The Vehicle Miles Tax: The Unintended Consequences of Paying as You Drive

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Introduction

In the vast American landscape we have become dependent upon transportation. Roads and vehicles are a metaphor for the way Americans live. We are a mobile culture with a ‘go west’ mentality. Driven by images of freedom – riding down the highway with the convertible top down, wind blowing through hair while listening to Springsteen – our heroes are James Dean, Steve McQueen, and the Corvette. Former President George W. Bush was mistaken when he said Americans are addicted to oil\(^1\) – we are not addicted to oil, but we are in love with the car and the freedom it brings.

This article will discuss the energy problem that has developed in this country and the world, partially because of automobile tailpipe emissions. This article will also discuss the courses that the federal government has taken and what it may do in the future to combat this energy problem; the consequences of certain proposed government programs aimed at preserving resources such as oil; and the constitutionality of these proposed programs.

America is a country founded in part upon the desire for freedom to exercise religious beliefs, join economic pursuits, and to explore our world. Since our founding, we have been a people who pursue our dreams. But in pursuing our dreams and exploring our world we have inflicted damage on that very world we seek to enjoy. In the building of our nation, infrastructure, and economy, we have depleted many of the resources we have been given – resources such as oil and gas – resources that will eventually run out. We love cars and trucks. We need oil. But if we are to keep our country strong and competitive in the world markets, we must be able to sustain our level of growth. In an economy that relies so heavily on oil and gas

\(^{1}\) President George W. Bush, Address Before a Joint Session of the Congress on the State of the Union (Jan. 31, 2006) (“Keeping America competitive requires affordable energy. And here we have a serious problem: America is addicted to oil, which is often imported from unstable parts of the world. The best way to break this addiction is through technology.”).
production, America will not be able to sustain itself on non-renewable resources like oil.\textsuperscript{2} With this knowledge comes the responsibility to do something.

\section*{I. America Will Eventually Run Out of Non-Renewable Energy Sources}

The fact that we will run out of non-renewable energy sources means that we must start acting soon, but we must be careful how we act – we need to be mindful of the unintended consequences that might flow from our well-intentioned attempts at regulating energy consumption. We need to be mindful of the economic consequences of our decisions as well as the environmental consequences.

\subsection*{A. Positive Steps the Government is Taking to Solve the Energy Problem}

For example, there exists the possibility of using unconventional oils that require extraction from shale deposits and tar sands like the ones that can be found in Alberta, Canada – home of the third largest crude oil reserve in the world.\textsuperscript{3} However, using unconventional oils is very harmful to the planet.\textsuperscript{4} The extraction of unconventional oils is more harmful to the environment than conventional oils because of the extra infrastructure needed for the extraction process.\textsuperscript{5} There are other beneficial alternatives to using unconventional oils, and there are agencies and programs in place to support the use of renewable energy sources in order to sustain

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\textsuperscript{3} Id. at 268; \textit{Oil Sands}, \textsc{Government of Alberta} (2011), http://www.energy.gov.ab.ca/OurBusiness/oilsands.asp.

\textsuperscript{4} Sims, \textit{Supra} note 2 at 268.

\textsuperscript{5} Id.
\end{footnotesize}
our energy needs. The following section will discuss some of the available options to solving our energy problem.

i. Finding Renewable Sources of Energy

A problem that occurs with using renewable sources of energy is the fact that their use tends to be difficult to implement in the marketplace; it is difficult to make the use of renewable sources of energy worth the cost of implementation. However, there are some renewable energy sources that are plentiful, cost-effective, and widely used in the market today. Some of these renewable energy sources are: hydrogen, woody biomass combustion, geothermal energy, landfill gas, crystalline silicon photovoltaic, solar water heating, onshore wind, and bioethanol from sugars and starch. Along with these readily available and highly used sources of renewable energy are other renewable energy sources that America is technologically prepared to use, but because world markets are only just starting to develop, their use has been minimal thus

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7 Sims, supra note 2 at 272.

8 Biomass is material derived from living, or recently living organisms. Biomass is the world’s major source of food, stock fodder and fiber, as well as a renewable resource of hydrocarbons that can be used as a source of heat, electricity, liquid fuels, and chemicals. Biomass sources include residues from forests and farms as well as the organic component of municipal solid waste. Once processed, these biomass materials come in the form of solid fuels like chips, pellets, briquettes, and logs; or in the form of liquid fuels like ethanol, methanol, butanol, and biodiesel; or in the form of gaseous fuels like synthesis gas, biogas, and hydrogen. In addition, these biomass materials can be converted into electricity and heat. Id. at 275-77.

9 Geothermal energy refers to natural heat-producing reservoirs under Earth’s surface. These reservoirs have been used for direct heat extraction for heating buildings, industrial processing, and domestic water and space heating. Re-injection of fluids can make some of these reservoirs self-sustaining if extraction of the heat does not exceed the rate of natural replenishment of the reservoir. As drilling technology continues to develop, drilling as far down as eight kilometers to magma resources may become cost-effective, as well as drilling down to hot dry rocks, injecting water, and creating steam. Improvements in techniques of extraction of geothermal resources are expected to increase and improve the uptake of these resources. Id. at 277-78.

10 Solar photovoltaic energy refers to the energy that is generated by converting energy from the Sun’s rays into usable electricity; in more technical terms solar photons are used to create free electrons in a cell. This is distinguished from solar thermal electric energy, which uses heat from the Sun’s rays to create usable electricity. Currently this type of photovoltaic energy generation can only be done at approximately fifteen to eighteen percent efficiency, but combining solar thermal and solar photovoltaic generating systems into one unit could make the system more efficient. Id. at 279.

