

# A HEALTHY FOREST IS A HEALTHY BAY



Association of Forest Industries, Inc.



Jointly Sponsored by the *Association of Forest Industries, Inc.*  
and the *Maryland Forests Association*  
Maryland's Forest Community Welcomes

## *Members of the 2019 Maryland General Assembly\**

**Thursday, February 7, 2019**

Luncheon, from 11 am to 1:30 pm

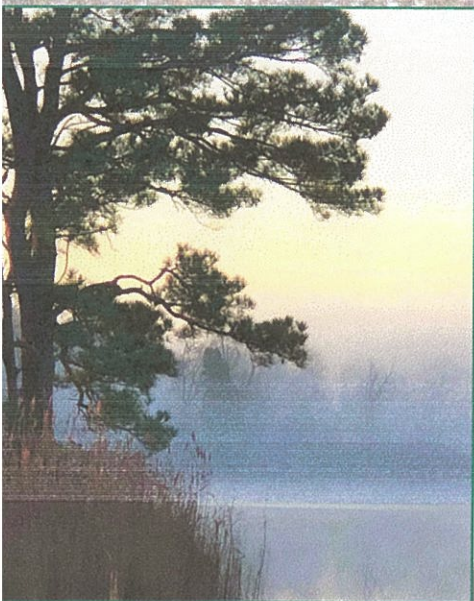
***Harry Browne's***

66 State Circle, Annapolis, Maryland 21401

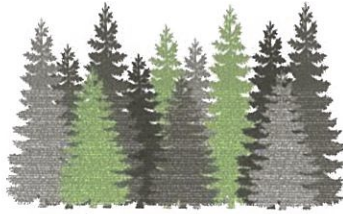
\*Staff Invited

This Act will help Maryland to meet its commitment under the 2010 Goals of the Chesapeake 2000 Agreement and the 2007 Forestry Conservation Initiative by improving and sustaining the health and ecological diversity of Chesapeake forests; encouraging retention of privately-owned forest lands; protecting and expanding forests in urban areas; increasing public awareness for the value of Chesapeake forests; and promoting new markets in the field of renewable energy emanating from the use of woody biomass.

*Sustainable Forestry Act of 2009 / Chapter 175, Acts of 2009*







Welcome to the “First” Legislative Luncheon sponsored by Maryland’s forest community via the Association of Forest Industries, Inc. and the Maryland Forests Association

February 7, 2019

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Enclosed are two statements from Maryland’s forest community that 2019 lawmakers may find useful in terms of understanding the importance and significance of policies intended to promote sustainably managed forests; a.k.a. “working forests”.

*Contacts: Elizabeth Hill/Bill Miles (beth@mdforests.org/billmiles@chesapeake.net)*

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A HEALTHY FOREST IS A HEALTHY BAY

**E**nactment of the *Sustainable Forestry Act of 2009* (Chapter 175, Acts of 2009) makes clear the importance of a healthy forest to a healthy Chesapeake Bay. Set forth in the nationally acclaimed Act are numerous statutory strategies for enhancing sustainable forestry in Maryland given its nexus to improved water quality. No other land use does more to filter harmful nutrients (phosphorous and nitrogen) and sediment than a forested landscape. Keeping Maryland forested is also a key goal of the *Forest Preservation Act of 2013* (Chapter 384, Acts of 2013).

CONVERTING EASTERN CORRECTIONAL INSTITUTION (ECI) FROM WOOD BIOMASS TO NATURAL GAS: PERSPECTIVE

**T**he State is planning to convert its only wood-biomass fueled public facility – Eastern Correctional Institution located in Somerset County -- to gas within the very near future. Maryland’s forest community has assessed the impact this decision will have on sustainable forestry management on the Lower Eastern Shore, notwithstanding its recognition of the importance of natural gas to the economic prosperity of the Lower Shore. As a consequence, the forest community is united in asking the Hogan Administration to offset the conversion – impacting about one-third of the region’s pulp market -- with an alternative public facility fueled by advanced wood combustion technology.


