

# **Work Plan**

## **Climate VISION Program**

### **Alliance of Automobile Manufacturers**

In January 2003, in response to the initiation of the President's Climate VISION Program (Voluntary Innovative Sector Initiatives: Opportunities Now) and the U.S. Department of Energy (DOE) Business Challenge, Alliance member companies committed to achieve at least a 10% intensity reduction in Greenhouse Gas (GHG) emissions from their U.S. automotive manufacturing facilities, based on U.S. vehicle production (CO<sub>2</sub>/vehicles produced), by 2012 from a base year of 2002. Each Alliance member has individually committed to achieve the 10% intensity reduction goal for its U.S. automotive manufacturing and agreed to make its progress public by filing annual reports through the U.S. Department of Energy Greenhouse Gas (GHG) Registry. The Alliance and its members will work in collaboration with the U.S. Department of Energy, the U.S. Environmental Protection Agency, and other partners to implement the activities described below and contribute to the President's goal of reducing the GHG intensity of the United States economy by 18% by the end of 2012.

The Alliance Work Plan consists of:

**Element 1: Emission measurement and reporting protocols (under DOE Guidelines)**

**Element 2: Identify/implement near-term, cost-effective opportunities**

**Element 3: Develop cross-sector projects for reducing greenhouse gas emission intensity**

**Element 4: Accelerate investment in R&D and commercialization of advanced technology**

**Web Links: Alliance and member websites**

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#### **Element 1: Emission Measurement and Reporting Protocols (Under DOE Guidelines)**

##### **Objectives:**

Core to the Alliance commitment is the measurement and reporting of GHG emissions from each Alliance member's auto and light duty truck manufacturing facilities in the United States. To that end, the members with U.S. manufacturing facilities are working with the DOE to update the Agency's 1605(b) guidelines for the reporting of GHG emissions, and are voluntarily annually reporting their energy use and GHG emissions and reductions to the DOE 1605(b) GHG Registry. Such reporting is an essential first step for evaluating each member's progress toward achieving its GHG intensity reduction commitment under the Climate VISION Program. Considerable investments have been made to initiate and maintain such reporting systems and track evolving reporting protocols established by DOE.

This member commitment to report directly to the DOE Registry underscores the leadership provided by the automobile industry sector in this voluntary effort.

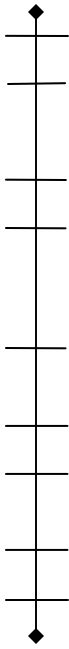
##### **Actions:**

Annual reporting was completed by all members for baseline calendar year 2002 data and 2003 data by June of 2004, and will continue over the duration of the Climate VISION Program until 2012. The following timeline highlights the actions and milestones that will be taken or achieved to ensure the effectiveness and accuracy of reporting protocols for the automobile-manufacturing sector:

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## Timeline

2002



**Jan. '03: Alliance submits its Climate VISION commitment letter to DOE**

**Feb. '03: DOE Announces Alliance Climate VISION commitment.** Prior to 2002, one member company reported to the DOE 1605(b) GHG Registry. All Alliance member companies with U.S. manufacturing facilities make formal commitment to report to the DOE 1605(b) GHG Registry.

**June '03:** Members file CY '02 baseline reports to DOE (some first time reporters file later in the year).

**Jan. '04:** The Alliance and many of its members participate in the **DOE workshop** to update the 1605(b) Guidelines for reporting GHG emissions. The Alliance views the DOE 1605(b) Guidelines as a set of tools to help guide Climate VISION members toward achieving their reduction goals, and provides written comments to DOE.

**June '04:** Members file CY '03 data to the DOE 1605(b) GHG Registry, pursuant to Climate VISION goal.

**Sept. '04:** The Alliance submits its draft work plan to the DOE.

**Jan. '06:** The Alliance and its members support DOE meetings to discuss initial implementation experiences with the updated reporting guidelines, once finalized by DOE.

