

The background of the slide is a photograph of the Massachusetts State House, featuring its prominent golden dome and classical architectural style with columns and arches. The image is slightly faded to allow the text to be clearly visible.

# **Lessons from Massachusetts on Biomass Energy**

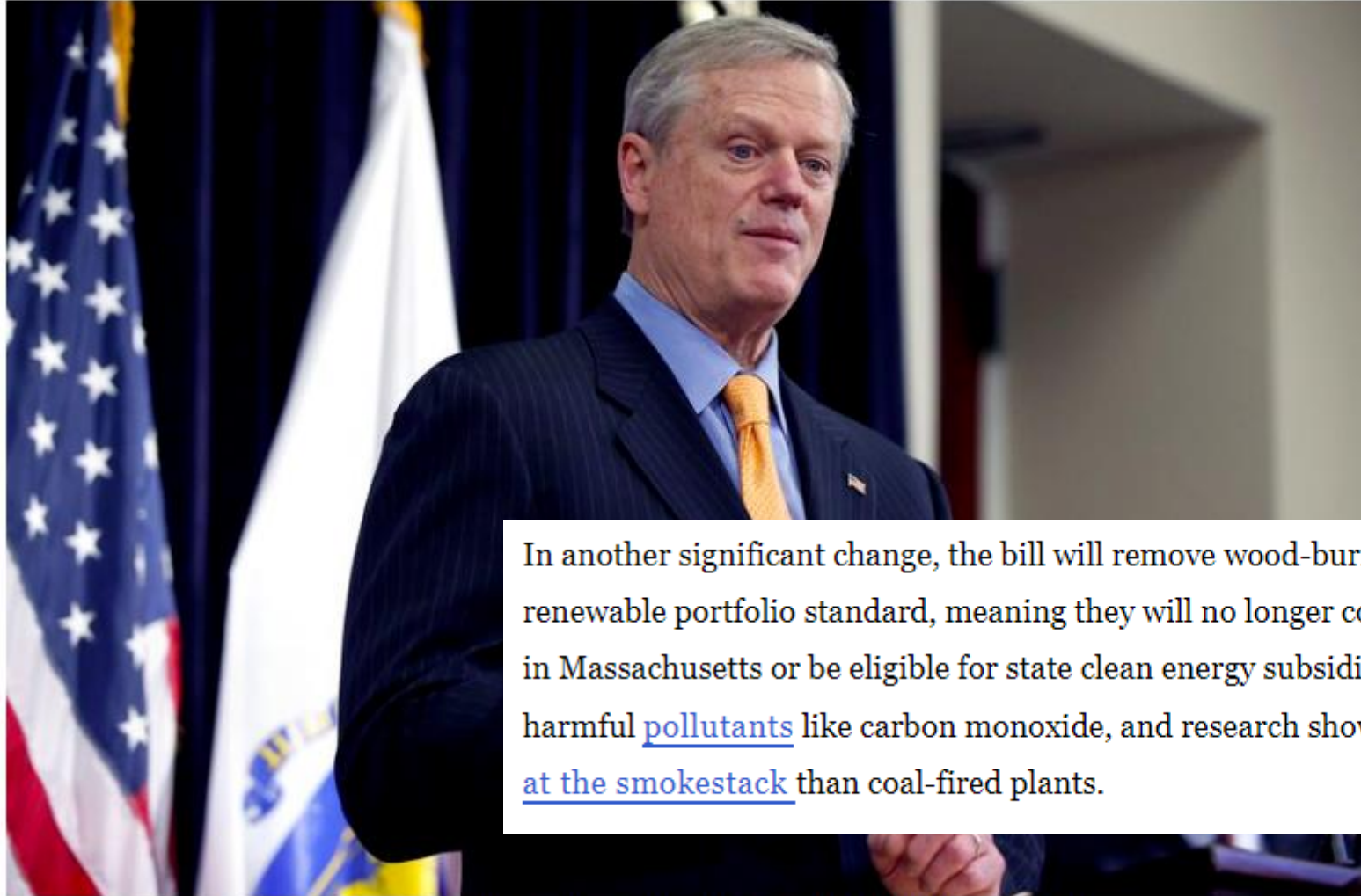
**Laura Haight, PFPI**

**Presentation to the Vermont Biomass Task Force**

**Sept. 14, 2022**

# Baker signs major climate bill into law

By [Sabrina Shankman](#) and [Dharna Noor](#) Globe Staff.  
Updated August 12, 2022, 8:14 a.m.



