

THE ENERGY POLICY ACT OF 2005: THE PATH TO ENERGY AUTONOMY?

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INTRODUCTION

Most Americans only become interested in energy when either gasoline or heating prices increase. When prices remain stagnant, we assume that there are bountiful sources of energy and carry on with everyday life. Occasionally, we hear the doom and gloom experts predicting that catastrophe is on the horizon as consumers continue to deplete the world's resources at an alarming rate. Analogous to the price spikes caused by the oil embargoes of the 1970's and the Persian Gulf War in 1990, gasoline and heating prices increased to unexpected levels during 2003.¹ In the past, many analysts expected that the price of oil would soon decrease to original rates.² Today, these same analysts project gasoline and heating prices to remain at elevated levels, with the potential to increase at any time.³ There are several reasons for the price increases. Increasing demand for petroleum, terrorism, and the 2005 hurricane season have each played a factor in the recent volatility of the price of oil. Regardless of the causes, elevated prices have revealed to the public the very real possibility that the world is running out of oil.

In a 2003 interview, Matthew Simmons,⁴ one of George W. Bush's key energy advisors, was asked whether it was time for "Peak Oil"⁵ and the future of our nation's energy to become part of the public policy debate:

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1. Energy Information Administration, <http://www.eia.doe.gov/emeu/international/gas1.html> (last visited Nov. 15, 2006); Energy Information Administration, <http://www.eia.doe.gov/pub/forecasting/steo/oldsteos/jan03.pdf> (last visited Nov. 15, 2006).

2. Energy Information Administration, <http://www.eia.doe.gov/pub/forecasting/steo/oldsteos/aug03.pdf> (last visited Nov. 15, 2006).

3. Energy Information Administration, <http://www.eia.doe.gov/pub/forecasting/steo/oldsteos/oct06.pdf> (last visited Nov. 15, 2006).

4. Matthew Simmons is the founder and Chairman of the world's largest energy investment bank, Simmons & Company International, largely considered the most reputable and reliable energy investment bank in the world.

5. Peak Oil, a model first theorized by American geophysicist M. King Hubbert, is the point in time when extraction of oil from the Earth reaches its highest point and begins to decline. There have been differing viewpoints as to when global energy production will meet its peak. Hubbert theorized that production would peak in 2000, while others project the peak to occur in 2010. *See generally* Association for the Study of Peak Oil & Gas, <http://www.peakoil.net> (last visited Nov. 15, 2006).

It is past time. As I have said, the experts and politicians have no Plan B to fall back on. If energy peaks, particularly while 5 of the world's 6.5 billion people have little or no use of modern energy, it will be a tremendous jolt to our economic wellbeing and to our health—greater than anyone could ever imagine.⁶

When asked whether there was a solution to impending shortages in energy, Simmons went on to state, "I don't think there is one. The solution is to pray.... Under the circumstances, if all prayers are answered, there will be no crisis for maybe two years. After that it's a certainty."⁷ Unfortunately, Simmons' predictions materialized earlier than anticipated. Beginning in 2003 and continuing into 2006, the prices of oil and natural gas have increased approximately 100% with no upward ceiling in sight.⁸

In response to rising prices in gasoline and electricity, Congress passed the Energy Policy Act of 2005.⁹ Although hard to believe, America had gone over a decade without a national energy policy. Upon signing the bill, President Bush stated that the Energy Policy Act "launches an energy strategy for the 21st century" by providing a more "balanced approach" to energy conservation and production.¹⁰ The Act also aims to promote a cleaner environment by encouraging new innovations and alternative power sources. To meet these objectives, the Act provides economic incentives in areas ranging from petroleum exploration and development to future generation of nuclear power in the United States. There is little doubt that the purpose of the Energy Policy Act of 2005 is praiseworthy; however, the strategy, or lack thereof, for achieving the Act's objectives is plagued with shortcomings. Critics claim not only that the Act merely provides a patchwork of subsidies to petroleum and coal corporations, but also that it fails to provide a sound strategy for combating today's energy supply issues.¹¹

Part I of this Note will discuss the consequences of an impending global energy crisis, followed by an outline of the changes in U.S. energy policy over the last thirty years in Part II. Part III will then discuss the Energy Policy Act of 2005, providing a synopsis of its key components and a critical analysis of its shortcomings. Part IV of

6. FromTheWilderness.com, Behind the Blackout An Energy Investment Banker and Bush Energy Advisor Gives Unexpected Answers to the Northeast Power Grid, Peak Oil and Gas, and Much More, http://www.fromthewilderness.com/free/ww3/082103_blackout.html (last visited Nov. 15, 2006).

7. *Id.*

8. During 2003, the price of oil increased to approximately \$30 per barrel, while the current price of oil is approximately \$60 per barrel (\$59.86 as of Oct. 30, 2006). The average price of natural gas in 2004 was \$5.46 per million cubic feet; natural gas prices for the winter of 2005-2006 ranged between \$14 to \$16 per million cubic feet. Energy Information Administration: Official Energy Statistics from the U.S. Government, <http://www.eia.doe.gov> (last visited Nov. 15, 2006).

9. Energy Policy Act of 2005, 42 U.S.C.A. § 15961 (West Supp. 2006).

10. President Bush signed the Energy Policy Act of 2005 in Albuquerque, New Mexico at the Sandia National Laboratory on August 8, 2005. White House Press Release, President Signs Energy Policy Act, <http://whitehouse.gov/news/releases/2005/08/20050808-6.html> (last visited Nov. 15, 2006) [hereinafter "White House Press Release"].

11. In response to his review of the initial drafts of the Energy Policy Act in 2003, John McCain called the bill the "No Lobbyist Left Behind Act," claiming that the bill did not successfully address the "real-life challenges" faced by the United States. John McCain on the Energy Bill, <http://www.taxpayer.net/energy/energywatch.htm> (last visited Nov. 15, 2006); see also Michael Grunwald & Juliet Eilperin, *Energy Bill Raises Fears About Pollution, Fraud*, WASH. POST, July 30, 2005 at A01 (claiming that the Energy Policy Act was a broad collection of subsidies for United States energy companies, in particular, the nuclear and oil industries).

this Note will argue that a multifaceted approach, providing clear objectives and a sound strategy, should be adopted to combat these pressing issues. Hopefully, this Note will provide the reader with, at the very least, a rudimentary understanding of the dilemmas our nation and the industrialized nations across the globe face concerning global energy issues. This Note is written in an effort to increase awareness and debate concerning potential solutions to the energy crisis. Ultimately, for our sake and the sake of our children, we must confront and find a solution to this problem.

I. PETROLEUM'S ROOTS: DRAKE'S DISCOVERY TRANSFORMS THE WORLD

Colonel Edwin Drake is popularly credited with drilling the world's first oil well in 1859 near Titusville, Pennsylvania.¹² Drake's success set off an oil boom that spread throughout Pennsylvania and nearby states as "wildcatters"¹³ drilled for oil in nearby fields. Eventually, the demand for oil increased, leading to the formation of John D. Rockefeller's refining giant Standard Oil¹⁴ and wildcatting for oil throughout much of the United States. It is unlikely that Drake or his fellow drillers had any conception that oil, commonly referred to as "black gold," would become the lifeblood of global economies, the center of global policy throughout much of the world, and the bedrock of the United States' development during the 20th century.

In contrast to Drake's world, today's society is dependent on a plentiful and relatively cheap supply of oil. Petroleum is used everyday of our lives—it is not only the predominant form of energy used to fuel our automobiles and heat our homes,¹⁵ but is also used to generate electricity.¹⁶ Moreover, all plastic is petroleum-based and is used in several products: cars, houses, computers, toys, and clothing. Other uses for petroleum include asphalt, fertilizer, pesticides, herbicides, furniture, and paint. In other words, without petroleum, our current way of life would cease to exist. As history shows, the dependence on black gold has significantly affected the United States.

12. Although Colonel Drake is credited with the discovery of oil, many others had successfully drilled for oil prior to his Titusville discovery. The Chinese had drilled for oil as early as the 4th century using bits attached to bamboo poles. In fact, Drake was not even the first person to discover oil in North America. In 1858, a year before Colonel Drake's discovery, James Miller Williams built the first oil well in Ontario, Canada. See Wikipedia.org, Petroleum Drilling, <http://en.wikipedia.org/Petroleum#Drilling> (last visited Nov. 15, 2006).

13. "Wildcatters" is a term commonly used in the petroleum industry to describe individuals engaged in speculative well drilling in areas not known to be productive. See Society of Petroleum Engineers, http://www.spe.org/spe/jsp/basic/0,,1104_1710,00.html (last visited Nov. 15, 2006).

14. In 1911, the Supreme Court broke up Standard Oil, finding that Standard Oil was an "unreasonable" monopoly in violation of the Sherman Antitrust Act. *Standard Oil Co. of New Jersey v. United States*, 221 U.S. 1 (1911). Fractions of Standard Oil eventually became part of, or resulted in the formation of, many of the petroleum corporations today, including: ExxonMobil (both Exxon and Mobil), Chevron, Conoco, British Petroleum (Amoco), and Marathon Oil. Standard Oil Today, <http://www.us-highways.com/sohist1999.htm> (last visited Nov. 15, 2006).

15. In 2004, petroleum-based products contributed to approximately 40.2% of the energy used in the United States. Natural gas provided approximately twenty-three percent of the energy used in the United States during 2004. Energy Information Administration, <http://www.eia.doe.gov/neic/infosheets/petroleumproducts.htm> (last visited Nov. 15, 2006).

16. While coal is the primary fuel used to generate electricity in the United States, companies also use oil and natural gas. In 2004, oil and natural gas provided approximately twenty-one percent of the electricity in the United States. See Energy Information Administration, <http://www.eia.doe.gov/neic/infosheets/electricgeneration.html> (last visited Nov. 15, 2006).

