

MWV Comments on “Resources” Definition to the South Carolina Energy Advisory Council

January 20, 2011

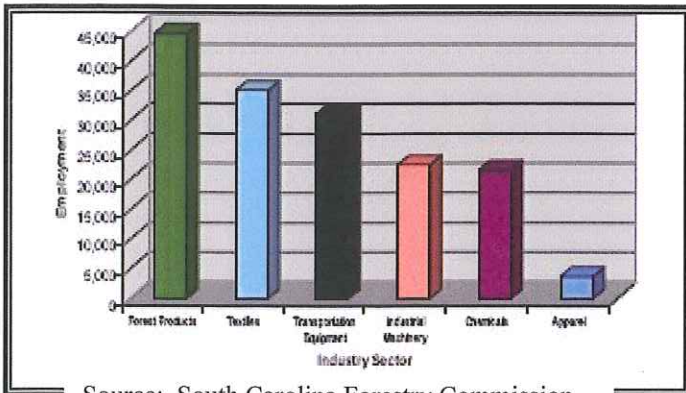
MeadWestvaco Corporation (MWV) is a global leader in packaging and packaging solutions. We also operate additional business in Consumer and Office products, Specialty Chemicals and Community Development and Land Management. In South Carolina we own and manage over 300,000 acres of land to certification standards and our Specialty Chemicals facility in North Charleston produces a multitude of pine chemical products, employing over 350 people.

MWV appreciates the opportunity to join the Energy Advisory Council’s discussion about its Resources definition and offers the following comments.

Summary

Biomass is broadly defined as biological material from living, or recently living organisms. It includes material that is currently used for producing products that satisfy many human needs, including some that are very basic including food, shelter and clothing. As such, biomass provides the raw material for many industries (and the associated jobs) that make those necessary and/or useful products.

The proposed “Resources” definition by including the phrase, including but not limited to, suggests unrestricted use of any and all types of biomass for energy production. Energy production that will likely be subsidized with government incentives or mandated by government fiat thereby biasing the use of biomass with high fuel value towards energy production and away from existing uses.



Source: South Carolina Forestry Commission

The forest products industry is South Carolina’s largest single manufacturing sector providing nearly 45,000 direct jobs as well as supporting many additional jobs in ancillary sectors. Woody biomass (in its various forms) is the forest products industry’s primary raw material and has a relatively high fuel value. **We submit that allowing unrestricted use of**

woody biomass for subsidized or mandated energy production will place many of those jobs in jeopardy.

Specific to MWV is our concern of the impacts on the availability of the biomass based raw material at our Specialty Chemicals plant in North Charleston - crude tall oil. Our plant uses crude tall oil (CTO) to make a variety products including adhesives, printing

ink, hand cleaners, paints, lubricants, emulsifiers and several others. CTO is a derivative of woody biomass as it comes from a component of the spent pulping liquor produced at Kraft paper mills called black liquor soap skimmings (BLSS). Specifically, BLSS is the sap from pine trees that is generally separated in the papermaking process. While BLSS is the precursor to CTO, because it has a very high heat value it is also a good candidate for subsidized/mandated energy use. (See MWV Specialty Chemicals Supplement comments in Appendix 1).

The Council should carefully consider its recommendations for government actions, including the definition of eligible biomass, that may jeopardize the competitiveness of existing facilities, the jobs they provide and the products they produce.

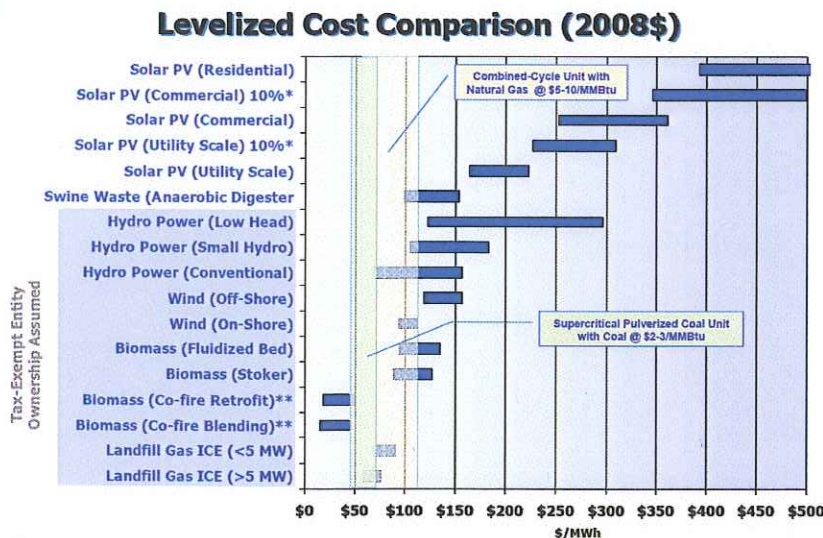
Proposed Biomass Definition Is All Inclusive

