Legislative Commission on Global Climate Change
544 Legislative Office Building
9:00 A.M.
November 17, 2009

Minutes

Representative Harrison called the meeting to order at 9:10 a.m., thanked everyone for coming and introduced the sergeant-at-arms.

Members present: Rep. Harrison, Mr. Garrou, Rep. Carney, Sen. Stein, Rep. Underhill, Rep. Wilkins, Dr. Andrews, Mr. Cecich, Ms. Choi, Mr. Crawford, Dr. Eggers, Dr. Everett, Mr. Glaser, Mr. Paul Sherman (for Mr. Peele), Mr. Tim Wooten (for Mr. Profeta), Mr. Regan, Dr. Riggs, Mr. Slocum, Jr., Mr. Toben, The Honorable Charles Thomas, Ms. Tompkins, and Dr. Uzochukwu. (Visitor Registration Sheets – (**Appendix A**)

Jeff Hudson stated that Tim Dodge is a new addition and has quite a bit of experience in this area and he will be the point person for this Commission He also gave a copy of the magazine Global Climate Change Impacts in the United States (**Appendix B**) to everyone.

Tim Dodge stated it is good to be working with the group again. He went over the Commission's authorizing legislation and pointed out the charge of this Commission. One of the primary purposes of this Commission was to evaluate the science of climate change including technical and economic issues, looking at the cost of climate change reduction programs, etc. He also stated we are charged with considering if it was appropriate to adopt a global warming pollution reduction goal for the state, in addition to considering all the past actions of the state has taken, such as clean smokestacks bill from 2002 and the Renewable Energy Portfolio Standard (REPS) bill in 2007.. Tim stated that minutes from past meetings will be sent out to you in electronic format to review, and if you have any comments please let us know and we will be approving those minutes at our next meeting.

Mr. Dodge stated that the agenda (**Appendix C**) for today is short and should have you out by lunch time. The presenters are Professor Victor Flatt, Mr. Tom Peterson, and Ms. Jennifer Mundt on the Commission staff.

Representative Harrison asked each member to introduce themselves and tell a little about their background.

Presentation by Professor Victor Flatt from the UNC School of Law and an expert on federal climate change policy: Climate Change at the Federal Level (**Appendix D**). Mr. Flatt congratulated this committee and the state of North Carolina for having been examining this issue since 2005. Together with persons at the Nicholas Institute at Duke, he hopes to assist the state in understanding better the upcoming legislation, particularly carbon markets and some of the challenges and opportunities that will exist based on climate change and adaptation.

Mr. Flatt discussed the major provisions of key climate change legislative proposals; the impact of those on some state and regional systems and a prognostication about what is happening at the international level, particularly Copenhagen and beyond.

Mr. Flatt stated that for federal legislation we are working from two templates, the first is the ACES bill – The American Clean Energy and Security Act – also known as the Waxman-Markey bill which passed the House of Representatives in June 2009 and is in the Senate now for consideration. Boxer-Kerry, the senate bill introduced by Chairwoman Barbara Boxer and Senator John Kerry is very similar to the Waxman-Markey bill and is the current bill up for consideration in Senate committee. He stated both pieces of legislation address several things: first there is a formula to reduce in the form of a cap and trade system and it caps the amount of greenhouse gases that may be released in any given year, reducing that over time the idea being to lower the load of greenhouse gases in the atmosphere. He stated that it then requires emitters of those gases to surrender compliance documents as they emit them per year and they are then free to trade and buy and sell those.

Mr. Flatt stated the legislation addresses several things that are related to both the cap and trade system and some other issues. First is the cap, he stated and how the cap is determined, how is it allocated, the rights to emit how they are allocated, whether there is a safety valve in the trading system so that is a price control. He notes there is a large section in both bills about direct energy and efficiency relations and this will have an immediate impact on state energy and efficiency programs. He also notes there are provisions related to climate change adaptation and funding adaptation and the legislation also addresses how the federal climate change policies will relate to many of the international policies.

Mr. Flatt noted that in relation to the cap under the ACES bill that passed, the amount of greenhouse gases that are emitted in the regulated sector by 17% below the amount emitted in 2005 by the year 2020 and that about 85% of the greenhouse gases emitted nationwide are expected to fall under the cap. He notes it is considered an economy wide cap – it covers industry, transportation sector, electricity generation sector – the primary area it does not cover is related to agriculture and land use.

