

PDP Overview

FY 2006-2007

SEO Sustainable
Energy Conference

Raleigh, NC

April 8, 2008

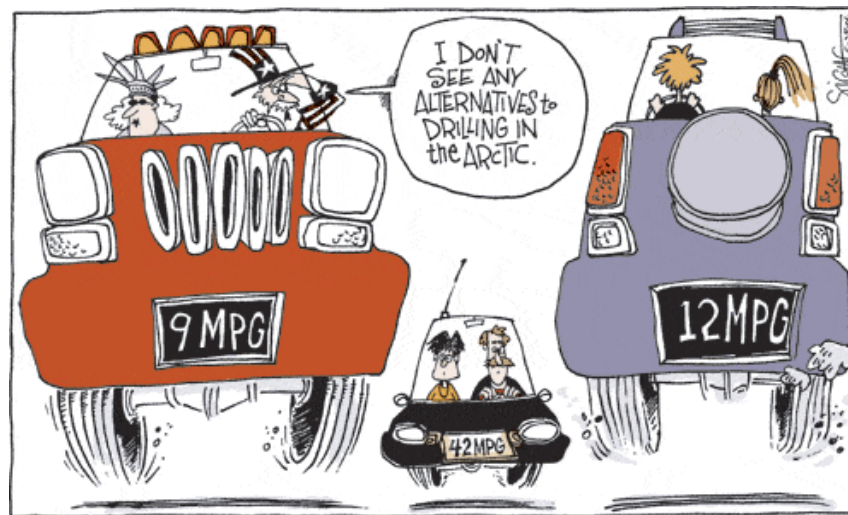
Anne Tazewell

Transportation Program Manager

NC Solar Center / NCSU

Presentation Topics to Cover

- What the State PDP is
- How the program is administered
- Plan progress through FY06-07
- Noteable efforts/plans
- How to implement on a local level



Session Law 2005-276 (State Budget Bill)

- All State agencies, universities, and community colleges that have State-owned vehicle fleets shall develop and implement plans to achieve a twenty percent (20%) reduction or displacement of the current petroleum products consumed by January 1, 2010.
 - The plan shall not impede mission fulfillment of the agency.
 - A State-owned vehicle fleet consists of more than 10 motor vehicles, designed for highway use and titled to the aforementioned entities.
 - Specialty vehicles, that are used for educational or emergency purposes are subject to ten percent (10%) reductions.
 - Agencies shall report annually by September 1st to the Department of Administration (DOA) on the efforts undertaken to achieve the reductions and the DOA shall compile and forward a report to the Joint Legislative Commission on Governmental Operations.

PDP Sample Plan

Petroleum Displacement	2006-2007	2007-2008	2008-2009	2009-2010	Initial Cost	Yearly Cost
5%	Switch over all Diesel (~25,000 gallons per year) to B20				\$650	\$2,000
2%		Implement an organization wide campaign to reduce speeds, eliminate unnecessary idling, stop fast accelerations, and encourage carpooling			\$0	-\$3946
7.5%		Switch over all 75,000 gallons of gasoline to E10			\$650	\$6,375
0.5%				Switch to Synthetic Motor Oils	\$0	\$0
1.5%				Purchase 3 Electric Cars for Maintenance	\$0	-\$2000
3%				Use 4,000 gallons of E85 from DOT fueling site or public pump in 12 FFV's purchased over the last 4 years	\$0	\$480
Totals	5%	14.5%	16.5%	19.5%	\$1,300	\$2,909

