

Natural Gas
vehicles

EXHIBIT 4

FOR *Florida*

TECO
PARTNERS

NGV DEVELOPMENT FOR FLORIDA

ANDDRIKK FRAZIER

Program Manager, Alternative Fuel Vehicles

ALFRAZIER@TECOENERGY.COM

PHONE: (813) 228-1075

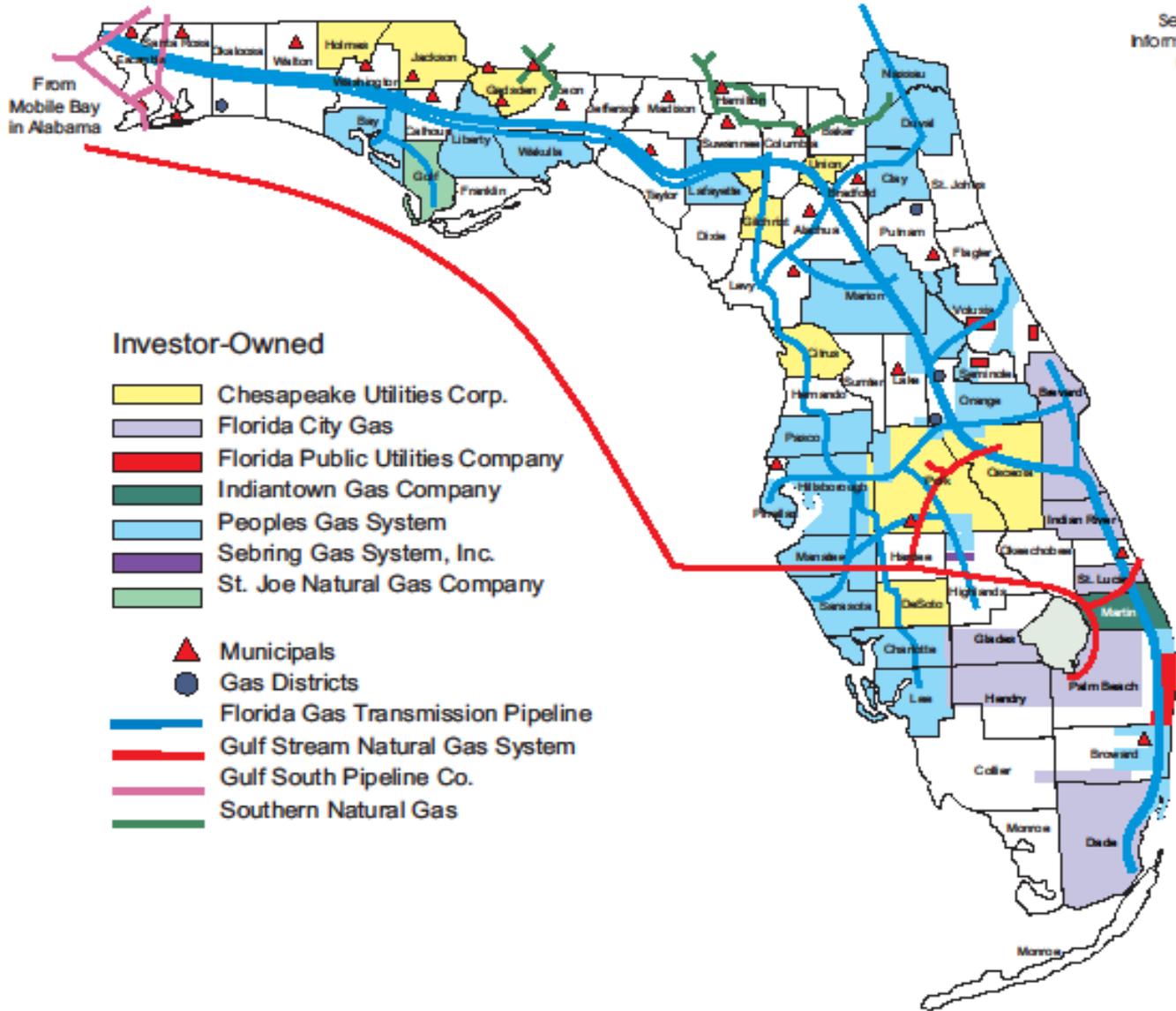
MOBILE: (813) 299-6468

TECO Partners and Peoples Gas

- TECO Partners provides marketing and sales services for a number of energy-related clients.
- Peoples Gas is Florida's largest natural gas distribution company, serving residential, commercial and industrial customers throughout the state since 1895.

