North Carolina
Climate Action Plan Advisory Group
WWW.NCCLIMATECHANGE.US

September 14, 2006

Description of Draft Energy Supply Policy Options

#	Policy Name	Status
ES-1	Renewable Energy Incentives (biomass, wind, solar, geothermal, hydro)	First draft complete
ES-2	Environmental Portfolio Standard (renewables and energy efficiency) with renewable energy credit trading	First draft complete
ES-3	Removing barriers to CHP and clean DG (including utility rate and interconnection barriers, financing, information, etc.)	First draft complete
ES-4	CO2 tax and/or cap-and-trade (including covering sources including fossil, renewable, and nuclear on life-cycle basis)	First draft complete
ES-5	Legislative changes requiring the NC Utility Commission to consider environmental and other factors	First draft complete
ES-6	Incentives for advanced coal, including IGCC and carbon capture and storage (CCS).	First draft complete
ES-7	Public Benefit Charge on electricity bills for funding efficiency activities	First draft complete
ES-8	Waste to Energy	in preparation
ES-9	Incentives for combined heat and power (CHP) and clean DG	in preparation
ES-10	NC Greenpower renewable resources program	in preparation

ES-1: Renewable Energy Incentives (biomass, wind, solar, geothermal, hydro)

Policy Description:

The purpose of this policy is to encourage investment in renewables by providing direct financial incentives. Financial incentives for renewables could include: (1) direct subsidies for purchasing/selling renewable technologies given to buyer/seller; (2) tax credits or exemptions for purchasing/selling renewable technologies given to the buyer/seller; (3) tax credits or exemptions for operating renewable energy facilities; (4) feed-in tariffs, which provide direct payments to renewable generators for each kWh of electricity generated from a qualifying renewable facility; (5) tax credits for each kWh generated from a qualifying renewable facility.

Policy Design:

a) Policy Design Alternatives

- As noted above
- Timely cost recovery for electric utility investment in renewables and/or the purchase of renewable energy from others
- Tax incentives for green industry recruitment, which has the added benefit of generating jobs and economic development within the state
- Tax credits and deductions (income, property, sales) for individuals and businesses to invest in renewable energy systems

b) Goal levels: As noted above

c) Timing: Tie into the timing of actions taken as a result of the NCUC RPS study (Section 4).

d) Coverage of Parties: State agency or designee to administer subsidies. Utilities would administer the feed-in tariff. Power producers operating qualifying renewable facility would receive the subsidies.

e) Other:

Implementation method(s):

- Funding mechanisms and/or incentives
- Technical assistance and education
- Pilots and demos

Related Policies/Programs in place:

- Each regulated utility operating in North Carolina already has available a tariff for the purchase of energy from qualifying facilities, including renewable generators.

- NC GreenPower
- The NCUC, at the request of the General Assembly, is conducting a study of the costs and benefits of a renewable portfolio standard (RPS) A report to the NC General Assembly is expected in early 2007 .

Type(s) of GHG Benefit(s):

- CO2: Renewable generation can reduce fossil fuel use in power generation and correspondingly reducing CO2 emissions
- Black Carbon: To the extent that generation from coal and oil is displaced by renewables, black carbon emissions will decrease.

ES-2: Environmental Portfolio Standard (renewables and energy efficiency) with renewable energy credit trading

Policy Description:

A renewable portfolio standard (RPS) is a policy requiring investor-owned electric utilities to supply a certain percentage of retail electricity from renewable energy sources by a stipulated date. An RPS that includes measurable, verifiable and lasting efficiency options is an Environmental Portfolio Standard (EPS). There are hundreds of potential energy efficiency applications, such as combined heat and power (CHP) and solar thermal hot water. Utilities can satisfy the EPS requirement by generating renewable energy themselves or by purchasing renewable energy credits (RECs) from a renewable energy generator. A REC is equal to 1 kWh of eligible and verified renewable electricity produced.

North Carolina's population is projected to grow about 40% by the year 2030, while the state's investor-owned utilities estimate electricity demand will rise about 35% by 2020 (from 2005 Integrated Resource Plans, Docket E-100, Sub103, NC Utilities Commission). Since North Carolina's electricity demand is growing at a higher rate than an EPS or RPS would be implemented, the estimated cost of an EPS or RPS should be compared against a reasonably possible portfolio of *new* coal, nuclear and natural gas power plants, and *not* against existing conventional generation resources. An EPS and a Public Benefits Fund are the only large scale policy options that could satisfy this electric demand increase on the utility projected timeline.

