



U.S. Department of Energy  
Energy Efficiency  
and Renewable Energy



# *Clean Cities National Program Update & Federal Incentives*

**Mike Bednarz**

U.S. Department of Energy  
National Energy Technology Laboratory



# The Clean Cities Program

- Established in 1993 in response to the Energy Policy Act (EPAct) of 1992
- Provides a framework for businesses and governments to work together as a coalition
- Coordinates the activities of petroleum displacement proponents
- **Mission:** To advance the energy, economic and environmental security of the United States by supporting local decisions to adopt practices that reduce the use of petroleum in the transportation sector.
- **Goal:** To expand and stimulate alternative fuel and advanced technology markets to achieve a petroleum reduction of 2.5 billion gallons of gasoline equivalent (GGEs) / year by 2020.





# Clean Cities Technologies (Fuel/Technology Neutral Approach)

## Alternative Fuels

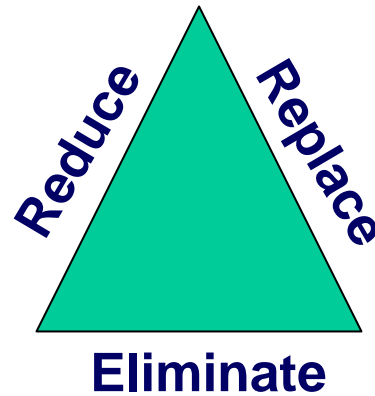
### Increase Vehicles and Infrastructure

- Electricity
- Ethanol (E-85)
- Propane
- Natural Gas
- Hydrogen
- Biodiesel (B100)

## Blended Fuels

### Increase Use of Blends

- Low levels of alternative fuels with conventional fuels
  - 10% ethanol / 90% gasoline blends (E10)
  - 2% biodiesel / 98% diesel blends (B2)
  - 20% biodiesel / 80% diesel blends (B20)



## Idle Reduction

### Increase Technology Use/Practices

- Heavy-duty trucks
- School Buses

## Hybrids

### Expand Market for Vehicles

- Light- and heavy-duty hybrid electric vehicles

## Fuel Economy

### Increase Fuel Efficient Technologies and Practices

- Fuel efficient vehicles, behavioral changes, vehicle maintenance initiatives, etc.



## 2007 Portfolio Performance

- 2007 is the fourth year of the new portfolio and the online survey
- 2007 survey results exceeded goal for the year
  - Goal for 2007 was 340 million GGE displaced
  - Actually achieved 375 million GGE displaced through coalition and ORNL fuel economy efforts
- 86 coalitions submitted reports with an average of 3.4 million GGE displaced per coalition
- CICCAs displaced 7.9 million GGE



## 2007 Portfolio Performance

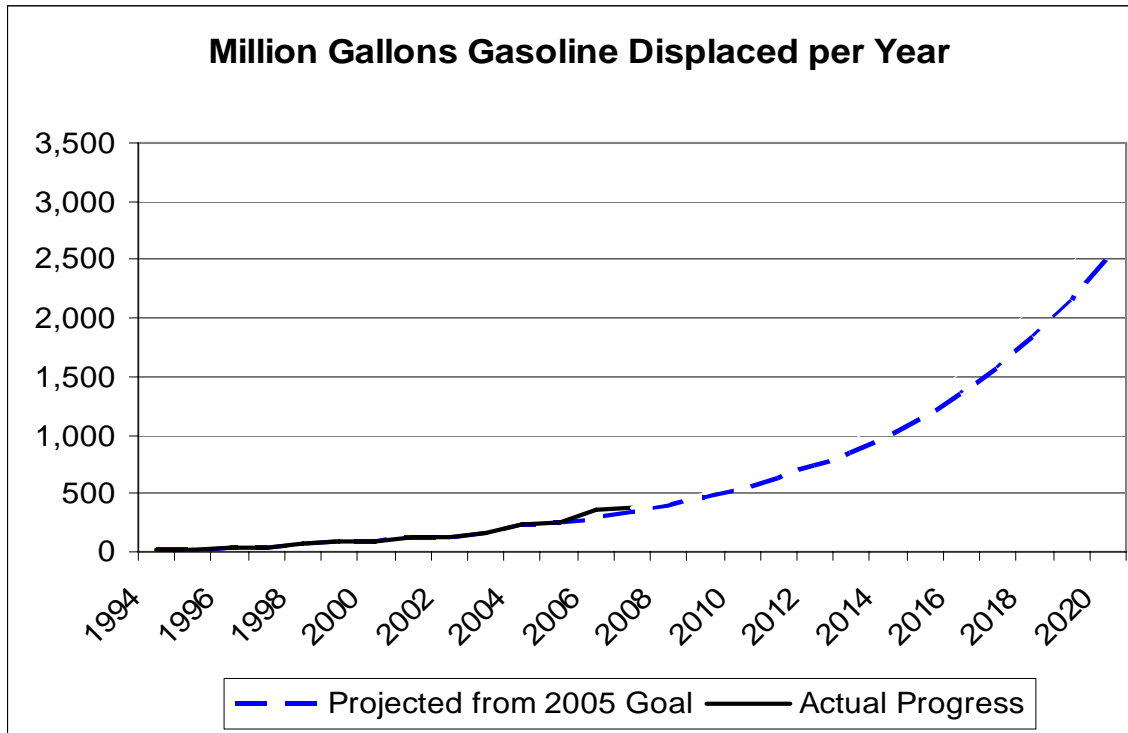
Technology	Million GGEs	Percent of Total
AFV	247	66% ↓
Fuel Economy	86	23% ↑
Blends	20	5% ↑
Hybrids (HEVs)	17	5% ↑
Idle Reduction	6	1% ↓
<b>Total</b>	<b>375</b> ↑	<b>100%</b>

