Agenda: Item 5

Consideration of a Clean Air Taxi Policy [INFORMATION and DISCUSSION]

From the Mayor

Climate change presents serious threats to the quality of life in San Francisco. The impacts of rising sea levels could be potentially devastating. Low lying areas such as San Francisco International Airport, Treasure Island, Mission Bay, SBC and Candlestick Parks, roads, railroad tracks, sewage treatment plants, and our marina and harbor facilities could be threatened. We must act now to significantly reduce greenhouse gas emissions or we will quickly reach a point at which global warming cannot be reversed.

That is why San Francisco holds itself accountable for its contributions to global warming, and is committed to dramatically reducing overall greenhouse gas emissions to 20% below 1990 levels by 2012. The *Climate Action Plan,* prepared by San Francisco's Department of Environment and Public Utilities Commission staff, quantifies the emissions we are responsible for and identifies actions required to achieve emissions rollbacks.

The good news is that we can reduce the pollution that causes global warming by using currently available technologies that also enhance economic development. We can promote energy efficiency, renewable energy, alternatives to automobile transportation, and recycling to help save money and create jobs that strengthen the local economy, and increase the livability of our neighborhoods.

Our actions can be an example to others. As cities across the nation make similar commitments we can work in concert to make an environmental u-turn. It is up to municipal governments to take ownership of this critical issue when there is scant leadership coming from Washington, D.C.

We need to act now if we are going to keep San Francisco and the Bay Area a viable place to live for future generations. It is our responsibility as citizens of the world.

Gavin Newsom

CITY AND COUNTY OF
SAN FRANCISCO

TAXI COMMISSION
MAYOR GAVIN C. NEWSOM

COMMISSIONERS TELEPHONE (415) 554-7737

PAUL GILLESPIE, PRESIDENT, ext. 3
PATRICIA BRESLIN, VICE PRESIDENT
RICHARD BENJAMIN, COMMISSIONER, ext. 1
MALCOLM HEINICKE, COMMISSIONER, ext. 4
BRUCE OKA, COMMISSIONER, ext. 5
TOM ONETO, COMMISSIONER, ext. 6
MIN PAEK, COMMISSIONER, ext. 7

HEIDI MACHEN, EXECUTIVE DIRECTOR

June 12, 2007

At the meeting of the Taxicab Commission on Tuesday, June 12, 2007 the following resolutions and findings were adopted:

Resolution to Reduce, Offset, and Eliminate Greenhouse Gases in the San Francisco Taxi Industry

RESOLUTION NO. 2007-21

WHEREAS, the San Francisco Taxi Industry is a major user of fossil fuels and producer of greenhouse gases ("GHG") with a normal taxi traveling 75,00 miles per year and emitting 50 tons of GHG and the number of taxis in San Francisco increasing from 821 in 1990 to 1431 today with total GHG going from over 40,000 tons to over 70,000 tons per year; and

WHEREAS, the *Stern Review: The Economics of Climate Change*, a 2006 study commissioned by the British Finance Minister to assess the economic impact of climate change, states that "the scientific evidence is now overwhelming; climate change presents very serious global risks and it demands an urgent global response" and "the benefits of strong early action on climate change outweigh the costs;" and

WHEREAS, the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, a United Nations–sponsored assessment group founded in 1988, has stated that "there is substantial economic potential for the mitigation of global greenhouse gas emissions over the coming decades, that could offset the projected growth of global emissions or reduce emissions below current levels," and specifically cited hybrid and alternative fuel vehicles as technology that had the greatest economic potential for mitigation in the short and medium term; and

WHEREAS, the CALIFORNIA GLOBAL WARMING SOLUTIONS ACT OF 2006 (AB-32) finds that "global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California," and caps California's GHG emissions at 1990 levels by 2020; and

WHEREAS, in 2002 the San Francisco Board of Supervisors passed, and Mayor Willie Brown signed, Resolution 158-02 which called for a 20% reduction in overall GHG emissions in San Francisco from 1990 levels by 2012; and

WHEREAS, Mayor Gavin Newsom has been a strong advocate of clean taxis since 1998 and in 2004 issued the first city Climate Action Plan and welcomed the first hybrid taxis into an American fleet, and in his 2006 State of the City address called for 100% of San Francisco taxis to be hybrid or alternative fuel by 2011; and

WHEREAS, the San Francisco Taxi Commission has supported innovation in the San Francisco taxi

industry such as the introduction of the Ford Escape and Toyota Prius hybrids and the Ford Crown Victoria and Honda Civic compressed natural gas vehicles into the fleet; and

WHEREAS, hybrid vehicles save drivers thousands of dollars a year in fuel costs and reduce GHG emissions by half and more but are often more expensive to purchase initially; and

WHEREAS, even with a 20% reduction of greenhouse gases from 1990 levels, the San Francisco taxi fleet will still produce over 30,000 tons per year of GHG, but by investing in renewable energy or efficiency, the taxi industry can offset its GHG emissions; and

WHEREAS, vehicles using technologies like hydrogen fuel cells, biofuel electric hybrids, or electric motor drive-by-wire that would emit little or no GHG at the tailpipe are viable and on the near horizon; and

NOW THEREFORE BE IT RESOLVED, the San Francisco Taxi Commission shall adopt the necessary rules and regulations to require that the San Francisco taxi industry reduce its total GHG emissions by 50% from current levels and 20% from 1990 levels by 2011; and

BE IT FURTHER RESOLVED, that by 2015, the San Francisco Taxi Commission shall work to achieve zero net carbon emissions by offsetting the total amount of GHG produced by the San Francisco taxi fleet with an equal amount of renewable energy or energy efficiency; and

BE IT FURTHER RESOLVED, that by 2020, the San Francisco Taxi Commission shall work to achieve zero gross GHG emissions by permitting only zero emission vehicles; and