**June '08:** Planned Mid-Program Review of progress toward target; adjust, if necessary, with DOE.

**Annual Reports** continue through 2012.

Specific actions in support of elements 1-4 can be found on company websites, listed below.

2012

Individual Alliance members will report their progress toward the intensity reduction target directly to the DOE 1605(b) GHG Registry. Alliance members are prepared to report their GHG emissions in accordance with the 1605(b) General Guidelines and Supporting Documents, using the DOE [Technical Assistance](#) reporting tools provided by the 1605(b) program. The Alliance and its members will also support DOE meetings to discuss initial implementation experiences with the updated reporting guidelines, once finalized by the DOE. In 2008, Alliance members and DOE will jointly evaluate whether adjustment to the projects and methods to achieve the 2012 target is necessary.

### **Benefits:**

Since 2002, many of the members of the Alliance have been working closely with the DOE through the Climate VISION program to help guide the development of the reporting guidelines under the 1605(b) program. We look forward to continuing our collaborative efforts, with the goal of creating a set of GHG reporting guidelines that support the Administration's goal of reducing total U.S. GHG emissions intensity by 18% by 2012. Reporting guidelines tailored to the manufacturing sector will help to measure members' progress in meeting their goals under the Climate VISION Program and assist in identifying measures and activities to maximize members' GHG intensity reductions. It is also clear that the process of reporting enables each company to determine its energy and CO2 baseline such that additional internal company targets can be set.

### **Element 2: Identify/Implement near-term, cost-effective opportunities**

#### **Objectives:**

The Climate VISION Program aims to work with industry groups/sectors and individual companies to identify and implement cost-effective energy saving opportunities that reduce GHG emissions. Through this collaboration, the members of the Alliance will continue to diligently work on implementing near-term cost effective opportunities to reduce energy usage and GHG emissions in their U.S. manufacturing facilities.

#### **Actions:**

Each Alliance member is developing and implementing a program (integrated into larger business systems and corporate planning) to achieve at least a 10% intensity reduction in GHG emissions from its U.S. manufacturing

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operations by 2012. Each member is focusing on those projects that are the most efficient and economical to implement, based on company-specific considerations. The range of activities that members may undertake to lower energy usage and GHG emissions per unit of production include the following:

- Energy conservation and efficiency measures at the company's manufacturing facilities
- Outreach to improve the performance of suppliers
- Use of "Green Power"(e.g., renewable energy, landfill methane) as a substitute for carbon-based energy sources
- Application of "Green Building" technologies and construction standards in new and existing facilities
- Other activities to reduce, avoid or sequester GHG emissions that are outside members' manufacturing facilities and operations

As a first step, Alliance members are performing energy assessments of their manufacturing operations to identify conservation measures, efficiency improvements, and other changes in operational practices that can be implemented at their manufacturing plants. For example, one focus area with near-term potential for the auto industry is the reduction of electric motor/plenum usage in the assembly plant paint shop. One method involves coordinating weekend (as well as holiday) equipment shut downs or reductions at the plant. Generally, vehicle assembly operation paint shops have the greatest GHG footprint. Therefore, Alliance members are investigating opportunities to mitigate the energy and environmental impact of their paint shop operations. Because different plants use different coating technologies, coating materials, equipment, environmental controls, and have different climate conditions, members must take into account site-specific considerations, rather than simply applying a "one-size-fits-all" approach to achieve reductions.

Likewise, auto industry manufacturing plants differ in the scope of operations they encompass. Some plants perform metal stamping operations, plastic parts manufacturing, or other specialized functions; others are more limited to assembling and painting the final vehicle. Therefore, each member company is independently developing its own means to GHG reductions based on the varying (and changing) characteristics of its constellation of facilities, timing of construction and permit cycles, and other factors.

