Report to the

Environmental Review Commission

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Evaluation of the Natural Resource Impacts of the Woody Biomass Industry in North Carolina

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Submitted by the

North Carolina

Environmental Management Commission

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Executive Summary

Senate Bill 3 (session law 2007-397) created a renewable energy and energy efficiency portfolio standard for North Carolina. Among other things, the law requires North Carolina's three utility companies to meet 12.5% of their annual electricity output with renewable energy by 2021. The bill requires the utilities to meet specific benchmarks in earlier years beginning in 2011.

Senate Bill 3 also provides the Environmental Management Commission (EMC) with the authority to evaluate renewable energy technologies and establish environmental standards where existing regulatory programs are insufficiently protective.

Pursuant to this authority the EMC has been evaluating the potential impacts of biopower facilities that generate electricity through the process of burning woody biomass[1]. Biopower from woody biomass is typically generated one of two ways. First, a facility can directly burn wood to generate steam to drive a turbine. The second method, co-firing, involves using wood in place of a portion of the coal burned in conventional coal-fired power plants. Biopower facilities have a number of potential environmental impacts ranging from air quality emissions to increased pressure for more intensive harvesting on the state's forestlands.

The EMC's evaluation of woody biomass facilities and their potential environmental and natural resource impacts was guided by a Technical Advisory Group (TAG). The TAG was comprised of representatives from the forest products industry, utility company representatives, state natural resource agency officials, environmental advocates and academics from North Carolina State University. The TAG reached general agreement that the creation of demand by the mandates of Senate Bill 3, particularly in combination with the demand for biomass from the biofuels goals, could have a significant impact on the market for woody biomass in the state.

At the same time it is important to understand that the degree and type of environmental impacts will be significantly affected by what is included within the categorization of eligible woody biomass. It was generally acknowledged that due to the lack of data and insufficient experience with similar scenarios, it is difficult to project with a high degree of certainty that the types and degrees of environmental impacts that can be expected. Nevertheless, the EMC has concluded that, without proper protections, significant impacts are possible in the areas of land use (e.g. conversion of old growth forest to plantation), soil nutrient deterioration, water quality degradation, destruction of wildlife habitat, ecosystem disruption, air quality and ash deposition.

[1] Woody biomass generally refers to the tops, limbs and other residuals that are left on the forest floor following a traditional harvest for timber. The usage of the term in this report, given the uncertainty of the North Carolina statutory definition of "biomass," may have a broader meaning.

The EMC also identified key policy issues that will have a direct impact on the future growth of the woody biomass market; in some cases those issues were outside the EMC's statutory charge but were identified because of their significance to the development of this market as well as to the potential for environmental harm.

The work of the EMC revealed a number of uncertainties in this policy arena that need to be addressed. For example, under the current regulatory scheme there are differing interpretations of the definition of "biomass resources." In its most basic form, the policy decision at issue is whether the General Assembly, with the passage of Senate Bill 3, intended for whole trees to be burned for electricity generation. If the definition of biomass is intended to encompass whole trees, as previously noted, the potential for landscape level impacts are increased. Under the current regulatory scheme, the North Carolina Utilities Commission is determining on a case-by-case basis what constitutes eligible biomass and appears to be interpreting the language broadly. Therefore, the need for environmental protections in this area is immediate.

This process has led the EMC to identify several policy issues that are important to this emerging industry[2] and that need to be addressed prior to significant growth in the woody biomass sector to ensure protection of the state's natural resources. The findings and corresponding recommendations identified in this report are listed below:

Environmental and Natural Resource Impacts

- *Finding: The use of woody biomass for energy production has a broad range of potential impacts that, without adequate safeguards, could be harmful for the environment, public health and culture of the State.*
- **Recommendation: The EMC should continue to study and analyze the environmental ramifications of the broader utilization of woody biomass and should develop guidelines and regulations necessary to minimize harmful impacts on North Carolina's natural resources.**

Definition of Biomass

- *Finding: The differing interpretations of the statutory definition of "renewable energy resource" as applicable to "biomass" result in uncertainty and confusion as to the types of biomass resources eligible under the Renewable Energy Portfolio Standard, and could*

[2] Two applications for new wood-burning biopower facilities have been filed with the North Carolina Utilities Commission. One in Hertford County and the other in Nash County.

allow for an ad hoc application of a broad definition without adequate environmental safeguards.