Mr. Flatt also noted the Boxer-Kerry bill proposes a 20% reduction from 2005 by 2020, although that is under negotiation and both propose an 83% reduction from 2005 levels by 2050. He stated these levels are important in international negotiations they are less than requested or recommended by the intergovernmental panel on climate change. He stated the cap shows from 2012 to 2050 the legislation sets the amount of how much can be emitted in the regulated sector per year up until 2050. He notes it is designed this way to create a predictable market, to ensure that we will have the reductions by the year 2050. In 2014 and 2016 the cap rises – this is because in this part of the ACES bill the coverage increases to cover more sectors of the economy. It is about an 80% reduction from that level from 1016 to about 2050. He stated they are measured in units of millions of tons of CO_2 for comparison or CO_2 equivalent and the current level being produced in the US is close to 7,000 million tons or seven billion tons.

Mr. Flatt stated under the ACES bill 16 percent of the rights to emit will be auctioned and the rest is to be utilized for other services and given away in one form or another. He notes fifty-nine percent is given to market based industry, 25% goes for other interest needs for the public sector which is

adaptation and this is actually 60% going for industry with the rest being used for funding other environmental or climate change related activities. He stated that within the part that is given to the private sector, 35% will go to the electric utility sector; 15% of the allocation will go to carbon-intensive industries in 2014; 9% for local natural gas distribution in 2016; three percent for auto makers toward advanced technologies through 2017; two percent for oil refineries from 2014 to 2026; and then two percent for carbon capture and storage technology from 2014 to 2017. This is the only allocation to the industrial sector that increases over time rather than decreases he stated.

Mr. Flatt noted that ten percent will go to the state for renewable energy and efficiency investment from 2012 to 2015; five percent for tropical deforestation prevention programs; two percent for adaptation; two percent for international adaptation and clean technology transfer from 2012 to 2021.

Mr. Flatt stated under the current distribution formula reports have indicated that Southern States will serve land in the middle on the electric power cost impact. He stated with respect to refineries and gasoline the additional cost for these imports of petroleum which must hold allowances for the amount of emissions that will be emitted from burning that fuel, this is expected to raise the cost of gasoline about eight to twelve cents per gallon and is expected to be passed on to consumers.

Mr. Flatt said that for the electricity suppliers the average monthly bill is expected to go up $30 to $80 per month depending on the area of the country you are in and the energy mix involved and the Pacific Northwest will most likely see a reduction in electric bill since it primarily depends on hydro-electric power.

According to Mr. Flatt, we do not currently have a federal renewable electricity standard but this bill would establish such a standard and would require the states to ensure that six percent of the electricity generated in a state comes from renewables in 2012 that would rise to 20% by 2020. He stated the Boxer Kerry bill is similar but is still undergoing discussion and in the ACES bill the following qualify as renewable electricity, wind, solar, geothermal, certain biogas and biofuels, qualified hydropower, marine and hydrokinetic energy, etc. There is a provision in this that would allow governors of the state to partition to use increasing energy efficiency for a higher proportion of the renewable qualification up to 2/5th by 2020 he stated and if they can reduce consumer demand that would count as renewable electricity production in the percentages.

Mr. Flatt stated the federal bill does pre-empt state existing measures to the extent that they go below the federal standard or differ from the federal standard in terms of what qualifies as renewable energy. He stated the bill does allow the state to go higher in requiring renewable energy within that state and also allows the state to retire credits to tighten the market.

Mr. Flatt told us the National Cap and Trade System also pre-empts state programs for the first five years, particularly cap and trade programs and the Boxer-Kerry bill also allows for a five year pre-emption with a nine month delay.

Mr. Flatt stated that the people who must surrender the allocations when they emit greenhouse gases are allowed to meet part of their obligation through the use of offset. He also stated offsets are defined as reductions or sequestration of greenhouse gases that occur outside of the regulated system. He noted the offset provisions in these bills are larger than the prior bill because of more

study of the market indicates that offsets are likely needed to increase market liquidity and to reduce the volatility of the market, particularly in the initial phases, offsets are expected to be cheaper. He also noted that offsets by definition must be additional, they cannot be business as usual; they have to occur because somebody invested money to reduce or sequester carbon dioxide or other greenhouse gases and they must be measurable, verifiable and permanent.

Mr. Flatt stated revenue is another big issue – we don't hear a lot about what is being done with it, but the percentages that are auctioned are expected to bring in 500 to 600 billion dollars per year. He also stated that many of the moderate Democrats and Republicans are concerned that this not be a hidden cap and that it be revenue neutral that it go back to the general public.

Mr. Flatt stated that targets may be revisited as there are some disagreements within the domestic agenda and between the domestic and international agendas and there should be some interactions with the meeting in Copenhagen.

Mr. Flatt's prognostication for the federal bills is he believes we will have a comprehensive federal climate change cap and trade bill by 2010. The reason he believes that is most likely is it is being driven by the threat or the promise of EPA regulations in the absence of a new comprehensive bill. He believes the targets we are seeing currently in the ACES and Boxer-Kerry is probably about where we will end up. He also believes there will be additional funding for states for the pre-emption of their systems.