Shortages of oil have created recessions in our economy¹⁷ and have been the basis for many global conflicts.¹⁸

Many analysts estimate that production of oil has peaked or will peak in the immediate future, eventually leading to a continuous reduction in the global supply of oil.¹⁹ The current world production of oil is eighty-four million barrels per day.²⁰ In the United States alone, the demand for oil is 19.7 million barrels per day,²¹ or approximately one-quarter of the world's supply.²² Alarming as this may be, it should not be surprising. The United States has the world's highest gross domestic product and is the world's largest exporter of goods. That said, the Peak Oil model, coupled with a global production of eighty-four million barrels of oil per day, is distressing considering that projected worldwide demand for oil will reach 111 million barrels of oil per day by 2025.²³ It is difficult to imagine that this projected demand will ever be met. In a February 2005 report entitled "Peaking of World Oil Production: Impacts, Mitigation, and Risk Management," the Department of Energy ("DOE") observed that, without timely mitigation, world supply/demand balance would be achieved through massive demand destruction (shortages) and drastic oil price increases, both of which could create a long period of significant economic hardship worldwide.²⁴

Decreasing supplies of petroleum have resulted in petroleum corporations undertaking significant risks to find new petroleum deposits.²⁵ Corporations justify

17. In both 1973 and 1979, oil shortages resulted in crises in the United States. During the 1973 oil embargo, the Organization of Petroleum Exporting Countries ("OPEC") reduced its supply drastically, causing the price of oil to quadruple. WTRG Economics, http://www.wtrg.com/oil_graphs/oilprice1947.gif (last visited Nov. 15, 2006). An Iranian revolution caused the 1979 shortage, prompting the price of oil to increase significantly and leading President Carter to institute price controls on the price of gasoline. See generally Department of Energy, <http://www.mbe.doe.gov/me70/history/1971-1980.htm> (last visited Nov. 15, 2006).

18. Beginning in the Carter administration, the United States became involved in several Middle Eastern conflicts in an effort to secure the supply of Middle East oil. In 1979, President Carter told Congress that Washington would use "any means necessary including military force," to maintain the flow of oil from the Middle East during the war between the Soviet Union and Afghanistan. In 1987, President Reagan ordered U.S. warships to escort Kuwaiti oil tankers out of the Persian Gulf to protect them from attack during the most recent Iran-Iraq war. Moreover, in August 1990, the United States forced Iraq out of Kuwait during the Persian Gulf War in an effort to protect the supply of oil from Saudi Arabia and Kuwait. The purpose of each of these military efforts was to ensure the uninterrupted flow of oil from the Middle East to the United States. See MICHAEL T. KLARE, *BLOOD AND OIL* 4-5 (Metropolitan Books 2004).

19. Peak Oil is also referred to as the Hubbert Theory. Based on a model he had created, Hubbert predicted that domestic production in the United States would peak sometime between 1965 and 1970, while worldwide supply of oil would peak sometime near the year 2000. The Hubbert Peak for World Oil, <http://www.hubbertpeak.com/summary.htm> (last visited Nov. 15, 2006); Wikipedia.org, Peak Oil Predictions, http://en.wikipedia.org/wiki/Peak_oil#Predictions (last visited Nov. 15, 2006).

20. Energy Information Administration, *supra* note 15.

21. *Id.*

22. The United States currently imports sixty percent of this amount. United States domestic production is currently 8.35 million barrels of oil per day, forcing it to import 13.0 million barrels of oil per day. Energy Information Administration, <http://www.eia.doe.gov/emeu/ipsr/t21.xls> (last visited Nov. 15, 2006).

23. *Id.* The increase in demand for oil is predominately the result of the development of China and India as industrialized nations. China has become the second largest importer of oil in the world, the largest being the United States.

24. ROBERT HIRSCH ET AL., DEPARTMENT OF ENERGY, PEAKING OF WORLD OIL PRODUCTION: IMPACTS, MITIGATION & RISK MANAGEMENT (2005), available at http://www.pppl.gov/publications/pics/Oil_Peaking_1205.pdf.

25. Improved technology has permitted drilling at depths exceeding 30,000 feet below the surface. On December 20, 2005, Chevron announced an oil discovery drilled to a depth of 34,189 feet in 3,500 feet of water, the deepest well ever drilled in the U.S. Gulf of Mexico. Chevron,

these risks by pointing to increased profits—a direct result of the recent surge in prices of oil and natural gas. However, oil and gas corporations *must* undertake these risks because new discoveries of petroleum reserves have become scarce. In 2003, the top ten petroleum corporations spent approximately \$8 billion combined on exploration, leading to discoveries with a net present value of slightly less than \$4 billion.²⁶ In other words, significant oil reserves have become so sparse that exploring for them often results in economic loss. Consequently, petroleum corporations are placed in a position where they are unable to replace their petroleum reserves. Unless the global consumption of petroleum is decreased or an alternative source of energy becomes viable, prices of oil and natural gas will remain at current or increased levels as petroleum reserves continue to be depleted.

Although an increase in the price of both oil and natural gas are the most visible consequences of oil shortages, it is also important to analyze the additional costs and risks the United States faces in light of an energy crisis. The nation's dependence on this quickly depleting finite resource is seldom explored. If the Peak Oil model is correct, and world oil production has peaked or will peak in the immediate future, economies of industrialized nations will face similar economic troubles as the United States experienced during the oil embargoes of 1973 and 1979. The one difference will be the length of the shortage. The oil embargoes were temporary supply disruptions—if the Peak Oil theory holds true, world oil production would steadily decrease for an extended period of time. The effects of a prolonged shortage could be devastating to both U.S. and global economies.

Another frightening aspect of a prolonged oil shortage is the potential for resource conflicts between industrialized nations. As evidenced in past global events, the United States is prepared to use force, either diplomatic or military, if a situation disrupting the supply of Middle Eastern oil²⁷ to the United States arises. Many critics of the Bush administration, fueled by the mainstream media, strongly believe that the underlying reason for the liberation of Iraq in 2003 was to ensure U.S. control over Iraqi oil.²⁸ Outside the Middle East, many geopolitical analysts believe that China is the most

<http://www.chevron.com/news/press/2005/2005-12-20.asp> (last visited Nov. 15, 2006).

26. James Boxell, *Top Oil Groups Fail to Recoup Exploration Costs*, FIN. TIMES, Oct. 10, 2004, <http://www.energybulletin.net/2470.html>.

27. While the Middle East would rather tell the United States otherwise, several energy experts believe that many of its nations are experiencing increasing declines in production from its largest fields. Kuwait ("Kuwait Oil Company"), the world's seventh largest exporter of oil, recently announced that its Burgan field, the world's second largest oil field, is exhausted and past its peak output. James Cordahi & Andy Critchlow, *Kuwait Oil Field, World's Second Largest, "Exhausted"*, ENERGY BULLETIN, Nov. 10, 2005, <http://www.energybulletin.net/10878.html>. Moreover, it also believed that Middle Eastern countries have overestimated or outright lied about the amount of recoverable reserves of oil in their respective countries. It was recently revealed that Kuwait had overestimated its oil reserves by twice the actual amount. Staff, *Kuwait Oil Reserves Only Half Official Estimate-PIW*, ENERGY BULLETIN, Jan. 20, 2006, <http://www.energybulletin.net/12242.html>. In 2004, Matthew Simmons, president of the world's largest energy investment bank, released a study arguing that Saudi Arabian oil fields are on declines and will not be able to supply the amount of oil that Saudi Arabia claims they will be able. IAGS.org, *New Study Raises Doubts About Saudi Oil Reserves*, <http://www.iags.org/n0331043.htm> (last visited Nov. 15, 2006). While both countries refute these reports, they have failed to provide documentation that verifies their respective reserves.

28. See generally H. Josef Hebert, *Group: Cheney Task Force Eyed on Iraqi Oil*, ASSOC. PRESS, July 18, 2003, <http://www.globalpolicy.org/security/oil/2003/0718taskforce.htm>; see also JudicialWatch.org, <http://www.judicialwatch.org/iraqi-oil-maps.shtml> (last visited Nov. 15, 2006) (provides maps and charts of Iraqi oil fields Cheney Group used in crafting an energy report in 2001).

likely country to become involved in a conflict with the United States over global resources.²⁹ China has been hailed the “sleeping giant” of the 21st century,³⁰ and has strategically acquired a number of petroleum reserves across the globe.³¹ This, in itself, is not alarming. However, the hostility that China has sporadically shown to the United States,³² coupled with China’s desire to remain a communist state, is disconcerting considering the amount of energy required to fuel both the Chinese and U.S. economies.³³ China has the fastest growing economy in the world, and will approximately double its demand for oil over the next two decades.³⁴ Meeting the energy demands of both economies will eventually become impossible if the current energy situation remains unchanged.

In an effort to combat these potential dilemmas, President George W. Bush pressured Congress to begin its work on the Energy Policy Act in 2001. After four years of revisions between the House and Senate, as well as public pressure for solutions to recent surges in prices of oil and natural gas, President Bush signed the Energy Policy Act of 2005 into law in August of 2005.³⁵ This Act is primarily a patchwork of tax incentives and loan guarantees for energy production of various types, leading to the inference that Congress has entrusted the marketplace with generating solutions to impending oil shortages. This trust is well-placed. The marketplace is typically more effective than the government in devising methods for meeting the demands of society, and at current prices, there is plenty of money floating around Wall Street seeking ways to invest in the energy industry. Nevertheless, it is unclear whether today’s marketplace can respond fast enough to combat the consequences of Peak Oil.

29. The Energy Policy Act of 2005 requires that the Secretary of Defense and the Secretary of Homeland Security “conduct a study of the growing energy requirements of the People’s Republic of China” to assess “the implications of such growth on the political, strategic, economic, or national security interests of the United States.” 42 U.S.C.A. § 15961 (West Supp. 2006).

30. DeWayne Wickham, *China: 21st Century’s Sleeping Giant*, USA TODAY, Jan. 4, 2000, <http://www.usatoday.com/news/opinion/columnists/wickham/wick045.htm>.

31. Since 2003, China, through its Chinese National Petroleum Corporation (“CNPC”), has signed twenty overseas contracts, significantly increasing its petroleum reserves. See Peter S. Goodman, *Big Shift in China’s Oil Policy*, WASH. POST, July 13, 2005, at D01. In 2005, CNPC successfully purchased Petrokazakhstan, the largest purchase of an oil firm by a Chinese conglomerate. China National Offshore Oil Corporation (“CNOOC”), the state-owned petrochemical giant, was unsuccessful in its attempt to purchase Unocal, a U.S.-based oil and gas corporation. See People Daily Online, http://english.people.com.cn/200508/23/eng20050823_204119.html (last visited Nov. 15, 2006). Despite the fact that China’s control of petroleum reserves abroad is relatively small compared that of large U.S. companies, China’s expansion plans will be of great interest to the United States in the coming years. See Matthew Forney, *China’s Quest for Oil*, TIME ASIA, Oct. 25, 2004, <http://www.time.com/time/asia/magazine/article/0,13673,501041025-725174,00.html>.