BE IT FURTHER RESOLVED, that the Taxi Commission urges the San Francisco Board of Supervisors to enact legislation to raise the per-shift gate fee to subsidize the purchase of high-efficiency vehicles; and

BE IT FURTHER RESOLVED, that the San Francisco Taxi Commission shall create a working group not later than September 1, 2007 to research and develop a green taxi vehicle guide listing the cleanest available gasoline and alternative fuel vehicles available on the market today that are suitable for use as taxis and to evaluate and suggest policies to implement this policy; and

BE IT FURTHER RESOLVED, that the working group will report its findings and present its "Green Taxi Vehicle Guide" to the Taxi Commission at the Taxi Commission's October 23, 2007 meeting; and

BE IT FURTHER RESOLVED, that the Taxi Commission asks that copies of this resolution be sent to all color schemes, permit holders, the San Francisco Board of Supervisors, the Municipal Transportation Authority, the Department of the Environment, and SFO's Ground Transportation Unit.

AYES: Gillespie, Breslin, Benjmain, Oka, Paek, Heinicke, Oneto **ABSENT: 0**
NOES: 0 **RECUSED: 0**

Respectfully Submitted,

Heidi Machen

Heidi Machen

CITY AND COUNTY OF
SAN FRANCISCO

TAXI COMMISSION
MAYOR GAVIN NEWSOM

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HEIDI MACHEN, EXECUTIVE DIRECTOR

January 23, 2007

At the meeting of the Taxicab Commission on Tuesday, January 22, 2007 the following resolution and findings were adopted:

RESOLUTION NO. 2007-XX
ADOPTING RECOMMENDATIONS OF THE CLEAN TAXI WORKING GROUP; ESTABLISHING EMISSIONS STANDARDS FOR ALL SAN FRANCISCO TAXIS PLACED INTO SERVICE AFTER JULY 1, 2008; ESTABLISHING LIMITED EXEMPTIONS; URGING THE SAN FRANCISCO BOARD OF SUPERVISORS TO INCREASE THE AVERAGE GATE FEE BY $7.50 PER SHIFT; AND ASKING THAT A COPY OF THIS RESOLUTION BE TRANSMITTED TO THE SAN FRANCISCO MAYOR, BOARD OF SUPERVISORS, DEPARTMENT OF THE ENVIRONMENT, SFO, MTA AND ALL COLOR SCHEMES.

WHEREAS, in 2002, the San Francisco Board of Supervisors passed and Mayor Willie Brown signed Resolution 158-02 which called for a 20% reduction of green house gas (GHG) emissions from 1990 levels by the year 2012; and

WHEREAS, in 2004 Mayor Gavin Newsom issued the San Francisco Climate Action Plan outlining necessary steps to meet GHG reduction goals; and

WHEREAS, on June 12, 2007, the San Francisco Taxi Commission passed Resolution 2007-21, which required the Taxi Commission to adopt the necessary rules and regulations to reduce GHG emissions in the SF taxi fleet by 20% from 1990 levels and 50% of current levels by 2011; and to work to achieve carbon offsets by 2015 and zero emission vehicles by 2020; and to appoint a working group to examine the issue and suggest rules to implement the policy; and

WHEREAS, Commissioners Paul Gillespie, Richard Benjamin and Tom Oneto, along with any and all members of the taxi industry and the public met in publicly noticed meetings during September and October 2007 to evaluate the potential of the taxi fleet to meet this goal; and

WHEREAS, the working group tried to balance the needs of both taxi companies and taxi drivers to derive adequate profit from their businesses; and

WHEREAS, the Clean Taxi Working group arrived at the following findings:

- **Assumptions**: the working group agreed that the average taxi travels 90,000 miles per year, averaging 70% city miles and 30% highway miles and that 821 taxicabs in 1990 resulted in 72,166 tons of total green house gas emissions and a 20% reduction would equal 57,733 tons per year; it is possible to meet the GHG reduction goals of the CCSF by using currently available vehicles such as the Ford Escape Hybrid and Toyota Prius which have been used successfully as SF taxis for more than three years; and

- **Goal**: in order to meet the overall fleet GHG reduction goal of 57,773 tons, each of today's 1500 cabs must emit no more than 36.84 tons per year; and

- **Financial off-sets:** In evaluating sources of funding, the working group considered raising per shift gate fees by three to ten dollars which would raise $6500 to $22000 over three years, tax credits up to three thousand dollars per qualifying vehicle; local air district grants; and as-yet-untapped or unidentified funds; and,

- **Exemptions:** Wheelchair accessible vehicles should be exempt since they serve a valuable purpose yet technology does not provide for environmentally responsible wheelchair accessible vehicles and legacy testing programs and clean fuel vehicles that might not meet a strict GHG standard could be allowed; and now therefore

BE IT RESOLVED, that the Taxi Commission adopts the recommendations of the Clean Air Taxi Working Group as follows:

- Beginning July 1, 2008, any vehicle placed into service as a San Francisco taxi must meet the Taxi Commission GHG emissions standards of no more than 36.84 tons of GHG per year per vehicle;

- All wheelchair accessible vehicles are exempt and assuming overall GHG emission goals are met, Taxi Commission may approve up to 15% of the taxi fleet as fleet test vehicles or clean fuel vehicles not meeting a strict GHG standard ;

- Increase the average daily gate fees by $7.50 per shift for all compliant vehicles, including those placed into service prior to the time this increase was approved;

- Every year by April 1, the Taxi Commission shall publish on its website, information concerning qualifying vehicles, available funding incentives as known at the time, and progress on implementing the goals of GHG reduction, offset and elimination, and any other relevant information as deemed necessary;

- Every year by June 1, each color scheme shall submit to the Taxi Commission information on vehicles to be replaced in the coming year and replacement plans; and

BE IT FURTHER RESOLVED that the Taxi Commission urges the San Francisco Board of Supervisors to increase the average gate fee taxi companies are allowed to charge by $7.50 for compliant vehicles including those placed into service prior to adoption of this resolution; and

BE IT FURTHER RESOLVED that the Taxi Commission asks that a copy of this resolution be transmitted to the San Francisco Mayor, Board of Supervisors, Department of the Environment, MTA, to SFO, and to all color schemes.