11 Sims, supra note 7.
far. These sources of renewable energy, for which markets are still developing, include: municipal solid waste-to-energy programs, anaerobic digestion,\(^{12}\) biodiesel, co-firing of biomass, concentrating solar dishes and troughs,\(^{13}\) solar-assisted air conditioning, mini and micro hydro power, and offshore wind.\(^{14}\) There are still other methods of renewable energy use that are beneficial to the planet, but are only being used in small-scale commercial operations. Some of these include: tidal range and currents, wave power, biomass gasification, pyrolysis,\(^{15}\) bioethanol from ligno-cellulose,\(^{16}\) and solar thermal towers.\(^{17}\) Further renewable sources of energy such as organic and inorganic nanotechnology solar cells, artificial photosynthesis, biological hydrogen production involving biomass, algae and bacteria, biorefineries,\(^{18}\) ocean thermal and saline gradients,\(^{19}\) ocean currents, biomethane and animal fats, are all still in the research stage, but may become feasible and marketable sources of renewable energy in the future.\(^{20}\) The point is that there are many options available – many alternatives to using unconventional oils, which are very harmful to the planet, and that the planet will not be destroyed beyond repair if we do not stop using fossil fuels now. We do not have an energy crisis, we have an energy problem. We do not need to legislate the use of gasoline and other fossil fuels out of existence in order to save the

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\(^{12}\) Anaerobic digestion is the process by which microorganisms break down biodegradable material and release energy without the use of oxygen.

\(^{13}\) The proportion of solar radiation that reaches the surface of Earth is approximately 10,000 times the annual global energy consumption (as of 2007). Because of this it is estimated that if one percent of Earth’s desert areas were covered by parabolic mirrors designed to collect the Sun’s thermal energy, these energy-collecting mirrors could meet the world’s energy needs until 2030. *Sims, supra* note 2 at 278.

\(^{14}\) *Sims, supra* note 11 at 272.

\(^{15}\) Pyrolysis is the decomposition of organic material that simultaneously changes the physical and chemical properties of the decomposing material without using oxygen.

\(^{16}\) Ligno-cellulose is plant matter used to produce bioethanol.

\(^{17}\) *Sims, supra* note 11.

\(^{18}\) Biorefineries convert biomass into biofuels.

\(^{19}\) Saline gradient power is the power that is generated by exploiting the scientific properties of salt in ocean water.

\(^{20}\) *Sims, supra* note 17 at 272.
environment and wean ourselves off non-renewable resources. We do need, however, to continue developing the use of renewable energy sources.

ii. **Rewarding Electric Vehicle Purchasers**

To get away from our dependence on non-renewable energy sources, the use of renewable energy sources should be rewarded rather than punishing the use of non-renewable sources. Positive reinforcement should be favored over negative reinforcement. Because of the current nature of the automobile, gasoline is a highly used fossil fuel that is being depleted and damaging the environment due to the amounts of carbon released during combustion. In order to correct the damage being done to the environment, we should be rewarding people who use modes of transportation that do not use gasoline. We should reward people for buying electric vehicles instead of gasoline-powered ones.

**Why Electric Vehicles are Beneficial**

Electric vehicles are good for the economy and the environment, and here is why: (1) Electric vehicles are cost-effective. Electric vehicle owners annually pay about one third for the electricity they use to power their cars than gasoline-powered car owners pay for fueling their cars. (2) The electricity used to power electric vehicles is locally generated, rather than bought from a foreign country. Since electric vehicles use electricity instead of gasoline produced from foreign oil, the increased use of electric cars will decrease our dependency on foreign oil, and increase the use of *domestic* electricity, keeping our American dollars on American soil. (3) Electric cars have zero tailpipe emissions, something that cannot be said for any gasoline-

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21 *Id.* at 265.
23 *Id.*
24 *Id.*
powered car. Electric vehicles can be charged overnight, taking advantage of off-peak electric bill rates, further saving the electric vehicle owner money. Having an electric vehicle means no more trips to the gasoline pumps will be necessary – just charge it at home. Electric vehicles are economical and good for the environment; those who develop them and improve their efficiency should be rewarded, as should the consumers who buy them.

iii. Awarding Tax Credits for Alternative Fuel Producers

One positive reinforcement tool that the government is using to help solve the energy problem is rewarding producers of alternative fuels. These rewards come in the form of tax credits for entities that produce alternative types of fuel such as alcohol-based fuels and biodiesel. The effect of these tax credits is to reward farmers and other business owners who power their vehicles by means of diesel and alcohol, which are better for the environment, instead of using regular gasoline. It is this type of alternative thinking that should be rewarded.

iv. Rewarding Manufacturers for Producing Electric Vehicles

There are manufacturer incentive programs in existence to further propagate the manufacturing and use of electric cars and to encourage automakers to exceed fuel efficiency standards. If it is not economically feasible to research, design, and manufacture new products like electric vehicles, automobile manufacturers will have no reason to invest in such research,

\[\text{\footnotesize 25 Id.}\]
\[\text{\footnotesize 26 Id.}\]
\[\text{\footnotesize 27 Id.}\]
\[\text{\footnotesize 29 Id.}\]
\[\text{\footnotesize 30 See, id.; Diesel is better for the environment than regular gasoline because diesel engines generally go farther per gallon than gasoline engines, resulting in less greenhouse gas emissions overall. But it is debated that diesel engines are better for the environment overall because of other considerations like the sulfur content of diesel, carbon emissions, and the more difficult processing that diesel fuel requires. Basically, diesel does not burn as cleanly as gasoline. See, Brendan Koerner, Will Diesel Save the World? SLATE (April 1, 2008), http://www.slate.com/articles/health_and_science/the_green_lantern/2008/04/will_diesel_save_the_world.html; Czerne M. Reid, Study Refutes Notion That Diesel-Powered Vehicles Are Better for the Environment, STANFORD UNIVERSITY REPORT (Feb. 11, 2004), http://news.stanford.edu/news/2004/february11/jacobson-211.html.}\]
\[\text{\footnotesize 31 See, e.g., 49 U.S.C.A. § 32903}\]
design, and production. Continued incentives need to be given to automobile manufacturers to enable them to continue researching and designing new electric vehicles, while still being allowed to develop gasoline-powered vehicles and remaining profitable as a business.

v. Rewarding Consumers for Buying Electric Vehicles

Due to the fact that electric vehicles have a very limited driving range – the only mainstream pure electric vehicle on the market today has an EPA-estimated range of seventy-three miles on a charge, reward consumers for switching to electric vehicles is necessary to increase the amount of electric vehicles that will be purchased. Reports show that consumers are still hesitant to buy electric vehicles, so they need additional incentives to ease their minds of the worries they have about the difficulties of being an electric vehicle owner. One of the main problems consumers have with electric vehicles is “range anxiety” – the fear of an electric vehicle running out of power before the driver reaches the destination. For example, the Nissan Leaf, which has a range of over seventy miles, might be ideal for someone who lives in a city and only makes short trips. An option for the more adventurous is the exciting Chevrolet Volt, which can go thirty-five miles on a single charge and then uses its very efficient gasoline motor to finish the journey when the electricity runs out. A concern closely associated with range anxiety is the absence of electric vehicle charging stations. If you are a Nissan employee who lives within seventy miles of the Smyrna, Tennessee plant that builds the Leaf, you might not

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32 James R. Healey, Americans Say ‘No’ to Electrics Despite High Gas Prices, USA TODAY (May 25, 2011, 3:35 PM) (referring to the Nissan Leaf, a vehicle currently being imported from Japan, but will be built in Smyrna, Tennessee, in 2012, which has a current range of just over seventy miles per charge), http://www.usatoday.com/money/autos/2011-05-24-most-americans-refuse-electric-cars_n.htm.