Natural Gas Utilities

Service areas are approximations. Information on these maps should be used only as general guidelines. For more detailed information, contact individual utilities.



Investor-Owned

- Chesapeake Utilities Corp.
- Florida City Gas
- Florida Public Utilities Company
- Indiantown Gas Company
- Peoples Gas System
- Sebring Gas System, Inc.
- St. Joe Natural Gas Company

- Municipals
- Gas Districts
- Florida Gas Transmission Pipeline
- Gulf Stream Natural Gas System
- Gulf South Pipeline Co.
- Southern Natural Gas

NGV Terms

- **NGV** – a vehicle that uses CNG or LNG fuel
- **CNG** – natural gas @ 3600 psi, 70°F
- **LNG** - natural gas @ 3.6 psi, -260°F
- **Bi-Fuel** – uses natural gas or gasoline/diesel
- **Dual Fuel** – uses both natural gas and gasoline/diesel
- **GGE** – gasoline gallon equivalent (1.25 Therms)
- **DGE** – diesel gallon equivalent (1.40 Therms)

History of NGVs and CNG

- As far back as the 1930s, natural gas and manufactured gas has been used in motor vehicles.
- Crude oil expansion after World War II drove down the use of natural gas for vehicles.
- The revised Clean Air Act of 1990 and the Energy Policy Act of 1992 paved the fuel pilot car program for California.

Advantages/Opportunities for CNG

Advantages

- Reduction in fuel costs
- Reduction in greenhouse gases
- Reduction in O & M
- Domestic fuel source
- Ability to hedge pricing
- Less volatile pricing

Opportunities

- Lack of infrastructure
- Capital costs for conversions
- Capital costs for stations
- Maintenance training
- Upgrade of facilities
- Range anxiety
- Change



Source of Information

- NGV America (www.ngvamerica.org)
- CNG engines retrofit or OEM
- According to NGV America in 2010
 - 30 different manufacturers produce 100 models of light, medium and heavy-duty vehicles and engines.
 - 2011 list available
<http://www.ngvamerica.org/pdfs/marketplace/MP.Analyses.NGVs-a.pdf>

NGVs Over 14,000 lbs.



NGVs Under 14,000 lbs.



