

Economic Impact of Incentives to Facilitate Compressed Natural Gas Vehicles In Florida

ADDENDUM A

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**Prepared for
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Introduction

Fishkind & Associates, Inc. (“Consultant”) prepared a study for the Beer Industry of Florida (“Client”) that focused on the use of compressed natural gas (“CNG”) in the state of Florida as an alternative energy saving fuel. This study was designed on behalf of the Florida Natural Gas Vehicle Coalition to provide a preliminary analysis of the costs and benefits for Florida from a program to facilitate CNG conversion.

Upon further analysis, discussions and review, the Client has determined that the upcoming bill for Compressed Natural Gas (“CNG”) will generate \$12-million in incentives for the CNG industry. The Client has requested of the Consultant to update their economic jobs and output results based on this new incentive amount.

Employment

As noted in the original report, investment and providing incentives in an alternative fuel network for Florida will have a positive impact on employment for both the construction phase and for ongoing operations. The original report forecasted 720 trucks and 12 stations based on those new trucks being generated. That was based on the number of stations that could quickly be developed within the existing system. The recommended incentive of \$12-million will generate 200 annual new Class C trucks and 400 annual new Class B trucks as shown in Table A-1 below

Table A-1. New Trucks per year

	Incentive
Class C - Large Truck	\$30,000
Class B - Medium Truck	\$15,000
Annual State Incentive	\$12,000,000
Annual New Class C Trucks	200
Annual New Class B Trucks	400
Total Annual New CNG Trucks	600

Source: Florida Natural Gas Vehicle Coalition & Fishkind & Associates, Inc.

Glastein, Neadross, and Associates, Inc (the author of the GNA Report) have developed a job calculator for the natural gas industry in response to a 2009 U.S. Department of Energy Clean Cities Program grant solicitation. The calculator is based on GNA's work with major national gas truck manufacturers to quantify the various categories of employment that flow from development of natural gas fuel networks. Figures from the GNA Report produced 1.6 construction and ongoing clean fuel technology jobs for every truck provided as part of an alternative fuel network. The clean fuel technology jobs are related to vehicles (production, training, service, and operation), stations (construction, maintenance, and ongoing operation), facilities (upgrades of maintenance facilities for CNG as required by code), and exploration and production (gas demand met by local production). Utilizing GNA's ratio of employees to trucks, the annual base case Florida alternative fuel network would create 960 clean energy jobs.

Table A-2 Job Generation

	Annual
Trucks	600
Trucks per Station	60
Stations	10
Jobs	960

Source: Fishkind & Associates, Inc. based on Glastein, Neadross, and Associates, Inc.

In addition to direct jobs, there will also be indirect job opportunities that arise because of the investment made in the alternative fuel network. Furthermore, the alternative fuel network represents a starting point to stimulate future growth in CNG vehicles and as such, job growth on a direct and indirect basis will only accelerate as the network builds upon itself.

Economic Impact of Fuel Cost Savings

In addition to the jobs created by the construction and ongoing operation of the network there will be economic impacts created by those jobs generated based on the Glastein, Neadross Associates, Inc. ratio multiplier.

The economic impact of adding those jobs is analyzed using RIMS II (Regional Input-Output Modeling System) as developed by the Bureau of Economic Analysis. The RIMS method utilizes I-O (Input-Output) tables, the distribution of the inputs purchased and the outputs sold, to analyze these economic effects.

The economic impacts take the form of:

- **Output** - value-added dollars and wage earnings spent and re-spent in the analysis area as a result of the savings;
- **Earnings** - wage earnings in the analysis area generated by employment associated directly and indirectly with the savings; and
- **Employment** - jobs created directly and indirectly in the analysis area as a result of the savings.

The analysis identifies both direct and indirect economic impacts created. Direct economic benefits are the result of people purchasing goods or services from a business. For example, a truck transportation business creates a direct impact on the economy. Indirect economic benefits are created by a 'ripple effect' through the economy. For example, as more truck transportation service is rendered the business must purchase more from wholesalers who in turn hire additional salespeople, clerical workers, etc. These employees in turn purchase additional goods and services in the local community, thus further indirectly impacting the economy.

The annual and 5-year outputs for these categories are noted below. The 5-year number is shown since that is the life of the \$12,000,000/year incentive.

