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Chairman Markey, Ranking Member Upton, and other members of the Subcommittee, thanks for the opportunity to offer testimony on issues raised by the pending legislative proposal on climate change and energy policy. My name is Jim Kerr and I chair the Energy and Climate Change practice at the law firm of McGuireWoods. I also serve on the Advisory Council to the Board of Directors of the Electric Power Research Institute.

For over seven years prior to returning to private practice, I was a Commissioner on the North Carolina Utilities Commission (NCUC). During that time I served as President of both the National Association of Regulatory Utility Commissioners (NARUC) and the Southeastern Association of Regulatory Utility Commissioners (SEARUC). As President of NARUC, I formed and served on NARUC's Climate Change Task Force which led to the adoption by NARUC of policies supporting economy-wide action by Congress to address greenhouse gases and outlining principles which should guide such action.

While serving on the NCUC, I was fortunate to be able to participate in the development of two landmark initiatives to encourage the development of renewable energy. In 2003, the Commission approved the creation of NC GreenPower, the first statewide voluntary green energy program in the nation. NC GreenPower is an independent, nonprofit organization that uses voluntary contributions from individual and business consumers to fund green power purchases by North Carolina electric utilities and to fund carbon offsets in the form of subsidies paid to generation project owners to reduce or mitigate carbon emissions. In 2007, North Carolina became the first state in the southeastern U.S. to enact a renewable portfolio standard with the state General Assembly's adoption of the Renewable Energy and Energy Efficiency Portfolio Standard (REPS) in Senate Bill 3. Pursuant to the REPS, the NCUC developed new regulations implementing Senate Bill 3 which were approved in early 2008.

Today, I am speaking to you as a counsel to the Electric Reliability Coordinating Council (ERCC), a group of power-generating companies established in 2001, serving millions of consumers in diverse regions of the United States. ERCC works for common sense energy, environmental and climate change policies.

While the Bill before the Committee is a comprehensive take on several complicated issues, including a cap-and-trade program, I will focus my remarks specifically on the renewable energy standard (RES) and on the carbon capture and sequestration (CCS) provisions. As a former public servant and economic regulator, my perspective was always to ensure that regulatory proposals were cost-effective for their intended purpose, and treated customers equally and equitably as a whole and across regions. From that perspective, I believe the Bill represents a good-faith effort to address the important topics of clean energy and climate change. These are topics that we, as a nation, are ready and willing to address. However, as with many legislative starting points, I also believe the Bill will need substantial work before it can become equitable and cost-effective public policy.

I believe, in particular, a national RES can be problematic from a cost-effectiveness and regional equity perspective. Renewables will be an important element in reducing our carbon emissions and decarbonizing our power fleets. But good, and by good, I mean cost-effective, renewable resources are not available equally in all regions of the country. Yet mandating a national RES requires power companies across the country to select renewables for a defined amount of carbon compliance regardless of their cost. That is a function that a carbon trading market is expected to resolve in a way that is most cost effective for the individual company.

The regional disparity in available cost-effective renewable resources also creates inequities among customer classes by region, a problem that is not solved by a renewable trading program because such a program simply directs investment capital from renewable poor state to renewable rich ones. I am thus concerned that a national RES effectively picks winners and losers in ways that are cost-ineffective and inequitable. While I cannot say that I am in favor of a national RES, since I do not see the need in the presence of a carbon cap-and-trade program, I do have some suggestions I will make later to tailor an RES to limit its inequities and cost issues.

Renewable Energy Standard

1. The need for a federal RES?

In legislation designed to address climate change through a cap and trade policy, the purpose of a federal RPS is not readily apparent. The Waxman-Markey draft imposes an RES, an energy efficiency resource standard (EERS), and a cap-and-trade program all at the same time. Two of these, the RES and the EERS, are mandated carbon reduction performance standards to be done regardless of cost, while the cap-and-trade program is a market–based proposal specifically intended to provide the least cost solution to carbon reduction requirements. Hence, these policies are at best redundant and at worst contradictory.