34 See, supra note 33.

have this concern, because Nissan is building solar-assisted charging stations so employees can drive their Leafs to work, recharge, and drive home.\footnote{36 Nissan Constructing 30 Electric Vehicle (EV) Charging Stations at Two Corporate Tennessee Locations, BOSTON HERALD BLOGS (May 24, 2011), http://www.bostonherald.com/blogs/lifestyle/behind_the_wheel/?p=1674.} But for everyone else, charging stations are a big concern. This is why we need more programs like the American Recovery and Reinvestment Act (ARRA), which is subsidizing the installation of charging stations around the country.\footnote{37 123 Stat. 115 (2009).} Because of the ARRA, electric vehicle owners can now drive their vehicles to stores like Kohl’s, which now has thirty-three charging locations, and charge their vehicles at no cost while they shop.\footnote{38 Heather Clancy, Kohls Plugs In Electric Vehicle Charging Stations, ZDNet (Dec. 15, 2011), http://www.zdnet.com/blog/green/kohls-plugs-in-electric-vehicle-charging-stations/19649; Kohl’s Department Stores Piloting Electric Vehicle Charging Stations at 33 Stores, THE CORPORATE SOCIAL RESPONSIBILITY NEWSWIRE (Dec. 15, 2011), http://www.csrwire.com/press_releases/33504-Kohl-s-Department-Stories-Piloting-Electric-Vehicle-Charging-Stations-At-33-Stores.} But thirty-three stations nationwide are not enough to assuage range anxiety for most users, hence the need for more programs that fund the development of charging stations.

vi. Mandating MPG Requirements

An additional tool in the hands of the government to ensure that auto manufacturers are not irresponsibly propagating the use of fossil fuels is to mandate that automotive companies meet certain fuel efficiency standards that apply to all models of vehicles they manufacture.\footnote{39 See, e.g., 49 C.F.R. § 533} By regulating fuel efficiency standards, the government may not be able to vastly reduce greenhouse gas emissions and the use of fossil fuels, but it can at least keep them at a reasonable level. The National Highway Traffic Safety Administration (NHTSA) and the Environmental Protection Agency (EPA) have passed regulations mandating that new trucks and cars manufactured in the United States are to meet progressively higher fuel efficiency standards year after year.\footnote{40 See, eg., id.; 40 CFR § 86 et seq.} Mandating that fleet vehicles, which are bought by companies and law enforcement agencies,
meet certain emissions and fuel efficiency requirements makes sense, but mandating that manufacturers build new passenger vehicles that meet certain fuel efficiency standards is superfluous because consumers want to buy more fuel-efficient vehicles.\textsuperscript{41} Because consumers want to buy fuel-efficient vehicles it would be redundant to force automobile manufacturers to make more fuel-efficient cars; manufacturers stay in business by making vehicles that consumers want to buy. If no one buys their vehicles, they will not remain profitable. Nevertheless, ensuring that automobile manufacturers stay within reasonable limits and are responsible in deciding how efficient to make their vehicles is good policy because it shows that the government cares about the health and safety of the people and the environment.

**There Are Many Options**

Plainly, there are many options at the government’s disposal when it comes to solving the energy problem, but with the advance in vehicle technology and the increase in the gas mileage of new cars, a catch-22 arises. With cars getting better gas mileage, drivers will be paying less tax on gasoline, which means there is less revenue to maintain roads. Currently, revenue levels are falling short of the necessary amount needed to sustain our nation’s roads.\textsuperscript{42} With this being said, the government needs to do something about the problem. However, there are some courses the government wishes to take, but which it should avoid for policy reasons and the negative effects these planned courses of conduct will have.

**B. Courses the Government Should Avoid**

**i. Instituting a Vehicle Miles Tax**


The Government should not institute a mileage-based tax on automobile drivers. Rhode Island has proposed a bill that would charge its citizens based on the miles driven in their vehicles regardless of whether those vehicles are powered by electricity or gasoline, and Washington, Oregon, and Georgia have already implemented pilot programs to observe the effects of paying as you drive. Rather than (or in addition to) paying tax on gasoline at the pump, consumers would pay by the mile. States are not the only entities proposing a Vehicle Miles Tax. Congress created The National Surface Transportation Policy and Revenue Study Commission in 2005 under section 1909 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act—A Legacy for Users (SAFETEA-LU). The Commission recommends that the federal gasoline tax be increased – something that has not happened since 1993, by forty cents per gallon. The Commission is hesitant to endorse a vehicle miles tax and other non-traditional fuel taxes until further experimental programs will show the real-life, practical effects of the implementation of a vehicle miles tax. It has been posited that the optimal gasoline tax in America should be just over one dollar per gallon, as opposed to the current forty cents per gallon average throughout the United States. Considering the gasoline tax in the United Kingdom is over two dollars and fifty cents per gallon (when factoring current currency exchange rates), and the fact that the American gasoline tax has not been raised since

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43 2009 RI H.B. 7845 (NS).
45 See, id.
46 PL 109-59 2005 HR 3; 23 USCA § 101.
48 Transportation for Tomorrow: Report of the National Surface Transportation Policy and Revenue Study Commission 210 (Dec. 2007).
1993, it seems that it is time to raise the gasoline tax here in the United States. Raising the gasoline tax is the simple and more equitable solution – it spreads the burden of extra taxation across the driving population rather than burdening one segment of the population – rural commuters, the details of which will be discussed below. But the Commission also recommends instituting a vehicle miles tax, which also sounds like an equitable solution. However, although this idea might seem very fair at first glance, it could bring many unintended consequences.