Mr. Flatt believes offsets will continue to be a big part of this. He believes the biggest question will be how our offset system will relate to the international offset system. In the current bill half of the offsets may come through international offsets if they meet domestic standards but the market is very concerned about whether those offsets will be fully tradable over an international system or not.

Mr. Flatt stated that originally EPA had indicated that it was going to issue its final endangerment finding by March 2010 and in the Massachusetts vs. EPA case the Supreme Court indicated that EPA had the requirements to respond to a partition to declare whether or not greenhouse gases endangered human health and the environment. He stated that under provisions of the Clean Air Act, they initiated a preliminary rule that said these are an endangerment and there is some controversy over that finding but it is certainly strong enough to withstand any court challenge. He stated that the final finding was going to be in March 2010 but last week they moved it up. He believes it is designed as a message to Copenhagen to show that the US will have some control over greenhouse gases by the time any international agreement will go into effect. He believes the finding can come at any time.

Mr. Flatt stated EPA has several requirements and options once that finding comes – they are expected to move quickly to regulate greenhouse gases under performance standards under the Clean Air Act. He believes this will allow them to require a particular technology on major sources and what that technology will be is unclear, some may be energy efficiency, for coal fired power plants it may actually be some request for some carbon capture and sequestration technology or in combination with efficiency. He stated that the United Kingdom will not allow any more new coal fired power plants without carbon capture sequestration technology that can sequester 60% of the carbon dioxide produced from the coal fired power plant.

Mr. Flatt indicated that EPA is moving first on this by exempting small sources – that is they have exempted all sources of greenhouse gases that are under the equivalent 25,000 tons of carbon dioxide produced per year. He stated this is for efficiency and the other is political to indicate that EPA will not be out there trying to regulate every small business. He stated that because of the wording of the Clean Air Act, there could be some legal challenges to the ability to exempt smaller sources.

Mr. Flatt stated EPA indicated they would like to use a cap and trade system for this bill that would be very similar to the one proposed. He believes it can be maneuvered but will be much harder than if authorized under the new legislation.

Mr. Flatt believes the biggest issue for international negotiations is whether or not developing countries will accept binding targets on their own emissions. He stated that some countries have stated they do not want to accept a binding cap at this time but have indicated that they might be willing to under certain circumstances. He stated one of the most important circumstances is whether the US will take a binding cap and what that cap will be. He stated financial assistance and transfer of resources from the developed countries to the developing countries is another circumstance.

Mr. Flatt also stated that financial assistance is supposed to be there to assist these countries that are dealing with the worst effect of climate change, which are generally the poorest countries facing disruption of agricultural patterns, rainfall patterns, disease vectors and even more dramatic are things like the low level island which have an average elevation of 2-3 ft. above sea level. He stated that in addition to this kind of adaptation there are request from those countries that depend economically on the continued use of fossil fuels. He stated Saudi Arabia stated it will oppose any climate change agreement that doesn't give it financial compensation for a shrinking in demand of oil.

Mr. Flatt believes it is anyone's guess how all of this will end – President Obama and the President of Denmark during the Asian trip stated that we do not think we will get a new comprehensive agreement in Copenhagen since both have indicated they wish to set up a new framework for moving forward. He thinks the framework will address the two largest issues and an agreement on adaptation funding will be easy and much more difficult to develop binding targets for developing countries and the final agreement will be postponed until 2010.

Mr. Flatt stated that the role of the US is critical in these negotiations, something he did not realize until watching it play out in the international stage in the last few months. He stated the rest of the world is looking to the US for signals of how it is going to move forward and regulate greenhouse gases.

Mr. Toben asked if in the conversations of neutrality are you seeing those get down to the level of states being able to recover the revenues themselves or is that a gross neutrality where the five to six hundred billion dollars is going to be reallocated.

Mr. Flatt thinks the Senator's position is complete neutrality – that is the government would not take in anything that it would not then return to the tax payers. He stated other conversations about

neutrality do imagine revenue neutral would mean the money be allocated for purposes of compliance.
Mr. Toben asked if Mr. Flatt could speak more about how offsets would provide additional market liquidity and how that mechanism works.

Mr. Flatt stated the idea with that is once you start reducing the amount of emissions you create a shortage and to meet that shortage somebody in the system must reduce their emissions.

Dr. Andrews asked in the context of this developing and hopefully accelerating federal process for putting legislation in place, what are your thoughts on what are the important areas where states either have promises separate from this federal system or where states would be advised to move ahead on their own and what are the conflicts.

Mr. Flatt believes on balance is well advised for states to move forward with respect to a committee to taking information to understand what is going to happen and the changes going to occur. If a state enters into its own cap or limitation of greenhouse gases it may receive credit under the federal bill.