Possible Additional Vehicle Purchases from 2006 - 2010

Year	Quantity, Vehicle Type and Description	Purpose	Fuel / Hybrid	Additional Cost
2006	3 FFV trucks to replace older vehicles	Facilities work	E85	\$0
2007	3 FFV trucks to replace older vehicles	Facilities work	E85	\$0
2008	3 FFV trucks to replace older vehicles	Facilities work	E85	\$0
2009	3 FFV trucks to replace older vehicles	Facilities work	E85	\$0
2008	3 Neighborhood Electric vehicles	Campus Maintenance	Electric	\$0
2006	1 Hybrid vehicle to reduce idling on watch	Campus Police	Hybrid	\$3,000
2007	1 Hybrid vehicle to reduce idling on watch	Campus Police	Hybrid	\$3,000
2008	1 Hybrid vehicle to reduce idling on watch	Campus Police	Hybrid	\$3,000
2009	1 Hybrid vehicle to reduce idling on watch	Campus Police	Hybrid	\$3,000

State Agency Participation

- Fleets eligible for exemption
 - 67 state entities with 10 or less vehicles
 - County-titled vehicles including school buses and some law enforcement (SBI)
 - Off-road equipment including lawn mowers, tractors, gators, ferries, etc.
- 39 organizations must comply with Provision
 - 1 has not submitted any information
 - 3 do not have any reduction plan in place

State PDP Requirements

- The total petroleum use is **26.2** million gallons[^] for FY 2004-2005 baseline year
 - [^]Includes adjustments (equal to the percentage increase in mileage) from six organizations that justified their expanded fleet use
- The petroleum reduction goal is **4.65** million gallons
 - This is an 18% reduction accounting for the 6,115 emergency/educational vehicles that only have to meet a 10% displacement

State Vehicles

- Current total = 28,058

- Fleet increases

- FFVs: 1,098

- Diesels: 478

- AFV ownership

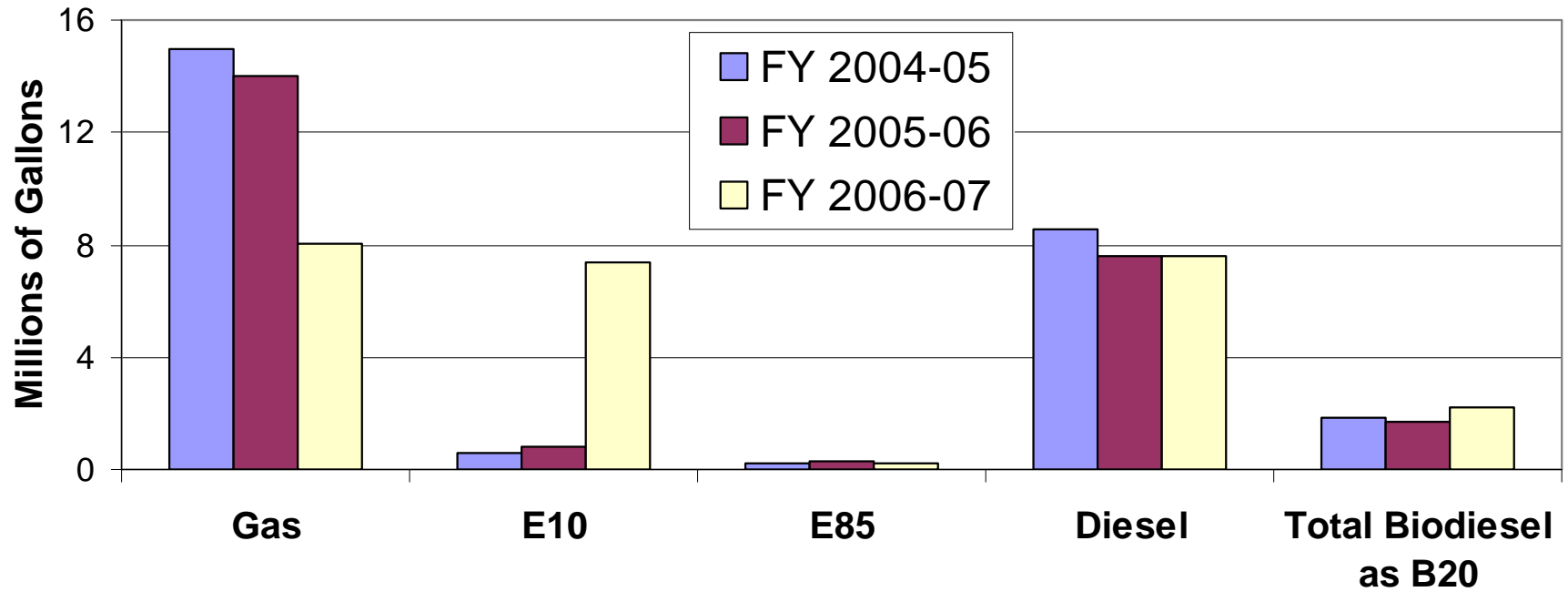
- 90% of FFVs & ALL hybrids are owned by MFM