1. **A Vehicle Miles Tax Overburdens the Poor**

One unintended consequence of a Vehicle Miles Tax (VMT) is that it overburdens one segment of the population, a segment not in need of further burden – the poorer people of our society. This proposed legislation would overburden the poor – specifically the poor in rural areas who must drive to work. There are no public transportation systems in half of rural counties nationwide, and because some public transportation lines normally operate under restricted hours, there are no public transportation options in most cities for those who work jobs with irregular hours – they must drive cars to work. The majority of the few rural transportation lines that exist only operate in single counties or are limited in scope to specific cities or towns. To further complicate things, the lines that do exist can be confusing and might not take passengers to certain important locations like airports. But the wealthy and those who can afford to live in cities are not affected. The wealthy class that lives in the suburbs can continue to drive their imported European automobiles while the wealthy who live in metropolitan areas can continue to walk or bike to the office. Because most rural commuters

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53 *See, e.g.*, supra note 51.
have no options from which to choose other than commuting by car, they would be disproportionately overburdened by a tax that charges them per mile.

2. A Vehicle Miles Tax Reduces Incentives to Buy Electric Vehicles

Another reason a mileage-based tax should not be imposed is because a pay as you drive system will reduce consumer incentives to buy electric vehicles. And in a market in which more than half of consumers would not even consider buying an electric car regardless of how high gas prices reach, potential buyers will need all the incentives they can get in order to change their minds and start buying electric cars. One of the main incentives for buying electric is that the per-mile cost of an electric vehicle is about one-third the cost of a gasoline vehicle. But by charging electric vehicle owners at the same rate as gasoline vehicle owners we are essentially tilting the balance back toward buying gasoline-powered vehicles, which is contradictory to a policy of trying to wean Americans off fossil fuels. If we tax fuel consumption alone and do not tax miles driven, then electric vehicle owners only pay for the electricity used to charge their vehicles, while gasoline users are paying for their gas at the pumps and being taxed. By charging per mile, we level the playing field: ‘you pay to fill up your car with electricity, and I’ll pay to fill mine up with gasoline, and we all pay by the mile.’ But the main incentive for consumers to buy electric vehicles is that electricity is much cheaper than gasoline. Part of the reason gasoline is much more expensive than electricity is the amount of tax that is included in the price paid at the pumps. If the tax that is now charged at the gasoline pumps will in the future be

54 Dennis Jacobe, IN U.S., HIGH GAS PRICES MAY MAKE MANY GET FUEL-EFFICIENT CARS, GALLUP (MAY 23, 2011) (finding that fifty-seven percent of polled Americans would not buy an electric car that could only be driven for a limited number of miles at one time), http://www.gallup.com/poll/147746/high-gas-prices-may-fuel-efficient-cars.aspx.
56 Id.
charged on the road by the mile, the difference in the price of gasoline and electricity will be much closer, reducing the benefits that potential electric vehicle buyers would have received by going electric. Because electric vehicles are better for the environment than gasoline vehicles, a mileage-based tax that reduces the incentives to buy electric vehicles is in opposition to policy of being environmentally responsible and would further this country’s dependency on foreign oil.

3. **A Vehicle Miles Tax Reduces Manufacturer Incentives to Build Electric Vehicles**

It follows that if consumers have few incentives to buy electric vehicles, manufacturers will have less of an incentive to make them. If electric cars were not in demand, then why would anyone make them and try to sell them? In a market that is finding electric vehicles to be a tough sell,\(^{57}\) we need to encourage the sale and production of electric vehicles as much as possible. The effect of enacting a mileage-based tax will be the reduction of automakers producing electric vehicles, furthering the nation’s dependency on foreign oil.

4. **A Vehicle Miles Tax Reduces Incentives to Buy Efficient Gasoline-Powered Cars**

For those consumers who will never purchase an electric vehicle, but wish to have a gasoline-powered vehicle, fuel-efficiency may be a deciding factor in which vehicle to buy.\(^{58}\) High gasoline prices result in consumers buying vehicles that are more fuel-efficient.\(^{59}\) But if a vehicle miles tax is instituted, fuel-efficiency will be less of a factor because the driver of a gas guzzler will pay the same road tax as the driver of a fuel-efficient car. This de-incentivizing to buy efficient vehicles is against public policy of being environmentally responsible.

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Possible Benefits of a Vehicle Miles Tax

Despite the many negative economic and environmental effects that pay-as-you-drive legislation may have, there are potential benefits of this type of taxation system. Perhaps the most obvious benefit is that less fossil fuel will be consumed. It is generally true that the more something is taxed, the less it will be purchased. To decrease the amount of cigarettes bought, increase taxes on cigarettes. To decrease the amount of fuel consumed, increase taxes on fuel. If people have to pay per the mile, they will drive less,\(^6^0\) therefore consuming less fossil fuel. Some authors have proposed that a vehicle miles tax is a more economically efficient tax than a gasoline tax because it causes people to drive less, causing fewer automobile collisions, and less wear and tear on roads.\(^6^1\) Drivers can reduce the amount of gasoline tax they pay by buying an efficient vehicle, but cannot avoid a vehicle miles tax because every time they venture out on the road, they will have to pay a tax no matter how efficient the vehicle is. However, a vehicle miles tax is only more economically efficient than a gasoline tax if drivers can choose to drive less. Rural commuters do not have a choice in how much they drive, thus they will not be induced to drive less because of the vehicle miles tax. They will still be an economic burden due to their wear and tear on the roads and their increased likelihood of causing traffic collisions because of how many miles they drive.

A side effect of driving less and consuming less fossil fuel is cleaner air because of a decrease in automobile-caused greenhouse gas emissions. But due to the fact that there are current systems in place for the use of renewable energy sources, and there is research advancing to develop renewable sources of energy discussed in this section, it is not necessary to

\(^6^0\) This has proved true regarding pay-as-you-drive insurance premiums. See Jason E. Bordoff, Pay-As-You-Drive Legislation is a Win-Win, BROOKINGS (February 12, 2011), http://www.brookings.edu/opinions/2009/0212_pay_as_you_drive_bordoff.aspx.