- **<u>Recommendation:</u> The General Assembly should clarify the definition of "renewable energy resource" in relation to woody biomass. A broad definition that allows the use of whole trees should be adopted only in conjunction with sustainable management requirements. Such requirements should mandate that to be eligible for credit under the RPS mandates, woody biomass must be harvested in accordance with standards and practices that are protective of continuing forest productivity, ecosystem health, soil quality, water quality and biodiversity conservation.**

Sustainable Management

- *<u>Findings</u>: 1) There are currently no standards or guidelines that require the sustainable management of the utilization of woody biomass. Sustainability refers to continuing forest productivity as well as to ecosystem protection, water and air quality protection, and biodiversity protection. 2) The state created market for biopower will create pressure on the sustainable use of our forest resources, and therefore must be guided and monitored to avoid adverse impacts.*

- **<u>Recommendations</u>: 1) The General Assembly should require the adoption of forest management guidelines or adoption of third party sustainability standards by power generators and biofuel producers for these state created markets. Such guidelines will require that forest management plans adopted by the power and fuel generators will be protective of forest productivity, wildlife habitat, riparian buffers and other sensitive areas. Further, suppliers shall be required to certify that harvests were conducted in accordance with the requirements of the forest management plans. 2) The General Assembly should support ongoing studies related to the impacts of harvest of forest residuals on wildlife habitat, soil conservation and forest health, and direct the development of harvest guidelines as appropriate.**

Forest Productivity

- *<u>Finding</u>: Current funding sources for forestry and landowner incentive programs may be inadequate to encourage increased productivity of the state's forestlands needed to supply feedstocks for biopower and biofuels.*

- **<u>Recommendations</u>: 1) The General Assembly should enhance existing programs and explore new programs that promote increased forest productivity. 2) The General**

Assembly should explore new sources of revenue for such programs, such as extending the current forest product assessment to all wood harvested.

Application to Biofuels

- *Finding: Under current law, any environmental standards or regulations adopted by the EMC for woody biomass utilization for biopower purposes would not apply to woody biomass utilization for the purposes of making biofuels. As a result, there is the potential for an unlevel playing field as these two emerging industries compete over limited feedstocks.*

- **Recommendation: The General Assembly should require that any rules or standards that are developed for woody biomass utilization for power generation are equally applicable to utilization for biofuels.**

Monitoring and Data Collection

- *Finding: Current data collection is inadequate to inform state policy makers and regulators of the impact of biomass harvesting. New technologies can facilitate better data collection without unreasonable expense to harvesters and power generators.*

- **Recommendation: The General Assembly should provide resources for data collection and monitoring efforts to better inform policy development related to woody biomass facilities.**

Ongoing Assessment

- *Finding: Oversight of the impacts of the woody biomass market is currently spread across a number of state entities and agencies, such as the Utilities Commission, the Environmental Management Commission, the Wildlife Resources Commission, the Division of Forest Resources and the Energy Policy Council.*

- **Recommendation: The General Assembly should direct the formation of an inter-agency task force charged with the oversight of the growth of the woody biomass market in North Carolina. The task force should be required to periodically provide updates to the appropriate legislative committees.**

North Carolina's woody biomass feedstocks are a cost-effective renewable resource and are critical to meeting the renewable energy goals in Senate Bill 3. The state has an opportunity to ensure that emerging biomass markets protect and enhance natural resources, provide increased revenue for landowners and provide jobs in rural communities. To capitalize on that

opportunity, the state must provide clear and definitive policies that will guide the woody biomass market.

Background

Session law 2007-397, more commonly referred to as Senate Bill 3, created a renewable energy and energy efficiency portfolio standard for North Carolina. The purposes of the portfolio standard as outlined in the session law are to diversify energy resources, encourage private investment in renewable energy and improve air quality.

