CALIFORNIA
Climate
ACTION TEAM

Executive Summary

Climate Action Team Report to Governor Schwarzenegger and the California Legislature

March 2006

CALIFORNIA ENVIRONMENTAL
PROTECTION AGENCY

THE CLIMATE ACTION TEAM REPORT IS ORGANIZED IN 3 VOLUMES

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Introduction

Climate change is widely recognized by scientists throughout the world to be one of the most daunting challenges of our time. Human activities are altering the chemical composition of the atmosphere through the rapid buildup of climate change emissions—primarily carbon dioxide, methane, nitrous oxide, and hydrofluorocarbons. Concentrations of these gases in the ambient atmosphere are increasing at a rate not experienced for millions of years, according to ice core samples and other scientific studies.

Although there is some uncertainty about exactly how and when the earth's climate will respond to increasing concentrations of climate change emissions, observations—in conjunction with climate models—indicate that detectable changes are underway.

These observed changes go beyond a global mean rise in temperature and include changes in regional temperature extremes, precipitation, soil moisture, and sea level. All of these changes could have significant adverse effects on water resources and ecological systems, as well as on human health and the economy. Implementation of precautionary and proactive measures is imperative if climate change emissions are to be reduced and communities are to adapt successfully to the adverse impacts.

California is the twelfth largest source of climate change emissions in the world, exceeding most nations. Actions taken in this State make a difference; not only because we are a major contributor to the problem but also because California is known throughout the world as a leader in addressing public health and environmental issues.

California has long been a pioneer in studying the impact of climate change and taking action to reduce our carbon "footprint." The California Energy Commission's energy efficiency standards for buildings and appliances are the most stringent in the world. The California Air Resources Board's vehicle climate change standards are the first of their kind in the United States. The State's Renewable Portfolio Standard was accelerated by Governor Schwarzenegger to require, by 2010, that 20% of all power used in California be generated from renewable resources. The California Public Utilities Commission recently adopted Governor Schwarzenegger's Solar Building Initiative that continues California's progressive approach to economic growth and technological innovation hand-in-hand with protection of public health and the environment.

On June 1, 2005, Governor Schwarzenegger signed an Executive Order establishing climate change emission reduction targets for the State and declared, ***"…the debate is over. We know the science. We see the threat. And we know the time for action is now."*** The Executive Order placed Cal/EPA as the lead coordinating State agency. The Secretary of Cal/EPA created a multi-agency team, the Climate Action Team, to meet the directives in the Executive Order.

California companies have acted voluntarily in support of the Governor's targets. More than 60 companies have joined the voluntary California Climate Action Registry; are reporting their emissions; and are discovering best practices to reduce emissions further. In the Silicon Valley, dozens of corporations have committed to significantly reducing climate change emissions.

The Climate Group, an independent, nonprofit organization dedicated to advancing business and government leadership on climate change, tracks climate change emission reduction efforts of Fortune 500 companies such as DuPont, Honda, Johnson and Johnson, and Kodak. The Climate Group reports on emissions reduced and dollars saved by these companies through voluntary actions.

Technologies that reduce climate change emissions are increasingly in demand in the world marketplace. California companies are both investing in those technologies and finding new opportunities to meet this demand.

Public Process

In preparation of this report, the Climate Action Team conducted nine public meetings. More than 100 individuals and representatives of organizations presented testimony. Since the Climate Action Team released its initial draft report in December 2005, more than 15,000 comments have been submitted. The comments overwhelmingly praise the efforts of the Climate Action Team and recognize that climate change is a serious problem facing California. They are primarily supportive of strategies to reduce climate change emissions and develop adaptation measures to mitigate the inevitable adverse consequences.

Comments ranged in specificity. Comments expressed most often were:

- The State should establish a cap on emissions and a market-based system of emissions trading, auctioning, and/or offsets. These commenters assert that a firm and statutory cap on emissions will provide the signal that will challenge Californians to reduce climate change emissions in the most cost-effective manner. Further, these commenters believe a firm cap and/or market-based approach will stimulate market innovation and grow the economy.
- Alternatively, some commenters said that California should take a slower approach that builds on voluntary efforts. Many of these commenters also prefer that climate change be addressed on a national or international level.
- A number of commenters wanted the State to conduct additional analyses of the impacts of climate change on low-income and minority communities.

