



SECOND MEETING OF THE GOVERNOR'S COMMISSION ON CLIMATE CHANGE

March 27, 2008

University of Virginia's Miller Center of Public Affairs
Charlottesville, Virginia

I. Call to Order

The Honorable L. Preston Bryant, Jr., Chairman, called the Second Meeting of the Governor's Commission on Climate Change to order at 10:00 a.m.

II. Attendance

The following Commission members were present: The Honorable L. Preston Bryant, Jr., The Honorable Patrick O. Gottschalk, The Honorable Pierce R. Homer, Mr. Stephen A. Walz, Ms. LuAnn L. Bennett, The Honorable Donald S. Beyer, Jr., The Honorable Joseph F. Bouchard, The Honorable David L. Bulova, Mr. R. Daniel Carson, Jr., Christine Chmura, Ph.D., The Reverend Richard Cizik, The Honorable John W. Daniel, II, The Honorable R. Creigh Deeds, The Honorable Paul Ferguson, Mr. Robert J. Fledderman, Mr. Stuart A. Freudberg, Mr. Felix Garcia, Mr. Dale A. Gardner, The Honorable John H. (Jack) Gibbons, Mr. William S. Greenleaf, The Honorable Penelope A. Gross, Mr. Robert F. Hemphill, Jr., Ms. Ann F. Jennings, Mr. Michael L. Lipford, Dr. Roger Mann, The Honorable Joe T. May, Mr. Tyrone W. Murray, Mr. R. Paul Orentas, The Honorable Kenneth R. Plum, Mr. Oliver A. Pollard, III, Mr. Michael J. Quillen, The Honorable Ron Rordam, Mr. Harrison B. Rue, Dr. Jagadish Shukla, The Honorable Bruce Smart, and Mr. William A. "Skip" Stiles.

Those not in attendance were: Ms. Jodi Gidley, Mr. David A. Heacock, The Honorable Robert E. Martínez, The Honorable Ralph S. Northam, Dr. Lydia W. Thomas, Mr. Michael S. Townes, and The Honorable Frank W. Wagner.

III. Opening Remarks

Chairman Bryant greeted the Commission members, the speakers, and the public and indicated that this was the second of eight scheduled meetings and that very detailed information would be presented. Chairman Bryant expressed gratitude to the Miller Center of Public Policy at the University of Virginia for hosting the day's events.

IV. Presentation: Miller Center Climate Change Initiative

The Honorable Gerald L. Baliles, former Governor of Virginia and Director, Miller Center of Public Affairs.

Governor Baliles welcomed the audience to the Miller Center and expressed his pleasure at being a part of the day's deliberations. Governor Baliles commended Governor Kaine for creating the Commission and saluted the Commission for its willingness to serve and to offer its recommendations and judgments.

About the Miller Center. The Governor offered some insights as to the mission of the Miller Center of Public Policy at the University of Virginia. Governor Baliles then invited the audience to view a summary of the Center's work in a three-minute video presentation that presented an overview of how the Center approached the complex issues of our time.

United Nations Intergovernmental Panel on Climate Change. Governor Baliles then focused his discussion on the United Nations Intergovernmental Panel on Climate Change (IPCC). He remarked that last year's IPCC assessment report paints a very disturbing picture in its detailed portrait of the impact of human activity on the build-up of greenhouse gases and predictions of dramatic changes to the world's environment. Providing examples of the documented changes, the report indicates widespread effects are already measurable, with much more to come. The Governor asserted that now is the time for Congress and the White House to act by joining forces with governors and states to address climate change concerns. He detailed the Lieberman-Warner Climate Security proposal and a number of bills proposed by Congress. He stated that, unfortunately, the various proposals are said to suffer from multiple deficiencies which raises the concern that without emissions reduction through an effective national commitment in the relatively near future, many low-cost opportunities for action may evaporate. Governor Baliles concluded that climate change strategy is essentially a governance strategy – how this increasingly critical concern is to be met and managed. Since global warming is international in scope, the Governor asserted that if this country is to exercise a leadership role internationally, then it must have an effective national strategy in place.

Miller Center's National Conference on the Governance of Climate Change Strategies. The Governor explained that to accomplish the task of exercising a leadership role, the Miller Center of Public Affairs at the University of Virginia has begun the process of creating a national conference on the governance of climate change strategy. Governor Baliles asserted that the Miller Center's National Conference on the Governance of Climate Change Strategies will act as a catalyst to cast light on the national governance structures needed to deal with climate change in a manner that embraces and empowers the best attributes of local, state, and national actions, as well as provide an opportunity for open discussion and national understanding of the economic realities of the cost of compliance and the impact that these programs will have on competitive goals and policies confronting this country. The Miller Center intends to file its report and distribute it to lawmakers, to the new presidential administration, and to Congressional leadership by the first quarter of 2009.