Outside of the legislatively required specific "set-asides" for solar energy, swine and poultry wastes, Senate Bill 3 provides the utilities with the flexibility to meet the renewable energy benchmarks without mandating a specific mix. During discussions among stakeholders as the legislation was developed, it was widely assumed that burning woody biomass would account for at least the majority of any new renewable energy generated pursuant to the legislation. Consequently, the development of the woody biomass market is critical to the success of the overall renewable energy market in North Carolina.

Included in Senate bill 3 was a provision directing the EMC to evaluate renewable energy technologies. The statutory language reads as follows:

> The Commission may establish a procedure for evaluating renewable energy technologies that are, or are proposed to be, employed as part of a renewable energy facility, as defined in G.S. 62-133.7; establish standards to ensure that renewable energy technologies do not harm the environment, natural resources, cultural resources, or public health, safety or welfare of the State; and, to the extent that there is not an environmental regulatory program, establish an environmental regulatory program to establish these standards.

Following the passage of Senate Bill 3, the EMC established a Renewable Energy Committee (Committee) for the purposes of evaluating and identifying whether appropriate regulatory programs for renewable energy facilities are in place to guide their development.

In late 2008 and early 2009 the Committee focused on developing a regulatory framework for a wind permitting program. This work culminated in the delivery of a report and recommendations for legislation to the General Assembly in March 2009.

Following its work on wind, the Committee turned its attention to the potential environmental impacts of woody biomass facilities. Since its inception the Committee has acknowledged that

all renewable power generating sources, including solar, wind and woody biomass, will have some adverse environmental impacts. For example, solar farms may have land use impacts, while wind farms raise viewshed concerns and could potentially harm birds and bats, among other adverse impacts. Recognizing that some type of impacts are inherent with energy generation, the Committee's efforts have been guided both by recognition of the environmental benefits of the utilization of renewable energy resources and by the need to limit and manage any potential adverse environmental and natural resource impacts from these facilities.

It was within this context that the Committee undertook an evaluation of the potential environmental and natural resource impacts of biopower facilities fueled by woody biomass. The use of woody biomass for energy production has a broad range of potential environmental, health and cultural impacts. These include, without limitation: land use (land in forest and forest type) water quality; air quality; soil conservation; wildlife habitat; biodiversity; atmospheric carbon; scenic; and ash deposition.

The Committee's work assumed existing air regulations were sufficiently protective of air emissions, although air quality issues were discussed to a limited degree during the Committee's deliberations of woody biomass facilities. For example, the Committee was presented information related to the issue of whether the federal Clean Air Act rules regulating commercial and industrial solid waste incinerators (CISWI) apply to combustion units using untreated wood as fuel. Application of the incinerator rules to woody biomass combustion would require more stringent air quality controls and could limit use of woody biomass for biopower purposes. DENR, in consultation with the NC Attorney General's Office, determined that woody debris harvested after completion of logging or land-clearing activity and transported or stored for use as a fuel is not a solid waste. Consequently, the combustion of this material would not require compliance with incinerator rules (*See Appendix I*).

Furthermore, just as the legislative committees heard reports from the Division of Air Quality during its deliberations on Senate Bill 3, the Committee heard the same reports on the emissions of wood fired plants. Counter to the stated goals of Senate Bill 3, those reports indicate that a wood burning facility will have higher emissions than a new state-of-the-art coal plant for some pollutants, including particulate matter and NOx. Although woody biomass is a renewable resource, combustion of woody biomass does generate greenhouse gas emissions, but to a lesser extent in comparison to a coal burning facility.

The majority of the Committee's review of woody biomass facilities focused on those sets of environmental impacts that would likely arise from increased harvesting, changes in harvesting

practices and land use conversions to meet a growing demand for feedstocks given the new state created market for biopower.