- AFVs continue to account for lion's share of the displacement
- Fuel Economy is next, with 21.6% from ORNL efforts and other 1.4% from coalitions' efforts

*In 2004, Clean Cities Celebrated Beyond A Billion.  
In 2008, Clean Cities surpassed two billion GGE displaced*



# Annual Displacement History Projected to 2020



- 15-16% annual growth achieves 2.5 billion GGE goal by 2020
- CC 25<sup>th</sup> Anniversary (2018) – displacement will approach 2B GGE/yr

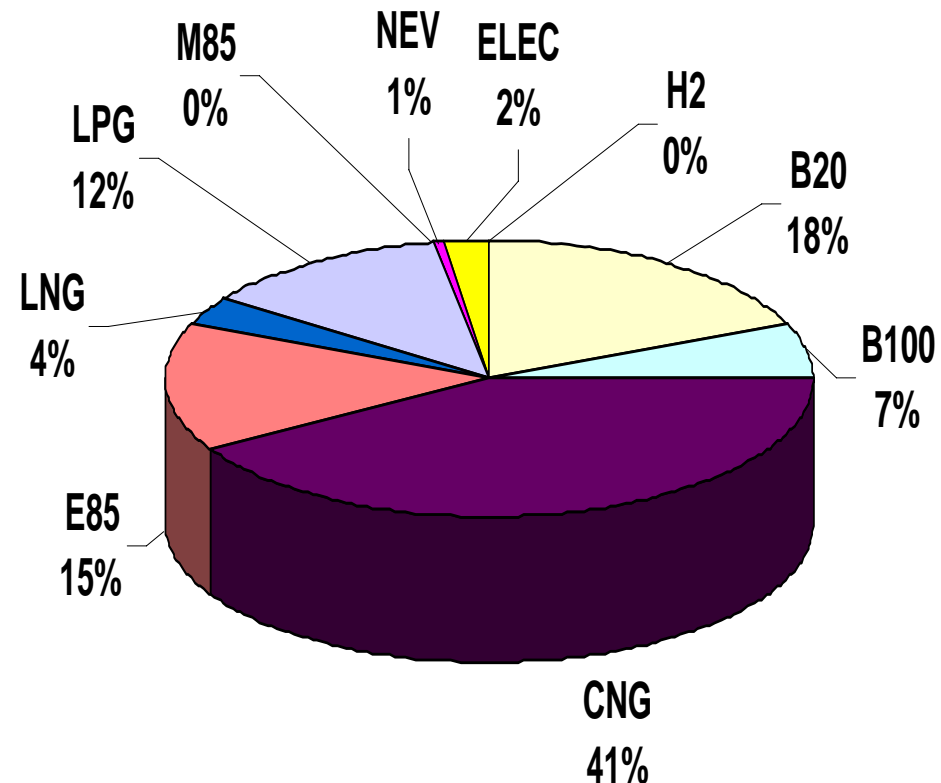


# Clean Cities and Alternative Fuels

***AFVs displaced 247 million GGEs in 2007***

- 2/3 of total CC displacement
- Slight Reduction from last year, due to improved reporting accuracy

