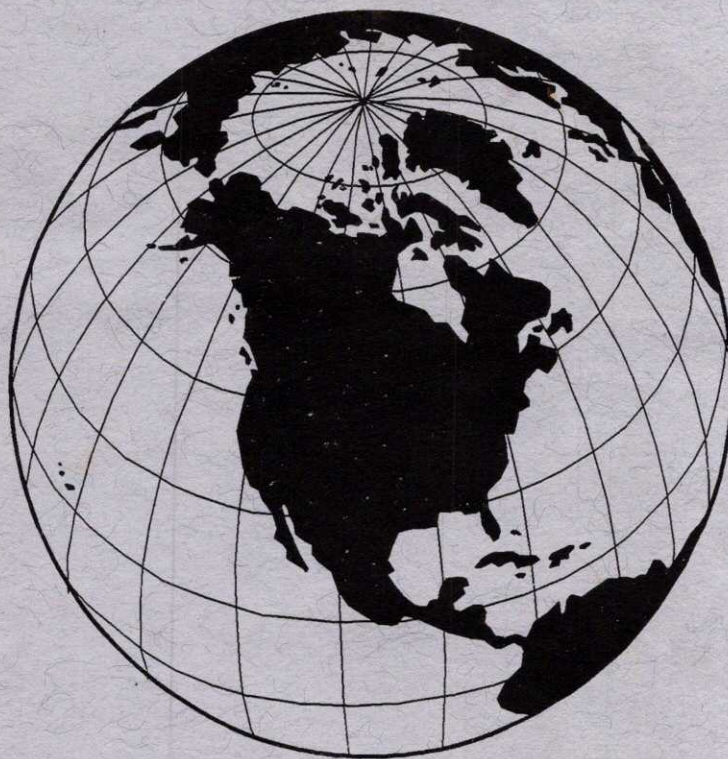


Progress Report on U.S. Industry Voluntary Actions to Curb Greenhouse Gas Emissions

Report to the
Global Climate Coalition



The EOP Group, Inc.

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Progress Report on U.S. Industry-led Voluntary Measures to Curb Greenhouse Gas Emissions

Global Climate Coalition

INTRODUCTION

In April 1993, President Clinton announced a "United States Climate Action Plan" designed to reduce greenhouse gas emissions, but at the same time to enhance prospects for new growth, job creation and competitiveness in a global market. Underpinning the initiatives included in the plan was the challenge to industry to work with government through new government/industry partnerships and to develop new voluntary initiatives independent of government actions which would contribute to the Plan's goal.

The voluntary approach is an effective approach. Economic growth has not declined, it has increased. Employment has increased. Energy use, and thus emissions, are declining for each unit of economic output. Participation in the global market is greater by some industries than in the past. This brief report is to provide a progress report on U.S. Industry-led voluntary initiatives that are improving energy efficiency and are already placing a curb on greenhouse gas emissions. The report finds that:

- The private sector has undertaken numerous initiatives aimed at addressing climate issues. Their initiatives frequently consider energy efficiency as well as environmental protection and productivity improvements when these critical capital investment and modernization decisions are made. Sometimes these initiatives address the commercialization of emerging and renewable technologies and the international transfer of technologies. **(INDUSTRY VOLUNTARY INITIATIVES)**
- Voluntary reporting under the Federal Government's Section 1605 (b) program gives firms the opportunity to report on emission reduction efforts. Although all firms taking such steps may not file reports with the government, in the first reporting cycle, over 600 separate measures were reported. **(VOLUNTARY REPORTING)**
- Since 1993, the over 35 voluntary initiatives included in the Climate Change Action Plan which involved both private sector and federal government action have been modified to be more effective and new programs have been added. To date, available information demonstrates tangible results even though some of the programs are less than one year old. **(FEDERAL VOLUNTARY PROGRAMS IN THE NATIONAL COMMUNICATION)**

Voluntary programs are successful because they represent a unique and innovative approach to addressing greenhouse gas emissions. They are easily adaptable to changing economic conditions. They can be tailored to unique national circumstances. They avoid costly and time consuming rulemaking and litigation. They harness the expertise, ingenuity and financial and human capital of the private sector. They facilitate innovation as technology improves and participants gain greater operating experience.