Key Recommendations

This final report has been revised from the December 2005 draft to reflect the comments, recommendations, and suggestions that have been submitted. The final report proposes a path to achieve the Governor's targets that will build on voluntary actions of California businesses, local government and community actions, and State incentive and regulatory programs. The Governor's climate change emission reduction targets are achievable with economic benefit for California.

The climate strategies set forth in this report are in various stages of development. Some of the strategies, such as the California Solar Initiative, are being implemented this year. Other strategies, such as those related to biofuels, may require statutory modification this year for implementation to proceed. Still others, such as Smart Land Use and Intelligent Transportation and Semiconductor Industry Targets are conceptually sound but require further analysis and development over the next two years. The Climate Action Team preliminary economic assessment, which is based on the Environmental Dynamic Revenue Model, indicates that implementation of these strategies will result in 83,000 new jobs and an increase in personal income of $4 billion by 2020.

The Climate Action Team process for developing this report has been successful and the Team should be charged with the next phase of activity. Since the signing of the Executive Order, the Climate Action Team, under the leadership of Cal/EPA, has provided a forum for coordinating State agency actions, program development, and budget proposals in addition to this report. Continuing allows for collaboration, reduced internal competition and conflict, and provides a single point of contact.

The Climate Action Team recognizes that reducing climate change emissions is challenging and will need to be addressed in a deliberative on-going manner. The Team also recognizes that many of the reductions will come from technological innovations that are not yet fully developed. We have identified key recommendations that will help ensure the Governor's targets are met:

- A multi-sector, market-based system uses economic incentives to lower costs, protect economic growth, and promote innovation. The Climate Action Team should proceed with the development of a multi-sector, market-based program which considers trading, emissions credits, auction, and offsets. The Climate Action Team should develop a multi-sector, market-based program and make a recommendation to the Governor on the structure for such a program no later than January 1, 2008. The Governor's 2020 climate change emission reduction target (to reach 1990 emission levels) should be the basis for an emissions cap in the development of the program. The Climate Action Team should consider working with other western States to develop a multi-State program to minimize emissions leakage.

- Mandatory emissions reporting from the largest sources—oil and gas extraction, oil refining, electric power, cement manufacturing, and solid waste landfills—that build on the California Climate Action Registry, is essential. Mandatory reporting will ensure an accurate inventory of emissions, which is critical to ensure that decision-making is based on real emissions and emission reductions. Equally essential are provisions for early action credit and a mechanism to ensure that companies are not penalized for early action. Early action will be attributed to California businesses that have voluntarily joined the California Climate Action Registry and have reduced emissions. Although the voluntary Climate Action Registry provides the foundation, the Climate Action Team believes mandatory reporting must occur through a State government agency.
- A multi-generational public education campaign should be implemented to ensure that the public is informed about the issue of climate change and what they can do to reduce emissions and adapt to adverse consequences. Such a program can build upon successful campaigns in place, such as Flex Your Power. The Education and the Environment Initiative mandates the development of a unified strategy to bring education about the environment into California's K–12 schools through California's Environmental Principles & Concepts and a standards-aligned, State Board of Education-approved model curriculum. It is essential that California's children understand the impacts and consequences of climate change on the State's resources as well as mitigation and adaptation strategies.
- The macroeconomic analysis should be updated to reflect refined data collected over the next year. A cost-effectiveness analysis of all the strategies recommended in this report should also be developed. Both should be completed by July 2007 and should incorporate an external review process.
- Transportation is the largest source of climate change emissions in California. The California Air Resources Board's vehicle climate change standards address a significant portion of the transportation sector. However, an aggressive alternative fuels program will significantly reduce climate change emissions. The California Energy Commission, working with Cal/EPA and its boards and departments and the California Department of Food and Agriculture, are currently developing an aggressive biofuels program that will be available this Spring. This biofuels program should be considered an essential component of the effort to reduce California's carbon footprint.
- The Governor's climate change emission reduction targets are based in part on the planning assumptions in the California Energy Commission's Integrated Energy Policy Report. Specifically, the report recommends that all long-term commitments to new electricity generation for use in the State must come from sources with climate change emissions equivalent to or less than a new combined cycle natural gas power plant. The California Public Utilities Commission's recently adopted proposal for an electricity sector carbon policy is generally consistent with the Integrated Energy Policy Report and will set forth a regulatory scheme for enforcing such a policy applicable to investor-owned utilities.