Woody Biomass Technical Advisory Group

With the assistance of the North Carolina State University Solar Center the Committee convened a Woody Biomass Technical Advisory Group (TAG) to provide assistance to the Committee in the deliberation of these matters. The TAG consisted of representatives from the forest products industry, utility company representatives, state natural resource agency officials, environmental advocates and academics from North Carolina State University. (*For a full listing of TAG members see Appendix II*)

The TAG was charged with providing technical data as well as identifying policy matters for consideration by the Committee. During the course of four meetings held over several months the TAG heard presentations from the NC State School of Forestry, NC Division of Forest Resources, NC State Forestry Extension, and others. The TAG evaluated existing forestry regulations and potential economic changes to the woody biomass markets. The TAG also received information on laws and regulations from other state's governing the utilization of biomass (*See Appendix III, Memorandum to Dickson Phillips from Steve Wall outlining actions taken by other states*). TAG members were invited to submit specific policy recommendations for the Committee's consideration (*A copy of submitted comments can be found in Appendix IV)*

Overview of the TAG Discussion Points

Below is a list of a few of the major discussion points identified during the TAG proceedings (it should be noted that the issues listed in no way reflect the views of all TAG members):

- The current definition of renewable energy resource in Senate Bill 3 provides for varying interpretations.
- The combined demand for power generation and biofuel production likely could not be met with wood waste or wood residuals alone.
- The new woody biomass market created by Senate Bill 3 has the potential to significantly increase demand for harvested wood, including increased harvesting specifically for woody biomass.
- Increased harvesting could lead to pressure to convert natural forests to plantations.

- Through more intensive forest management practices, and funding and education regarding the same, the existing average productivity of forests in this state could be increased in multiples.

Existing Forestry Regulations

The TAG reviewed the current regulatory framework for forestry operations. North Carolina has mandatory forest practice guidelines (FPGs) related to water quality which are defined by the Administrative Code (15A NCAC 01I .0100-.0209). All forestry activities must comply with the FPGs to remain exempt from the permitting and other requirements in the North Carolina Sedimentation and Pollution Control Act. Best Management Practices are the methods or practices that can be implemented to stay in compliance with the FPGs.

North Carolina has no requirement that a forest owner have a forest management or harvest plan, nor is there a requirement for pre-harvest or post-harvest notification or reporting. North Carolina does not have restrictions, except in limited circumstances, on harvesting from sensitive areas, such as old growth forests, riparian buffers or wetlands.

Policy Decisions

The EMC has identified below several major policy decisions that need to be addressed to ensure that the woody biomass market develops and does so in a sustainable manner for the long term benefit of the state.

Issue: Environmental and Natural Resource Impacts

As noted above the degree and type of environmental and natural resource impacts will be significantly affected by what is included within the categorization of eligible woody biomass. The areas of these impacts could include land use changes; water, air and soil quality; wildlife habitat; biodiversity; accumulation of atmospheric carbon; scenic changes; and ash deposition and disposal. While the burning of woody biomass to generate electricity has the advantage, like coal, of being usable for base load, its potential unfavorable environmental impacts are greater than other renewable resources such as wind and solar.

In particular the EMC evaluation has concluded that there will be increased harvesting, including more harvests specifically for biomass. Such harvests have some greater intensity of clearing than do harvests without a biomass component, with implications for water quality, soil conservations and wildlife habitat. There will also be pressure to convert natural forest to plantation. Conversion could include conversion not only to forest plantation but also to other forms of “energy crops.”

<u>Finding:</u> The use of woody biomass for energy production has a broad range of potential impacts that, without adequate safeguards, could be harmful for the environment, public health and culture of the State.

<u>Recommendation:</u> The EMC should continue to study and analyze the environmental ramifications of the broader utilization of woody biomass and should develop guidelines and regulations necessary to minimize harmful impacts on North Carolina's natural resources.

Issue: Definition of Biomass

Senate Bill 3 defines, in part, "renewable energy resource" as a solar electric, solar thermal, wind, hydropower, geothermal, or ocean current or wave energy resource; **a biomass resource, including agricultural waste, animal waste, wood waste, spent pulping liquors, combustible residues, combustible liquids, combustible gases, energy crops, or landfill methane** (emphasis added).

As written the definition of renewable energy resource allows for a range of interpretations as to what the legislature intended to include as a biomass resource. The resolution of this issue is a critical policy decision when viewed in the context of recent data from N.C. State which illustrates that the amount of wood residuals or "wood waste" will likely be insufficient to meet both biopower and biofuels goals.

