



FOURTH MEETING OF THE GOVERNOR'S COMMISSION ON CLIMATE CHANGE
May 13, 2008
Johnson Center, Dewberry Hall
George Mason University - Fairfax, Virginia

I. Call to Order

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

II. Attendance

The following Commission members were present: The Honorable L. Preston Bryant, Jr., The Honorable Patrick O. Gottschalk, Mr. Ralph M. Davis (representing The Honorable Pierce 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 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, Ms. Jodi Gidley, Mr. William S. Greenleaf, The Honorable Penelope A. Gross, Mr. David A. Heacock, Mr. Robert F. Hemphill, Jr., Ms. Ann F. Jennings, Mr. Michael L. Lipford, Dr. Roger Mann, The Honorable Robert E. Martínez, The Honorable Joe T. May, Mr. Tyrone W. Murray, Mr. R. Paul Orentas, The Honorable Kenneth R. Plum, Mr. Oliver A. Pollard, III, Mr. Harrison B. Rue, Dr. Jagadish Shukla, The Honorable Bruce Smart, Mr. William A. "Skip" Stiles, and Dr. Lydia W. Thomas.

Those not in attendance were: The Honorable John W. Daniel, II, The Honorable Ralph S. Northam, Mr. Michael J. Quillen, The Honorable Ron Rordam, Mr. Michael S. Townes, and The Honorable Frank W. Wagner.

III. Opening Remarks

Chairman Bryant expressed his appreciation to George Mason University (GMU) for offering its facility to host the fourth Governor's Commission on Climate Change meeting.

Dr. J. Thomas Hennessey, Jr., Chief of Staff at GMU, welcomed the Commission and provided an overview of climate studies, including issues of climate dynamics, offered at GMU.

IV. Approval of Minutes

Chairman Bryant noted that a draft of the April 22, 2008, meeting minutes had been posted to the Commission's website. Mr. Fledderman asked that the minutes be amended to reflect his request to have a table showing greenhouse gas emissions reductions in the

manufacturing sector distributed to the Commission. The motion to adopt the minutes as amended was approved unanimously, and the table was provided to the Commission.

V. Presentation: Update on Congressional Activity Regarding Climate Change

Carter Cornick, Chief of Staff, and Chelsea Maxwell, Senior Policy Advisor of the Office of U.S. Senator John Warner.

The Warner-Lieberman bill is the first climate change bill to emerge from a congressional committee to the Senate floor. The bill is expected to be brought up around June 2 and definitely before July 4.

The cost containment element of the bill reflecting the difference between the free-market approach effort of the Warner-Lieberman bill and the Bingaman-Specter cap-and-trade bill is still under discussion. Staffs are working on the final details of a "managers' amendment," which is a revised version of the bill that the Senate will be asked to vote on.

Regarding the states' role under the proposed legislation, while the bill will place a value on what states are doing and reward those states taking action, the bill would establish a national cap-and-trade program in part to avoid businesses having 50 distinct points of compliance.

Senator Warner's position is that if the U.S. does not act, India and China will not act. Senator Warner met with Europeans regarding cap-and-trade strategies and was told that Europe is looking to the U.S. to move on climate change legislation.

VI. Presentations: Impacts of Climate Change on Infrastructure

A. Potential Impacts of Climate Change on U.S. Transportation

Nan Humphrey, Senior Staff Officer, Transportation Research Board

Ms. Humphrey discussed a study released in March by the Transportation Research Board entitled *Potential Impacts of Climate Change on U.S. Transportation*. The study's focus lay in what types of adaptation strategies would be appropriate with respect to the impacts on infrastructure and transportation operations. The study's charge was to provide an overview of scientific consensus regarding climate change, and then to identify potential impacts on U.S. transportation and adaptation.

The study's main findings included:

- we are feeling impacts of greenhouse gases put in the atmosphere up to 100 years ago;
- we are experiencing extreme variability in climate, which in turn means that historical climate patterns may not be a reliable planning guide for the future;
- climate changes will require significant changes in how transportation professionals plan; and

- of particular relevance to transportation are the rising sea levels added to storm surge, increase in very hot days and heat waves, increase in Arctic temperatures, increase in intense precipitation events, and more frequent hurricanes.

The study offered 14 recommendations, grouped by decision framework and adaptation strategies.

