MINUTES
Legislative Commission on Global Climate Change
April 22, 2008

Welcome, attendance and opening remarks

The Legislative Commission on Global Climate Change met at 11 a.m., Tuesday, April 22, 2008 in Room 643 of the Legislative Office Building. Chairwoman Pricey Harrison presided. The meeting was called to order at 11:12 a.m.

Members present were Chairpersons Harrison and Mr. John Garrou, Senator Charlie Albertson, Representative Lucy Allen, Representative Charles Thomas, Representative Alice Graham Underhill, Representative Winkie Wilkins, Dr. Pete Andrews, Dr. Ryan Boyles, Mr. Thomas Cecich, Dr. Delores Eggers, Dr. George Everett, Mr. Robert Glaser, Mr. Preston Howard, Mr. Michael Nelson, Mr. Mitchell Peele, Dr. Daniel Phaneuf and Ms. Jane B. Preyer, Mr. Tim Profeta, Dr. Stanley Riggs, Mr. Robert Slocum, Dr. Stephen Smith, Mr. James Stephenson, Mr. Tim Toben, Ms. Susan Tompkins, Mr. Ivan Urlaub. Staff present were Commission Counsel George Givens, Assistant Counsel Jeff Hudson, Assistant Counsel Susan Iddings, Assistant Counsel Jennifer McGinnis, Commission Analyst Jennifer Mundt, Research Assistant Mariah Matheson, Commission Assistant Thelma Utley and substitute Commission Assistant Jessica Kozma Bennett.

. Chairwoman Harrison welcomed members and visitors to the meeting, and noted that the State remained behind "the rest of the world" to keep up with climate change. She then asked for comments from fellow chairs, of which there were none.

Beginning **Item 3**, Chairwoman Harrison recognized Commission Counsel George Givens. Mr. Givens said that he had returned from a conference on coal reduction, adding that it was an excellent trip. He then reminded members to sign reimbursement sheets.

Presentation of the Results of the Intergovernmental Panel no Climate Change in the context of creating a greenhouse gas emissions reduction goal for the State of North Carolina
Item 4

Mr. Robert Jackson, Faculty Director of the Center of Global Climate Change and Professor of Biology and Environmental Sciences at Duke University was recognized by the chair. A copy of his presentation, entitled "educing Emission for Climate Stabilization" is attached to the minutes.

Mr. Jackson began reviewing his report to the Commission and said that all organizations have declared official climate change statements saying that the Earth is

warming and human activities are creating such warming. He then showed a slide depicting the Earth's existing climate, and said that there is more record hot weather than in times past. Last August through October were the hottest on record, he said, then moved to a graph depicting global surface warming. He continued reviewing his presentation, noting increases in temperatures juxtaposed to population growth.

Mr. Jackson also noted the higher lands were warming more quickly than tropical areas. Reviewing slides Mr. Jackson said that what policies we put in effect will have an "enormous" effect on the Earth's temperature.

In his report Mr. Jackson noted that there is a lot of inertia about emissions peaks, and that there is an even longer lag in stabilizing temperature. He added that the longest issue to climate change would be ice melting.

Reviewing a slide "Emission trajectories to stabilization" and "Trajectory of Global Fossil Fuel Emissions," Mr. Jackson said that the best consensus is to keep the world from warming would be within a range of 450 to 500 atmospheric CO(2). He added that currently the United States dominates in emissions but globalization and industrial development in China and India also contribute. He also reviewed slides on United States emissions, renewable technologies, point sources and reservoirs and local opportunities to reduce the human contribution to global warming.

He then thanked the Commission for their time. Chairwoman Harrison thanked him and opened the floor for questions and comments.

Representative Thomas inquired about ocean salinity in the wake of rising ocean levels due to Artic melting. Mr. Jackson replied water can melt in any area, and that fresh water flows into the oceans. He continued saying ocean circulation is a "great conveyor belt" Water warms at the equator then moves to the poles, dives down deeply into the ocean and can stay well under for up to 500 years. If this were to change, there would be enormous consequences, he said. But such an event is unlikely to happen in the 21st century.

Senator Albertson noted a presentation slide regarding a 2003 blackout in the Northeast. He asked how long the blackout lasted. Mr. Jackson replied a few days.

The slide reads that during the 2003 blackout visibility in the Northeast improved by 25 miles, and smog and ozone pollution dropped by half within a day, and gases contributing to haze and acid rain plummeted 90 percent.

Senator Albertson then noted that the blackout statistics make a good case for nuclear energy. Mr. Jackson said that in previous years he wrote editorial pieces on the intersection of nuclear energy and climate change.

Representative Allen commented that she found quotes on the first page of his report contradictory, adding that she thought that human action was contributing to global climate change, not causing it. She asked to hear from people who may have a different view.

Mr. Jackson said that the statements say a majority is through human activities.