Another way that our objectives are currently being supported is through existing voluntary programs that share "best practices" in order to accelerate the near-term implementation of energy efficiency/energy management projects. Public/private partnerships that Alliance members use as resources to achieve cost-effective opportunities include, but are not limited to:

- DOE co-sponsored energy efficiency training events on various energy applications (pumping, steam, process heating, etc.)
- DOE co-sponsored energy efficiency applications (i.e., [Green Buildings](#), [Rebuild America Program](#))
- EPA co-sponsored activities and GHG reductions programs (Energy Star, Suppliers Partnership (SP), WasteWise, [Climate Leaders](#))
- Implementation of emerging energy efficient technologies
- Development and dissemination of information, tools and resources ([DOE 1605\(b\) program](#))

A brief description of the programs that the membership of the Alliance feels are particularly successful in promoting near-term cost effective opportunities are listed below:

[Energy Star](#), and one of its programs "Focus on Energy Efficiency in Auto Manufacturing", works with participating companies to institute or improve corporate energy management programs and the energy performance of their operations. EPA provides tools to gauge plant and program energy performance and recognizes superior environmental and energy achievements.

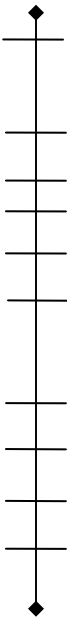
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Other partnership opportunities that various individual Alliance member companies are participating in are: (1) working with the [DOE Office of Energy Efficiency and Renewable Energy](#) (EERE) to develop Allied Partnership agreements that will include a variety of activities to “establish an organizational mechanism within the sector to facilitate communication of best practices and technologies which could impact energy utilization and/or CO<sub>2</sub> generation within the auto supply chain,” (2) working with the EPA via the [Suppliers Partnership for the Environment \(SP\)](#) program to find opportunities for energy usage and GHG reductions up and down the automotive value and supply chain (as well as other environmental and pollution prevention goals), and (3) working with [U.S. Climate Partnership Association \(USCPA\)](#) to develop, on behalf of the DOE Climate VISION goals, a framework for managing GHG emissions across all value chains, in concert with the enabling tools provided by the DOE 1605(b) program. In addition, there are many other voluntary partnerships that Alliance members are involved in that consider energy and the environment and contribute to efforts to meet the established targets.

In some cases, Alliance members are participating in the [Climate Leaders](#) Program, an EPA-industry partnership established to promote voluntary GHG emissions reductions. This governmental partnership provides another effective tool to assist members in meeting their 10% intensity reduction commitments under the Climate VISION program. Among other things, participating members set aggressive corporate-wide GHG emission reduction goals for their U.S. manufacturing operations and report the results of their reduction efforts to the DOE 1605(b) GHG Registry.

### Timeline

**2002**



**'01-'03:** Development/Publication of *Energy Star Guide on Energy Efficiency Improvement for the Vehicle Assembly Industry*. Perform or update energy assessments to identify conservation measures, efficiency improvements, and other changes in operational practices to reduce GHG emissions intensity at each member's U.S. manufacturing facilities.

**June '03:** Initial discussions with DOE, EERE, and EPA.

**Dec. '03:** Member companies participated in various workshops and other public/private partnership activities (and will continue to do so throughout the program).

**Feb. '04:** EPA Climate Leaders Workshop -- a sharing of best practices.

**Mar. '04:** US Climate Partnership Association GHG Management Workshop – several Alliance members participated in a DOE/USCPA co-sponsored workshop. Seven project areas are under development and progress will be publicly reported. Follow-on workshops co-sponsored with the DOE are anticipated.

**June '04-Dec. '05:** Individual Alliance members will identify GHG reduction activities on their company websites.

**Aug. '04:** Annual Meeting, Energy Star Focus/Auto Manufacturing.

**Aug. '04:** Publication of Energy Star Auto Assembly Plant Energy Performance Indicator (EPI) tool.

**June '08:** Alliance and DOE evaluate impact of six years of reporting progress and pathways forward to meet the target. Alliance members update, to the extent necessary, energy assessments for reducing GHG emissions intensity at member U.S. manufacturing facilities.