Currently, 20 U.S. states have a flexible RPS requirement, 3 states have RPS goals, and 13 states have proposed RPS legislation. (See figure 1) To avoid confusion, note existing RPS states are in red, and proposed RPS states are in yellow. These policies will meet and exceed their renewables requirements, leveraging over $52 billion in investments before the year 2020. No state has repealed or reduced their RPS target, and several have increased their targets. Most recently, California adopted a carbon cap, made achievable in part by its 20% RPS requirement by 2010, and long-term dedication to energy efficiency.

a) Benefits

Currently, North Carolina ranks as the world's 24th largest emitter of GHGs. A significant portion of North Carolina's GHG emissions come from the use of coal to generate electricity. An EPS could provide our state with clean, low GHG emitting baseload, intermediate and peak electric generation solutions such as renewable energy and energy efficiency to:

- Reduce GHG emissions, and
- Accommodate rapidly rising population and electricity demand, without
- Increasing risks to the economy, public health and security.

A 2005/2006 Appalachian State University and NREL certified economic analysis estimates a 10% RPS in NC will result in significantly higher job creation, gross state product and income than the business-as-usual electric generation portfolio. (See Figure 2)

A 2005 technical report by the Renewable Energy Policy Project indicates that North Carolina could revitalize portions of its manufacturing sector by participating in an RPS. North Carolina firms could supply over 12,900 new manufacturing jobs to make renewables technologies.

An EPS is not the appropriate policy tool for encouraging greater load shifting by our regulated investor-owned utilities (IOU). While energy conservation applications outlined above are eligible for an EPS,

non-IOU entities currently have the capacity and skill to implement efficiency improvements. An EPS appropriately incentives IOUs not to recreate the wheel, but invest back in the economy by contracting with these skilled entities, bringing additional economic benefits to every county.

b) How renewable energy and energy efficiency match up with NC electricity needs

It is likely that over half of the renewable energy resources used to satisfy an EPS requirement will be baseload, in the form of biomass, including animal, wood, landfill gas, agricultural and clean construction and demolition wastes. Each of these resources offset baseload electric generation, roughly half of which is coal-fired power plants. Therefore, potential GHG reductions resulting from adoption of an RPS or EPS policy are very high. Where energy efficiency applications are measurable, verifiable and lasting, they also can reliably offset the need for baseload, intermediate and peak electric generation.

c) Costs

The utility has the option of purchasing RECs from the renewable electricity someone else produces, instead of building their own renewable facilities. RECs give companies with the ability to generate renewable electricity an incentive to do so, because an EPS creates a market place to buy and sell RECs. Many states have used a "safety valve" to limit the cost of an RPS or EPS, by putting a ceiling on the price of RECs above which they cannot rise. This makes the cost of compliance for the utility more transparent and protects the ratepayer.

EPS (or RPS) Policy Design

An EPS or RPS often includes the following basic policy design elements:

- Determine the size of the renewable requirement, time allowed to satisfy requirement, and incremental or annual requirements
- Identify date for when the policy becomes effective
- Define eligible renewable sources and eligible energy efficiency applications and guidelines:
  - **Renewables:** Solar PV; wind power; micro-hydropower (< 20MW); non-utility combined heat and power; ocean current, tidal and wave energy; fuel cells using renewable fuels; and biomass including hog waste using an innovative waste management system that does not employ a lagoon, non-woody energy crops, wood wastes, anaerobically digested waste biomass and other animal waste biomass.
  - **Efficiency:** applications that provide measurable, verifiable, long-term savings to the retail customer as compared to current technology in use, including but not limited to metered solar thermal, appliances, HVAC, efficient motors, etc.
- Clearly state ineligible resources:
  - **Conventional energy:** coal, nuclear, natural gas and all other fossil fuels
  - **Other ineligible resources:** hydro electric generators with a generation capacity larger than 20 MW, wood treated with chemical preservatives, municipal solid waste, biomass co-firing in conventional power plants
- Determine if some resources need to be prioritized for implementation based on price, GHG emissions, offset need for new baseload, etc
- Guidelines on the creation and valuation of RECs

- Determine if cost limits or "safety valves" need to be included to protect utilities and their customers against unforeseen spikes in the price of RECs

Biomass co-firing in coal plants does not provide new renewable energy generation capacity and should not be an eligible resource for a state EPS. Benefits of co-firing biomass energy in existing or new coal plants are limited to displacing a small amount of coal and have the more expensive consequence of

- Making it necessary for the ratepayer to pay for extra new baseload generation, because the wood biomass was used in coal plants to offset coal instead of building new biomass plants, and
- Reducing the amount of biomass fuel available for more robust rural economic development.