\(^6^1\) See Perry & Small, supra note 49, at 15.
immediately wean the American populace off oil. The negative economic consequences and the burden placed on the underprivileged class of Americans that results from a mileage-based taxation system for drivers far outweigh any positive environmental impacts that might be seen. Rather than punishing consumers for buying gasoline and driving, we should reward those consumers and manufacturers for using alternative energy sources.

ii. Mandatory MPG Requirements for Manufacturers

Although there is a great need for the government to encourage a policy of responsibility and good stewardship of our planet, there are unintended consequences that will occur from government-mandated MPG requirements. Creating strict regulations for automobile manufacturers is counter-productive to the auto industry.\(^\text{62}\) Lack of cost-effectiveness to make and sell electric vehicles, and uncertainty about fuel availability add to the difficulties present in trying to make and sell cars fueled by anything other than gasoline.\(^\text{63}\) Add these problems to the fact that most consumers would not buy an electric vehicle no matter how expensive gasoline is,\(^\text{64}\) it becomes clear that requiring auto manufacturers to meet certain MPG requirements and develop new technology places a heavy economic burden on manufacturers. In much the same way that a mileage-based tax system constricts economic growth and is counter-productive to the actual reasoning behind such policy, government involvement and mandating MPG requirements for automakers is also counter-productive and economically restrictive.

A further unintended consequence of mandating MPG requirements is that cars will achieve higher MPG capabilities and use less gasoline. As cars begin to use less gas, drivers will need to buy less gas. As drivers buy less gas, they pay fewer taxes on gas. But taxes on gasoline


\(^\text{63}\) Id.

\(^\text{64}\) See, supra note 33.
go toward funding very important structures, namely – roads. So consumers get to drive their fuel-efficient cars farther than ever before on roads that are getting proportionally less funding than ever before. So the solution looks simple – tax drivers by the miles they drive rather than at the gas pumps. But as we have seen thus far, this solution creates more problems than it solves; furthermore, it allows the government to sidestep the problem entirely. The government is able to show that it is being conscientious about the environment, while appearing fair (although it is unfairly taxing rural commuters), and pointing the finger at the bad guys – automakers who do not build fuel-efficient cars (although no one wants to buy them).

In sum, it is better to reward good behavior than to punish bad behavior. Rather than taxing people by the miles they drive and mandating auto manufacturers build cars consumers do not want, the government should focus on developing renewable sources of energy.

iii. Toll Passes & Road Congestion Charges

One might propose to increase the amount of toll roads to sustain the level of revenue required to maintain roads, while at the same time deterring drivers from burning so much gasoline and adding to traffic congestion, increasing the risk of collisions. One might also propose the implementation of a congestion charge that drivers must pay to use roads in high traffic areas to deter drivers from traveling during busier hours and to raise revenue. A look into the British system of congestion charges will show the difficulties and negative consequences of implementing a congestion charge scheme like the scheme in London.

Drivers entering London are charged a flat rate of five British pounds or about seven American dollars and fifty cents per day for the use of roads within the Inner Ring – an area of central London covering about eight square miles. The road user charge applies for every day

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that the driver enters the charge zone during peak traffic hours – between 7:00 AM and 6:30 PM. The road user charge applies to those who live within the Inner Ring, but they receive a ninety percent discount unless they are able to park their cars in a private parking garage or in their own driveway; then they are exempt from the charge completely. This means that a person living within central London who has to park a car on the street will still have to pay about one dollar per day, without even starting the car. Cameras using automatic number plate recognition technology (ANPR) read license plate numbers of vehicles entering the charge zone, sending drivers bills that must be paid by 10:00PM the same day, or else the driver will be subject to a late fee that is twice the price of the regular road-user fee. Despite the technologically advanced, ANPR system in place to reduce congestion and reduce travel times for commuters, traffic speeds in London are no different or at best show minor improvements in peak driving times than in off-peak times. The result of this London congestion scheme was approximately 200 million dollars in revenue for the year of 2005-2006, which is an impressive sum, but it does not account for any negative social impacts the congestion charge may have had. For example, people driving to work accounted for about thirty-six percent of travel passing through the congestion zone; fifteen percent were traveling to educational institutions; and thirty-one percent were visiting the city to make purchases. So the result of the congestion tax is to penalize over eighty percent of total commuters, who are traveling into the city to either spend money, make money, or further their education. Rather than imposing congestion fees or

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66 Id.
67 Id. at 6.
68 Id. at 5-6.
69 Id. at 8; but cf., Central London Congestion Charging, Impacts Monitoring: Fourth Annual Report, Office of the Mayor of London 4 (June 2006) (showing improvements in congestion rates, but longer trip times per kilometer since the implementation of the congestion scheme, as part of a long-term trend).
70 Supra, note 69, Central London Congestion Charging at 2.
71 See Blow, supra note 65 at 14.
road user fees, the author recommends considering a more equitable solution – one that uses an optional toll system to combat traffic congestion.

Millions of drivers use toll systems such as E-Z pass and other toll systems, which seem to work just fine, although there are some people who cheat the system. But people who use these systems have chosen to use them in order to avoid the hassle of paying for the use of toll roads every time they use the road. Instead, many regular toll road users elect to pre-pay, saving them time and money. E-Z pass users simply attach a device to their windshield that is automatically scanned as they drive past the lines of non-E-Z pass users waiting to pay at the toll booths. The user is charged for the use of the toll road and the corresponding amount is then deducted from the user’s account. This is essentially a pay-as-you-drive system, but it is optional. Rather than penalizing drivers for driving during the busiest parts of the day – when people are driving to and from work – a system could be set up that allows drivers who choose to do so, to pay a toll for the use of High Occupancy Toll (HOT) lanes, allowing them to bypass more congested traffic, but only if they pay for that privilege. This alternative to a vehicle miles tax avoids the implementation of an indiscriminate congestion charge, which would penalize people for going to work, and rewards those drivers who choose to pay for HOT lanes with the use of lanes that are presumably less-traveled, therefore more free-flowing. It also avoids imposing a burden on those who must travel longer distances to work, the rural commuters discussed above. The rural commuter who cannot afford to pay for the use of HOT lanes must

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75 Id.
The use of HOT lanes has the potential to generate billions of dollars in revenue nationwide and avoids the problems arising from the vehicle miles tax.\footnote{\textit{See} Rouse, \textit{supra} note 72 (Orlando, Florida generated $872.2 million from toll roads in one year).}

\section*{II. Constitutional Authority to Implement a Vehicle Miles Tax}

If the federal government implements a pay as you drive system of taxing automobile drivers, it must enforce the system. There are limited options available in keeping track of how many miles each vehicle has been driven. The first option is to mandate that car owners must bring each vehicle to an inspection station for a periodic odometer check to verify how many miles the vehicle has been driven. Once each car’s odometer has been checked, the owner would be given a bill based on the miles driven. The second option is to install a Global Positioning Satellite (GPS) unit into every car that periodically sends data to whatever entity is responsible for collecting such data, and sending the owner a bill. Both options raise several problems.

