

# **THE ECONOMIC AND ENVIRONMENTAL IMPACTS OF A CORPORATE FLEET VEHICLE PURCHASE PROGRAM**

**PREPARED FOR**

**AT&T**

**BY**

**SUSTAINABLE TRANSPORTATION AND COMMUNITIES GROUP  
CENTER FOR AUTOMOTIVE RESEARCH**



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*The statements, findings, and conclusions herein are those of the authors and do not necessarily reflect the views of the project sponsor.*



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## CENTER FOR AUTOMOTIVE RESEARCH

The Center for Automotive Research (CAR), a nonprofit organization, is focused on a wide variety of important trends and changes related to the automobile industry and society at the international, federal, state and local levels. CAR conducts industry research, develops new methodologies, forecasts industry trends, advises on public policy, and sponsors multi-stakeholder communication forums. CAR has carried out the majority of national level automotive economic contribution studies completed in the United States since 1992.<sup>1</sup> A list of these studies is footnoted below and these reports contain descriptions of the methodologies used to produce this paper. CAR's industry research is performed by distinct groups, including the Sustainable Transportation and Communities (STC) group, led by Kim Hill, associate director of research. STC concentrates on the long-term viability and sustainability of the auto industry, the surface transportation system, and the communities that lie at the heart of both the industry and the system.

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<sup>1</sup> These studies include: The Center for Automotive Research. **Contribution of the Motor Vehicle Supplier Sector to the Economies of the United States and its 50 States**. Prepared for the Motor & Equipment Manufacturers Association, Ann Arbor, January, 2007. The Center for Automotive Research. **Contribution of Toyota to the Economies of Sixteen States and the United States in 2006**. Prepared for Toyota Motor North America, Inc., Ann Arbor, October, 2007. Institute of Labor and Industrial Relations, University of Michigan and the Center for Automotive Research. **Contribution of the U.S. Motor Vehicle Industry to the Economies of the United States, California, New York, and New Jersey in 2003**. Prepared for the Alliance of Automobile Manufacturers, Inc., Ann Arbor, May, 2004. Institute of Labor and Industrial Relations and the Office for the Study of Automotive Transportation, University of Michigan and the Center for Automotive Research. **Contribution of the Automotive Industry to the U.S. Economy in 1998: The Nation and Its Fifty States**. A Study Prepared for the Alliance of Automobile Manufacturers, Inc. and the Association of International Automobile Manufacturers, Inc. Ann Arbor, Winter 2001. The Office for the Study of Automotive Transportation, Transportation Research Institute, and the Institute of Labor and Industrial Relations, University of Michigan. **The Contribution of the International Auto Sector to the U.S. Economy**. A study prepared for the Association of International Automobile Manufacturers, Inc., Ann Arbor, March, 1998. McAlinden, Sean P., et. al., **Economic Contribution of the Automotive Industry to the U.S. Economy – An Update – A Study Prepared for the Alliance of Automobile Manufacturers**, Center for Automotive Research. Ann Arbor, Fall 2003. Office for the Study of Automotive Transportation, **Competitive Survival: Private Initiatives, Public Policy and the North American Automotive Industry** – Prepared for the U.S.-Canada Automotive Select Panel. University of Michigan Transportation Research Institute, Ann Arbor, June, 1992. The research staff of the Center for Automotive Research performed a number of these studies when located at the University of Michigan's Office for the Study of Automotive Transportation.

## **EXECUTIVE SUMMARY**

Historically, some business leaders and policymakers have been skeptical of environmental-friendly business practices for fear they would prove a cost burden that reduced profits and cut into economic growth. However, today, as the world wrestles with the twin challenges of economic recovery and environmental sustainability, there is a growing awareness that “green” business practices do not fall solely to the cost side of the ledger and can, in fact, deliver substantial benefits. In particular, business practices that create “green jobs” can stimulate economic growth, reduce reliance on pollution-generating fossil fuels, and reduce the volume of carbon emissions. Increasingly, business leaders at all levels are beginning to realize that building green strategies into their planning is a smart business practice that can help the bottom line.

In the United States, a greening of corporate vehicle fleets presents an opportunity to generate both economic and environmental benefits. Fleet vehicles account for nearly one of every five new vehicle purchases in the United States each year. Because fleets tend to turn over quickly, there is an opportunity to move a substantial number of cleaner technology cars and trucks onto the road in a small number of years. Moreover, if historical rates of fleet vehicle turnover are maintained, clean technology vehicles purchased for corporate and rental fleets would find their way into the used car market and end up in the hands of private owners very quickly – spreading the benefits of fuel-efficient, low-emission vehicles even more widely.

Thus the announcement by AT&T earlier this year of a 10-year program to buy or convert 15,000 of its vehicles to cleaner technology represents a significant example of what could potentially lead to a widespread shift in the makeup of corporate fleets. A similar shift by a significant number of corporations, vehicle rental businesses, and government agencies to convert their fleets would mean substantial reductions in carbon emissions and gasoline consumption. It also would support thousands of jobs, particularly in the nation’s struggling automotive industry.