Potential Implementation Mechanisms

- Considered as a legislative act by the NC General Assembly, and/or
- Mandated by the North Carolina Utilities Commission, within their jurisdiction (see G.S. 62)

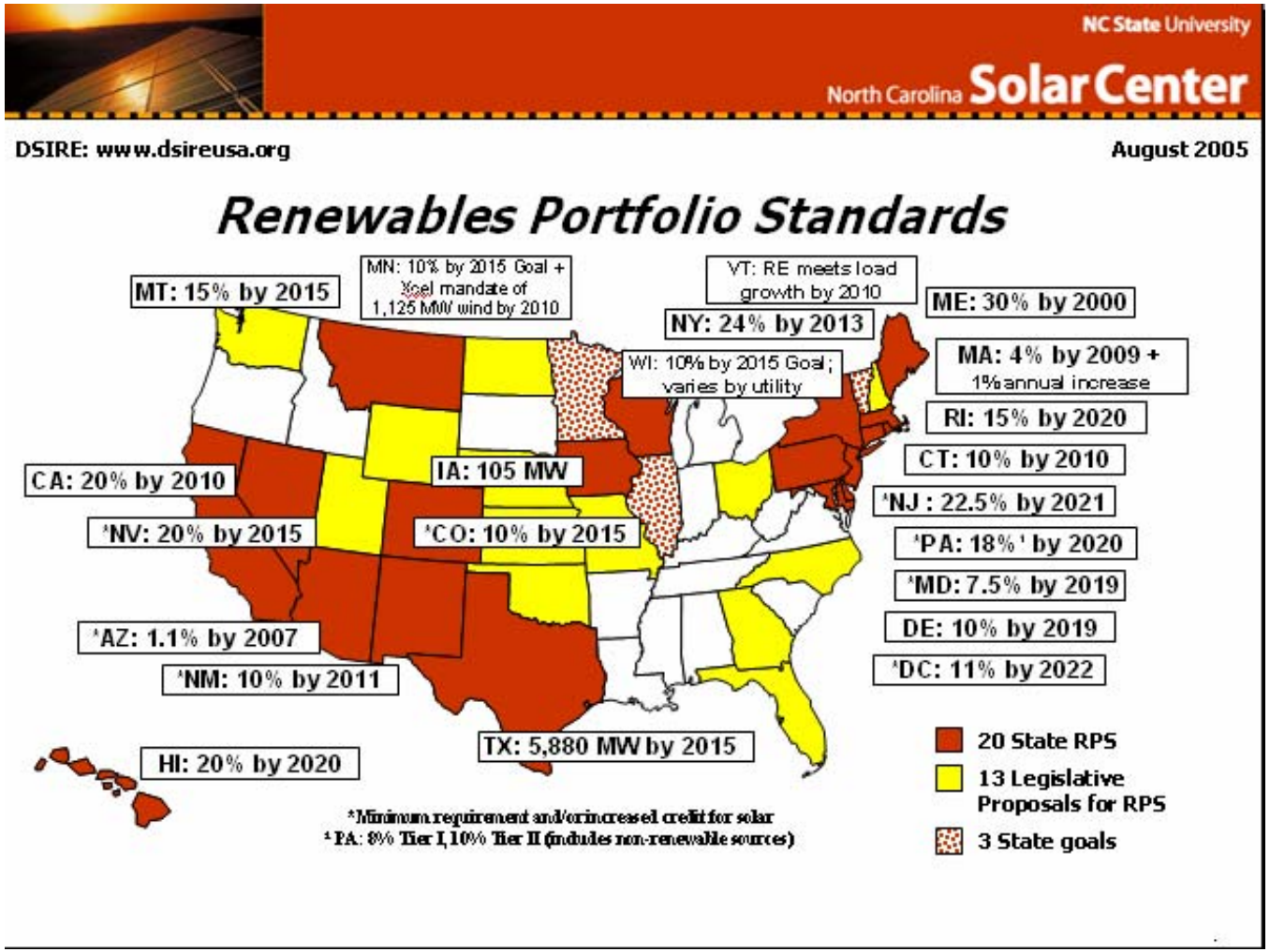
Related Policies/Programs in Place

- **RPS Cost-Benefit Study (in progress)** – The NC Utilities Commission is currently conducting a study with a diverse range of stakeholder input to determine the potential electric rate impacts and economic benefits of adopting a state RPS policy, including a general assessment of including energy efficiency. It is currently unknown whether the study will conduct a sensitivity analysis on the estimated value of GHG emission reductions from the RPS or EPS policy option. The study is on schedule with results expected by December 2006 and a final report and presentation to the NC legislative Environmental Review Commission around January 2007.
- **NC GreenPower Program (NCGP)** – will benefit NCGP by lowering cost of renewables, advancing utilities' understanding of renewables in NC, and increasing utility customer desire to contribute because adoption of EPS will convince them that their contribution will now make a difference; will need to address administrative costs, because utilities currently cover NCGP's administrative cost, but are less likely to do so after an EPS is adopted.
- **NC Renewable Energy Tax Credits** – will result in much higher commercial use of North Carolina's 35% renewable energy tax credits for biomass, wind, solar PV, solar thermal hot water and hydropower. Commercial tax credits are limited to $2,500,000 per installation.

