

Memorandum

To: President Clinton

From: Kathy Yu, Executive Office member

Date: Development stages of PNGV program

Re: From Confrontation to Cooperation: How Detroit and Washington Became Partners

Introduction:

With global warming significantly affecting people's lives, countries around the world are taking efforts to reduce the greenhouse effect. The U.S. did its part by approving a global warming treaty in 1992 at the Earth Summit in Rio de Janeiro that promised to reduce and stabilize outputs of greenhouse gases. The global warming treaty signed by President George Bush mandated nationwide efforts to reduce and stabilize outputs of greenhouse gases back to the 1990 levels. Meanwhile, the coinciding increase in U.S.'s dependency on foreign oil has also become a public issue that got pushed onto the governmental agenda and calls for the government action (March, 1994; Cobb & Elder, 1995). A new presidential administration opened up a policy window for President Clinton to draw public attention to greenhouse effects and at the same time, address the issue of the U.S.'s dependency on foreign oil (Kingdon, 1995). Upon his inception as the new president, Clinton, along with Vice President Al Gore, made meeting the terms of the global warming treaty a major priority of their administration and took a bold attempt in bringing the government and auto industries into a partnership. Because corporate automakers often focus on competition among themselves, President Clinton and Vice President Al Gore saw a need for government to intervene and have them join forces to

combat the environmental challenge and find ways to reduce oil dependency. After a lengthy debate, the US government and the “Big Three” - Ford Motor Company, the General Motors Corporation, and the Chrysler Corporation - finally launched a program called Partnership for a New Generation of Vehicles (PNGV), where government and industry scientists would work together on research and development projects. Its goals were to increase the corporate average fuel economy standard (CAFÉ) by tripling the fuel-efficiency of today’s automobiles which would result in reduction of carbon dioxide emissions, reduce the US’s dependence on foreign sources of oil, and reduce production costs for new cars. Despite the challenges to implement the PNGV initiative, its implementation will be beneficial to the government, automakers, and as well as the public.

Government Intervention

Issues:

The first issue is that the government entered into the private domain of auto industry and proposed a significant increase in fuel-efficiency of their cars. Clinton’s proposed partnership program is an example of a non-incremental policy in which pressure from increased public concern over problems of environmental quality overbalanced small minimal regulatory standards of the federal government (Schulman, 1995). The government justified their intervention as actions to correct the market failure of negative externalities caused by carbon emissions (Theodoulou & Kofinis, 2004). Corporate automakers made great profits annually, but they lacked the time and resources to invest in long-term research and development projects on increase fuel-efficiency significantly

because they were preoccupied by intense competition with both domestic and foreign automakers. However, the “Big Three” resisted this partnership because this appeared to be a dramatic policy imposed on them, and as was the case with most private corporations, did not want government intruding into their businesses practices. They feared that the government would raise CAFÉ standards too quickly and inappropriately and that promising any specific goals would lock them in future Congressional legislations.

A problem also arose when the government initially gave the “Big Three” the impression that this would be a mutually-beneficial partnership and the former adversarial attitude between the government and the auto industry would go away. To their surprise and disappointment, the “Big Three” later discovered that the government had a more ambitious plan in mind than the non-regulatory approach that the auto industry had envisioned. The Clinton administration saw that in order to reduce and actually reverse the emission trend back to the 1990s levels, actions had to be drastic and proposed that the auto industry build a vehicle that was three or four times more fuel-efficient in ten years time. Automakers immediately saw this increase as impossible and unrealistic if it meant maintaining the same cost and performance, and it could potentially cost many jobs. This disappointment with the cordial relations they had hoped for caused the “Big Three” to lose trust in the government and made them fear that the government would accelerate the ten-year time frame and raise CAFÉ standards in the interim.

Another issue with a big increase in CAFÉ standards was that it would create a chain effect where automakers would likely look for ways to create lighter cars in order to meet this increase in fuel efficiency standard. This big reduction in car mass or size could potentially increase the risk of injury or fatality for passengers. As a result, drivers would

likely purchase more SUVs and light trucks to avoid the risks of lighter compact cars (Miller, Benjamin & North, 2005). A problem with this shift in consumer purchasing behavior was that SUVs and light trucks will decrease the overall fuel efficiency levels and increase the carbon dioxide emissions (Gore, 2006).