The proposed Resources definition for biomass will be interpreted as all inclusive because of the phrase “including but not limited too.” The list that follows in the definition provides examples of eligible biomass but defines no limits on what types of biomass could be included. Eligible biomass could therefore include merchantable pulpwood, merchantable sawmill chips and sawdust, and *crude tall oil* (a component of spent pulping liquors). Biomass that is currently merchantable material and feedstock for existing products would be at risk of escalating prices (similar to the situation when incentives for corn ethanol were enacted). In the case of woody biomass the escalation would likely be rapid, as the supply is inelastic because of its long production lead time, that is, it takes a big jump in price to increase supply a little.

Forest Products Facilities Could Be Put at Risk

South Carolina’s large forest products industry has created competitive markets for most woody biomass in the state as well as an economic incentive for many landowners to maintain forestland. However, the forest products industry makes products that must compete in the global market place as this industry is not afforded a fuel surcharge price component to recover costs. Incentives and/or mandates for renewable energy are likely to increase the demand for woody biomass, thereby increasing the raw material costs (and energy costs) for existing forest products facilities. Higher costs for raw materials and energy, especially energy intensive industries like pulp and paper and pine chemicals, will harm the competitiveness of existing wood based manufacturing facilities.

Woody Biomass Is the Least Cost Renewable Fuel in South Carolina



In order to give SC rate payers the lowest cost renewable power, public utilities will likely consider co-firing with woody biomass or retrofitting some existing power plants for all woody biomass firing as low cost options.

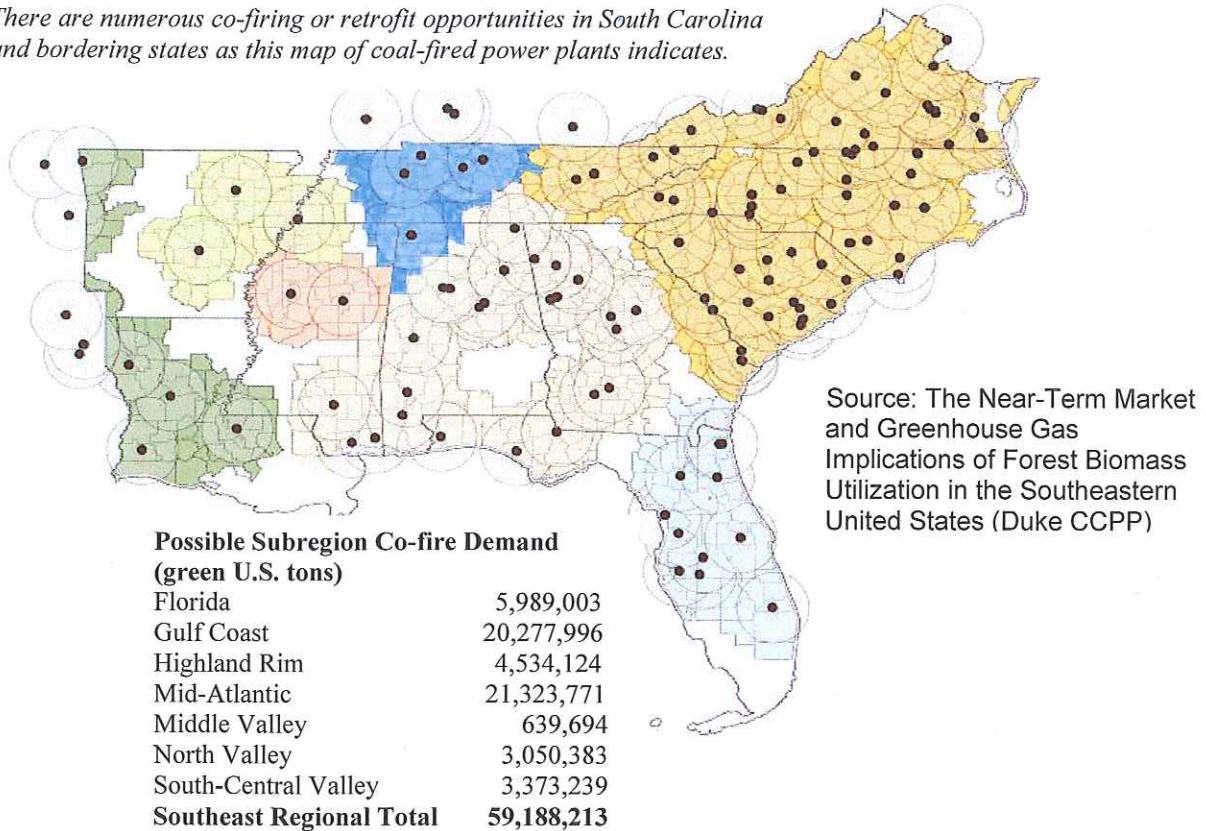


*Cost estimates include reduction of federal solar tax credits to 10% after 2007 for commercial/utility scale installations.
**Co-firing costs are calculated as incremental costs of avoiding coal consumption for generation (\$2.25/MMBtu (2006\$) coal cost assessment)

This LaCapra chart indicates biomass co-firing is the lowest cost option for renewable power production and some utilities are considering retrofitting older coal plants to completely switch to biomass.