The successes of these new voluntary programs, which are just now beginning to be documented, offset many of the criticisms that have been raised regarding the efficacy of the U.S. National Communication and its dependence upon a voluntary approach.

Economic growth has been higher, and energy prices lower than the original plan assumed and thus projections of greenhouse gas emissions are higher than anticipated. This underscores the fact that arbitrary greenhouse gas emissions targets and timetables are not appropriate policy for a dynamic economy. Rather, the flexibility offered through voluntary programs allows industry to react to new business and competitive forces in such a way as to encourage economic growth and job creation.

This report, prepared for the Global Climate Coalition, the leading industry organization actively working for sensible and cost effective climate change policies, includes examples of a small portion of the initiatives in which GCC members are involved.

INDUSTRY VOLUNTARY INITIATIVES

The U.S. business sector voluntarily has taken an active role in addressing climate change. Much of this activity is focused on energy efficiency, in many instances through integrated programs which combine energy efficiency and environmental protection with overall and productivity and competitiveness enhancements. This integration ensures that energy efficiency is given appropriate consideration in capital investment and modernization plans. In turn, this longer range planning ensures that reductions of greenhouse gas emissions are permanent, not just one time, reductions. U.S. business is also engaged in other types of activities to reduce greenhouse gas emissions.

Some of these key industry activities are highlighted below. This list provides a small but representative sample of activities underway in the U.S. and is not meant to be comprehensive. Many of these activities are coordinated through industry associations and include government-sponsored voluntary programs as well as industry initiated activities that go beyond the scope on current government initiatives.

Domestic and International Partnership Programs

- **Utility Forest Carbon Management Program (UFCMP)** is an initiative developed by the Edison Electric Institute (EEI) with support from 55 electric utilities to expand utility industry efforts to manage CO₂ via forestry projects, both domestic and international. Based on a project solicitation, thirty proposals were received of which six were selected. A non-profit corporation, called the UtilTree Carbon Company, was established by 40 utilities to sponsor the project. The individual projects represent a mix of rural tree planting, forest preservation, management, and research efforts at both domestic and international sites.
- **International Utility Efficiency Partnerships (IUEP) Program** was formed by EEI in early 1995 to identify international energy project development opportunities, to work with host country government personnel to facilitate project investment, and to demonstrate U.S. utility commitment to voluntary approaches to global climate issues. The goal of the IUEP is to identify and support international activities, sponsored by the U.S. utilities, which reduce, limit, or avoid greenhouse gas emissions. The IUEP will be engaged in partnerships with DOE and other agencies to support the development of joint implementation (JI) projects. On December 19, 1995 a power project in Honduras, sponsored by the lead developer Tucson Electric/Nations Energy and the IUEP, was recognized by the U.S. as a certified JI project. In addition the IUEP issued a request for proposals that closed in September 1995; 44 project proposals from 18 countries were submitted.
- **The Climate Challenge Program** is a joint, voluntary effort of the electric utility industry and Department of Energy to reduce, avoid, limit or sequester greenhouse gases. Utilities make a commitment to report annually on activities and achievements under the Program. In a Participation Agreement the utility describes the actions that it has or will take towards achieving its commitments and agrees to report annually on its actions. As of November 1995, a total of 113 agreements, representing 61% of the 1990 electric generation and utility CO₂ emissions, had been signed. DOE estimates that the Climate Challenge will reduce carbon emissions by over 43 million metric tons of carbon equivalent (MMTCE) in the year 2000. The estimate is conservative, as it does not include reduction commitments not yet quantified or most of the benefits of the utility industry-wide initiatives.
- The American Iron and Steel Institute (AISI) has coordinated major **collaborative research and development projects** with DOE and other parties to develop and demonstrate fundamentally new technologies for making iron and steel, improved process control of traditional steel making operations, and waste recycling technologies. These projects have the potential for substantial energy reductions, pollution prevention, and waste reduction as the demonstrated technologies are adopted on a commercial basis in the coming years.