One view of this definition is that it is intended to encompass all woody biomass resources and is not restricted to wood waste. The acceptance of this interpretation in its most basic form would allow the use of any type of woody biomass resource to meet the mandates of Senate Bill 3, including the harvesting and burning of whole trees. The North Carolina Forestry Association supports this broad interpretation and submitted comments to the Committee stating such. In the TAG meetings representatives of the utility companies have also expressed their position that this is their favored interpretation and have questioned whether the Senate Bill 3 mandates can be met with a more restrictive definition.

Another view of the definition is that it is intended to be narrowly read and restricts biomass resources to wood waste. Supporters of this position contend that the listing of biomass sources in the definition is done for limiting purposes rather than illustrative purposes. Comments were submitted to the Committee by the Southern Environmental Law Center in support of this interpretation. Furthermore, the current statute does not define wood waste. It is imperative from a policy perspective to include some further legislative guidance and clarification of the meaning of the phrase "wood waste."

The current regulatory framework in place would resolve these differing interpretations at the NC Utilities Commission. The Utilities Commission in its rulemaking for Senate Bill 3 chose not to further define the biomass resource, but rather stated it should be a case by case decision. The Commission concluded that "rather than potentially limit the definition of biomass on the basis of an incomplete record in this rulemaking proceeding, the Commission concludes that the statutory definition of "renewable energy resource" is sufficient."

A recent ruling by the Utilities Commission in a request for Declaratory Ruling by the Water and Sewer Authority of Cabarrus County found that biosolids (the organic material remaining after the treatment of domestic sewage) is a renewable energy resource for combustion purposes. The Utilities Commission in the order writes, "G.S. 62-133.8(a)(8) includes any biomass resource, listing several examples without limitation." The Commission's order indicates that it will interpret the definition of biomass resource very broadly.

The potential environmental impacts of this industry are very significantly affected by the resolution of this definitional issue. Therefore, to enhance the growth of this industry and to ensure strong environmental safeguards are in place, it is imperative that the state clearly and definitively establish what constitutes "eligible biomass" for purposes under Senate Bill 3.

Finding:

The differing interpretations of the statutory definition of "renewable energy resource" as applicable to "biomass" result in uncertainty concerning the types of biomass resources eligible under the Renewable Portfolio Standard, and could allow for an ad hoc application of a broad definition without adequate environmental safeguards.

Recommendation:

The General Assembly should clarify the definition of "renewable energy resource" in relation to woody biomass. A broad definition that allows the use of whole trees should be adopted only in conjunction with sustainable management requirements. Such requirements should mandate that to be eligible for credit under the RPS mandates, woody biomass must be harvested in accordance with standards and practices that are protective of continuing forest productivity, ecosystem health, soil quality, water quality and biodiversity conservation.

Issue: Sustainable Management

Placing a sustainability requirement on power generators or landowners conducting biomass harvests is a policy already in place in other states. The suggestion for such a requirement is grounded on the recognition that the new market for woody biomass created by the legislative mandates could have far-reaching but currently unforeseeable impacts. A sustainability requirement could take several forms. One form would require a power generator to develop its own forest management plan and certify that its suppliers of woody biomass are meeting the requirements of the plan. Such a plan could require management practices designed to conserve biological diversity and forest productivity and health, and potentially protect higher value forests and lands.

Some states have addressed the potential for increased harvesting or changes in harvesting practices through the development of harvesting guidelines specifically developed for the harvesting of woody biomass. In most cases these guidelines are voluntary and address such issues as wildlife and biodiversity, water quality and soil productivity.

Other policy actions, such as restricting harvesting of biomass from riparian buffers or a specific type of wetlands, would be another step for the legislature to take that could ensure increased biomass harvests do not lead to degradation of water quality. Furthermore, some states in an attempt to stop conversion of old growth forests to energy plantations have chosen to exclude any wood from an old growth forest as an eligible biomass for purposes of their state's Renewable Energy Portfolio Standard.