Option 1 could work provided there are plentiful inspection stations available to which drivers may bring their cars. Many states already have periodic vehicle safety inspection regulations, and already have inspection stations in place. So if this legislation is enacted state-by-state and not federally, those states that already have inspections stations and choose to implement the pay as you drive program, will not have much difficulty in putting this program into practice. But if a mileage-based tax were imposed by the federal government, many states would have practical difficulties implementing this program, not to mention the extra costs that would be involved. And because the federal Government cannot compel the States to implement federal regulatory programs, the federal government will not be allowed to commandeer the state inspection stations that are already in place.\footnote{Printz v. U.S, 521 U.S. 898 (1997).} The Supreme Court said in \textit{Printz v. United States}, “opinions of ours have made clear that the Federal Government may not compel the States to
implement, by legislation or executive federal action, federal regulatory programs.”\textsuperscript{78} The Court continued by saying that in previous cases it, “sustained statutes against constitutional challenge only after assuring ourselves that they did not require the states to enforce federal law.”\textsuperscript{79} Because of these Supreme Court decisions, the federal government will have to build and run inspection stations if Option 1 is implemented, requiring periodic odometer checks. If the government wishes to avoid the hassle of building inspection stations, it may decide that it would be better to not worry about creating a nationwide infrastructure, but would rather enforce the collection of the Vehicle Miles Tax through the Internal Revenue Service (IRS) or an IRS-like branch. After all, we do not require taxpayers to come by an IRS office every year to report earnings, the IRS simply makes them send in a report of their earnings by the mail or Internet. The IRS relies on taxpayers to be honest and accurately report their earnings, and deters malfeasance by occasionally auditing people and inflicting punishment for those who deceive.\textsuperscript{80} People who lie to the IRS are subject to receiving a fine of up to $100,000 and three years in prison.\textsuperscript{81} To ensure that people accurately report their wages, W2 forms provided by the employer must be sent to the IRS. But if the government wishes to make individuals report the miles they have driven monthly or annually, there must be a way to ensure they are reporting accurately – there must be some documentation proving their honesty about the miles they have driven. With income tax, it is fairly easy to determine if a taxpayer has reported his or her wages accurately – the declared earnings of the employee are checked against the declared wages paid

\textsuperscript{78} Id. at 925.

\textsuperscript{79} Id. (referring to Hodel v. Virginia Surface Mining & Reclamation Ass’n, Inc, 452 U.S. 264 (1981) (concluding the Surface Mining Control and Regulation Act of 1977 was not an unconstitutional commandeering because it merely made compliance with federal standards a precondition to continued state regulation in an otherwise pre-empted field); and FERC v. Mississippi, 456 U.S. 742 (1982) (construing the provisions at issue in the Public Utility Regulatory Policies Act of 1978 to contain only the “command” that state agencies “consider” federal standards, and only as a precondition to continued state regulation in an already pre-empted field)).


\textsuperscript{81} 26 U.S.C. 7206.
by the employer, but with individuals and their vehicles, there will be no practical way to ensure that drivers report honestly and accurately unless they are required to have periodic odometer checks by an outside party like an inspection station.

Another problem with Option 1 and the honesty of individual drivers is that it assumes odometers will not be tampered with. Option 1 also relies on the accuracy of odometer readings. Odometers malfunction frequently, even in newer cars. A quick glance in the “How To” or “Do It Yourself” section of any number of automotive enthusiast Internet forums will show that odometer malfunctions are a frequent problem.\(^{82}\) Simply having tires that are larger than the original equipment size, having tires that are very worn down, or having an electrical shortage can cause an odometer malfunction that results in an inaccurate reading.

Option 1 raises some serious issues with practical application and enforcement of the Vehicle Miles Tax, but Option 2 raises several more serious problems. Option 2 involves placing an electronic tracking unit, a GPS device, inside every car within the jurisdiction enacting a vehicle miles tax. Because GPS technology is capable of being tampered with,\(^{83}\) using a GPS presents the same technological problems that Option 1 presents. Although the long arm of the federal government has a history of reaching into our cars and mandating the installation of safety devices such as airbags and seatbelts, it has never stretched so far as to mandate the installation of electronic devices that are capable of tracking every vehicle’s move. To show the difference in the government’s ability to mandate vehicle safety devices and their (in)ability to

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\(^{83}\) Transportation for Tomorrow: Report of the National Surface Transportation Policy and Revenue Study Commission 209 (Dec. 2007).
mandate installing GPS units, we must look to the policy reasons of past and current regulations and the history of the automotive industry.

Since the birth of the car over one hundred years ago, advances have been made that resulted in motor vehicles attaining dangerous speeds. While the primary purpose of the automobile was transportation, manufacturers began to push the limits of their vehicles. Safety took a back seat to power, acceleration, styling, and speed. In the quest to become faster, automakers focused on their vehicles’ capabilities rather than the safety of drivers. In 1966, Congress passed the National Highway Traffic Safety Act (National Safety Act) due to “the soaring rate of death and debilitation on the Nation’s highways.” Eventually included in the National Safety Act were bumper-to-bumper safety standards that included everything from indicator positions to seatbelt requirements; as well as requirements for the strength of other vehicle parts like roofs, seats, brakes, glass, and headrests. But the purpose behind these regulations was to “reduce traffic accidents and deaths” and injuries to persons resulting from traffic accidents. In addition to public safety reasons, the government found other reasons to regulate and limit the use of automobiles. In 1974, the government went so far as to impose a national fifty-five mile per hour speed limit to conserve fuel consumption. In the past few decades it has become widely accepted that the government can pass regulations related to the public safety. But the policy reasons that allow the government to enter our vehicles and place

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\[85\]
See, Id.