AT&T’s planned fleet vehicle purchases and modifications will help support an average of 1,000 jobs each year from 2009-2013. Replacing fleet vehicles normally equipped with standard internal combustion engines with hybrid vehicles or vans and trucks converted to compressed natural gas (CNG) will reduce gasoline consumption by more than 49 million gallons over the next ten years and trim CO<sub>2</sub> emissions by 211,000 metric tons total over that period – the equivalent of removing more than 38,000 vehicles

from the road for a year. Once all the new vehicles have been phased in, the annual reduction of CO<sub>2</sub> will total 31,533 metric tons, an amount equal to the annual CO<sub>2</sub> emissions of 5,776 vehicles.

Taking this further, if half of U.S. corporate fleets were to emulate a green fleet plan similar to AT&T's over the next ten years, CAR estimates annual CO<sub>2</sub> emissions could be cut by the equivalent of 1.2 million vehicles. Such a shift to hybrid and alternative fuel vehicles could also cut annual gasoline consumption by 1.5 billion gallons once the technology shift was complete, and could create or retain some 20,000 assembly jobs. If just one-quarter of corporate fleets were to switch to green vehicles, the benefits would still be quite substantial – reducing emissions by the equivalent of 600,000 vehicles, cutting gasoline consumption by 750 million gallons a year, and supporting 10,000 assembly jobs.

Moving these gains from theory to reality, of course, would require a large number of fleet operations to commit to alternative technologies. Earlier this year, AT&T announced a 10-year, \$556 million investment plan to reduce its carbon footprint. Clearly, this is the type of response that corporate America is capable of undertaking and must be encouraged to pursue through a variety of programs that provide incentives to companies to absorb costs while also realizing the benefits of such actions.

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## I. INTRODUCTION

The global recession and climate change have placed a premium on policies and practices that can create jobs while also addressing environmental challenges. In the United States, the business community has an opportunity to lead the way by shifting corporate vehicle fleets from reliance on the standard internal combustion engine to more fuel-efficient technologies and alternative fuels. On a large scale, such a move could substantially reduce carbon emissions by reducing the use of fossil fuels and support thousands of new jobs. As discussed later in this paper, if half of U.S. corporate fleets embraced alternative fuels, the potential annual reduction of carbon fuels could be the same as removing 1.2 million gasoline-powered vehicles from U.S. roads. The number of jobs created or preserved to produce the alternative vehicles could total 20,000.

While that level of benefits is theoretical, a step toward that reality came with the announcement this year that AT&T plans to invest \$556 million to replace a large portion of its fleet with new alternative fuel vehicles over the next 5-10 years (depending on the vehicle). These fleet vehicle purchases will help support approximately 1,000 jobs during each year of the purchasing period. Over the ten-year period, the replacement of standard internal combustion engine vehicles with a combination of hybrid vehicles and vans that run on compressed natural gas (CNG) will reduce gasoline consumption by more than 49 million gallons. During that same period, AT&T will have reduced CO<sub>2</sub> emissions by 211,000 metric tons – an amount equal to the emissions from more than 38,000 vehicles.

The AT&T plan could serve as a model for corporate environmental responsibility by stimulating economic growth through the creation of “green jobs” that contribute to the development or production of cleaner or more fuel-efficient technologies. Clearly, the terms green economy and green jobs could mean different things to different people. Green jobs contribute not only to economic growth, but also to furthering development and adoption of cleaner and more efficient technologies. A job that contributes to the production of a technology that is more fuel efficient or cleaner than a previous technology can be termed a green job. For example, one contribution to the green economy is in equipping vehicle assembly operations to build alternative fuel vehicles.

Over the next five years, the company plans to purchase 8,000 domestically produced vans that will be converted to CNG. In addition to the service vans, AT&T will also

purchase 7,100 hybrid passenger vehicles over the next 10 years. The hybrid vehicles purchased in the initial years of the program will be Toyota Prius and Ford Escape hybrids, which will operate with an average fuel efficiency of 40.4 miles per gallon (MPG).

## **II. THE JOBS IMPACT**

Over the next five years, the AT&T initiative will support about 1,000 jobs annually through direct, indirect and spin-off employment opportunities. The jobs benefit will climb from 360 during 2009 to an estimated 1,125 in 2010 and will peak at 1,219 in 2012, the program's fourth year. These workers will earn an average of \$65 million a year and pay about \$10 million annually in taxes.

In addition to production of the vehicles, jobs also will be generated by the shipment of vans for upfitting work and by the upfitting work itself. Since there are no alternative fuel vehicle choices currently available directly from U.S. manufacturers, these service vans will be converted to run on CNG by a third-party company. The development of new CNG fueling stations to support operation of the transformed fleet also will support new jobs.

Details of the projected employment benefits are examined below.