Representative Harrison added the new North Carolina law centers federal and climate policy has issued a twelve page analysis of Boxer-Kerry which is a great summary of where states should be and new opportunities in the federal legislation which will be distributed to members. There are lots incentives and also areas that we need to be worried about pre-exemption.

Representative Underhill stated you mentioned four terms on offsets, measurable, verifiable, additional, and permanent.

Representative Harrison stated to the extent that you are aware, I remember Senator McKauskey had an amendment to be attached to interior preparations that would help EPA on regulating carbon.

Mr. Flatt – Senator McKauskey did introduce a proposed amendment to prevent EPA from expending funds to regulate stationary sources, not automobiles for one year only. The amendment did not pass.

Mr. Slocum comments on the forestry offsets that were mentioned – in the two bills the opportunities are exceedingly limited and the way they are set up run head long into bio-fuels and biomass power production and will run head long into long term supply of wood for existing industries which makes it a real problem in this legislation from the standpoint of forestry. What are the impacts of this legislation on manufacturing?

Mr. Flatt stated there is a perceived conflict between using wood as renewable energy source for bio renewable energy and as an offset. The way the legislation is setup it cannot be done. A lot of the forestry offset would come through changes in forest management. He sates impacts on the economy the only study that seems to look directly at this looks at the big picture economy and have suggested about a 0.5% reduction in gdp in what would otherwise occur within the US within the next 20-25 years.

Mr. Thomas asked what changes do you see on the nuclear side of permitting and hydrology in relation to small businesses in these two pieces of legislation.
Mr. Flatt stated that on the nuclear side a larger role is being played in the Senate negotiations than in the House. He stated it is likely that attempts are being made to shorten the process to speed it up and financial incentives will be given to increase and move more nuclear power. He stated the biggest problem with nuclear now is the infrastructure, with a four year wait and some American companies are in line but we are a little behind that.

Mr. Flatt stated that what he is calling micro-hydro, we see movement of micro distributed power with respect to wind and solar. We see less of that with hydro and he believes the augment that you point out is essentially what is going to have to happen going forward. I don't see any major change.

Dr. Uzo asked are there any education programs planned for other countries to come to the table so that they will know what is going on.

Mr. Flatt stated there is some movement within the United Nations but primarily being done by non-governmental organizations or NGOs. In fact NGOs are often moving economic opportunities relatively rapidly. On the other hand, he stated for the most part a lot of these countries particularly the least developed countries are waiting for any sort of signal to assist with adaptation particularly agriculture and changes in the weather patterns and there is some education to answer your question.

Dr. Eggers wanted to know what you think are the greatest weakness with the federal pre-emption augments of this in the cap and trade system.

Mr. Flatt believes the weakest augment for allowing the federal government to pre-empt is that the federal system might not be effective or might not be enforced well. It would be a semblance of something that looks good but isn't in fact during reduction. He believes California feels that is because they have moved forward that they are pushing the federal government to come up with a comprehensive bill because industries understandably want a uniform bill. He doesn't think that the federal bill will be any less effective than the California comprehensive bill. He believes there are things in the bill that are left to the administrator. It is possible given who is running the EPA at a particular time there could be some problems. That way a compromise of five years and at that time states could come back and regulate if the federal government was slack.

He believes the other big issue is offset. California has indicated it wants to restrict the offsets farm work, the federal government wants to look more at co-environmental benefits and harms. The federal does have that in legislation but not to the same extent as California.

Mr. Flatt stated the assumption is that once the price reaches a certain level and we're looking at \$29/ton for CO_2 that there would be a reserve amount that comes on to the market and the idea is to alleviate price pressures on that. It is not expected to get that high but in case we have misunderstood the market that we don't want to drive industry out of business. That cap itself goes up every year after that. The price gets higher and higher as one would expect.

Mr. Crawford wanted to know if the ACES and Boxer-Kerry standards were less than some of what other European nations are pursuing can you comment on that.

Mr. Flatt stated last year the European Union adopted a 25% reduction by 20/20 and they are now looking at moving that and are calling for a 40% reduction. Europe believed 1990 as the base year, in 2005 everybody had many more emissions except for the Eastern block, depending on how you established the base year, even a 20% reduction from 2005 levels would be only a seven percent reduction from 1990 levels. There is discussion about that he stated.

Mr. Wooton commented on work they're done concerning the 25,000 ton rule and that is a follow-up from a report done a few years ago on what at that time was the 10,000 ton rule. What we found in that report in regards to the power sector is we still capture over 99% of the emissions that you are trying to get. If you go through the report, while there is a number of small power generating facilities, those facilities don't tend to run at a very steady rate. They tend to only be called on when the power is very necessary. The larger facilities tend to produce the bulk of power over the most time. In regards to human factoring which is what people are more concerned about, no more than 10% of the facilities in any one industry would be covered by a 25,000 ton rule. This means that they don't have to worry about handing in credits.

