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Overview of H.853: *An Act to Assure the Attainment of Greenhouse Gas Emissions Goals in the Alternative Portfolio Standard* (Rep. D. Provost, D-Somerville)

H.853 would amend the state's Alternative Portfolio Standard (APS) by removing polluting technologies - including wood burning (biomass) and garbage incineration- from the list of renewable heating and CHP technologies eligible for alternative energy incentives. These biomass subsidies have only existed for a year – so eliminating them will not cost jobs, just save money that can be allocated to zero-emissions technologies.

Burning wood increases air pollution - There is nothing "clean" about burning wood. So-called "modern" wood heating systems generate smoke that includes a mixture of harmful gases and fine particulates harmful to human health. Wood heating is far more polluting than fossil fuels and accounts for a quarter of the PM 2.5 (fine particle) pollution emissions in MA.

Burning wood is not climate-friendly - Using forests for fuel hurts our climate. Wood burning furnaces emit more CO_2 emissions than either oil or natural gas furnaces. The best thing we can do for the climate is to minimize combustion and focus on energy efficiency and clean renewable energy.

Forests are essential for our future - Forests play a key role in protecting the climate by capturing and sequestering carbon, and provide a wide array of local benefits, such as clean air and water, flood control, habitat protection, and economic and recreational opportunities.

Clean energy doesn't come out of a smokestack - The Baker Administration has given out millions of dollars to support increasing the use of wood-heating in Massachusetts. This includes granting $2.8 million of ratepayer funds that are intended to support clean energy to private companies, including to build wood-chipping facilities. So far the data suggest that subsidies for APS-qualified wood heating units can range from $1,000-$22,000 per year, and biomass combined heat and power plants can potentially earn $50,000-$70,000 per year. *These payments continue indefinitely.*

After H.853 was introduced, the Baker Administration proposed sweeping changes to the Renewable Portfolio Standard (RPS) that must be addressed as well.

The APS subsidizes biomass heating; the RPS subsidizes biomass for electricity. Massachusetts' RPS program currently has the most stringent, science-based standards in the nation for wood-burning power plants. As a result, there are only a few small biomass plants that qualify for the MA RPS, with a combined capacity of less than 2 MW. But that could change due to new regulations just proposed by the Baker Administration that significantly weaken the standards for biomass energy in the RPS. When the MA Legislature passed a 2% increase in renewable energy requirements last year, the goal was to encourage new clean energy generation, such as wind and solar. Instead, the Baker Administration's proposal would "backfill" this requirement by subsidizing polluting wood-burning power plants that fail to meet the RPS program's current efficiency and health-based standards. Their answer? Loosen up the program's criteria so these polluting plants qualify!

Urge the Massachusetts Legislature to (1) support H.853 and (2) amend the bill to remove woody biomass fuel from the list of eligible renewable energy sources in the RPS.

Financial considerations for H. 853

Subsidizing biomass in the Alternative Portfolio Standard is costly and increases emissions

We burn a lot of wood in MA already… so why are we subsidizing burning more?

Tens of thousands of homes rely on wood heat for their primary source of heat (Figure 1), and the number is highly variable over time. Why is the state spending millions to increase the number of homes and businesses heating with wood when the number is so high already?

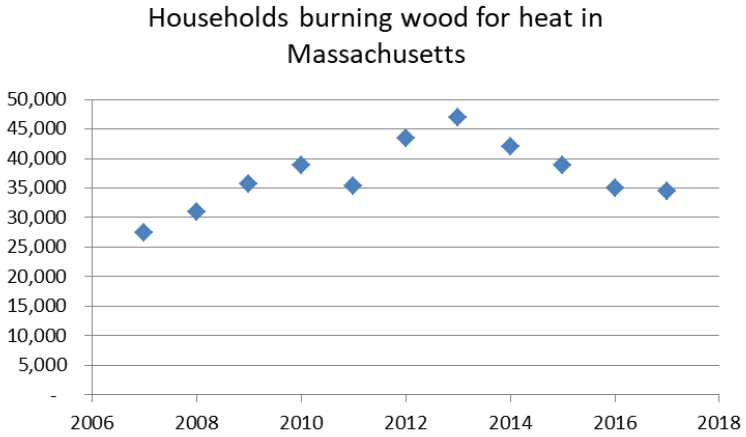

Figure 1. The number of households burning wood for heating is variable over short time periods (37% higher in 2013 than 2017). It varies with price of oil, outdoor temperature, and other factors. Wood-burning could increase to 2013 levels or above again, putting additional pressure on resources. Data from American Community Survey.[1]

Forest harvesting for wood fuel is already increasing net CO_2 emissions

MA GHG inventory data on forest CO_2 sequestration and net sequestration (Figure 2) illustrates how harvesting wood for fuel reduces the forest carbon sink.[2] The less negative values of the net forest CO_2 uptake data (red line) represents forest carbon sequestration taking wood burning into effect.

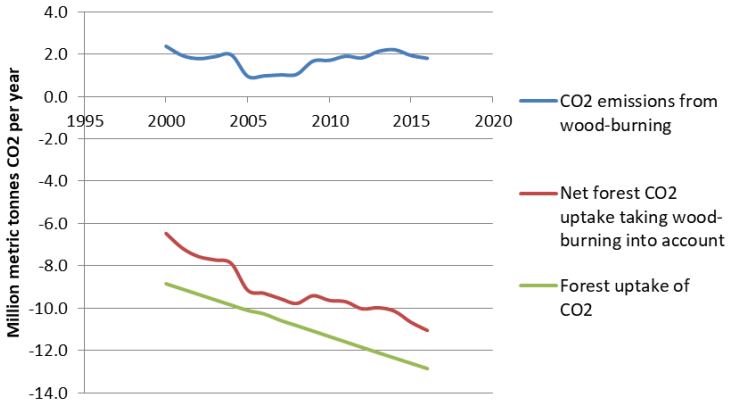

Figure 2. MA GHG inventory data for forest sequestration and its attenuation by wood-harvesting.