### **DIRECT EMPLOYMENT CONTRIBUTION**

First and foremost, the AT&T initiative will create or support vehicle manufacturing jobs. At the time of this study, AT&T has committed to purchasing vans that will be produced in Avon Lake, Ohio, and a portion of the purchased hybrid vehicles will be produced in Kansas City, Missouri. Using two methods, CAR estimated the number of employees needed to produce these vehicles, as well as the number of corporate support employees at the automaker's headquarters who facilitate the sale, financing, insuring and shipping of the vehicles. First, the number of employees required at the assembly plants was determined by using the ratio of total vehicles purchased to total vehicles produced at the plants. Next, the number of employees required was calculated using Harbour Report<sup>2</sup> productivity estimates. The ranges calculated consistently had less than a 10 percent variance from high to low estimates. For cars that will be imported into the U.S., corporate logistical support was estimated using best-in-class dealership employment and productivity numbers.

The vans will be shipped from Ohio to Texas and Georgia for the upfitting work, which supports shipping jobs. CAR estimated the number of shipping jobs created or

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<sup>2</sup> The Harbour Report is an annual report that examines productivity by plant in the automotive industry. The report is used for plant-level statistics and for benchmarking purposes for those in the industry.  
The Harbour Report North America, 2003 through 2007. Harbour Consulting, Michigan.

supported by dividing annual revenues per shipping employee by shipping costs per van. This calculation provided the estimated number of vans that can be managed by one full-time equivalent (FTE) employee per year. The upfitter companies estimated that this fleet purchase would support about 185 jobs annually.

Several CNG fueling stations will be built to support these new fleet vehicles. AT&T serves customers across the U.S. with key service regions located in 22 states. The investment in these new fueling stations will increase the total number of compressed natural gas fueling stations in the United States by 5 percent. The employment contribution associated with the investment for constructing these stations was calculated by the econometric model as a function of the dollar value of the construction costs, a direct input into the model<sup>3</sup>. Table 1 shows the total annual direct jobs in manufacturing, professional and administrative services, transportation, finance, insurance and upfitting, as well as the expected investment in fueling stations because of AT&T's purchase program.

**Table 1 Direct Employment and Investment  
AT&T Fleet Investment, 2011**

Occupation	Employment
Administration and Services	36
Finance, Insurance	12
Motor Vehicle Manufacturing	31
Professional and Technical Services	4
Transportation, Warehousing	74
Upfitting Vans	185
<b>Total</b>	<b>342</b>
Investment in Fueling Infrastructure	<b>\$40M</b>

#### **INDIRECT AND SPIN-OFF EMPLOYMENT CONTRIBUTION**

The direct jobs to build and upfit vehicles and the investment in new CNG fueling infrastructure create a number of additional indirect and spin-off jobs through a

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<sup>3</sup> The employment contribution of constructing these CNG fueling stations was further estimated by determining the average revenue per employee for construction companies, by type of construction work. The construction jobs calculated in this manner were compared to the modeled data to ensure that employment estimates and results were closely aligned. The ranges calculated had consistently less than a 10 percent variance from high to low estimates. The economic and employment contributions of this new construction were further refined using data supplied by AT&T and from CNG trade research.

“multiplier” effect that spreads the impact of the initial investment throughout the broader economy. For example, any business investment includes wages that generate local economic activity when workers spend their earnings. In the case of the auto industry, the multiplier effect can touch an unusually large number of individual communities because the industry’s supplier network is spread across many states.

The multiplier effect creates a large number of indirect (or intermediate) jobs at businesses that supply goods and services to auto manufacturing facilities. For example, an automotive manufacturing facility requires plastic and metallic parts, electronic components, and other products in order to manufacture vehicles. These supply requirements generate indirect employment impacts. “Spin-off” employment, in turn, refers to the jobs supported by the personal spending of the individuals who hold direct or indirect jobs.

Table 2 below summarizes the indirect and supplier job categories and spin-off employment estimates for the year 2011, a typical year in the study. Table 3 shows these jobs, along with the direct jobs, for the first five years of the purchase program.

**Table 2: Intermediate and Spin-off Employment Contribution of AT&T Fleet Investment, 2011**

Occupation	Employment
<b>Manufacturing</b>	<b>74</b>
<b>Non-Manufacturing</b>	<b>756</b>
Administration and Services	61
Construction	182
Finance, Insurance	25
Management of Companies	15
Other Non-Manufacturing	90
Other Services (including Government)	168
Professional and Technical Services	62
Retail Trade	98
Transportation, Warehousing	12
Wholesale Trade	43
<b>Total</b>	<b>830</b>

## SUMMARY OF RESULTS

- Employment contribution support: 1,100 jobs per year
- Total over 5 years of program: 4,939 FTE
- Average compensation each year: \$65 million
- Average taxes paid by all workers: \$10 million

**Table 3: Direct, Intermediate and Spin-off Employment Contribution of AT&T Fleet Investment, All Years**

Employment	2009	2010	2011	2012	2013
Direct	118	342	342	342	342
Indirect	78	258	277	301	270
Spinoff	164	525	553	576	451
<b>Total</b>	<b>360</b>	<b>1,125</b>	<b>1,172</b>	<b>1,219</b>	<b>1,063</b>
Compensation	13,700,000	56,600,000	63,500,000	72,300,000	69,300,000
Taxes	2,700,000	8,800,000	10,100,000	12,000,000	10,700,000
Comp per employee	38,000	50,300	54,200	59,300	65,200