Table A-3 Economic Impact of Cost Savings

RIMS II	Direct Impacts		Direct and Indirect Impacts		
	Employment (jobs)	Output (dollars)	Output (dollars)	Earnings (dollars)	Employment (jobs)
Economic Impacts					
Annual Economic Numbers	960	\$127,218,045	\$252,362,436	\$71,572,872	2,044
5-Year Incentive Economic Numbers	4,800	\$636,090,226	\$1,261,812,180	\$357,864,361	10,220

Source: Fishkind & Associates, Inc. based BEA

The table shows that in addition to the direct impacts, the monetary incentive has an indirect ripple effect on the entire state economy. The incentive money will be directly and indirectly responsible for generating \$252.4-million in economic output throughout the state annually. Also, it will create \$71.6-million in earnings and be responsible for 4,088 employees throughout the state. Over the 5-year incentive period, the incentive money will create approximately \$1.3-billion in economic output throughout the state and will create \$357.9-million in earnings and be responsible for 10,220 employees throughout the state.

Private Investment

The Consultant next calculated the amount of private investment that will be necessary to accommodate the amount of new trucks and stations across that state that will be generated by the new incentive. Private investment is calculated by taking the new truck cost and the new station cost and multiplying them by the appropriate number of new trucks and stations then subtracting the state investment from that total. The Consultant has utilized a cost per vehicle of \$152,000 based on the DOE Report and a cost per station of \$2,000,000 also based on the DOE Report. The following table summarizes the total cost of each scenario utilizing these inputs. The following tables show the private investment that will occur both on an annual basis and over the 5-year incentive period:

Table A-4. Annual Private Investment

Annual Private Investment	
Trucks	600
Cost/Truck	\$152,000
Stations	20
Cost/Station	\$2,000,000
Less State Incentive	\$12,000,000
Total private Investment	\$119,200,000

Source: U.S. Department of Energy & Fishkind & Associates, Inc.

Table A-5. Five-Year Private Investment

5-Year Private Investment	
Trucks	3,000
Cost/Truck	\$152,000
Stations	100
Cost/Station	\$2,000,000
Less State Incentive	\$60,000,000
Total Private Investment	\$596,000,000

Source: U.S. Department of Energy & Fishkind & Associates, Inc.

The costs shown above are for vehicles and stations only and do not include updates required for maintenance garages, personnel training, and project management.

Tax Revenue and Payback Period

In addition to the local investment and employment benefits, implementation of the alternative fuel network will generate recurring revenues from the additional sales tax on a per gallon of natural gas proposed in the LNG legislation. The LNG legislation language will eliminate the decal tax and add an excise tax of \$0.31 per gallon of natural gas. The existing excise tax on diesel fuel is \$0.12 per gallon. The difference between the two taxes (\$0.19) is what the State would see in additional taxes that could pay back the \$60-million incentive. The table below shows the excise tax revenue generated to the State of Florida for both the heavy duty and medium duty trucks on an annual basis.

Table A-6. Annual Fuel Taxes Generated by Type of Truck

	Heavy Duty	Medium Duty
Number	83	318
Gallons Per Year Per Vehicle	11,706	1,834
Total Gallons Per Year	971,598	583,212
Tax Differential Per Gallon	\$0.19	\$0.19
Annual Taxes Generated	\$184,604	\$110,810
Taxes Per Vehicle	\$2,224	\$348

Source: U.S. Department of Energy, Alternative Fuels & Advanced Vehicles Data Center

Using this data, the Consultant then calculated the taxes generated by year starting with the existing vehicles and adding the new vehicles based on the incentive-driven numbers from the new trucks generated from the \$12-million per year for 5 years State of Florida incentive. By year 6 the tax on the natural gas is generating \$3.2-million per year. Based on that analysis, the payback period for the \$60-million is 21 years.

Table A-7. Payback Period for \$60-million State of Florida Incentive Program

	Existing	Year – 1	2	3	4	5	20	21
Class B - Medium	318	718	1,118	1,518	1,918	2,318	2,318	2,318
Annual Gas Tax Per Vehicle	\$348	\$348	\$348	\$348	\$348	\$348	\$348	\$348
Total Taxes Collected		\$250,194	\$389,578	\$528,962	\$668,346	\$807,730	\$807,730	\$807,730
Class C - Large	83	283	483	683	883	1,083	1,083	1,083
Annual Gas Tax Per Vehicle	\$2,224	\$2,224	\$2,224	\$2,224	\$2,224	\$2,224	\$2,224	\$2,224
Total Taxes Collected		\$629,432	\$1,074,260	\$1,519,088	\$1,963,916	\$2,408,744	\$2,408,744	\$2,408,744
Grand Total Taxes Collected		\$879,626	\$1,463,838	\$2,048,050	\$2,632,262	\$3,216,474	\$3,216,474	\$3,216,474
Cumulative Taxes Collected		\$879,626	\$2,343,464	\$4,391,514	\$7,023,776	\$10,240,250	\$58,487,358	\$61,703,832

Source: Fishkind & Associates, Inc.