B. The Potential Impacts of Global Sea Level Rise on Transportation Infrastructure Phase 1 – Final Report: the District of Columbia, Maryland, North Carolina and Virginia

Chris Munson, Senior Manager, Technology & Management Solutions, ICF International

Mr. Munson's presentation examined global sea level rise with respect to the east coast of the U.S. Specifically, the Phase I final report focused on D.C., Maryland, Virginia, and North Carolina.

The Phase 1 report underscored the premise that sea level rise is the least uncertain impact of climate change and has significant risks. It incorporated within its methodology the use of GIS layers – USGS topography, risk assessments, and public data sources. The report calculated two levels of inundation (regular and periodic), and the infrastructure risk assessment applied various GIS layers to visualize various scenarios.

The next step will be to drill down to a much finer level of detail, to create additional elevation scenarios for a broader use – expand studies to ports, power plants, LPF facilities, natural resources, and communities. The report concluded that sea level rise due to climate change impacts Virginia's transportation infrastructure, and, in some instances, its ability to function could be seriously impaired.

C. National Security and the Threat of Climate Change

Edward T. (Tom) Morehouse, Jr., CNA Study Team

Mr. Morehouse reported that the CNA study team changed the tone of the climate change debate by convening a panel of senior military leaders to help inform the national debate. The team posed the question, "what climate change-induced conditions worldwide would represent security risks to the United States?" The information-gathering process grouped the effects of climate change according to natural and human systems: water supply, agriculture, human health, sea level, and floods.

The report identified the mechanisms for instability and conflict that included weak or failing states, cross-border resources conflicts, mass migrations, humanitarian crises, and direct effects on military operations, while also considering scenarios for Africa, the Middle East, Asia, and the Western Hemisphere. In Virginia, the sea level rise would affect military installations in and around Hampton Roads.

The team concluded that climate change acts as a threat multiplier for instability in some of the most volatile regions of the world and would add to tensions in stable regions of

the world. It also indicated that climate change, national security, and energy dependency are a related set of challenges.

VII. Presentation: Impacts of Climate Change on the Insurance Industry

Elizabeth Costle, former Vermont Commissioner of Banking, Insurance, Securities and Health Care Administration

Ms. Costle asserted that insurance is a key element of our economy because it is required to obtain financing: insurers are investors. She emphasized that climate change affects insurance claims and that insurers and re-insurers fear multiple events in a single year based on the risk of insolvency. With climate change, we will experience more floods, droughts, increased climate change litigation, which will have an impact on health and life insurance. Insurers, mainly European insurers, have sounded the alarm on climate change, and insurance regulators warn of financial consequences.

Insurance is a promise to pay premiums if a specific event happens. Ms. Costle indicated we are already paying for global warming in the form of higher premiums. Flood insurance in the U.S. is paid by the federal government; taxpayers are the re-insurers for the federal program.

Climate change is important because the predicted increase in the number of severe weather events is likely to result in claims. The past may no longer predict the future, so the cost of insurance is likely to include a premium for uncertainty. In 2008, the top insurance risk is climate change.

Addressing the Virginia insurance market, Virginia homeowner premiums have increased 67.2% between 2001 and 2006. Virginia will experience problems in the future due to sea level rise. Virginia Beach is the tenth largest coastal city in the world in terms of assets exposed to increased flooding from sea level rise. On the positive side, Ms. Costle stated that climate change can offer the opportunity to include public policy and to develop new products to incorporate into investment strategies.

VIII. Presentations: Economic Opportunities Associated with Climate Change: Emerging Technologies

A. Solar Market Outlook

Travis Bradford, Prometheus Institute for Sustainable Development

Mr. Bradford is the author of the book, *Solar Revolution*. His presentation provided information on the world photovoltaic (PV) market. Through his research, Mr. Bradford concluded that solar is a powerful driver of world electricity, and it represents a huge business opportunity. PV is such an interesting solution to alternative energy sources because it reflects a 50% global growth rate. The industry is growth-driven, as evidenced by what has happened in Germany, Japan, Italy, Spain, and California. A great deal of PV production is going to Asia – China and Taiwan, and to the U.S. as well.

With respect to policy and state legislation, a number of states are doing interesting things, particularly California. Renewable portfolio standards (RPSs) are adding to demand.

Federal legislation for solar energy tax credits was extended through 2008, although proposed federal legislation through 2016 has essentially been abandoned.

Mr. Bradford further explained that what is really exciting is where the industry is going: massive manufacturing plants are expected by 2010 and cell supply is growing quickly, and PV costs are coming down. He stated that Germany has not had to add any nuclear or coal-fired power plants in the last five years due to wind and solar efforts – and that should be our short-term goal. In considering the future of energy, PV represents an inevitable economic shift. Mr. Bradford indicated there are no technical hurdles, only the scale of production.