- 90% of diesels & 95% of LPGs are owned by DOT

Vehicle Types	FY 2004-05 Baseline yr	FY 2006-07	
	#	#	% change
Gasoline	10,816	10,760	-1%
Hybrid	78	123	58%
Flex-fueled Vehicles	4,752	5,841	23%
Comp Natural Gas	14	11	-21%
Diesel	4,498	4,976	11%
Propane	192	187	-3%
Emergency/Ed (10%)	6,007	6,115	2%
Electric	13	45	246%
Total	26,370	28,058	6%

Fuel Usage

NC Fuel Use by State Vehicles



FY 2006-2007 Achievements

- Displaced 2 million gallons (7.5%) of petroleum
 - 2.6% was displaced through E10 use
 - 1.8% was displaced through biodiesel use
 - 1.7% was displaced through conservation and efficiency
 - 1.6% was displaced through a reduction in miles driven
 - -0.1% was added through a decrease in CNG and propane
 - -0.1% was added through a decrease in E85 use
- The 3.3% displaced through a reduction in miles, conservation, and efficient vehicles equates to 862,500 gallons of fuel saving the state \$1,725,000.

Overall State PDP Plan (Projected)

PDP Strategy	Thousand of petroleum gallons displaced	% reduction
Biodiesel (B20)	1,950	7.5%
E10	1,300	5.0%
Conservation & Efficiency	640	2.5%
E85	510	2.0%
Reduction in miles	250	1.0%
Total	4,650	18.0%

Reduction in Miles

- 17 out of 36 entities recorded less miles
 - last year was generally a “quiet” year for state departments with no major events, such as a major fire or hurricane that would cause evacuation or disaster relief efforts that could increase the vehicle use by the state fleet
- Gains through combining trips, carpooling, and adjusting routes
- Technology advances help this area
 - Video and tele-conferencing (webinars)
 - Computer programming to map shorter trips
- Prisoner transport requires extensive travels

Conservation & Efficiency

- Conservation has significant savings
 - Elimination of unnecessary idling, lower speeds, slower accelerations, cruise control and removing excess weight
- Agencies must purchase more efficient vehicles
 - Should choose 4-cylinder mid-sized sedans instead of mid- or full-sized vehicles with 6- or 8-cylinders
- Hybrid-electric Vehicles (HEVs)
 - With city driving, the HEVs can save more money in fuel savings than is needed for the increased initial cost
- Neighborhood Electric Vehicles (NEVs)
 - Now on the state contract, these vehicles have lower operating costs and are ideal for campus locations

UNC-Charlotte- NEVs

Estimated Savings on Electric Vehicle:

FUEL \$ 105.75 per unit
for 9 months
Shop Maintenance \$ 190.00 “
“
PM \$ 229.30 for 500
miles, 9 months labor/mtl.
Fuel labor \$ 76.45 for 10
less fuel time outs
Trip savings \$ 187.65 labor
saving larger load cap.

Total 8 months \$ 789.15

Yearly projection \$1052.19

7 years min. life/use \$7365.00

78% cost of vehicle recovery in savings vs. surplus value only on golf carts.