The Climate Action Team recommends the policy, including an accountability mechanism, in the Integrated Energy Policy Report be extended to apply to all load-serving entities in the State, including municipal utilities, electric service providers, and community choice aggregators. The California Public Utilities Commission will work with the Climate Action Team so that this effort is consistent with the development of a multi-sector market-based program.

- All utilities should meet the energy efficiency goals and the Renewable Portfolio Standard required of investor-owned utilities. The State has adopted energy efficiency goals and a Renewable Portfolio Standard for investor-owned utilities. Publicly-owned utilities should match this level of performance and account for their achievements in a manner consistent with that of investor-owned utilities. Because publicly-owned utilities provide 25% to 30% of the electricity used in California, these entities are essential to the State's overall goal to reduce electricity demand and increase the State's use of renewable resources. The California Energy Commission should work with the publicly-owned utilities to develop an accurate accounting system that captures climate emission reduction efforts by publicly-owned utilities so that their performance can be evaluated comparatively to investor-owned utilities.
- The California Climate Action Registry, in cooperation with the California Energy Commission, should develop emission reporting protocols for local government. Local governments are already contributing to the effort to reduce climate change emissions and an accurate tracking system of their contributions is essential.
- Over time, funding will be needed to implement the strategies set forth in this plan and to provide incentives for industry to develop emission reduction technologies for use in California and abroad. A coordinated investment strategy can leverage the talent of California's universities, community colleges, and other entities to lead technology development and train the next generation of technicians that will be needed to operate and service those technologies. A public goods charge for transportation that funds key strategies to reduce climate change emissions and to reduce dependence on petroleum should be considered. Over dependence on petroleum fosters undesirable geopolitical, economic, energy, and environmental consequences. Other possible funding could come from the Public Interest Energy Research program at the California Energy Commission, other State funds, or philanthropic and corporate investment. The current electricity sector and natural gas public goods charges should continue at projected levels. Any new funding concepts require additional study and review until the preliminary recommendations noted above can be more fully developed. Accordingly, the 2006–07 Governor's budget proposes $7.2 million across several State agencies to begin the additional work.

Executive Order S-3-05

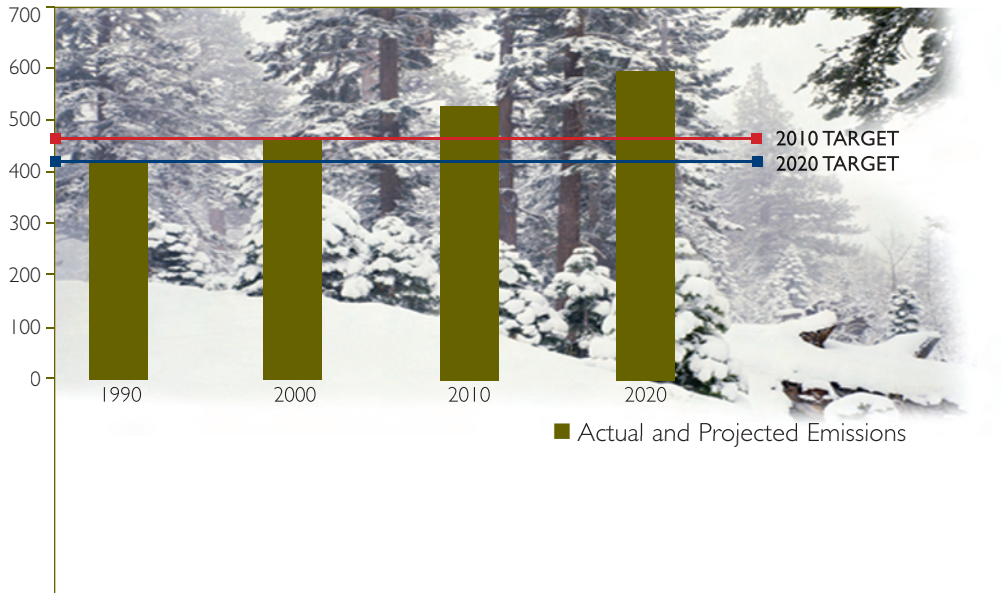
In recognition of the risks associated with climate change and the imperative for California to act, Governor Schwarzenegger signed Executive Order S-3-05. This Executive Order established Statewide climate change emission reduction targets:

- By 2010, reduce emissions to 2000 levels;
- By 2020, reduce emissions to 1990 levels;
- by 2050, reduce emissions to 80 percent below 1990 levels.

The red and blue lines in figure ES-1 illustrate Governor Schwarzenegger's target.

Figure ES-1

California's Climate Change Emissions and Targets



The Executive Order also directed the Secretary for Environmental Protection to prepare a report to the Governor and the Legislature by January 2006 that defines actions necessary to meet the Governor's targets. This effort is to be coordinated with other key agencies to ensure the targets are met. Progress towards meeting the targets must be provided in subsequent reports every two years. These reports must also include scientific analysis of climate change impacts on the State and adaptation measures that can be taken to best respond to the adverse consequences of climate change.

Consistent with the directives of the Executive Order, a Climate Action Team was formed. The Team is comprised of knowledgeable representatives from the following State agencies:

- Business, Transportation and Housing Agency;
- Department of Food and Agriculture;
- Resources Agency;
- Air Resources Board;
- Energy Commission;
- Integrated Waste Management Board; and
- Public Utilities Commission.

The Climate Action Team has developed a list of emission reduction strategies that could meet the Governor's targets. Further, the Climate Action Team reviewed the work by some of California's top scientists regarding the impacts of climate change on California and potential adaptation measures to combat adverse impacts.

Strategies Recommended to Reduce Climate Change Emissions

The strategies being recommended by the Climate Action Team are shown in Tables ES-1 through ES-4. Although the Climate Action Team recommends additional development on all of these strategies at this time, the implementing agencies will proceed through their existing regulatory, public, and stakeholder processes for each of the strategies. Modifications to the strategies may be necessary as a result of those processes. Additional strategies may also emerge over time. Modifications and additions will be made as appropriate over the course of the Climate Action Team report updates.

Many of the strategies listed in Tables ES-1 through ES-4 also reduce ozone and criteria and toxic pollutants. (Criteria pollutants are a type of pollutant: oxides of nitrogen, carbon monoxide, and hydrocarbons). Although the degree to which they contribute to climate change has not been fully quantified, ozone, most criteria pollutants, and particulate matter emissions are being evaluated for their climate-forcing potential. Further iterations of this report will update the Governor and Legislature on the results.

Table ES-1 lists all of the strategies that Cal/EPA will implement over the next two years. By 2020, the Air Resources Board's vehicle climate change emission standards will provide the largest emission reductions of any of the strategies being recommended by the Climate Action Team. The large auto manufacturers are currently challenging California's right to set climate change emission standards for vehicles. Governor Schwarzenegger has pledged his support in defending the State's right to require the sale of cleaner cars.

