MINUTES
LEGISLATIVE COMMISSION ON GLOBAL CLIMATE CHANGE

Tuesday, December 9, 2008, 10 A.M.
Room 643, Legislative Office Building

The Legislative Commission on Global Climate Change (LCGCC) met on Tuesday, December 9, 2008 in Room 643 of the Legislative Office Building at 10 a.m. Co-Chairman John Garrou presided. The agenda is attached as EXHIBIT A.

George Givens told the members that the meeting was approximately timed for three hours without a lunch break. He said that there have been several members who made recommendations to the Commission, which he discussed with the Co-Chairs. He said that only those recommendations provided in advance would be considered and urged that proposals in need of legislative action should be submitted in legislative language.

Mr. Givens noted that the next scheduled meeting of the LCGCC would be held on January 13, 2009. This is a firm date, so any proposed recommendations should be provided to staff for review by January 5th or 6th. The LCGCC will hear any proposed recommendations at the January 13th meeting. Recommendations in need of legislative action will be heard at the next meeting, which is currently scheduled for January 27th. He noted that the next meeting is tentatively scheduled for the day prior to the convening of the General Assembly, which may change this date.

With regard to the California Auto Emission Standards, Mr. Givens said that this would be compared with another study, but comparison results would not be available until mid-January. He asked the Department of Environment and Natural Resources (DENR) to consult with the auto industry regarding federal initiatives. He observed that three major U. S. auto manufacturers were before Congress "fighting for their very lives."

Mr. Givens indicated that the agenda is divided into two parts: the first part is green jobs and the second part is adaptation to climate change. He said that any recommendations made to the 2009 Session of the General Assembly would rise or fall on the subject of jobs.

Minutes were approved for the meetings of October 23, 2007, December 4, 2007, January 16, 2008, February 11, 2008, and March 5, 2008.

PRESENTATIONS

Green Jobs in North Carolina
Item #4

Paul Quinlan, Director of Economic Research and Development of the North Carolina Sustainable Energy Association outlined the subject of green jobs in context for North Carolina. ***(SEE EXHIBIT B)***

Mr. Quinlan noted that green jobs were defined by the number of industries involved in the action of work to preserve or restore environmental quality plus the degree of involvement by various individuals and/or institutions.

Citing three recent studies, beginning with one for the United States Conference of Mayors, Mr. Quinlan said that the most green jobs nationally were in renewable energy, except for the category of green engineering, legal, research, and consulting. Of over 750,000 such green jobs, North Carolina had 16,338 in the metro areas of the state. Over half of the jobs in North Carolina are in support services.

With regard to forecasting, the Mayors report estimates that there will be 4.2 million green jobs nationwide by 2038. North Carolina is estimated to have 129,260 of those jobs in the metro areas. Mr. Quinlan noted that the reports by the Center for American Progress (CAP) tended to track proposals mentioned by President-Elect Obama's positions, since Mr. John Podesta from CAP was a part of the Administration's transition team.

Mr. Quinlan said that the research sought information from 486 companies in North Carolina of which 166 responded, showing a conservative estimate of 2144 jobs in North Carolina. A surprising part is that over 70% of the jobs were in the manufacturing sector. One company in Rocky Mount produces special wire, which is sold in Europe. The research was conducted prior to the impact of North Carolina's renewable energy portfolio standard (REPS).

The rate of green job growth in North Carolina is expected to be 18%, which has slowed due to the current economic situation. Most of the companies were new and small. More than half of the companies had come into being since the year 2000. This included some firms, which made a transition into the surveyed categories. The geographic spread indicated that Wake, Mecklenburg, and Buncombe Counties had the heaviest concentration.

The presentation also provided data from Dr. Keith Debbage concerning the potential job supply change, which includes a potential for 1,300 firms in North Carolina. This study expects an expansion of the biomass potential in the eastern part of the state.

Biomass was also a large component of information in a study by La Capra Associates, which expects 4,000 new jobs to meet North Carolina's renewable energy portfolio standards. This data indicates that most of those jobs will involve biomass. This survey also predicts an increase in fuel collection.