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See, e.g., 49 C.F.R. 571.101 (regulating indicator and display positions); Id. 571.102 (regulating the transmission shift position sequence, starter interlock, and transmission braking effect); Id. 571.205 (regulating glass glazing); Id. 571.207 (regulating seat position and strength); Id. 571.216 (regulating roof crush resistance); Id. 571.202 (regulating head restraint placement and angle).

\[88\]
87 Stat. 1046.

\[89\]
Not to mention its history of infringing on rights such as Miranda warnings when the public safety is in danger. See New York v. Quarles, 467 U.S. 649 (1984).
airbags and seatbelts in our cars do not extend to allowing the government to place GPS units in our cars. The government may regulate our vehicles for safety, not taxation.

**The Tax Power to Regulate Miles Driven**

If this pay as you drive plan were to be implemented at the federal level, questions of whether Congress has the power to tax in this situation would arise. However, the provisions of the taxing Act must be reasonably related to the collection of the tax, and not solely to the achievement of some other purpose plainly within state power,90 and it may not be declared unconstitutional because its effect may be to accomplish another purpose as well as raising revenue.91 The power to tax gasoline purchases clearly falls within the purview of Congress because of article 1, section 8 of the Constitution, which grants Congress the power to “lay and collect Taxes, Duties, Imposts and Excises.”92 But if Congress were to enact a statute that required citizens to pay by the mile, Congress would not be taxing gasoline purchases – it would be taxing distance travelled. A tax imposed by Congress must not be a penalty,93 but that is exactly what a miles-based tax would be: a penalty with the aim of limiting the miles that people drive in order to address the environmental concerns mentioned above. In *Bailey v. Drexel Furniture Company*,94 the Court struck down the Child Labor Tax Law because it was a penalty against employers that hired children under the age of sixteen.95 The Court asks the question of whether the law “impose[s] a tax with only that incidental restraint and regulation which a tax must inevitably involve,” or if it regulates as a penalty.96 The Court says that if the Act were an

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91 Doremus, 29 U.S. at 216.
92 U.S. CONST. art. 1, § 8, cl 1.
94 Id.
95 Id. at 43.
96 Id. at 36
excise on a commodity or other thing of value, it might not be able to infer that the tax was anything more than just that – a tax. But the regulation was not an excise on a commodity such as gasoline, but a regulation of labor with penalties imposed on those deviating from a prescribed course of conduct. Likewise, if Congress passes an Act that does not regulate a commodity such as gasoline, but instead regulates conduct – driving a car, it has instated a penalty, not a tax. The Court states

The difference between a tax and a penalty is sometimes difficult to define, and yet the consequences of the distinction in the required method of their collection often are important…. Taxes are occasionally imposed in the discretion of the Legislature on proper subjects with the primary motive of obtaining revenue from them and with the incidental motive of discouraging them by making their continuance onerous. They do not lose their character as taxes because of the incidental motive. But there comes a time in the extension of the penalizing features of the so-called tax when it loses its character as such and becomes a mere penalty, with the characteristics of regulation and punishment.

Such would be the case in the imposition of a miles-based tax. The motive of reducing the miles driven in vehicles, thereby reducing pollution and reliance on fossil fuel is not an incidental one. It would be the prime reason for the so-called tax, based on the environmental policy reasons mentioned above, thereby making it a penalty and not a legitimate tax.

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97 Ibid.
98 Ibid.
99 Ibid. at 38.
Commerce Clause Power to Regulate Miles Driven

If the federal government does not have the ability to pass a nation-wide miles-based tax due to its taxing power, the next logical place to look for the authority would be the Commerce Clause of the United States Constitution. The Commerce Clause gives to Congress the power to “regulate Commerce with foreign Nations, and among the several States, and with the Indian Tribes.”100 The Supreme Court has since held that Congress may regulate the channels of interstate commerce and the instrumentalities of interstate commerce.101 Channels refer to the means of the transportation such as canals and roads; and instrumentalities are the people or objects that move across state lines.102 So clearly county roads, state roads, and federally-created interstate highways are all channels falling within Congressional control for Commerce Clause purposes. Likewise, the people and goods that are using those roads are the instrumentalities of commerce, hence within the Commerce power of Congress, whether they are people driving to work or transporting commercial goods. Currently, the state of the law as given in Gonzales v. Raich103 is that the Commerce Clause allows the federal government to regulate activity, even if it is purely intrastate activity, if Congress has a rational basis for believing that the activity, in the aggregate, substantially affects interstate commerce.104 What this means for the Vehicle Miles Tax is that if Congress has any rational basis whatsoever for believing that citizens driving their cars or companies driving their trucks have a substantial affect on interstate commerce, Congress

100 U.S. CONST. art I, § 8, cl. 3.
101 See, e.g., U.S. v. Lopez, 514 U.S. 549, 558; Gibbons v. Ogden, 22 U.S. 1 (1824) (Stating that Congress may regulate the channels of interstate commerce, such as steamboat ferries travelling between states); Caminetti v. U.S., 242 U.S. 470, 491 (“[T]he authority of Congress to keep the channels of interstate commerce free from immoral and injurious uses has been frequently sustained, and is no longer open to question.”); Shreveport Rate Cases, 234 U.S. 342 (upholding Congressional authority to regulate intrastate transportation rates that negatively impact interstate commerce).
102 See, id.
103 545 U.S. 17 (2005).
104 Id.
can regulate how those cars and trucks are driven.\textsuperscript{105} It is obviously rational how people driving to work and truckers transporting commercial goods affect interstate commerce – people driving to their workplaces are generally doing so for economic purposes – to make money and to help their employer make money – they are indirectly affecting commerce; and truckers transporting goods are participating in economic activity that directly affects commerce, so meeting the rational basis test would not be hard to do in this situation.

**Freedom of Movement and Taxing by the Mile**

It might be that the installation of GPS devices and using those devices to tax by the mile infringes upon constitutional rights to interstate travel, intrastate travel, and freedom of movement. Federal case law supports the proposition that there is a constitutional right to interstate travel,\textsuperscript{106} but the Supreme Court has refused to decide whether there is a right to intrastate travel.\textsuperscript{107} Regardless, because the courts have refused to acknowledge any right to choose the most convenient mode of transportation,\textsuperscript{108} the states might not be infringing on citizens’ freedom of movement rights by placing GPS units in their cars as long as the citizens can walk, bike, or use public transportation. But here is where we come back to a problem already mentioned in this note, the fact that in rural areas of the country the car is the only reasonable mode of transportation. Those with no public transportation must drive their own vehicles (which would contain GPS devices), and pay tax by the mile. Freedom of movement has been defined by the Supreme Court as the right to free movement inside a nation’s frontiers.\textsuperscript{109}

\textsuperscript{105} Id.