V. Approval of Meeting Minutes

The Chairman requested a motion to approve the minutes from the February 1, 2008, meeting. The motion was moved and seconded. The motion carried unanimously.

VI. Presentation: Intergovernmental Panel Climate Change: Findings, Process

Benjamin J. DeAngelo, Senior Climate Analyst, Climate Change Division, Office of Atmospheric Programs, U. S. Environmental Protection Agency.

Chairman Bryant provided a brief introduction to Mr. DeAngelo and indicated that much of the information Mr. DeAngelo would present to the Commission is foundational. Mr. DeAngelo began by informing his audience that his focus would be almost entirely on the most recent report of the IPCC – what it says, what it says about what we know and what we do not know – and would then speak briefly about the process.

Mr. DeAngelo's presentation addressed the drivers of climate change, to the endpoint impacts and then responses to that change. He indicated today's climate is being affected by activities occurring decades ago and that the cumulative effects of concentrations stay in the atmosphere for years. Stating that the most notable observed parameter of climate change is that of global temperature, Mr. DeAngelo indicated there is more pronounced warming in the northern hemisphere. Other indicators of observed climate change are the global rise in sea level and northern hemisphere snow cover. As to future projections, Mr. DeAngelo suggested global climate change will very likely be greater in the 21st century than in the 20th century. Climate change in later years will depend greatly on what we do now. We need to improve the ability to predict climate change impacts and risks on a regional scale. He concluded that the longer emissions reductions are delayed, we may be committing ourselves to higher risks. Addressing the question of cost and benefits of mitigations, we should think rather in terms of risk management – reducing the risks with different scenarios.

VII. Presentation: Summary of U.S. Local, State, and Regional Action on Climate Change

Patrick Hogan, Solutions Fellow, Pew Center on Global Climate Change

Mr. Hogan provided a brief overview of the Pew Center and indicated that the Pew Center's research focuses on every aspect of the climate change problem. The Center works closely with the Business Environmental Leadership Council, a 42-member council primarily comprised of Fortune 500 multi-national companies.

Providing an overview of state actions, Mr. Hogan indicated states are acknowledging that the science is there and are recognizing there are very legitimate concerns and impacts they need to address. States are recognizing that the world is moving toward a more carbon-restrained economy, and as this happens there is an enormous opportunity for green-collar jobs, low carbon technologies, and clean technology industries. Recognizing they can achieve greater benefits at lower costs by working together, a number of states are forming alliances to reduce and stabilize emissions. The International Carbon Action Partnership, formed in October 2007, aims to share best practices. There are a range of actions that states are adopting, including utility profit decoupling, which changes the relationship between utility revenues and the amount of power the utility companies are selling. A survey of state actions includes regional cap-and-trade initiatives; vehicle GHG standards; participating in GHG reporting and

registries; and developing climate action plans, energy efficiency resource standards, and mandates and incentives for biofuels. Increasingly, GHG emission targets are being set by state legislatures.

Mr. Hogan stated that local action initiatives include 811 cities that have signed the Mayors Climate Protection Agreement, the Clinton Climate Initiative, and the Mayors Climate Protection Summit.

He concluded his remarks by stating momentum is accelerating at the federal level, with enactment of a federal policy to come within the next couple of years. States and localities are in the front in terms of achieving real emissions reductions while simultaneously providing models and lessons that can inform federal policy, emphasizing that what happens at the local level really does matter.

VIII. Presentation: U.S. Climate Policy and Programs 2008, EPA's Transportation and Climate Activities – Regulatory Responsibilities

Bill Irving, Greenhouse Gas Inventory Team Leader, Climate Change Division, Office of Atmospheric Programs, U. S. Environmental Protection Agency – Office of Air and Radiation, and Rebecca White, Transportation and Climate Division, Office of Transportation and Air Quality, U.S. Environmental Protection Agency - Office of Air and Radiation

Mr. Irving detailed two central themes: (i) since 1992, there has been a lot of activity at the federal level, and (ii) since early 2007, there has been a tremendous flux in terms of what is happening at the federal level and what is happening at the international level.

Mr. Irving informed the audience that there has been an overall growth trend in all U.S. emissions by gas of about 15 to 16 percent since 1990 levels, not including sinks – sequestration by trees and soils. He stated the dominant greenhouse gases are CO₂, methane, and nitrous oxide. A different way to look at emissions is by economic sectors: electricity generation represents the largest emitting sector in the U.S., primarily due to the use of coal.