Battery bank costs (est. life 4 – 5 yrs.) \$ 700.00

Vehicle Cost \$9340.00

•Over 50 NEVs & E85 LSVs replacing full size gasoline vehicles



LICENSES		MAINT/DESCRIPTION		SHOP		SHOP 14 MILEAGE HOURS FOR MONTH	
7	P11	1993 Club Car	2,121.90	2,132.00	2,144.60	2,156.00	63
8	P10	Battery Car					
9	P11	Battery Car					
10	P21	1996 Club Car	2,227.20	2,260.60	2,295.30	2,330.10	111.1
11	P20	1995 Club Car	2,192.40	2,204.40	2,215.50	2,221.40	39
12	P32	1995 Club Car	2,800.30	2,820.20	2,836.40	2,856.30	71
13	P33	1995 Club Car	1,745.60	1,763.10	1,783.00	1,796.20	71
14	P35	1995 Club Car	1,719.00	1,731.00	1,742.60	1,754.20	54
15	P36	1995 EZ-Go Work Horse	1,238.10	1,246.20	1,254.10	1,266.00	65
16	P38	1994 Club Car	2,171.00	2,187.00	2,209.10	2,226.40	71
17	F47	1999 EZ-Go Work Horse	897.30	904.10	912.30	920.50	40
18	PR7000	1995 Ford Ranger	29,227.00	29,517.00	29,788.00	29,958.00	731.1
19	PR7007	1995 Ford Ranger	46,600.00	46,906.00	47,137.00	47,607.00	607
20	PR7008	1995 Ford Ranger	37,744.00	37,933.00	38,190.00	38,303.00	593
21	PR959	1993 Dodge Van	29,066.10	29,068.40	29,115.20	29,149.50	83
22	F40	1992E2-00	2,796.40	2,796.20	2,777.20	2,789.90	43
23	PT9149	1990 Dodge Van	broken odometer	14,305.50	14,305.50	14,305.50	0
24	PS3	Vantage Cargo Van	1,245.20	1,260.20	1,268.50	1,276.20	510
25	PS4	Vantage Cargo	1,002.60	1,003.00	1,010.70	1,013.80	381
26	AV2	1992E2-00	2,742.00	2,766.90	2,768.00	2,792.30	60
27			13,389.64	114,738	107,027	101,74	341
28			\$ 1.65	\$ 1.65	\$ 1.65	\$ 1.75	1.7
29			\$ 21,762.90	\$ 189.39	\$ 176.67	\$ 170.04	698.2
30			174.10	107.50	105.32	140.02	
31			\$ 1.65	\$ 1.65	\$ 1.65	\$ 1.65	
32			\$ 235.04	\$ 203.10	\$ 209.52	\$ 201.15	
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Biodiesel

- DOT currently has B20 at 22 sites and will expand to all 106 of their sites by end of 2008
- The state's use of biodiesel (primarily as B20) has increased from 375,000 to 450,000 gallons of B100 and should reach 2 million gallons by 2010

4/3/08 Wake Co state contract price for B20= .18 cents less than ULSD

State Organizations (in addition to DOT) using biodiesel

Appalachian SU	Caldwell CC & TI	Cape Fear CC
East Carolina U	Fayetteville SU	NC A&T
Motor Fleet Management	NC Arboretum	NC Dept. of Ag & CS
NC Dept. of CC & PS	NC Dept. of Correction	NC DENR
NC State University	UNC Asheville	UNC Chapel Hill
UNC Greensboro	Wilson Technical CC	Winston-Salem SU

Ethanol; E10

- As a 10% blend with gasoline, ethanol can be used in any gas vehicle with little performance differences
- All 106 DOT sites replaced gasoline with E10
- E10 use increased from 600,000 to 7,600,000 gallons and may reach 13 million gallons by 2010

4/3/08 Wake Co State contract price is .01 cent less per gal than UL

State Organizations (in addition to DOT) using E10

Appalachian SU	Davidson County CC	East Carolina U
NC A&T Resources	Motor Fleet Management	NC Cultural
NC Dept. of Ag & CS	NC Dept. of CC & PS	NC Dept. of Correction
NC DENR	NC Dept. of Health & HS	NC State University
UNC Chapel Hill	UNC Greensboro	