L I N C O L N



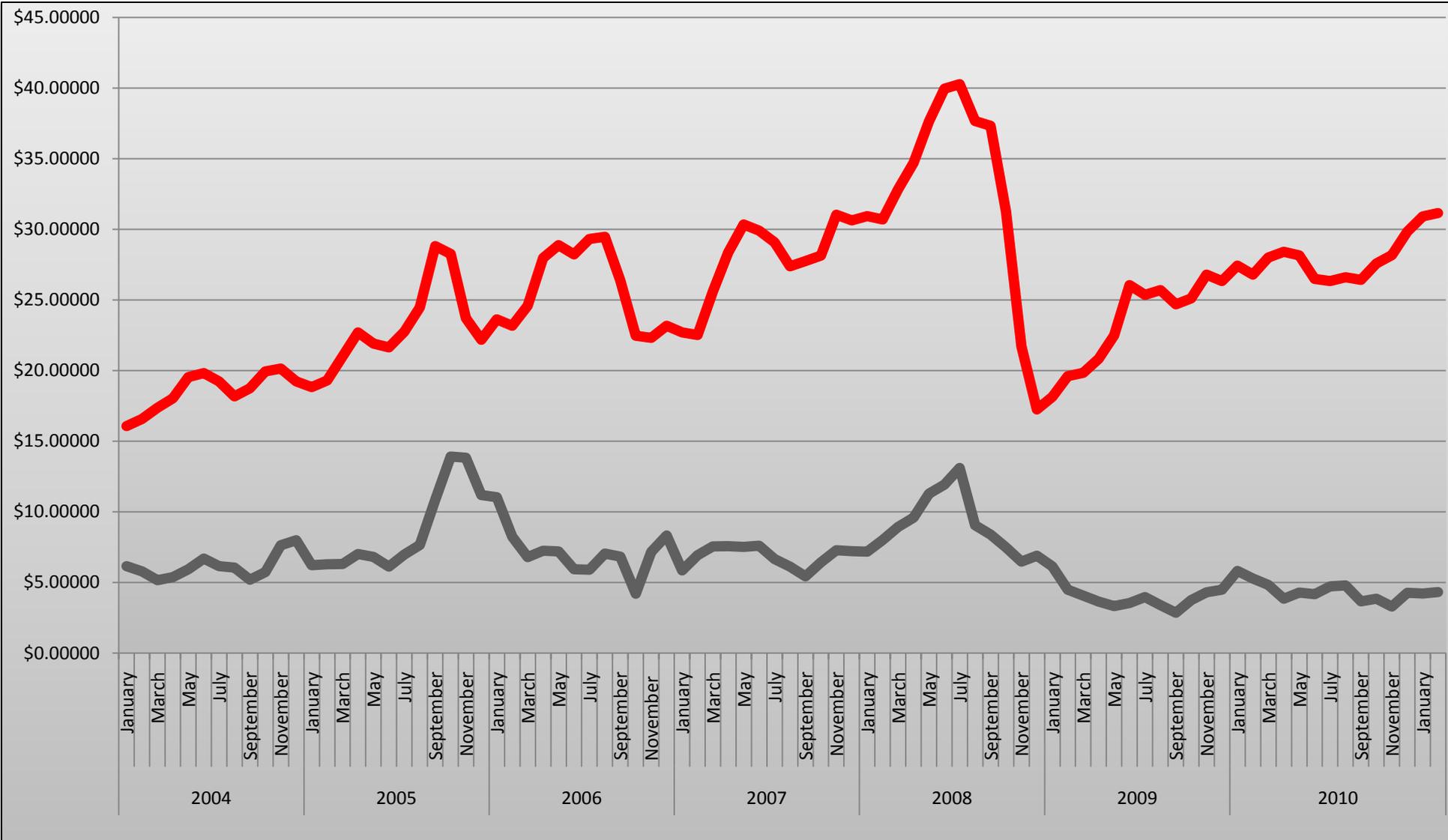
Fuel Energy Content Comparisons

	Gasoline	Diesel	Bio 20	Bio 100	CNG
Volume/(Gal. of Gasoline)	1.00 gal.	0.88 gal.	0.90 gal.	0.96 gal.	126.67 cu. ft.
Energy (BTU/Vol.)	114,000/gal.	129,500/gal.	127,500/gal.	118,300/gal.	900/cu. ft.