Mr. Wooten stated in the overall manufacturing sector you would capture around 80% of the total emissions as it relates to fossil fuels but it would only affect 1.3 percent of the actual facility. He stated if you want to capture everybody you can try but if you are getting a significant percentage of the emission and limiting the number of facilities that you have to monitor, you can probably be more accurate and achieve the goals that you are actually shooting for.

Our second presenter is Mr. Tom Peterson from the Center for Climate Strategies. Mr. Peterson shares the results of an initiative conducted for the Southern Governor's Association and a round up new actions that have occurred at the state and federal levels. He stated the Association asked to understand what the range of climate mitigation options in the SGA region would look like in terms of cost effectiveness and they were interested in understanding how to get a better understanding of a variety of different studies that are crossing their desks, the costs and economic impacts of climate change.

Mr. Peterson stated they started by looking at the results of five comprehensive climate action planning processes that have occurred in the SG region. He notes this is a region that has 16 states and two territories and is responsible for half of the nation's energy, 40% of the population, one-third of our US senate representation. He also says the governors wanted to understand how stakeholders viewed the issues, and focused on five state plans that NC had helped conduct. That involved focusing on 23 major policy options that were the big ticket items and this set of 23 is responsible for about 83% of all of the emissions reductions potential in the region. The analysis for each of these plans was updated and that was based on changes in energy price forecast, the effects of recession and recent and state actions and other factors.

Mr. Peterson stated they looked at recent federal actions as a baseline in the region as a starting place. Some of these effects are more significant than others such as federal action, the Café standard; renewable fuels standard, energy efficiency from a variety of different corners as well as key state actions. He stated they put together an updated projection of emissions showing the

concentration of emissions in different sectors focused predominantly on transportation and electricity and it uses the consumption base system. The numbers were run on a production and a consumption basis for the region and they are virtually the same. The big story is the very top line in fact that this is now looking in comparison to the past, like a moderate rate of growth. He stated that emissions projections and actual emissions have substantially come down over time.

Mr. Peterson stated a number of key factors are involved here in recent and planned federal actions similarly with state and local actions. He stated that major companies are acting in advance of market and law to put in place reduction programs, Walmart has been very active in this area. He stated that there are unrelated actions that have the net affect of reducing emissions. He stated there are also changes in energy prices – so the annual energy outlook in 2008 pegged the year 2020 mid range point on petroleum at $2.50/gallon and in the most recent forecast it is up to $3.64. He believes electricity rates have gone through a similar revision; the last projection has electricity price forecast at thirteen and a half cent kilowatt hour out at 2020, higher than the past. He stated with electricity you see electricity sales coming down and between that and shifts in future fuel technology that is expected we see emissions coming down, which are big differences in terms of the projected pathways nationally for electricity.

Mr. Peterson showed data from North Carolina with electricity projections for generation which are shared out by source and emissions which are shared out by source and emissions are coming down and the rates of growth going forward.

Mr. Peterson stated in transportation a comparison of transportation fuel projections between 2007 and 2009 and a couple of key federal actions are taking in a fuel standard from the energy incentive and security act, then an initial café standard and then an accelerated café plus fuel type standard recently put in place. They are projected to have the impact of significantly reducing fuel consumption he stated.

Mr. Peterson believes as a consequence we will continue to see an increase in transportation fuel use even though we have seen production from vehicle efficiency come into play there are still other factors that are increasing the total fuel use in the sector. He stated the overall numbers are continuing to come down.

Mr. Peterson stated some of the key actions in the energy security and dependence act we are now seeing new appliance and lighting standards coming in play proposed by EPA. The Economic Recovery Act spending is now coming into play and will be anticipated over the next couple of years. He stated there is a very significant revenue and investment stream for energy efficiency and renewables, there are also strings attached. He stated some of these funds are contingent on improving state building codes. He stated the availability of investment funds to support state and local level investment in efficiency and renewable actions is quite significant and a number of stated are moving at a fairly targeted level to deploy those funds for that purpose.

Mr. Peterson stated we continue to see more states moving forward with comprehensive climate and energy action planning and Kentucky is the next state in the south moving forward with a comprehensive plan. New York is putting in place a very comprehensive new plan that includes both climate mitigation and climate adaptation. He stated a number of states are beginning to

focus in a more determined way on climate adaptations. In time he expects to see the level of adaptation begin to parallel the activity we have seen on mitigation.

Mr. Peterson stated that on renewable energy a lot of states have moved forward with some sort of standard or incentive system. That movement is continuing along with efficiency through standards and incentives. He stated that on DMT reductions there is a law on the books but going through rule making is the SP375 Act in California which is putting in place DMT reduction goals statewide as a climate measure. There are half a dozen states that have binding statewide targets that are going to be met through a combination of policies and measures that are under development he stated.