The cost-effectiveness of a trading regime is based upon the premise that the regulated community should have a choice of regulatory options – from reductions to credits to offsets, from fuel switching to new technology – in order to achieve compliance. In addition, utility least cost planning and prudence standards also ensure that power companies seek the lowest cost solution. By contrast, the RES mandates a specific set of technological choices in the manner of a command-and-control regulatory policy, and regardless of cost. The market-based least-cost objective of the cap-and-trade program is thereby undermined by the RES, and for no additional policy benefits. In effect, the RES is simply an economic bet that renewables up to the full amount of the RES will prove more cost effective than all the other carbon reduction alternatives the market might otherwise select. Nor is this an idle bet, since compliance with the RES may produce one-third or more of the carbon reductions called for under the legislation's proposed cap in 2020. More troubling, in the face of this economic bet, there appears to be little cost analysis supporting it. The cost impacts of layering in the RES and efficiency performance standards over the cap-and-trade program have not yet been assessed, and any cost assessments of the Bill's cap-and-trade program must include simultaneous implementation of the RES and EERS a hard and fast assumption, or the analysis will be meaningless.

As the Harvard Electricity Policy Group found, efficient climate policies are global, economy-wide, directed at emissions, market-based, and aimed at creating new technologies. The RES, by contrast, addresses planning and resource issues which have traditionally been local or regional matters, is limited to the electric sector, is command-and-control in nature, does not even mention the carbon emissions it seeks to reduce, and focuses attention on the limited suite

of renewable technologies, to the potential exclusion of others. In many respects, the policy is "the opposite of a desirable climate policy."[1]

If the purpose behind an RES is simply to encourage the use of renewables, it is still unclear if a federal mandate is needed given the plethora of adopted state RES mandates. First, based on existing state renewable policies and market conditions, the North American Electric Reliability Council (NERC) has estimated a massive expansion in renewable resources added to the North American bulk power system in the next decade. Even if only half of the predicted capacity comes into service, it will represent a 350% increase in variable resources over what existed in 2008. Absorbing this expansion already strains the system in a manner that could pose "reliability concerns as well as economic consequences" if not planned properly.[2]

Second, considerable encouragement for renewables will come from the proposed cap and trade program because it will provide a "price" for carbon – which in turn will incentivize low-carbon or no-carbon energy. Further, the President – in signing the recent economic stimulus package – has put aside some $71 billion for green-technology development. Given these elements, as well as existing policy incentives for renewables, it is not clear that an RES is necessary to further encourage development of renewables or the U.S. renewables industry.

2. The cost of a federal RES

There is no doubt that a federal RES will impose costs, that those costs might be higher than other carbon reduction alternatives, and that those costs will not be borne equally by all regions of the nation. Some preliminary data gathered on the impacts on consumers of a proposed renewable portfolio standard in one Midwestern state yielded some troubling results. If utilities in that state were to actually build renewable electricity sources to comply with the mandate, ratepayers could see their rates increase by roughly 31% over estimated rate levels in 2025. If the alternative compliance option were chosen, electric rates over the same period could increase by roughly 21% - however the policy would thereby result in no net increase in renewable energy in Missouri and no carbon reductions in that state.

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1 W. David Montgomery, Harvard Electricity Policy Group, Renewable Portfolio Standards: A Solution in Search of Problem?, CRA International, May 20, 2005, at

2 NERC, Accommodating High Levels of Variable Generation, April 7, 2008, at i and iii.

Increases in renewable energy requirements also carry significant additional costs to address transmission needs. NERC recently reported that, "High levels of variable generation will require significant transmission additions and reinforcements to move wind, solar, and ocean power from their point sources to demand centers and provide other needed reliability services, such as greater access to ramping and ancillary services."[3] One analysis has found that addressing transmission bottlenecks for renewable power can cost some three times more than with other types of energy resources since generation sites are distant and transmission must be sized to meet generation maximums that will rarely be hit by variable renewable resources.[4]

3. Regional differences and a federal RES

Under the draft Bill, utilities that cannot meet the percentage requirement for renewables in their system could pay a certain charge – an alternative compliance payment of 5 cents per kilowatt hour – in lieu of meeting the requirements. Some areas of the country simply do not have access to the same level of certain traditional and cost effective renewable resources as other parts of the country. For example, the very limited and very cost-ineffective solar and wind resources in the Southeast and in much of the Midwest make it unlikely that the aggressive RES timetable and targets can be met in those regions, forcing companies – and their customers – in those regions to make instead substantial alternative compliance payments. These payments would adversely impact consumers in those regions, yet provide little or no benefit to them. In other words, citizens in resource-poor states pay an inflated cost yet gain no renewable or carbon benefit.

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3 NERC at ii.