\textsuperscript{108} City of Houston v. FAA, 679 F.2d 1184, 1198 (5th Cir. 1982); See, e.g., Berberian v. Petit, 374 A.2d 791 (R.I. 1977).

And although The Court has not explicitly recognized the right to freedom of movement, it has suggested that there is at least a fundamental right to travel by foot. \textit{Lutz v. York} acknowledged the constitutionally protected right to walk and extended this fundamental right to include a protected interest in driving a car. If a state imposes a regulation that mandates the installation of GPS devices into cars in order to tax drivers, the regulation will inevitably affect some people who do not have a choice in their mode of transportation – rural commuters. It is this class of people that might have an equal protection claim against the state’s imposition of this tax because it infringes on the right to travel. If the state’s imposition of a tax constitutes a penalty on the right to travel because it denies a basic necessity of life (being able to drive to work and earn an income) by making it impracticable or impossible to own or drive a car, this poorer class of people may have an equal protection claim.

\textbf{Reasonable Expectation of Privacy}

Perhaps the most important problem with government use of GPS devices to keep a log of miles driven on roads is the question of whether this violates citizens’ reasonable expectation of privacy. The 4th Amendment to the United States Constitution grants the right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures. \textit{Katz v. United States} provides an excellent example of the encroachment of modern technology upon persons’ reasonable expectation of privacy. Although Katz was in a

\begin{itemize}
\item See \textit{id}.
\item \textit{Lutz}, 899 F.2d at 266.
\item U.S. CONST. amend. IV.
\item 389 U.S. 347 (1967).
\end{itemize}
public place – a phone booth, it was determined that he had a reasonable expectation of privacy –
he expected that his telephone conversations would not be listened to via police wiretap. 118

The Supreme Court has warned of the dangerousness of the government’s use of
electronic surveillance in United States v. Bailey. 119 The Court stated, “[w]e think electronic
surveillance has such a potential for abuse that the Government must be held accountable for its
use.” 120 A case that appears to support the position that it is permissible for the government to
install GPS devices in citizens’ cars is United States v. Knotts, 121 which held that using a GPS
unit to monitor a persons’ movements in his or her vehicle is not a search in violation of the 4th
Amendment. 122 But a later decision that narrowed the Knotts decision is United States v.
Maynard, 123 which said, “Knotts held only that ‘[a] person traveling in an automobile on public
thoroughfares has no reasonable expectation of privacy in his movements from one place to
another, not that such a person has no reasonable expectation of privacy in his movements
whatsoever, world without end.’” 124 The court explained the difference of using a GPS to track a
person on a journey from one point to another versus using a GPS to track all of a person’s
movements along that journey:

First, unlike one’s movements during a single journey, the whole
of one’s movements over the course of a month is not actually
exposed to the public because the likelihood anyone will observe
all those movements is effectively nil. Second, the whole of one’s

118 Id.
119 628 F.2d 938 (1980).
120 Id. at 947.
122 Id. at 285.
123 615 F.3d 544 (2010).
124 Id. at 557 (quoting Knotts v. United States) (internal citations omitted).
movements is not exposed *constructively* even though each individual movement is exposed, because that whole reveals more – sometimes a great deal more – than does the sum of its parts.\(^{125}\)

Tracking one’s movements over a long period of time is like a video – we get to see how the subject got from point A to point B, and we see the subject at every point in between. But tracking a person from point A to point B is like a photo album – all we see is that the events happened, that the person got from point A to point B. What are not seen are all the private moments in between; the *what* is exposed, not the *how*. And this is an important difference because it is not reasonable for a person to expect that his starting point and destination will remain secret – one expects to be seen commencing the journey as well as arriving at the destination. But it is unreasonable to think that every moment along the journey one continuous observer has access to all the details of the trip – the start, the end, and all events in between. And GPS devices are certainly capable of doing just that – tracking every move.\(^{126}\) Although most consumer-oriented devices are not capable of being found by another device via live tracking, once there is a market for GPS devices to have live tracking, devices could be made with the purpose of being tracked from a central location in real time because the technology is readily available.\(^{127}\) If the government institutes a vehicle miles tax, the market for GPS devices with technology allowing them to be tracked from a tracking center would be immediately developed. This modern version of a Hansel and Gretel\(^ {128}\) tracking system is ready to be

\(^{125}\) *Id.* at 558.


\(^{127}\) *Id.*

\(^{128}\) The boy and girl in the Brothers Grimm tale who used trails of breadcrumbs and stones to find their way home. Some GPS devices, the Garmin Nüvi 1450 for example, keep logs of the GPS’s past movements and show a dotted trail, representing ground that has already been covered, on the map display.
developed, but because there is a reasonable expectation of privacy in people’s movements in their vehicles, the use of GPS devices to track vehicle mileage is unconstitutional.

III. Conclusion

For the policy reasons of taking care of our environment by reducing greenhouse gas emissions and reducing our dependency on fossil fuel, as well as for the upkeep of our nation’s highways, action must be taken. However, we must consider the unintended consequences of our actions. There are several beneficial options available to reduce the use of fossil fuels: finding and developing renewable sources of energy; rewarding electric vehicle purchasers and manufacturers; giving tax credits for alternative fuel producers; and regulating the efficiency of new vehicles. Because of the ease of implementing the above options we must be careful before considering instituting a vehicle miles tax or creating a congestion-charging scheme. A congestion-charging scheme would be detrimental because it punishes people for going to work, making purchases, and going to school. A vehicle miles tax would be detrimental because it: overburdens the poor; reduces consumer incentives to buy electric vehicles; reduces manufacturer incentives to build electric vehicles; and reduces incentives to buy fuel-efficient gas-powered vehicles. It is also very questionable whether a vehicle miles tax would be constitutional. Although a vehicle miles tax might be constitutional under the Commerce Clause, a vehicle miles tax could be considered a penalty, not a tax. A vehicle miles tax could also be a violation of the right to freedom of movement and reasonable expectation of privacy.

It is for the above reasons that any proposed vehicle miles tax should be avoided at all costs.