AYES:
ABSENT:

NOES:
RECUSED:

Respectfully submitted,

Heidi Machen
Executive Director

AS AMENDED IN COMMITTEE
2/21/02

FILE NO. 020158 RESOLUTION NO. 158-02

[Reducing Greenhouse Gas Emissions.]

Resolution supporting efforts to curb global warming, adopting greenhouse gas emissions reduction goals for the City and County of San Francisco in excess of the targeted goals of the Kyoto Protocol, and calling for continued actions towards achieving these goals.

WHEREAS, The world's leading climate scientists have documented a clear global warming trend and the unmistakable impact of human activities on that trend; and

WHEREAS, Global warming of the magnitude now predicted by the scientific community will cause extremely costly disruption of human and natural systems throughout the world; and

WHEREAS, Climate change is the most critical threat to the sustainability of our planet and the health of millions of people is at risk from smog, rising heat, increased disease, more frequent extreme weather events and rising sea levels; and

WHEREAS, Over the next 50-100 years, sea levels around the world could rise one meter; and

WHEREAS, To prevent flooding of the Airports in San Francisco and Oakland; Treasure Island; Mission Bay Development; the Giants new ballpark; parts of Interstate 80 and Highway 101; railroad tracks; sewage treatment plants; marinas; and harbors would require vast investments in dikes, pumping stations or other infrastructure; and

WHEREAS, The International Panel on Climate Change has determined that stabilizing concentrations of greenhouse gases in the atmosphere will require emission reductions in excess of 60% of current emissions, and the Kyoto Protocol is a modest first step in the direction of those reductions;

WHEREAS, Achieving greenhouse gas emission reductions required to protect the climate is of overriding importance not just to the community of nations but to the City and County of San Francisco, which relies heavily on the stability of the climate for our water and power supplies; and

WHEREAS, President George H. W. Bush signed the United Nations Framework Convention on Climate Change in 1992, which includes the commitment on the part of the United States to seek the "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system;" and

WHEREAS, The current administration in Washington, D.C. has demonstrated an alarming unwillingness to play a leadership role in climate protection; and

WHEREAS, President George W. Bush rejected the Kyoto Protocol on global warming outright, while in Bonn 178 countries, not including the United States, reached agreement on the Kyoto Protocol in July, 2001, and

WHEREAS, Local actions can help to pave the way for national leadership, by providing working models of greenhouse gas reduction initiatives that reinforce other high-priority policy objectives; and

WHEREAS, Over 370 cities across the United States and around the world are inventorying greenhouse gas emissions and adopting reduction targets as part of the International Council for Local Environmental Initiatives' Cities for Climate Protection program; and

WHEREAS, 16 cities from around the world have agreed in the Toronto Declaration to send a communiqué to the Conference of the Parties meeting in Morocco in November 2001 declaring their intention to achieve much higher levels of greenhouse gas reduction than those called for in the Kyoto Protocol; and

WHEREAS, Many of the critical components of a local action plan for climate protection are already in place or under development in the City and County of San Francisco, including the Green Building Program, the Resource Conservation Ordinance, the Environmentally Preferable Purchasing Program, the Clean Air Program, the Urban Forestry Council, the Sustainability Plan, and others; and

WHEREAS, fossil fueled electrical generators are among the largest contributors of greenhouse gas emissions adding to global warming; and

WHEREAS, the Board of Supervisors along with a large majority of San Franciscans supported Propositions B and H in November 2001 which will create the largest renewable energy programs in the country; and

WHEREAS, Greenhouse gas reduction activities contribute substantially to the achievement of many of the City's highest priority goals, including but not limited to: energy security and cost reduction; affordable housing; mobility and, transportation choices; solid waste reduction and recycling; reliable, affordable water supply; urban and rural forest protection; sustainable economic development; and clean air; and

WHEREAS, The City and County of San Francisco's existing energy, solid waste, and transportation and air quality initiatives – all designed and implemented to meet established City priorities – are expected to reduce greenhouse gas emissions while delivering tangible local economic and environmental benefits; and

WHEREAS, On a municipal level, reducing greenhouse gas emissions to the target established by the Kyoto Protocol or beyond would demonstrate that the goals of the international treaty are realistic and can be met; now, therefore, be it

RESOLVED, That the Board of Supervisors of the City and County of San Francisco establishes the long-range goal of reducing San Francisco's greenhouse gas emissions; and, be it

FURTHER RESOLVED, That the Board of Supervisors of the City and County of San Francisco directs the Department of the Environment as lead agency, to work with the Public Utilities Commission, and other appropriate City agencies to complete and coordinate the analysis and planning of a Local Action Plan targeting greenhouse gas emission reduction activities, so that:

a. By April 30, 2002, these agencies will complete and deliver an inventory of 1990 and 2000 greenhouse gas emissions, including as a first step, defining the scope of activities and geographic boundaries to be included in the inventory. The completed inventory should include:

i. an accounting of greenhouse gas emissions associated with City activities for the baseline years

ii. an accounting of greenhouse gas emissions within the City and County of San Francisco, but not associated with City operations;

iii. a projection of future emissions through the year 2012.