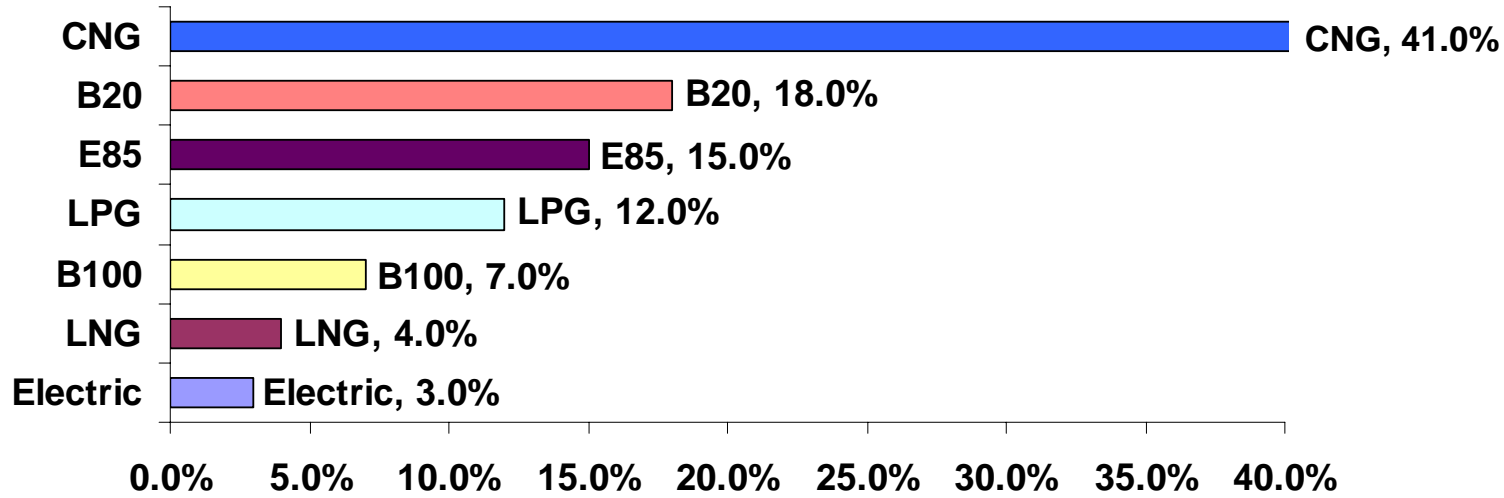
Displacement by AFVs



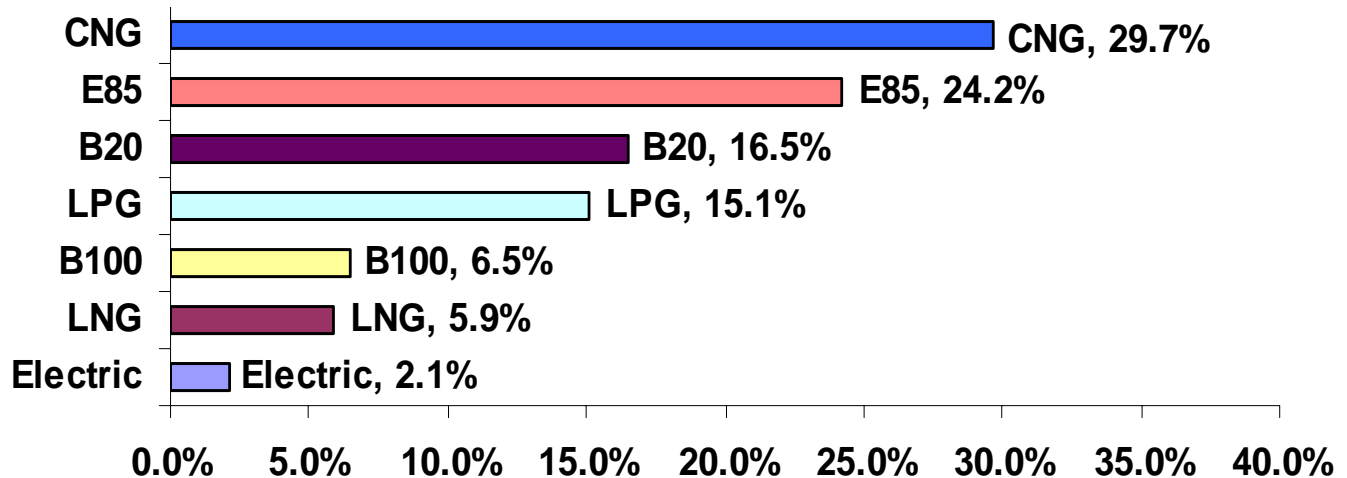


# AFV Petroleum Displacement Trends

2007



2006







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# **FY09 Clean Cities Solicitation – Potential Schedule**

- **Estimated Date to Issue Solicitation: Early December 2008**
- **Estimated Due Date For Proposals: Late February 2009**
- **Estimated Award Date: June 2009**
- **Estimated Funding Available:**
  - **\$6 million in DOE funds over 2 year funding period**
    - **\$3 million in FY 09 funds & \$3 million in FY 10 funds**



# FY09 CC Solicitation – Potential Categories

## Infrastructure for Alternative Fuels:

- intend to fund a percentage of the infrastructure cost associated with developing alternative fuel fueling capability.

## Incremental Cost of Alternative Fuel Vehicles

- intend to fund a percentage of the incremental cost associated with purchase of dedicated alternative fuel vehicles.

## Education/Workshops:

- intend to provide technical support to transition biofuels and other alternative fuel refueling infrastructure to a scale and scope to support achievement of the President's Twenty in Ten goal. This may include educational materials, technical assistance, and workshops on subjects such as, Fuel Handling & Quality, First Responder Training, the safe and proper use of FFVs and E85 refueling equipment/stations, working with local public safety and regulatory officials, etc.

## University/College Biofuels Integration Program

- intend to fund projects to support an integrated program from curriculum through application to demonstrate production and use of biofuels on campus (vehicle fleets, heating, off-road vehicles, etc.)