- The steel industry is also participating in the **EPA Common Sense Initiative** which, through its pollution prevention focus, will have some potential for energy savings and reduced CO2 emissions.
- Twelve of the thirteen U.S. aluminum companies have joined with EPA in the **Voluntary Aluminum Industrial Partnership (VAIP)** program to promote and achieve cost-effective reductions in perfluorocarbon (PFCs) emissions. PFCs are greenhouse gases produced in small quantities by primary aluminum production plants during the reduction process. These emissions only occur for short periods during high voltage conditions called anode effects. The focus of the VAIP is to reduce the frequency and duration of anode effects.

Elimination of anode effects is not technically possible today because a limited number of anode effects is important to smelter operation. Anode effects can provide critical information about the chemical balance in the smelting "pot" and on occasion are induced for this reason. Under the VAIP, producers work toward the minimum number of anode effects they can technically achieve without sacrificing competitiveness. VAIP partners are finding that it is feasible to reduce anode effects further than they thought was possible just a few years ago, thus improving their efficiency.

The Partnership has been designed with important and unique characteristics that reflect both the diversity within the primary aluminum industry and the differences between this and other industries. These unique characteristics include flexibility; a joint commitment to finding answers to critical technical questions; and a clear course for achieving substantial pollution prevention goals by the year 2000. EPA estimates that the VAIP will achieve reductions in PFC emissions of 30 - 60 percent across the U.S. primary aluminum industry -- or 1.8 million metric tons of carbon equivalent by the year 2000.

The VAIP agreement provides flexibility by allowing each partner to tailor the program to reflect its particular mix of technology, management structure, and operational practices, and to be recognized for past as well as future accomplishments. The VAIP also brings together experts from industry, government and academia to answer fundamental questions about the processes that lead to greenhouse gas emissions, the best way to measure these emissions, and how to most cost effectively reduce them. As a result, EPA is funding anode effect research at the Massachusetts Institute of Technology and gas standards developments at the National Institute for Standards and Technology. Finally, the VAIP provided partner companies with a framework for documenting their past accomplishments, setting achievable, cost effective goals for the future, and tracking progress toward meeting these future goals. It also provides partner companies with an opportunity to receive the recognition they deserve for taking the initiative to prevent atmospheric pollution.

- **Partnership for a New Generation of Vehicles (PNGV)** is a cooperative industry/government research and development partnership between the Federal government and the U.S. automotive industry. This program focuses government and industry R&D resources on a consensus set of goals and timetables that will preserve personal mobility while enhancing national competitiveness, reducing petroleum consumption and reducing emissions of greenhouse gases and pollutants. The three primary goals are:

- 1) To significantly improve national competitiveness in manufacturing by pursuing advances that can reduce production costs and product development times;
- 2) To pursue and implement commercially viable advances that can lead to improvement in the fuel efficiency and emissions of conventional vehicles; and
- 3) To pursue development of a revolutionary class of vehicles that could achieve fuel efficiencies of up to three times today's comparable vehicle; which will at the same time cost no more to own and operate; will maintain performance, size, and utility; and will meet or exceed safety and emission requirements.

The timetable is targeted towards development of a production prototype by 2004 that meets the Goal 3 criteria. Several promising research paths are initially being pursued, although the focus will be narrowed to a smaller list of component technologies that meet intermediate goals by 1997. This list will then be further refined as subsystem, vehicle level and manufacturing feasibility demonstrations are completed. It is hoped that PNGV will serve as a model for other U.S. industries and of efforts to apply advanced defense technologies to practical commercial uses that will create jobs and economic growth.