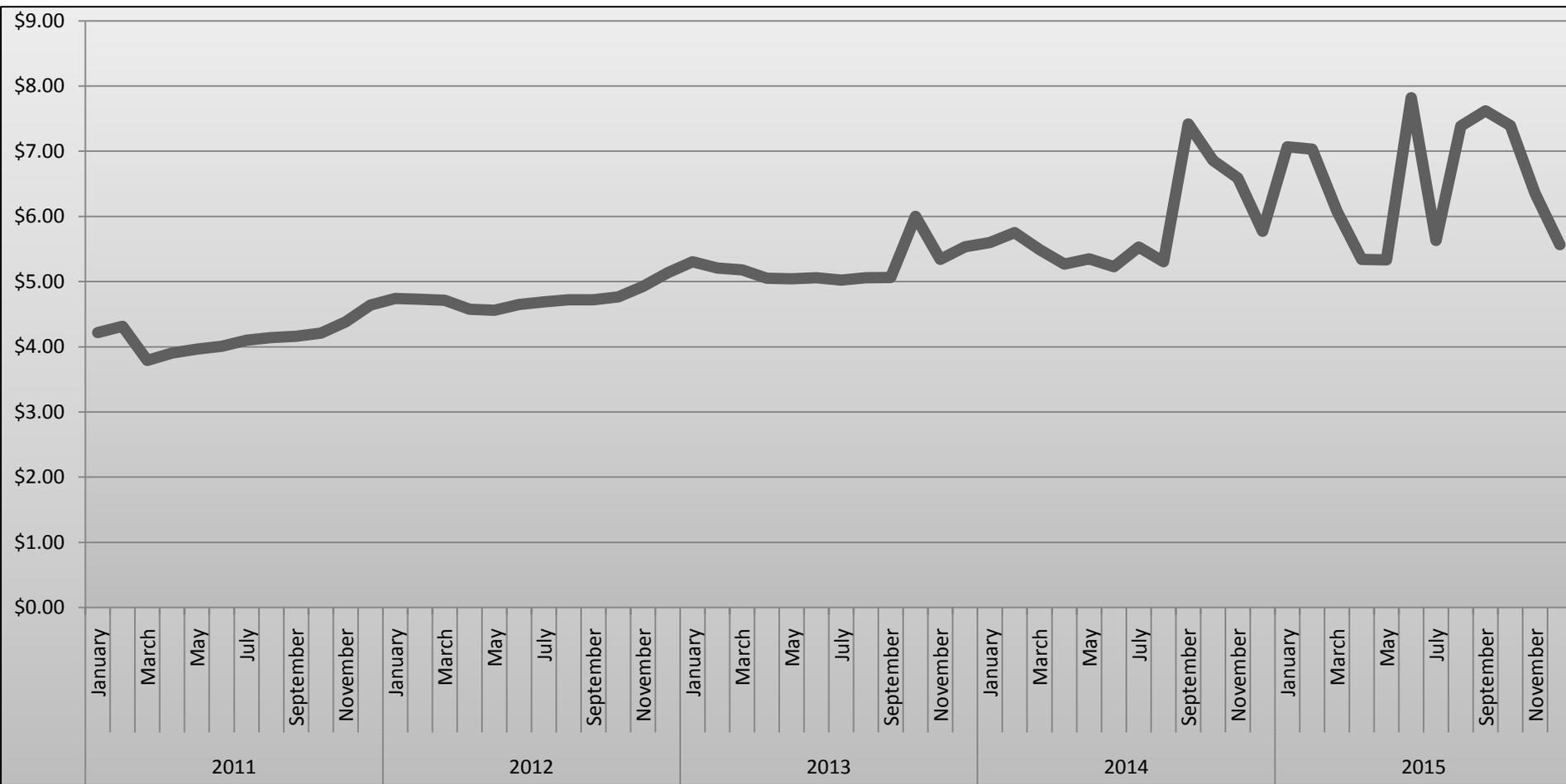
Heat Energy for CNG

Cubic Ft.	BTU	Therms
100	100,000	1

Natural Gas vs. Petroleum (2004-10)



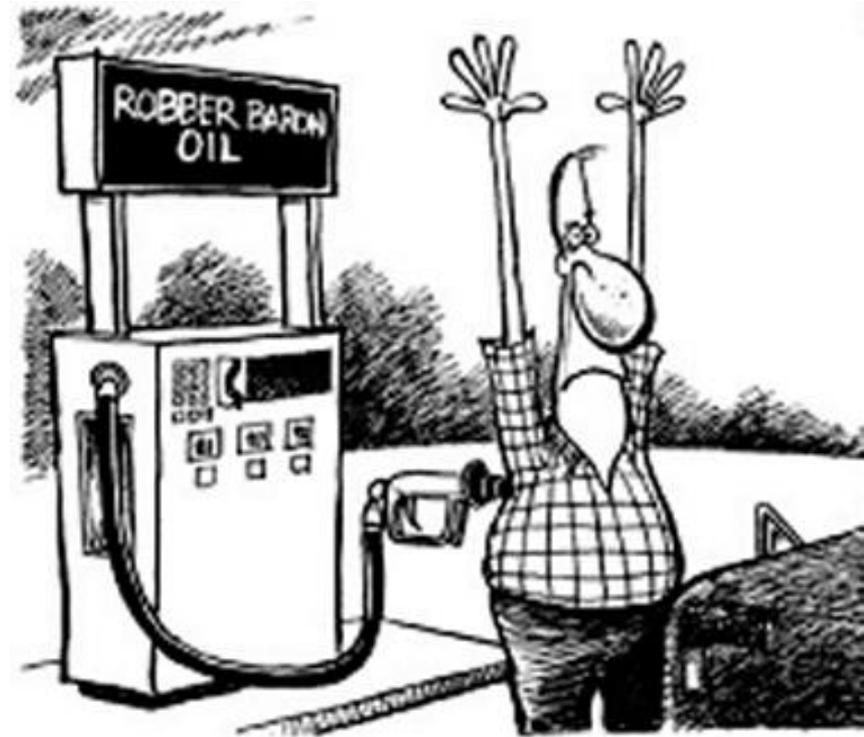
Natural Gas Futures(2011-2015)



Today's Fuel Costs Public Stations

CNG vs. FL Petroleum

Rate Schedule	Cost/ GGE	Cost/ DGE
CNG FL Avg. ¹	\$1.790	\$2.004
CNG US Avg. ²	\$2.060	\$2.307
Unleaded ⁴	\$3.803	
Mid ⁴	\$3.971	
Premium ⁴	\$4.084	
Diesel ⁴		\$4.019



1 – www.cngprices.com

2- Clean Cities Alternative Fuels Price Report (April 2011)