Table ES-1

Environmental Protection Agency

Climate Change Emission Reductions (Million Metric Tons CO_2 Equivalent)	2010	2020
• ***Air Resources Board***		
· Vehicle Climate Change Standards	1	30
· Diesel Anti-Idling	1	1.2
· Other New Light Duty Vehicle Technology Improvements	0	4
· HFC Reduction Strategies	2.7	8.5
· Transport Refrigeration Units, Off-Road Electrification, Port Electrification (ship to shore)	<1	<1
· Manure Management	0	1
· Semi Conductor Industry Targets (PFC Emissions)	2	2
· Alternative Fuels: Biodiesel Blends	<1	<1
· Alternative Fuels: Ethanol	<1	<3.2
· Heavy-Duty Vehicle Emission Reduction Measures	0	3
· Reduced Venting and Leaks in Oil and Gas Systems	1	1
· Hydrogen Highway	Included•	
• ***Integrated Waste Management Board***		
· Achieve 50% Statewide Recycling Goal	3	3
· Landfill Methane Capture	2	3
· Zero Waste—High Recycling	3	

• The benefits of the Hydrogen Highway have been captured in other programs such as the Vehicle Climate Change Standard and Green Buildings Initiative.

Table ES-2 lists all of the strategies that Resources Agency will implement over the next two years. The Forest management efforts promise not only climate change emission reductions but also protect biodiversity, water quality and habitat resources. For three decades, the California Energy Commission has led the world with the most progressive new building and appliance efficiency standards. These efficiency standards have provided substantial climate change emission reductions and have saved consumers about $1,000 per household in California. Finally, by reducing the energy used to transport and deliver water in the State and by increasing water use efficiency, California can both protect our water supply and reduce climate change emissions.

Table ES-2
Resources Agency

Climate Change Emission Reductions (Million Metric Tons CO_2 Equivalent)	2010	2020
• ***Department of Forestry***		
· Forest Management	1-2	2-4
· Forest Conservation	4.2	8.4
· Fuels Management/Biomass	3.4	6.8
· Urban Forestry	0	3.5
· Afforestation/Reforestation	0	12.5
• ***Energy Commission***		
· Building Energy Efficiency Standards in Place	1	2
· Appliance Energy Efficiency Standards in Place	3	5
· Fuel-Efficient Replacement Tires & Inflation Programs	1.5	1.5
· Building Energy Efficiency Standards in Progress	TBD	TBD
· Appliance Energy Efficiency Standards in Progress	TBD	TBD
· Cement Manufacturing	<1	<1
· Municipal Utility Energy Efficiency Programs/Demand Response	1	5.9
· Municipal Utility Renewable Portfolio Standard	<1	3.2
· Municipal Utility Combined Heat and Power	0	<1
· Municipal Utility Electricity Sector Carbon Policy	3	9
· Alternative Fuels: Non-Petroleum Fuels	TBD	TBD
· Building Energy Efficiency Standards in Place	1	2
• ***Department of Water Resources***		
· Water Use Efficiency	0.4	1.2

Table ES-3 lists all of the strategies that other State agencies will implement over the next two years. Many participants at the Climate Action Team public meetings, particularly in Southern California, indicated that smart land use and increased transit availability should be a priority in the State. The participation of Business, Transportation and Housing Agency on the Climate Action Team has highlighted the fact that such strategies can provide substantial climate change emission reductions. Similarly the efforts of the Department of Food and Agriculture and the State and Consumer Services Agency provide benefits beyond their climate change emission reduction potential.

Table ES-3

Other State Agencies

Climate Change Emission Reductions (Million Metric Tons CO_2 Equivalent)	2010	2020
• ***Business Transportation and Housing***		
· Measures to Improve Transportation Energy Efficiency	1.8	9
· Smart Land Use and Intelligent Transportation	5.5	18
• ***Department of Food and Agriculture***		
· Conservation Tillage/Cover Crops	TBD	
· Enteric Fermentation	<1	<1
• ***State and Consumer Services Agency***		
· Green Buildings Initiative	0.5	1.8
· Transportation Policy Implementation	Under Review	

Table ES-4 lists all of the strategies that the Public Utilities Commission will implement over the next two years. Working in cooperation with the Energy Commission, the Public Utilities Commission has implemented the most progressive Renewable Portfolio Standard in the nation. The Public Utilities Commission has also been progressive in energy efficiency and clean energy programs for investor-owned utilities. Many stakeholders indicated that these programs should apply to the publicly-owned utilities as well.