# Federal Incentives to Encourage NGV Use

- **Fuel Credit -**
  - \$0.50 credit for sellers/user of CNG and LNG
  - Expires 09/30/2009
- **Vehicle Credit**
  - Range from \$2,500 - \$32,000
  - Expires 12/31/2010
- **Infrastructure Credit**
  - \$30,000 retail station/ \$1,000 home refueling
  - Expires 12/31/2009



# Alternative Fuel Tax Credit

*Enacted as part of **SAFETEA-LU**  
(P.L. 109-59, section 11113)*

- AFs included: LPG, LNG, CNG, and liquefied hydrogen
- Credit worth 50¢ per gal. (CNG per 121 cubic feet)
- Credit generally goes to retail sellers, but can also go to users that operate their own fueling station(s)
- If you use another fleet's private station, they get the credit
- Public entities and tax exempt entities qualify for the credit/payment.



## Alternative Fuels Tax Credit (cont.)

- Effective period: Oct. 1, 2006 – Sept. 30, 2009 (2014 for H2)
- Claiming the credit – IRS forms which may be required, depending on circumstances: Form 637; Form 720; Form 8849, Schedule 6; and Form 4136

Additional sources of information:

- IRS Guidance – [www.irs.gov/pub/irs-drop/n-06-92.pdf](http://www.irs.gov/pub/irs-drop/n-06-92.pdf)
- IRS Forms – [www.irs.gov/formspubs/lists/0,,id=97817,00.html](http://www.irs.gov/formspubs/lists/0,,id=97817,00.html)
- NGVAmerica Summary

<http://www.ngvamerica.org/pdfs/Notice2006-92RegSum2.pdf>



## Federal Vehicle Tax Credits for NGVs

- New vehicles and retrofits eligible
  - Light Duty (up to 8,500 lb):  
up to \$5,000
    - Honda GX = \$4,000
  - Medium Duty (up to 14,000 lb):  
up to \$10,000
  - Medium-Heavy Duty (up to 26,000 lb):  
up to \$25,000
  - Heavy Duty (more than 26,000 lb):  
up to \$32,000