Mr. Quinlan recommended that positions taken by the Commission be explicit in terms of policies and programs and the importance of managing number of companies and the number of employees.

In discussion, Co-Chairman Garrou asked if how North Carolina can have an advantage from an economic standpoint.

Mr. Quinlan said that the next step for North Carolina could be electronic components and biomass.

Representative Allen noted the firm, Novozymes North America, Inc., which is an innovator in ethanol research and development.

Mr. Slocum pointed out that only the Mayor's survey included agriculture and forest products. He noted that with regard to renewable energy generation, the pulp and paper industry produced over 60% of the power it consumes.

Dr. Smith and others agreed that wind energy would play a minor role in North Carolina unless it was off-shore wind. He said that North Carolina would be competing with Georgia and South Carolina because of the relatively shallow shelf off-shore.

Mr. Quinlan said that there has been some talk of wind power in the Norfolk, Virginia area and the potential impact on shipping.

Green Buildings and Green Building Codes
Item #5

Mr. Christopher Mathis, President of MC2 Consulting, presented the on the potential for energy efficiency (EXHIBIT C) improvements. In short, Mr. Mathis said that we need to "fix our buildings."

Mr. Mathis noted that buildings consume the largest portion of electricity. Mr. Mathis pointed out that the challenges of supply and demand are cooling and lighting. He said that the Environmental Protection Agency (EPA) has figured that the American home pollutes the air twice as much as the American car. In 1997 the Department of Energy said that improving building energy by 30% could off-set the plans to build 80 nuclear power plants. He noted that lighting changes alone could accomplish that.

Mr. Mathis said that a change in building codes should be the first step. Current codes are bare minimums. He said that replacing a billion windows in U.S. homes could save about 1 KW of peak power per house. If multiplied by 60 million homes (half of the existing homes in the United States) that is the equivalent of replacing 300 old coal-fired plants.

Mr. Mathis said that we need to have the technology, skilled workforce, and materials to make these changes. He believes that this would translate into people at work, materials being bought, and tax revenues increasing.

Mr. Mathis estimated that building a new 2,000 megawatt nuclear power plant costs about $20 billion. Dividing that amount by $5,000 worth of insulation per home times four million homes could save approximately 1 kilowatts of peak power per home or a total of 4,000 megawatts.

Mr. Mathis said that since only about one percent of the buildings are new each year, the biggest impact will come from improving the existing structures. He said that State-owned buildings should set the example of operating more efficiently.

Mr. Mathis said energy inflation was regressive, thus he suggested that utility policies need to be discussed. He proposed rewarding utilities for saving power similar to rewards for producing power. He said that utility companies could prove the delivery of savings and earn a profit on conservation. He recognized that a lot of attention should be paid on the selling of ideas. He pointed out that the United Nations (UN) has reported that current building technologies have the potential to cut energy consumption in half without significant investment.

Responding to a question from Co-Chair Rep. Harrison, Mr. Mathis said that he did not have experience with problems that might result from the $100 million cap on performance contracting.

Ms. Choi asked what is preventing more gains in energy efficiency. Mr. Mathis said that the subject is boring. He said insulation and caulk were not exciting. He suggested more marketing and education programs on the benefits of energy efficiency.

Co-Chair Garrou asked about the private decisions that may not take into consideration the present value of future savings. Mr. Mathis said future savings are overlooked. He said 80% of the commercial buildings in existence today were built before 1989 with no roof insulation.

Co-Chair Garrou responded by saying that if he as an owner is not going to keep a building for 50 years, does he have to worry about how the next purchaser will pay him for his (energy efficiency) investment. Mr. Mathis said that this showed a need for policy consideration on tax, utility, and the like, in order to encourage better front-end decisions.

Dr. Andrews asked if there is a functioning industry that can provide assistance in selling this sort of venture or a method to run the numbers to show the savings. Mr. Mathis said that there is a growing capacity to provide this information, such as tax incentives, savings, etc. He said that the information has been available for years, but as he put it, "windmills are cooler than efficiency."