Recommendations:

Instead of simply imposing such a drastic increase in fuel-efficiency on the automakers, the government should use take incremental approaches to address the greenhouse effect and oil dependency issues (Lindblom, 1995). As will be discussed later, the government can use other measures such as combining public efforts to help reduce carbon dioxide emissions and find alternate fuel sources.

To diminish resistance from the automakers, the government should work on building a good relationship and faith with the automakers so it can give them better assurance about how the government operates. The government should understand that raising big increase CAFÉ fuel efficiency in a short amount of time is unrealistic and impossible and should not give imposed tight deadlines on the automakers. Meanwhile, with cooperation from the automakers, the government should do careful analysis and planning to work out a timeline to make realistic goals in increasing the CAFÉ fuel-efficiency (Goldsmith & Eggers, 2004).

The PNGV also needs to do careful research and analysis to determine the design criteria that will meet all the desired effects of the initiative. The auto industry task member should use their expertise to consider all the vehicle configurations and all the materials to make sure that the car is not only reducing carbon emissions but that it maintains safety standards. For example, the auto industry experts need to do careful

calculations to make sure that decreasing the mass of the vehicle would increase the risk of injury and would not reduce driving performance such as acceleration and braking performance (Moore & Lovins, 1995).

Lack of Cooperation & Leadership

Issues:

One of the issues with the auto industry's management team is that it excluded foreign automakers in the PNGV efforts. When the "Big Three" initially fought against the government-industry partnership, they expelled the American subsidiaries of Honda and Volvo from the Motor Vehicles Manufacturers Association (MVMA) and formed their own American Auto Manufacturers Association (AAMA). Later when the "Big Three" finally agreed to the partnership, they also asked the government to work through an organization, United States Council for Automotive Research (USCAR), in which the "Big Three" had set up. This effort to exclude foreign automakers in research decreases the scientific muscle for the task force to come up with better fuel efficient cars.

On the government side, the PNGV management structure is not well planned. The Government's "virtual" program assigned the Commerce Department to be in charge and to coordinate PNGV's activities; this appeared to be a poor decision because the Commerce Department is not a powerful department that possesses much control on the federal government's Research and Development programs. In addition, there was a lack of cooperation among the Commerce Department and the other seven federal agencies and twenty laboratories that represented the government side of PNGV. The sheer number of agencies involved resulted in difficulties in coordinating efforts. The task force efforts

were further exacerbated by a lack of support and commitment for PNGV across agencies. Because PNGV is not a Congressional program, some agencies do not take the task force seriously; some were not cooperative, while others did not participate at all because each agency only focused on its own primary goals and not the PNGV goals. Chapman notes that each agency simply wants to remain cordial in their relationship with the Congress rather than accommodate the presidential initiative. The eight agencies and laboratories each have their own source of money and guidelines. The fuzzy boundaries nature of sharing responsibilities across agencies is a main contributor to the PNGV program failure (Kettl, 2002). This portrayed an example of groupthink, where federal officials went along with activities that were favored by the Congress ((Denhardt & Denhardt, 2006).

The government management structure failed due to its complex and decentralized structure, and reflected a lack of leadership. No one knew how much funds would be available and how to direct funds once they were received. This lack of leadership led to confusion among the federal agencies about who is in charge and resulted in delays in pulling efforts together. Robert Chapman, though supposedly in charge as the PNGV director, has no authority and power to run the PNGV. He not only lacks power to redirect funds within agencies, but his own Commerce Department's monetary contributions are beyond his control as well. Chapman did not possess enough power and authority to pull resources together from all agencies to accomplish tasks (Kettl, 2002). He had to operate as a salesman to gain access and lure agencies to share their research. In addition, the management itself is not well structured with a crew of permanent staff. Though Good, supervisor of the PNGV program provided staff to assist Chapman with his duties, all these

employees are loaned to him from other agencies. What is more problematic is that Chapman himself is also on loan from National Institute of Standards and Technology.

Recommendations:

The greenhouse effect and foreign oil dependency is a global issue. The PNGV task force should encourage more domestic and international automakers to join the PNGV task force in building a better fuel efficient car. In Woodrow Wilson's (1886) discussion on administration, he says Americans should put away prejudices against looking anywhere in the world. If foreign auto manufacturers can provide great ideas to the better fuel-efficient cars, the PNGV should incorporate their technological ideas so that everyone around the world can benefit.