In responding to a question, Mr. Bradford expanded on what Germany had done to attract solar investments: the Germans started sooner, they incorporated PV production under a jobs creation program, and they adopted a feed-in tariff.

B. Algal Biofuel

Dr. Pat Hatcher, Old Dominion University

Dr. Hatcher discussed work being carried out at Old Dominion University (ODU) with respect to research and the practical application of biodiesel production from algae growing on municipal wastewater. The process is carbon neutral and avoids reliance upon fossil fuels.

Dr. Hatcher indicated that much of the work has been funded by the Virginia Coastal Energy Consortium (VCERC). VCERC and ODU are targeting two alternative, non-fossil fuel energy sources: offshore wind farms and biodiesel production from algae. Algae are attractive because the quality of oil production is high, they reproduce rapidly, the ensuing biodiesel can be coupled with numerous industrial processes, and it is cleaner burning.

He further explained that algal biofuel production is attractive for Virginia because Virginia has plenty of sunshine and has many coastal areas amenable to locating algal production. VCERC's strategy for production of biodiesel from algal wastewater has led to the development of a chemo-reactor to convert algal biomass to liquid fuel. Dr. Hatcher also indicated that operating cost adjustments could offset the costs of operation and that this is an interdisciplinary effort.

In response to a question, Dr. Hatcher informed the audience that ODU/VCERC is about three to five years from realizing its first commercial plant.

C. Geoengineering

David Schnare, Thomas Jefferson Institute for Public Policy

Mr. Schnare's premise was that efforts to reduce greenhouse gases as set forth by the IPCC are behind the times. He indicated we are not getting there and that efforts are too little, too late.

Mr. Schnare defined geoengineering as is the deliberate, large-scale modification of the Earth's environment. Mr. Schnare shared the view that geoengineering is at present the only economically competitive technology to offset global warming.

There are five large-scale geoengineering approaches that have been seriously considered to cool the planet: whitening the Earth's surface, shading the earth with mirrors; sequestering carbon in the ocean; shading the Earth with aerosols; and shading the earth with whiter clouds. Of the five approaches, launching stratospheric aerosols (mimicking volcanic eruptions) and whitening clouds (utilizing natural cloud reflectivity) offer the ability to be turned off and on. Mr. Schnare proposed that geotechnology could delay catastrophic potential effects and provide the planet time to transition to a non-carbon energy base.

Based on questions raised by Dr. Shukla, Mr. Schnare responded that the modeling has been done but the actual real-world approach would probably be started in the Arctic on a very small scale.

D. Biodiesel

Dean Price, Red Birch Energy

Mr. Price's business enterprise, the Bassett project, offers a "closed loop system," by growing canola in southside Virginia near an interstate truck stop, producing biodiesel from the canola at the nearby Bassett facility, and selling the biodiesel at the truck stop that is located close to where the canola is grown.

Emissions from biodiesel are much cleaner than from #2 petroleum-based diesel. From an economics perspective, local enterprises stimulate local economies. The Bassett project encourages farmers to grow canola, a winter crop, and deliver the canola to the Bassett facility. Farmers, in turn, will be able to purchase the biodiesel produced from their canola at the local truck stop. Mr. Price's goal is to have farmers involved in all the value-added steps of biodiesel production.

Responding to a question with regard to the fertilizer requirements of canola cultivation, Mr. Price's partner, Sam Brake, explained that the nutrient demands are similar to that of wheat with the exception that more nitrogen and sulfur are needed. No pesticides, fungicides, or herbicides are used.

E. Energy Efficiency

Diane Munns, Executive Director, Retail Energy Services, Edison Electric Services

Ms. Munns' presentation addressed energy usage and efficiency from the perspective of the electric industry. She indicated that in determining what is technically feasible when reducing CO₂, the electric industry considered what kind of policies would provide energy efficiencies suggested by the Electric Power Research Institute (EPRI)-Edison Electric Institute (EEI) Joint Energy Efficiency Study that analyzed potential U.S. energy efficiency savings between 2008 and 2030.

She explained that the steps to becoming more energy efficient are based in (i) codes and standards; (ii) market-driven efficiencies, where consumers respond by conserving or buying more energy-efficient appliances; and (iii) energy-efficiency programs that include rebates, tax incentives, consumer education, and innovative rates.