4-FL average fuel prices. AAA Fuel Gauge Report
May 24, 2011

Today's Fuel Costs Private Stations

Natural Gas vs. FL Petroleum

Rate Schedule	Cost/ Therm	Cost/ GGE	Cost/ DGE
NG NGV ¹	\$0.9027	\$1.128	\$1.263
NG GS-4 ²	\$0.8265	\$1.033	\$1.157
NG GS-5 ³	\$0.7989	\$0.998	\$1.118
Unleaded ⁴		\$3.904	
Mid ⁴		\$4.064	
Premium ⁴		\$4.178	
Diesel ⁴			\$4.092



- 1 – Assumes 50,000 Therms or 40,000 GGE annually
- 2- Assumes 250,000 Therms or 200,000 GGE annually
- 3- Assumes 500,000 Therms or 400,000 GGE annually

Impact on Environment

Light Duty Vehicle (Full Fuel Cycle)	TIAX- CEC Report	GREET Model Report
VOCs reductions	55%	45%
CO reductions	11%	1%
NOx reductions	54%	20%
PM 10 reductions	42%	9%
Air toxics*	99-100%	N/A
GHG	30%	15%
Petroleum reductions	100%	99%

Based on information prepared for the U.S. Department of Energy and California Energy Commission. The estimates compare new natural gas vehicles with new gasoline and diesel powered vehicles. The emission results include criteria pollutants and greenhouse gas emissions.

*Most Air Toxics (CEC- California Energy Commission, GREET-Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation)

Impact on Environment (continued)

Heavy Duty Bus (Full Fuel Cycle)	TIAX- CEC Report
VOCs reductions	46%
CO reductions	6%
NOx reductions	8%
PM 10 reductions	27%
Air toxics*	99-100%
GHG	23%
Petroleum reductions	100%

Based on information prepared for the U.S. Department of Energy and California Energy Commission. The estimates compare new natural gas vehicles with new gasoline and diesel powered vehicles. The emission results include criteria pollutants and greenhouse gas emissions.

*Most Air Toxics (CEC- California Energy Commission)

Incentives and Legislation

- Income Tax Credits of Alternative Fuel Infrastructure

- Income tax credit equal to 30 percent of the cost of natural gas refueling equipment, up to \$30,000 in the case of large stations and \$1,000 for home refueling appliances.

- Excise Tax Credit to the Seller of CNG or LNG

- Tax credit of 50-cent per gasoline-gallon-equivalent of CNG or liquid gallon of LNG for the sale of CNG and LNG for use as a motor vehicle fuel.

Proposed Legislation

- Extend the current 50 cents per GGE tax credit for 5 years.
- Establish a vehicle purchase income tax credit for dedicated (80%), bi-fuel (50%), and dual-fuel NGVs for 5 years (percentage of incremental costs).

Weight Class	Max. Credit
Under 8,500 #	\$7,500
8,501-14,000 #	\$16,000
14,001 – 26,000 #	\$40,000
Over 26,000 #	\$64,000

Proposed Legislation (continued)

- Extend refueling property and income tax credit for 5 years.
- Increase **property tax credit for natural gas fueling facilities** from \$30,000 or 30% of the cost up to \$100,000 or 50%
- Increase **income tax credit for home fueling appliances** from \$1,000 or 30% of the cost up to \$4,000 or 50%.



Fueling Appliances

Allows for residential fueling and requires standard electrical services and natural gas service.

Fuel Rate

- Can fill 8 GGE in 5 hours to 40 minutes.

Manufactures

- HE Systems Technologies
- BRC FuelMaker

Price Ranges

- \$5,000 to \$50,000



Fast Fill Fueling

Advantages

- Shorter fill times
- Accommodates vehicles not stored on site
- Public vehicles can be served
- Suited to peak load

Disadvantages

- High initial cost and frequency of maintenance
- Lost fill rate while compressor replenishes storage.

Major Costs

~ (\$4800/GGEh or \$5300/DGEh)