In order to accomplish a complex task such as PNGV involving eight agencies, the government management should first make sure all the team members are cooperating before launching this partnership. The government management team should set a good example for the automakers which will allow them to learn about the positive collaboration of the governmental agencies. There should also be a key leader who will guide and lead the agencies in the right direction. This key figure must possess great leadership and management skills and experience in order to hold together a diverse group of experts and task members from both industries. At the same time, this key leader should work closely with financial officers to make sure funds are enough for each research and operation. In order for this task force to work, the most important element is to start with a clear goal or objective. In a network of this many agencies, it is important to have meetings on a regular basis and work on aligning goals because it will not succeed unless people throughout their agencies see the benefits of the network. Success depends on identifying and resolving

any friction points (Goldsmith & Eggers, 2004). The team should develop a culture where everyone in the agencies will see the importance of their contribution and that their contribution will be valued (Guy, Newman & Mastracci, 2008). Furthermore, there needs to be a shared visibility into each agency's process. Better access to information produces better decisions and results, in turn reduce risk. Visibility allows agencies to instantly see other agencies' information, which produces higher level of efficiency (Goldsmith & Eggers, 2004). Agencies should put aside their competitive attitude and should not hide their knowledge and expertise.

Next, the task force should detail each official and each agency's roles in the task force. For example, the task force should legitimize and define Chapman's power and authority right from the start so he does not have to "wheedle" around among agencies. Once his power and authority is clear to all member of the task force, he can obtain access to information more efficiently without obstacles and questions from the agencies. Having clear roles will also keep the task force members focused on their responsibilities throughout the operation and that everyone can work towards the same goal.

After building a strong relationship among federal agencies, incongruence of business practices and philosophy between the government and auto industry should be addressed. Instead of government coming in and using their "command and control" approach to demand increases in fuel efficiency, the government should first work on building positive relationships with the auto industry. For example, the government may hire a liaison to get both sides acquainted and familiar with each other's business practice before launching this partnership. Building this relationship allows both sides of the PNGV trust one another and makes the process smoother. Lastly, the government

management team should observe and learn how other countries have successfully worked with their successful relationship with the auto industries.

Budget

Issues:

No definitive and concrete funding for this PNGV program exists, making it very difficult for all members and agencies of the task force. The clean air initiative simply lacked a coherent budget for agencies to work with. Because this initiative is not a congressional program, the PNGV cannot tap into other agencies' funds without Congressional approval. Currently the PNGV has limited funding and this is problematic because agencies will not know how, when and whether to take on a research a project when one does come along. Robert Chapman has no authority and power to redirect funds among agencies so there is essentially no one available in the task force with great power to make all the financial decisions and take on a leadership role to handle all the finances. President Clinton, though enthusiastic about the task force, does not have enough budgetary authority to direct funds to the PNGV as his power is constrained by the powers of the Congress (Theodoulou & Kofinis, 2004). This created budgetary problems and delays throughout the whole operation.

Another issue is that many agencies were reluctant to identify PNGV-related items in their budget because congressional oversight committees immediately cut them out. Congressional oversight committees kept a close eye on agencies' budgets making it difficult for agencies to redirect funds to PNGV as their funds were already approved and appropriated by the Congress to fulfill certain goals. This leaves the Department of Energy

as the only enthusiastic backer of PNGV, which allocated a portion of its agency funds towards the PNGV related activities. This is problematic because this initiative certainly requires more funding from sources because it cannot just rely on funding from the Department of Energy.

Recommendations:

The Clinton administration should figure out a good funding program to make sure this program can run successfully. Instead of forming this partnership with the corporate automakers, the government should allocate funds to these automakers each year to conduct long term research. Automakers will be evaluated and assessed each year and they will be granted funds according to their performance that year. The government should also award and recognize any industry or business, not just the automakers, for their technological achievements each year as a way to help company get their brand name recognized. In addition to allocating a set fund for each automaker each year, government should provide additional incentives such as matching and subsidizing automaker's costs if they want to do additional research that will help increase fuel efficiency. These methods will give companies an incentive to build more competitive and innovative technologies. Meanwhile, the government should still allow research companies to utilize the national laboratory systems for their research.

Another alternative is the PNGV should involve Congress and become a more conventional government program with clear lines of funding and authority spelled out by Congress. This Congressional program makes it easier for agencies when determining research projects. A conventional government program will make PNGV an official program so it won't be regarded as a "stealth program" in the eyes of the federal agencies.

Also, government agencies would be more willing to participate and support the program if they know that the program is supported and passed by the Congress.