Ms. Munns explained that by 2030, the achievable potential electrical energy savings is estimated to be between 7 to 11%. We are now seeing increased use of smart and efficient devices, such as programmable communicating thermostats, direct energy feedback devices, lighting and heat pumps. But with the advancement of efficiencies, we are seeing the growth of consumer electronics that consume more energy, such as plasma TVs and set-top boxes.

Ms. Munns further indicated that hyper-efficient technologies on the market include variable refrigerant flow air conditioning, ductless residential heat pumps and air conditioners, LED street and area lighting, heat pump water heaters, data centers, and residential appliances.

To overcome barriers to increased investments in energy efficiencies, the study encourages a range of actions from the recognition of energy efficiency as an energy resource to the promotion of utility rates that more accurately reflect the cost to provide electricity. Ms. Munn reminded the audience that the savings achieved through energy efficiencies could be used invest in local economies.

Ms. Munn stated that Edison is working with other electric companies and regulators on promoting what is basically a culture change: transforming from being solely an energy supplier to becoming an industry that both supplies energy to customers and assists them with energy management.

IX. Presentation: Economic Opportunities Associated with Climate Change - Green Investment and the Role of State Government

Roger Ballentine, President, Green Strategies, Inc.

Mr. Ballentine opened his presentation by saying he would be discussing climate change issues from an investor's standpoint. There are two "mega" trends: (i) unprecedented demand for oil with a relatively fixed supply, and (ii) a sustained political response to climate change/crisis. Investors are not concerned about the science surrounding climate change or the ensuing debates because those factors are not relevant to the marketplace. Due to a fundamental shift in oil markets since 9/11, we are facing for the first time demand-driven increase in prices as opposed to supply or supply-disruption increase in prices.

Mr. Ballentine further indicated that the two mega trends reflect the unprecedented demand for energy growth, largely from China and India, and the sustained political response to climate change. Investors view these challenges of responding to the mega trends as opportunities. Roughly half of the tools we have to stabilize greenhouse gas emissions are profitable. He indicated that the difference between energy prices and energy costs is efficiency. Capital investments are now going into wind power, solar PVs, solar troughs, geothermal energy, hydropower, biomass energy, and ethanol. Presently, there is a lot of volatility in bioenergy. Total global investments in clean energy between 2004 and 2007 are significant; Europe continues to lead, although the western hemisphere is gaining.

Mr. Ballentine stated that venture capital and private equity are moving into the clean energy sector and that public equity funds are growing. Carbon finance also is growing as a result of carbon becoming a commodity of its own.

Mr. Pollard requested suggestions on actions that states could take to encourage opportunities arising from the challenge of global climate change. Mr. Ballentine mentioned implementing regulatory change and setting a price on carbon, and then allowing the market take it from there.

X. Presentation: Economic Considerations in Regulating U.S. Greenhouse Gases

Mark MacLeod, Director for Special Projects, Environmental Defense Fund

Mr. MacLeod framed his talk within the context of addressing four key issues: the most expensive action is to do nothing, delay drives up the costs, we have the technology to get started, and public policy should utilize current technology while advancing new technology.

He indicated that most economic models that address climate change consider cost and do not look at the other side, i.e., the benefits. They also do not address issues that span

generations and must rely on the past as a guide to the future. Finally, they have difficulty predicting the rate of technological change.

He stated that when we look at the costs of doing nothing, doing nothing is no longer an option and delay will only drive up costs. He indicated that the costs of implementing a climate policy are small, and the impact on household consumption is projected to be less than a penny per dollar of income. A strong climate policy is consistent with strong U. S. economic growth. Mr. MacLeod asserted we *can* afford to address climate change because we have the technologies to immediately begin reducing emissions.

Public policy can accelerate technology. An example cited is the acid rain program: patents for scrubber technology to reduce sulfur dioxide emissions proved to be very successful. Cap-and-trade creates the demand for emissions reductions. Mr. MacLeod concluded that Virginia is already contributing to these emerging markets as evidenced by the presence of renewable energy and energy efficiency companies.

XI. Presentation: The EU Climate Change Strategy - Lessons for Virginia

Noah M. Sachs, Assistant Professor of Law, University of Richmond

Mr. Sachs addressed EU leadership on climate, EU emission trading system (ETS), EU policies beyond 2012, and lessons for Virginia. He indicated that the EU is taking aggressive measures on climate change, and its actions are starting to show. Since 2000, the EU has adopted a suite of legislation. Key policies that the EU has adopted include emissions trading, fuel pricing, mass transit, renewable energy sources, biofuels, energy efficiency, and waste management. The centerpiece action is the new emissions trading program, a cap-and-trade system for power plants and major emitting industries. He also indicated that wind is one of the hottest commodities in Europe.