**2012**

**Specific actions in support of elements 1-4 can be found on company websites, listed below.**

### Benefits:

The Climate VISION program helps its members leverage the network of voluntary programs listed above, and also many others at the local level. Alliance members' ongoing active involvement in these programs enables members to improve upon their programs, initiatives and actions that collectively add up to millions of dollars per year in projects that conserve energy and reduce GHG emissions by improving efficiency.

Improvements within existing manufacturing facilities include enhancing energy management and greenhouse gas reduction planning, conservation activities, efficiency improvements, changes in operating practices, and employee awareness programs. At the plant level, additional actions to reduce energy consumption by major processes such as assembly, painting, metal casting and machining, stamping, and powerhouses, may be available. Facilities will

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continue to implement energy management systems that maintain control of compressed air, lighting, equipment power utilization, hot water, and steam. The commitment to comprehensive energy and environmental management systems has been integrated into member companies' International Standards Organization (ISO) 14001 programs. Many Alliance members have initiated plant and corporate goals to measure energy and environmental performance at manufacturing facilities. Leading performers are often rewarded for successful projects within corporate energy and environmental project competitions.

In addition, at the corporate level, the Climate VISION program, through access to numerous voluntary programs, enables Alliance members committed to reducing GHG emissions outside of their manufacturing facilities to do so and to share best practices along the way. Members financially support numerous forest preservation and reforestation activities. Environmental and conservation grant efforts will continue, as will volunteering with a variety of community-based environmental programs. Alliance members will continue to pursue partnerships with energy service providers/suppliers and investigate innovative energy savings technologies (including possible Demand-Side Management Programs).

### **Case Studies:**

- Example 2-1: Lighting efficiency plans to implement green lights projects at 73 plants. [Read More](#)
- Example 2-2: Plant-wide assessment to identify opportunities to reduce energy use. [Read More](#)

For additional examples and case studies, please see [Appendix 1](#) of the Work Plan.

## **Element 3: Develop cross-sector projects for reducing greenhouse gas emission intensity**

### **Objectives:**

The Climate VISION Program encourages cross-sector projects that reduce GHG emissions. Alliance members, DOE, and EPA will explore potential innovative projects for improving energy efficiency and reducing GHG emissions across the auto industry supply chain and other related industrial sectors.

### **Actions:**

Alliance members are working to spur GHG emissions intensity reductions across all sectors of the economy through collaborations with our suppliers, energy suppliers, local governments, and other industry sectors. One such collaboration involves extending technology bridges to local community energy and environmental projects. The [Rebuild America Program](#), for example, is reaching k-12 schools to improve energy system efficiency of the schools, as well as co-designing innovative curriculum materials to learn of the untapped opportunities to reduce and better manage GHG emissions. Alliance members are also exploring a wide variety of other possible initiatives, such as: (1) development and application of renewable energy technologies; (2) development and application of more efficient manufacturing technologies (e.g., motors); (3) recycling, pollution prevention and waste reduction efforts; (4) Green Power; and (5) Green Building /Demand Side Management (DSM).

Alliance members are frequently leveraging these collaborative efforts through cross-sectoral programs lead by the DOE, EPA, Non-Governmental Organizations, and other sponsored initiatives, many of which have been launched in the past year or two. Individual Alliance members currently participate in a variety of voluntary programs aimed at promoting development of cross-sector projects for reducing GHG intensity, such as the following:

- [Climate Leaders](#)  
Voluntary program challenging partners in various types of businesses to set aggressive corporate-wide GHG emission reduction goals. Participating Alliance members report the results of their Climate Leaders emission reduction goals to the DOE 1605(b) GHG Registry.
- [Climate RESOLVE](#)  
The Business Roundtable (BRT) cross-sector initiative calling for voluntary action by all businesses to control GHG emissions, in order to minimize the risks of climate change. BRT members are encouraged to report their GHG management to the DOE 1605(b) program. Workshops have helped companies identify ways to take voluntary action to reduce, offset, sequester, or avoid GHG emissions. Several Alliance members are members of the BRT.