The first year of this program, 2009, produces relatively few of the higher paying jobs in construction or vehicle manufacturing. Wages per employee jump in subsequent years because both vehicle production and CNG fuel station installations are ramped up significantly. In these years, higher paying construction and assembly jobs share a much greater portion of direct jobs, thereby raising average compensation per employee. In years 6 through 10 of this program (2014 and beyond), fleet investment will be primarily for hybrid passenger cars. Employment contributions for these years are not estimated in this study because large-scale production of these vehicles is not yet occurring in the United States. As automakers ramp up their United States capacity to produce alternative fuel passenger cars, the employment contribution of AT&T's investment can be expected to be significant. In the interim, AT&T's program, if adopted by a significant number of fleets, could serve as a signal to automakers and suppliers in the U.S. to increase their capacity to produce these vehicles.

In 2010, AT&T's fleet purchase program will directly create or support 342 jobs. These jobs are spread across AT&T's 22-state service area. Another 250 to 300 jobs will be created or supported in supplier companies that provide goods or services to the assembly plants, shipping companies and upfitter companies. These are indirect employment impacts and are typically thought of as supplier and service provider jobs. Another category of jobs supported or created by these AT&T fleet purchases is spin-off employment, which results from spending by plant and supplier workers. More than 500 spin-off jobs are supported or created each year as a result of this spending.

For the years in which the fleet purchase program is operating at 100 percent, more than 1,100 jobs annually (not including any employment created within AT&T) are created or supported by the purchases of environmentally friendly vehicles for the AT&T fleets. Annual compensation for these jobs will average \$65 million and generate about \$10 million in tax revenues.

## METHODOLOGY

The estimates of economic and employment impact presented in the above section of this study were generated through the use of an economic and demographic forecasting model constructed by Regional Economic Models, Inc. (REMI). The model was calibrated using public and proprietary data for employment, wages and costs for various industries. The REMI model, which has been fully documented and peer-reviewed, was designed for the type of analyses employed in this current study and has been used by CAR and other organizations for these types of analyses, for over two decades. CAR ran simulations estimating economic impacts on the U.S. economy over the ten-year period, based on changes to the economy due to AT&T's investment. The model captures three types of employment impacts:

1. DIRECT: Direct changes in employment, compensation and personal income tax revenues that are a result of AT&T's alternative fuel fleet investment.
2. INDIRECT: This is the "supplier effect", indicating indirect changes in employment, compensation and tax revenues that are a result of purchased inputs to automotive production, construction, upfitting and shipping of vehicles. This impact includes any employment, compensation or personal income taxes related to firms that sell commodities, products or services directly and indirectly to firms primarily involved in meeting AT&T's fleet requirements. The supplier

effect also includes both manufacturing and non-manufacturing suppliers to these industries as well as suppliers to suppliers.

3. SPIN-OFF: These are the expenditure-induced effects in the general economy. Spin-off effects represent the economic activity due to spending of direct employees and suppliers' employees.

The sum of the direct, indirect and expenditure-induced or spin-off impacts represents the total contribution of this investment to the national economy.

### **III. EMISSION REDUCTIONS AND ENERGY SAVINGS**

The AT&T program, which replaces conventional gasoline-powered vehicles with hybrid-electric cars and vans powered by compressed natural gas, will substantially reduce both gasoline consumption and CO<sub>2</sub> emissions within AT&T's fleet. CAR's analysis, detailed below, estimates that the program will cut carbon emissions by 211,193 metric tons over the initial ten years and also save 49.3 million gallons of gasoline. The carbon reduction is equal to removing 38,682 gasoline-powered vehicles from the roads. Once all of the planned alternate fuel vehicles are in use, CO<sub>2</sub> emissions will be reduced by 31,533 metric tons a year – the equivalent of annual emissions from 5,776 gasoline-powered vehicles. Annual gasoline consumption will be reduced by 6.8 million gallons, which would save 138,340 barrels of oil, once all of the clean fuel vehicles have been placed in service.

#### **SUMMARY OF ASSUMPTIONS**

For analysis purposes of this pilot study, it was assumed that AT&T would purchase specific vehicles in order to perform the emissions and energy consumption reductions calculations. The actual vehicle models that AT&T will purchase for this program have been determined for the first couple of years (2009 and 2010) and will serve as a baseline, or minimum, estimation of fuel and emissions reductions. As years pass and technology becomes more prevalent, AT&T intends to purchase the most efficient and cleanest vehicles available, presumably resulting in even greater annual and aggregate reductions of emissions and fuel use. Therefore, for this analysis, the following assumptions were made:

- 7,100 Toyota Prius and Ford Escape hybrid vehicles will be purchased over ten years replacing Ford Focus and Chevrolet Malibu vehicles
- 8,000 E250 CNG Econoline vans will be purchased over five years instead of regular E250 vans
- The average annual mileage for the passenger cars is about 12,000 miles; the average annual mileage for the vans is about 10,000 miles

Vehicle specific data – particularly gas mileage, emission rates, and vehicle weights for each vehicle – were drawn from [www.fueleconomy.gov](http://www.fueleconomy.gov), which is jointly run by the U.S. Department of Energy and the Environmental Protection Agency (EPA). The curb weights used were provided by vehicle manufacturers in their standard vehicle

specifications. These data were input into a proprietary model provided by the Environmental Defense Fund (EDF). This model estimates greenhouse gas emissions per vehicle mile and assesses overall vehicle model environmental impacts. The least stringent emissions estimates for each vehicle were used in an effort to provide the most conservative measure of emissions performance. These data are summarized in Table 4 below.