b. By June 30, 2002, these agencies will present to the Board of Supervisors a proposed plan for the City's role in achieving a greenhouse gas emissions reduction target of 20% below 1990 levels by the year 2012. The Plan will also present other scenarios, such as one describing what actions would be necessary to reverse global warming, according to the United Nations Intergovernmental Panel on Climate Change (IPCC) . The plan should include but not be limited to:

i. reductions, the approximate costs and benefits of those alternatives, and the estimated time and resources required to implement them;

ii. recommended combinations of measures to meet an emission reduction target of 20% below 1990 levels by 2012, and United Nations IPCC set scientific targets above this target that would constitute a proper scientific response to the global warming crisis;

iii. an assessment of which of those alternatives require actions that lie outside the City's control and what the City can do to influence those responsible for such actions;

iv. an assessment of the time and resources required for continuing coordination of the plan and to assure its successful implementation; and, be it

FURTHER RESOLVED, That the Board of Supervisors of the City and County of San Francisco do actively support the Kyoto Protocol, and call upon national leaders to do so as well; and, be it

FURTHER RESOLVED, That the Board of Supervisors of the City and County of San Francisco join the cities that have signed the Toronto Declaration in calling for strong national leadership and pledging to promote cooperation toward the ultimate goal of stabilizing greenhouse gas concentrations in the atmosphere; and, be it

FURTHER RESOLVED, That the Mayor and Board of Supervisors of the City and County of San Francisco commit to continue to achieve steady progress in reducing greenhouse gas emissions throughout the period covered by the Kyoto Protocol and beyond.

City and County of San Francisco

Tails

Resolution

City Hall
1 Dr. Carlton B. Goodlett Place
San Francisco, CA 94102-4689

File Number: 020158 **Date Passed:**

Resolution supporting efforts to curb global warming, adopting greenhouse gas emissions reduction goals for the City and County of San Francisco in excess of the targeted goals of the Kyoto Protocol, and calling for continued actions towards achieving these goals.

March 4, 2002 Board of Supervisors — ADOPTED

Ayes: 11 - Ammiano, Daly, Gonzalez, Hall, Leno, Maxwell, McGoldrick, Newsom, Peskin, Sandoval, Yee

File No. 020158

I hereby certify that the foregoing Resolution was ADOPTED on March 4, 2002 by the Board of Supervisors of the City and County of San Francisco.

Gloria L. Young
Clerk of the Board

3/15/02
Date Approved

Mayor Willie L. Brown Jr.

MAKE	MODEL	YEAR	FUEL	ANNUAL FUEL BARRELS	COMB MPG	FUEL $ PER YEAR	YEARLY GHG METRIC TONS 90,000 (15,000)	TOTAL FLEET METRIC TONS GHG (821)	CALIFORNIA EMISSIONS STANDARD
FORD	CROWN VIC (PI)	1990	GAS	157.1	13	24,231	84.4	69,292	N/A
FORD	CROWN VIC (PI)	1988	GAS	171.3	12	26,250	91.4	75,039	N/A
DODGE	CARAVAN	2008	GAS	114.2	18	17,500	61.1	6110 (PER 100)	N/A
			E85	36.9	13	31,154	51.2	5120	N/A

THIS DATA WAS COMPILED FROM THE U.S. DEPARTMENT OF ENERGY WEBSITE, (WWW.FUELECONOMY.GOV) AND USES THE NEW EPA MPG RATINGS.
THESE ARE FULL FUEL-CYCLE ESTIMATES FROM THE ARGONNE NATIONAL LABORATORY'S GREET MODEL 1.7, WHICH CONSIDER ALL STEPS IN THE USE OF A FUEL, FROM PRODUCTION AND REFINING TO DISTRIBUTION AND FINAL USE, (WELL TO WHEELS).
GREEN HOUSE GASES INCLUDE CARBON DIOXIDE, NITROUS OXIDE AND METHANE.
ANNUAL FUEL IS TOTAL ANNUAL PETROLEUM CONSUMPTION IN BARRELS (1 BARREL = 42 GALLONS)
VEHICLES ARE ASSUMED TO TRAVEL 90,000 MILES PER YEAR, 70% CITY AND 30 % HIGHWAY.
FUEL PRICE ASSUMPTIONS ARE $3.50 FOR REGULAR GAS, $2.20 FOR CNG GALLON EQUIVALENT AND $4.50 FOR E-85.
TOTAL FLEET IS CALCULATED FOR 1500 VEHICLES.

BASE GREEN HOUSE GAS AMOUNT FROM 1990 = (½ -1988 + ½ -1990) =	72,166	RAMP CACULATION
2012 TARGET GREEN HOUSE GAS AMOUNT (LESS 20%) =	57,773	61.1 – 38.49 = 22.61 PER VEHICLE
GREEN HOUSE GAS AMOUNT PER VEHICLE =	38.49	22.61 x 100 = 2261
AMOUNT ADJUSTED FOR 100 RAMP TAXI'S =	-1.62	2261 ÷ 1400 = 1.62

2012 NET GREEN HOUSE GAS TARGET PER VEHICLE	36.84
POUNDS PER MILE EQUIVALENT	.8187

SURCHARGE	SHIFTS PER DAY	NUMBER OF DAYS	TOTAL COLLECTED 1 YEAR	TOTAL COLLECTED 3 YEARS	TOTAL COLLECTED 3 ½ YEARS
$3	2	365	$ 2,190	$ 6,570	$ 7,665
$5	2	365	$ 3,650	$ 10,950	$ 12,775
$7	2	365	$ 5,110	$ 15,330	$ 17,885
$7.50	2	365	$ 5,475	$ 16,425	$ 19,163
$10.00	2	365	$ 7,300	$ 21,900	$ 25,550

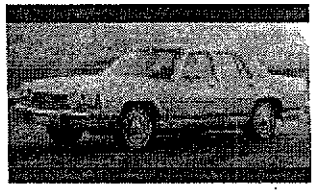
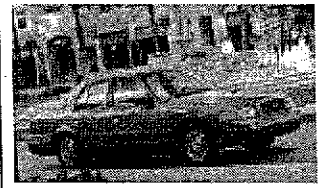
COMPARISON OF VEHICLES FOR SAN FRANCISCO TAXICABS