Information and Efficiency Promotion

- **Building Environmental Stewardship Tools (BEST)** is a National Petroleum Refiners Association (NPRA) program to promote environmental improvement and achieve environmental excellence. The commitment of NPRA's members to this activity is framed in Guiding Principles, one of which is "to further reduce overall emissions and waste generation." The BEST program uses various indicators including greenhouse gas emissions to measure the success of facilities in managing releases to the environment. The BEST program was implemented in 1994. A total of 144 facilities representing 65 members are participating in the program. A confidential "benchmarking" report, including information on 1993 emissions, was provided to each of these facilities comparing their performance to that of other similar facilities. The self-review resulting from benchmarking will guide improvements in future facility performance. The results of the improvements will be included in the trends analysis when 1995 data is available.

- **Semi-annual technical meetings** sponsored by the NPRA strongly support improved energy efficiency. Industry experts present technical papers and answer practical questions regarding changes, technologies and proven approaches to improve all aspects of petroleum refining efficiency, including energy, in meeting product requirements.
- Separately, the NPRA supports the annual **Energy Technology Conference** which focuses on the refining and petrochemical industries efforts to improve energy efficiency.
- The EPA and the Aluminum Association will co-sponsor an **International PFC Workshop** with cooperation from the Quebec, European and International Aluminum organizations. The Workshop will be held in May 1996 and will focus on the VAIP, the research conducted to better understand the behavior of PFCs and the activities of industry to measure and control the gaseous emissions from their facilities.
- **Improvements in energy efficiency and development of technical standards** in a broad range of facility operations and equipment are supported through industry associations such as the American Petroleum Institute. API technical standards are frequently utilized by state, federal and foreign governments. API member companies also participate in various government sponsored voluntary programs including: Climate Wise; Green Lights; Motor Challenge; Source Reduction and Natural Gas Star.
- The **Chemical Action Program**, adopted by the Chemical Manufacturers Association (CMA) in 1994, promotes voluntary and cost-effective efforts. The CMA program includes companies representing about 90% of the chemical industry, and emphasizes three elements:
 1. Development and analysis of greenhouse gas emissions and adoption of appropriate and economic sound measures to reduce these emissions;
 2. Submission of reports under the 1605(b) program, as well as participation in the annual CMA Energy Efficiency and CO2 Emissions Survey; and
 3. Participation in the Motor Challenge Program and other government voluntary initiatives in the U.S. Climate Change Action Plan.
- CMA has created an **Energy Efficiency Award Program** to provide companies an opportunity to achieve peer recognition for their outstanding energy efficiency accomplishments. Seven awards were made in 1994 and thirteen awards to ten companies were made in 1995. In order to increase awareness of the award-winning entries, CMA publicizes the awards.

- In 1993 CMA created the **Energy Efficiency Continuous Improvement Program** which has many elements including:
 1. Sponsorship of meetings and seminars for plant and corporate representatives to focus on energy efficiency programs, achievements, education, etc. Many types of examples of technology application are discussed in these meetings; and
 2. The Energy and Feedstocks Issues Newsletter reports on industry energy efficiency progress. It and other CMA publications have articles relating to energy efficiency improvements and technologies which have potential application to the industry.
- **Energy data, conservation and combustion technology workshops** organized through the American Iron and Steel Institute encourage continued efforts to improve energy efficiency and reduce CO2 emissions. For example, the Institute collects and distributes to members energy statistics on an annual basis. The Institute has a committee on energy technology that sponsors workshops on energy conservation, combustion technology and related matters. Several of the company members are involved in the DOE Motor Challenge Program, others are involved in the EPA Green Lights program and some are participating in the "Waste Wise" program.

