

FINAL DOCUMENT
JANUARY 2003



Response to
U. S. Department of Energy
Business Challenge

BMW GROUP • DAIMLERCHRYSLER • FORD MOTOR COMPANY •
GENERAL MOTORS • MAZDA • MITSUBISHI MOTORS • NISSAN •
PORSCHE • TOYOTA • VOLKSWAGEN

1401 H STREET, N.W. SUITE 900 • WASHINGTON, D.C. 20005
TEL: (202) 326-5500 • FAX: (202) 326-5598

Alliance Commitment

The Alliance of Automobile Manufacturers (Alliance) is a trade association of ten car and light truck manufacturers that account for more than 90 percent of U.S. vehicle sales. Member companies, which include BMW Group, DaimlerChrysler, Ford Motor Company, General Motors, Mazda, Mitsubishi Motors, Nissan, Porsche, Toyota, and Volkswagen, employ about 620,000 people in the United States in 35 states.

The Alliance supports the President's U.S. climate change strategy announced on February 14, 2002. In light of the global debate on climate change, we believe it is prudent to reduce emissions, including carbon dioxide, from our plants, products, and processes. We support the development of new technologies and the deployment of cost-effective energy strategies in all sectors to improve energy efficiency and reduce greenhouse gas (GHG) emissions.¹ We accept the President's challenge to reduce GHG intensity and improve the energy efficiency of our manufacturing facilities and will participate in the Department of Energy's (DOE) Business Challenge program.

- We support a single national voluntary reporting registry under the Department of Energy. Building on the reporting that some members are already engaged in, within one year all Alliance members will be reporting GHG emissions from their manufacturing facilities.
- Alliance member companies commit to achieve at least a 10% reduction in GHG emissions from their U. S. automotive manufacturing facilities, based on U. S. vehicle production, by 2012 from a base year of 2002.
- Progress toward this goal can be measured by DOE based on 1605(b) registry reporting by individual Alliance members of their emissions and avoidance, reduction, and sequestration activities.
- Alliance members will continue to support government/industry partnerships that further the development of practical and affordable energy efficiency solutions.

Clearly, achievement of this commitment and the national goal will depend on a number of external factors, including economic stability, coordinated regulatory policies that avoid mandates and other market barriers, weather variations which skew energy use, and support from the utilities' energy mix including emission factors reductions. With respect to the energy efficiency of our products, we will continue to work with the National Highway Transportation Safety Administration (NHTSA) on its ongoing rulemaking to address new vehicle fuel economy.

Greenhouse gas reduction policies must be balanced with sound energy policy for the United States. The challenge is to work together to meet the world's growing demands for energy while addressing long-term concerns about the environment. We agree with the President that it is critical to continue to sustain economic growth. It is through this growth that both the public and private sectors will be capable of financing investment in new, clean energy technologies. The climate issue is a global one, which must be addressed as a shared responsibility of government, industry, and individuals.

¹ Greenhouse gases, as defined by the UNFCCC, include carbon dioxide, methane, nitrous oxide, halogenated substances (e.g. HFCs and PFCs), and SF₆.

A Decade of Progress

Energy Conservation at Automotive Facilities

Carbon dioxide (CO₂), the primary GHG emitted from manufacturing facilities, is generated from the consumption of energy, direct and indirect. Direct CO₂ emissions are a product of efficient combustion of various fuels for purposes of heating and cooling buildings, operation of process equipment, and operation of emission control equipment (e.g., thermal oxidizers and incinerators). Indirect emissions result from the consumption of electricity and other forms of converted energy.

Over the past decade, the automotive industry has made significant advancements in projects that conserve energy and improve efficiency. A highly competitive market drives such advancements.

Improvements within existing manufacturing facilities include conservation activities, such as changes in operating practices and employee awareness programs, and efficiency improvements such as capital investments in new, more efficient, technologies and processes. Examples of projects include the widespread use of energy efficient lighting, development of automated facility energy management systems, efficiency improvements in heating, ventilation, and air conditioning systems, and upgrades and modernization of buildings and equipment to optimize energy use.

The industry has also undertaken fossil fuel conversion projects to utilize cleaner burning fuels. Powerhouses in older manufacturing facilities, designed to burn coal and fuel oil, have been converted to cleaner, less carbon-intensive natural gas.

At "greenfield" sites, Alliance members have invested in state-of-the-art manufacturing plants that produce vehicles and component parts at dramatically reduced rates of CO₂ emissions per unit of production.