# Clean Cities Website Tools

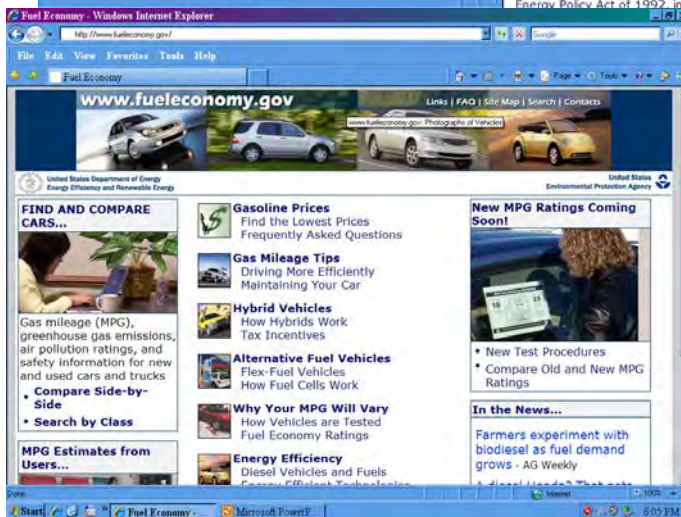
*Clean Cities*

[www.eere.energy.gov/cleancities](http://www.eere.energy.gov/cleancities)



*Alt Fuels Data Center*

[www.eere.energy.gov/afdc](http://www.eere.energy.gov/afdc)



*FuelEconomy.gov – in partnership with EPA*

[www.fueleconomy.gov](http://www.fueleconomy.gov)





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*THANK YOU!*

***Mike Bednarz***

U.S. Department of Energy - NETL

Office: 412.386.4862

E-mail: [Michael.Bednarz@netl.doe.gov](mailto:Michael.Bednarz@netl.doe.gov)



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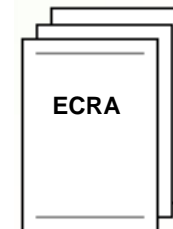
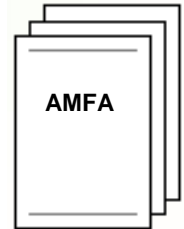
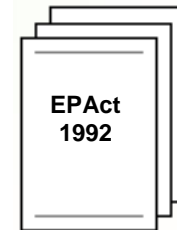


# Back-Up Slides



# Timeline of Key Federal Alt Fuel Actions

- **1988** – **Alternative Motor Fuels Act** calls for Federal demos and provides CAFE credit for AFVs
- **1991** – **Executive Order 12759**, procurement of AFVs by Federal Fleet
- **1992** – **EPAct 1992**, mandatory fleet programs for Federal, State and AF Provider fleets, conditional for Private and Local Government, plus Clean Cities and tax incentives
- **1998** – **Energy Conservation Reauthorization Act (ECRA)**, adds B20 as an option for EPAct fleets
- **2000** – **Executive Order 13149** calls for Federal fleets to reduce petroleum by 20% (FY '99-'05)
- **2005** – **EPAct 2005**, additional options and requirements for covered fleets, plus Renewable Fuel Standard and tax incentives
- **2007** – **Executive Order 13423** calls for Federal fleets to reduce petroleum by 2% per year and increase Alt Fuel use by 10% per year through 2015





## EPAct 1992 Tax Incentives

- Section 1913 of EPAct 1992 (P.L. 102-486) created section 179A (AFVs and AF infrastructure) and modified section 30 (EVs) of the Tax Code
- Provided for tax deductions for AFVs of up to \$2,000 for LDVs and \$5,000 - \$50,000 for MDVs/HDVs, based on Gross Vehicle Weight, limited to incremental cost for dual-fuel AFVs
- Provided for tax credit for EVs of up to 10% of vehicle cost (limited to \$4,000)
- Provided for tax deduction for refueling station equipment of up to a max. of \$100,000 per location



# EPAct 2005 Tax Incentives

## *Alternative Motor Fuel Vehicle Credit (P.L. 109-58, Sec. 1341)*

Provides for tax credits for the following types of vehicles:

- Fuel Cell Vehicle, \$8,000-\$40,000
- Advanced Lean Burn Technology Motor Vehicle, up to \$3,400 (LDVs only)
- Hybrid Motor Vehicle, up to \$3,400 (LDV) or \$1,500 - \$12,000 for MDVs/HDVs
- Alternative Fuel Motor Vehicle, 50-80% of incremental cost for vehicles: \$4,000 max. for LDVs and \$8,000-\$32,000 max. for MDVs/HDVs
- Aftermarket conversions also qualify



# EPAct 2005 Tax Incentives

## Expiration Dates for Credits

- Fuel Cell Vehicles – 12/31/2014
- Advanced Lean Burn Technology Motor Vehicle – 12/31/2010\*
- LD Hybrid Motor Vehicle – 12/31/2010\*
- MD/HD Hybrid Motor Vehicle – 12/31/2009
- Alternative Fuel Motor Vehicle – 12/31/2010

*\* Subject to phase-out per 60,000 vehicle threshold, includes both hybrid and lean-burn vehicles sold by a manufacturer*



# EPAct 2005 Tax Incentives

## NATURAL GAS

- Only Honda has certified an NGV so far - \$4,000 credit for Civic GX

## HYBRID

- Initial hybrid vehicle guidance released by IRS in Jan. 2006, Notice 2006-9; only addresses light duty hybrids
- Numerous hybrid vehicles have been “certified”
- Phase-out guidance released in Sept. 2006, Notice 2006-78
- Toyota and Honda vehicles now subject to phase-out provision
- Numerous announcements and updates concerning hybrid credits available on IRS website:
  - <http://www.irs.gov/newsroom/article/0,,id=157557,00.html>
  - Or go to [irs.gov](http://irs.gov), and enter “hybrid vehicle” in Search box



# 2008 MY Light-Duty Hybrid Vehicles

Make	Hybrid Model	Credit Amount	
Chevrolet	Malibu	\$1,300	
Chevrolet	Tahoe 2 & 4WD	\$2,200	
Ford	Escape 2WD	\$3,000	
Ford	Escape 4WD	\$2,200	
GMC	Yukon	\$2,200	
Honda	Civic CVT	Purchase Date	
		Prior to 1/1/08	\$2,100
		1/1/08 - 6/30/08	\$1,050
		7/1/08 12/31/08	\$ 525
		1/1/09 & later	\$ 0
Mazda	Tribute 2WD	\$3,000	
Mazda	Tribute 4WD	\$2,200	
Mercury	Mariner 2WD	\$3,000	
Mercury	Mariner 4WD	\$2,200	
Nissan	Altima	\$2,350	
Saturn	Aura	\$1,300	
Saturn	Vue Green Line	\$1,550	
Toyota	Camry	Purchase Date	
		1/1/06-9/30/06	\$2,600
		10/1/06-3/31/07	\$1,300
		4/1/07- 9/30/07	\$ 650
		After 10/1/2007	\$ 0

Make	Hybrid Model	Credit Amount	
Toyota	Camry	Purchase Date	
		1/1/06 -9/30/06	\$2,600
		10/1/063/31/07	\$1,300
		4/1/07 -9/30/07	\$ 650
		After 10/1/07	\$ 0
Toyota	Prius	Purchase Date	
		1/1/06-9/30/06	\$3,150
		10/1/06-3/31/07	\$1,575
		4/1/07-9/30/07	\$ 787
		After 10/1/07	\$ 0
Toyota	Highlander 4WD	Purchase Date	
		1/1/06-9/30/06	\$2,600
		10/1/06-3/31/07	\$1,300
		4/1/07-9/30/07	\$ 650
		After 10/1/07	\$ 0
Lexus	RX 400h 2 and 4WD	Purchase Date	
		1/1/06-9/30/06	\$2,200
		10/1/06-3/31/07	\$1,100
		4/1/07-9/30/07	\$ 550
		After 10/1/07	\$ 0
Lexus	LS 600h L	Purchase Date	
		1/1/06- 9/30/06	\$1,800
		10/1/06-3/31/07	\$ 900
		4/1/07- 9/30/07	\$ 450
		After 10/1/07	\$ 0