MAKE	MODEL	MSRP	ENGINE	PASSENGER ROOM CUBIC FEET	CARGO ROOM CUBIC FEET	CRASH RATINGS FRONTAL DRIVER PASS		SIDE DRIVER PASS		ROLLOVER
FORD	ESCAPE HYBRID	26,265	4 CYL 2.3L + ELECTRIC	99.4	29.2	4 *	4 *	5 *	5 *	3 *
HONDA	CIVIC GX CNG	24,590	4 CYL 1.8L	90.9	6.0	5 *	5 *	4 *	5 *	4 *
HONDA	CIVIC HYBRID	22,600	4 CYL 1.3L + ELECTRIC	90.7	10.4	5 *	5 *	4 *	5 *	4 *
MAZDA	TRIBUTE HYBRID	26,250	4 CYL 2.3L + ELECTRIC	99.4	29.2	4 *	4 *	5 *	5 *	3 *
MERCURY	MARINER HYBRID	26,265	4 CYL 2.3L + ELECTRIC	99.4	29.2	4 *	4 *	5 *	5 *	3 *
NISSAN	ALTIMA HYBRID	25,070	4 CYL 2.4L + ELECTRIC	100.7	10.1	5 *	5 *	5 *	4 *	4 *
TOYOTA	CAMRY HYBRID	25,200	4 CYL 2.4L +ELECTRIC	101.4	10.6	5 *	5 *	5 *	5 *	N/A
TOYOTA	PRIUS HYBRID	22, 325	4 CYL 1.5L + ELECTRIC	96.2	14.4	4 *	4 *	5 *	4 *	4 *
FORD	CROWN VICTORIA GAS	24,620	8 CYL 4.6L	106.4	20.6	5 *	5 *	5 *	5 *	5 *

THE ABOVE INFORMATION WAS DERIVED FROM THE WEBSITE, WWW,VEHIX.COM.

CRASH RATINGS ARE FROM J. D. POWERS STATISTICS.

Compare Side-by-Side

	Remove 1988 Ford LTD Crown Victoria	Remove 1990 Ford LTD Crown Victoria	Remove 2003 Ford Crown Victoria	Remove 2003 Ford Crown Victoria (CNG)
	PHOTO NOT AVAILABLE			
				Natural Gas Vehicle
Estimated New EPA MPG				
	REGULAR GASOLINE	REGULAR GASOLINE	REGULAR GASOLINE	NATURAL GAS
	11 City **12** Combined 16 Hwy	11 City **13** Combined 17 Hwy	16 City **17** Combined 23 Hwy	12 City **13** Combined 17 Hwy
	Compare to Official EPA Window Sticker MPG	Compare to Official EPA Window Sticker MPG	Compare to Official EPA Window Sticker MPG	Compare to Official EPA Window Sticker MPG
MPG Estimates from Drivers Like You				
	User MPG estimates are not yet available for this vehicle.	User MPG estimates are not yet available for this vehicle.	Average based on 4 vehicles. **18.6** Lo 15 → Hi 26 View Individual Estimates	User MPG estimates are not yet available for this vehicle.
Fuel Economics				
Cost to drive 25 Miles	**$7.29**	**$6.73**	**$5.15**	**$4.23**
Fuel to Drive 25 Miles	2.08 gal	1.92 gal	1.47 gal	1.92 gal
Annual Fuel Cost*	$26250	$24231	$18529	$15231

Based on 30% highway, 70% city driving, 90000 annual miles and Reg. Gas: $3.50 per gallon
CNG: $2.20 per gallon equivalent* You may customize these values to reflect the price of fuel in your area and your own driving patterns.

Energy Impact Score				
Annual Petroleum Consumption (1 barrel=42 gallons) - Imported - Domestic	**171.3 barrels**	**158.1 barrels**	**120.9 barrels**	**1.2 barrels**
Carbon Footprint				
Annual Tons of CO_2 Emitted	91.4	84.4	64.7	69.2

Use Your Gas Prices & Annual Miles

Switch to Metric units

MPG ratings for 1985-2007 models have been revised

Learn more about "Your MPG"

Side-by-Side Vehicle Characteristics

Personalize Annual Miles

	21.8	100.7	21.8	100.7	21.8	100.7	21.8	100.7
Air Pollution Score	Not Available		Not Available				Not Available	

EPA Air Pollution Score

	Air Pollution Score	Availability
LEV 3FMXV04.6VH5	Best 2 (0–10)	
BIN 7 3FMXV04.6VH5	Best 4 (0–10)	
LEV 3FMXV04.6VG5	Best 2 (0–10)	
BIN 7 3FMXV04.6VG5	Best 4 (0–10)	

▸ Hide Details - Show Scores for California and Northeast States

▸ Hide Details - Show Scores for Rest of U.S.

More about emissions....

- Why do some vehicles have more than one air pollution score?
- What's the difference between air pollution and greenhouse gases?
- Want more info? See EPA's Green Vehicle Guide

Safety	**NA**	**NA**	**Crash Test Results**	**NA**
EPA Size Class	Large Cars	Large Cars	Large Cars	Large Cars
Engine Size (liters)	5.8	5.8	4.6	4.6
Cylinders	8	8	8	8
Transmission	Automatic (4 sp)	Automatic (4 sp)	Automatic (4 speed)	Automatic (4 speed)
Drive	Rear-wheel drive	Rear-wheel drive	Rear-wheel drive	Rear-wheel drive
Gas Guzzler	no	no	no	no
Turbocharger	no	no	no	no
Supercharger	no	no	no	no
Passenger Volume	111 ft^3 (4D)	111 ft^3 (4D)	111 ft^3 (4D)	111 ft^3 (4D)
Luggage Volume	22 ft^3 (4D)	22 ft^3 (4D)	21 ft^3 (4D)	21 ft^3 (4D)
Engine Characteristics	(POLICE) (FFS)	(POLICE) (FFS)	NA	RNG130/170
Trans Characteristics	NA	NA	CLKUP	CLKUP

How are fuel cost estimates and miles on a tank determined?
Fuel cost estimates are based on 30% highway driving, 70% city driving, 90000 annual miles and the following fuel prices:

Regular Gasoline: $3.50 per gallon
CNG: $2.20 per gallon equivalent*

You may customize these values to reflect the price of fuel in your area and your own driving patterns.