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- [Energy Star](#)  
Government partnership offering energy management strategies to assist in measuring energy performance, setting goals, tracking savings, and rewarding improvements. Alliance members participating in Energy Star have developed energy benchmarks and best practices for manufacturing operations.
- [Great Lakes Renewable Energy Association \(GLREA\)](#)  
A non-profit organization that educates, advocates, promotes, and publicly demonstrates renewable energy technologies. Participating Alliance members pursue renewable energy availability through certification and education opportunities.
- [Great Lakes Region Waste Reduction and Energy Efficiency Conference and Expo \(WREE\)](#)  
Provides opportunities for industry to exchange ideas on pollution prevention and energy efficiency activities. Several Alliance members are partnership organizations, which share case studies and best practices during this annual workshop.
- [Green Power Partnership](#)  
Encourages organizations to use green power as a part of best-practice environmental management. Several Alliance members are partners in the U.S. EPA Green Power Partnership and have committed to utilizing green power renewable electricity sources.
- [Landfill Methane Outreach Program](#)  
Voluntary assistance and partnership program expanding the use of landfill gas for plant heating and electrical generation. Alliance members are among the largest corporate users of landfill gas for thermal energy in the United States and have completed numerous projects to use landfill gas as fuel.
- [Michigan Automotive P2 Partnership](#)  
A voluntary partnership between automotive companies and the Michigan Department of Environmental Quality (MDEQ) promoting pollution prevention and resource conservation. Alliance members work together to advance pollution prevention within their organizations, and with the MDEQ to promote pollution prevention to auto suppliers and other industries in Michigan.
- [Green Buildings, Rebuild America Program](#)  
Growing network of community-driven voluntary partnerships that foster energy efficiency and renewable energy in commercial, government, and public housing buildings. The program's goals are: to conserve energy, accelerate use of the best energy technologies, save money, reduce air pollution, lower U.S. reliance on energy imports, help revitalize aging city and town neighborhoods, and create "smart energy" jobs.
- [Suppliers Partnership for the Environment](#)  
Automobile industry partnership striving to increase the competitiveness of U.S. companies, while reducing environmental impacts. It involves sharing best practices throughout the automotive industry supply chain, especially for the benefit of the smaller, lower-tier companies in the industry. Through the partnership, manufacturers and suppliers will be able to continuously improve products and processes, increase energy efficiency, eliminate wastes, reduce environmental impacts, identify cost-saving opportunities, and optimize resources and technologies.
- [US Climate Partnership Association \(USCPA\)](#)  
Multi-industry trade association designed as a learning platform to help companies manage their GHG emissions, and advocate to the government that voluntary actions are effective. The USCPA also provides a forum for companies to "get started" in reporting to the DOE 1605(b) GHG Registry.
- [WasteWise](#)  
Voluntary partnership designed to take steps towards reducing waste (and GHG emissions) associated with waste disposal and increase recycling efforts. The GHG reductions associated with WasteWise recycling efforts and waste prevention will assist Alliance members in achieving commitments.

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- [World Resources Institute – Green Power Market Development Group](#)  
Commercial and industrial partnership dedicated to building corporate markets for green power. Opportunities for GHG reductions include on-site projects such as hydrogen fuel cells or direct use of landfill gas for thermal energy at manufacturing facilities.

**Benefits:**

Participation in the Climate VISION program has allowed for a more streamlined approach to managing the plethora of voluntary programs made available to help manage energy usage and GHG emissions. Alliance members are involved in at least a few of the programs listed above and a few of the members have also been honored with awards through the various programs. Awards range from Sustained Energy Management practices (including the use of landfill gas for thermal energy) to Superior Resource Management to manage waste streams up and down the supply chain. Alliance members are actively involved in managing not only costs but the energy and environmental impacts up and down the supply chain and the DOE Climate VISION program enhances such activities.