Climate Change Emission Reductions (Million Metric Tons CO_2 Equivalent)	2010	2020
· Accelerated Renewable Portfolio Std to 33% by 2020 (includes load-serving entities)	5	11
· California Solar Initiative	0.4	3
· Investor-Owned Utility (IOU) Energy Efficiency Programs (including LSEs)	4	8.8
· IOU Additional Energy Efficiency Programs/Demand Response	NA	6.3
· IOU Combined Heat and Power Initiative	1.1	4.4
· IOU Electricity Sector Carbon Policy	1.6	2.7

Table ES-4

Public Utilities Commission

The Governor's Targets Are Achievable

Based on the emission reduction potential demonstrated in the tables above, and illustrated in Figure ES-2 below, it is clear the Governor's targets are achievable. However, continued top-down leadership—as has been demonstrated by this Governor, and the coordinated agency-level effort that has been achieved via the Climate Action Team—will be essential to success.

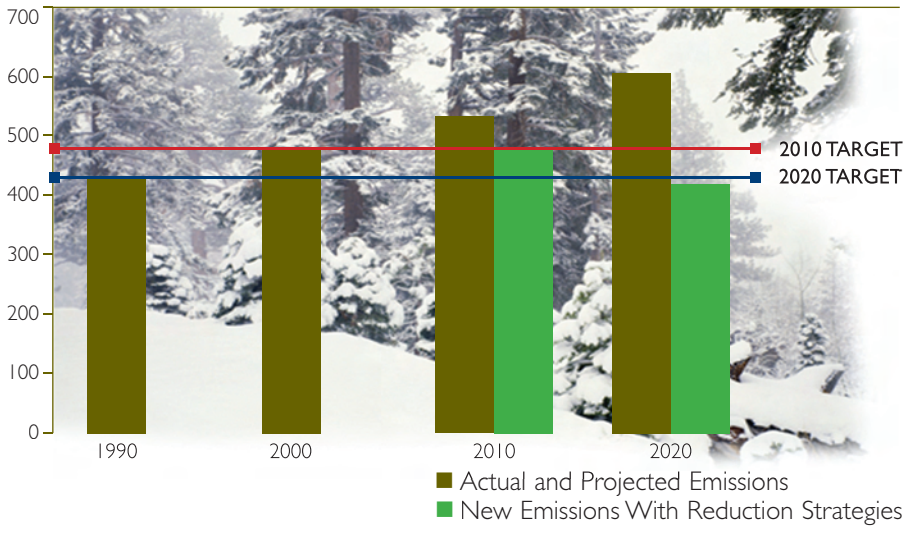


Figure ES-2

California Climate Change Emissions and Targets After Implementing Emission Reduction Strategies

Scenario Analysis

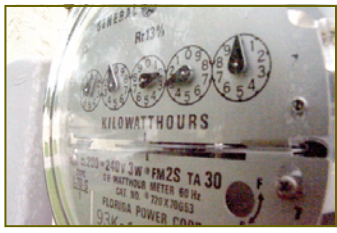
The scientific analysis to determine the impacts of climate change on California, and potential adaptation measures, is referred to here as the Scenario Analysis. Three scenarios of future global climate change emissions were selected to determine the range of possible impacts from climate change. These scenarios come directly from the Intergovernmental Panel on Climate Change 2001 report and represent higher, medium-high, and low-emission scenarios.

This analysis considers impacts on water resources, public health, agriculture, coastline, forests, and electricity demand based on the three emission scenarios. The analysis in this report stems directly from the ongoing work being done by the California Energy Commission. It represents a mid-point check in the current five-year plan that the California Energy Commission has underway to evaluate climate change impacts in the State.