Types of GHG Reductions

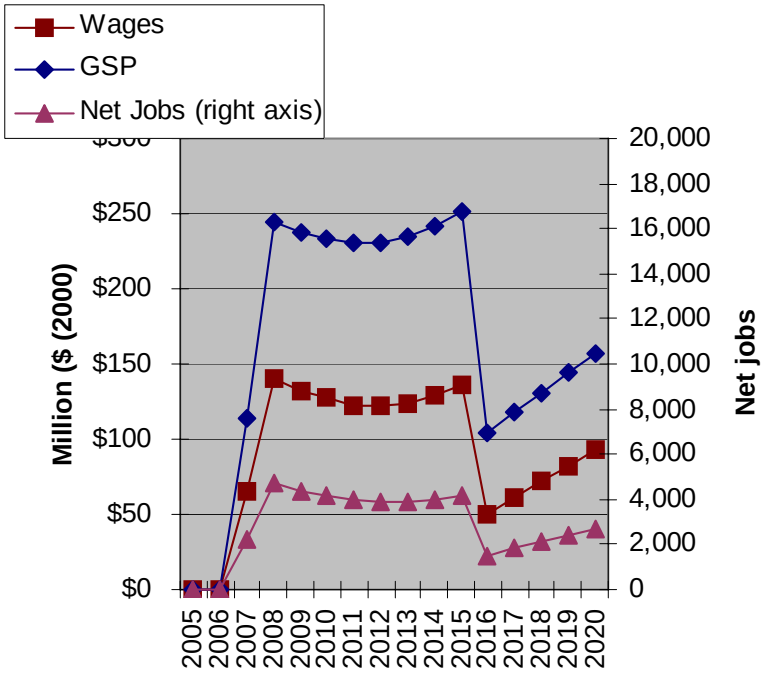
- **Carbon dioxide (CO_2)** – baseload and intermediate renewables will both offset existing coal generation, and be put in place instead of new coal generation capacity in the future. Peaking renewables, such as solar, will offset CO_2 emissions from combined cycle and combustion turbine natural gas facilities. To an extent some renewables will offset CO_2 emissions related to nuclear power if fuel importation, transportation, processing and storage is offset by renewables, relative to electric demand growth.
- **Methane (CH_4)** – animal waste-to-energy and landfill gas-to-energy (LFGE) resources will reduce methane emissions, changing them to CO_2, which has a much lower global warming potential.
- **Aerosols** – if renewable energy and energy efficiency technologies result in an absolute reduction in ambient atmospheric aerosol concentrations from coal power plant emissions could cause North Carolina's temperatures to rise, catching up with the rest of the U.S.

Figure 1. Existing state RPS requirements and state legislative proposals for RPS requirements



Sources: online on August 31, 2006 at www.dsireusa.org for existing RPS; web search of proposed RPS legislation

Figure 2. Estimated benefits and implementation of a 10% RPS in NC



Source: Arent, Doug. "NC Economic Model Review." National Renewable Energy Laboratory. March 2005.