Specific Technology Programs

- The **National Earth Comfort Program** is a 6-year program, initiated in 1994 as a collaborative effort by DOE and an electric utility-led industry consortium to increase geothermal heat pump annual installations from 40,000 to 400,000 by 2001, raising their share of the market for space heating and cooling equipment from 1 to 12 percent. EPA data show that geothermal heat pumps are generally the most-energy-efficient and least-polluting of all technologies for space heating and cooling.
- The **EnviroTech (SM) Investment Fund** is a venture capital fund to invest in the commercialization of emerging electric and renewable technologies that are more energy efficient than those currently in the marketplace. Advent International, a well-known, international venture capital firm, has been selected to be General Partner to manage the Fund. In January 1996 the fund was closed for subscription with a total commitment of \$32.5 million. About 25-30 investments are expected to be made by the Fund and for every investment, some 1,700 proposals will be evaluated. The first investment was announced in January 1996.
- **EV America** is a program to accelerate the introduction of electric vehicles (EVs) into the marketplace through placement of as many as 5,000 EVs into utility, commercial, government and transit fleets by the end of 1997. EV America has been involved in testing vehicles during performance evaluations and developing common sets of specifications for EVs.

VOLUNTARY REPORTING

Section 1605 (b) of the Energy Policy Act of 1992 established a program for voluntary reporting by industry of actions to curb greenhouse gas emissions. This program is unique among the industrialized countries. The Department of Energy, Energy Information Administration (EIA) has worked closely with industry to develop the criteria and procedures for industry reporting. These requirements were developed in a manner to facilitate broad industry participation while ensuring accurate and verifiable emissions reductions. The first 1605 (b) reports, covering the years 1991 - 1994, have recently been filed. The EIA is currently in the process of validating the information of public release later this year.

The initial reports suggest that the voluntary reporting program will be very successful and will further enhance efforts to promote and monitor voluntary industry climate change actions. However, the results are likely to be understated. As the reports cover only the period through 1994, they do not reflect the beginning results of the voluntary programs undertaken over the last year. Not all companies that are taking voluntary actions to reduce or limit growth of greenhouse gas emissions have chosen to supply information under the 1605 (b) program. Initial information shows:

- Over 100 reports have been filed by individual companies. 40 of these reports include company-wide greenhouse emissions, while the remainder report on specific elements within the companies.
- A total of over 600 separate measures to reduce greenhouse emissions have been reported. The scope of the company reports varies greatly, with some companies reporting a single project while others have reported several dozen or more projects.
- The company reports provide data on greenhouse gas emissions reductions measured either against a baseline projection (in the absence of action), or against 1990 levels.
- Detailed information on the specific projects has not yet been released. Many of the projects encompass activities that are part of other government led or industry-led initiatives discussed in this report.

FEDERAL VOLUNTARY PROGRAMS IN THE U.S. NATIONAL COMMUNICATION

The U.S. National Communication contained a total of over 35 separate voluntary program initiatives. Some of these activities have been in existence for 1 year or less. Overall, these programs have already achieved substantial participation levels and are demonstrating tangible results. However, there is no U.S. Government reporting system that provides the status of all projects in a comprehensive manner. A summary of some of the more significant activities follows.