Findings:

There are currently no standards or guidelines that require the sustainable management of the utilization of woody biomass. Sustainability refers to continuing forest productivity as well as to ecosystem protection, water and air quality protection, and biodiversity protection.

The state created market for biopower will create pressure on the sustainable use of our forest resources, and therefore must be guided and monitored to avoid adverse impacts.

Recommendations:

The General Assembly should require the adoption of forest management guidelines or adoption of third party sustainability standards by power generators and biofuel producers for these state created markets. Such guidelines will require that forest management plans adopted by the power and fuel generators will be protective of forest productivity, wildlife habitat, riparian buffers and other sensitive areas. Further, suppliers shall be required to

certify that harvests were conducted in accordance with the requirements of the forest management plans.

The General Assembly should support ongoing studies related to the impacts of harvest of forest residuals on wildlife habitat, soil conservation and forest health, and direct the development of harvest guidelines as appropriate.

Issue: Forest Productivity

Due to the pending resource demands placed on the state's forests from the biopower and biofuels programs, there is a need to develop a statewide effort to increase the productivity of existing forests. The Committee identified the potential for increasing the productivity of our state's forestland through increased cost-share or other incentive programs with landowners.

One potential funding source for increasing incentive programs could include a more equitable forest product assessment. Under the current Forest Product Assessment Act, not all wood processed in North Carolina is being taxed in the same manner, including wood moving out of state or overseas. This disproportionately hurts in state processors and limits the revenue available for incentive programs.

Finding:

Current funding sources for forestry and landowner incentive programs may be inadequate to encourage increased productivity of the state's forestlands needed to supply feedstocks for biopower and biofuels.

Recommendations:

The General Assembly should enhance existing programs and explore new programs that promote increased forest productivity.

The General Assembly should explore new sources of revenue for such programs, such as extending the current forest product assessment to all wood harvested.

Issue: Application to Biofuels

North Carolina has a goal that by 2017 10% of the liquid fuels sold in the state will be locally grown and produced. The goal equates roughly to 600 million gallons of biofuels per year and could create a significant demand for woody biomass as a feedstock for development of biofuels. Impact from the use of woody biomass for power generation cannot be assessed without also considering impacts from the prospective demand for woody biomass conversion to biofuels. Thus, the North Carolina Biofuels Center has been an active and helpful participant in these policy discussions from the outset and has submitted written comments in support of a comprehensive approach to this issue.

The development of standards on woody biomass harvesting for biopower purposes, while ignoring harvesting for the biofuels sector would create an unlevel playing field. The biofuels sector like the biopower program is being driven by a legislatively established program. As such, it would logically follow that each should be subject to the same types of restrictions, if any are developed. During Committee discussion and the TAG deliberations there was no opposition expressed to the idea that any standards applicable to woody biomass for biopower should also apply to biofuels.

One way of addressing this needed change would be to amend the current EMC authority from Senate bill 3 (N.C.G.S. 143B-282(a)(6)) and broaden that authority to the biofuels sector.

EMC Finding:

Under current law, any environmental standards or regulations adopted by the EMC for woody biomass utilization for biopower purposes would not apply to woody biomass utilization for the purposes of making biofuels. As a result, there is the potential for an unlevel playing field as these two emerging industries compete over limited feedstocks.

Recommendation:

The General Assembly should require that any rules or standards for woody biomass utilization for power generation are equally applicable to utilization for biofuels.

Issue: Monitoring and Data Collection

One of the consensus items of discussions during the TAG meets centered on the importance of capturing and analyzing data to help inform the policy-making process. The TAG received comments from DENR's Division of Natural Resources Planning and Conservation suggesting relevant data types be collected, including:

- Geographic information documenting the location of biomass harvests and the extent of the acreage that provided the biomass;
- Source of the biomass harvest and whether the biomass harvest was paired with harvesting for other purposes; and
- Post-harvest land use and whether a native forest is being converted to an energy crop.

The Division of Forest Resources also compiled a summary of the current data collection efforts underway at the state and federal level. Some of the information collection efforts already in place include the Forest Best Management Practice (BMP) Implementation Survey and the Forest Inventory and Analysis Program. The Forest BMP Implementation Survey could potentially be expanded to gather additional biomass related information. The survey work requires dedicated salary funding.