# MARYLAND'S FOREST COMMUNITY WELCOMES THE 2019 MARYLAND GENERAL ASSEMBLY

## A HEALTHY FOREST IS A HEALTHY BAY

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**M**aryland has declared forestry its preferred land use because, among other things, forests have no rival in combating nutrient pollution. Why? Because forests act as a sponge by capturing rainfall, reducing runoff, maintaining streamflow, filtering nutrients and sediment and stabilizing soils. *Other benefits of forests include flood control, wood products, renewable energy, climate moderation, aesthetics, and recreational opportunities.* And it's well known that nutrient pollution is the number one problem facing the ailing Chesapeake Bay. Sadly, the **2018 State of the Bay Report** was a D+. For Maryland to realize a healthier Bay by meeting its \$14.5 billion 2025 restoration goals, a healthy forest requires sustainable forestry management.

 Maryland's forest community encourages the Hogan Administration and incoming State lawmakers to learn more about the measurable environmental and economic benefits attendant to sustainable forestry management, aka "working forests". There exists many pro-forestry laws on the books, most notably is the nationally acclaimed **Sustainable Forestry Act of 2009**. But, the 2009 Act, *et al*, cannot alone achieve intended results. Instead, Maryland's forest community challenges lawmakers – in cooperation with us -- to take these well-intentioned laws to the next level by adopting new responsive policies, like biomass energy. In doing so, Maryland could well become the "First" state to meet its EPA-mandated 2025 Bay restoration goals.

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### FORESTRY FACTS

Maryland is the fifth most densely populated state, and its population of more than 5.7 million people is expected to grow by at least 15% over the next 25 years.

Since the 1960s, Maryland has lost more than 450,000 acres of forest. Between 2010 and 2040 Maryland may lose 346,000 acres in resource lands (forestry and agriculture).

Maryland has 2.6 million acres of forest land covering almost 39% of the total land area.

72% of Maryland's forest land is privately-owned.

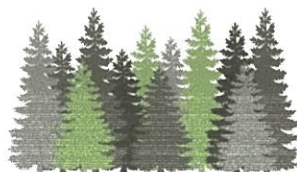
Maryland's forest products industry is considered a \$4 billion industry which provides 10,000 in direct jobs and 40,000 in indirect jobs.

For every 1,000 acres of private forest, 15 jobs are supported.

Total annual growth of all live trees on timberland outpaces total removals by a ratio of 2.3:1.

Wood is defined under Maryland's RPS law as a Tier 1 Resource; but, Maryland's only wood-fueled facility is the Eastern Correctional Institution (EC) which is slated for conversion to natural gas.

*One acre of healthy  
growing trees absorbs  
6 tons of carbon  
dioxide and produces  
4 tons of oxygen –  
enough to meet the  
needs of 18 people.*





## EXISTING STATE LAW

Cited below are Maryland's premiere forestry laws, including this 2017 forestry-related Report by the Maryland General Assembly's Department of Legislative Services: <http://dls.maryland.gov/pubs/prod/NatRes/Forest-Conservation-Act-and-Other-Forestry-Programs-in-Maryland.pdf>

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**Renewable Portfolio Standard**  
§7-701 Public Utilities Article

**Sustainable Forestry Act of 2009**  
§5-102 of the Natural Resources Article

**Chesapeake and Atlantic Coastal Bays Trust Fund**  
§8-2-A-01 of the Natural Resources Article

**Forest Preservation Act of 2013**  
§5-101 of the Natural Resources Article

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## *SUSTAINABLE FORESTRY ACT OF 2009*

This landmark Act makes clear the importance of sustainable forestry to the Bay restoration effort and outlines several innovative strategies for achieving the healthy forest/Bay nexus, inclusive of the integral role played by Maryland's forestry products industry. Two particular excerpts from the Act's Preamble are worth noting:

WHEREAS, This Act will help Maryland to meet its commitment under the 2010 goals of the Chesapeake 2000 Agreement and the 2007 Forest Conservation Initiative by improving and sustaining the health and ecological diversity of Chesapeake forests; encouraging retention of privately-owned forest lands; protecting and expanding forests in urban areas; increasing public appreciation for the value of Chesapeake forests; measuring Chesapeake forest conditions in the future; and promoting new markets in the field of renewable energy emanating from the use of woody biomass.