ES-3: Removing Barriers to CHP and Clean DG

Policy Description

Distributed generation in the form of clean combined heat and power systems give electricity consumers the capability of generating electricity or mechanical power on-site to meet all or part of their own needs, sell power back to the grid, and, through capture of heat typically lost during power generation, meet on-site thermal needs (hot water, steam, space heat, or process heat) or cooling (for example, through application of absorption chillers)[11]. In so doing, distributed generation with combined heat and power (CHP) raises the overall efficiency with which fuel is used. In addition to improvements in the efficiency of fuel use, and related reduction in greenhouse gas emissions, expanded use of distributed CHP offers significant electricity system benefits (including avoided electricity transmission and distribution losses, and avoided requirements for electricity grid expansion).

Distributed generation consisting of clean combined heat and power systems improves the overall efficiency of fuel use as well as providing electric system benefits. Implementation of these systems could be encouraged through a combination of regulatory changes and incentive programs. The purpose of these changes and programs would be to encourage investment through the removal of barriers that currently impede their introduction in North Carolina. Barriers for combined heat and power systems include commercialization barriers; price distortions; failure of the market to value the public benefits of renewables; failure of the market to value the social cost of fossil fuel technologies; and market barriers such as inadequate information, institutional barriers, high transaction costs because of small projects, high financing costs because of lender unfamiliarity and perceived risk, "split incentives" between building owners and tenants, and transmission costs are often higher for renewables.

Policy Design

Policies to remove barriers to CHP and clean DG include: standard interconnection policies; procurement policies (e.g., state power purchases, loading order requirements, long-term contracting with clean DG, etc.); and environmental disclosure. For North Carolina, the proposed policy would be to encourage the adoption of CHP through a combination of regulatory changes and incentives for adoption of CHP systems. Specifically, CHP systems of 10 MW or smaller (or of equivalent mechanical power) would be covered, and policies would be put in place by the end of 2007, and remain in force thereafter, with periodic review as needed. The combination of regulatory changes and incentives will be designed to allow XX percent of North Carolina's estimated remaining CHP potential to be realized by the year 20XX.

- **Goal levels:** XX percent of North Carolina's estimated remaining CHP potential to be realized by the year 20XX
- **Timing:** Depends on specific policies to remove barriers.
- **Parties:** Depends on specific regulatory changes and incentives to remove barriers.
- **Other:**

Potential Implementation Mechanisms

- Information and education: Would include training and education programs and certification for building planners, builders/contractors, energy managers and operators, and state and local officials related to the incorporation of CHP into building plans/designs/operation. Would also include programs for consumer and elementary/secondary education.
- Codes and standards: A national IEEE standard, IEEE #1547, has been adopted to facilitate DG installations. FERC has adopted a national interconnect standard for installation to transmission lines. A number of other states, including Texas, California, New Jersey, New York- have adopted interconnect standards to facilitate DG installation. A similar standard could be implemented in North Carolina.
- Market based mechanisms: Net metering, avoided-cost pricing rules, and/or other utility tariff policies that promote CHP. Performance contracting is another possible mechanism
- Utility Planning: Include CHP as an element of resource planning for utilities

Related Policies/Programs in Place:

Types of GHG Reductions

- Carbon dioxide reduction from avoided electricity production and avoided on-site fuel combustion less additional on-site carbon dioxide emissions from fuel used in CHP systems.
- Other gases: modest potential changes in emissions of methane from avoided fuel combustion and avoided natural gas pipeline leakage, net of any additional on-site emissions or additional leakage from increased gas use, likely relatively small reductions in emissions of nitrous oxide :from avoided fuel combustion, net of any increased on-site emissions, and also some possible small net changes in emissions of black carbon, depending on the balance between avoided and additional consumption of oil, coal, and biomass fuels, and of emission control equipment used on CHP and heating systems

ES-4: CO2 tax and/or cap-and-trade (including covering sources including fossil, renewable, and nuclear on life-cycle basis)

Policy Description:

A cap and trade system is a market mechanism in which CO2 and other GHG emissions are limited or capped at a specified level, and those participating in the system can trade permits (a permit is an allowance to emit one ton of CO2 and GHG) in order to lower costs of compliance. For every ton of CO2 and GHG released, an emitter must hold a permit. Therefore, the number of permits issued or allocated is, in effect, the cap. The government can give permits away for free (according to any one of many different criteria to those participating in the cap & trade system or even to those who are not), auction them, or a combination of the two. Participants can range from a small group within a single sector to the entire economy and can be implemented upstream (at the level of fuel extraction or import) or downstream at the points where fuel is consumed.