In another significant change, the bill will remove wood-burning power plants from the state's renewable portfolio standard, meaning they will no longer count toward renewable energy goals in Massachusetts or be eligible for state clean energy subsidies. Wood-burning plants produce harmful [pollutants](#) like carbon monoxide, and research shows they can emit [even more carbon at the smokestack](#) than coal-fired plants.

Massachusetts Governor Charlie Baker during a morning press conference. JONATHAN WIGGS/GLOBE STAFF

## 2007-2015 (Patrick Administration)

- 2008: Biomass plants proposed in Greenfield, Russell & Springfield
- 2010: MassDOER commissions Manomet Center to evaluate the GHG and forest impacts of using wood for energy
- 2012: RPS regulations amended to restrict biomass eligibility

# Manomet study shows offsetting bioenergy CO<sub>2</sub> emissions takes decades or longer; not “carbon neutral”

## Wood for electricity: Time to parity with fossil fuels

**TABLE 7** Years for Biomass Energy Emissions to Reach Equal Flux with Fossil Fuel Energy Emissions

Harvest scenario	Fossil fuel technology			
	Oil (#6), thermal	Coal, electric	Gas, thermal	Gas, electric
Mixed wood	15–30	45–75	60–90	>90
Logging residues only	<5	10	10	30

Optimistic because assumes forests are allowed to regrow fully

Walker, T., et al (2013). "Carbon Accounting for Woody Biomass from Massachusetts (USA) Managed Forests: A Framework for Determining the Temporal Impacts of Wood Biomass Energy on Atmospheric Greenhouse Gas Levels." [Journal of Sustainable Forestry](#) **32(1-2): 130-158.**

# 2012 MA RPS Requirements

## GHG emissions accounting

- Framework accounts for carbon debt of whole tree harvesting
- Lifecycle emissions (fossil fuels CO<sub>2</sub> from harvest, manuf, transp) counted
- Requires 50% reduction in GHGs over 20 yrs compared to combined cycle natural gas facility

## Efficiency requirement

- Facility must be 60% efficient to qualify for subsidy (50% for half-subsidy)

## Forest Sustainability

- Soil fertility determines allowable biomass removals
- Protection of old growth forests, steep slopes; retention of naturally down woody material
- Harvest plans/fuel sourcing plans required

## 2015-2022 (Baker Administration)

- 2017: APS regulations adopted for renewable thermal
- 2019: RPS regulatory amendments proposed, weakening biomass standards
- 2021: MassDEP revokes Springfield plant permit; MassDOER amends its proposed RPS rule changes to add EJ protections
- 2022: Legislature removes woody biomass from RPS



# In the nation's asthma capital, plans to burn wood for energy spark fury

By David Abel Globe Staff, [Updated October 20, 2020](#), 10:53 a.m.



# Proposed 2021 RPS Rule Changes: What Could Be Bad?

In April 2021, DOER added two new provisions to the proposed RPS Class I regulation that would:

- Require all Generation Units with a Commercial Operation Date after 12/31/2020 to meet a 60% overall efficiency requirement, regardless of the type of feedstock.
- Prohibit Generation Units using Eligible Biomass Woody Fuel from qualifying for the RPS program if they are located within an environmental justice population or within 5 miles of an environmental justice population.

Source: [MA DOER](#)



## Proposed 2021 RPS Rule Changes: The Fine Print

- Eliminates the 60% efficiency requirement for existing biomass power if they burn 95% “non-forest derived residues” (NFDR)
- Significantly expands the definition of NFDR
- Eliminates the entire fuel tracking procedure established to certify compliance with eligible biomass guidelines
- Replaces strong forest and soil protections with vague “sustainable forestry” guidelines