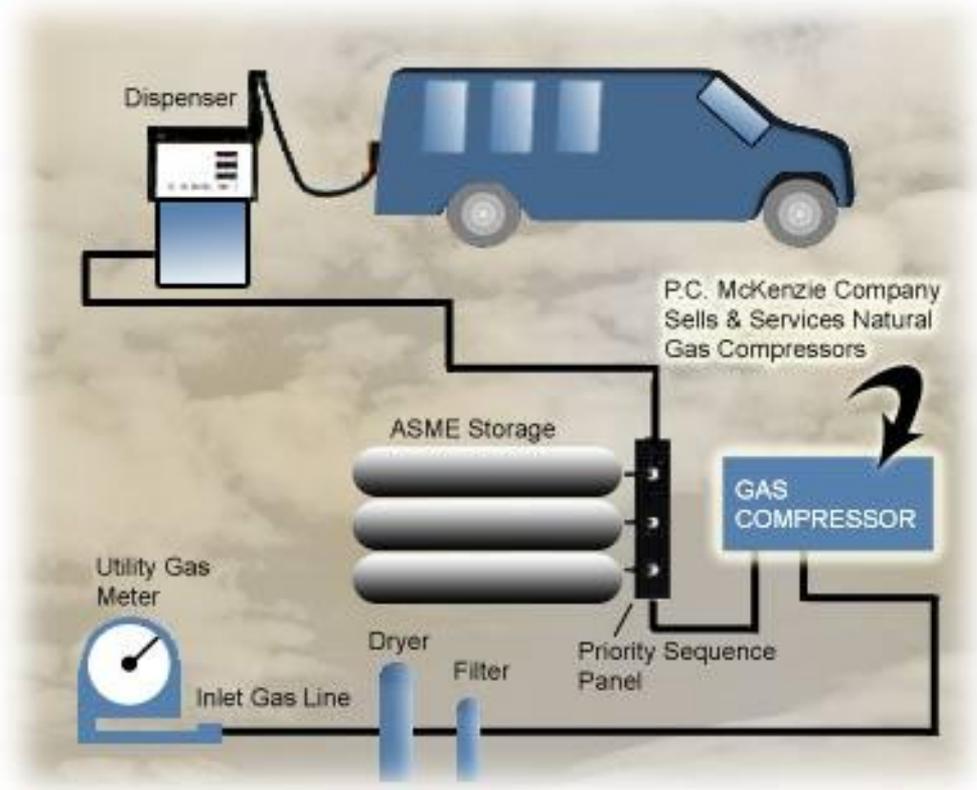
Gas Dryer

Compressor/Motor Assembly
(Redundancy)

Storage

Control System

Dispenser/Card Reader



Time Fill Fueling

Advantages

- Lower initial cost driven by compressor size and absence of storage.
- Lower maintenance cost due to lack of compressor cycling.
- Minimal labor to fuel vehicles.
- Modular construction suited for fleet expansion.

Disadvantages

- Vehicle remains on site while fueling (~ 8 hours)
- Typically excludes public use

Major Costs

~ (\$4000/GGEh or \$4400/DGEh)

Gas Dryer

Compressor/Motor Assembly
(Redundancy)

Control System

Dispenser Set Up



NGV Applications in Florida

- Solid Waste Refuse
- Municipal/Private Fleet Operations
- Airport
- Transit
- Distribution

Cost Savings and Simple Payback

Freight Distribution

		Year 2012	Year 2013	Year 2014	Year 2015	Year 2016
Freight Distribution	Total #	60	60	60	60	60
Trucks	Diesel	54	48	42	36	30
	CNG	6	12	18	24	30
New CNG Truck Cost Differential	Total	\$ (300,000.00)	\$ (600,000.00)	\$ (900,000.00)	\$ (1,200,000.00)	\$ (1,500,000.00)
Annual Estimated Fuel Consumption	Diesel (gal)	751,680	668,160	584,640	501,120	417,600
	CNG (dge)	89,366	178,733	268,099	357,466	446,832
Estimated Fuel Cost	Diesel (\$/gal)	\$ 3.91	\$ 4.07	\$ 4.23	\$ 4.40	\$ 4.57
	CNG (\$/dge)	\$ 1.17	\$ 1.21	\$ 1.32	\$ 1.37	\$ 1.34
Estimated Annual Fuel Cost	Total	\$ 3,043,590.32	\$ 5,977,126.76	\$ 8,802,965.03	\$ 11,498,022.21	\$ 14,006,080.69
Estimated Cost Fuel and CNG Conversion	Total	\$ 3,343,590.32	\$ 6,577,126.76	\$ 9,702,965.03	\$ 12,698,022.21	\$ 15,506,080.69
Estimated Annual Fuel Cost (100% Diesel)	Total	\$ 3,265,632.00	\$ 6,661,889.28	\$ 10,193,996.85	\$ 13,867,388.73	\$ 17,687,716.27
Simple Payback	Total	\$ (77,958.32)	\$ 84,762.52	\$ 491,031.82	\$ 1,169,366.51	\$ 2,181,635.59