Mr. Peterson believes we have seen an expanded focus on micro-economic analysis, jobs, income investment tied to climate actions coming out of state climate plans and the increased capacity to be able to isolate these effects and manage them in a positive way.

Mr. Peterson stated that in terms of some of the recent actions on the federal debate there is an increase in energy efficiency on allowance prices for cap and trade conducted as a part of the Midwestern Governor's Association cap and trade process. By doubling the level of efficiency in the system, the price of cap and trade allowances is cut in half. He stated we are seeing as a consequence a significant focus in federal legislation on the integration of price and non-price market based mechanisms plus non-price policies and measures. He stated in order to minimize cost and maximize co-benefits an overall integrated structure is needed that selectively integrates the best mechanisms and actions.

Mr. Peterson stated the results of the analyses for SGA based on the initial work in five states it was expanded through updates in a modeling process to the full region. He stated they identified 37 factors that at the sector and state levels influenced the cost in effectiveness of emissions in the 23 major policy action areas. He stated they went through a multifactor modeling process to apply the policies and measures out to the new states. Data from the other states is available for use in the same kind of multifactor analysis. The data base now includes upwards of 1,000 different policy agreements that have been facilitated and analyzed and involved about 2,000 stakeholders in its development.

Mr. Peterson listed the 23 measures which are on his website. He stated in the south the five states plan included final agreements on over 200 specific policy actions with a significant amount of overlap between them. The question was asked is there an 80/20 rule going on and confirmed that this list of 23 was responsible for about 83% of all the emissions reduction potential so the analysis was simplified to focus on these: in the ag forestry and waste side it is forest retention, urban forestry, reforestation, afforestation, soil carbon buildup, nutrient management, manure management, recycling of municipal solid waste and land fill gaps management.

Mr. Peterson stated on the transportation and land use side it includes smart growth of land use, transit, renewable fuels standards, above and beyond federal vehicle purchase incentives. He stated we did not model cash for clunkers, it is something that can be done going forward. Anti-idling technology and then mode shifts from truck to rail to a package and transportation. He stated the one thing missing from this list is a recommended increase in the café standard or the institution of new tail pipe standards. On the buildings manufacturing and facility side, the top

items for building codes: demand side management program, high performance building supply standards, and combined heat and power. And then on the energy supply sector, heat and power generation – the four key things that came out were pull plant efficiency improvements and re-powering, renewable standards of some kind, carbon capture storage and reuse, the geological sequestration is shown and nuclear power. He stated those are the top 23 that came out of the mix from the south and we also looked at the results of another 16 state plans developed in other regions and it is the same list. He thinks some should be relabeled renewable portfolio standards should be more a clean energy standard, but the same essential list. He believes a lot of commonality between regions on this fundamental set of sector based policies and measures that are potentially responsible for most of the opportunity for reduction.

Mr. Peterson stated the cost curve for all of these actions together for the southern region show an analysis to net basis per dollar savings and that even the savings that show net savings they still require outlays. They still require investments, they are not free. There is a significant issue in terms of the mobilization of investment as well as authority for all of these measures, even though it shows a potential for savings you have to spend in order to save.

Mr. Peterson shows the break down by sectors and they are very different in terms of their behavior. He stated this raises fundamental policy issues the one in orange is less responsive to simple increases in the price of energy or the establishment of price on emissions as the energy supply sector. He stated the use of price instruments alone is unlikely to have the same effect on that set of actions as it does others. He stated that the business of choosing price and non-price instruments and optimizing them for specific actions has been an important part of all of these plans.

Mr. Peterson stated that for the residential-commercial-industrial, the stair step supply curve, the length of the bars shows the amount of junk it gets out of the air. He stated that when decisions were made in stakeholder processes about picking and choosing options those decisions were not made fully on a cost basis, they were also made on a tonnage basis and a co-benefits basis and on the basis of feasibility determinations.

Mr. Peterson stated that nuclear power is one that has been an interesting discussion because it holds typically somewhere on the right side of these curves which means it is not one of the lowest cost options. He stated it is viewed as very important because of reliability even though it is more expensive compared to other sources.

Mr. Peterson stated that in transportation some are net savings and some net spending but you would need to get underneath them to understand the specific mechanisms that are required for their institution. He stated in ag forestry and waste some high priced items in terms of urban forestry partly due to the assumptions that were used in the analysis and partly due to a decision preference for co-benefits that are associated with some of these actions.

Mr. Petersons stated those are the findings that were scaled out and they created a cost curve for every state and territory in the region and stitched them back together at an aggregate level. He stated they were not asked to evaluate a regional target they wanted to understand the performance of individual actions and preferences of stakeholders and the report is on the SGA site.