Mr. Sachs reported the EU estimates that 350,000 jobs are tied to renewable energy. Europe heavily taxes gasoline and invests in more efficient cars and mass transit. He suggested that Virginia could apply a similar model by adjusting car stickers to reflect environmental performance. Europe is about to enact CO₂ tailpipe emissions standards similar to those of California.

The outcome of EU initiatives is that the EU is on track to meet Kyoto protocol goals. In comparing Virginia to the EU, using 2005 data, each Virginian uses 345 million BTU; the average European uses half that amount of energy. Mr. Sachs indicated the lesson here is that countries can still enjoy economic growth with climate change initiatives.

Mr. Sachs reported that the EU has rolled out very ambitious goals for 2020: 20 percent reductions in greenhouse gases, 20 percent improvement in energy efficiency, and 20 percent renewables in their energy mix. The EU's biggest concern is heavy industry that trades globally with countries that do not work under a cap.

Mr. Sachs concluded by suggesting lessons for Virginia include: (i) markets do work, but cap-and-trade is only as good as the tightness of the cap; (ii) climate change strategies

need to be wide (all sectors of the economy), deep, and long (long-term, 2020 or beyond); and (iii) not just industry, but agriculture, suburban areas, the transportation sector, the building sector, and the land use sector need to bear the burden.

XII. Commission Roundtable Discussion

- Chairman Bryant opened the Commission's roundtable discussion by reminding the Commission that from a process perspective, the Commission delayed commencing discussions on strategy in order to gather essential background material. In the upcoming June meeting, the Commission would start developing strategies.
- Mr. Smart stated that people think this is a serious problem on which we need to move rapidly. As there will be major changes in the way Americans live, we will need to find ways to build public support – outreach, publicity.
- Mr. Rue indicated he was pleased with the day's presentations. The research shows that people are making money at this. In Charlottesville, there has been interest in both rural areas and in town on a transportation plan and land use strategies.
- Ms. Gross asked what other states do about insurance as it pertains to coastal communities. Ms. Gross would like to see more information, including opportunities for insuring coastal communities, and urges the topic be included in the final report. Also, she questioned where re-training industry comes into play.
- Mr. Bouchard strongly endorsed studies in sea level rise, as discussed in Chris Munson's presentation, along with studies looking at the impact across economic sectors. There is a trade-off between mitigation and adaptation, in that the less you mitigate the more you have to spend on adaptation. We need to consider the tension between the goals of energy security and reducing greenhouse emissions.
- Dr. Shukla indicated the common thread about outreach is education. Dr. Shukla encourages the Commission's staff to incorporate educational material.
- Mr. Bulova asked that the Commission keep in mind that this continues to be a world-wide problem. The relevance of what we do in Virginia should be a reflection of what other states are doing. He expressed his opinion that when states join together, the federal government will act.
- Reverend Cizik asked if human health impacts are on the agenda. Chairman Bryant responded that there were presentations in the April meeting which addressed climate change-related health impacts.
- Mr. Bulova stated that given that there will be some sort of federal legislation likely in the next couple of years, he would not want the General Assembly to refrain from acting based on what the federal government would enact. Chairman Bryant responded that the Commission may want to draft recommendations against the backdrop of national policies.
- Delegate May agreed that education provides a tremendous opportunity for the public to learn and implement conservation measures and apply innovations.
- Mr. Stiles stated the political system needs public education backing. We need to begin to prepare the public now on the adaptation side. Cost will be all on the taxpayers; we will need to provide support for local governments.

- Dr. Mann indicated that there is public awareness now because global awareness is thrust upon us everyday.
- Mr. Freudberg requested that the Commission staff compile a list of other state actions and organize them.
- Dr. Gibbons stated that the Commission needs to try to lay out an investment strategy for our grandchildren.
- Mr. Rue proposed that we can take actions now as individuals. For example, he indicated taxpayers could apply their rebate money toward energy-saving measures at home.
- Mr. Beyer indicated that other states' legislators and governors are looking at Virginia as a lab for emerging technologies.