The analysis indicates that if emissions are not reduced significantly, there is a strong likelihood that the amount of warming toward the end of the century will exceed 3 °F. In the analyses, as the warming increases above this level to as much as 10 °F, some of the consequences of climate change in California may become quite severe, including:

- Sierra snowpack, which accounts for approximately half of the surface water storage in the State, would decline by 70% to as much as 90% over the next 100 years, threatening California's water supply.
- Climate change will slow progress toward attainment of air quality standards and increase control costs by increasing emissions, accelerating chemical processes, and raising inversion temperatures during summertime stagnation episodes. The number of days meteorologically conducive to pollution formation may rise by 75% to 85% in the high ozone areas of Los Angeles and the San Joaquin Valley by the end of the century under the higher temperature scenario, and by 25% to 35% under the lower temperature scenario.
- The agriculture industry is one of the largest industries in the State. Potential impacts from limited water storage, increasing temperatures, and salt water in the Sacramento and San Joaquin Delta would pose increasing challenges for this industry. Direct threats to the structural integrity of the State's levee and flood control systems would also have immense implications for the State's fresh water supply, food supply, and overall economic prosperity.

- Higher potential for erosion of California's coastlines and sea water intrusion into the State's Delta and levee systems may result as sea levels rise above present levels by as much as 35 inches during the next 100 years. This would exacerbate flooding in already vulnerable regions.
- Pest infestation and increasing temperatures would make the State's forest resources more vulnerable to fires. Forest fires not only adversely affect the State's economy as a result of both suppression and damage costs, they also decrease air quality, damaging public health and visibility.
- Rising temperatures will increase electricity demand, especially in the hot summer season. By 2020, this would translate to a 1% to 3% increase in electricity demand resulting in potentially hundreds of millions of extra expenditures.



These impacts will affect everyone. However, in many cases, the most vulnerable are children, the elderly, and the frail who suffer disproportionately when pollution increases and temperatures rise. Low-income and minority communities are also at greater risk as limited resources and current disparities in health care limit the capacity of residents in these communities to adapt and respond.

The scenario analysis also included an evaluation of adaptation measures that could be taken to respond to the adverse consequences of climate change. This evaluation is only beginning, but at this point, the adaptation measures identified include the following:

- Study and use modern probabilistic weather and hydrological forecasts for the management of water reservoirs and other resources in the State.
- Develop and implement heat emergency action plans with special emphasis on providing assistance to the elderly and those living in housing without air conditioning units.
- Adopt short-term actions to improve our ability to live within California's fire-prone landscapes while maintaining the functioning and structure of ecosystems upon which we depend.
- Mitigate the impact of high temperatures on electricity demand with energy efficiency programs, increased penetration of photovoltaic systems and other forms of renewable energy, and the implementation of measures designed to reduce the urban heat island effect.

Market-Based Options For California

Market-based programs can be integral to California's strategy for reducing climate change emissions. Establishing firm attainment directives for reduction of greenhouse gas emissions, coupled with a market-based program, allows for flexibility in meeting a cap at the least possible cost.

To maximize its effectiveness, a market-based program in California should encompass as many sources and as large a geographic region as possible. However, the breadth of coverage must be tempered by administrative realities and source-specific considerations. Two alternatives for defining the scope of California's market-based program are a sector-based emissions cap and a fuels-based carbon cap.

A sector-based emissions cap would cover up to 30 percent of the State's climate change emissions by focusing on five key industries: electric power (including emissions from imported electricity); oil refining; oil and gas extraction; solid waste landfills; and cement manufacturing. Mobile sources, the largest source of climate change emissions in the State, are not recommended for inclusion under a sector-based emissions cap at this time.

As an alternative to a sector-based cap, climate change emissions can be reduced by capping the total carbon content of oil, gas, and coal consumed in the State. This approach encompasses all sectors that use fossil fuels, including those indicated in the paragraph above, covering 75 percent of the State's climate change emissions. All options for reducing fossil fuel combustion across all sectors can contribute to achieving the carbon cap. Additionally, all sectors are put on an equal footing as it relates to their use of fossil fuels.

