



## **West Coast Governors' Global Warming Initiative Staff Recommendations to the Governors<sup>1</sup>**

**November, 2004**

### **Executive Summary**

Global warming will have serious adverse consequences on the economy, health and environment of the West Coast states. These impacts will grow significantly in coming years if we do nothing to reduce greenhouse gas pollution. Fortunately, addressing global warming carries substantial economic benefits. The West Coast region is rich in renewable energy resources and advanced energy-efficient technologies. We can capitalize on these strengths and invest in the clean energy resources of our region.

Recognizing these facts, the Governors of California, Oregon, and Washington launched the West Coast Governors' Global Warming Initiative in September 2003. They committed the states to acting "individually and regionally to reduce greenhouse gas emissions" through strategies that "provide long-term sustainability for the environment, protect public health, consider social equity, and expand public awareness." They directed their staffs to develop joint policy recommendations focused on, among other things, ways the West Coast states can:

- Use the states' combined purchasing power to obtain fuel-efficient vehicles and low-rolling resistance tires for motor pool fleets.
- Reduce emissions from diesel fuel in transportation through reductions in the use of diesel in ships and trucks.
- Remove barriers to and encourage the development of renewable electricity generation resources and technologies.
- Improve efficiency standards with the potential to reduce greenhouse gas emissions.
- Develop consistent and coordinated greenhouse gas emission inventories and reporting protocols and collaborate on scientific tools to measure the impact of climate change.

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<sup>1</sup> This report was prepared by the Executive Committee of the West Coast Governors' Global Warming Initiative, comprised of Carol Jolly and Ron Shultz from Washington; David Van't Hof and Stephen Schneider from Oregon; and Bob Therkelsen and Anne Baker from California.

This initiative was well-received by the public and the media around the world. It is widely considered one of the top two or three state initiatives on climate change in the United States. (See Appendix A for selected press clippings.)

Workgroups with representatives from the three states were created to address each of the five areas. An additional sixth group on hydrogen was created later. Draft recommendations from the original five groups were made available for public review and comment in April 2004. The final list of recommendations includes, among other things:

1. Set new targets for improvement in performance in average annual state fleet greenhouse gas emissions.
2. Collaborate on the purchase of hybrid vehicles.
3. Establish a plan for the deployment of electrification technologies at truck stops in each state on the I-5 corridor, on the outskirts of major urban areas, and on other major interstate routes.
4. Set goals and implement strategies and incentives to increase retail energy sales from renewable resources by one percent or more annually in each state through 2015.
5. Adopt energy efficiency standards for eight to 14 products not regulated by the federal government, establishing a cost-effective efficiency threshold for all products sold on the West Coast.
6. Incorporate aggressive energy efficiency measures into updates of state building energy codes, with a goal of achieving at least 15 percent cumulative savings by 2015 in each state.
7. Organize a West Coast Governors' conference in 2005 to inform policy-makers and the public of climate change research concerning the West Coast states.

The Executive Committee recommends that the three Governors direct the staffs of their states to implement the recommendations in this report.

It also is clear that significant policies beyond the workgroup recommendations will be needed to meet the Governors' goal of reducing the states' greenhouse gas emissions below current levels. In addition to working together on the workgroup topic areas, each state has created its own stakeholder process to develop a more comprehensive list of recommendations for state-based climate protection strategies. These processes are in different stages in each state, and many significant new policies and measures are under consideration. Going forward, activities under this regional initiative should be coordinated with what emerges from those stakeholder groups.

The Governors should give careful consideration to four actions under consideration in one or more of the stakeholder processes that offer the most promise for achieving greenhouse gas emission reductions:

- Adopting comprehensive state and regional goals for greenhouse gas emissions reductions;
- Adopting standards to reduce greenhouse gas emissions from vehicles;
- Developing a regional market-based carbon allowance program; and,
- Expanding the markets for efficiency, renewable energy, and alternative fuels.