Cost Savings and Simple Payback

Refuse

		Year 2012	Year 2013	Year 2014	Year 2015	Year 2016
Refuse Distribution	Total #	100	100	100	100	100
Trucks	Diesel	75	50	25	0	0
	CNG	25	50	75	100	100
New CNG Truck Cost Differential	Total	\$ (1,250,000.00)	\$ (2,500,000.00)	\$ (3,750,000.00)	\$ (5,000,000.00)	\$ (5,000,000.00)
Annual Estimated Fuel Consumption	Diesel (gal)	573,750	382,500	191,250	0	0
	CNG (dge)	204,638	409,275	613,913	818,550	818,550
Estimated Fuel Cost	Diesel (\$/gal)	\$ 3.91	\$ 4.07	\$ 4.23	\$ 4.40	\$ 4.57
	CNG (\$/dge)	\$ 1.17	\$ 1.21	\$ 1.32	\$ 1.37	\$ 1.34
Estimated Annual Fuel Cost	Total	\$ 2,482,703.26	\$ 4,533,928.37	\$ 6,151,890.84	\$ 7,276,267.87	\$ 8,371,549.10
Estimated Cost Fuel and CNG Conversion	Total	\$ 3,732,528.30	\$ 7,034,297.48	\$ 9,902,259.94	\$ 12,276,636.98	\$ 13,371,918.21
Estimated Annual Fuel Cost (100% Diesel)	Total	\$ 2,991,150.00	\$ 6,101,946.00	\$ 9,337,173.84	\$ 12,701,810.79	\$ 16,201,033.23
Simple Payback	Total	\$ (741,378.30)	\$ (932,351.48)	\$ (565,086.10)	\$ 425,173.82	\$ 2,829,115.01

Cost Savings and Simple Payback Shuttle Service

		Year 2012	Year 2013	Year 2014	Year 2015	Year 2016
Shuttle Service	Total #	6	6	6	6	6
Trucks	Diesel	5	4	3	2	1
	CNG	1	2	3	4	5
New CNG Truck Cost Differential	Total	\$ (20,000.00)	\$ (30,000.00)	\$ (45,000.00)	\$ (60,000.00)	\$ (75,000.00)
Annual Estimated Fuel Consumption	Diesel (gal)	40,000	32,000	24,000	16,000	8,000
	CNG (dge)	8,560	17,120	25,680	34,240	42,800
Estimated Fuel Cost	Diesel (\$/gal)	\$ 3.91	\$ 4.07	\$ 4.23	\$ 4.40	\$ 4.57
	CNG (\$/dge)	\$ 1.17	\$ 1.21	\$ 1.32	\$ 1.37	\$ 1.34
Estimated Annual Fuel Cost	Total	\$ 166,415.20	\$ 317,255.20	\$ 452,650.14	\$ 569,930.44	\$ 663,875.61
Estimated Cost Fuel and CNG Conversion	Total	\$ 186,415.20	\$ 347,255.20	\$ 497,650.14	\$ 629,930.44	\$ 738,875.61
Estimated Annual Fuel Cost (100% Diesel)	Total	\$ 187,680.00	\$ 382,867.20	\$ 585,861.89	\$ 796,976.36	\$ 1,016,535.42
Simple Payback	Total	\$ 1,264.80	\$ 35,612.00	\$ 88,211.74	\$ 167,045.93	\$ 277,659.81