Fill-up cost and the distance you can travel on a tank are calculated based on the combined MPG and the assumption that you will re-fuel when your tank is 10% full.

What's the difference between air pollution and greenhouse gas emissions?
The Air Pollution score and Carbon Footprint measure different types of vehicle emissions. Air pollutants harm human health and/or cause smog. Carbon Footprint measures greenhouse gas emissions (primarily CO2) that impact climate change.

Why do some vehicles have more than one air pollution score?
Some vehicles are available in multiple emission versions that look the same but have different air pollution scores. Unfortunately, it is difficult to distinguish between similar models.

If you click on the link "Show Detailed Air Pollution Information" above, it will display the emission standard and the 12-digit underhood engine ID. You can identify the cleaner car by matching the engine ID listed above to the Underhood Label Identification Number on the vehicle.

Note: In some cases, manufacturers choose to certify identical vehicles to different emission standards. In these cases, the vehicles will have the same engine ID.

Compressed Natural Gas (CNG) is normally dispensed in "equivalent gallons" where one "equivalent gallon" is equals to 121.5 cubic feet of CNG. The fuel economy for natural gas vehicles is shown in miles per gallon-equivalent.

The carbon footprint measures greenhouse gas emissions expressed in CO_2 equivalents. The estimates presented here are "full fuel-cycle estimates" and include the three major greenhouse gases emitted by motor vehicles: carbon dioxide, nitrous oxide, and methane. Full fuel-cycle estimates consider all steps in the use of a fuel, from production and refining to distribution and final use. Vehicle manufacture is excluded. (U.S. Department of Energy, GREET Model 1.7, Argonne National Laboratory)

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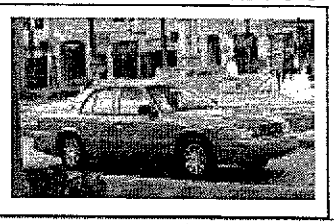
2008 Ford Crown Victoria FFV

Flex-fuel Vehicle
Use Your Gas Prices & Annual Miles

Switch to Metric units



Compare side-by-side

New EPA MPG

New MPG tests are more realistic

E85			GASOLINE		
11 City	13 Combined	16 Hwy	15 City	17 Combined	23 Hwy

MPG Estimates from Drivers Like You

User MPG estimates are not yet available for this vehicle.

Learn more about "Your MPG"

Fuel Economics

Cost to Drive 25 Miles	**$8.65**	**$5.15**
Fuel to Drive 25 Miles	1.92 gal	1.47 gal
Annual Fuel Cost*	$31154	$18529

Based on 30% highway, 70% city driving, 90000 annual miles and a fuel price of $ 3.50 per gallon of gasoline and $4.50 per gallon of E85 . Use Your Gas Prices & Annual Miles

Energy Impact Score

	E85	GASOLINE
Annual Petroleum Consumption (1 barrel=42 gallons)	36.9 barrels/year	120.9 barrels/year

Carbon Footprint

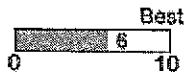
	E85	GASOLINE
Annual Tons of CO_2 Emitted	51.2	64.7

Personalize Annual Miles

E85		GASOLINE	
21.8	100.7	21.8	100.7

EPA Air Pollution Score

Air Pollution Score	Availability	Emission Standard	Underhood Label ID



BIN 5 8FMXV04.6VEF

Hide Details - Show Scores for California and Northeast States Only

Hide Details - Show Scores for Rest of U.S. Only

More about emissions....

- Why do some vehicles have more than one air pollution score?
- What's the difference between air pollution and greenhouse gas emissions?
- Want more info? See EPA's Green Vehicle Guide

Safety	**NA**	
Range (miles)	250	340
Size Class	Large Cars	
Engine Size (liters)	4.6	
Cylinders	8	
Transmission	Automatic (4 speed)	
Drive	Rear-wheel drive	
Gas Guzzler	no	
Turbocharger	no	
Supercharger	no	
Passenger Volume	107 ft^3 (4D)	
Luggage Volume	21 ft^3 (4D)	
Engine Characteristics	RNG=340	
Trans Characteristics	CLKUP	

How are fuel cost estimates and miles on a tank determined?
Fuel cost estimates are based on 30% highway driving, 70% city driving, 90000 annual miles and a fuel cost of $ 3.50 per gallon of gasoline and $4.50 per gallon of E85 . You may customize these values to reflect the cost of fuel in your area and your own driving patterns.

Fill-up cost and the distance you can travel on a tank are calculated based on the combined MPG and the assumption that you will re-fuel when your tank is 10% full.

What's the difference between air pollution and greenhouse gas emissions?
The Air Pollution score and Carbon Footprint measure different types of vehicle emissions. Air pollutants harm human health and/or cause smog. Carbon Footprint measures greenhouse gas emissions (primarily CO2) that impact climate change.

Why do some vehicles have more than one air pollution score?
Some vehicles are available in multiple emission versions that look the same but have different air pollution scores. Unfortunately, it is difficult to distinguish between similar models.

If you click on the link "Show Detailed Air Pollution Information" above, it will display the emission standard and the 12-digit underhood engine ID. You can identify the cleaner car by matching the engine ID listed above to the Underhood Label Identification Number on the vehicle.