Note that the co-firing options have levelized costs per MWh in the \$25 to \$50 dollar range. All of the solar options are in the \$200 or better per MWh range and off-shore wind ranges from about \$125 to \$160 per MWh. In addition co-firing is also base load while most others are intermittent.

There are numerous co-firing or retrofit opportunities in South Carolina and bordering states as this map of coal-fired power plants indicates.



Co-firing and retrofits are only part of likely increased demand for wood based biomass. Other demands would include new developments like those recently announced by Domtar and Southeast Regional Energy, wood pellet facilities for export to Europe, and in the future, cellulosic ethanol plants.

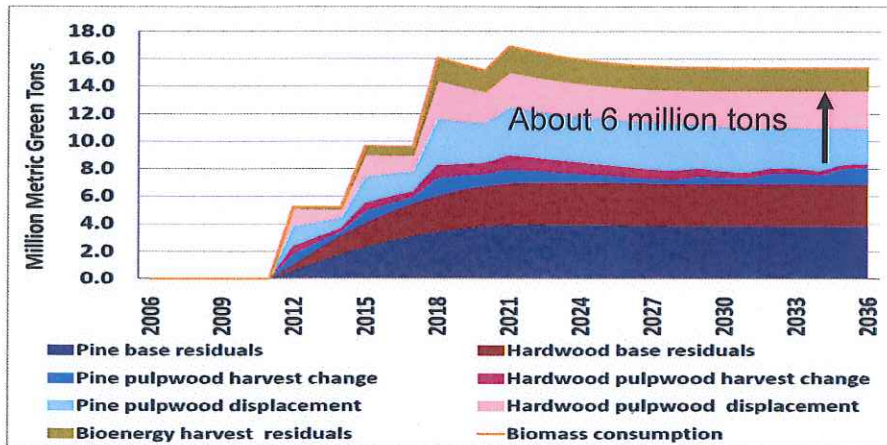
Woody Biomass is Not Unlimited

Conner, Adams and Johnson point out in their report, "Assessing the Potential for Biomass Energy Development in South Carolina" that most mill residuals, *including CTO*, are utilized and pole sized (pulpwood) timber in South Carolina is not increasing in the long term. Their report generally indicates that if biomass energy projects are not to harm existing industry by increasing prices, woody biomass, at least in the short term, must come from what has been traditionally known as precommercial thinnings, logging residue and unmerchantable residuals, and urban waste wood.

As Duke Energy discovered in North Carolina – low cost supplies (nearby) of non-merchantable wood waste are limited for any given wood basket so they asked for, and received, access to merchantable woody material to meet their co-firing and future

retrofit needs. Merchantable woody material would likely be necessary in South Carolina to meet the demand of larger scale power plants and/or high levels of renewable power. Meeting that demand by bidding up wood prices will in turn displace some existing forest products facilities

An analysis by NC State/US Forest Service researchers suggests that North Carolina's 12.5% REPS would displace about 6 million green tons of woody biomass currently used by existing forest industry if the various renewable fuels are used in expected proportions.



**Effect of Policy-based Bioenergy Demand On Southern Timber Markets:
A Case Study of North Carolina**

Robert C. Abta, Karen L. Abtb, Frederick W. Cubblegec and Jesse D. Hendersond

Forest Industry Creates More Jobs per Unit of Woody Biomass

This table from a RISI study commissioned by the American Forest & Paper Association shows that forest industry creates 5 to 9 more jobs per unit of wood than energy

Employment Impact (per 1000 short tons of wood)								
	Core	Total		Core	Total		Core	Total
Pulp and Paper	0.57	2.09	Solid Wood	0.77	3.55	Solid Wood	0.64	2.63
Bioenergy	0.13	0.25	Bioenergy	0.13	0.31	Bioenergy	0.13	0.28
Pellets	0.33	0.45	Pellets	0.33	0.5	Pellets	0.33	0.48
Biopower	0.07	0.19	Biopower	0.07	0.24	Biopower	0.07	0.22
Cellulosic ethanol	0.06	0.18	Cellulosic ethanol	0.06	0.23	Cellulosic ethanol	0.06	0.21
Impact ratios								
Pulp and Paper	Core	Total	Solid Wood	Core	Total	Combined Forest Prod.	Core	Total
Bioenergy	4:1	8:1	Bioenergy	6:1	11:1	Bioenergy	5:1	9:1
Pellets	2:1	5:1	Pellets	2:1	7:1	Pellets	2:1	6:1
Electric Power Plants	8:1	11:1	Electric Power Plants	9:1	14:1	Electric Power Plants	9:1	12:1
Cellulosic ethanol	10:1	12:1	Cellulosic ethanol	11:1	14:1	Cellulosic ethanol	11:1	13:1