A hybrid approach can be considered, for example, in which emissions from the electric power industry (including imported power) are capped and the carbon content of fuels is capped.

Emission offsets can be used to motivate emission reductions from sources outside the cap. Emission offsets help lower the cost of reducing emissions: facilities covered by the cap can purchase low-cost emission reductions from outside the cap as a means of complying with their emission limit. To ensure that offsets do not compromise the emission reduction goal of the program, they must be real, verifiable, quantifiable, in excess to any regulatory requirement, and not counted toward any other climate change emission reduction targets.

The primary weakness associated with implementing a market-based program in California is that it will be vulnerable to emission "leakage." If the State implements the program without other States, there will be an incentive for production to shift to neighboring States to avoid the cap. If this occurs, emissions may decline in the State, only to increase in neighboring States. A coordinated national approach to capping climate change emissions within an international framework would be the best approach for addressing this leakage problem. In the absence of national action, or even regional action, the leakage issues may be partially addressed through the design of the program. As part of the implementation of a market-based program, data should be collected over time to assess the extent to which leakage occurs, as well as its impacts on businesses and on the effectiveness of the emissions cap.

Economic Impact

This report also provides the results of a preliminary assessment of the macroeconomic impacts associated with the climate change emission reduction strategies. The results show that the overall impacts of the climate change emission reduction strategies on California's economy are expected to be positive. Specifically, when the emission reduction strategies are considered in total, the resulting impacts on the economy are expected to translate into job and income gains for Californians. For example, in 2020, the implementation of the strategies is expected to result in a net increase of 83,000 jobs and $4 billion, in income, above and beyond the substantial growth that will occur between today and 2020.

The macroeconomic assessment relies on a computable general equilibrium model developed by the University of California, Berkeley called the Environmental Dynamic Revenue Model. This model has been peer reviewed and calibrated to be representative of the California economy. It simulates the functioning of a market economy in which different sectors interact with one another (one sector supplies inputs to another, or purchases the outputs of another) and where prices and production adjust in response to changes caused by government policies applied to specific sectors. The model simulates these relationships among California producers, California consumers, government, and the rest of the world. Because of the interconnection between sectors, an intervention in one sector has impacts on others, which are captured by the model analysis. This model has long been used by the California Air Resources Board and California Energy Commission in the development of certain of their reports and regulations. The Department of Finance also uses a version of this model to determine the revenue impacts of State policies.

The favorable impacts on the economy are possible because of the reduced costs associated with many of the strategies. The additional job growth is expected to come from the net savings to consumers associated with the implementation of the strategies. The savings will, in turn, promote further business expansion and job creation.

A subsequent refined analysis is planned over the next year. The refined analysis will incorporate updated cost and savings estimates for the strategies. It will also assess the cost-effectiveness of the various individual strategies. Thus, the refined economic analysis will provide additional information to decision-makers as they proceed with implementation of the strategies.

Impacts On Low Income And Minority Communities

Cal/EPA has made the achievement of environmental justice an integral part of its activities. Cal/EPA adopted its intra-agency Environmental Justice Strategy in August 2004 and its Environmental Justice Action Plan in October 2004. These policies establish a framework for incorporating environmental justice into Cal/EPA's programs, consistent with the directives of California State law.

As the Climate Action Team developed this report to the Governor and the Legislature, Cal/EPA staff worked with community leaders involved with environmental justice and with environmental and public health organizations to maintain an ongoing dialogue. This approach has worked to successfully implement the administration's environmental justice policies.

The Climate Action Team has undertaken an evaluation to investigate if low-income and minority communities may be impacted disproportionately by climate change, efforts to adapt to climate change, and/or efforts to reduce climate change emissions.

Each agency represented on the Climate Action Team has agreed to incorporate environmental justice considerations into their efforts to support the directives of the Executive Order. To the extent possible, environmental justice considerations are included in the agencies' work plans to implement strategies that reduce climate change emissions.

Climate Website:
www.climatechange.ca.gov

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