32. Many analysts believe that if there was a dispute between the United States and China, the most likely cause would be the disputed independence of Taiwan. See generally Cross-Strait Relations Between China and Taiwan, <http://newton.uor.edu/Departments&Programs/AsianStudiesDept/china-taiwan.html> (last visited Nov. 15, 2006). The United States has vowed to defend the independence of Taiwan by any means necessary. Conversely, China believes that Taiwan is a breakaway province that should be reunified with China. China has grown increasingly frustrated with Taiwan’s continued move towards autonomy from the communist state. *Id.*

33. The United States and China’s demand for oil is approximately 27.5 million barrels per day, approximately one-third of the world’s oil supply. See Energy Information Administration, <http://www.eia.doe.gov/emeu/ipsr/t21.xls> (last visited Nov. 15, 2006).

34. The Energy Information Agency projects China’s demand for oil to reach fifteen million barrels of oil per day by 2030. See Energy Information Administration, <http://www.eia.doe.gov/oiaf/ieo/highlights.html> (last visited Nov. 15, 2006).

35. See generally White House Press Release, *supra* note 10.

In its 2005 report, the DOE also observed that “[T]he world has never faced a problem like this. Without massive mitigation more than a decade before the fact, the problem [of oil shortages] will be pervasive and will not be temporary. Previous energy transitions were gradual and evolutionary. Oil peaking will be abrupt and revolutionary.”³⁶ It is difficult to envision a U.S. marketplace, already heavily dependent on petroleum-based products, implementing a “massive mitigation” without more direction from the U.S. government. Congress indefensibly failed to provide this needed direction in the Energy Policy Act of 2005. Accordingly, when the necessity of invention occurs, it may be too late for the marketplace to respond.

II. SETTING THE STAGE FOR THE ENERGY POLICY ACT OF 2005

Although the Federal Government first recognized the benefits of a national energy policy during the 1930s, legislators have only recognized the *need* for a domestic energy plan within the last thirty years. During the 1970s, when the nation was faced with a Middle Eastern oil embargo, President Jimmy Carter proposed a national energy plan attempting to confront “the greatest challenge our country will face during our lifetimes.”³⁷ Carter’s plan, codified as the National Energy Act,³⁸ was intended to be a comprehensive response to the energy crises that affected energy prices and the economy. Unfortunately, President Carter’s plan was, for the most part, an abysmal failure. The “ten fundamental principles” of Carter’s energy strategy failed to provide necessary deregulation in the petroleum industry, and the plan was misguided in its attempt to reduce domestic energy consumption.³⁹ Moreover, Carter lacked the necessary savvy to convince the American public that it was facing a crisis. Carter’s missteps included a proclamation that the energy crisis was the “moral equivalent of war,” the declaration of an oil embargo on Iran, and a proposal for the creation of massive chemical plants producing synthetic fuels.⁴⁰ Rather than providing incentives for feasible alternative energy sources and energy efficiency, Carter set out goals for reducing domestic energy consumption by “set[ting] [our] thermostats” and “obey[ing] the speed limit.”⁴¹ These proposals were not only imprudent, but also unconvincing to a public wary of change. Ultimately, however, the primary reason behind the failure of Carter’s policy was that it was a knee-jerk reaction to the oil embargo, rather than a thoroughly planned, comprehensive policy allowing for a steady reduction in the

36. HIRSCH ET AL., *supra* note 24, at 64.

37. PBS.org, *Primary Sources: The President’s Proposed Energy Policy*, http://www.pbs.org/wgbh/amex/carter/filmmore/ps_energy.html (last visited Nov. 15, 2006).

38. The National Energy Act of 1978 contains five pieces of legislation: the Natural Gas Policy Act (“NGPA”), Pub.L. No. 95-621, 92 Stat. 3350 (1978); the Public Utility Regulatory Policies Act (“PURPA”), Pub.L. No. 95-617, 92 Stat. 3117 (1978); the Energy Tax Act, Pub.L. No. 95-618, 92 Stat. 3174 (1978); the Powerplant and Industrial Fuel Use Act (Fuel Use Act), Pub.L. No. 95-620, 92 Stat. 3289 (1978); and the National Energy Conservation Policy Act, Pub.L. No. 95-619, 92 Stat. 3206 (1978). See Julia Richardson & Robert Nordhaus, *The National Energy Act of 1978*, 10 NAT. RESOURCES & ENV’T. 62 (1995).

39. President Carter’s energy plan was based on “ten fundamental principles.” PBS.org, *Primary Sources: The President’s Proposed Energy Policy*, http://www.pbs.org/wgbh/amex/carter/filmmore/ps_energy.html (last visited Nov. 15, 2006).

40. PBS.org, *supra* note 37.

41. Miller Center of Public Affairs, http://millercenter.virginia.edu/scripps/diglibrary/prezspeeches/carter/jec_1979_0715.html (last visited Nov. 15, 2006).

nation's dependence on foreign oil.

In a similar string of events, President George H.W. Bush proposed a revamped energy plan to promote "energy conservation and efficiency, increased development, and greater use of alternative fuels"⁴² in 1991. President Bush conceived this plan in response to U.S. fears of oil price shocks caused by Saddam Hussein's occupation of Kuwait and the subsequent U.S.-led Desert Storm Operation. President Bush's energy plan, the Energy Policy Act of 1992,⁴³ included several provisions aimed at reducing consumption of petroleum through the use of alternative fuels in light-weight vehicles (cars and light-weight trucks). The act established goals for reducing the use of petroleum fuels in the United States by ten percent by the year 2000, and thirty percent by the year 2010.⁴⁴ Since the act's passage, there has been limited progress towards achieving these goals. In a 1999 draft report, the DOE reported that, in total, only 4.23 billion gallons of gasoline were replaced by alternative fuels during 1998.⁴⁵ This equated to only 3.6% of all gasoline use during 1998—well short of the 10% goal.⁴⁶ According to the DOE, the reasons for failure include the "economic disadvantages" of alternative fuels, and the lack of infrastructure necessary for an alternative energy society.⁴⁷ In short, the Energy Policy Act of 1992 lacked the necessary tax incentives and mandates for making alternative fuels a more viable source of energy. Furthermore, the DOE concluded that "before public investments [in alternative energy] are made... more people will need to be convinced about the energy and the environmental benefits of alternative fuels."⁴⁸ This could have been a result of the mixed signals that the Bush administration provided the public. President Bush signed the Energy Policy Act of 1992, which was aimed at increasing the use of alternative fuels, in front of an oil drilling rig in Maurice, Louisiana, only strengthening the inference that President Bush's ties to the petroleum industry remained paramount.⁴⁹

When President George W. Bush took office in 2001, he established the National Energy Policy Development Group ("NEPDG"), led by Vice President Dick Cheney, with the purpose of developing "a comprehensive long-term strategy that uses leading technology to produce an integrated energy, environmental and economic policy."⁵⁰ President Bush created the NEPDG in response to an acknowledged energy crisis in 2000, when the eastern United States and Midwest suffered from oil and natural gas shortages, and California endured rolling electricity blackouts. The group examined nearly every aspect of the nation's energy situation, including energy challenges and concerns regarding supply, national infrastructure, and the environment.⁵¹ The

42. 137 CONG. REC. S1216-02 (1991).

43. Energy Policy Act of 1992, Pub. L. 102-486, 106 Stat. 2776 (1992).

44. UNITED STATES GENERAL ACCOUNTING OFFICE, ENERGY POLICY ACT OF 1992, LIMITED PROGRESS IN ACQUIRING ALTERNATIVE FUEL VEHICLES AND REACHING FUEL GOALS 3 (2000), available at <http://www.gao.gov/new.items/rc00059.pdf>.

45. *Id.* at 4.

46. *Id.*

47. *Id.*

48. *Id.* at 35.

49. U.S. Department of Energy, *President Bush signs the Energy Policy Act of 1992*, <http://www.energy.gov/news/2533.htm> (last visited Nov. 15, 2006).

50. NAT'L ENERGY POLICY DEVELOPMENT GROUP, NAT'L ENERGY POLICY FORWARD 4 (2001), <http://www.whitehouse.gov/energy/Forward.pdf>.

51. *Id.* at 6.

NEPDG, also known as the Cheney Group, provided President Bush with a report detailing what it believed to be a long term, national energy policy.⁵² President Bush used this report as a springboard for the Energy Policy Act of 2005.⁵³ The report called for increased exploitation of domestic petroleum resources and improvements in technology and research for alternative fuel sources.⁵⁴ Critics of the Cheney Group claim that “nothing in the Cheney plan offer[s] any prospect for lowering [U.S.] dependence on imported oil” and only calls for “timid moves” for changing “America’s oil consuming behavior.”⁵⁵ Moreover, controversy continues to swirl, including the filing of lawsuits,⁵⁶ as information becomes public concerning the influence of the major U.S. petroleum corporations over the Cheney Group.⁵⁷ There are several reports that the late Kenneth Lay, former CEO of Enron, was a key advisor to the group.⁵⁸ Additionally, “Secretary of Energy Spencer Abraham, another key figure in the NEPDG review, met with no fewer than 109 representatives of prominent energy firms” in preparation of the NEPDG report.⁵⁹

A common trait of each of these energy plans was their formation during times of national energy crises. The national energy policies of the past, and now the future, were only developed in *response* to petroleum supply disruptions. The rhetoric and substance of each plan did not and has not changed—each has been long on form, but short on substance. Consequently, the products of these hurried decisions have been energy plans that have provided only temporary solutions to the nation’s energy woes. While each plan had the noble intent of incorporating alternative energy into the national energy landscape and promoting energy efficiency, each policy lacked the necessary substance and foresight to truly achieve these goals. Each also neglected the key component of national energy transformation—convincing the American public that change must occur. Several critics believe that President George W. Bush’s current energy plan, the Energy Policy Act of 2005, faces a similar path to failure.

52. NAT’L ENERGY POLICY DEVELOPMENT GROUP, NAT’L ENERGY POLICY 1 (2001), <http://www.whitehouse.gov/energy/National-Energy-Policy.pdf>.

53. *Cf. id.*; 42 U.S.C.A. § 15961 (West Supp. 2006).

54. *See generally* NAT’L ENERGY POLICY DEVELOPMENT GROUP, *supra* note 52.

55. KLARE, *supra* note 18, at 60–61.

56. *See* *Cheney v. U.S. Dist. Court for Dist. of Columbia*, 542 U.S. 367 (2004); *Judicial Watch v. Nat’l Energy Policy Dev. Group*, No. 02-5356, 2003 WL 22319584 (D.C. Cir. Sept. 30, 2003).