# Biomass rules, legislation down to the wire in Massachusetts

*Published July 19, 2022*

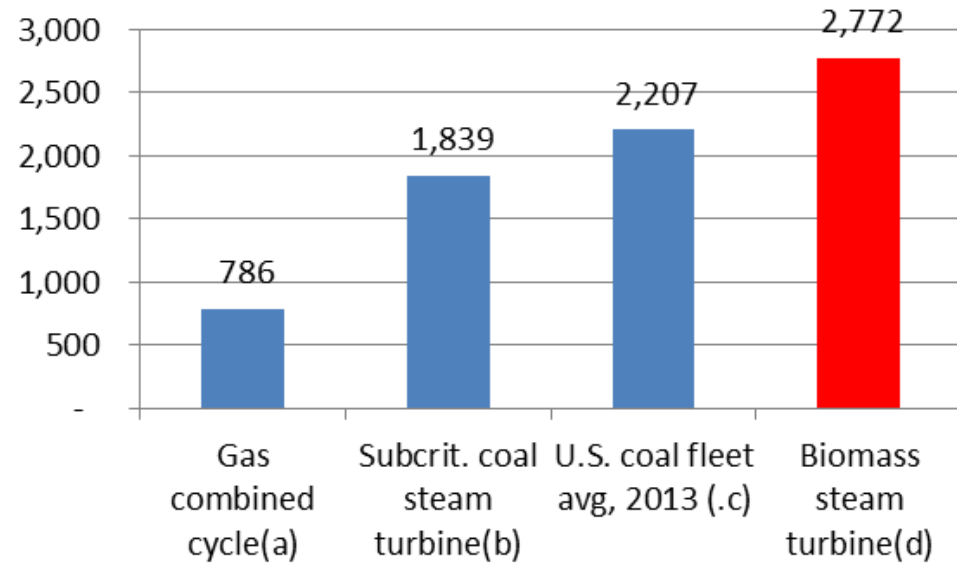


It's a race to the finish line in Massachusetts between regulations that will ease restrictions on biomass power plants that can receive renewable energy subsidies and legislation that PFPI and others are championing that would end those subsidies entirely.

The Baker Administration is finalizing controversial new rules that will [weaken the state's renewable energy \("RPS"\) regulations](#) and force ratepayers to subsidize polluting wood-burning power plants across the Northeast. The legislature's energy committee – the Joint Committee on Telecommunications, Utilities, and Energy (TUE) – is required by law to issue a report on the [amended regulations](#) by the end of July.

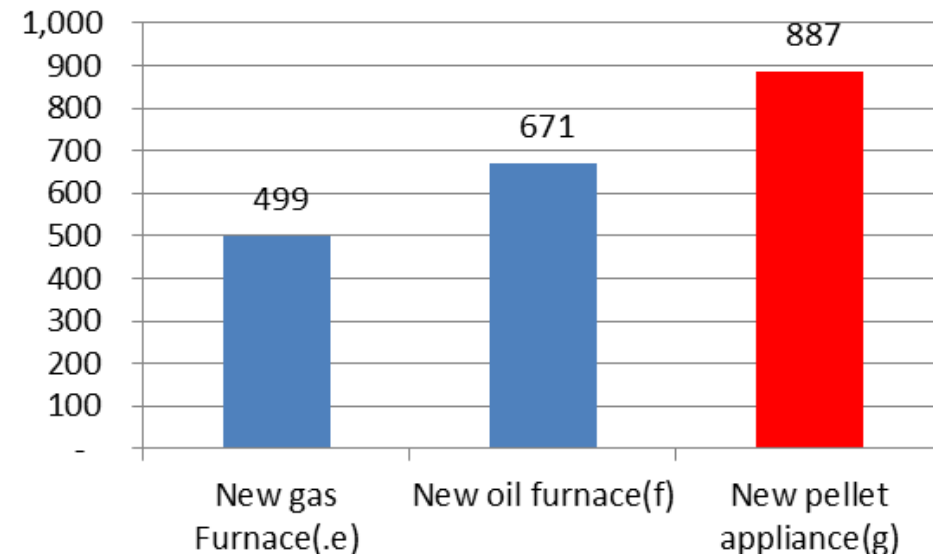
# Climate Impacts: Wood-fired electricity and heating units emit more CO<sub>2</sub> per unit energy output than fossil-fired units (lb CO<sub>2</sub>/MWh)

### Electricity power plants



Results for power plants and wood-boilers **burning green wood chips for fuel**. Green wood is ~50% water by weight, thus inefficient.