Dr. Smith suggested that since cars have EPA ratings, houses might need to have a similar ratings system. He said that this would give consumers better information and give financial institutions better risk management. He said that some states were looking at this.

Rep. Allen asked what sort of energy efficiency marketing could be done by utilities. Mr. Mathis believes that utilities can deliver the message easily and the companies should be encouraged to do so.

Rep. Underhill asked about states who are working to deliver the efficiency message. Mr. Mathis listed Washington and Oregon, but said others were looking at the issue.

Mr. Profeta said that North Carolina was pretty up to date with building codes. Mr. Mathis countered that the code process lags and that North Carolina was trying to shorten the time to produce code changes.

Mr. Urlaub said that many trades do not have up to date skills and asked if the community college system could help train for code enforcement. Mr. Mathis said that the community colleges could be used for this and to provide education on savings from efficiency.

Anticipated Federal Actions on Energy and Climate Change
Item #6

Mr. Profeta, Director of the Nicholas Institute for Environmental Policy Solutions at Duke University and a member of the Commission brought his assessment of future federal action. (EXHIBIT D)

He said that leadership on the issue has been lacking in the past and that the changes in Congress offered a good time for the Obama Administration to lead. Mr. Profeta believes that the President-Elect is poised to move ahead. He suggested two scenarios: first, if President-Elect Obama takes the lead there will be significant legislation in the next year and a half. Second, if there is no leadership from the Executive Branch

there will be a movement on the federal level due to the changes in Congress. He sees this possibility as posing more responsibilities for the states.

Mr. Profeta believes the first scenario is the more likely. He believes that the President-Elect must move to govern, that the issue is already drawn. If left to the states to set the agenda, the EPA will be in a regulatory role only.

Mr. Profeta believes that the US must take a role in the climate change issue to maintain a leadership position with the UN and the European Union. The presidential campaign brought the pledge to reduce the reliance on foreign oil and he believes that this provides an economic opportunity.

In the short term, Mr. Profeta believes that green capital will begin to flow into projects and that a cap and trade agreement will be passed for carbon reduction by 80% by 2050.

The green capital Mr. Profeta foresees would deal with making public buildings more efficient, including schools, improve highway infrastructure, and transportation funding.

As for the states' actions, Mr. Profeta mentioned that Virginia is looking at off-shore wind, Tennessee is looking at biomass, Kentucky is looking at renewable energy, and Mississippi is looking at bio-energy.

Mr. Profeta outlined the following focus areas:

1. Breakdown barriers to investments for energy efficiency.
2. Fix transmission bottle necks—for example how would wind-driven power be brought from off-shore? The need for a smarter power grid.
3. Examining caps on performance contracts.
4. Need to show that NC has potential projects. (He supports a clean hog package).
5. Build in the capacity for people and for the infrastructure; i.e. places to plug in hybrid cars in homes and work.
6. Job training for green technologies.
7. Solar manufacturing plant to create North Carolina jobs.
8. An RTP-type program for green energy and technology. North Carolina has brain power that should be used. Mr. Profeta said that there is only one place in the US to study new solar modules and that this test site draws ancillary benefits.

When asked by Co-Chair Garrou if cap and trade would fall victim to economic circumstances, Mr. Profeta mentioned a dinner meeting between a group of moderate U.S. Senators and corporate CEOs. The CEOs said that the cap and trade agreement must come this year. Profeta cautioned that all of the speculation depends on who is put in charge of the strategies and tactics.

Mr. Urlaub asked about differing projections for considering energy efficiency as a reliable resource. Mr. Profeta said that a lot of emphasis is being placed on efficiency because that is where a lot of people can be put to work, many with little or no additional training. He said that there is no consensus that energy efficiency can be considered a reliable base resource.

Dr. Smith asked if energy stimulus funds would flow incrementally to see how the economy would respond. Mr. Profeta said that there was no unified position at this time. He noted that the President-Elect will go to the UN in Copenhagen in December where he believes that he must have something to show the world some progress by the U.S. in energy policy.

Mr. Urlaub asked if the removal of the caps on performance contracts would be necessary to make stimulus money flow. Mr. Profeta said he did not feel competent to answer the question. He said that the money needs to flow quickly.