Policy Design:

The TWG should look at a state market program within the context of both a national or regional economy-wide cap and trade program. The TWG will look at existing studies of such programs to infer what the impact on North Carolina may be. The TWG should also conduct comparative analyses concerning the costs of reaching a given state cap and also look at caps on national and a regional basis. It may be possible to explore these two options for both an economy-wide and a power-sector-only program. Not all allowances should be given away; a percentage should be auctioned to develop funds for transition fuels and incentives for low carbon technology development.

There should be consideration of a weighted outset market within the state that supports boarder goals for the state, i.e., agriculture energy programs that offset GHGs and diversify fuel sources, increase economic development and lead to greater energy security maybe given more weight. Offsets that increase risk and decrease security may have less values in the market, e.g., nuclear power.

Other issues to consider:

- Applicability (sources & sectors included)
- Gases included
- Permit allocation rules (method; options for new market entrants)
- Generation-based or load-based; leakage concerns
- Linkage to other trading systems
- Banking and borrowing; early reduction credit
- Inclusion of emission offsets (within or outside sector, geography)
- Incentive opportunities (e.g., interaction with other pollution regulations like
- Pennsylvania's EDGE program).

a) Goal levels: TBD

b) Timing: Baselines should be develop immediately 2008

- Utility sector pilot 2010,
- Economy wide pilot 2015
- Timing could be impacted by regional and nation markets

d) Coverage of Parties: TBD

Potential Implementation method(s):

- Market-based mechanisms with underlying regulatory obligation.

Related Policies/Programs in place:

- No cap & trade system is in place in North Carolina

Type(s) of GHG Benefit(s):

- CO2: A cap & trade system is a direct limit on CO2 emissions. Reductions are determined by the level of the cap.
- Black Carbon: To the extent that generation from coal and oil declines under a cap and trade system, black carbon emissions will also decrease.

Ancillary Benefits and Costs, if applicable:

- The shift from fossil fuel generation as a result of a cap and trade system will lead to reductions in criteria air pollutants and, consequently, health impacts and costs associated with those pollutants.
- The shift from fossil fuel would lead to diversified energy source and increase opportunity for local distributed generation, adding in rural economic development and greater grid stability and security.
- Water use may be reduced through renewable versus combustion technologies.
- Allowing “offsets” from outside the capped sector can create the incentive to quantify and reduce GHG emissions from sources in other sectors.
- The shift in fossil fuel resources as a result of a cap and trade system could have unintended consequences, including increased cost of natural gas and need for additional natural gas infrastructure.

ES-5: Legislative changes requiring the NC Utility Commission to consider environmental and other factors

Policy Description

Harnessing the power of the free market private sector is the best way to promote energy efficiency. Unfortunately, the incentives of the current rate structure can discourage efficiency because financial incentives for building new power plants and selling increased electricity. North Carolina's utilities have responded rationally to these distorted incentives and barriers. There may be an opportunity for the North Carolina Utility Commission to remove barriers and align free market profit incentives with increased efficiency. Policy changes include:

- **Decoupling and Lost Revenue Adjustment.** These policies would sever the relationship between quantity of electricity sold and profit.
- **Total Resource Cost.** The test would allow efficiency programs that decrease overall customer payments, even if rates incrementally increase.
- **Inverted block pricing for residential.** This policy would create Higher per unit pricing for larger residential consumers of electricity.
- **Carbon risk.** Incorporating the potential cost of future carbon regulation into new generation decision.
- **Efficiency as a resource**. Efficiency could be allowed to compete with other resources to meet demand. This would favor efficiency as it is often the least cost way of meeting demand.

Policy Design:

a) Policy Design Alternatives

- For each, conduct a cost-benefit analysis.

b) Goal levels: no specific targets.

c) Timing: Implementation beginning as early as 2008.

d) Coverage of Parties: Utilities Commission, Utilities

e) Other:

Implementation method(s):

- Utility Commission rule and/or directives from the General Assembly.