### Wood for heat



May 12, 1998



Forest Impacts: Trees  
take a long time to regrow

25-ACRE CLEARCUT, MAINE

~ 950 dry tons biomass

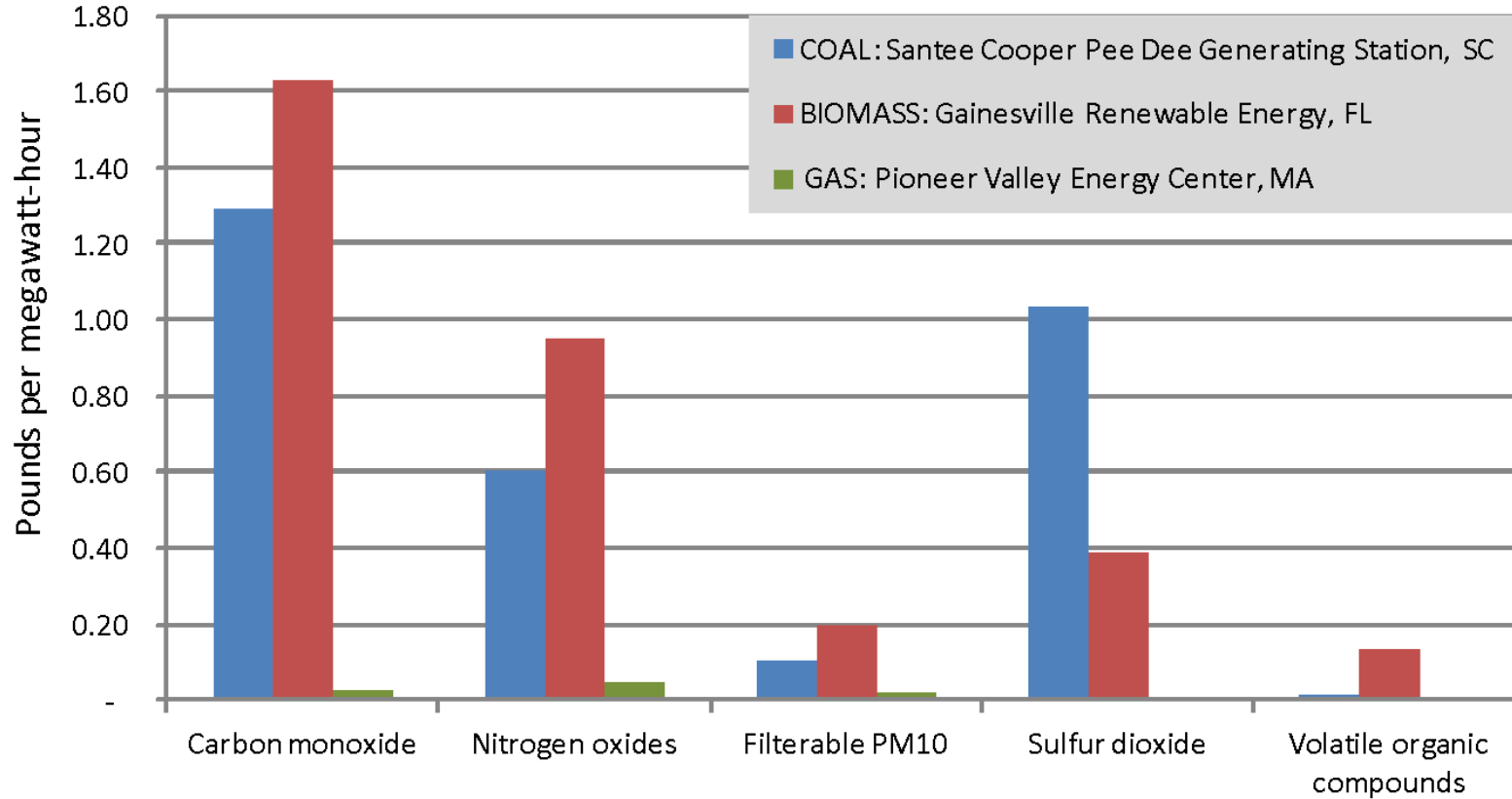
Enough fuel to power a 50-MW  
biomass plant for about 21 hours