Throughout the operation, financial managers from both the government and auto industries should do cost-benefit analysis to make sure that the benefits are larger than the costs before launching any research project (Patton & Sawicki, 1993; Brealey, Myers & Marcus, 2007). There should be a central figure such as a financial manager who carefully monitors all the finances of the program so that they can make adjustments to their budget as the program progresses. And since PNGV involves several agencies and the Big Three, this chief financial manager should work with the controller and financial managers from each entity to make sure they have sufficient funds and discuss their budgetary issues before it becomes problematic. Also, to make sure that the funds are spent appropriately, an auditing team will examine the finances thoroughly to make the task force spending are accountable to all the public funds (Rubin, 1995).

Since the Government Performance and Results Act (GPRA) of 1993 just passed, OMB and the Chief Financial Officers (CFO) Council, should instruct and provide guidance to these agencies on how to better prepare their budgets. At the same time, the financial officers of PNGV should take their time and do strategic planning to identify their goals and priorities and do their annual budget according to these priorities (Lee, Johnson, & Joyce, 2004). Lastly, global warming is a societal issue, agencies from all sectors including private, public or non-profit agencies should work together to fund this program. For example, the government can impose a small tax on all businesses so that all revenues coming from this tax can be used to fund the PNGV program.

Environmental Issues

Issues:

Individuals' decision to drive a car creates a negative externality as more carbon dioxide is emitted into the air directly resulting in bad air quality. If the government does not intervene and fix this problem, the cost to the US as well as countries worldwide to fix the air quality problem could become very large (Miller, Benjamin, & North, 2005). An average American emits about 15,000 pounds of carbon dioxide into the air each year (Gore, 2006). The abundant amount of carbon dioxide along with other pollutants in the air degrades the air quality and affects the Earth's atmosphere resulting in what is known as the greenhouse effect. The greenhouse effect is essential as it traps heat in the atmosphere to keep the Earth warm, but the tremendous amount of driving done by individuals nationwide has distorted and accelerated the natural process by trapping more infrared radiation in the Earth's atmosphere than necessary, causing gradual increases to the temperature of the Earth's surface (Gore, 2006). There is a consensus from scientists that even a small increase in the global temperature would lead to significant climate and weather changes, affecting the severity of storms, cloud cover, wind patterns and the duration of seasons (Gore, 2006). Some of the more severe greenhouse effect has contributed to higher ocean temperatures which caused death of coral reefs, and mountain glaciers have been melting more rapidly in the past decade and could potentially cause water shortage around the world in the future.

As we can see, poor air quality and greenhouse effects are negative externalities that result from the low production cost borne by the drivers. The production cost borne by individuals is very minimal compare to the social costs because they get to enjoy all the

benefits of driving while only incurring their private cost such as gas. The cost that individuals have to pay to drive simply cannot cover the entire social costs of pollution nor compensate the people who may be harmed by this pollution (Steinemann, Apgar, & Brown, 2005). Gore (2006) notes that many people are skeptical and do not notice the severity of the global warming problem because accepting this truth means they would have to change the way they live their lives, i.e.- their driving habits.

Similarly, private corporations such as the “Big Three,” do not want to accept the truth about the greenhouse effect because they do not want to face any more costs than they are incurring currently (Gore, 2006). Simply relying on free market and private actions to resolve externality problem will not be effective (Steinemann, Apgar, and Brown, 2005). Automakers such as the “Big Three” only concern about making money and competing with other automakers, simply did not focus on the environmental impact when they designed their cars. Clean air is a public good that the private sector is unwilling or unable to provide. When the nonrivalry and nonexclusivity characteristics of a public good, clean air in this case, is violated and that the public at large considers worthy, government has to step in to provide that good. Clean air used to be a good that everyone in the society can enjoy simultaneously, but the air quality has gradually deteriorated due to the increase in carbon dioxide and other pollutants.

Recommendations:

Government should take a regulatory role to address the issue of the greenhouse effect. To address this market failure of negative externality, both the producer of cars and consumers of gasoline should be responsible for the greenhouse gas effect. As Miller, Benjamin, & North (2005) suggest, in order to reduce production of greenhouse gases to

the efficient market rate, government must make the drivers bear the costs of their actions. The U.S. Government should impose a policy that taxes drivers each year for their negative contribution to the greenhouse effect. For example, the Department of Motor and Vehicles should review their database and evaluate the age of individuals' cars and determine an annual tax based on the age of cars. At the same time, the Government should give incentives to individuals who buy new low carbon emission cars such as giving them a tax deduction at the end of the year.