Mr. Peterson stated his group reviewed a broad range of studies that had crossed desks of the governors in the last few months involved feedback from each of the states' through the governor's offices and state agencies. They went through a series of reviews and comments of building up to the final and actually submitted to us a number of studies that said help us understand what is going on here. He stated they looked both a micro-economic and macro-economic effects and we wanted to identify the factors that explain the differences in end result. He stated that with the macro-economic think of it as the cost per ton calculation. The micro-economic think of it as job income, gross rate product. He stated that on the micro-economic side the factors that drive the differences in these costs per ton estimates are the same factors that are used in building these portfolios and their analyses in the first place. He stated it is the rare study that is sufficiently transparent to answer any of these questions adequately. The effect on the micro-economic study is overwhelmingly driven by these inputs on the micro-economic policies and thoughts that are fed into those in the first place. He further stated that we could use a lot more transparency at a level of specific decision making on analyses to help clear up why these studies are coming out in such different places.

Mr. Peterson stated that he was told by someone that the only way to fix this problem of climate change is you drive energy prices straight through the roof. Nothing else works – is that true. He stated we see studies that are based on that assumption – there are other studies that say you can take a broader set of actions, not just energy price increase but other things, and design them differently and as you actually run the numbers on them, choose different data, different assumptions and different methods and come out with a different solution. He further stated that is why we see such wide variations in these estimates.

Representative Harrison starts off with cost issue – CVO and EPA studies estimated that it will cost around $160 to $170 per household, the Aces – Waxman – Markey bill is that basically what you are finding?

Mr. Peterson stated whether those analyses were based completely on the implementation of a cap and trade program or whether they were based on the integration of the cap and trade program. He stated that to the extent that they did not integrate that they are going to come out with a very different price tag and some of the studies that have lower prices are showing a more full integration of energy efficiency.

Representative Harrison stated that on your slide of nuclear power does that factor in the subsidies when you are looking at the cost?

Mr. Peterson stated that it does and there was a lot of variation in the assumptions that people had on what those subsidies would look like.

Mr. Garrou asked about the federal stimulus money and what states are doing to get money for adaptation or energy efficiency and how successful those efforts have been.

Mr. Peterson thinks there is a very large pool of funding available and more to come soon that can be targeted directly toward for energy efficiency and renewable actions. He believes there is a kind of mixture in terms of how aggressively and clearly they are going after those funds and targeting

investments in these areas. He also thinks some states are targeting very heavily and some are not but the door is not closed. He believes there is a significant amount of money that can be funneled to a number of these actions.

Dr. Eggers wonders what the doubling of energy efficiency for generation is based on in the slide.

Mr. Peterson stated the top line is the one percent growth in efficiency and the bottom line is two percent which is aggressive. It is just for electric power and does not involve direct fuel use for heat and does not include transportation efficiency.

Our third presenter is Ms. Jennifer Mundt on the Commission staff. Ms. Mundt gave a brief overview (**Appendix E**) of the legislation that the General Assembly enacted this past session and a brief discussion of some of the legislation that is pending in the 2010 session that convenes in May. The most pertinent of this Commission is Session Law 2009 Chapter 306 which allows the Commission to continue in their range toward achieving its charge by extending our Commission by one year to October 1, 2010.

Ms. Mundt stated that Session Law 2009 Chapter 241 directs the Department of Administration to state in their request for proposals a preference for purchasing passenger motor vehicles and better than the top 15 percent of fuel economy. She stated that any contracts awarded under this legislation would be for an evaluation of the best value for the state taking into account the fuel economy and the life cycle cost analysis for those vehicles. This would not apply to vehicles used in law enforcement, fire fighting and emergency medical response. This legislation becomes effective for any contracts entered into beginning July 1, 2010.

Ms. Mundt stated that Session Law 2009 Chapter 95 makes state wide a provision that has been on the books for a few years that provides local governments with the authority to adopt ordinances that provide incentives to developers and builders of either new construction or re-constructing existing developments in a manner that the local government determines to make a significant contribution to the reduction of energy consumption by the construction of that building. She stated that incentives under this legislation include density bonuses or other adjustments to otherwise require development requirements by that local government.

Ms. Mundt stated that Session Law 2009 Chapter 522 authorizes local governments to establish loan programs to finance energy efficiency improvements or the installation of distributed renewable energy sources that are permanently affixed to residential, commercial or other real property within their jurisdiction. She stated the local governments are authorized in the legislation to use funds that come down from the energy efficiency conservation block grant fund to help support that fund. The local governments are restricted to charging up to eight percent interest on those loans and those loans can only be carried forward for a total of 15 years.