The residential/commercial heating sector is the second-largest source of GHG's in MA, emitting around 18.5 million metric tonnes of CO_2 from fossil fuels each year.[3] This does not take into account emissions from homes burning wood. When DOER added biomass thermal to the APS, they increased the timeframe for biomass to show a carbon "benefit" to **30 years** compared to the target of **20 years** as included in the RPS (they have now proposed to change the timeframe in the RPS to 30 years, as well). The biomass they are actually promoting (wood pellets) are generally made from whole trees that are essential for sequestering carbon, not residues, and thus will not yield a reduction in net CO_2 emissions even in 30 years. Increasing wood-burning and counting the emissions as zero, as DOER does in the APS, may reduce emissions "on paper," but undermines real climate action.

Subsidizing wood-burning units under the Alternative Portfolio Standard is costly

- Payments to individual thermal biomass units range from ~$1,000 to ~$22,000 per year (assuming 5 months of operation per year and $20/MWh subsidy). The current average is $2,600/year installation.
- Payments to biomass combined heat and power units are potentially around ~$50,000 - $70,000 per year (currently, two units registered).

Payments are *indefinite* – to the end of the unit, or the end of the program!

The number of subsidized units is growing quickly, so costs will increase

Currently, **58 thermal units[4] are subsidized**, but number of units increased 38%[5] from January to April 2019, and capacity almost doubled in this short period, from 3,629 to 7071 rated MWe capacity.

Data from the RPS Solar Carve-Out (for electricity generation) shows how a program can explode when subsidies become available. Over 40 quarters, starting in 2010, that program grew exponentially from **37 units to nearly 12,000** (Figure 3).

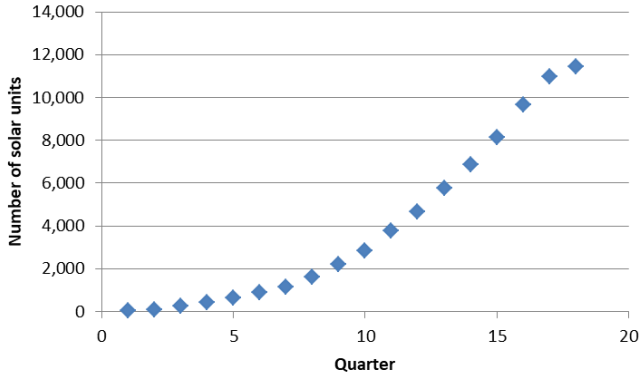

Figure 3. Number of solar installations participating in MA RPS Solar Carve-out Program, starting Q1 2010.[6]

MA is investing millions into burning forest biomass, increasing emissions

MA DOER and the MA Clean Energy Center have allocated millions of dollars to support wood-burning units and associated infrastructure over the last several years. Particular projects that stand out as unhelpful include:

- $1 million allocated to Roberts Sawmill in Ashfield to achieve a three-phase power interconnection to the biomass plant there (current status of this program unknown).
- $2.8 million allocated for biomass thermal infrastructure in spring 2019.[7] It's not clear these projects are capable of "reducing" emissions.

  Caluwe Inc., Burlington. $426,035
  To build a showroom storage warehouse in Western Massachusetts and purchase a service vehicle. Also included in the project is the full testing and certification of several European wood chip boilers and related emission control devices to EPA and UL standards.

  Dunlap's Energy,Plymouth, $228,250
  To **build a mixing tank** that precisely blends renewable biofuel with conventional heating fuels.

  Holiday Farm Inc., Dalton, $1,000,000
  To purchase equipment to **process, handle, store and deliver dried wood chips**. This project will include the **purchase of two trucks** able to pneumatically deliver dried woodchips.

  Pantermehl Land Clearing Inc., Ashfield, $350,000
  To purchase a **large format chipper, live-floor trailer and chip screen**, to allow for the creation and bulk delivery of dried woodchips. Also cost shared is a **65' x 80' chip storage building and accompanying asphalt pad.**

  Wagner Wood, Amherst, $885,000
  To purchase the **equipment to process, handle, store and deliver dried woodchips**. This project will include the purchase of a **chip trailer designed to pneumatically deliver** dried woodchips into residential or commercial fuel storage silos.

  These kinds of land clearing and forestry operations remove whole trees, not "residues." Creating this infrastructure, and then installing units that are dependent on chipped fuel, perpetuates extractive forestry and according to the state's own science, increases CO_2 emissions.
- Millions allocated to install wood-burners in schools – even though wood smoke emissions, including from "clean-burning" pellet burners, are linked to a variety of health problems. Asthma rates in MA are increasing – why are we not doing everything possible to transition schools to zero-emissions heating?

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[1] https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml

[2] Massachusetts DEP. Greenhouse Gas Baseline, Inventory and Projection. Open XLSX file, 746.24 KB, for Appendix C: Massachusetts Annual Greenhouse Gas Emissions Inventory: 1990-2016, with Partial 2017 Data. At https://www.mass.gov/doc/appendix-c-massachusetts-annual-greenhouse-gas-emissions-inventory-1990-2016-with-partial-2017/download

[3] MA GHG inventory data 2016.

[4] APS qualified units updated April 16, 2019

[5] APS qualified units as of January 17, 2019

[6] RPS Solar Carve-Out SRECs Minted and Expected, undated March 4, 2019

[7] https://www.mass.gov/news/baker-polito-administration-announces-28-million-in-matching-funding-for-renewable-heating