57. *See generally* Michael Schmidt et al., *Democrats Say CEOs of Oil Majors Lied at Hearings; Executives Deny Charge*, INSIDE ENERGY WITH FEDERAL LANDS, Nov. 21, 2005 at 4, available at 2005 WLNR 19555782.

58. *Coming Clean*, Newsweek (Jan. 11, 2002), available at 2002 WLNR 8853396.

59. KLARE, *supra* note 18, at 58.

III. THE ENERGY POLICY ACT OF 2005: "AN ACT TO ENSURE JOBS FOR OUR FUTURE WITH SECURE, AFFORDABLE, AND RELIABLE ENERGY"⁶⁰

The U.S. House Committee on Energy and Commerce released the following press statement upon completion of the Energy Policy Act of 2005: "In the past few weeks, Americans have seen gasoline prices jump as crude oil prices hit new records. Passage of a comprehensive energy legislation this year will ensure a more affordable and environmentally friendly energy supply. America's prosperity and national security are at stake."⁶¹ More than 1700 pages long, the long-awaited Act includes provisions that aim to "[d]ecrease... America's dangerous dependence" on Middle Eastern oil, promote new "nuclear and hydropower production," and supply "leadership in energy conservation."⁶² The key components of the Energy Policy Act of 2005 impact each of the major energy industries in a different way. While the criticism within each of the following sections may appear pessimistic, it is only meant to suggest that the Energy Policy Act of 2005 should have been more aggressive in providing incentives to industries that are positioned to immediately reduce U.S. dependence on foreign oil through supply. Instead, the Act places its emphasis on industries that are currently incapable of meeting the Act's objectives. Moreover, and probably most importantly, the Act lacks the necessary leadership and strategy for solving today's energy problems.

A. Fossil Fuels

The Energy Policy Act of 2005 authorizes significant amounts of money for fossil fuel industries.⁶³ In the coal industry,⁶⁴ the Act promotes "clean coal" technology by authorizing funds for the implementation of the Clean Coal Power Initiative⁶⁵ and the

60. 42 U.S.C.A. § 15961 (West Supp. 2006).

61. U.S. HOUSE COMM. ON ENERGY AND COMMERCE PRESS OFFICE, ENERGY POLICY ACT OF 2005 (2005), http://energycommerce.house.gov/108/0205_Energy/05policy_act/EPACT%202005%20Committee%20Print%20Highlights.pdf.

62. *Id.*

63. It should be noted that an "authorization" of a discretionary program is a permission to spend money, while an "appropriation" is the actual decision to spend money. Thus, even if a provision includes an authorization of money, that does not necessarily mean that money will be appropriated. *See generally* U.S. Senate Comm. on Appropriations, <http://appropriations.senate.gov/budgetprocess/budgetprocess.htm> (last visited Nov. 15, 2006).

64. Coal produces more than fifty percent of America's electric power and represents more than ninety percent of proved fossil fuel reserves in the United States. U.S. Dep't of Energy, President Bush's Clean Coal Power Initiative Seeks New Round of Technology Improvement from Industry, <http://www.energy.gov/news/1274.htm> (last visited Nov. 15, 2006).

65. The Clean Coal Power Initiative is a government/industry partnership to increase investment in clean coal technology. *See generally* U.S. Dep't of Energy, Clean Coal Technology & The President's Clean Coal Power Initiative, <http://www.fossil.energy.gov/programs/powersystems/cleancoal/> (last visited Nov. 15, 2006).

Clean Air Coal Program.⁶⁶ In the oil and gas industries, the Act increases exploration and development of non-park federal lands, while authorizing the expansion of the Strategic Petroleum Reserve's capacity.⁶⁷ The Energy Policy Act also provides an estimated \$2.8 billion in tax incentives for fossil fuel production.⁶⁸

Today, the majority of coal is burned in aging power plants which are not subject to standards set by the Environmental Protection Agency ("EPA") as they have been grandfathered into past modern emission control standards. In a 2004 report, consultants to the EPA estimated that 24,000 lives were shortened as a result of emissions from grandfathered coal-burning power plants.⁶⁹ Environmentalists have continued to pressure the Bush Administration and Congress to hold these coal-burning power plants accountable to the standards set by the EPA.

As a result of this pressure—and an increased demand for coal—clean coal technology has emerged. The primary example of clean coal technology is the proposed US FutureGen Plant,⁷⁰ a zero emissions coal-fired power plant. The Energy Policy Act of 2005 seeks to increase coal as an energy source, while also reducing air pollution through clean coal technology. The Act authorizes \$2.5 billion in funding for advanced coal-based power generation technologies that achieve significant reductions in emissions.⁷¹ It also authorizes \$2.5 billion for the Secretary of Energy to carry out a Clean Air Coal Program to advance the production and deployment of coal-based power generation equipment which meet emission standards outlined by the Clean Air Act.⁷²

The Energy Policy Act also takes several steps to increase domestic production of oil and natural gas. The Act (1) improves access to federal lands for exploration, production, and pipelines;⁷³ (2) authorizes an evaluation of reserves on the Outer Continental Shelf of the Gulf of Mexico;⁷⁴ (3) authorizes funds for the research and development of oil shale, tar sands, and other sources of energy on federal lands;⁷⁵ (4) provides tax incentives and royalty reductions for marginal wells;⁷⁶ and (5) provides an accelerated review and approval process for new refineries in "refinery revitalization

66. The intent of the Clean Air Coal Program is to facilitate the production of equipment used to generate coal-based power which meets regulations set out by the Clean Air Act. *See generally* U.S. Dep't of Energy, Pollution Control Innovations for Power Plants, <http://www.fe.doe.gov/programs/powersystems/pollutioncontrols/> (last visited Nov. 15, 2006).

67. The Energy Policy Act authorizes the expansion of the Strategic Petroleum Reserve from 700 million to 1 billion barrels of oil. Pub. L. No. 109-58, § 301, 119 Stat. 594 (West 2005).

68. *See generally* David Leiter, *Legislative Summary of the 109th Congress*, MONDAQ BUS. BRIEFING (Jan. 17, 2006), available at 2006 WLNR 903600 (Jan. 17, 2006); *see also* Wikipedia.org, Energy Policy Act of 2005, http://en.wikipedia.org/wiki/Energy_Policy_Act_of_2005 (last visited Nov. 15, 2006).

69. ANGELA LEDFORD, CLEAN AIR TASK FORCE, THE DIRTY SECRET BEHIND DIRTY AIR: DIRTY POWER 12 (2004), available at <http://www.cleartheair.org/dirtypower/docs/dirtyAir.pdf>.

70. FutureGen is a project by the U.S. government to build coal-fired power plants that emit near-zero emissions. The plant would generate hydrogen and electricity while using carbon dioxide sequestration (a method that removes carbon from the atmosphere in an effort to prevent global warming). Wikipedia.org, FutureGen, <http://en.wikipedia.org/wiki/FutureGen> (last visited Nov. 15, 2006).

71. Energy Policy Act of 2005, 42 U.S.C.A. § 15961 (West Supp. 2006).

72. *Id.* § 13573.

73. *Id.* § 15921.

74. *Id.* § 15912.

75. *Id.* § 15927.

76. Marginal wells are defined as those that produce less than fifteen barrels of oil equivalent per day. 42 U.S.C.A. § 15903 (West Supp. 2006). Marginal wells account for sixteen percent of domestic production. INTERSTATE OIL AND GAS COMPACT COMMISSION, MARGINAL OIL AND NATURAL GAS: AMERICAN ENERGY FOR THE AMERICAN DREAM 3 (2005), <http://www.iogcc.state.ok.us/PDFS/2005-Marginal-Well-Report.pdf>.

zones.”⁷⁷ Victor Carrillo, a chairman for the Texas Railroad Commission⁷⁸ and a representative of the Interstate Oil and Gas Compact Commission,⁷⁹ believes that each of these provisions will help the United States “maximize the production of its domestic oil and gas resource[s].”⁸⁰ In a February 2005 appearance before the House Committee on Energy and Commerce, Carrillo testified that “[w]ith the right policies in place[,] there is nothing that should stop America in the years ahead from remaining its own biggest supplier of oil and natural gas.”⁸¹ He suggested that America needs a policy “that recognizes [future] possibilities and moves us towards solutions.”⁸²

As mentioned above, another important provision included in the Energy Policy Act is the Refinery Revitalization Act. This provision provides an accelerated review and approval process for new refinery facilities in designated areas. As such, the provision “provides incentives for oil refineries to expand their capacity.”⁸³ Many energy analysts believe that the rise in the price of gasoline was caused not by a shortage in oil, but by a lack of domestic refining capacity.⁸⁴ Because of federal and state regulations,⁸⁵ there has not been a refinery built in the United States for approximately twenty years. As a result of increased demand and a lack of refining capacity, prices of gasoline have increased. These problems were only amplified when Hurricanes Katrina and Rita damaged Gulf of Mexico refineries. The Energy Policy Act hopes to cure these problems through expansion of domestic refining capacity.

Although many of the fossil fuel provisions included within the Energy Policy Act of 2005 deserve praise, especially the incentives earmarked for clean coal technology, the Act fails to provide practical solutions for “[d]ecreas[ing] America’s dangerous dependence on foreign oil.”⁸⁶ Undoubtedly, clean coal technology will help the environment and promote greater use of coal. If power plants rely more heavily on coal-based power generation, the demand for oil and natural gas power generation will be reduced. Nonetheless, it is unclear how the technology will alleviate the United States’ *strong* dependence on foreign oil. In 2004, merely 494,000 barrels of oil were used per day to generate electricity, or approximately 2.4% of the petroleum used per

77. 42 U.S.C.A. §§ 15951–52 (West Supp. 2006). While not included in the final version, drafts of the Refinery Revitalization Act of 2005 classified certain areas as “refinery revitalization zones” based on the area’s previous experience in refining or manufacturing and its current unemployment rate. H.R. REP. NO. 109-215 (2005).

78. The Texas Railroad Commission (“TRC”) is the regulatory agency that oversees the state’s oil and gas industries. Railroad Commission of Texas, <http://www.trc.state.tx.us/> (last visited Nov. 15, 2006).

79. The Interstate Oil and Gas Compact Commission (“IOGCC”) is an interstate compact between thirty-seven states. It is the nation’s largest advocate for conservation and wise development of petroleum resources. Interstate Oil and Gas Compact Commission, <http://www.iogcc.state.ok.us/index.aspx> (last visited Nov. 15, 2006).