Note: In some cases, manufacturers choose to certify identical vehicles to different emission standards. In these cases, the vehicles will have the same engine ID.

The carbon footprint measures greenhouse gas emissions expressed in CO_2 equivalents. The estimates presented here are "full fuel-cycle estimates" and include the three major greenhouse gases emitted by motor vehicles: carbon dioxide, nitrous oxide, and methane. Full fuel-cycle estimates consider all steps in the use of a fuel, from production and refining to distribution and final use. Vehicle manufacture is excluded. (U.S. Department of Energy, GREET Model 1.7, Argonne National Laboratory)

NA - Not Available

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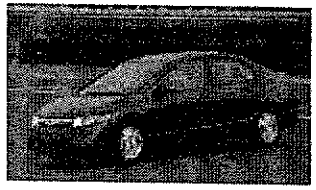
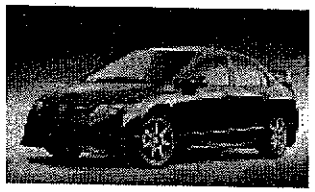
Compare Side-by-Side

Use Your Gas Prices & Annual Miles

Switch to Metric units

Remove	Remove	Remove
2008 Honda Civic Hybrid	**2008 Honda Civic**	**2008 Honda Civic**
		
Hybrid Vehicle	**Natural Gas Vehicle**	

Compare side-by-side

New MPG tests are more realistic

New EPA MPG

REGULAR GASOLINE	NATURAL GAS	REGULAR GASOLINE
42 Combined	**27** Combined	**28** Combined
40 City / 45 Hwy	24 City / 36 Hwy	25 City / 36 Hwy

MPG Estimates from Drivers Like You

Learn more about "Your MPG"

User MPG estimates are not yet available for this vehicle.	User MPG estimates are not yet available for this vehicle.	Average based on 5 vehicles. **31.7** (Lo 25 → Hi 39) View Individual Estimates

Disclaimer

Fuel Economics

Cost to drive 25 Miles	**$2.08**	**$2.04**	**$3.12**
Fuel to Drive 25 Miles	0.60 gal	0.93 gal	0.89 gal
Annual Fuel Cost*	$7500	$7333	$11250

Based on 30% highway driving, 70% city driving, 90000 annual miles and Reg. Gas: $3.50 per gallon
CNG: $2.20 per gallon equivalent* You may personalize these values to reflect the price of fuel in your area and your own driving patterns.

Energy Impact Score

Annual Petroleum Consumption (1 barrel=42 gallons)

48.9 barrels	**0.6 barrels**	**73.4 barrels**

Carbon Footprint

Annual Tons of CO_2 Emitted	26.4	33.7	39.4

Personalize Annual Miles

21.8 — 100.7	21.8 — 100.7	21.8 — 100.7

EPA Air Pollution Score

Air Pollution Score	Air Pollution Score	Availability	Air Pollution Score	Availability	Air Pollution Score	Availability
	Best 9 (0–10) BIN 2 8HNXV01.3ZCP		Best 9 (0–10) BIN 2 8HNXV01.8XW3		Best 6 (0–10) BIN 5 8HNXV01.8LKR	
	Best 9.5 (0–10) SULEV II 8HNXV01.3ZCP		Best 9.5 (0–10) SULEV II 8HNXV01.8XW3		Best 7 (0–10) ULEV II 8HNXV01.8LKR	

▶Hide Details - Show Scores for California and Northeast States

▶Hide Details - Show Scores for Rest of U.S.

More about emissions....

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- What's the difference between air pollution and greenhouse gases?
- Want more info? See EPA's Green Vehicle Guide

Safety	NA	NA	NA
EPA Size Class	Compact Cars	Subcompact Cars	Subcompact Cars
Engine Size (liters)	1.3	1.8	1.8
Cylinders	4	4	4
Transmission	Automatic (CVT)	Automatic (5 speed)	Automatic (5 speed)
Drive	Front-wheel drive	Front-wheel drive	Front-wheel drive
Gas Guzzler	no	no	no
Turbocharger	no	no	no
Supercharger	no	no	no
Passenger Volume	91 ft^3 (4D)	91 ft^3 (4D)	91 ft^3 (4D)
Luggage Volume	10 ft^3 (4D)	6 ft^3 (4D)	12 ft^3 (4D)
Engine Characteristics	HEV	RNG=170	NA
Trans Characteristics	EMS	CLKUP	CLKUP

How are fuel cost estimates and miles on a tank determined?

Fuel cost estimates are based on 30% highway driving, 70% city driving, 90000 annual miles and the following fuel prices:

Regular Gasoline: $3.50 per gallon
CNG: $2.20 per gallon equivalent*

You may customize these values to reflect the price of fuel in your area and your own driving patterns.

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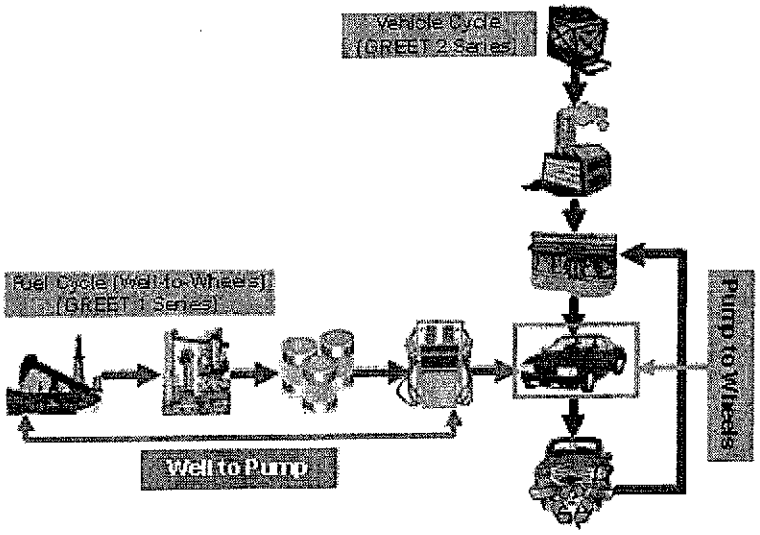
The Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation (GREET) Model

GREET 1.8a - August 30, 2007 (download)

GREET 2.8a - August 30, 2007 (download)

How Does GREET Work?