Ms. Mundt stated that Session Law 2009 Chapter 390 shortens the time to 45 days for the Utilities Commission to decide on a partition for certificate of public convenience and necessity for the construction of natural gas fueled generating unit that will replace old coal fired units on a particular site and allow that site to comply with the emission reduction requirements as required under the Clean Smoke Stacks Act. She stated this legislation also authorizes the Utilities Commission to allow an electric public utility to recover operating cost and their investment in what is defined in the

legislation as a carbon offset facility. Carbon offset facility is defined as one that is purchased or constructed by an electric public utility between July 1, 2009 and July 1, 2014 that uses solar wind, hydropower, geo-thermal or wave energy technology to generate electricity. Also the electricity generated will displace any electricity generation to reduce greenhouse gas emissions of existing fossil fuel facilities.

Ms. Mundt stated that Session Law 2009 Chapter 375 increases the cap from 100 to 500 million for the aggregate outstanding amount payable by the state under the energy savings contract statutes.

Ms. Mundt stated that Session Law 2009 Chapter 548 expends the state taxing centers for energy conservation by adding geo-thermal, heat pumps and other geo-thermal equipment to the types of renewable energy property that qualifies for a tax credit under existing statutes. The credit can be taken for up to 35 percent of the cost and installation of the property and certain types of renewable energy property have caps on that. This legislation extends the sunset of this tax credit from January 1, 2011 for five years to January 1, 2016.

Ms. Mundt stated that was a quick wrap of legislation enacted this past session and there are two bills that she thinks will be pertinent to this Commission that are pending next session. She stated those include SB 1068 which is the legislation that has been moving, it is currently in House Energy and Energy Efficiency Committee. The bill would establish a dual permitting program for wind energy generating facilities. It is a dual program because facilities that are proposed to be located within the 20 cama counties would be regulated and permitted by the Coastal Resources Commission and facilities that are proposed to be located outside of the 20 cama counties would be regulated by the Environmental Management Commission.

Ms. Mundt stated that House Bill 504 is also sitting in the House Energy and Energy Efficiency Committee would provide tax credits to builders and developers for developing, constructing energy efficient homes. Under the current legislation as it stands if the home is built to federal energy star standards the builder would qualify for $1,000 credit. If the home is built to the state healthy built homes standard then the builder/developer would qualify for a $2,000 credit. Under the legislation as it stands that credit would sunset January 1, 2013.

Dr. Riggs wonders what happens to anything that goes out to federal waters, will stated have no control over that at all since it is not in the county's jurisdiction.

Ms. Mundt stated there would be a number of places for the state to insert itself and any facility proposed to be placed out beyond the three mile boundary jurisdiction.

Dr. Riggs stated that is truly critical because 99.9% of the potential is offshore, not in the counties. He stated the second part of that is that we have operations that are already beginning to design and plan but we don't have a bill to deal with that, is that what I'm hearing.

Representative Harrison stated the controversy is that in the Senate bill they effectively established a ban on wind on the roof tops. The bill that we had contemplated originally as filed would have established the parting system in the cama counties and then the EMC would take over as Ms. Mundt indicated and left the ridge issues for status quo we weren't going to touch it. She stated we are still trying to figure whether we can build the ridge law and we do have to establish a permitting

system because right now there is none in the state regime. There is a proposal in the Albemarle Pamlico Sound, she believes.

Dr. Riggs stated they are going on with the project now as we speak.

Ms. Mundt stated she understands that this year's budget/appropriations bill provided some criteria by which those facilities can move forward under the direction of the Department of Environmental and Natural Resources. She stated they are not going in completely un-watched.

Mr. Steve Wall (DENR) stated the pilot project Ms. Mundt is referring to is going in in Pamlico Sound, the legislation establishing that pilot project exempted it from most state permit requirements. There will be federal permits required by the US Army Corp. but again the legislation exempted it from the state permits.

Representative Harrison stated that on the expansion of tax credits we had contemplated a broader tax credit for conversion of manufacturing facilities to renewable energy. We had hoped that the house and tax credit would be part of House Bill 512 which initially passed and it just appeared that the budget would not accommodate that which is why those items were not included. She stated we have seen a good return on energy investments as a result of our tax credits and we want to continue those if we can.

Representative Harrison stated she has filed a bill to make this Commission a permanent commission but it was not heard.

Mr. Dodge stated that all materials will be on website.

Meeting adjourned at 11:17 a.m.

Respectfully submitted,

Representative Pricey Harrison, Chair

Thelma T. Utley, Committee Clerk

APPENDICES

Appendix A Visitor Registration Sheets

Appendix B Global Climate Change Impacts in the United States magazine

Appendix C Agenda

Appendix D Climate Change at the Federal Level – Victor B. Flatt

Appendix E North Carolina Climate change-Related Legislation: 2009 Session
Jennifer Mundt