Dr. Andrews asked if stimulus money would use infrastructure processes already in place or would new processes be needed. Mr. Profeta said that he did not expect any new processes early on, that more traditional spending would come first and that there could be some creativity in the energy bill or in cap and trade.

Adaptation Strategies for Rural and Conservation Lands and Waters
Item #7

This presentation was by Sam Pearsall, Southeast Regional Manager for Land, Water and Wildlife for the Environmental Defense Fund. (EXHIBIT D)

Mr. Pearsall called his presentation a change of pace, to deal with the area where few people in the State live, but must still consider climate change issues.

In his study, evidence supports that the ultimate speed of environmental change will happen rapidly and that it should be understood that just as many species of life did not survive the last great climate change, many will not survive this new change.

Mr. Pearsall urges that man mitigate against future stress. He said that many organisms arrange their life around the length of a day, while others lives revolve around temperature changes. He noted that for many years soil such as peat had been allowed to ignite without much consideration. Now we should mange this to prevent such soil ignition in order to reduce additional carbon emissions. He said that there must be pragmatic solutions to species invasion such as kudzu.

When focusing attention on the Albemarle/Pamlico Sounds, the rise of the sea-level has been two inches every ten years on average. This area is very vulnerable to ocean level change. That area, along with the Mississippi Delta and Southern Florida, are the three most seriously threatened areas concerning sea-level change.

At the same time, Mr. Pearsall said that this is the healthiest estuary in the world. It is a landscape defined by water and land and the world's largest lagoon. If you take the 540,000 acres of conservation and valued it at one thousand dollars per acre, then a half billion dollar resource is at risk.

Mr. Pearsall presented an animation which showed what the area would look like under 32 inches of water. Optimistically this would take 120 years, but if nothing is done, that would be reduced to 42 years.

Mr. Pearsall offered information on several threats of a rising sea-level:

1. The many ditches in the area. Ditches that were dug for forestry and agriculture problems, mosquito control, built to drain water out, etc. These ditches now let salt water in. Salt breaks down the peat; the

ground level gets lower and vegetation undergoes salt poisoning, and more carbon is released.

2. Higher waves and currents could be mitigated by artificial oyster reefs and since oysters clean the water this would work two ways.
    a. Fast rising waters are outrunning the species. The estuaries will not be able to keep up with the changes.
    b. Mr. Pearsall suggests planting salt marsh grasses and sea grass. To consider future shifts, bald cypress trees should be planted farther inland.

Mr. Pearsall said that irrational human responses to conditions pose the biggest threat. He said that the most irrational response is from people who do not believe that the sea-level is rising. He said that our infrastructure is not taking into account potential changes, things such as septic tanks, propane tanks, roads, landfills are subject to storms coming with rising waters. All of these components wash to become a part of the environment.

Mr. Pearsall said that some communities in North Carolina want to consider dikes to protect low-lying areas. He noted the experience in the Netherlands. Twenty-seven percent of Holland is below sea-level, so that the windmill/pumps work to keep the land available for people to live. It is expected that the country will have twice as much land below sea-level by 2100. After Hurricane Katrina, the Dutch decided to spend a hundred billion dollars to add to their pump system. Now engineers say privately that they doubt the system will work. He figures this is their investment to protect 13,000 square miles…about the size of the Albemarle/Pamlico area.

As far as action by the State, Mr. Pearsall said that there is a great need for public education on the issue and the adaptations. He feels that there is local evidence of some knowledge of the issue, but not of what can be done.

Mr. Pearsall urges capitalizing on green jobs to deal with adaptation, manage ditches, plant grasses, etc. He feels that the university system could come into play in order to develop new water and land management programs.

The ditches and roads should be considered in the management area. Many roads serve as dams during occasions of high water and should be mitigated. Hazardous materials should be removed before they are inundated and become part of the environment.

Mr. Pearsall favors elevated oyster reefs and the avoidance of new developments that are threatened in areas that would be harmed if we follow a business as usual approach. He said that there should be incentives for participating in these strategies.