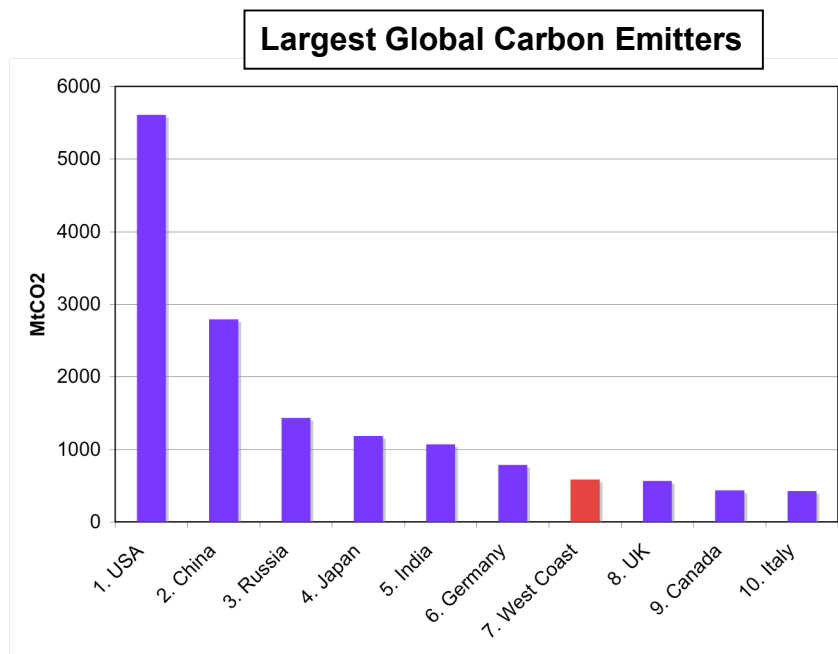
The Executive Committee recommends that the Governors continue the efforts of this West Coast Initiative over the coming year and direct the Initiative to focus its efforts on assessing the feasibility of regional greenhouse gas emission reduction strategies that arise out of the state stakeholder processes, with particular emphasis on those listed above.

We are confident that by working together, the West Coast States can take a global leadership position in reducing greenhouse gas emissions and combating global warming—while setting the stage for strong, long-term economic growth.

## Background: The Problem and the Solution

The world's scientists are clear: Global warming is happening, and the world must act now to reduce greenhouse gas emissions. Global warming will have serious adverse consequences on the economy, health and environment of the West Coast states. While these consequences are not entirely predictable, the effects of global warming are already evident in the form of higher temperatures, reduced snow pack, insect infestation and increased fire danger in our forests, and rising sea levels on our ocean shores. These impacts will grow significantly in coming years if we do nothing to reduce greenhouse gas emissions.

Unfortunately, current state and federal policies will not lead to a reduction in current emission levels of the greenhouse gases associated with global warming. The Governors of the West Coast states have concluded that our states must act individually and regionally to reduce greenhouse gas emissions, and to establish precedents that will spur the development of climate polices in other states and at the federal level.



Sources: Carbon Dioxide Information Analysis Center and Tellus Institute, 2004.

The West Coast states cannot stop global warming alone. By acting together the states can have a profound impact, both substantively and politically. The states' combined carbon emissions, if compared against other countries in the world, rank 7<sup>th</sup> globally. A significant reduction in regional greenhouse gas emissions would have a measurable global impact. But more importantly, all jurisdictions, as a matter of public leadership, have the responsibility to take on the challenge of addressing global warming. We must do our part. By acting early and exhibiting state and regional leadership, the West Coast states can encourage others to follow.

## The Benefits of Acting

Addressing global warming carries substantial economic benefits. The West Coast region is rich in renewable energy resources and advanced energy efficient technologies. We can capitalize on these strengths and invest in the clean energy sources of our region.