Related Policies/Programs in place:

Type(s) of GHG Benefit(s):

- CO2: Increased efficiency is the lowest cost opportunity for reduce global warming pollution and much less expensive then a new power plant.

ES-6: Incentives for advanced coal, including IGCC and carbon capture and storage (CCS).

Policy Description:

Advanced fossil technologies are more efficient than conventional fossil technologies, and, therefore, have lower CO2 emission rates. Advanced fossil technologies combined with carbon capture and sequestration or reuse (CCSR) could enable significantly lower CO2 emissions. Policies for advanced fossil technologies may include mandates or incentives to use advanced coal technologies for new coal plants.

A mandate might require that new coal plants achieve a certain CO2 emission rate that is only achievable with advanced technology. Alternatively, a mandate might require that all new coal plants be of a certain type, e.g., Integrated Gasification Combined Cycle (IGCC). A mandate might also be a requirement that a certain percentage of new coal plants be IGCC or employ advanced fossil technologies. Incentives may be in the form of direct subsidies or assistance in securing financing and/or off-take agreements. A combination of mandates and incentives is also possible.

Policies to encourage CCS could include a state agency or department within an existing agency tasked with promoting CCSR, evaluation studies to identify geologically sound reservoirs, R&D funding to improve CCS technologies, financial incentives to capture and store carbon or to capture and reuse it, and/or mandates to capture and store carbon or capture and reuse it.

Policy Design:

a) Policy Design Alternatives - incentives

- New advanced coal generation (or a percentage of new coal generation) will need incentives under current regulations to overcome the cost premium now associated with IGCC technology
- Based on available cost estimates, the incentive would need to be in the range of a 20-25% premium above the cost of pulverized coal plants
- Utilities would need to be assured cost recovery or an incentive plan for the 20-25% premium
- Tax incentives could be used to spread the cost beyond rate payers at the single utility installing the technology
- In addition to the capital costs for an IGCC plant, provisions to address the cost of capture and storage of CO2 need to be included as part of an incentive plan
- If CO2 capture and storage technology is not available by the time the first IGCC units are in operation in NC, proposals for additional facilities should be re-examined
- Regulatory changes and/or tax incentives would need approval of the General Assembly

b) Goal levels: A new IGCC unit installed in the Carolinas by _____

c) Timing: Tie into CPCN proceeding – costs can be estimated at that time.

d) Coverage of Parties: Utilities as noted above.

e) Other:

3. Implementation method(s):

- Funding mechanisms and/or incentives
- Research and development
- Technical assistance and education
- Pilots and demos

4. Related Policies/Programs in place:

- Rate reform and restructuring, energy efficiency as a resource, and environment as a criteria for decision-making are already before the NCUC in the Integrated Resource Planning (IRP) proceeding. As part of the IRP proceeding, Public Staff is conducting workshops with stakeholders to investigate these issues and, where appropriate, develop and recommend revised or new actions or policies.

- Rate programs already in place: Energy conservation discount rate; time of use rates, real-time pricing, and curtailable rate options for customers

5. Type(s) of GHG Benefit(s):

- CO2: Advanced fossil technologies are more efficient than conventional fossil technologies, and, therefore, have lower CO2 emission rates. Advanced fossil technologies combined with carbon capture and sequestration or reuse (CCS) could enable significantly lower CO2 emissions. IRP is a planning process that factors in the cost of emissions, including CO2, into the resource planning process. Lower emitting technologies may be favored as a result, which would result in CO2 savings.

ES-7: Public Benefits Charge on Electric Bills To Support Energy Efficiency Programs

Policy Description:

A public benefits charge (sometimes call systems benefits charge) is a fee attributed to electric customers based on their usage of electricity in a given time period. North Carolina has the oldest such program, established in 1980 by the NC Utilities Commission. The original intent of this program was to reduce electric demand in an effort to slow the need for new power plant construction. The current public benefits charge of $0.003567 translates to approximately three cents per month per average residential customer in NC. The total collected amounts to about $3.5 million per year. These funds are used for energy efficiency and economic development programs throughout the state. Because of the small amount of funding, efforts have been specialized to serve specific markets in the state. Industrial motors and process heating receive much of the attention in an effort to make our industries more efficient and competitive, thereby retaining and building the job base. The other primary area these funds go to in NC is the residential new construction sector.