80. See generally *Testimony Submitted to the H. Comm. on Energy and Commerce by Victor Carrillo, Chairman, Texas Railroad Comm’n Representing the Interstate Oil and Gas Compact Comm’n Feb. 10, 2005*, 109th CONG. 1 (2005) (statement of Victor Carrillo, Chairman, TRRC representing the IOGCC).

81. *Id.*

82. *Id.*

83. White House Press Release, *supra* note 10.

84. John W. Schoen, *U.S. refiners stretch to meet demand: Can existing plants continue to squeeze more output?*, MSNBC, <http://www.msnbc.msn.com/id/6019739/> (last visited Nov. 15, 2006).

85. The construction of new nuclear plants has been static since the Three Mile Island accident in 1979; the Nuclear Regulatory Commission (NRC), however, certified the design of a new reactor in December 2005. U.S. Nuclear Regulatory Commission, <http://www.nrc.gov/reading-rm/doc-collections/news/2005/05-168.html> (last visited Nov. 15, 2006).

86. U.S. HOUSE COMM. ON ENERGY AND COMMERCE PRESS OFFICE, *supra* note 61, at 1.

day in the United States.⁸⁷ Even if clean coal technology were substituted for petroleum-based electric generation altogether, it would only marginally reduce the demand for oil in the United States. Yet, with that said, if electricity generation in the United States were provided through coal-burning power plants (or through nuclear energy), a reduction of 2.4% of U.S. dependence on foreign oil would eliminate our demand of oil from OPEC countries by approximately 7.2%.⁸⁸

Moreover, the oil and natural gas provisions of the Energy Policy Act do little to offset the United States' declining supply of oil. The Act provides greater access to federal lands, but these lands lack significant oil reserves beneath their surfaces.⁸⁹ Originally, the Energy Policy Act of 2005 included a provision that permitted oil exploration in the Arctic National Wildlife Refuge ("ANWR"), but Congress later removed that provision so that the bill would be passed.⁹⁰ Because of the area's designation as a U.S. wilderness area,⁹¹ congressional authorization is required before oil drilling can occur. It is estimated that ANWR possesses between 5.7 and 16 billion barrels of recoverable oil reserves.⁹² Although ANWR would only provide a projected 1.1 to 1.64 million barrels of oil per day,⁹³ it is one of the United States' strongest weapons for decreasing a portion of the nation's dependence on foreign oil. Saudi Arabia is the largest exporter of Middle Eastern oil to the United States, currently exporting 1.515 million barrels of oil per day.⁹⁴ By including a provision permitting exploration and production in ANWR,⁹⁵ the Energy Policy Act of 2005 would have potentially allowed the United States to eliminate its oil imports from Saudi Arabia

87. Energy Information Administration, Petroleum Liquids: Consumption for Electricity Generation and Useful Thermal Output by Sector, http://www.eia.doe.gov/cneaf/electricity/epm/table2_2_c.html (last visited Nov. 15, 2006); Energy Information Administration, Petroleum Products Consumption, <http://www.eia.doe.gov/neic/infosheets/petroleumproductsconsumption.html> (last visited Nov. 15, 2006).

88. Energy Information Administration, U.S. Imports by Country of Origin, http://tonto.eia.doe.gov/dnav/pet/pet_move_impqus_a2_nus_ep00_im0_mbbldpd_m.htm (last visited Nov. 15, 2006).

89. Energy Information Administration, U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves 2000 Annual Report, Lower 48 States Onshore and Offshore, available at http://www.eia.doe.gov/pub/oil_gas/natural_gas/data_publications/crude_oil_natural_gas_reserves/historical/2000/pdf/appg.pdf.

90. On December 22, 2005, Republicans in Congress were again defeated in their latest attempt to open drilling in ANWR when the Senate blocked an ANWR provision attached to a measure for funding ongoing military operations in Afghanistan and Iraq.

91. ANWR covers 19,049,236 acres in northeastern Alaska, in the North Slope region. Eight million acres of the refuge are designated as U.S. wilderness area, and the land supports a greater variety of plant and animal life than any other protected area in the circumpolar arctic. See generally Arctic National Wildlife Refuge, <http://www.anwr.org/> (last visited Nov. 15, 2006).

92. U.S. GEOLOGICAL SURVEY, ARCTIC NATIONAL WILDLIFE REFUGE, 1002 AREA, PETROLEUM ASSESSMENT, 1998, INCLUDING ECONOMIC ANALYSIS 4 (1998), available at <http://pubs.usgs.gov/fs/fs-0028-01/fs-0028-01.pdf>.

93. Energy Information Administration, Potential Oil Production from the Coastal Plain of the Arctic National Wildlife Refuge: Updated Assessment, http://www.eia.doe.gov/pub/oil_gas/petroleum/analysis_publications/arctic_national_wildlife_refuge/html/summary.html (last visited Nov. 15, 2006).

94. Energy Information Administration, November 2005 Highlights, http://www.eia.doe.gov/pub/oil_gas/petroleum/data_publications/company_level_imports/current/import.html (last visited Nov. 15, 2006); http://tonto.eia.doe.gov/dnav/pet/pet_move_impqus_a2_nus_ep00_im0_mbbldpd_m.htm (last visited Nov. 15, 2006).

95. Interestingly enough, the act includes a provision requiring that no drilling is to occur in or underneath the Great Lakes. 42 U.S.C.A § 15941 (West 2005). Congress, understandably, was unwilling to risk twenty percent of the world's freshwater drinking supply for the exploration of oil. By including this provision, and failing to address the ANWR situation, it leads to the inference that neither side of the aisle can get the necessary votes to vote 'yes' or 'no' on the issue.

altogether.⁹⁶

Outside of ANWR, coastal regions also provide the potential to increase domestic production. Off the shores of Florida and California, oil drilling has been off-limits for decades.⁹⁷ Like ANWR, these areas possess vast petroleum reserves in environmentally sensitive areas which the Energy Policy Act of 2005 fails to address. While the aforementioned incentives provided by the Energy Policy Act will both increase domestic production and indirectly decrease demand (although marginally), the failure to include provisions that allow exploration in ANWR and offshore coastal regions which are currently off-limits, was a missed opportunity by Congress to utilize the most reliable form of energy: U.S. petroleum reserves. Paul Kelly, senior vice president of Rowan, a drilling contractor, expressed a frustration felt throughout the petroleum industry:

Congress could have been more open-minded about opening up areas off our coast for exploration. We have an extremely long coastline, from Maine to Alaska, and basically we are only allowed to drill in the central and western Gulf of Mexico and offshore Alaska. The market place is demanding that we go internationally [for new petroleum reserves].⁹⁸

B. Alternative Sources of Energy

Several proponents of the Energy Policy Act of 2005 believe that the subsidies allocated to the alternative and renewable energy industries will eventually be the solution for reducing U.S. dependence on foreign oil. The Act includes a number of incentives for the development of alternative energy, and approximately \$6.0 billion in subsidies to renewable energy industries. Bill Stevens, executive vice president of the Texas Alliance of Energy Producers, stated that the Energy Policy Act of 2005 “spreads the money or incentives around between renewables, hydrogen, nuclear, coal, oil, and gas. And hopefully that will give us a firm basis from which to increase our overall energy production.”⁹⁹ Whether domestic energy production actually increases depends largely on the nation’s willingness to integrate alternative and renewable energy into its lifestyles.

The nuclear industry has been deemed the Energy Policy Act’s “biggest winner” as the bill authorizes billions of dollars in incentives to almost every facet of nuclear operations.¹⁰⁰ The bill includes provisions for the development of advanced nuclear

96. Observers estimate that it could fifteen years or more to commence ANWR production. ANWR.org, <http://www.anwr.org/backgrnd/theissue.htm> (last visited Nov. 15, 2006). Thus, even if the ANWR provision was included in the Act, it would not immediately decrease the price of oil. However, development of ANWR needs to begin immediately so that it can offset the steadily declining supply of U.S. oil, which will continue into the foreseeable future.

97. Josef Hebert, *House Votes to Keep Offshore Drilling*, WASH. POST, May 18, 2006, available at <http://www.washingtonpost.com/wp-dyn/content/article/2006/05/18/AR2006051801507.html>.

98. Kris Axtman, *How Much New US Oil? Not a Lot*, THE CHRISTIAN SCI. MONITOR, Aug. 8, 2005, available at <http://www.csmonitor.com/2005/0808/p01s01-uspo.htm>.

99. *Id.*

100. Michael Grunwald & Juliet Eilperin, *Energy Bill Raises Fears About Pollution, Fraud*, WASH.

reactors,¹⁰¹ extends the Price-Anderson Nuclear Industries Indemnity Act,¹⁰² and strengthens security for nuclear facilities.¹⁰³ Nuclear energy is primarily used to generate electricity, and does not emit “an ounce of air pollution or greenhouse gases”¹⁰⁴ during the generation process. In addition to the generation of clean-burning energy, another advantage of nuclear energy is its potential to provide an abundant source of energy. Several energy experts believe that nuclear energy has the potential to provide a bountiful supply of domestic energy for several decades, if not centuries.¹⁰⁵

There are several reasons, however, why nuclear energy is *not* the predominant source of electricity in the United States. The biggest criticism of nuclear energy is its potential to wreak havoc on the environment. While nuclear energy does not emit harmful greenhouse gases, it does create, at the end of the generation process, radioactive fuel rods. The disposal of these fuel rods is a controversial issue. As provided by the Energy Policy Act of 1992, Nevada has been selected as the nation’s storage site for fuel rods,¹⁰⁶ inducing some Nevada residents to block the disposal.¹⁰⁷ The efforts have succeeded, for the time being, as nuclear waste continues to remain stored at 126 sites across the nation.¹⁰⁸

Another environmental liability of nuclear energy is the risk of a power plant accident similar to the incidents at Chernobyl¹⁰⁹ and Three Mile Island.¹¹⁰ While these fears are understandable, advances in technology and safety have made nuclear energy a much safer operation. Industrialized countries such as Japan and France rely heavily on nuclear energy and have developed fuel rod processing methods which decrease the potential of adverse effects on the environment.¹¹¹ Moreover, gross operating and design errors caused the accidents in Chernobyl and Three Mile Island, rather than errors in the technology itself. If the United States can develop nuclear energy in power plants that takes advantage of technological advances, nuclear energy has the potential

POST, July 30, 2005, at A01.

101. 42 U.S.C.A. § 16021 (West Supp. 2006).