Regarding the US climate change policy, Mr. Irvin stated the actual quantified goal is the reduction of GHG intensity of 18% by 2012, using 2002 as the baseline – this is a simple ratio of emissions over GDP.

Mr. Irving continued by relating that most U.S. Congressional activities have occurred within the last two years and include climate-related bills, hearings, and staff workshops. Congressman Waxman's bill is certainly the most aggressive of cap-and-trade bills. EPA Legislative Analyses of the Lieberman-Warner bill indicate that most reductions are taking place in the power sector, enabled by a greater reliance on nuclear power. Full analyses of bills are available online. Congress mandated the EPA to implement a GHG reporting program for all sectors of the economy; authority is to be tied to the Clean Air Act. A proposed rule on carbon capture and storage is due to be issued. The rule provides environmental guidelines for the injection and storage of CO₂ and will be developed through EPA's Water and Air offices. Activities at the federal level in the

U.S. transportation sector identify contributions of the transportation sector to U.S. GHG emissions. Transportation represents about one-third of all U.S. GHG emissions.

Ms. White then indicated that in a global context, the US transportation sector emissions alone exceed those of a lot of other major countries' total emissions. Her office works with field offices to develop the national GHG emissions inventory and to provide consumer information on vehicle fuel efficiency. Additionally, she collaborates with the freight industry to increase energy efficiency while simultaneously reducing GHGs and air pollution.

Ms. White detailed that the EPA derived its main regulatory authority the Clean Air Act (CAA). Acts that have changed the EPA's authority include the Energy Policy Act of 2005 and the Energy Independence and Security Act of 2007, which establishes new renewable fuels standards with GHG thresholds. As an outcome of the April 2, 2007, Supreme Court ruling that EPA must take action under the CAA regarding GHG emissions from motor vehicles, the President signed an Executive Order directing the EPA to coordinate with DOE, USDA, and NHTSA to reduce gasoline consumption by 20 percent over 10 years, and to develop regulations, using existing authority under the CAA, to respond to the Supreme Court's decision.

Currently, a major focus for Ms. White's office is conducting the life cycle GHG analysis, which looks at the implications of growing increased amounts of corn for ethanol production and indirect land-use impacts.

IX. Presentation: Major Sources of Greenhouse Gas Emissions in Virginia

Thomas R. Ballou, Department of Environmental Quality

The Chairman introduced Mr. Ballou, who informed the Commission that the Department of Environmental Quality (DEQ) has now developed inventories of GHG emissions from all sources (statewide) for base year 2000 and 2005 through 2025. The three main sectors that are producing GHG emissions are the electricity (in-state, and out-of-state), transportation, other fuel use in residential, industrial, and commercial (total of almost 90% of total GHG emissions). Transportation makes up the largest sector of energy end-use.

He indicated the largest single sector producing the emissions is the electricity sector; when that sector is broken down by fuel, coal accounts for 83% of the fuel emissions for in-state-generated electricity. Nuclear is not included because nuclear electricity generation does not create GHG emissions. The emissions figures are estimates based on activity levels or fuel consumption.

Mr. Ballou stated that projected emissions growth from 2000 to 2025 is anticipated to be an 88 million metric ton increase from 2000 to 2025 in a business-as-usual scenario. Per capita emission trends show an increase, factoring in the projected demand for power as well as population growth.

Mr. Ballou summarized mitigation measures for the electricity, transportation, and other fuel use sectors. He concluded his remarks by stating that energy consumption and generation will continue to dominate the Virginia GHG inventory and that to reduce GHG emissions, we will need to implement a combination of reduction measures, address consumption, and utilize technology.

X. Presentation: The Role of Nature in Capturing and Storing Carbon Emissions

Bill Stanley, Science Lead, Climate Change Team, The Nature Conservancy

The Chairman next introduced Mr. Stanley, who reported that TNC is involved in climate change because it considers climate change to be one of the biggest threats to its mission of protecting nature and because it considers the use of nature as part of the solution. He provided a basic overview of the role of nature in capturing and storing carbon emissions: the process of photosynthesis pulls carbon dioxide from the air and fixes it into plant material, and the ocean environment absorbs CO₂ into the ocean itself.

He indicated that nature cannot keep up with the amount of emissions people are putting into the air, and people are complicating the situation by destroying forests. Also, as the ocean warms, it loses its potential to store CO₂.