### By promoting energy efficiency, renewable energy, and low-carbon technologies:

- **Our energy dollars stay invested at home instead of being exported overseas to oil and gas suppliers.**
- **In the face of record oil and natural gas prices, consumers and businesses will save billions of dollars in energy costs.** A set of representative low-carbon policies analyzed for the Initiative would save the region a cumulative total of almost \$40 billion net by 2020. (See Appendix B.)
- **The states can stimulate economic development in rural areas and the agricultural sector through development of clean energy solutions.**
- **The three states can create new jobs in the renewable energy and energy efficiency sectors.** Renewable energy and energy efficiency are more labor-intensive than fossil fuel plants. For example, a study by UC-Berkeley estimates that the California Renewable Portfolio Standard will create from 90,000 to 157,000 more new jobs by 2020 than would business-as-usual energy development.<sup>2</sup>
- **The three states can provide a hedge against the economic impact of price spikes for natural gas and oil.** Some projections show natural gas reaching prices of \$16/Mbtu this winter. Gas prices are sensitive to demand, so robust energy efficiency programs and renewable energy generation—by reducing the demand for gas—could trim this peak price significantly. A recent study shows that the three West Coast states could provide consumers with savings of \$14 billion over 4 years in lower natural gas bills and electricity system savings by adopting policies to expand investment in energy efficiency and renewable energy.<sup>3</sup>
- **Over the long term, the West Coast states will become global leaders in the development of renewable energy and energy efficient technologies.** This worldwide growth sector is poised to expand more than tenfold over the next twenty years, to more than \$180 billion a year. This will create investment opportunities, jobs in new renewable, efficiency and control technologies, and opportunities for export of innovative technologies and applications. The West Coast states are already leaders in this sector, and have a strong foundation to build on. (See Appendix C.)
- **Climate change prevention strategies will have numerous public health and environmental co-benefits.** Reducing fossil fuel combustion will also reduce the pollutants that cause smog, soot, haze, and toxic air pollution. Some of the

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<sup>2</sup> Kammen, D., Kapadia, K., Fripp. M. 2004. *Putting Renewables to Work: How Many Jobs Can the Clean Energy Industry Generate?* RAEL Report, University of California, Berkeley.

<sup>3</sup> American Council for an Energy Efficient Economy, “Natural Gas Price Effects Of Energy Efficiency And Renewable Energy Practices And Policies,” Report Number E032 December 2003.

strategies will also help ensure adequate water supplies, preserve farm and forest land uses, and reduce traffic congestion. When health care costs and other environmental damages are factored in, the cost savings from these strategies multiply.

## **The Costs and Impacts of Inaction**

In addition to the direct economic benefits of investing in low-carbon energy sources, acting against global warming hedges against the risks posed by global warming itself. The economic costs of unchecked global warming are projected to be immense.

Sea level rise, coupled with more frequent and severe storm events, would threaten beaches, ports, low-lying towns and cities, and other coastal resources, causing severe disruption for people and ecosystems. The increased frequency and severity of storm surges may be more significant for low-lying areas than sea level rise alone. Increased storms and wave height could lead to saturated ground, increased erosion, and more slope failure in the coastal bluffs and hills.

A reduction in the mountain snow pack will exacerbate already tight water supplies, restrict agricultural production, and alter the pattern of power generation. For example, in California, the \$30 billion agriculture industry is one of the sectors most vulnerable to changes in climate and water supply.

With an increased proportion of winter precipitation falling as rain, winter flooding is more likely. Ski areas at lower elevations will likely disappear. Scenarios of future climate change in the Northwest from the University of Washington Climate Impacts Group show a snow pack decline by 2090 that could reach 72 percent below the base period of 1960 to 1990.<sup>4</sup>

Energy generation, salmon recovery, and infrastructure operations, including roads, bridges, and dams, are likely to be directly affected by climate change impacts, according to the Climate Impacts Group. Many of these changes may be felt within 20 years. (See Appendix D.)