102. Price-Anderson Amendments Act of 2005, Pub. L. No. 109-58, §§ 601–610, 119 Stat. 779 (1954) (amended 2005).

103. 42 U.S.C.A. §§ 16025, 16041, 2210h (West Supp. 2006).

104. White House Press Release, *supra* note 10.

105. See John McCarthy, *Frequently Asked Questions About Nuclear Energy*, <http://www.formal.stanford.edu/jmc/progress/nuclear-faq.html> (last visited Nov. 15, 2006).

106. 42 U.S.C.A. § 10141 (West Supp. 2006).

107. Nuclear Energy Institute, Inc. v. E.P.A., 373 F.3d 1251 (D.C. Cir. 2004). For a detailed discussion of the case and related issues, see David Forberg, Casenote, *Nuclear Energy Institute, Inc. v. E.P.A.*, 373 F.3d 1251 (D.C. Cir. 2004), *Will Science Triumph Over Policy? The Future of a Nuclear Waste Depository at Yucca Mountain, Nevada*, 24 TEMP. J. SCI. TECH. & ENVTL. L. 187 (2005).

108. Civilian Radioactive Waste Management, Yucca Mountain Repository, http://www.ocrwm.doe.gov/ym_repository/index.shtml (last visited Nov. 15, 2006).

109. The Chernobyl accident, the result of operating error and flawed technology, occurred at the Chernobyl nuclear power plant on April 26, 1986. The accident was the worst accident in the history of nuclear power and resulted in the deaths of thousands of people and the contamination of large parts of Russia. Wikipedia.org, Chernobyl Disaster, http://en.wikipedia.org/wiki/Chernobyl_accident (last visited Nov. 15, 2006).

110. The Three Mile Island accident occurred at the Three Mile Nuclear Generating Station on March 28, 1979. The damage resulting from this accident was much less severe than Chernobyl, and the environmental impact was comparatively minimal. Researchers claim accident-related cancers caused only one casualty. Like Chernobyl, the Three Mile Island accident was the result of human error and technical malfunction. See *id.*; Wikipedia.org, Three Mile Island Accident, http://en.wikipedia.org/Three_Mile_Island (last visited Nov. 15, 2006).

111. McCarthy, *supra* note 105.

to become a viable source of energy in the United States for years. With that said, similar to the clean coal technology discussed above, nuclear energy would only help alleviate the nation's demand for electricity—it would only marginally reduce U.S. demand for oil.¹¹²

Additionally, the Act does little to ease public concern about nuclear energy generation. The indemnification provision provides federal risk insurance to the builders of nuclear power plants, encouraging construction of new power plants. However, neither the indemnification provision nor any other provision of the Energy Policy Act, attempts to ease the public's misconceptions about the nuclear energy industry. The success of the nuclear energy industry not only depends on the construction of new power plants, but also on the public's acceptance of nuclear energy as a safe, alternative source of energy. Until this occurs, proponents of nuclear energy will continue to face intense opposition from state and local governments, and citizens who could potentially be adversely affected by a power plant accident.

The Energy Policy Act of 2005 also includes several incentives for renewable energy sources.¹¹³ During the signing of the Energy Policy Act, President Bush stated that “one of the ways to become less dependent [on foreign oil] is to enhance the use of renewable sources of energy.”¹¹⁴ While it is unclear how renewable energy sources will truly reduce dependence on petroleum fuels, the incentives are commendable. The Act reauthorizes the Renewable Energy Production Incentive program,¹¹⁵ includes incentives for increased efficiency at existing dams,¹¹⁶ directs the federal government to use more renewable energy,¹¹⁷ and includes the new “Renewable Energy Security Act.”¹¹⁸ Both the Renewable Energy Production incentive and additional renewable energy subsidies encourage the initial investments necessary for these industries. These provisions are aimed at alleviating the excessive startup costs associated with alternative energy. The financial incentives also provide stability to an industry wary of changes in U.S. policy concerning renewable energy. The Renewable Energy Production incentive has expired numerous times, leading renewable energy producers to question the United States' commitment to their industry. Renewing the incentive within an Act aimed at increasing domestic energy production provides needed stability to the renewable energy industries.

Despite these incentives, renewable energy industries continue to face several obstacles in the pursuit of becoming a steady supply of domestic energy. First, renewable energy would be predominately used to generate *electricity*, not as a substitute for *gasoline*. Because renewable energy and many alternative sources of energy cannot fuel our petroleum-dependent cars, using these sources is not likely to reduce our dependence on foreign oil. Second, renewable energy has several

112. Simply put, based on today's technology, cars cannot be powered by nuclear energy—more importantly, this will remain the case for the foreseeable future.

113. Renewable energy sources capture their energy from existing flows of energy such as sunshine, wind, flowing water, biological processes, and geothermal heat flows. They are replaced rapidly by natural processes such as power generated from the sun or wind. Wikipedia.org, Renewable Energy, http://en.wikipedia.org/wiki/Renewable_Energy (last visited Nov. 15, 2006).

114. White House Press Release, *supra* note 10.

115. 42 U.S.C.A. § 13317 (West Supp. 2006).

116. *Id.* § 15881(a).

117. *Id.* § 16122.

118. *Id.* § 16271.

shortcomings. Renewable energy sources simply are incapable of generating anywhere close to the same amount of energy as petroleum. The amount of energy passing through a single gas station per day is the equivalent to the amount of energy that would be produced by four Manhattan-sized city blocks of solar equipment.¹¹⁹ Furthermore, the sources of renewable energy are intermittent. Although technology is currently being developed to solve these problems, wind turbines and solar power are dependent on wind and sunshine, both of which are abundant only at certain times. This is unproblematic when considering the amount of energy required for a single household; however, if the desire is to run an industrial economy using renewable energy, an irregular energy source will not suffice.

Nonetheless, possibly the biggest restraint on renewable energy as a domestic energy source is the public's unwillingness to use it. The Energy Policy Act of 1992 included similar incentives to those provided by the Energy Policy Act of 2005,¹²⁰ and the supply of alternative energy has only marginally increased since the incentives took effect.¹²¹ Critics have argued that the price of alternative energy is too high for it to become a viable energy supply.¹²² This criticism is no longer convincing. While solar power remains cost restrictive, the cost of wind power has become very competitive with other sources of energy.¹²³ Furthermore, the Energy Policy Act's renewal of the Renewable Energy Production Incentive program makes several forms of renewable energy even more cost efficient. Much of the reason that alternative energy production has remained stagnant—especially from wind turbines—is a result of the public's unwillingness to adopt renewable energy into its standard of living. For instance, in states where offshore wind-farms have been proposed, citizens have vehemently opposed them. In Massachusetts, the Cape Wind project, a proposal to build a wind-farm off the shores of Cape Cod, was strongly challenged by Cape Cod residents because it was deemed a potential eyesore.¹²⁴ Although the electricity generated by the Cape Wind project would have provided the electricity necessary for Cape Cod and surrounding islands, the proposal continues to face strong local opposition.¹²⁵ Analogous offshore projects have faced similar resistance from communities who believe that the projects are not aesthetically pleasing. As technology improves and the provisions provided by the Energy Policy Act of 2005 make renewable energy a more viable source of energy, Americans, especially those who will be affected in some way by the generation of alternative energy, will have to reassess their values in relation to their need for energy.

Last, and probably of most importance, the energy Act includes several incentives

119. Sam Fletcher, *Exxon President Predicts Non-OPEC Peak in 10 Years*, ENERGY BULLETIN, Dec. 12, 2004, available at <http://www.energybulletin.net/3624.html>.

120. See 42 U.S.C.A. §§ 13401–13525 (West Supp. 2006).

121. See ENERGY INFORMATION ADMINISTRATION, RENEWABLE ENERGY TRENDS 10–11 (2003), http://www.eia.doe.gov/cneaf/solar.renewables/page/rea_data/trends.pdf.

122. See generally Robert L. Bradley Jr., *Renewable Energy: Not Cheap, Not "Green,"* POLICY ANALYSIS, Aug. 27, 1997, <http://www.cato.org/pubs/pas/pa-280.html>.

123. Cameron Walker, *The Future of Alternative Energy*, NAT'L GEOGRAPHIC, Oct. 28, 2004, http://news.nationalgeographic.com/news/2004/10/1028_041028_alternative_energy.html.

124. CBS.com, *Storm Over Mass. Windmill Plan*, <http://www.cbsnews.com/stories/2003/06/26/sunday/main560595.shtml> (last visited Nov. 15, 2006).

125. *Id.*

for energy efficient technologies: hybrid vehicles,¹²⁶ ethanol and biodiesel fuels,¹²⁷ and hydrogen fuel cells.¹²⁸ Of the alternative technologies that are currently available, energy efficiency is not only the most sensible, but also the most sustainable. The Energy Policy Act of 2005 includes tax incentives for owners of hybrid vehicles,¹²⁹ “a flexible, cost effective renewable fuel standard that will double the amount of ethanol and biodiesel in our fuel supply over the next seven years,”¹³⁰ and provisions which “help keep the momentum of the [Hydrogen Fuel Initiative].”¹³¹ Currently, each of these technologies lacks viability;¹³² yet, the incentives provided by the Energy Policy Act of 2005 may be able to ease the hurdles each industry currently faces. If this were the case, the question would then become whether the bill does enough to further these technologies. As of right now, the answer is unclear, and will only be answered in due time.¹³³

C. Energy Efficiency

According to President Bush, the Energy Policy Act of 2005 makes “an unprecedented commitment to energy conservation and efficiency.”¹³⁴ The commitment that President Bush makes reference to is found in two major provisions of the Act. First, the Energy Policy Act of 2005 establishes energy efficiency standards for fifteen new products including commercial refrigeration, commercial heaters, ceiling fans, traffic signals, and other home and business products.¹³⁵ The DOE is directed to establish these standards along with standards for additional products. Moreover, the Act authorizes tax credits for homeowners who make use of energy efficient products such as solar panels, solar water heating equipment, and energy efficient insulation systems.¹³⁶ Second, the Energy Policy Act includes manufacturer and tax incentives for energy saving technologies including hybrid vehicles and fuel cell cars.¹³⁷ The Act does not establish new fuel efficiency standards; however, it instructs the National Highway Transportation Safety Administration (“NHTSA”) to perform a one year study on the effects of fuel efficiency standards on gasoline supply, air quality,

126. 42 U.S.C.A. §§ 16061–16062 (West Supp. 2006).