In addition, research studies being conducted by the NCSU Forestry Extension and the NCSU Department of Forestry and Environmental Services have the potential to help illuminate the potential impacts a growing biopower market may have on our state's farm and forest lands. The first of these studies is intended to develop a statewide inventory of available woody biomass, while the second study is focused on the impacts on wildlife from woody biomass harvesting.

Finding:

Current data collection is inadequate to inform state policy makers and regulators of the impacts of biomass harvesting. New technologies can facilitate better data collection without unreasonable expense to harvesters and power generators.

Recommendation:

The General Assembly should provide resources for data collection and monitoring efforts to better inform policy development related to woody biomass facilities.

Issue: Ongoing Assessment

Another point of consensus during the Committee's work on this issue was the understanding that the woody biomass market is dynamic. External factors, such as possible federal climate change legislation and changes in the European energy market, only add to the uncertainty. Consequently, it is difficult to predict the likely growth of the woody biomass market and biopower facilities.

This uncertainty could be addressed through the creation of some state level entity charged with identifying possible policy issues that need resolution. The range of issues evaluated by this new "Woody Biomass Stakeholder Group" could include: development of siting criteria; changes in land use practices linked to biopower facilities, such as conversion of natural forests or crop lands to energy plantations; and impacts to water quality; wildlife and biodiversity.

A subcommittee of the Energy Policy Council or some other appropriate entity could convene an ongoing working group to cover these topics, which extend beyond environmental concerns. Such a group could be formed with representatives from the EMC, the Wildlife Resources Commission, the Utilities Commission and the investor-owned utilities. Coordination of these organizations will be critical to the woody biomass market and formalizing a collaborative process among them adds to the chances for the growth of this market. This work group could provide annual reports to back to the legislature and identify key policy issues.

Finding:

Oversight of the impacts of the woody biomass market is currently spread across a number of state entities and agencies, such as the Utilities Commission, the Environmental Management Commission, the Wildlife Resources Commission, the Division of Forest Resources and the Energy Policy Council.

Recommendation:

The General Assembly should direct the formation of an inter-agency task force charged with the oversight of the growth of the woody biomass market in North Carolina. The task force should be required to periodically provide updates to the appropriate legislative committees.

Conclusion

North Carolina is in a strong position to be leader in renewable energy development. While the implementation of Senate Bill 3 remains in its early stages, it is critical that the state establish and develop clear and consistent policies to maintain this leadership status. The EMC's evaluation of the woody biomass industry in North Carolina has identified a number of pressing issues that must be addressed. The threshold issue that the implementing agencies and other stakeholders need clarification on is the definitional aspect of "biomass resource." Until the uncertainty is removed, the growth of the woody biomass market may be limited. However should this clarification result in the unequivocal inclusion of whole trees as woody biomass, due to the significant impacts from harvesting whole trees for energy generation the authority of the EMC to develop appropriate regulations or guidelines should be reaffirmed.

This report also identifies a number of policy actions that could be taken by the General Assembly. Taken as a whole these findings are intended to promote the renewable energy market, and specifically the woody biomass sector as well as protect the environment, while at the same time establishing environmental and natural resource standards that will guide and manage growth in that sector. The woody biomass sector has the potential to become an important component of our state's energy production in the future. Properly managed the woody biomass facilities and the harvesting of the feedstocks necessary to fuel those facilities have the potential to add jobs in rural communities and at the same time enhance the state's natural resources.

This report is intended to further the adoption of policies that will guide the growth of the woody biomass market in a manner consistent with the environmental protection mandate contained in Senate Bill 3.

The members of the Environmental Management Commission's Renewable Energy Committee are:

Mr. J. Dickson Phillips, III	Committee Chairman
Mr. Thomas F. Cecich	
Mr. Stan Crowe	
Mr. John S. Curry	
Ms. Marion Deerhake	
Mr. Tom Ellis	
Dr. Charles Peterson	
Mr. Stephen T. Smith	EMC Chairman