The United States as the biggest fuel burning country, contributing majority of carbon dioxide into the atmosphere should have the biggest responsibility to resolve the global warming situation (Gore, 2006). Not only should the auto industry be responsible to combat this carbon dioxide emission problem, governmental agencies should have the responsibility to work together with the public to protect and recover this public good of clean air (Geuras, & Garofalo, 2005). If the U.S. can control and reduce the carbon dioxide emissions, there could potentially be beneficial spillover effects everywhere else in the world (Steinemann, Apgar, and Brown, 2005). First, government needs to admit to and inform the public about the severity of the current carbon dioxide emission levels and dangers of global warming. Political leaders like the U.S. President have a major effect not only on policy but on public opinions and he should come out and mobilize the public's perception about the global warming (Theodoulou & Kofinis, 2004). The president should form a committee with his advisors and analysts to devise a detailed plan for the public to fight the greenhouse effect. He should work with government agencies as well as private companies to use mediums such as the media to create commercials and advertisements to educate the public about the global warming problems (Goldsmith &

Eggers, 2004). The government should also work with school districts to review their curricula to make sure children are learning about the impacts of greenhouse effects early on. Also, scientists should do more presentations supported by careful analysis at college campuses and universities to educate students and inspire them to find ways to fight the greenhouse effect (O'Sullivan, Rassel, & Berner, 2008).

In addition, the responsibility to save our Earth should start at the individual level. The government should reinforce and make citizens internalize their role and responsibility as public servants to serve and contribute to the public good of clean air (Geuras & Garofalo, 2005). Individuals should plan their trips more wisely by traveling shorter distances, taking advantage of carpools and take public transportation to help reduce the amount of carbon dioxide emitted each day. Even though global warming seems like such a big issue that individuals believe their own efforts won't matter, individuals' collective efforts can save our Earth (Theodoulou & Kofinis, 2004). After all, our ability to live on Earth is a moral issue (Geuras & Garofalo, 2005; Gore, 2006). Citizens can also help fight global warming by pressuring their elected representatives to support measures that contribute positively to climate change (Gore, 2006). Though corporations want to evade the responsibility to clean the air, pressure from the media and citizens participation can help bring public agenda to surface and make changes (Theodoulou & Kofinis, 2004; Stivers, 2008).

Also, in an effort to reduce fuel burning by cars, the government should promote more "Spare the Air" days to encourage people to drive less and take public transportation. Goral (2007) believes that we as residents, all have a "social responsibility" to find alternatives to "vehicle overpopulation and our dependency on oil." One bus easily

reduces at least 100 cars on the road. In addition, transportation systems across the nation need to perform tests to determine the carbon emission levels of the current buses and make necessary changes to reduce the emission levels as well. The department of transportation should work with automakers to come up with lower carbon emissions buses. Meanwhile, city planners in urban areas should also structure roads in neighborhoods friendly for people to walk or bike to their destinations.

In order to avoid increase in carbon dioxide emissions by SUVs and light trucks, the government should impose a policy that requires auto makers to make oversized vehicles that also meet higher fuel efficiency standards. In addition, the government should also educate people that driving oversized vehicles will cause more carbon dioxide into the air and contribute tremendously to the greenhouse effect and discourage people from purchasing oversized vehicles.

Oil Dependency

Issues:

In addition to environmental issues, the U.S.'s dependence on foreign oil signifies another market failure in our society in which only a few oil-producing suppliers, a form of an oligopoly, dominate the market (Steinemann, Apgar & Brown, 2005). American's persistent demand for gasoline and the lack of oil alternatives allow oil exporters to successfully continue to threaten the United States, even when prices have doubled and tripled (Hakes, 2008). The current market simply lacks a range of oil suppliers to provide a perfect competition market and results in an inefficient allocation of this resource (Steinemann, Apgar & Brown, 2005). In addition, the rapid population growth and

urbanization has made the U.S.'s dependency on oil ever increasing (Gore, 2006). The oligopoly significantly affects the efficiency of our society by setting prices higher and producing lower output, meanwhile social equity is also affected as all the wealth is shifted to this group of oligopoly. For example, one of the most successful cartels, the Organizational of Petroleum Exporting Countries (OPEC), was able to affect the American economy significantly by sharply reducing their supply of oil during the outbreak of the Middle East war in 1973, and drove gas prices up (Miller, Benjamin, & North, 2005). Interruption of oil supplies during this Middle East war created long lines at gas stations and caused gas stations to run out of gas (Hakes, 2008). The U.S.'s oil dependence makes the country very vulnerable and puts its will in the hands of these oil producing countries (Hakes, 2008). As Hakes (2008) mentions, American dependence on foreign oil at the current level of 60 percent of total consumption constitutes a grave security and economic risk and the risk of having a complete loss of oil from the world's largest exporter, Saudi Arabia, is clearly a major threat.