XIII. Public Comment

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

- Charles Battig, M.D., of Virginia Tech, cited a lack of scientific input that might conflict with the Commission's political mandate. Dr. Battig refuted sea level rise statements and the conclusions reached by the IPCC regarding the impact of man-made CO₂ emissions.
- Chester Smith, a former Dominion employee, expressed the need for a balanced approach to meet energy needs in Virginia. He stated we must use all our resources to the greatest extent possible, understanding that our first job is to conserve and use energy more efficiently.
- Ned Leonard, a resident of Arlington, Virginia, noted that one-third of the U.S. emissions of CO₂ comes from the utility sector. He observed that in Northern Virginia there is an insatiable appetite for electrical energy. To address emission concerns and the energy appetite, Mr. Leonard supported the clean coal and carbon capture technologies.
- Frazier Blaylock, of Covanta Energy, introduced Covanta's net greenhouse gas reduction program, through which with every ton of garbage that arrives at its processing facilities, one ton of CO₂ emissions is avoided. Ms. Blaylock left informational and contact materials with the Commission's chair.
- Richard H. Ball, a volunteer energy issues chair with the Virginia Chapter of the Sierra Club, spoke to bring awareness of the Sierra Club's energy plan for Virginia, available for download on the Chapter's website. Mr. Ball questioned the predicted effects of the geoengineering approaches as well as the forecasted sea level rise.
- Marlo Lewis, of the Competitive Enterprise Institute, sought to clarify misconceptions he had heard during the day's presentation with regard to what he termed the global warming scare and to coastal sea level rise predictions. Mr. Lewis added poor people will suffer when we make energy less affordable.
- Roger Diedrich, a retired energy analyst and resident of Fairfax County, would like to see more attention focused on the Cool Counties program, whose pledge for emissions reductions is much stronger.
- Lenna Storm, Sustainability Coordinator at GMU, observed that climate change and sustainability issues can be unifying rather than divisive issues and

- recommended that the Commission form a consortium of scholars across state universities. She stated that public awareness campaigns are critical.
- George Landrith, co-chair of the American Environmental Coalition, asserted that the public policy is always an exercise in balancing costs and benefits. He stated that costs, which he deemed “stealth taxes,” of climate change legislative proposals are high.
 - Jim Martin, president of the 60 Plus Association, claimed that energy is the target of new taxes under the guise of climate policies, and that seniors, many of whom live on fixed incomes, would pay a disproportionately high amount. Mr. Martin advocated use of coal for energy and domestic oil and gas exploration.
 - James Fowler, a GMU student, indicated he lives and attends school in northern Virginia. He stated the cap-and-trade program is a tax and, if adopted, energy costs would go through the roof. Currently struggling to pay tuition and gasoline costs to commute to work and school, Mr. Fowler feared that cap-and-trade taxes would impose an even greater financial burden.
 - Hubbel Relat, a GMU student and resident of Virginia, raised concerns he had about the correlation between global temperature rises and CO₂ emissions and cautioned that any climate change initiatives that Virginia would take should be done for actual impact and relevance rather than for claiming leadership.
 - John Kwapisz, of Virginia Coalition for Common Sense on Climate Change, a proponent of studies suggesting the world may actually going into a period of global cooling, cautioned the Commission about the conclusions it would reach in its report. Mr. Kwapisz offered the Commission members and audience the opportunity to view a film he was showing at the campus immediately following the Commission’s meeting entitled “The Great Global Warming Swindle, a rebuttal to An Inconvenient Truth.”
 - Sandy Liddy Bourne, of the Heartland Institute, brought three publications to be submitted for the record: a DVD containing both “The Great Global Warming Swindle” and “An Inconvenient Truth;” a book entitled *The Unstoppable Global Warming* written by Fred Singer and Dennis Avery; and her own publication, “Energy Policies for State Legislatures.” Ms. Bourne expressed her concern about the European model for a cap-and-trade system, as well as energy security.
 - Randy Randol, a retired nuclear engineer, reiterated the “there are no silver bullet” position for solving global climate change challenges, and urged the Commission’s plan to include incentives and provisions for energy security.
 - Suzanne Dee, a graduate student in the environmental sciences and policies program at GMU and a Virginia resident, spoke about green growth in Virginia. Citing her own personal experiences regarding difficulty in locating Virginia businesses to supply green building materials, she saw a need for encouraging such business locally, along with incentives for residents to adopt more environmentally-conscious lifestyles.

XIV. Adjournment

Chairman Bryant thanked the Commission and audience, and encouraged everyone to refer to the Department of Environmental Quality’s website for Commission announcements and meeting presentations. The meeting adjourned at 6:32 p.m.