Forest fires, smog, and extreme weather events, along with the attendant costs of fighting fires and protecting public health, will worsen. There have been high fluctuations in wet-dry climate cycles for the last 30 years in the Northwest. Climate change may increase the annual and decadal variability of precipitation. Climate variability, far more than fire suppression, has led to the sudden rise and severity of wildfires in recent years. In fact, climate variability is the primary determinant of fire occurrence, location, and timing.

The Institute for Natural Resources at Oregon State University hosted a symposium in June 2004 to solicit guidance from the Northwest's climate and resource scientists. The

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<sup>4</sup> Alan F. Hamlet, David Fluharty, Dennis Lettenmaier, Nate Mantua, Edward Miles, Philip Mote, and Lara Whitely Binder; "Effects of Climate Change on Water Resources in the Pacific Northwest: Impacts and Policy Implications;" University of Washington, Joint Institute for the Study of the Atmosphere and Ocean, July 2001.

Consensus Statement of the symposium is attached as Appendix E. The signatories of the statement describe the state of scientific knowledge regarding likely impacts of global warming to the Pacific Northwest region. The signatories agree that global warming is underway and that it is having global effects as well as impacts in the Pacific Northwest region.

The California Energy Commission has one of the nation's best research programs on the direct costs of global warming. A series of preliminary reports estimates that the cost of a limited set of impacts could rise to \$20 billion per year for California over the next century.<sup>5</sup> Many experts feel that this number could be a severe underestimate. It is notoriously difficult to translate projected impacts of global warming into numeric dollar terms, given the range of uncertainty in how climate and weather will evolve, the difficulty of estimating costs that are stretched out into the future, and speculation about how the public and private sectors will respond.

A major new study on the projected impacts of climate change on California was published in August 2004 in the prestigious journal *Proceedings of the National Academy of Sciences* (see Appendix F). Authored by a team of nineteen scientists, including leading experts from California universities and research laboratories, the study provides striking new information on California's changing climate and projected impacts to human health, snow pack and water resources, agriculture and natural ecosystems. Among the conclusions are:

- By 2030, summer temperatures are projected to rise on the order of 2° to 3° Fahrenheit under the lower emissions scenario and 2° to 4.5°F under the higher emissions scenario.
- By 2100, summer temperatures rise 4° to 8°F under the lower emissions scenario and a dramatic 7.5° to 15°F under the higher emissions scenario.
- California's rapidly growing and increasingly urban population will be at greater risk for illness and death from more severe and prolonged high summer temperatures. At greatest risk are the poor, elderly and already ill.
- By the 2050s, expected heat-related deaths in Los Angeles, Riverside/San Bernardino, Sacramento, and San Francisco increase by about 60-180 percent over historic rates. By the 2090s, heat-related deaths increase by about 140-570 percent.
- Spring snow pack in the Sierra Nevada Mountains declines by about 25-40 percent before mid-century, a loss of 2.6-4 million acre-feet of water storage. By the end of the century, snow pack losses could reach 30-90 percent with serious consequences for summer water supply.
- Warmer winter storms and earlier snowmelt runoff increase stresses on California's systems of reservoirs.

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<sup>5</sup> This work is managed and funded under the California Energy Commission's Public Interest Energy Research program. See [www.energy.ca.gov/pier/environmental/energy\\_global.html](http://www.energy.ca.gov/pier/environmental/energy_global.html).

## Summary of the First Year Activity of the West Coast Initiative

In September, 2003, the three Governors directed their staffs to:

“...work together during the next year to develop joint policy recommendations focused on activities that require regional cooperation and action and present them to the Governors no later than September 1, 2004. These measures should include recommendations on, among other things, ways the west coast states can:

- Use the states’ combined purchasing power to obtain fuel-efficient vehicles and low-rolling resistance tires for motor pool fleets. For example, the states are working on a uniform specification for the purchase of hybrid vehicles.
- Reduce emissions from diesel fuel in transportation through reductions in the use of diesel generators in ships at west coast ports, and in the use of diesel engines in trucks by creating a system of emission-free truck stops along the Interstate 5 corridor that stretches from Mexico to Canada.
- Remove barriers to and encourage the development of renewable electricity generation resources and technologies.
- Improve efficiency standards with the potential to reduce greenhouse gas emissions. Specifically, the states could work together to upgrade appliance efficiency standards and seek waivers of federal limitations where necessary.
- Develop consistent and coordinated greenhouse gas emission inventories, protocols for standard reporting, and accounting methods for greenhouse gas emissions; and collaborate on improved scientific tools to more precisely measure the impact of climate change.”