**Table 4: Average Vehicle Specifications and Standards**

Brand	Toyota	Ford	Chevrolet	Ford	Ford
Model	Prius	Escape	Malibu	Focus	E250
Model Year	2009	2009	2009	2009	2006
Vehicle Type	Hybrid	Hybrid	Conventional	Conventional	Conventional
City MPG	48	34	22	24	13
HWY MPG	45	31	30	33	16
Combined MPG	46	32	25	27	14
Emission Standards	BIN 3 SULEV II	BIN 3 SULEV II	LEV II BIN 5 SULEV II	BIN 4 BIN 3 SULEV II	LEV BIN 8

The ensuing annual emissions for each vehicle were used to compute the overall reduction in CO<sub>2</sub> as a result of this investment program by AT&T. Average annual CO<sub>2</sub> emissions reduction and overall (ten-year) CO<sub>2</sub> emissions reduction were computed by comparing the emissions of the new vehicles against the emissions of the standard vehicles formerly used in AT&T's fleet.

A conversion tool on the EPA website<sup>4</sup> was used to put the CO<sub>2</sub> reductions in perspective by quantifying the equivalent number of standard gasoline vehicles removed from operation.

Finally, the reduction in gasoline consumption was calculated based on a comparison of gasoline usage between the Ford Focus, the Chevy Malibu, the E250 gasoline-powered vans and the hybrid or CNG powered vehicles. These comparisons were made using the gas mileage, volume, vehicle mix and annual usage from AT&T, the EPA, and vehicle manufacturers.

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<sup>4</sup> <http://www.epa.gov/solar/energy-resources/calculator.html>

## RESULTS

The total reduction of CO<sub>2</sub> emissions over 10 years from the deployment of 15,100 hybrid and CNG vehicles is 211,193 metric tons. Of this, 62,749 tons are a result of the use of hybrid passenger cars and 148,444 tons a result of the use of CNG vans. The total CO<sub>2</sub> reduction is equivalent to the CO<sub>2</sub> emissions of 38,682 gasoline-powered vehicles. This investment program will phase in the alternative fuel vehicles over a ten-year time span. When all vehicles are in operation, the annual reduction of CO<sub>2</sub> will be 31,533 metric tons, which is equivalent to the annual CO<sub>2</sub> emissions of 5,776 vehicles.

The program also cuts gasoline consumption by 49.3 million gallons over 10 years. Once all the alternate fuel vehicles are in service, gasoline consumption will be reduced by 6.8 million gallons a year. The reduction in gasoline consumption is equivalent to approximately 138,000 barrels of oil.

**Table 5: Savings over 10-Year Period of Program**

	Reduction in CO <sub>2</sub> emissions (metric tons)	Equivalent CO <sub>2</sub> emissions (number of cars)	Reduced use of gasoline (gallons)	Equivalent barrels of oil
Hybrid passenger cars	62,749	11,492	5,328,203	109,166
CNG vans	148,444	27,190	43,928,571	900,025
Total	211,193	38,682	49,256,774	1,009,191

**Table 6: Average Annual Savings Once all Vehicles are in Operation**

	Reduction in CO <sub>2</sub> emissions (metric tons)	Equivalent CO <sub>2</sub> emissions (number of cars)	Reduced use of gasoline (gallons)	Equivalent barrels of oil
Hybrid passenger cars	12,223	2,239	1,037,867	21,264
CNG vans	19,310	3,537	5,714,286	117,076
Total	31,533	5,776	6,752,152	138,340

#### **IV. MARKET POTENTIAL**

The U.S. vehicle fleet market makes up close to 20 percent of annual new vehicle registrations.<sup>5</sup> A substantial shift of 10 million total fleet vehicles currently in service toward cleaner fuels would create large numbers of jobs, cut energy consumption substantially, and significantly reduce carbon emissions.

Because of high turnover rates for fleets, a move toward green fleets could produce substantial benefits in a relatively short period. For example, carbon emissions could be cut by an amount equal to the emissions of 1.2 million gasoline vehicles each year if half of all fleets pursued a 10-year program similar to AT&T's. Annual gasoline consumption could be cut by 1.5 billion gallons, or about 30 million barrels of oil. Such a transition also would create or preserve about 20,000 auto industry jobs. If just one-quarter of fleets embraced the clean vehicle model, the benefit would still be substantial. That scenario would save 750 million gallons of gasoline a year and emissions would be cut by the equivalent of 600,000 vehicles. About 10,000 assembly jobs would be created or preserved if one-quarter of U.S. fleets took this approach.

