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Biofuels at KSC

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Alternative Fuel Vehicle (AFV) Requirements

Energy Policy Act of 1992, the law is commonly known as EPAct
(implementing DOE regulations **10 CFR part 490**)

Presidential Executive Order 13149 (4/21/00)
-restates that Federal agencies shall comply with acquisition req’ts in EPACT
-agencies shall reduce petroleum consumption by 20% by FY05
-AFVs shall operate on alternative fuel a majority of the time
-agencies shall increase fleet average fuel economy (1mpg by FY02, 3mpg by FY05)

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Current Fleet and Infrastructure Status

Fleet;

KSC's large fleet of GSA leased vehicles (~1,600) is nearly half the Agency fleet

Full spectrum; compact sedans to heavy duty tractor trailers

By fuel type;

300 E85 flex-fuel
100 CNG
150 Diesel (+200 HEs?)
1,100 Gasoline

Consume ~800,000 gal gasoline, ~200,000 gal diesel, 15,000 gge CNG per year

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Current Fleet and Infrastructure Status

Infrastructure;

Concessionaire operated service station

switched to B20 (since March 03)

E85 (since January 04)

gov't owned/operated CNG Station capable of refueling ~400 CNG vehicles

additional E85 station design complete,
no project submittal due to unresolved challenges with current E85 Station

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Fleet In Transition

GSA replaces leased vehicles at a rate of ~300-400 per year

75% AFV requirement means ~225 - 300 "EPAct credits" needed for compliance

1 credit -	**1 bi-fuel or flex fuel AFV, 450 gallons of biodiesel (2,250 gallons of B20)**
2 credits -	**Dedicated AFV**
3 credits -	**Dedicated Medium-duty AFV**
4 credits -	**Dedicated Heavy-duty AFV**

Biodiesel may be used for up to one-half of the total required credits (for a total usable of >100)

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For AFV Program Success;
acquire AFVs and ensure adequate infrastructure (refueling and servicing)

Acquire vehicles;

model -	sedan, compact truck, full size van, etc.	
fuel type -	bi-fuel CNG, dedicated CNG, flex fuel E85, B20	
availability -	many models available in only one alternative fuel	
cost		
(vs. gasoline) -	CNG costs much more upfront, less during life of vehicle	
	E85 costs more upfront, more during life of vehicle	
	B20 costs same upfront and during life of vehicle	
emissions -	CNG has lowest emissions (esp. dedicated)	
	E85 has marginally lower emissions than gasoline	
	B20 has marginally lower emissions than diesel	
petroleum		
reduction -	CNG dedicated;	100%
	CNG bi-fuel;	>50%
	E85;	>42%
	B20;	>10%

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For AFV Program Success;
acquire AFVs and ensure adequate infrastructure (refueling and servicing)

Refueling;
NASA build fueling station(s), pay contractor for O&M, GSA purchases fuel
Easy for project manager; hard on the budget

Private investment (or Exchange) builds, operates and maintains station, GSA buys fuel
Allows employees POVs to utilize
For positive business case, sale of other products and services may be required
(e.g., convenience store, quick lube, brakes, tires)
Hard for project manager; easy on the budget

Servicing;
Work with OEM reps, dealerships, local service stations and GSA to establish and maintain adequate service/repair capability

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These are my opinions and not necessarily those of NASA…

DOE's decision on municipal and private fleets leaves AFVs nowhere to spread and grow.

Only EPA through Clean Air Act will push expansion
(if more cities become non-attainment)

Therefore infrastructure for bi-fuel and dedicated vehicles will suffer,
and only flex-fuel vehicles (E85 and diesel) will have widespread practicality
(and marketability!)

The market for dedicated and bi-fuel AFVs will suffer.