In addition, the Governors directed their Staffs to:

“develop their recommendations in consultation and cooperation with all interested stakeholders and the public. Staff in each state shall work with the business, environmental, and academic communities to develop recommendations as well as proposed goals by which we will measure our progress and effectiveness in reducing greenhouse gas emissions. In doing so, they should also seek to increase public understanding of global warming issues.”

### Inter-State Activity

Workgroups with representatives from each of the three states were created for each of the five areas. State staff met over the course of the year via conference call and in person to discuss progress on these items. A sixth working group on hydrogen was created partway through the year. Draft workgroup papers on the original five topics were made available to the public and stakeholders in early April 2004, with a request for comments. The workgroups incorporated these comments into revised drafts that they submitted to the executive committee. The executive committee finalized the working groups’ reports and is forwarding them to the Governors via this report.



The final reports from each working group are contained in Appendix G. The policy recommendations are summarized in the next chapter of this report.

In addition to the work on the identified issues, the states requested an independent analysis of overall carbon reduction potential for the West Coast states through a range of representative policies and measures. This analysis is attached as Appendix B.

The workgroup collaborations and the three states' meetings provided venues for information-sharing and relationship-building between the three states' staff. These relationships will provide important foundations for future collaborative efforts among the states.

### **In-State Activity**

In addition to participating in the West Coast Governors' Global Warming Initiative, each state has undertaken its own stakeholder process to create a global warming strategy. The regional work and the state stakeholder efforts are on parallel and complementary tracks.

- **Oregon** has created a Governors Advisory Group on Global Warming. This stakeholder group will submit a comprehensive set of policy recommendations to Governor Kulongoski by the end of the year. A draft set of recommendations will be circulated for public comment from mid-October to mid-November. Oregon will hold three public meetings on the draft recommendations.
- In **Washington**, the Puget Sound Clean Air Agency has convened a stakeholder group to develop a package of climate policy recommendations both for the Puget Sound region and for the state. These will be completed by the end of the year, with draft recommendations evaluated in the fall.
- In **California**, the California Environmental Protection Agency is considering a state greenhouse gas reduction target, and the Energy Commission has convened a stakeholder Climate Change Advisory Committee. This committee had its first meeting in July and will meet at least quarterly over the next year to consider California's global warming strategy.

Each state has already taken action to reduce greenhouse gas emissions. Since 1997, Oregon has required new energy facilities to offset a significant portion of their carbon dioxide emissions. During 2004, the Washington Legislature passed, and Governor Locke signed, a bill requiring new gas-fired power plants to offset a portion of their CO<sub>2</sub> emissions. Also during 2004, the California Air Resources Board approved draft rules for the world's first regulation of greenhouse gases from motor vehicles.

### **Interactions with Northeast States**

Before the launch of the West Coast Governors' Initiative, the Northeast states put in place ambitious state and regional climate change programs. The New England Governors and Eastern Canadian Premiers have adopted regional goals of reducing

greenhouse gas pollution to 1990 levels by 2010, 10 percent below 1990 levels by 2020, and 75-85 percent below current levels in the long run. Several of the states have adopted these goals as their own, through administrative action or legislation. In addition, nine Northeast states, led by New York, are developing a cap-and-trade program for CO<sub>2</sub> from the power sector. This regional program would be the nation's first carbon cap-and-trade system. (For a more complete review of state activity on global warming, see Appendix H.)