Such a shift in fleet purchases could be a critical catalyst that helps push the U.S. automotive industry in a new direction both economically and technologically. The prospect of large purchases of cleaner vehicles by U.S. fleet operators would provide an enormous incentive for the industry to commit production capacity towards the production of advanced technology vehicles.

Such a shift also might stimulate sales of cleaner vehicles to consumers by helping to reduce prices for energy-efficient cars and trucks. New technologies tend to be more expensive in the early years as companies recoup investment and development costs. However, as production ramps up, costs tend to fall. Fleet purchases of a critical mass of alternative fuel vehicles could be enough to support advances in the industry in technology and advanced production techniques, without passing these development costs on to the consumer.

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<sup>5</sup> Automotive Fleet magazine via [www.automotive-fleet.com](http://www.automotive-fleet.com); Cars & Light Trucks data: [http://www.automotive-fleet.com/Statistics/StatsViewer.aspx?file=http%3a%2f%2fwww.automotive-fleet.com%2fc\\_resources%2fstats%2fAFFB-cht-pass-ctreq.pdf&channel=Vehicle-Research](http://www.automotive-fleet.com/Statistics/StatsViewer.aspx?file=http%3a%2f%2fwww.automotive-fleet.com%2fc_resources%2fstats%2fAFFB-cht-pass-ctreq.pdf&channel=Vehicle-Research); Medium Duty Trucks data: [http://www.automotive-fleet.com/Statistics/StatsViewer.aspx?file=http%3a%2f%2fwww.automotive-fleet.com%2fc\\_resources%2fstats%2fAFFB-cht-MDT-req-2-1.pdf&channel=Vehicle-Research](http://www.automotive-fleet.com/Statistics/StatsViewer.aspx?file=http%3a%2f%2fwww.automotive-fleet.com%2fc_resources%2fstats%2fAFFB-cht-MDT-req-2-1.pdf&channel=Vehicle-Research)

It is important to note that in order to spur fleet purchases, and subsequent consumer acceptance, advances in research, technology, and production should not be wedded to any one specific technology. Companies should be allowed to produce and purchase the products that make good business sense while also meeting the broader societal goals.

## V. INCENTIVES TO ENCOURAGE ALTERNATIVE ENERGY VEHICLES

The current state of incentives to introduce alternative energy to corporate vehicle fleets has never been more promising. Congress recently passed the American Recovery and Reinvestment Act of 2009 (commonly referred to as the ‘economic stimulus’ bill) which has added a variety of alternative energy usage incentives to the federal code. These new government incentives append a substantial body of incentives already codified as law. Additionally, 49 out of 50 states encourage alternative fuel use and fuel conservation, through incentives at the state level.

As part of the solution to building more fuel-efficient, environmentally responsible corporate fleets, solid infrastructure must exist to support the day-to-day use of these vehicles. A significant number of compressed natural gas refueling stations will be built, many of which may be available for use by non-AT&T vehicles. In the recently-passed economic stimulus bill, one provision in particular offers significant government assistance to that end: a temporary increase in tax credits for alternative fuel vehicle refueling properties.

- Specifically, the provision (section 1123, p. 211) increases the tax credit on alternative vehicle refueling properties from 30 percent to 50 percent of the cost of that property. If the provision is subject to an allowance for depreciation, the tax credit limit is raised from \$30,000 to a maximum of \$50,000. Hydrogen-related facilities subject to an allowance for depreciation are allowed a maximum credit limit of \$200,000. Qualified facilities are those in which at least 85 percent of their volume consists of ethanol, natural gas, compressed natural gas, liquefied natural gas, liquefied petroleum gas and/or hydrogen.
- The stimulus bill features additional provisions of interest to AT&T and other companies investigating the introduction of alternative fuel vehicles to their corporate fleets. In upgrading its own vehicle fleet, AT&T’s investment in alternative energy vehicles both spurs demand for these products and supports responsible and sustainable corporate vehicle usage by means of a markedly smaller environmental footprint. This action mirrors the Energy-Efficient Federal Motor Vehicle Fleet Procurement provision (p. 36) in the stimulus bill. In the provision, Congress included \$300,000,000 in spending in order to upgrade the federal vehicle fleet by purchasing alternative energy vehicles. This action is an important first step on the part of the federal government in signaling increased

demand, as well as government support, for upgrading vehicle fleets with alternative fuel vehicles.