Mr. Stanley suggested two things that can be done to manage the CO₂ cycle would be to protect nature and restore nature but that there is no "silver bullet." He explained that TNC has determined it will focus on strategies about which it has knowledge and in which it has expertise and has chosen two specific actions to stabilize GHG concentrations: (i) stop global deforestation and double reforestation, and (ii) adopt "conservation tillage" for all agriculture globally.

Mr. Stanley stated there are significant opportunities to cut CO₂ emissions for less than \$50 per ton of CO₂ through forest management, conservation tillage, and agricultural practices. The biggest opportunity is in the area of afforestation of pasture land, at about a cost of \$18 per ton of CO₂, between now and 2030.

Applying the approach to Virginia, TNC entered into a feasibility study with the U.S. Department of Energy on reforesting abandoned mine lands in southwest Virginia. TNC's interest was in carbon sequestration, protection of fresh water habitats, and improvements to water quality in general, as well as with employment opportunities in terms of forest management. TNC has been working with Virginia Tech on a reforestation project in Wise County and surrounding areas. When TNC undertook a study evaluating afforestation options in the Chesapeake Rivers region, looking at forests and agricultural land for carbon storage potential, it found there were significant opportunities. If the entire area available were reforested, up to about 4 million tons of CO₂ equivalent could be sequestered over a year – a significant contribution.

Afforestation was defined as replanting forests in areas that have been out of forest for many, many years.

XI. Public Comment

At this point of the meeting, the Chairman opened the floor for public comment.

- John Kwapisz, a volunteer with the Science and Environmental Policy Project (SEPP), requested that the report, “Nature, Not Human Activity, Rules the Climate,” produced by the Nongovernmental International Panel on Climate Change, and edited by S. Fred Singer, Ph.D., be accepted into the record of this Commission. Copies of the report were distributed to Commission members.
- Charles Battig, M.D., ATTA, spoke on the “demonizing” of carbon dioxide and the one-sidedness of scientific discourse.
- Randy Randol questioned the accuracy/predictability level of the IPCC models.
- Bill Cunningham of Unions for Jobs and the Environment stated he found the presentations informative and appreciated the speakers using the IPCC report as a reference point for the science.
- Lowell Smith spoke of the importance of baselines and goals, indicating he felt the goals of the day’s proceedings were unclear. He also stated that some of the baselines did not consider several factors, including macro-economic factors.
- Tyla Matteson, a volunteer with the Sierra Club, indicated she had attended the U.N. Climate Change Conference in Bali and that she felt the conference illustrated the consensus-building power of different countries working together. She urged Commission members to consider going to some of these climate change meetings.
- Diego Ramos, a VCU student from Brazil and a Sierra Club volunteer, stated the climate change discussion is important because climate change is a danger. He indicated the U.S. is missing the opportunity to lead the process of addressing climate change and that everyone needs to contribute.
- John Cruickshank, Vice-Chair of the Virginia Chapter of the Sierra Club, distributed copies of the Sierra Club Citizens Energy Plan – Virginia Chapter to the Commission and urged members to read the plan and consider its recommendations for the state government of Virginia.
- Shirley Napps of the Piedmont Group of the Sierra Club and summer worker at Nature Camp in Vesuvius, Virginia, stated that climate change models have not anticipated how fast change climate change and global warming are happening and urged fast action. She declared “Stop Wise County power plant.”
- Elizabeth Spellman, a UVA student, asked how the Wise County power plant fits into the Commission’s long-term plan of bringing greenhouse gas emissions back to year 2000 levels.
- Lynne Ellison, a UVA student, stated that people of her generation will be faced with the recommendations / decisions made by the Commission and, therefore, inquired as to whether a seat on the Commission could be offered to a student.
- Matt Trumbo-Tual, a UVA student, stated he is very concerned about the proposed Wise County coal plant and asked how the Commission plans to address the issue that carbon sequestration technology has not been proven and might not be proven or available for 10-15 years.

- Kelsey Huelsman, a UVA student, questioned that with Virginia's carbon emission on the rise how a change can be made in carbon dioxide emissions if the Wise County power plant is built.
- Drew Moore, a UVA student, urged the Commission to consider the need for renewable energy rather than build the Wise County power plant that would rely on finite, polluting resources.
- Elizabeth Frank, a UVA student, asked how a new plant would encourage energy efficiency and suggested the money and resources be invested in alternative energy technologies to help Virginia improve its standing and avoid further environmental degradation.

Chairman Bryant expressed his appreciation to everyone who came to speak. Mr. Smart added that the students' appearances represented a superb demonstration of getting involved in the public process.