Florida NGV Associations and Organizations

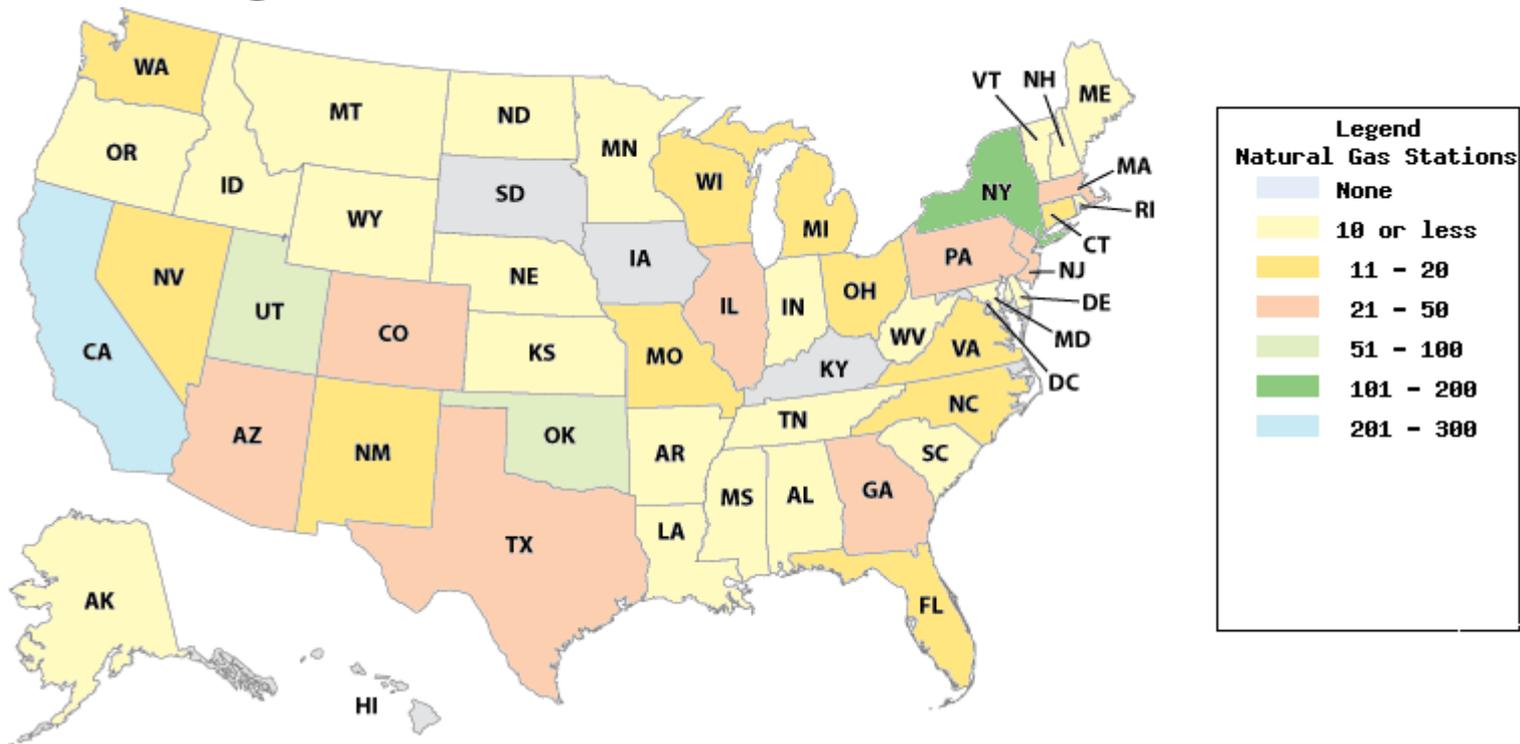
- SE NGV Corridor Committee
- Clean Cities
 - Gold Coast Clean Cities Coalition
 - Miami-Dade, Broward, Palm Beach, Martin, and Monroe County in south east Florida.
 - Space Coast Clean Cities Coalition
 - Brevard, Flagler, Indian River, Lake, Osceola, Okeechobee, Orange, Seminole, St. Lucie and Volusia in east central Florida

Florida NGV Associations and Organizations

- Clean Cities
 - Emerald Coast Clean Cities Coalition
 - Escambia, Santa Rosa, Okaloosa, Walton, Bay, Washington and Rose County in the Florida Panhandle.
 - Suncoast Region
 - Currently under the planning stages (Hernando, Pasco, Hillsborough, Pinellas, Polk, Manatee, Sarasota, Charlotte, Lee, and Collier County).

NGVs in the U.S.

- 112,000 NGVs on roads
- 1,000 fueling stations (nearly half public)
- In 2010, about 44 billion cubic feet (bcf) of natural gas was used for vehicle fuel.



CNG Stations in Florida

- City of Apopka
- Broward County
- **Wise Gas (Ft. Lauderdale)-
Public Station**
- City of Hollywood
- Mayport Naval Station
(Jacksonville)
- TECO Peoples Gas (7 Service
Centers in FL)
- Jacksonville Naval Air
Station
- City of North Miami
- Kennedy Space Center
(Cocoa)
- Travis Career Center
(Lakeland)
- **City of Milton – Public
Station**
- Choice Environmental
(Pompano Beach)
- Republic Services (Lakeland)
- Veolia Environmental
Services (Ft. Myers Beach)

CNG Stations Under Construction

- City of Clearwater
07/01/11 – Public
Station
- Florida City Gas
(Rockledge) TBD
- City of Sunrise TBD
- TECO Peoples Gas
(Tampa) 12/01/11 –
Public Station
- Tampa International
Airport 10/01/11 –
Public Station

TECO CNG Sales in Florida Prior to August 2010

- 16,000 Therms/11,500 DGE per month



TECO CNG Sales in Florida After August 2010

- Total of 622,000 Therms/ or 62,000 GGE per Month
- Scheduled to add 4 M Therms/3,200,000 GGE annually by 2012