- The stimulus bill also features a provision with interesting potential implications for vehicle fleets that use diesel fuel. The provision contains \$300,000,000 in additional funding for the Diesel Emission Reduction Act, which provides grants to retrofit current diesel engines with clean diesel emission-reducing technologies. Currently, funding only applies for non-profit and public organizations. However, private corporations operating in partnership with non-profit and public organizations may partner with an eligible entity to take advantage of the program. One such non-profit of potential interest to AT&T is CALSTART, a non-profit organization that works with public and private sectors to develop advanced transportation technologies and foster companies that will help clean the air, lessen dependence on foreign oil, reduce global warming, and create jobs. CALSTART features an interesting Hybrid Truck Users Forum (HTUF) which works to promote the commercialization of medium/heavy duty hybrid technology by bringing together fleet users and truck and system OEMs. Seven working groups have been launched, including the Hybrid Utility Truck, Hybrid Parcel Delivery Truck, Hybrid Refuse Truck, Hybrid Bus, Plug-In Electric Truck, Incentive, and Regional Delivery.
- In addition to action at the federal level, a variety of programs exist at the state level to promote alternative fuel use and fuel conservation. Thirty-three states offer some type of grant program, including grants for production of alternative fuels, distribution of alternative fuels, vehicle procurement, emissions reduction and fueling infrastructure. Additionally, 39 states offer incentives in the form of tax credits for fuel production, fuel retailers, alternative fuel vehicle purchases and conversions, property tax exemptions, and more. Incentives also exist in the form of loans, rebates, restriction exemptions, fuel discounts, technical assistance, and High Occupancy Vehicle (HOV) lane access for fuel-efficient and alternative energy vehicles. For a complete list of state incentives, visit the U.S. Department of Energy Alternative Fuels & Advanced Vehicles Data Center website at [http://www.afdc.energy.gov/afdc/progs/in\\_matrix.php](http://www.afdc.energy.gov/afdc/progs/in_matrix.php).

If over time, potential fleet vehicles include electric or plug-in electric, the following provisions are in the stimulus bill:

- Part V-Plug-In Electric Drive Motor Vehicles, Sec. 1141. Credit for New Qualified Plug-In Electric Drive Motor Vehicles (p. 212)

Sec. 30D. amended, under (b) Per Vehicle Dollar Limitation (2) a base amount of \$2500 with (3) for batteries with not less than 5 kilowatt hours of capacity, \$417, plus \$417 for each kilowatt hour of capacity in excess of 5 kilowatt hours, until \$5,000 has been reached (for a total maximum tax credit of \$7500 per vehicle)

Under (c) Application with Other Credits, (1) that allowance for depreciation can be treated as a general business credit (additional tax credit here)

Under (e) Limitation on Number of New Qualified Plug-In Electric Drive Motor Vehicles Eligible For Credit, (2) that after December 31, 2009, and after 200,000 credits have been issued, phase-out of the program will begin 2 calendar quarters after (meaning businesses should get these credits while they're available, because they'll be phased out)

- Sec. 1142 Credit For Certain Plug-In Electric Vehicles (p. 215)

Sec. 30 amended, under (a) Allowance of Credit – credit against tax imposed by this chapter equal to 10 percent of the cost of any qualified plug-in electric vehicle” and under (c) Application with Other Credits that (1) that allowance for depreciation can be treated as a general business credit

Here, Qualified Plug-In Electric Vehicles are defined in (d) as (1)(F)(i) having a capacity not less than 4 kilowatt hours and (ii) capable of being recharged from an external source of electricity

- Sec. 1143 Conversion Kits (p. 217)

Section 30B is amended by adding subsection (i) Plug-In Conversion Credit whereby (1) any motor vehicle which is converted to a plug-in electric drive motor vehicle is eligible for a credit of 10% of the cost of conversion up to \$40,000

And (3) even if the vehicle has received a tax credit in the past, this new credit still applies

## **VI. APPENDIX**

### American Recovery and Reinvestment Act of 2009 – Key Provisions

#### Title IV – Dept. of Energy – Energy Programs – Energy Efficiency and Renewable Energy (p. 24)

\$2,000,000,000 shall be available for grants for the manufacturing of advanced batteries and components and the Secretary shall provide facility funding awards under this section to manufacturers of advanced battery systems and vehicle batteries that are produced in the United States, including advanced lithium ion batteries, hybrid electrical systems, component manufacturers, and software designers

(2 billion for advanced battery manufacturing/components)

#### Sec. 406 Renewable Energy and Electric Power Transmission Loan Guarantee Program (p. 31)

Update to Energy Policy Act of 2005 (42 USC 16511) with Sec. 1705, (a). Temporary Program For Rapid Deployment of Renewable Energy and Electric Power Transmission Projects

The Secretary may make guarantees under this section only for the following categories of projects that commence construction not later than September 30, 2001:

“(3) Leading edge biofuel projects that will use technologies performing at the pilot or demonstration scale that the Secretary determines are likely to become commercial technologies and will produce transportation fuels that substantially reduce life-cycle greenhouse gas emissions compared to other transportation fuels.

(biofuels project that have possibility of leading to improved transportation fuels to become part of loan guarantee program)

#### Energy-Efficient Federal Motor Vehicle Fleet Procurement (p. 36)

For acquiring motor vehicles for the federal government with higher fuel economy, including: hybrid vehicles; electric vehicles; and commercially-available plug-in hybrid vehicles, \$300,000,000

EPA State and Tribal Assistance Programs – Funding for Diesel Emission Reduction Act  
(p. 55)

(3) Funding made available in amount of \$300,000,000. Under the program, fleets may receive grants towards the purchase of new hybrid trucks, and for projects that reduce emissions from existing vehicles. Funding is limited to public and non-profit fleets, but private companies can partner with public/non-profit entities to receive funding.