The U.S. dependency on foreign oil indicates that there is a lack of technology and innovation in our nation in finding alternative sources to fuel automobiles. Gasoline is an inelastic good with no existing substitutes for people to use as an alternative when gas prices change, but the US as well as countries worldwide have subjected themselves to the will of these few oil suppliers. The U.S. has not done any major technological progress and innovation to address this oil dependency problem and allowed this oligopoly to face little to no competition (Steinemann, Apgar & Brown, 2005).

Recommendations:

To remedy this market failure of oligopoly, the U.S. should find alternatives to petroleum and reduce oil dependency to prevent threats from these oil suppliers. Not only should the auto industry be responsible to combat this oil dependency, governmental agencies should have the responsibility to work together with the automakers and promote alternatives to gasoline to reduce demand and the price of gasoline. A committee consisting of environmentalists, scientists, policymakers, and analysts from the Clinton administration should be formed to discuss ways to find alternatives to petroleum. This diverse group of committee allows the team to find more solutions to address the oil dependency issue. This requires the committee to take its time in recruiting the right people (Shafritz, Rosenbloom, Riccucci, Naff & Hyde, 2001). For example, the committee can use qualitative research methods to review works of reputable scientists with expertise in the fields of biology or chemistry before bringing them on board to the committee (Berg, 2007). In addition, the committee needs to do human resources planning or a needs assessment to examine carefully what kinds of skills the task force needs and what positions are needed in order to fulfill their program needs and objectives (Shafritz, Rosenbloom, Riccucci, Naff & Hyde, 2001). Once these experts are carefully selected, they should do research to find more natural sources that we have an abundance of and convert them into fuel. Innovations such as the use of biofuels derived from plant materials such as corn and wood are great ways to utilize resources that we already have, and at the same time, give drivers alternatives to petroleum, reducing its demand (Gore, 2006). But the U.S. needs to make sure that consumption of these plant materials will not bring them to depletion.

Another way to reduce oil dependency is that the automakers should use technology to discover and explore other drive systems such as the recent concept of battery-electric vehicles (BEVs) and hybrid-electric vehicles (HEVs) cars (Moore & Lovins, 1995). Also efforts made by automakers recently to meet legislative mandates for zero-emission vehicle (ZEV) and ultra-low emission vehicle (ULEV) have brought new insights about the electric and chemical-fuel propulsion systems and should be explored further (Moore & Lovins, 1995). In addition, the recent prototype car such as the 1991 General Motor's Ultralite concept car should be used as a benchmark in the design criteria of the PNGV high fuel efficiency car. The Ultralite introduced some of the advanced materials used and incorporated a significant mass savings that resulted in an efficient car (Moore & Lovins, 1995).

In addition, policymakers worldwide need to form a public regulatory commission to formulate and adopt a stricter price regulation policy on oil suppliers (Steinemann, Apgar, & Brown, 2005). This public regulatory commission should consist of major policymakers from nations to brainstorm and analyze ways to come up with a fair price level. Furthermore, the U.S. and policymakers should review existing antitrust policies and possibly formulate an antitrust policy on these oligopoly when deemed necessary so they cannot control the market prices (Steinemann, Apgar, & Brown, 2005).

Lastly, to reduce oil dependency from the oil supplying countries, the PNGV should put aside their American pride and should not limit the task force to domestic automakers. The task force should encourage and allow other foreign automakers to contribute in finding solutions to alternate sources of petroleum. President Clinton and Al Gore should understand that reducing carbon dioxide emissions and oil dependency is a

global issue and collaborating with other nations will generate more solutions to fight these challenges.

Conclusion:

The analysis of issues in the PNGV initiative helps the U.S. government determine some of the problems in this government-industry partnership. It also provides valuable recommendations for both the government and auto industry management teams to make their partnership work more efficiently and stronger. Furthermore, discussion of PNGV helps bring public attention to the environmental and oil dependency challenges that Americans are facing. This is crucial as it can get everyone in the society to participate in saving our Earth and fight the oil dependency from oil supplying countries.

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