- **Climate Challenge.** This program is a collaborative effort between the electric utility industry and the Department of Energy (DOE). Through company-specific agreements, participating utilities have the flexibility to implement a portfolio of emission-reduction measures. Through August 1995, agreements have been signed that included 567 utility companies. Total emission reductions of at least 43 MMTCE by the year 2000 are projected. The U.S. National Communication did not provide a separate emissions reduction estimate for Climate Challenge, but other provisions of the plan assumed about 36 MMTCE reductions due to Climate Challenge activities. (This program was described in the previous section)
- **Climate Wise.** This EPA/DOE program, launched in 1994, is intended to encourage and publicly recognize voluntary efforts to reduce greenhouse gas emissions. It involves partnerships with business, industry, state and local governments, and other organizations that make commitments to reduce greenhouse emissions and report their results. Participants include companies that account for almost 4 percent of all U.S. industrial energy use. Emission savings of 4 MMTCE are currently projected by the year 2000. The U.S. National Communication did not include a separate estimate for Climate Wise emissions reductions.
- **Rebuild America** Following start up in 1995, the U.S. Department of Energy (DOE) awarded \$4.3 million in grants to six regional partnership teams that are expected to generate 3,000 jobs and over \$300 million in investments as a result of private sector contributions. In addition, the Mayors of 28 cities have pledged to facilitate Rebuild America regional partnerships by measuring their cities' energy use and making energy efficient upgrades. Rebuild America partners are contributing \$70 for each \$1 of Federal funding. There were 34 community partnerships established by the end of 1995, compared to an initial planning estimate of 20. By the year 2000, DOE estimates that Rebuild America partnerships will achieve \$650 million in energy savings and emissions reductions of 1.7 MMTCE.
- **Energy Star Buildings.** This EPA initiative provides assistance to building owners to increase the overall effectiveness of existing commercial building efficiency programs. American businesses spend \$70 billion annually to operate commercial buildings. EPA estimates that the operating costs could be reduced by \$28 billion through the use of energy-efficient technology. Energy Star is a five stage process beginning with Green lights; and progressing through a building tune-up; heating, ventilation, and air conditioning (HVAC) load reductions; fan system upgrades; and new, improved HVAC equipment. The program was launched in April 1995 with 58 charter partners representing over 384 million square feet. An example of a success is the upgrade of University Hall at the University of Missouri, which has achieved 60 percent savings in electricity and an 87 percent in natural gas usage.

- **"Green Lights".** This EPA program involves partnerships between the EPA and corporations, utilities, nonprofit organizations, and other groups that agree to analyze and, where profitable, to upgrade lighting equipment with more energy-efficient systems. EPA provides technical support and on-site implementation assistance. Lighting accounts for 20-25 percent of all electricity sold in the U.S. Available technology can reduce the electricity used for lighting by 50 to 70 percent and earn internal rates of return (IRR) of 20 to 30 percent or more. EPA estimates that Green Lights could reduce annual CO₂ emissions by 225 billion pounds annually. Two examples of the savings include a Gillette Company facility in Santa Monica that has achieved 61 percent energy savings with 37 percent IRR on the project and a Whirlpool facility in Laverne, Tennessee that achieved 54 percent energy savings with 72 percent IRR. More than 4.3 billion square feet of facility space has been committed to participating in the Green Lights program.
- **Cost-shared demonstration of emerging technologies.** This DOE initiative brings together appliance and equipment manufacturers with prospective purchasers to test and evaluate prototype equipment. Examples of Technology Partnerships include: 1) a consortium of hotel/motel chains; 2) the National Association of Energy Service Companies; 3) gas appliance manufacturers; and 4) a collaborative dedicated to applying an innovative lighting technology. By the end of 1995, there were 17 partners compared to the 5 forecast. This initiative is estimated to lead to a reduction of 1.5 MMTCE in the year 2000.
- **"Golden Carrot" market-pull partnerships.** This DOE/EPA program involves partnerships with nonprofit organizations, retailers, utilities and environmental groups to accelerate the commercialization and marketing of advanced energy-efficient appliances. By the end of 1995 there were 33 partners compared to the 10 forecast. Resources committed by the partners totaled \$46 million compared to the \$15 million forecast. Emission reductions from these types of projects are estimated at 0.7 MMTCE in the year 2000.
- **Home energy-rating systems and energy-efficient mortgages.** This DOE program is designed to provide home buyers with information on the energy efficiency of new and existing homes (Home Energy Rating Systems - HERS). The Energy Efficient Mortgages (EEMS) program is designed to allow home buyers to finance investment in energy improvements through their mortgage lender when the monthly energy savings are greater than the increased monthly mortgage payments. Fannie Mae has announced a \$1 trillion initiative, "Showing America a New Way Home" to provide energy efficient loans to homeowners. DOE and the Department of Housing and Urban Development (HUD) have agreed to upgrade 1 million housing units to reduce federal utility outlays by approximately \$300 million annually by the year 2000. Emissions reductions of 0.6 MMTCE have been projected.