While NC already has a public benefits charge, other states have also enacted their own public benefits charges. Most often, these other states have done so as a result of deregulation of electric utilities. In a regulated electric market, each state's utility commission has the authority to require electric utilities to provide some level of energy efficiency programming. With deregulation in many states, the utility commissions often lost the ability to require efficiency programs of the electric utilities. The result in many states was the development of the public benefits charge, which is a non-bypassable charge on electric bills. The funds collected are then provided to a third party to provide energy efficiency programming. It should be noted that the purpose behind public benefits charges is most often to reduce energy consumption in a given state. While efficiency carries significant air quality and GHG benefits, that is rarely a consideration for creation of a program.

Policy Design:

While NC has a well established public benefits charge and fund, the charge has not changed since its inception in 1980. Since that time, other states that have implemented charges have significantly outpaced that in NC. For states that have implemented a public benefits charge, the average charge is equivalent to $8.44 per person. If NC were to achieve the national average it would be the equivalent of a total fund of $72 million per year; more than 20 times the current fund. The higher funding in other states has allowed them to take the lead and drive energy efficiency both locally and nationally. Because almost all public benefit charges are assessed in cold weather states, the majority of research and program development has been directed to issues faced in the Northeast and Northwest. While some of these programs can be translated to NC, many cannot, due to differing electric rates and climates. Unfortunately, there are no substantial public benefits programs in the Southeast, leaving the area shallow in terms of energy efficiency programs at a time when population growth is pushing electric demand to new highs.

In a 2003 Oak Ridge National Laboratory (ORNL) study, researchers reported a potential for savings of as much as 3,086 MW and 21,700 GWh per year by 2020 if NC adopted every

efficiency measure technologically possible. However, these estimates do not address cost-effectiveness of the efficiency programs. We believe a better estimate to be in the range of 333-1,000 MW and 1,700-4,700 MWH. For comparison, a typical coal fired power plant is rated at about 500 MW.

For purposes of policy design, members of the Climate Action Plan Advisory Group recommend that public benefits charges be implemented through the NC Utilities Commission to a third party administrator. The recommendation for a third party administrator is to remove the conflict of interest from electric utilities in the potential for both trying to sell as much power as possible for stockholder return on investment while also trying to reduce consumption through efficiency efforts. A third party administrator removes that conflict.

a) Goal levels:

There are two goal levels for this policy recommendation, and the second goal is dependent upon the first. The first goal is to increase the public benefit charge and funding level to the national average, or a total of $72 million per year. The second goal is to utilize that funding to achieve nearly 1,000 MW in demand and 4,760 GWh in electricity consumption.

b) Timing:

Based on the experience learned in other states, we recommend a three year phase in of public benefits charges. In other states, a dramatic increase in funding levels has led to severe growing pains as administration of such funding was difficult to develop. A three year plan would allow expectations to be more effectively set and realized.

c) Coverage of Parties:

Only investor-owned electric utilities are covered by the NC Utilities Commission. In the current public benefits charge, the municipal utilities and electric cooperatives are also invited to participate. At present, the electric cooperatives participate in the program.

d) Other:

Implementation method(s):

As stated above, we believe the most effective implementation method is to work through the NC Utilities Commission to increase funding in the established program. Not all funds must go to the same organization as is currently administering the fund.

Related Policies/Programs in place:

While NC already has a public benefit charge, it would be valuable to the state in both energy efficiency, air quality and GHG emissions to increase funding and programming. NC has many fine organizations providing energy efficiency services that can be supplemented and improved with a steady and increased funding mechanism.

Type(s) of GHG Benefit(s):

The following GHG benefits are based on the high and low end estimates of energy efficiency potential described earlier. The ORNL study discussed above would provide for higher GHG

benefits but we believe a more conservative estimate is in order. The emissions calculator at the Bonneville Environmental Foundation is used to determine GHG emission reduction potential. Further, we have estimated that 75% of GHG emissions are in the form of CO2.

Potential Energy and Emissions Savings		
Demand Saved (MW)	333	1,000
Energy Saved (GWh)	1,700	4,700
Total GHG Emissions Saved (includes CO2)	766,300 tons	3,167,970 tons
Total CO2 Emissions Saved	571,000 tons	2,376,000 tons

ES-8: Waste to Energy

Under preparation…

ES-9: Incentives for combined heat and power (CHP) and clean DG

Under preparation…

ES-10: NC Greenpower renewable resources program

Under preparation…