WHEREAS, A sustainably managed forest system also helps to promote domestic renewable energy production and clean green energy produced in-State from biomass, including forestry residues, which are vital, not only to securing energy independence, smaller trade deficits, economic growth, and clean air and water; but, also to facilitate compliance with the 2010 goals of the Chesapeake 2000 Agreement, the nutrient reduction goals of the Water Quality Improvement Act of 1998; and the land conservation goals of the 2007 Forest Conservation Initiative.

## LOOKING AHEAD

§5-201 (B) of the Natural Resources Article sets forth requisite goals for a healthier forest and healthier Bay; but, there is a time-sensitive need to convert these laudable policies into bold action. Let 2019 be the beginning.

It is the policy of the State to encourage the retention and sustainable management of the State's privately-owned forest lands by:

Affording due consideration to the protection and retention of forests in the State through existing land conservation programs where they have the highest value in terms of promoting the State's compliance with its clean water goals under the Chesapeake Bay 2000 Agreement and the 2007 Forest Conservation Initiative.

Enhancing the retention of privately-owned forest lands through research-based educational outreach efforts to landowners by the State's Forest Conservancy District Boards.

Developing financial incentives to encourage landowners to retain and manage their forests sustainably and in a manner that is consistent with a Forest Stewardship Plan.

Promoting renewable energy policies and markets with increased emphasis on the use of in-State produced woody biomass.

Recognizing the importance of (I) A viable forest products industry to the economies of rural Maryland; (II) Continued development of fiber production; and (III) Maryland's green infrastructure.

Developing and enhancing programs with a sustainable forestry component, including a forest mitigation banking system, a carbon credit or carbon sequestration program, a clean water credit trading system, an environmental services credit trading program, and a renewable energy credit trading system.

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# CONVERTING EASTERN CORRECTIONAL INSTITUTION (ECI) FROM WOOD BIOMASS TO NATURAL GAS: PERSPECTIVE

February 7, 2019

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Maryland is planning to convert its only wood-biomass fueled public facility – Eastern Correctional Institution (ECI) operated by the Maryland Environmental Service (MES) in Somerset County – to a natural gas-fired system. ECI is a keystone facility upon which local jobs, the regional economy, Maryland's Chesapeake Bay restoration efforts, forest land retention goals, in-State renewable energy generation and greenhouse gas reduction goals are inexorably linked.

This PERSPECTIVE has a two-fold intent: (1) explain the impact of conversion as seen by those within the Eastern Shore's forest community; and (2) request the Hogan Administration to declare its consideration of alternative advanced wood combustion system - within an appropriate public facility on the Eastern Shore – upon conversion.

This PERSPECTIVE has been developed by the Association of Forest Industries and the Maryland Forests Association. Contact information: [billmiles@chesapeake.net](mailto:billmiles@chesapeake.net) or [beth@mdforests.org](mailto:beth@mdforests.org)

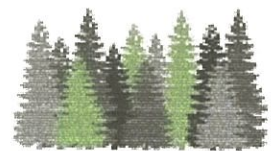
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## ECI BACKGROUND

ECI was commissioned in 1987 to ensure uninterrupted electric power and heating for the correctional facility. A combined heat and power system relies upon two steam boilers fueled by wood chips with a 4 MW electrical generation capacity. ECI consumes 55,000 tons of wood chips annually to produce steam that meets 100% of its heating needs and 79% of its electric needs, with the remaining 21% derived from the grid.

## THE WOOD RESOURCE

The wood chips used at ECI are derived from low-grade, small diameter trees that would otherwise have marginal commercial value, yet such thinning is an important silvicultural practice as is utilizing debris (tops, cull logs and limbs left from logging) following a regulated timber harvest.