State officials and experts from the Northeast participated in the West Coast states' meetings to allow for inter-regional learning and collaboration. The West Coast states have begun sending observers to the design meetings for the Northeast's carbon cap-and-trade program, the Regional Greenhouse Gas Initiative (RGGI), and will continue to do so as resources allow.

### **The Local, National, and International Profile of the Initiative**

The West Coast Governors' Global Warming Initiative has received favorable public attention from many perspectives. Perhaps the best indication of the local interest is that 195 comments were received on the workgroup papers. The vast majority of public comments supported the Initiative and urged the three states to go further and be more ambitious. The nature of the comments mirrored local polls on climate change, which show the public to be strongly supportive of reducing greenhouse gas emissions.

At the national level, the Initiative has been cited favorably by policy leaders such as Senators McCain and Lieberman and has been referred to in numerous national press stories. The Initiative has even made a splash internationally. For example, it had a high profile at the launch of The Climate Group in London, and it has been covered in international press such as *The Economist* (see Appendix A). In recognition of U.S. states' efforts, the European Union has inserted a clause into their trading rules that will allow trading of carbon allowances between EU member countries and U.S. states with comparable programs, such as RGGI (if it is implemented).

## **Policy Recommendations**

Brief descriptions of the workgroups' recommendations are summarized below. The full workgroup reports are attached as Appendix G. With few exceptions, the workgroup recommendations are being recommended here verbatim by the Initiative's Executive Committee. By design, these workgroup recommendations are focused on near-term actions, and the actions they recommend should be considered first steps toward addressing the threat of climate change. We will need to go further if we are to meet the objective of reducing global warming gases below current levels.

### **1. State Fleets: Working Group 1**

Short Term (by October 2004).

1. Coordinate purchasing of low rolling resistance tires.
2. Provide GHG emission baseline data from operations of each state fleet.

Longer Term (between October 2004 and October 2005)

3. Set new targets for improvement in performance in average annual fleet GHG emissions.
4. Collaborate on the purchase of hybrid vehicles.
5. Develop common specification for low rolling resistance tires.
6. Develop a model “Green Fleet” Policy that identifies comprehensive best practices for fleets.
7. Determine best in class vehicle standards for each type of vehicle needed for light duty fleets (compacts, sedans, pickups, vans).
8. Develop specifications and bid selection criteria for best in-class vehicles for the various light duty and light trucks.
9. Identify key leverage points among the three states in fleet operations, and recommend actions particularly in alternative fuel implementation and market transformation.
10. Explore options to address limitations of the Energy Policy Act of 1992 in pursuing fleet purchase of hybrid vehicles.
11. Promote and collaborate with education and awareness efforts designed to communicate the benefits of cleaner, more efficient vehicles.

## **2a. Emission Reductions at Truck Stops: Working Group 2a**

1. Broadly publicize the efforts that aid in the deployment of electrification technologies at truck stops.
2. Within six months, establish a plan for the deployment of electrification technologies at willing truck stops in each state on the I-5 corridor, the outskirts of major urban areas and on other major interstate routes.
3. Develop a more comprehensive program to reduce other forms of non-essential idling by heavy-duty vehicles.
4. Cooperate with the U.S. Environmental Protection Agency’s West Coast Diesel Emissions Reduction Collaborative to address truck emissions.

## **2b. Emission Reductions at Marine Ports: Working Group 2b**

1. Continue the states’ coordination effort related to port electrification through participation in the Marine Vessels and Ports Sector Workgroup within the West Coast Diesel Emissions Reductions Collaborative, and provide periodic progress reports to the West Coast Governors’ Global Warming Initiative.
2. Work with stakeholders and interested parties to identify and implement actions that are available to reduce port-related emissions.