127. Energy Policy Act of 2005, P. L. 109-58, §§ 1512, 1514, 119 Stat. 594 (2005).

128. *Id.* at § 801.

129. 26 U.S.C.A. § 30B (West 2006).

130. White House Press Release, *supra* note 10.

131. *Id.*

132. *Id.*

133. One unintended consequence of the bill was shortages in E85, a blend of gasoline and ethanol. Section 701 of the bill requires U.S. Federal Fleet vehicles capable of operating on alternative fuels to operate on alternative fuels 100% of the time (whereas the previous requirement was fifty-one percent). As a consequence, the Government’s use of Ethanol has effectively doubled, causing shortages of E85 and increases in the price of E85. See Wikipedia.org, Energy Policy Act of 2005, http://en.wikipedia.org/wiki/Energy_Policy_Act_of_2005 (last visited Nov. 15, 2006).

134. White House Press Release, *supra* note 10.

135. SHIRLEY NEFF, CENTER FOR ENERGY, MARINE TRANSPORTATION AND PUBLIC POLICY AT COLUMBIA UNIVERSITY, REVIEW OF THE ENERGY POLICY ACT OF 2005 3 (2005), <http://www.beg.utexas.edu/energyecon/thinkcorner/Highlights%20of%20the%20Energy%20Bill.pdf>.

136. Internal Revenue Service, Highlights of the Energy Policy Act of 2005 for Individualism <http://www.irs.gov/newsroom/article/0,,id=153397,00.html> (last visited Nov. 15, 2006).

137. See *supra* Section III-B.

and the automobile industry.¹³⁸

It is important to mention that the Senate passed a form of the bill with a provision requiring the President “to develop and implement measures to conserve petroleum in end-uses throughout the economy of the United States sufficient to reduce total demand for petroleum in the United States by 1,000,000 barrels of oil per day from the amount projected calendar year 2015.”¹³⁹ This provision was dropped from the final conference report of the bill, and has become one of the most controversial issues of domestic energy policy.

In 1975, with the passage of the Energy Policy and Conservation Act,¹⁴⁰ Congress established average fuel economy standards through a program called “Corporate Average Fuel Economy,” also known as the CAFE standards. Subject to penalty, manufactures of fleet passenger cars and/or light trucks were required to meet fuel efficiency standards established by the NHTSA. The program was effective in reaching its goals, as most manufactures complied with the law. The fuel efficiency of passenger cars and light-weight trucks increased to 27.5 and 20.7 miles per gallon respectively by 1985.¹⁴¹ During the late eighties and nineties there were pushes—which for the most part were unsuccessful—to increase the standards provided by CAFE. The “1,000,000 million barrel per day” reduction was the most recent tactic employed by advocates of a federally mandated fuel economy.

Proponents of increasing CAFE standards claim that a reduction in the use of petroleum fuels, approximately 4.7 million barrels per day, could be achieved by the year 2020 through fuel efficiency increases.¹⁴² Opponents of CAFE claim that the standards have led to greater use of petroleum fuels (by reducing the cost of driving an automobile), more pollution, and an increase in fatalities and injuries to persons involved in accidents (resulting from the lighter weight of vehicles).¹⁴³ Furthermore, the laissez-faire crowd believes that the marketplace can take care of fuel efficiency standards, as evidenced with the release of the Toyota Highlander and the Ford Escape, both Sports Utility Vehicle hybrids.

While each side’s position has its own merits, one thing holds true—the United States must reduce its growing demand for petroleum fuels. Incentives which are earmarked for homeowners who make use of energy efficient products, and for new energy efficient products themselves, will only reduce the demand for electricity. The real area where progress can be made in energy efficiency is the *fuel economy*. Whether it be through federally mandated fuel efficiency standards, or through an industry response to a demand for fuel efficient vehicles, the nation has the opportunity to reduce oil dependence through fuel efficiency. These changes, however, must be balanced against claims that CAFE standards have resulted in more harm than good.

138. Neff, *supra* note 135, at 1.

139. *Id.*

140. 42 U.S.C.A. §§ 6201–6422 (West Supp. 2006).

141. In 1974, before the Act’s passage, the fuel efficiency of automobiles had dropped to 12.9 miles per gallon. See Robert Bamberger, *Automobile and Light Truck Fuel Economy: The CAFE standards*, CONGRESSIONAL RESEARCH SERVICE, Sept. 25, 2002, available at http://www.policyalmanac.org/environment/archive/crs_cafe_standards.shtml.

142. Aceee.org, Vehicle Fuel Economy Standards Big Energy Savings at a Modest Cost, <http://www.aceee.org/energy/cafe.htm> (last visited Nov. 15, 2006).

143. See generally Letter to the Editor, *Will Better Truck Fuel Economy Hurt Safety*, N.Y. TIMES, Sept. 11, 1995 at 14.

Nonetheless, by making a choice against implementation of CAFE standard increases, Congress and the Bush Administration have entrusted the marketplace with solving energy efficiency dilemmas. Again, time will only tell whether this gamble pays off.

D. Leadership

With the passage of the Energy Policy Act of 2005, the United States needed a strategy for increasing supplies of domestic oil and alternative sources of energy to offset the implications of global oil shortages. The American public also needed a clear message from its leaders concerning the implications of Peak Oil and its impact on the U.S. economy. Instead, the Energy Policy Act concentrates on the *development* of alternative sources of energy and marginal oil production, while failing to provide the public with an awareness of the severity of current global energy issues. Unfortunately, the lack of leadership provided in the bill could be its most damning aspect.

President Bush stated that the provisions of the Energy Policy Act of 2005 provide the United States with a “strategy” to alleviate the nation’s “rising dependence on foreign oil” and other problems such as “high gasoline costs.”¹⁴⁴ However, it is unclear what this strategy is. The bill simply offers a patchwork of subsidies targeted at different energy industries without a working plan for integrating them into the U.S. economy. Congress could have provided a plan specifying the amount of energy needed from alternative energy industries to lessen U.S. dependence on foreign oil. Benchmarks would provide energy industry leaders with goals and *true* incentives for future production of alternative sources of energy. Rather, Congress has decided to throw money at producers of alternative energy with an objective of *development* rather than *supply*.

Moreover, it is unclear what “policy” the Energy Policy Act of 2005 proposes for confronting the immediate problems of Peak Oil. Although the DOE is aware of Peak Oil and its related problems,¹⁴⁵ the Act fails to make reference to the Peak Oil model. If the model is true, and according to the DOE it is, the consequences of Peak Oil demand immediate attention by our leaders. The “strategy” and “policy” discussed by President Bush should not have only been focused on decreasing “high prices of gasoline” or “ensur[ing] jobs for our future”;¹⁴⁶ it should have also directed its focus at preparing the U.S. economy and public for Peak Oil.

Moreover, the Act fails to provide the American public with an accurate picture of the current landscape of future energy supply and demand. This could have been accomplished easily through a public awareness campaign, or a similar medium for generating awareness on global energy issues. Granted, the Energy Policy Act of 2005 includes the “Public Energy Education Program”¹⁴⁷ and the “Energy Efficiency Public Information Initiative,”¹⁴⁸ however, the Act lacks any provision that makes the nation aware of the *seriousness* of the situation we currently face. The only message that Congress and past administrations have provided to the public is one of passive reaction

144. White House Press Release, *supra* note 10.

145. HIRSCH ET AL., *supra* note 24, at 11.

146. White House Press Release, *supra* note 10.

147. 42 U.S.C.A. § 15831 (West Supp. 2006).

148. *Id.*

to the decreasing supply of global oil. A case in point is the length of time it took the United States to establish an “energy policy.” The United States had gone over a decade without an energy policy, and it took over four years—with increasing public pressure caused by energy price surges—to pass the Energy Policy Act of 2005. During the time it took to pass the Act, Congress should have been informing Americans that high prices of oil and natural gas will remain unchanged so long as the nation remains a petroleum dependent economy. Petroleum giants Chevron and BP have brought these issues to the public forefront through aggressive advertising campaigns;¹⁴⁹ however, the U.S. government has been, and remains, steadfast in its failure to generate public awareness concerning global energy issues.¹⁵⁰

IV: A DIFFERENT APPROACH TO ENERGY AUTONOMY

It did not take President’s Bush 2006 State of the Union address for Americans to realize that the United States is “addicted” to oil. Global conflicts and uncontrollable gasoline prices have—long ago—made it clear that our current way of life is *entirely* dependent on oil. Unfortunately, an abundant supply of oil, both domestic and abroad, is coming to an end. While the nation and economy comes to grip with this realization, it is important that our nation’s leaders react quickly so that we are prepared for the affects of Peak Oil. The Energy Policy Act of 2005 attempts to make limited changes to domestic energy supply, but the Act’s provisions demonstrate an apathetic approach to solving our nation’s energy problems. This is largely because the energy issue has become far too politicized for Congress, and the Bush administration to provide complete solutions to energy supply problems. Fortunately, we still have time to make the needed changes in our lifestyle. While its supply is dwindling, the petroleum faucet will provide an adequate supply of oil for many years, as shortages may not occur for ten, fifteen, or twenty years. During this short window of time, members of Congress, from both sides of the aisle, must set aside their differences and provide the nation with a real energy policy—not one that focuses on development, but a policy that focuses on supply and energy efficiency. This new policy must be implemented through federal

149. In July 2005, Chevron placed several ads in the Wall Street Journal as part of its “Will You Join Us” campaign. The messages were signed by “Dave” (Dave O’Reilly, Chevron’s CEO) and stated: “Energy will be one of the defining issues of this century . . . [d]emand is soaring like never before . . . [a]t the same time, many of the world’s oil and gas fields are maturing. And new energy discoveries are mainly occurring in places where resources are difficult to extract. . . [w]e can wait until a crisis forces us to do something. Or we can commit to working together, and start by asking the tough questions: How do we meet the energy needs of the developing world and those of industrialized nations? What role will renewable and alternative energies play? That is the best way to protect our environment? We call upon scientists and educators, politicians and policy-makers, environmentalists, leaders of industry and each one of you to be part of reshaping the next era of energy.” Dave O’Reilly, Will You Join Us?, <http://www.willyoujoinus.com/downloads/manifesto.pdf> (last visited Nov. 15, 2006). Additionally, BP (formerly British Petroleum) has rebranded itself “Beyond Petroleum” as it aggressively advertises its investments in alternative sources of energy in response to the decreasing supply of global oil. Both Chevron and BP, continue to generate public awareness based on a message that “[w]hat we all do next will determine how well the energy demands of the entire world in this century and beyond.” Chevron, <http://www.willyoujoinus.com/vision/> (last visited Nov. 15, 2006).