The provision of wood chips to ECI positively impacts about 1,000 acres of forestland annually. Thinning forests allows faster growth of remaining trees which increases value to landowners by providing future products for sawmills. Most importantly, these lands will continue to provide income for landowners and be left as sustainably managed forestland, a.k.a. "renewable". Remove the opportunity for income earnings and these forestlands fall prey to development with its conversion of open space to impervious surfaces.

According to the Pinchot Institute, statewide there may be as much as 780,000 dry tons of biomass produced annually which could be delivered at \$30/ton. Notable is the fact that Maryland woodlands grow 2.8 times more than wood is harvested plus there exists large amounts of underutilized urban wood waste. Clearly, the abundance of woody biomass in Maryland could easily support many other wood energy facilities consistent with and responsive to the *Sustainable Forestry Act of 2009*.



## THE ECONOMIC IMPACT

ECI's use of wood produces local wealth in two ways, according to the current provider of wood chips to ECI. First, are the direct payments to forest landowners for the wood used to make chips. This cumulatively totals about \$300,000 each year. Second are the direct jobs created through logging and trucking. The operation necessary to supply chips on a continuing basis to ECI includes 13 equipment operators and truckers plus their supervisors and supporting staff. The payroll generated through these local jobs totals \$730,000 annually plus an additional 20% in benefits. Secondary jobs created consist of mechanics, fuel distributors and equipment dealers.

The projected economic impact of having ECI convert from wood to gas would result in the regional economic loss of 50 jobs, \$7 million in annual activity and over \$250,000 in State and local taxes. No other viable markets exist to recapture the wealth creation loss if ECI stops buying this wood from local landowners. Such are the January 2019 findings from an abbreviated IMPLAN analysis by the resource-based development consulting firm of Agricultural and Community Development Services (ACDS) at the request of the Harry R. Hughes Center for Agro-Ecology (<http://acds-llc.com/wp/contact-acds/>).

The hidden economic value of ECI and other wood biomass facilities, when compared to fossil fuel sources, is due to the local sourcing of biomass. Studies in the Northeast find that about \$0.78 of every dollar spent on fuel oil is "exported"; meaning, those dollars do not circulate in the regional economy. Conversely, woody biomass must be sourced within about 50-75 miles, so dollars spent on this energy source is circulated in the local/regional economy to generate commerce and support jobs as wood is harvested, trucked and processed. Using wood biomass to heat facilities adds value to rural economies and should be pursued, per State law, as a viable source for economic development.

The tradeoffs of continuing to use wood energy at ECI versus conversion to natural gas should include a comparison of the direct costs of each. The data is readily available from the US Energy Information Administration. From 2000 to 2007, the costs of energy for wood chips delivered to ECI have remained very constant, averaging \$4.58/MMBtu. However, industrial gas prices during the same period have fluctuated considerably, ranging from \$9.91 to \$11.69 per 1,000 cubic feet. This has resulted in an average cost of \$10.21 per 1,000 cubic feet or an average energy cost of \$9.63/MMBtu. Therefore, comparing wood energy cost for natural gas (\$9.63/MMBtu) with wood chips (\$4.58/MMBtu) shows natural gas costs are more than double that of using wood (<https://www.eia.gov/dnav/ng/hist/n3020md3m.htm>).

## CHESAPEAKE BAY RESTORATION EFFORT

Maryland's compliance with its Chesapeake Bay restoration efforts – via the EPA-mandated TMDL goal – will cost an estimated \$14.4 billion by 2025. The *Sustainable Forestry Act of 2009* declares the importance of forest land retention, through sustainable forest management, to help realize a healthier Chesapeake Bay. Filtering harmful nutrients (phosphorous and nitrogen + sediment) is a paramount role played by sustainably managed forests. No other land use compares in terms of water quality protection. Research suggests that riparian buffers alone remove 19-65 percent of the nitrogen; 30-45 percent of the phosphorus; and 40-60 percent of the sediment that would otherwise enter adjacent streams.

Retaining Maryland's remaining 2.6 million acres of forest land is the intent of both the 2009 Act and the *Forest Preservation Act of 2013*, a.k.a. "No Net Loss of Forest Land".