4 PNUCC, Renewable Portfolio Standards, May 4, 2007, at http://www.pnucc.org/documents/PNUCCRPSPostionPaper.pdf.

The Southern Legislative Conference of the Council of State Governments observed that, "[a] federal mandate fails to recognize the significant differences among states in terms of available and cost-effective renewable energy resources, and the impact on consumers' electric bills."[5] This point was recently underscored by a bipartisan resolution adopted by the Mississippi State Senate, finding that because of adverse impacts on "our state's people and overall economy through increased energy costs to consumers" the US Congress should "forego the imposition" of the RES "until such time as technological advancements allow for efficient and cost-saving implementation."[6]

The very states that have the most limited available renewable resources would clearly pay the most in these alternative payments. However, these payments will go to those states that are already blessed with significant access to wind and solar locations, thereby subsidizing the RES compliance requirements for states that have abundant renewable resources. As a consequence, the federal RES will perpetrate a massive income and jobs transfer of otherwise needed investment capital from "have-not" states to "have" states – working tremendous regional unfairness, particularly to the Southeast and Midwest. If instead, RECs are purchased to comply with the RES, and renewable facilities in the "have" states are thereby constructed, that will subsidize efforts to decarbonize the power fleets of the "have" states. In both cases, having provided compliance subsidies to the "have" states, ratepayers in the "have not" states will have to pay again to generate their own carbon reductions to comply with the carbon cap. At the very least, funds collected for alternative compliance in particular states must be spent within those states on energy and efficiency programs so that ratepayer dollars will at least generate jobs and carbon reductions in their own states.

4. Limitations on the choice of energy sources

Severe limitations on which energy sources satisfy the compliance obligations of the proposal further compound these regional imbalances. Because wind and solar are very limited in their regional availability, it is troubling to see that the current language does not allow waste-to-energy or existing hydroelectric power to qualify as renewable. Further, energy efficiency is

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5 Southern Legislative Conference, Policy Position Regarding Federal Renewable Portfolio Standards, July 14, 2008, at http://www.slcatlanta.org/meetings/OKC_08/RPS_final.pdf.

6 Senate Concurrent Resolution No. 689, adopted 45-5, Mississippi State Senate, 2009 Regular Session.

limited to no greater than one-fifth of the compliance obligation, where sound policy and equity direct that efficiency gains should be allowed to satisfy as much of any RES as possible. In addition , nuclear power – while producing neither carbon dioxide nor conventional air pollutants – is not only excluded from compliance; it is included in the baseline of non-qualifying energy sources making its treatment roughly the same as coal, natural gas, or even bunker oil. These efforts to "pick winners and losers," between resources and, effectively, citizens, must be changed.

In the Southeast, it is often suggested that biomass could help satisfy an RES because forests in the region account for some 29% of total US forest reserves. That suggestion is probably incorrect, for several reasons. First, Southeastern forests already supply some 60% of the fiber for US timber product output. Second, recent federal mandates for cellulosic ethanol also rely in part on a cost-effective supply of woody biomass as feedstock.[7] Third, the supply of biomass for energy needs in the South alone is not likely to be sufficient to meet RES needs. The Bill complicates the equation further by adopting an overly-restrictive definition of biomass that qualifies under the standard. For example, utilities in Georgia alone would require another 2300 megawatts of biomass generating capacity to meet a 20% RES. While the largest biomass facilities are only planned for about 100 megawatts, 2300 megawatts would require almost 4 million acres of forest to harvest enough biomass – that land area would equal about eleven counties in Georgia![8]

5. Impacts on natural gas demand

Some have suggested that simultaneous implementation of an RES and a climate change policy could lesson demand for natural gas by driving power providers away from natural gas and towards renewables. Unfortunately, we are likely to see the opposite result. Unlike natural gas or coal, which can be extracted and stored or transported for later use, renewable power is

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7 G. Comatas and J.L. Shumaker, Effects of Renewable Energy Mandates on the Sustainability of Forests in the Southeastern U.S., available at www.pinchot.org/uploads/download?fileId=222.