Report

Jobs Creation in PPI and Energy
Alternative in the United States

**Report prepared for American Forest and Paper
Association - 25 June 2010**

Specifically, the industry employs 2 to 6 times more people than the pellet industry, 9 to 12 times more people than the electric power industry and 11 to 13 times more people than is expected from the cellulosic ethanol industry per unit of wood consumed. If government incentives or mandates displace existing wood products facilities, does it make economic sense to trade 5 to 9 forest products industry jobs (many high paying manufacturing jobs) for 1 bioenergy job and a modicum of energy security?

Conclusions/Recommendations

MWV agrees that some biomass resources are available for bioenergy production in South Carolina including some woody biomass as indicated by Conner, Adams and Johnson. However, as many existing jobs in South Carolina are dependent on woody biomass, extreme care should be exercised to minimize the market distortions of government incentives or mandates.

Broadly including all types of biomass as eligible resources for government subsidies or mandates without limits or safeguards is likely to harm existing industries that use biomass for a raw material.

To protect existing industries and the jobs they provide, the Energy Advisory Council should explore and recommend mechanisms that limit the exposure of existing industry to adverse impacts of incentives/mandates for bioenergy.

There are some types of currently utilized biomass that are relatively easy to identify and separate such as the crude tall oil mentioned earlier. These types of biomass should be clearly declared off limits for subsidized and/or mandated energy production. (See MWV Specialty Chemicals Supplement comments in Appendix 1).

The Council should commission a study to analyze the potential displacement of existing biomass based industries at varying levels of renewable energy requirements if eligible biomass is broadly defined. It should also commission a study to identify locations where surplus biomass resources are most available to guide development of those resources for potential bio-energy applications.

Appendix 1

MWV Specialty Chemicals supplemental Comments to the Energy Advisory Council regarding the resource definition developed by the Council

MWV Specialty Chemicals appreciates the opportunity to provide these supplemental comments on the Resource Definition as proposed by the Energy Advisory Council. MWV Specialty Chemicals is a business unit within MWV, focused on chemicals from renewable resources, and is headquartered in North Charleston, SC.

The Resource Definition under consideration currently includes “spent pulping liquors.” MWV Specialty Chemicals supports the inclusion of this bio mass fuel source with one exception. The spent pulping liquor includes a component called Black Liquor Soap Skimmings (BLSS). We ask that the Council exclude by definition BLSS from the definition because of its higher value as a raw material when compared as a renewable energy source.

BLSS is the sap of the pine tree and is separated in the Kraft paper making process. BLSS is removed as a part of the recovery process to burn the spent black liquor in a Kraft (sulphate) paper mill. Segregated BLSS is converted to Crude Tall Oil (CTO) when mixed with acid.

CTO, a derivative of BLSS, is a sustainable and renewable chemical raw material used in applications ranging from adhesives, printing inks, hand cleaners, paints, lubricants, oil drilling, road construction, emulsifiers and many other smaller applications. Why exclude CTO?

- The CTO supports a \$1.8 Billion industry with over 1,600 jobs nationally. (Pine Chemical Association, Inc)
- Products from CTO substitute for petroleum based products, reducing the GHG impact by half. (C&E News, November 23, 2009)
- The value creation from CTO versus using this material as a fuel ranges from 5 (C&E News, November 23, 2009) to 9 times (private evaluations).
- Products derived from CTO include chemicals for warm mix asphalt, which reduce GHG by over 50% and on site emissions by 90% versus hot mix asphalt applications.
- Rosin from CTO is used to produce resins which provide critical properties to hold the ink on the paper, improving speeds of printing and reducing other chemical use.
- Replacement products for Crude Tall Oil based chemicals include both petroleum based products and imported products from China.
- MWV Specialty Chemical employs 356 operations, engineers, scientists and managers at the global headquarters and Bio Refinery in North Charleston..

MWV Specialty Chemicals encourages the Council to exclude by definition Black Liquor Soaps Skimmings and Crude Tall Oil from the Resource Definition due to the societal value of these renewable chemical intermediates. While the Resource Definition does include an exclusion for materials which have a “higher valued products”, this seems to apply only to what might be

considered wood waste. Regardless, if higher value exclusion is allowed, this must be applied on a case by case basis. We ask the Council specifically exclude BLSS and CTO to eliminate any ambiguity for these critical chemical raw materials.