In partnerships with energy suppliers, some of the auto companies have implemented energy management programs and have undertaken projects that reduce energy consumption and GHG emissions, including co-generation projects and landfill gas recovery.

Company-specific examples of energy efficiency / GHG reduction projects are published in corporate environmental reports and are also publicly available on some of the companies' websites. Alliance member companies also participate in a variety of governmental programs that promote energy conservation and energy efficiency.

Halogenated GHG Emissions

In the early 1990s, the automotive industry successfully re-designed air-conditioning systems in vehicles to eliminate the use of chlorofluorocarbons (CFCs). Automotive air conditioning systems today primarily utilize HFC134a, which has a significantly lower Global Warming Potential (GWP).

Similarly, Alliance members have successfully reduced the use of CFCs in fire suppression systems, refrigeration systems, and building chillers in automotive manufacturing facilities and office buildings.

Vehicle Technology: Government/Industry Partnerships

The fuel economy of passenger vehicles (cars and light trucks) is regulated under the existing Corporate Average Fuel Economy (CAFE) program. The agency responsible for setting CAFE standards, NHTSA, has already begun a rulemaking to increase the current standards over several years. In addition, auto manufacturers are engaged in a range of activities, as individual companies, investing billions of dollars to develop alternative and advanced technologies, such as fuel cell and hydrogen vehicles, and hybrid gasoline-electric vehicles, to reduce fuel consumption and emissions. Many of these advanced technologies have been introduced voluntarily, not in response to regulatory requirements or mandates, and member companies have already announced plans to expand the availability of technologies such as hybrids in the near future.

While regulation of vehicle fuel economy is a separate program administered by NHTSA, apart from the DOE Business Challenge, Alliance companies are also participating in various activities that will serve to promote technology aimed at reducing vehicle CO₂ emissions. Two examples of these are the California Fuel Cell Partnership and FreedomCAR.

California Fuel Cell Partnership

This partnership is advancing a new vehicle technology that could move the world toward more practical and affordable environmental solutions. For the first time ever, automobile companies, fuel suppliers, and government have joined together to demonstrate fuel cell vehicles under day-to-day driving conditions. In addition to testing the fuel cell vehicles, the partnership is examining fuel infrastructure issues and beginning to prepare the California market for this new technology.

Specifically, the partnership aims to achieve four main goals:

Demonstrate vehicle technology by operating and testing the vehicles under real-world conditions in California;

Demonstrate the viability of alternative fuel infrastructure technology, including hydrogen and methanol stations;

Explore the path to commercialization, from identifying potential problems to developing solutions; and

Increase public awareness and enhance public opinion about fuel cell electric vehicles, preparing the market for commercialization.

FreedomCAR

In January of 2002, USCAR, a consortium of auto companies, announced their participation in a new federal research partnership with the Department of Energy called FreedomCAR. FreedomCAR is a program for the advancement of high-efficiency vehicles that focuses on fuel cells and hydrogen produced from domestic renewable energy sources. FreedomCAR's long-term goal is to develop technologies for hydrogen-powered fuel cell cars and trucks that will require no foreign oil and emit no pollutants or greenhouse gases.

The transition of vehicles from gasoline to hydrogen is viewed as critical both to reducing carbon dioxide emissions and to reducing U. S. reliance on foreign oil. FreedomCAR will focus on technologies to enable mass production of affordable hydrogen-powered fuel cell vehicles and the hydrogen-supply infrastructure to support them. FreedomCAR also will continue its support for petroleum-dependent technologies that have the potential to dramatically reduce oil consumption and environmental impacts.

Deployment of Advanced Vehicle Technologies

Automakers share the goal of increasing fuel efficiency and believe the best way to continue making progress is through the development and purchase of advanced technology vehicles. Consumers purchase vehicles to meet their family needs for affordability, passenger room, payload capacity, increased safety features, and utility. Automakers offer more than 30 models with fuel economy ratings above 30 miles per gallon, but consumers purchase few of these vehicles because they do not offer all of the attributes that consumers desire. Breakthrough technologies will allow consumers to continue choosing vehicle attributes they need while enjoying increased fuel economy gains. Alliance members are developing and introducing vehicles that run on alternative fuels, as well as hybrid-electric cars, SUVs, and pickups that can significantly improve city fuel economy. Automakers are also working on the next generation of lean burn technology and have committed billions of dollars to bring zero-emission fuel cell vehicles to market as soon as possible.