8 Stan Wise, Georgia Public Service Commissioner, Statement before Subcomm. on Energy and the Environment, House Comm. on Energy and Commerce, Hearing on Renewable Energy (Feb. 26, 2009) at http://energycommerce.house.gov/Press_111/20090226/testimony_wise.pdf.

highly variable and must be backed up. The most likely candidate to support these variable renewable resources is natural gas.[9]

Notably, several regional transmission organizations and the TVA recently issued a report which shows that in the eastern U.S. when electric demand is at peak load wind is only available 30% of the time. The report goes on to conclude that the gap between that 30% and meeting 100% of the demand will have be filled by building natural gas fired generating capacity. The same report also shows that the Eastern US would need to build approximate 115,000 large windmills if it were to satisfy a 20% RES.[10]

6. A more sensible RES?

As stated in the beginning, we are for a cost-effective and equitable climate change policy, and we have pointed out aspects of the national RES that do not meet these criteria. Although on this basis, we believe a persuasive case has not yet been made for a one-size-fits-all federal RES – particularly in light of a pending federal climate change trading system – there are several points Congress should keep in mind if it should proceed with a national RES:

- A federal RES should set a more sensible renewable requirement (for example, 10% - not 20% or 25%), and should moderate, or phase in, the amount of renewables required over time to avoid price spikes;
- A federal RES should contain a rate impact cap (cap rate impacts attributable to the RES at a certain percentage, e.g. 1% per year). Some states have rate impact caps, but the current federal proposal has none. Any law should also conduct periodic reviews of the renewable program to determine impacts on consumers;
- A federal RES should allow for unlimited use of energy efficiency measures as a means of compliance to the greatest extent possible. Energy efficiency, available across all regions of the country, should be placed on "equal footing" with new generation - megawatts saved are as effective as any zero-emissions technology;
- A federal RPS should allow for a lower alternative compliance payment e.g., 1.5 cents /kWh as opposed to the 5 cents/kWh in the current proposal. Utilities should have the option of paying their alternative compliance payments to their states, but at the very least any such payments must be made available to fund projects within the state that generated the payments;
- A federal RES should allow existing nuclear generation to be subtracted from the baseline, and new nuclear energy, all hydroelectric and waste-to-energy to count toward meeting the requirement; and

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9 NERC at i-ii.

10 Wise at 3.

- A federal RES should terminate upon enactment of carbon legislation so that the market determines the most cost-effective means of compliance.

Carbon Capture and Sequestration

As a general proposition, ERCC supports the policy goals of legislation designed to support the research, development and deployment of carbon capture and sequestration (CCS) technology. Coal represents over half of the electricity generated in the United States today. As an energy source, coal is reliable, affordable, and domestically produced. Therefore, as society seeks to address carbon emissions, CCS will be an important part of maintaining the viability of coal in the national energy equation. ERCC understands the need for broad-based funding mechanisms to support CCS and looks forward to working with the Committee in perfecting its approach.

We hope the Committee will keep the following points in mind as it deals with CCS development and deployment:

- The federal government must make realistic assumptions regarding the viability and commercial availability of CCS technology as it calibrates its carbon trading program. Emissions timetables and target assumptions are based on how robust CCS technology will be at any given time. If the technology does not advance as planned, Congress must allow the government to conform its timetables and targets accordingly;
- The goal of developing CCS is inconsistent with the federal RES as drafted. Because the size of the RES is significant, and the range of renewable technologies is so limited under, the legislation may create undue focus on those technologies. That will draw attention and resources away from CCS and into a limited range of geographically-limited renewables. Congress should consider counting clean coal applications with CCS towards RES compliance in order to level the regional playing field;
- Congress should think more broadly in terms of the CCS technologies it supports. The current draft seems limited to geological sequestration. The flexibility to consider perfecting terrestrial carbon sinks or mineralogical sequestrations processes should be considered. As broad an array of CCS technologies as can be used to allow affordable and reliable coal is an obviously desirable policy objective;
- The current proposal is weak in terms of providing appropriate liability protections for geological sequestration. Part of providing an inviting investment climate for CCS is to firmly establish that the government will share in the potential liabilities, much as it has done in the context of Price-Anderson for the nuclear industry; and
- Funding mechanisms for CCS research, development and deployment must be carefully monitored. On the one hand, the funding mechanism must not become a target for increases to address other programs; on the other hand, monies raised must be spent as suggested – and not diverted for other purposes through the budgetary process.

The task of balancing conflicting command and control regulations like the RES, the Energy Efficiency Resource Standard, performance standards for new coal-fired plants, and a Low-Carbon Fuel Standard with a market-based carbon trading program is daunting if not impossible, and seemingly unnecessary. Given the tremendous economic consequences for the entire US economy, and the perilous state of our economic recovery, we urge this Committee to undertake a full deliberative process and to understand the needs of consumers and businesses in all regions of the United States.

Thank you for the opportunity to testify.