# EPAct 2005 Tax Incentives

## *AFV Refueling Property Credit (P.L. 109-58, Sec. 1342)*

- Provides for tax credits of:
  - Up to 30% of fueling equipment cost (max. credit of \$30,000)
  - Up to \$1,000 for a residential installation
- Form 8911, “AFV Refueling Property Credit” – available
- Instructions clarify that credit may be taken for more than one refueling property
  - Not clear if multiple dispensers at single location qualify
  - Not clear if upgrades to stations qualify
- Credits expire 12/31/2009 (except 12/31/2014 for Hydrogen)



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# Energy Independence & Security Act of 2007 (EISA)

- **January 2007, State of the Union Address**
  - President announces **20 in 10 initiative**, focused on reducing gasoline demand by 20% in 10 years (2017)
    - Three-quarters from increased utilization of alternative fuels
    - One-quarter from increased fuel efficiency
- **December 2007, Congress Passes and President Signs the Energy Independence and Security Act of 2007 (EISA, P.L. 110-140)**
  - What EISA did:
    - Expanded Renewable Fuel Standard (RFS)
    - Increased Corporate Average Fuel Economy (CAFE)
  - What EISA did NOT do:
    - Create New Tax Incentives



# EISA – Renewable Fuel Standard

- Expands the Renewable Fuel Standard to 36B gal/yr of renewable fuel by 2022 (vs. 7.5B gal/yr by 2012, from EPA Act 2005)
- Fuels include:
  - Corn ethanol
  - Advanced biofuels
    - Cellulosic ethanol and ethanol from other non-corn biomass sources
    - Biomass-based Diesel (Biodiesel)
    - Biogas
    - Butanol and other alcohols from biomass
    - Other fuels from cellulosic biomass
- EPA will develop regulations to implement
- Corn Ethanol limited to 15B of 36B gallons in 2022 – remaining 21B gallons is Advanced Biofuels
- Biodiesel must be at least 1B gallons in 2022



# EISA – Corporate Average Fuel Economy

- Increases CAFE levels to 35 mpg overall by 2020 – estimated to save 0.9M barrels per day by 2020, and 2M barrels per day by 2030
- DOT/NHTSA to develop implementing regulations
- Continues to allow separate standards for passenger cars and light trucks
- Manufacturers can still separate results for domestic and import passenger cars
- Flexible Fuel Vehicle credit continues at current 1.2mpg credit level through 2014, then ramps down to complete phase-out after 2019
- Fines – half goes to DOT to administer CAFE program, half goes to DOT to provide grants for manufacturing conversion for advanced technologies
- Calls for development of Medium- and Heavy-Duty fuel economy standards, after completion of a National Academies of Science study



# EISA – Biofuels Utilization

- R&D on optimizing FFVs to run on ethanol
- R&D on optimizing engines to run on various biodiesel blends
- Specifications for biodiesel (ASTM or EPA), and enforcement by EPA
- Study on biogas R&D needs for use in NGVs
- Opening up opportunities for renewable fuel infrastructure through prohibiting restrictions in franchise agreements
- Study of feasibility of requiring fuel retailers to install E85 pumps
- Study of feasibility of constructing ethanol pipelines
- Study adequacy of rail transport system for ethanol
- Distribution infrastructure R&D



## EISA Biofuels Utilization (cont.)

### Sec. 244 – Renewable Fuel Infrastructure & Fueling Station Grants

- Calls for DOE to administer grants for renewable fuel infrastructure (blends of >10% up to 85% with gasoline (no cap for diesel blends)) – up to 33% of costs, up to \$180,000 for any single retail outlet. No double benefit w/tax credits.
- Also allows for technical/marketing assistance.
- Also includes refueling infrastructure corridor program
  - up to 10 areas,
  - maximum of \$20M/applicant,
  - requires involvement of EERE Vehicle Technology deployment program participants
- \$200M/yr Authorization, FY2008-2014





# Alternative Motor Vehicle Tax Credit Values

Vehicle Size	Incremental Price Cap	80% Credit	50% Credit
0 - 8,500 lbs. GVWR	\$5,000	\$4,000	\$2,500
8,501 – 14,000 lbs. GVWR	\$10,000	\$8,000	\$5,000
14,001 – 26,000 lbs. GVWR	\$25,000	\$20,000	\$12,500
26,001 lbs. GVWR & Up	\$40,000	\$32,000	\$20,000