## **3. Renewable Resources: Working Group 3**

Specific Near-Term Recommended Actions:

1. Establish goals and strategies for state and local government purchases of renewable energy.

2. Assist the states congressional delegations to extend the Federal Wind Production Tax Credit for no less than ten years and expand it to include biomass, biofuels, geothermal, solar, ocean energy, new hydro, and other renewable resources.
3. Encourage Public Utility Commissions and local suppliers to adopt Western Renewable Energy Generation Information System reporting requirements for renewable resources.
4. Improve renewable resource access on public lands.
5. Increase use of non-petroleum fuels to 20 percent of on-road fuel consumption by 2020 and 30 percent by 2030 based on identified strategies that are achievable and cost-effective.

#### Recommendations for Longer-Term or Broader-Focused Actions

1. Set goals and implement strategies and incentives to increase retail energy sales from renewable resources by one percent or more annually in each state through 2015.
2. Establish energy efficiency incentive standards in Washington comparable to Oregon and California.
3. Influence the Western Interconnection to place grid expansion investment priority where it supports development of renewable resources.
4. Encourage and assist the states' Congressional delegation to adopt a national renewable or emissions and efficiency portfolio standard.
5. Develop and promote net-zero or premium efficiency homes with integrated renewable resources.

## **4. Codes and Standards: Working Group 4**

#### Specific Near-Term Recommendations

1. Continue to defend the states' authority to adopt energy efficiency standards for products not covered by the federal government, and oppose the federal government's attempts to add products to its list of federally regulated standards prematurely.
2. Direct agencies to secure investments from energy efficiency to support the continued development and implementation of building energy codes and appliance efficiency standards.
3. Adoption of energy efficiency standards for eight to 14 products, not regulated by the federal government, establishing a cost-effective efficiency threshold that all products sold on the West Coast must achieve.
4. Defend the rights of states to require manufacturers to certify the performance of federally covered products to the state.

#### Recommendations for Longer-Term Actions

1. Incorporate aggressive energy efficiency measures into updates of state building energy codes, with a goal of achieving at least 15 percent cumulative savings by 2015 in each state.

2. Intervene in and inspire the federal rulemaking process to capture all cost-effective upgrades to federal energy efficiency standards for all federally regulated products.

## **5. Inventories/Protocols/Scientific Research: Working Group 5**

1. Organize a West Coast Governors' conference in 2005 to inform policy-makers and the public of climate change research concerning the West Coast states.
2. Further refine their accounting of emission reductions through materials use and recycling, considering the difference between accounting for in-state consumption and production.
3. Update greenhouse gas inventories every three years, or as necessary to track progress toward goals that may be adopted.

### **Recommendations: Next Steps**

Significant new policies beyond those recommended by the workgroups would need to be put in place to achieve a reduction in greenhouse gas emissions. Indeed, in the face of strong economic growth, reducing emissions below current levels is a significant challenge. Nonetheless, this remains the appropriate goal for any serious climate effort. Given the promises of new technologies, we are optimistic that the twin goals of economic growth and environmental protection can be met.

We recommend that the three Governors endorse an ambitious agenda for the next phase of work under the West Coast Governors' Global Warming Initiative that, when combined with in-state actions, will put the region on track to turn around its greenhouse gas emissions curve and reduce greenhouse gas emissions below current levels.

Although we have not yet arrived at a set of specific policy actions to meet this goal, we can suggest areas of focus based on the preliminary work that has been done. Based on this analysis and on actions under discussion in the state-level climate change stakeholder processes, we recommend several measures for further consideration under the Initiative. Announcement of next steps for regional action should be coordinated with the products of the in-state processes.

- 1. The three Governors should direct the staffs of their states to implement the recommendations in this report.**
- 2. The West Coast states should consider adopting comprehensive state and regional goals for greenhouse gas emissions reductions.** Changes in the level of greenhouse gas emissions are the benchmark that illustrates how well a state or region is doing to address the challenge of global warming. Many countries have committed to binding reduction targets; a handful of states have committed to nonbinding targets; and, numerous cities and companies have adopted reduction targets. Some of these targets are described in Appendix I. The West Coast's targets should be visionary and reflect a global leadership position.