Absent a wood fueled energy project similar to ECI in the event of its conversion, sustainable forestry management on the Lower Eastern Shore would measurably be compromised. And with the Chesapeake Bay Foundation's "2018 State of the Bay Report" which scored Bay quality at a D+, one could argue that sustainable forest management is key to a better grade.

## GREENHOUSE GAS EMISSIONS

Through photosynthesis, plants absorb carbon dioxide (CO<sub>2</sub>) from the atmosphere and add it to their biomass as carbon, a process referred to as sequestration. When plant biomass is harvested or cleared from the land and burned for energy, the carbon biomass is released into the atmosphere as CO<sub>2</sub>. Forests have been historically and are currently deemed a "net sink of carbon"; according to a 2015 finding by EPA, the U.S. forest sector offset approximately 11.2% of gross U.S. greenhouse gas emissions. On April 28, 2018, EPA announced its "policy in forthcoming regulatory actions will be to treat biogenic CO<sub>2</sub> emissions resulting from the combustion of biomass from managed forests at stationary sources for energy production as carbon neutral." Notably, Maryland has a statutory goal of reducing greenhouse gas emissions, measured in metric tons of carbon dioxide equivalents, by 25% from 2006 levels by 2020 per §2-1204 of the Environment Article.

## RENEWABLE ENERGY

The *Sustainable Forestry Act* declares, among other things, the importance of sustainable forestry to Maryland's renewable energy goals. First, §5-102 (B) of the Natural Resources Article states: "It is the policy of the State to encourage the retention and sustainable management of the State's privately owned forest lands by...(5) Promoting renewable energy policies and markets with increased emphasis on the use of in-State produced woody biomass". Second, SECTION 8 of the Act states: "That Maryland's green power goal for procurement of renewable energy by State government be met, to the extent practicable, through the provision of financial and other incentives intended to promote in-State production of renewable energy, with due consideration afforded to biomass-fueled facilities".

Maryland relies on fossil energy – propane (3%), natural gas (47%), #2 heating oil (11%) and electricity (39%) mostly from coal and nuclear – for meeting its public facilities' heating/cooling needs. Maryland does, however, have renewable energy goals embodied in the Renewable Portfolio Standard (RPS) – inclusive of wood ("qualifying biomass") as a Tier 1 resource – via §7-701 of the Public Utilities Article. If ECI was converted – absent an offset via an alternative wood fueled energy project similar to ECI – Maryland would distance itself from meeting its renewable goals.

## CONCLUSIONS AND CONSIDERATIONS

**A unilateral decision to convert ECI would be detrimental to sustainable forestry management, the Chesapeake Bay restoration effort, profitability of the Lower Shore's forest products industry, and Maryland's statutory driven efforts to comply with its renewable energy and greenhouse gas reduction efforts.**

Maryland is well-positioned to offset the measurable impacts attendant to ECI's conversion – given the abundance of available and affordable woody biomass within the region – with usage of advanced wood combustion technology in other publicly-owned facilities.



Modern and commercially viable biomass heating, cooling, and combined heat and power (CHP) technologies can reach efficiencies of up to 80-90% while electric power plants only reach 25-30%, releasing three quarters of the energy produced into the air and/or surrounding bodies of water.

Moving forward with biomass-fueled publicly-owned facility/facilities – as a consequence of the ECI conversion -- will demonstrate the Administration's recognition of and compliance with existing statutory directives set forth in the *Sustainable Forestry Act of 2009*.

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**A**s the representative voice of Maryland's forest products industry and forest landowners, the Association of Forest Industries and the Maryland Forests Association, respectively, request the Hogan Administration – for all the reasons stated within this PERSPECTIVE – to consider declaring its consideration of an alternative woody biomass fueled facility to offset the conversion of ECI with an eye towards pursuing additional woody biomass-fueled facilities predicated upon the success of an initial project. A correlation in announcement timing, if possible, would be most welcomed not only by the second largest industry on the Eastern Shore, but, more importantly, to those forest landowners whose continued stewardship represents the underpinning of forest land retention and their nexus with the Chesapeake Bay restoration effort.

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