In the discussion, Dr. Eggers asked if there is danger in abandoning some road structures that are not acting as dams. Mr. Pearsall said that there is not much objection if these roadways are not acting as a dam now.

Co-Chair Harrison asked his opinion of jetties for North Carolina inlets. Mr. Pearsall said that this hot item bothered him more from the standpoint of wasting vast amounts of money to protect a system that is being destroyed anyway. As an example, he said that jetties at Oregon Inlet will not have an impact on sea-level change.

Dr. Boyles asked about public awareness on the issue. He said that there does not appear to be much education about the issue so as to reduce anxiety.

Mr. Pearsall said communities are expressing anxiety over issues such as who will make future and current decisions; "will I have to move or who will have to move etc." He does not expect much impact from global climate models because they are not capable of high resolution of future climate scenarios.

Dr. Eggers asked if any states or local governments were putting bans on development. Mr. Pearsall said New Jersey and states in the northeast were paying more attention, which he said was an area experiencing the least pressure from sea-level rise. He said that Texas has taken steps to move buildings back from the rising sea.

North Carolina Coasts in Crisis: A Vision for the Future
Item #8

Dr. David Mallinson, Associate Professor in Geological Sciences at East Carolina University, introduced this report as a collaborative effort which seeks to explain data on climate and sea-level change on a quantitative and qualitative basis.

The first part of his presentation provided the historical data of climate change with regard to the numerous ice ages in the past. The material also looked at various sea-level changes.

After that, Dr. Stephen Culver, Professor of the Department of Geological Sciences at ECU, took over to present explanations of the crisis and the agents of coastal change. Dr. Culver said that storms were the major agents of such changes. The storms move the sand along the coast leaving a varied landscape. Some of the barrier islands are very simple consisting mostly of sand. Other islands are more complex with less sand and more soil.

Dr. Culver noted that the inlets open and close over time. Storms also cause over-wash which move dunes to build the island higher in some parts. He emphasized that the barrier islands must move and that the hardening of the beach is not the answer.

Dr. Culver said that beach nourishment has been requested for 122 miles of the North Carolina coastline. Not only does this provide varying results, but the costs can vary. He said that on the southern coast where the off-shore sand is thin and sits atop a rock shelf, the costs are higher because there is a smaller amount of available sand.

Dr. Culver said that jetties caused erosion downstream or down the coast. The biggest problem he said is that we have built static infrastructures onto moving land.

Dr. Culver noted that a third of the State's economy is sensitive to climate and weather. He urged that there is a need to adapt now and that we have adapted before and must do so now. He raised the point of another hurricane such as Katrina would accelerate changes to an unknown degree.

Dr. Culver posed a question of how adaptation would occur if there was a break-in one of the Outer Banks.

When discussing the glacial periods, Dr. Culver answered a question from Dr. Edwards to the effect that the earth wants to be either very warm or very cold, but when it changes it does so rapidly. Dr. Mallinson said that storms infusing fresh water into the ocean change circulation and current patterns all around.

Dr. Smith wanted to discuss the so-called "String of Pearls" analogy applied to the Northern Outer Banks. Specifically, he wanted to know if the local tourist interests were conscious of the opportunities that could come if there were to be a break in the "string."

Dr. Culver said that at a recent tourism conference sea-level rising was considered a threat and an opportunity.

Dr. Boyles, who also attended that meeting, said that the reactions were mixed.

Dr. Eggers asked if there is legislative language needed to allow a pre-emptive response to the issue without throwing money away. She was told that the Division of Coastal Management had the regulations in place and intended to abide by those regulations.

Co-Chair Harrison said that other states, such as Texas and Massachusetts have better disclosure of real estate transactions. Dr. Culver said that was the responsible thing to do.

Commission Discussion and Announcements
Item #9

Co-Chair Garrou reminded the members of the meeting schedule for January: January 13th and 27th.

The meeting adjourned at 12:32 pm

_____ _____

Mr. John L. W. Garrou, Presiding Co-Chair

Representative Pricey Harrison
Co-Chair

_____

Ted Harrison, Minutes