To fully evaluate energy and emission impacts of advanced vehicle technologies and new transportation fuels, the fuel cycle from wells to wheels and the vehicle cycle through material recovery and vehicle disposal need to be considered. Sponsored by the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE), Argonne has developed a full life-cycle model called GREET (Greenhouse gases, Regulated Emissions, and Energy use in Transportation). It allows researchers and analysts to evaluate various vehicle and fuel combinations on a full fuel-cycle/vehicle-cycle basis.



GREET was developed as a multidimensional spreadsheet model in Microsoft Excel. This public domain model is available free of charge for anyone to use. The first version of GREET was released in 1996. Since then, Argonne has continued to update and expand the model. The most recent GREET versions are GREET 1.8a version for fuel-cycle analysis and GREET 2.8a version for vehicle-cycle analysis.

For a given vehicle and fuel system, GREET separately calculates the following:

- Consumption of total energy (energy in non-renewable and

Related Items

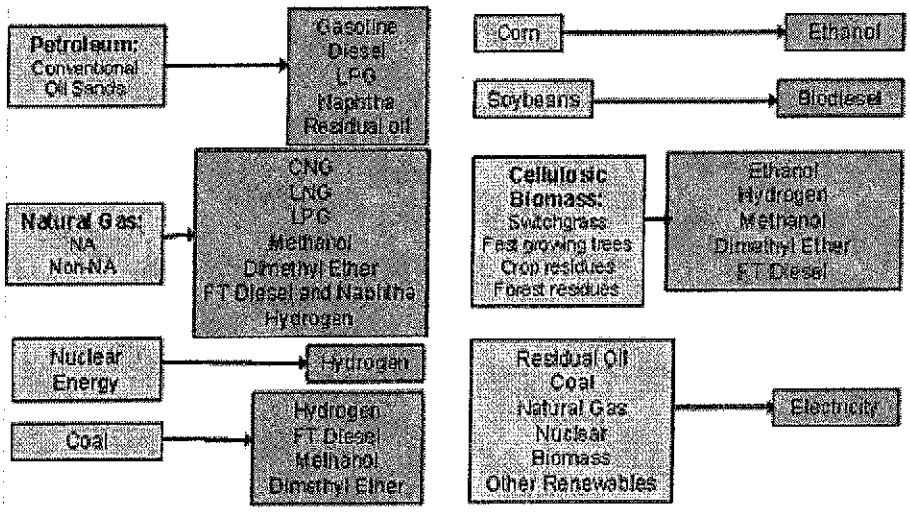
Contact

greet@anl.gov

renewable sources), fossil fuels (petroleum, natural gas, and coal together), petroleum, coal and natural gas.
- Emissions of CO2-equivalent greenhouse gases - primarily carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O).
- Emissions of six criteria pollutants: volatile organic compounds (VOCs), carbon monoxide (CO), nitrogen oxide (NOx), particulate matter with size smaller than 10 micron (PM10), particulate matter with size smaller than 2.5 micron (PM2.5),and sulfur oxides (SOx).

GREET includes more than 100 fuel production pathways and more than 70 vehicle/fuel systems. These vehicle/fuel systems cover all major vehicle technologies in the market and R&D arena:

- Conventional spark-ignition engines
- Direct-injection, spark-ignition engines
- Direct injection, compression-ignition engines
- Grid-independent hybrid electric vehicles
- Grid-connected (or plug-in) hybrid electric vehicles
- Battery-powered electric vehicles
- Fuel-cell vehicles



To address technology improvements over time, GREET simulates vehicle/fuel systems over the period from 1990 to 2020, in five-year intervals.

Uses of GREET

Argonne has used GREET to evaluate various engine and fuel systems for DOE, other government agencies, and industry (see publications list). In addition, other organizations have used GREET for their evaluation of advanced vehicle technologies and new transportation fuels. GREET users include government agencies, the auto industry, the energy industry, research institutions, universities, and public interest groups. GREET users are spread in North America, Europe, and Asia.

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Stax Inc.

December 14, 2007

Paul Gillespie
San Francisco Taxi Cab Commission
25 Van Ness Avenue, Suite 420
San Francisco, CA 94102

Dear Paul,

As municipalities are leading the charge to improve their environments and reduce our dependence on foreign oil, you may be interested in our analysis of the cost/benefit of taxi fleets switching to hybrids.

Over the last six months, Stax has spent close to 2000 hours conducting original research and analysis on the New York City taxi and limousine market. According to our analysis, the average hybrid saves enough money per month for both drivers and medallion owners to profit.

So why aren't they switching and what could be done to get them switching faster, making a city greener, and giving a raise to every driver and medallion owner in the city? Within our work we've analyzed where incentives are not aligned, how everyone in the system could make more money, and we've developed ideas and communication strategies that would help cities accelerate change, with little cost and without having to provide tax incentives.

By way of background, Stax Inc. is a consulting firm, focused on market strategy, business strategy for major corporations and commercial due diligence for leveraged buyout funds. The work mentioned above is all within Stax's pro-bono work and our ROG (Return on Green) work, and we are pleased to share results. If you would like to discuss or have us give a web-ex or presentation, please call or email my assistant, Kim Bowman to set up a conversation.

Thanks and regards,

Rafi Musher
CEO, Stax Inc.

d: 212.299.0375
e: rafi@stax.com