XII. Roundtable Discussion

Commission members made the following comments.

- Mr. Rue indicated a new report, "Growing Cooler," suggests we need to be far more aggressive about reducing vehicles miles traveled. Also, something that can be done now is to apply the strategies put forth in a paper, "Travel Smart," that offered measures by which an actual reduction of 8% per year vehicle miles traveled can be realized.
- Mr. Bulova wanted to (i) ensure that there is more discussion on carbon capture technology, and (ii) discuss how the Commission is planning to react to leakage, principally in the northeast corridor.
- Dr. Shukla asked when the action plan will be drafted. Chairman Bryant responded that the first couple of meetings are foundational and then the Commission drill down to Virginia-specific issues. After the May meeting, the Commission will have the information from which to build its action plan.
- Mr. Beyer referred to Tom Ballou's chart on per capita emission trends as it related to population growth and suggested there is a need to think about sustainable communities.
- Ms. Gross asked if there will be a role for students in the Commissions' work, and, referencing the nuclear piece and alternative energy, asked where information can be obtained about other technologies at a lay person's level. Chairman Bryant stated that some links are already on the Commission's website to existing reports of various sorts and that the June meeting will have presentations on emerging technologies.
- Mr. Greenleaf observed that the regulatory framework for approving the new coal-fired power plant in Wise County does not factor any of the information which Commission members had heard during the day's meeting. Chairman Bryant responded by giving an overview of the regulatory process as he understood it, indicating that the Air Board may make its decision to approve the permit as early as May, which would probably be six to seven months prior to when the Commission's recommendations were due. The Chairman further stated

- that while it is arguable as to whether this issue is in the scope of what the Commission is doing, it is perfectly within this Commission's purview to consider what Virginia's position going forward should be on coal-fired plants.
- Dr. Gibbons asked if there are other states that have changed their direction based on new recognition of the importance of these emissions from coal-powered plants and was informed that Kansas had very recently done so. Dr. Gibbons stated the Commission should be able to offer comments or even recommendations on actions about such things as the Wise County plant.
 - Ms. Jennings stated that in future meetings, the Commission needs to be talking about what is important to all Virginians, in particular impacts to the Chesapeake Bay. She reminded the Commissioners that related documents on Chesapeake Bay impacts will be posted on the Commission's website.
 - Mr. Murray said conservation steps are ones we can take now and asked what the Commonwealth is doing to re-educate individuals. He also asked if there are incentives to jump-start conservation efforts. Mr. Walz outlined some forthcoming consumer education plans on energy efficiency.
 - Mr. Smart stated he is concerned about the impact of the proposed Wise County plant on the Commission's work and wondered if in the agenda of the next meeting the Commission should consider making a recommendation to the Governor or to the State Corporation Commission to put the decision on hold until the Commission has completed its work. Additionally, he asked for clarification on what the Governor's intention is in terms of the emissions baseline the Commission is starting with and how that emissions baseline was calculated in the energy plan and in the DEQ presentation. He also would like to see more on adaptation plans.
 - Mayor Rordam observed that they are working on Blacksburg's carbon footprint and suggested that until the use of vehicles is curtailed, this problem will not be solved. He asked how mass transit can be better supported and how people can be persuaded to move closer to where they want to be.
 - Dr. Mann stated that as a biologist, he knows that small changes have a manifold effect and that the Commission needs to consider that the biology of Virginia is very susceptible.
 - Mr. Fledderman stated he would be interested in hearing the presentation from the Nongovernmental International Panel on Climate Change and stated the presentation and information provided by TNC was very good.
 - Mr. Freudberg suggested the Commission invite Dominion Power to make a presentation to this Commission, to hear from them as to how Dominion plans to meet its 10 percent conservation goal. He also asked how the Commission will act on suggestions made by Commission members. Chairman Bryant responded that Dominion would be invited in two meetings. Other industry representatives also will be invited.
 - Rev. Cizik commended the conversations afforded by the Commission as a forum to share ideas and to learn of the science about climate change and greenhouse gas emissions.
 - Mr. Stiles stated it is important that the Commission stress local government's role, as state governments cannot wait for the federal government to act and local

governments cannot wait for the state. With respect to coastal areas and ongoing work with two counties that are reviewing their comprehensive plans, they are learning that it is difficult to build sea-level rise adaptability into zoning codes.

- Mr. May stated he learned more today than all the other times during which he has looked at this situation and expressed his thanks.

XIII. Adjournment

Chairman Bryant adjourned the meeting at 5:10 p.m.