**Case Studies:**

- Example 3-1: Landfill gas used to power boilers, instead of fossil fuel. [Read More](#)

For additional examples and case studies, please see [Appendix 1](#) of the Work Plan.

**Element 4: Accelerate investment in R&D and commercialization of advanced technology**

**Objectives:**

Alliance members will continue to work through the Climate VISION program to promote the acceleration of investment in R&D and the commercialization of advanced technologies to bringing new energy efficient processes and products to market.

**Actions:**

The development of more advanced technologies and new manufacturing processes is critical for improving plant performance over the long term. Alliance member companies are actively working individually, and in some cases in partnerships enabled through the DOE Climate VISION program and its connections to EPA and local voluntary programs, on energy efficiency technologies that positively impact upstream segments of the value chain.

Apart from Alliance member commitments regarding their facilities, members are also making enormous investments in new technologies for auto and light duty truck products, which will reduce emissions, benefit the environment, and change the energy and fuel use footprint. Alliance and member company websites listed below provide additional information on development of product/vehicle technologies and participation in government/industry partnerships for development these technologies.

**Benefits:**

Members of the Alliance believe that their participation in the DOE Climate VISION program will enhance access to new, cutting edge technologies offered through the sharing of best practices that allow participants to take away practical actions they can use in their respective businesses. The Alliance membership activities with many of the groups listed in Elements 2 and 3 above highlight the goal of accelerating investment for R&D.

**Case Studies:**

- Example 4-1: Ford “Fumes-to-Fuel” system that captures and concentrates paint fumes, which are used to generate clean energy from fuel cells for use at the plant. [Read More](#)

For additional examples and case studies, please see [Appendix 1](#) of the Work Plan.

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**Web Links to Alliance and Member Company Websites:**

The Internet address for the Alliance is [www.autoalliance.org](http://www.autoalliance.org). Additional details on participation in various voluntary initiatives are published in member corporate environmental reports and will be found within each of the member websites shown below.

**BMW Group**

**General Motors**

**Porsche**

\* Does not own or operate  
U.S. manufacturing facilities

**DaimlerChrysler**

**Mazda**

\*1605(b) reporting covered by Ford

**Toyota**

**Ford Motor Company**

**Mitsubishi Motors**

**Volkswagen**

\* Does not own or operate  
U.S. manufacturing facilities



## **Appendix 1: Case Studies**

### **Element 2: Near-Term Cost Effective Projects**

[Example 2-1 from GM \(Lighting efficiency plan to implement “green lights” projects at 73 plants\)](#)

[Example 2-2 from Ford \(Plant-wide assessment to identify opportunities to reduce energy use\) \(Michigan Truck\)](#)

[Example 2-3 from GM \(Plant-wide audit to reduce energy use at Janesville truck plant\)](#)

[Example 2-4 from DaimlerChrysler \(Equipment Lighting Survey, Kenosha Engine\)](#)

[Example 2-5 from DaimlerChrysler \(Steam Trap program, Sterling Heights\)](#)

[Example 2-6 from DaimlerChrysler \(Thermal Oxidizer temperature, Belvidere\)](#)

### **Element 3:**

[Example 3-1 from GM \(Project to use landfill gas, instead of fossil fuel to power boilers\)](#)

[Example 3-2 from GM \(WasteWise Project\)](#)

[Example 3-3 from BMW \(Landfill Gas Project\)](#)

[Example 3-4 from DaimlerChrysler \(Landfill Gas Project, St. Louis\)](#)

### **Element 4:**

[Example 4-1-A from Ford \(Overview of Ford fumes-to-fuel project\)](#)

[Example 4-1-B from Ford \(Additional information on Ford fumes-to-fuel project\)](#)