- **"Cool Communities"**. This DOE proposed initiative promotes the planting of trees to shade residential and commercial buildings, and the use of light-colored building surfaces to reduce absorption of sunlight. Planting trees also helps create more sinks for absorbing carbon dioxide. Over 50 cities, local communities, Federal facilities, and local utility companies have stated an interest in participating in the program.
- **"Motor Challenge"**. This DOE program, initiated in October, 1993, is to test, verify and disseminate information on the cost-saving potential of improving industrial motor systems. Participation has far exceeded expectations: by 1995, 300 partners were expected but 1000 had enlisted. Twenty one showcase demonstrations, representing an industry investment of \$15 million, have been initiated. Emissions reductions of 5.5 MMTCE have been projected in the year 2000.
- **Energy analysis and diagnostic centers**. This DOE program is designed to increase the number of Energy and Diagnostic Centers (EADCs), which are university-based organizations that offer engineering students and faculty to perform energy audits and make recommendations to help manufacturers control costs, improve energy efficiency, and reduce waste. Emission reductions of 0.1 MMTCE by the year 2000 are estimated.
- **Source reduction, pollution prevention, and recycling**. This DOE/EPA/U.S. Department of Agriculture (USDA) program is focusing on ways to enhance recycling. Source reduction efforts encourage unit pricing wherein homeowners are charged by the amount of garbage they throw away, provide incentives and education to reduce waste at the source, and promote the design of longer-life, repairable goods. Recycling efforts foster "buy recycled" programs, expand access to information clearinghouses, increase the use of government loan guarantees for recycling manufacturing investment and provide technical assistance to state and local governments to improve the quality of recycled materials. About \$3.68 of private sector funding is being generated by each \$1 of Federal assistance. Emission reductions of 3.2 MMTCE are projected by the year 2000. By the end of 1995, there were 60 new partners compared to a target of 51 participants.
- **Renewable-energy market mobilization collaborative and technology demonstrations**. This DOE program is designed to accelerate the market acceptance of renewable technologies. It emphasizes commercialization of wind energy technologies, Photovoltaics, Biomass, and geothermal energy.

Wind. The National Wind Coordinating Committee was formed in October 1994. Three cost-shared wind energy projects were selected in September 1995 and six proposals to collect and analyze wind data have been selected. Emission reductions of 1.1 MMTCE by the year 2000 are projected.

Biomass. Projects totaling 1,000 mw of capacity were proposed in 1995. Emission reductions of 0.9 MMTCE by the year 2000 are estimated.

Photovoltaics. The Utility Photovoltaics Group (UPVG) represent all sectors of the electric utility industry and more than 45 percent of electricity sales in the United States. Several projects are underway, including one at Sacramento Municipal Utility District to install 1.5 mw of Photovoltaics capacity.

Geothermal heat pumps. The Geothermal Heat Pump consortium has been formed which includes 70 utility members. By the end of 1995, there were 100 partners compared to the target of 25 partners. Emission reductions of 0.4 MMTCE by the year 2000 are estimated.

Geothermal power. By 1997, the Geysers geothermal energy pipeline project is expected to be in operation. That and additional projects are expected to reduce emissions 0.2 MMTCE by the year 2000.

- **Coalbed methane outreach program.** This DOE/EPA program provides technical and financial assistance for coal mine owners to promote energy recovery. Of the fourteen proposals submitted by the private sector, ten coal mine sites have been selected for demonstration of the recovery and utilization of methane. Detailed design and implementation of the pilot demonstrations are scheduled for 1996 and 1997.

Global Climate Coalition

MISSION

The Global Climate Coalition (GCC) is an organization of business trade associations and private companies established in 1989 to coordinate business participation in the scientific and policy debate on the global climate change issue.

GCC is dedicated to: 1) assessing scientific research on global climate change, 2) analyzing economic and social impacts of policy options, 3) creating an understanding of the global dimensions of the issue to ensure that solutions are addressed equitably by all nations, 4) encouraging the transfer of technology to developing nations, and 5) promoting a voluntary commitment among members to "Guiding Principles for Business" that benefit the environment, and are consistent with good business practices and are technically and economic feasible.