Sec. 1008. Additional Deduction for State Sales Tax and Excise Tax on the Purchase of Certain Motor Vehicles (p. 203-204)

Section 164, subsection (a) is amended by inserting paragraph 6 stating (A) 'qualified motor vehicle taxes' means any State or local sales or excise tax imposed on the purchase of a qualified motor vehicle and (B) the amount of taxes deductible "shall not exceed the portion of such tax attributable to so much of the purchase price as does not exceed \$49,500"

(sales/excise tax for new vehicle purchase is deductible up to value of \$49,500 of automobile)

Sec. 1123. Temporary Increase in Credit for Alternative Fuel Vehicle Refueling Property  
(p. 211) – Under Part III – Energy Conservation Incentives

Section 30C(e) is amended by adding a new paragraph (6) stating (A) if the property does not relate to hydrogen,

Subsection (a) substituted '50 percent' for '30 percent'

Subsection (b)(1) substitutes \$50,000 for \$30,000

Subsection (b)(2) substitutes \$2,000 for \$1,000

And (B) if the property does relate to hydrogen, then (b)(1) substitutes '\$200,000' for '\$30,000'

(increased tax credits for alternative vehicle refueling properties) – See Section 30C

Part V-Plug-In Electric Drive Motor Vehicles, Sec. 1141. Credit for New Qualified Plug-In Electric Drive Motor Vehicles (p. 212)

Sec. 30D. amended, under (b) Per Vehicle Dollar Limitation (2) a base amount of \$2500 with (3) for batteries with not less than 5 kilowatt hours of capacity, \$417, plus \$417 for each kilowatt hour of capacity in excess of 5 kilowatt hours, until \$5,000 has been reached (for a total maximum tax credit of \$7500 per vehicle)

Under (c) Application with Other Credits, (1) that allowance for depreciation can be treated as a general business credit (additional tax credit here)

Under (e) Limitation on Number of New Qualified Plug-In Electric Drive Motor Vehicles Eligible For Credit, (2) that after December 31, 2009, and after 200,000 credits have been issued, phase-out of the program will begin 2 calendar quarters after (meaning businesses should get these credits while they're available, because they'll be phased out)

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## Subtitle D—Manufacturing Recovery Provisions

### Sec. 1301. Temporary Expansion of Availability of Industrial Development Bonds to Facilities Manufacturing Intangible Property (p. 230)

Subparagraph (c) of section 144(a)(12) is amended to include (2)(ii) “facilities which are directly related and ancillary to a manufacturing facility if (I) these facilities are located on the same site as the manufacturing property (opportunity here for manufacturing related businesses)

### Sec. 1302. Credit for Investment in Advanced Energy Facilities (p. 231)

Insertion of Sec. 48C of (a) an advanced energy project credit equal to 30 percent of the qualified investment. Qualified means that the project (c)(1)(A)(i) re-equips, expands, or establishes a manufacturing facility for the production of

- (I) Property designed to be used to produce energy from the sun, wind, geothermal deposits, or other renewable resources,
- (II) Fuel cells, microturbines, or an energy storage system for use with electric or hybrid electric motor vehicles,
- (III) Electric grids to support the transmission of intermittent sources of renewable energy, including energy storage,
- (IV) Property designed to capture and sequester carbon dioxide emissions,
- (V) Property designed to refine or blend renewable fuels or to produce energy conservation technologies,
- (VI) New qualified plug-in electric drive motor vehicles, qualified plug-in electric vehicles, or their components, and
- (VII) Other advanced energy property designed to reduce greenhouse gas emissions as determined by the Secretary

And the total amount of credits may not exceed (d)(1)(B) \$2,300,000,000

And (3) projects will be taken into consideration insofar as (B)

- (i) they provide the greatest domestic job creation,
- (ii) provide the greatest net impact in avoiding or reducing air pollutants or anthropogenic emissions of greenhouse gases,

- (iii) have the greatest potential for technological innovation and commercial deployment,
- (iv) have the lowest levelized cost of generated or stored energy, or measured reduction in energy consumption or greenhouse gas emission, and
- (v) have the shortest project time from certification to completion

But (e) no credit will be allowed for any investment which already is allowed a credit under section 48, 48A, or 48B

Sec. 1603. Grants for Specified Energy Property in Lieu of Tax Credits (p. 250)

(a) the Secretary of the Treasury will provide a grant to each person who places in service specified energy property to reimburse such purpose for a portion of the expense of the property, with the grant equal to (b)(2)(A) 30 percent for properties of style 1-4 as specified below or (B) 10 percent in the other instances, with the property styles outlined as: (1) any qualified property per section 48(a)(5)(D) of the Internal Revenue Code of 1986, (2) is a qualified fuel cell property, (3) solar property, (4) qualified small wind energy property, (5) geothermal property, (6) microturbine property, (7) combined heat and power system property, or (8) geothermal heat pump property

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