150. As mentioned earlier in this Note, it appears that President Bush has changed his posture toward educating the public about energy and the impacts of Peak Oil. While President Bush has failed to make reference to the Peak Oil model, during his 2006 State of the Union address, he attempted to make reference to domestic energy problems by stating that the United States was addicted to oil. Although he should have acted much earlier to combat these problems, President Bush deserves praise for this decree.

mandates that incorporate several energy sources into the domestic supply of energy; public policy must support a strategic utilization of numerous sources of energy. The Energy Policy Act of 2005 inexcusably failed to provide this blueprint. The following outlines the steps necessary for the United States to become energy independent.

First, the United States must take full advantage of its domestic resources. There are several untapped sources of oil and natural gas in the United States that remain unexplored because of federal and state regulations. These areas need to be developed, in an environmentally friendly way, to account for price fluctuations caused by Middle Eastern supply disruptions. This includes both ANWR and coastal regions rich with petroleum reserves. While neither will entirely cure U.S. dependence on oil, their development will provide both stability to oil and natural gas prices, and act as a bridge between our current petroleum-based economy and post-petroleum economies of the future.

Furthermore, it is important that we continue to support the petroleum industry, through tax relief and subsidies, in order to further existing technologies for the recovery of oil and natural gas reserves. The recovery rate for typical oil fields in the United States is well under fifty percent of original oil in place ("OOIP"). Improvements in technology and production methods can potentially lead to recovery rates exceeding the fifty percent barrier. More importantly, technological advances in the recovery of oil shale and tar sands can potentially help reduce U.S. dependence on foreign oil immensely. Currently, development and production of fields consisting of oil shale or tar sands are not economically feasible. However, because these fields, which are located in North America, possess immense amounts of petroleum reserves,¹⁵¹ their development is a vital part of reducing U.S. dependence on foreign oil.

Second, the United States must place a significant emphasis on developing alternative sources of energy. This will take both time and money, but is an essential part of the nation becoming energy autonomous. Rather than blindly earmarking subsidies for alternative energy sources that will be impracticable for generations to come (as seen with both current and former U.S. energy policies), we must concentrate our economic support on alternative industries that will realize their full potential quickly. Likewise, the United States must place a heavy focus on alternative energy sources that are already sustainable. Although each would only marginally reduce our dependence on oil, nuclear and wind energy have the potential, if developed, to become major components of the U.S. energy picture. These sources of energy remain largely undeveloped in the United States, and will remain that way as long as the public refuses to accept them as viable sources of energy. Consequently, we must not only provide economic support to these industries, but also educate the public on their potential to hasten the nation's transition to a post-petroleum economy. When both of these objectives are accomplished, the U.S. will be able to take a large step toward becoming energy autonomous. A case in point is U.S. power plants: if U.S. power plants eliminated the use of petroleum (through utilization of energy sources such as nuclear

151. See generally TONY DAMMER, OFFICE OF NAVAL PETROLEUM AND OIL SHALE RESERVES, AMERICA'S OIL SHALE RESOURCE (2005), <http://www.eia.doe.gov/oiaf/aeo/conf/pdf/dammer.pdf>; see also Forbes.com, http://www.forbes.com/energy/2005/02/17/cz_0217oxan_canadaoil.html (last visited Nov. 15, 2006) (discussion on Canada's tar sands).

power), it would reduce U.S. demand for OPEC oil by approximately nine percent.¹⁵²

Third, we must heavily invest in mass transit systems. The use of mass transit systems in major U.S. cities could greatly reduce U.S. dependence on foreign oil. In 2004, the average annual U.S. gasoline consumption per capita by state was 464 gallons per person.¹⁵³ In states with large mass transit systems, gasoline consumption was much less. In the state of New York and in the District of Columbia, areas that have expansive mass transit systems, gasoline consumption per capita in 2004 was 215.3 and 293.4 gallons, respectively.¹⁵⁴ Mass transit systems in New York City and Washington, D.C. are not only efficient, but have become the backbone of transportation in both cities. If the United States was able to establish, and encourage, the use of *effective* mass transit systems throughout the nation, demand and dependence for petroleum-based fuels would be greatly reduced.

The mass transit system in Portland, Oregon provides politicians and urban planners with a seamless blueprint for effective mass transit. In an effort to reduce urban sprawl, improve the environment, and reduce gasoline consumption, local officials engineered a mass transit system that has been used “as a model for transportation planners throughout North America” for close to three decades.¹⁵⁵ Through a private/public partnership, Portland created a mass transit system that includes three light rail lines, streetcars, and bus service. Not only has the mass transit system resulted in a weekday ridership of 300,000, which has increased annually for sixteen straight years, it has also stimulated approximately three billion dollars in “transit-oriented development.”¹⁵⁶ Even for skeptics of mass transit, Portland provides an illustration of the potential success of well-planned mass transit systems.

It must be realized, however, that mass transit would be largely ineffective in areas with significant amounts of urban sprawl. This is illustrated in the Dallas-Fort Worth and Houston areas of Texas. Both areas have mass transportation systems which remain ineffective due to large populations spread over sizeable areas. As discussed earlier, in cities where populations are concentrated in small geographic areas, such as Portland and Washington, D.C., mass transit systems can become extremely successful. Hence, officials must strategically plan the implementation of mass transit systems. This takes cooperation from both public and private enterprises, similar to that of the Portland model, in creating a system that is not only economically feasible, but also an attractive option for the traveling public.

Fourth, the U.S. must become a more efficient fuel economy. While there are several strategies for increasing domestic energy supply, each will prove futile so long as demand for petroleum-based fuels continues to increase. Accordingly, it is important that we use fuel more efficiently domestically. This can be done through mass transit

152. See Energy Information Administration, http://tonto.eia.doe.gov/dnav/pet/pet_move_impqus_a2_nus_ep00_im0_mbb1_m.htm (last visited Nov. 15, 2006).

153. California Energy Commission, http://www.energy.ca.gov/gasoline/statistics/gasoline_per_capita.html (last visited Nov. 15, 2006).

154. *Id.*

155. Julian Wolinsky, *Still a Pioneer: Portland's Rail Transit System Remains a Vital Part of the Region's Urban Fabric and Policy of Stimulating Economic Growth, While Discouraging Sprawl and Motor Vehicle Traffic*, RAILWAY AGE (June 2005), available at http://www.findarticles.com/p/articles/mi_m1215/is_6_206/ai_n14932529.

156. *Id.*

systems, as discussed above, fuel efficiency standards, and hybrid vehicles.

The CAFE standards have been a particularly effective tool for reducing our petroleum consumption. Strengthening these standards could reduce U.S. demand for OPEC petroleum fuels by approximately eighty-four percent, or 4.7 million barrels of oil per day. At the same time, we must ensure that automakers do not compromise the mechanical integrity of our automobiles to reach enhanced fuel efficiency standards. This should be left to the automakers, but monitored by federal agencies. "How to increase efficiency is something for the manufactures to decide, but the ultimate goal should be to *double* our fuel savings – thereby reducing our total petroleum usage by an estimated... 1.8 billion barrels per year."¹⁵⁷

Furthermore, hybrid vehicles can play a significant role in creating an efficient U.S. fuel economy. Whether hybrid technology delivers on its promise depends on the choices policymakers, automakers, and consumers make over the coming years. Policymakers should promote these vehicles through continued subsidies and a reduction in the allowable carbon dioxide emissions level for all vehicles, both of which would provide automakers and consumers incentives for the implementation of hybrid technology. This support should be coupled with continued research and innovation in the fuel cell and biofuel industries (ethanol and biodiesel), as both have the potential to become sustainable technologies in a post-petroleum economy.

While there are undoubtedly several more devices that can be used to confront Peak Oil, the aforementioned strategies are critical to our nation's pursuit of energy autonomy. Each should be looked at collectively, rather than on an individual basis, as tools for reducing our dependence on foreign oil. Through a strengthening of CAFE standards and utilization of nuclear energy in power plants, the United States would potentially be able to eliminate its demand for oil from OPEC countries instantaneously. Further, mass transit systems and hybrid vehicles would only strengthen our path to energy autonomy as the United States would become an energy efficient nation. As we make this transition, public policy should also promote utilization of domestic petroleum reserves. Because it is the cheapest source of energy available, the United States must fully exploit its petroleum resources during the transition to energy autonomy. There is little doubt that these changes will require sacrifices, but "[i]f we strengthen our resolve, accept a degree of self-discipline, and embrace new technologies, we can escape the trap of dependency and establish a secure, sustainable, and responsible energy system... [t]he time of decision is now."¹⁵⁸

V. CONCLUSION

As Peak Oil arrives, the United States, and industrialized nations of the world, face a difficult task in meeting an ever-increasing global demand for energy. How each nation reacts to this problem will dictate global policy for decades to come. In the United States, policymakers have been unsuccessful in past attempts to confront similar problems. While the reasons behind these failures cover a wide spectrum, policymakers' apathetic approach to dealing with energy shortage issues and the public's unwillingness to change its lifestyle have been the primary causes of each

157. KLARE, *supra* note 18, at 195.

158. KLARE, *supra* note 18, at 202.

policy's failure.

As detailed in this Note, the Energy Policy Act of 2005 is the latest attempt to confront the United States' dependence on foreign oil. This Note concludes that although the Energy Policy Act of 2005 contains many important provisions, the Act fails to provide a comprehensive solution that confronts the global energy crisis. The Energy Policy Act does not include provisions for (1) deregulating federal lands with significant oil reserves; (2) making alternative energy sources sustainable on the supply side; (3) addressing the importance of mass transit systems; or (4) strengthening CAFE standards. For these reasons, and many others detailed in this Note, it appears that the Energy Policy Act of 2005 faces a path similar to those of past U.S. energy policies—one of disappointment and ineffectiveness.

There is no magic formula that, once found, will lead the United States to energy autonomy. Therefore, it is important that policymakers and private enterprises remain aggressive in dealing with energy shortage issues. President Bush's recognition of the United States' oil addiction was an important first step. Now, it is important that President Bush and Congress address the weaknesses of the Energy Policy Act of 2005 through further legislation and, at the same time, educate the public on the potential consequences of Peak Oil. If we remain apathetic towards the global energy crisis, and refuse to embark on a new energy path, we will condemn ourselves to the increased hardship of a peaking supply of global oil. The decision is ours.