3. **The West Coast states should consider adopting common standards to reduce greenhouse gases from vehicles.** Transportation is the largest single source of greenhouse gas emissions in the region, and it will be an even greater proportion in the future. California's vehicle standards for greenhouse gases, once fully implemented, will reduce emissions of new cars and light trucks by up to 30 percent and save California consumers \$4.5 billion net by 2020, while bringing new automobile technology to the marketplace.
4. **The West Coast states should evaluate a regional market-based carbon allowance program.** A carbon cap-and-trade program is likely to be the eventual form of federal regulation of carbon, and moving early on a carbon allowance strategy would position our states' industries to be more competitive in a low-carbon world. Although the West Coast's electricity sector is cleaner than in most of the U.S., electric utilities are still our second-largest source of carbon pollution, in part because we import significant amounts of coal-generated power. To address this pollution, we need a market-based solution that is appropriate to the West Coast. It would be productive to explore the policy options and economics of a carbon allowance program at a regional level because a regional market for carbon reductions would be more efficient and effective than individual state markets.

As part of its exploration of a regional carbon allowance program, the West Coast states should become formal observers to the Regional Greenhouse Gas Initiative process in the Northeast. Our states could benefit greatly from tracking the progress of the Northeast states' exploration of the policy and economic issues that arise when designing a regional carbon market.

5. **The West Coast states should expand the markets for efficiency, renewable energy, and alternative fuels.** These areas present other significant opportunities to reduce pollution more deeply over time, and should be considered as options for inter-state collaboration in year two of the West Coast Governors Initiative. Some of these areas are cost-saving, especially efficiency; other areas may have some cost, but will result in economic benefits, such as renewables and alternative fuels.
  - a) **Consider collaboration on, and expansion of, energy efficiency programs and markets for electricity and gas.**
  - b) **Establish a working group to develop a coordinated approach to developing markets for alternative fuels, including biofuels and hydrogen.**
  - c) **Establish a working group to assess how markets for renewable energy can be expanded throughout the West Coast states, including enhancement of the transmission system to allow for continued renewable energy development.**

## **Conclusion**

This list of recommendations sets out an ambitious agenda, but steps such as these will be necessary to counter the threat of global warming. The science is unequivocal that in order to avert the worst consequences of global warming—which become more threatening with each new phase of research—we must begin turning around our greenhouse gas emissions curve now. The West Coast states are in a good position to demonstrate leadership and to advocate actions by the federal government, other states, and the private sector to reduce greenhouse gas pollution.

The economic benefits of these low-carbon strategies are real. In the short run, energy efficiency strategies will save consumers billions on energy costs, fossil fuel prices will moderate with the reduction in demand, and the region will benefit from reduced energy price volatility.

Over the longer run, these strategies will ensure the West Coast’s continued technological leadership by promoting advanced energy efficiency and renewable technologies—technologies that will be the foundation of economic growth in the future.

The Governors have shown long-term vision by supporting the West Coast Governors’ Global Warming Initiative. By working together, the West Coast states can demonstrate that combating global warming and strong economic growth go hand-in-hand.

## Appendices

- A. Selected press clippings
- B. “Turning the Corner on Global Warming Emissions,” Tellus Institute
- C. “Poised for Profit II” Executive Summary, The Athena Institute
- D. “Overview of Climate Change Impacts in the U.S. Pacific Northwest,” University of Washington, Climate Impacts Group
- E. “Scientific Consensus Statement on the Likely Impacts of Climate Change on the Pacific Northwest,” Institute for Natural Resources, Oregon State University
- F. “Emissions Pathways, Climate Change, and Impacts on California,” from the *Proceedings of the National Academy of Sciences*
- G. Working Group Reports
- H. Review of Actions by States: Senate Testimony by Kenneth Colburn
- I. Setting a Global Warming Pollution Reduction Target, The Energy Foundation
- J. Contact List for the West Coast Governors’ Global Warming Initiative