Conversation continued. Mr. Givens asked that a handout be presented to Commission members and noted that there were five parts to the presentation. He added that it was a way to set goals, and said there needed to be a discussion of whether to have a goal to reduce carbon load. Mr. Garrou said the chairmen were not ready for a motion at the day's meeting but would rather keep the idea up for discussion. He also asked to have suggestions ready between now and the next meeting.

Presentation on electricity technologies in a carbon constrained world

Mr. Bryan Hannegan, Vice President of Environment and Generation for Electric Power Research Institute was recognized by Chairwoman Harrison to present a report entitled, "Electricity Technologies in a Carbon-Constrained World." A copy of his presentation in attached to the minutes. Mr. Hannegan skipped over the presentation's initial slides to begin a discussion on CO(2) reductions.

Reviewing the slide entitled "Electric Sector CO(2) Reduction Potential, Mr. Hannegan said reduction efforts are already in effect but that there is much more work to do. He then reviewed "Key Technology Challenges" (Slide 5). Challenges reviewed were a) enabling efficiency, PHEVs, DER via the Smart Distribution Grid; b) enabling intermittent renewables via advanced transmission grids; c) expanded advanced light water reactor deployment and d) advanced coal plants with CO(2) capture and storage.

Reporting on nuclear energy, Mr. Hannegan said that (slide entitled "Nuclear Energy") assumptions and necessities for successful nuclear energy include sustained safe, reliable economic operations; extend lifetimes beyond 60 years; and continue high capacity factors to the end of life. He said that it is one thing to build a new unit, but quite another to keep units running successfully. And more advances in materials were needed, he added.

Mr. Hannegan then reviewed a slide entitled "Electricity Technology Scenarios," which showed limited and full portfolio impacts on carbon capture, new nuclear and renewable supplies. Discussing potential impacts on electrical prices, Mr. Hannegan showed on a slide that limited wholesale electricity prices could increase 260 percent in the next fifty years and full wholesale energy up 45 percent.

Mr Hannegan closed his presentation and the Commission recessed at 1:50 for a fifty-five minutes lunch break.

The Commission reconvened at 2:45 p.m.

Presentation of final results of the macroeconomic analysis conducted on various climate mitigation options recommended by Climate Action Plan Advisory Group

Chairwoman Harrison recognized Mr. David W. Ponder, a graduate research assistant with the Department of Political Science/Criminal Justice at Appalachian State University. A copy of Mr. Ponder's presentation is attached to the minutes.

Mr. Ponder began his presentation discussing the impact analysis conceptualized the Nobel laureate Wassily Leontief. Input-output modeling, as it were, which describes the relationship among sectors of the economy; notes that outputs for one sector are inputs or another; that changes in consumption catalyze chain reaction of production; that multipliers measure ripple effect due to changes in demand. His work derived from "IMPLAN 2004."

Regarding sensitivity analysis, Mr. Ponder said there were several options for the Commission upon their request. He then reviewed three options selected primarily for the contribution of economic effects and carbon reductions.

- RCI1 Program is a utility investment in efficiency that is measured in energy savings realized. Two points were made. One, the estimates can overstate energy

savings and loss of job production would result from this. Secondly, that on the "flip side," there would be more KPAC savings.

- Looking at local investment sensitivities, most spending would occur in the State economy.
- Increasing job in the energy industry would be of benefit to customers.

Presentation on the economics of climate change legislation in North Carolina

Mr. Ponder was thanked by Chairwoman Harrison. She then recognized Mr. David Tuerck, executive director of the Beacon Hill Institute for Public Policy Research and professor and chairperson of the Economics Department at Suffolk University. Mr. Tuerck thanked Chairwoman Harrison and the Commission.

Mr. Tuerck's presentation, "The Economics of Climate Change Legislation in North Carolina" is attached to the minutes. He began his presentation saying that he did not believe adopting global climate change recommendations would have a positive effect on the economy. He then reviewed several cost benefit analysis.

One, he suggested the utilities account for the capital integration and operation costs for projects; and that there should be an understanding of what constitutes a social benefit. He added that the only benefit to North Carolina consisted of reduced GHG emissions from North Carolina, as the state would still reap the consequences of such emissions from other states.

Mr. Tuerck continued that reductions in GHG fail to offer a cost benefit for the State, and because the net benefits are negative, a legitimate cost benefit analysis will show net losses, not gain. Meaning, he continued, less job and reduced investment.

He suggested that policy officials not fail to account for goods that must be sacrificed to capture reported savings. Multipliers should also not be used, and legislators and policy officials should not ignore price distortions and remember that job losses are a cost, not a benefit, to the State.

Continuing, Mr. Tuerck said job gains are a proxy for benefits but only when distortions are removed. Losses, he said, are a proxy for costs but only when distortions are created. And new jobs are of benefit only if they add more value than the jobs they displace. He then disputed claims from the two prior presentations. Please refer to the attached presentation.

Adjournment

The meeting was adjourned at 4:15 p.m.