Ethanol; E85

- FFVs make up 21% of the state fleet
- E85 use decreased when MFM Peace St. closed early 2007
- Only E85 state pump is at Blue Ridge MFM, but 11 commercial stations are in Arden, Charlotte, Durham, Hickory, Pinehurst, Shelby, Southern Pines, and Statesville
- DENR has an agency E85 pump at Jordan Lake & UNC Charlotte just opened E85 pump
- Planned new stations include UNC Chapel Hill, 5 DOT sites (Greenville, Winston-Salem, Asheboro, Charlotte, and Marion), and 10-12 commercial locations (Asheville, Gaston, Salisbury, Lenoir, Gastonia, Pittsboro, Cherryville)

4/3/08 Wake Co State contract E85 = .06 cents less than UL

CNG, Propane, and Motor Oils

- Due to the extensive infrastructure requirements with CNG and propane, and the lower quantities of motor oils used, these three strategies will have little impact on the total displacement for the state
- CNG use decreased with Peace St. site closing, but vehicles and tank are available
- DOT's does not have plans to expand their propane fleet, their focus is on biodiesel
- Synthetic motor oils cost more but may last longer
- Re-refined motor oils cost less on state contract

Recommendations

- Implement initiatives to encourage conservation
- Increase the number of hybrid-electric vehicles
- Replace older vehicles with more fuel-efficient ones
- Encourage the use of alternative fuels
 - E10 and B20 at DOT sites
 - E85 at commercial and state pumps
- Change MFM leasing rates to support conservation
- Increase fuel allowances for state agencies
- Develop bid procedures and purchasing policy that ensure fuel-efficient and alternative fueled vehicles

2007-2008 PDP Actions

- Raise awareness, get support at higher levels
- Check accuracy of reporting
- Expand use of NEVs and hybrids
- Site visits / consulting
- Resolve PDP barriers for MFM
- Increase availability and use of E85
- Provide Information for petroleum alternatives
 - Re-refined motor oils, biofuels,

Get involved!

GREEN YOUR FLEET - Learn How/Get Help

- NC Mobile CARE Initiative/ NC Clean Cities Coalition
www.cleantransportation.org
- International Council for Local Environmental Initiatives
http://www.greenfleets.org/greenfleets_us.html



Step One

- Document the impact of fleet activities by conducting an inventory of fleet vehicles, including the types of vehicles, how many there are of each type, and the type and quantity of fuel that they use.

Step Two

- Once the fleet has been characterized, realistic goals can be set and measured. Goals should be set for reducing fuel use, criteria air pollutants, and carbon dioxide emissions for the fleet.

Step Three

- There are many cost effective and practical measures that can "green" your fleet. Implemented wisely, the actions taken will not adversely impact the day-to-day operations of local government. In fact, many actions will result in significant savings. Measures include:
 - » "Right-sizing" vehicle fleets by downsizing and eliminating vehicles.
 - » Optimizing vehicle travel, operation, and maintenance.
 - » Substituting other travel modes, or reducing the need to travel.

US Mayors Climate Protection Agreement

Started by Seattle Mayor Nickels in March 2005
800 signatories to date.

In area of transportation cities agree to:

- Promote transportation options such as bicycle trails, commute trip reduction programs, incentives for car pooling and public transit;
- Increase the average fuel efficiency of municipal fleet vehicles;
- Reduce the number of vehicles in the fleet;
- Launch an employee education program including anti-idling messages;
- Convert diesel vehicles to bio-diesel

<http://www.ci.seattle.wa.us/mayor/climate/default.htm#what>

Stay informed!

- Sign up for the NC Mobile CARE Listserve by sending 'subscribe ncmobilecare' to mj2@lists.ncsu.edu
- Join Clean Cities coalition in Triangle, Charlotte & Asheville
- Attend Quarterly NC Alternative Fuel Consortium Meeting email: cleantransportation@ncsu.edu
- Attend Quarterly NC Biomass Council meetings email: kim_tungate@ncsu.edu