PROGRAMS

GCC is the leading voice for industry on the global climate change issue, and represents its members both internationally and domestically before government agencies, Congress, the media and the general public. The coalition contributes to a balanced debate on global climate change by sponsoring independent research and studies that examine the potential impacts of proposed global climate change policies on the economy. Through educational materials and programs, GCC supports an informed press and public, and an open scientific dialogue.

POSITION ON CLIMATE CHANGE

GCC accepts the finding that there is a natural "greenhouse effect" which protects the Earth from the freezing rigors of space. GCC agrees that the amount of so-called greenhouse gases in the Earth's atmosphere is increasing. In addition, GCC also accepts that the Earth's climate has warmed about 0.5 degrees Centigrade since the late 19th Century. It is an open question, however, what the cause of this warming has been. The GCC believes that the preponderance of the evidence indicates that most, if not all, of the observed warming is part of a natural warming trend which began approximately 400 years ago. If there is an anthropogenic component to this observed warming, the GCC believes that it must be very small and must be superimposed on a much larger natural warming trend. These positions are consistent with the IPCC conclusions. The GCC believes there is no convincing evidence that future increases in greenhouse gas concentrations will produce significant climatic effects.

Considerable uncertainty remains within the scientific community about the fundamental questions relating to this issue. Significant reductions in these uncertainties are essential. For this reason, GCC supports a coordinated international research program, the continuation of U.S. climate research efforts (\$1.8 billion requested for FY 1995), in addition to independent and industry sponsored research. GCC also supports activities to reduce greenhouse gas emissions that make sense in their own right, thus continuing sound business practices that will lead to more efficient use of energy while supporting economic growth.

GCC believes that there are trade-offs associated with many of the regulatory schemes to control greenhouse gas emissions. Some of these proposals would impose a direct tax on businesses and consumers through energy or environmental fees while other proposals would impose a hidden tax through other indirect control measures. These trade-offs would include higher energy and product costs to American consumers, higher operating costs for industry and a potential negative impact on employment. Importantly, many of these proposals would create a competitive advantage for our international trading partners at the expense of U.S. jobs and economic growth.

MEMBERSHIP

The current membership of the GCC represents a broad cross-section of U.S. business organizations and companies representing a range of industrial sectors, including oil, coal, paper, automobile manufacturing, railroads, chemical manufacturing, airlines and utilities.



GLOBAL CLIMATE COALITION

GLOBAL CLIMATE COALITION MEMBERSHIP

Board Membership

Air Transport Association
Aluminum Association, Inc.
American Automobile Manufacturers Association
American Commercial Barge Line Co.
American Electric Power Service Corporation
American Forest & Paper Association
American Iron & Steel Institute
American Petroleum Institute
American Portland Cement Alliance
Association of American Railroads
Atlantic Richfield Coal Company
Chemical Manufacturers Association
Chevron
Cinergy
Council of Industrial Boiler Owners
CSX Transportation, Inc.
Dow Chemical Company
Drummond Company
Duke Power Company
Edison Electric Institute
ELCON
Exxon
Greencoal
Illinois Power Company
Mobil Corporation
National Association of Manufacturers
National Lime Association
National Mining Association
National Rural Electric Cooperative Association
Process Gas Consumers
The Southern Company
Texaco, Inc.
U.S. Chamber of Commerce
Union Electric Company
Western Fuels Association

General Membership

Amoco Corporation
Arizona Public Service Company
Association of International Automobile Manufacturers
BHP Minerals
BP America, Inc.
Burlington Northern Railroad
CONRAIL
Consumers Power
Eastman Chemical
Goodyear Tire & Rubber Co.
Hoechst Celanese Chemical Group
Kaiser Aluminum & Chemical Corp.
Norfolk Southern
Northern Indiana Public Service Co.
Ohio Edison
Shell Oil Company
Society of the Plastics Industry
Union Carbide
Union Pacific Railroad