October 31, 2007



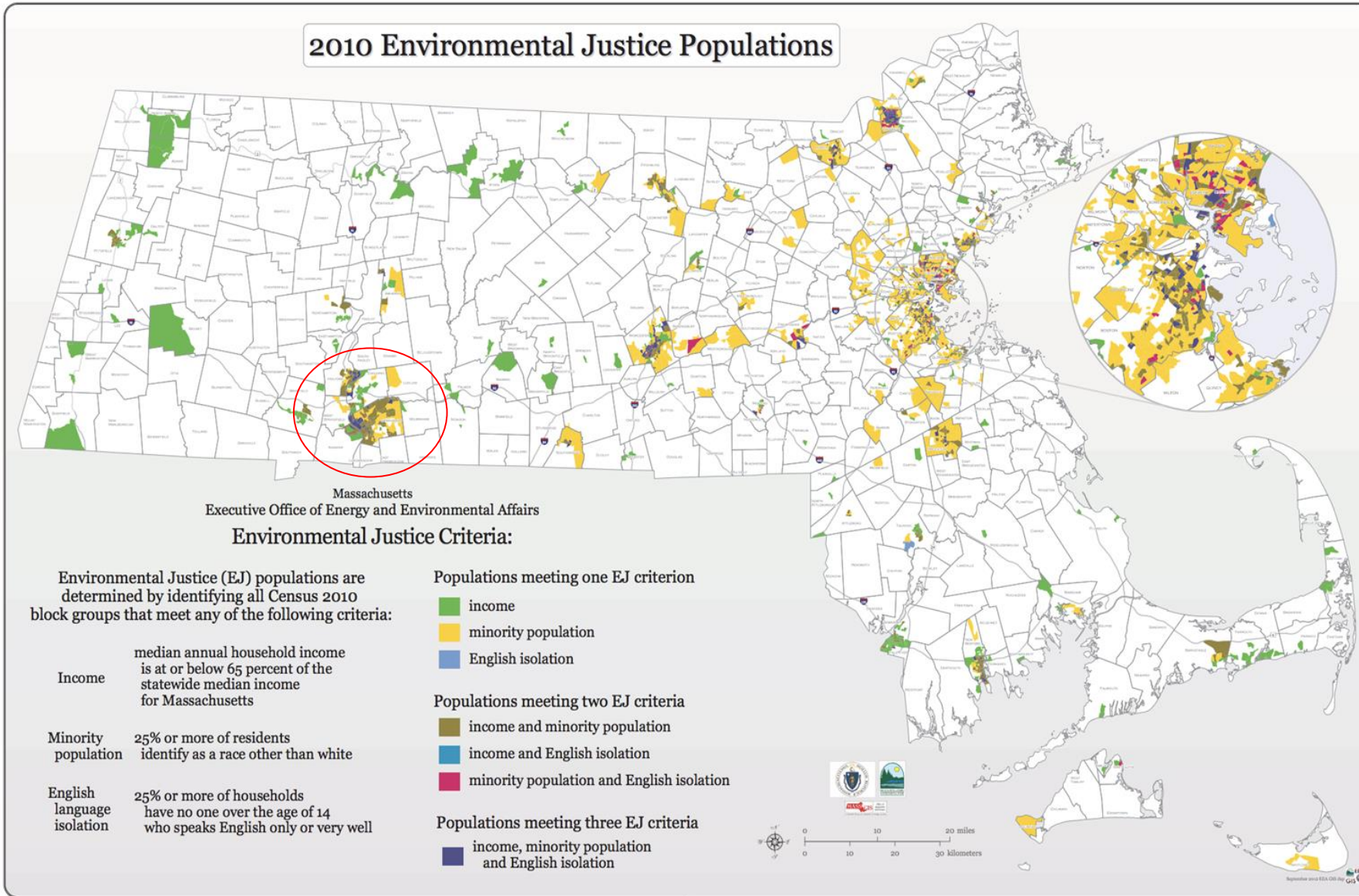
**NEARLY 10 YEARS –  
REGROWTH NEGLIGIBLE**

# Health Impacts: Biomass power plant emissions per MWh exceed those from coal and gas for key air pollutants





# Environmental Justice Populations in MA



The proposed Palmer biomass power plant in East Springfield is sited in a community that meets all three of MA's criteria for environmental justice populations.

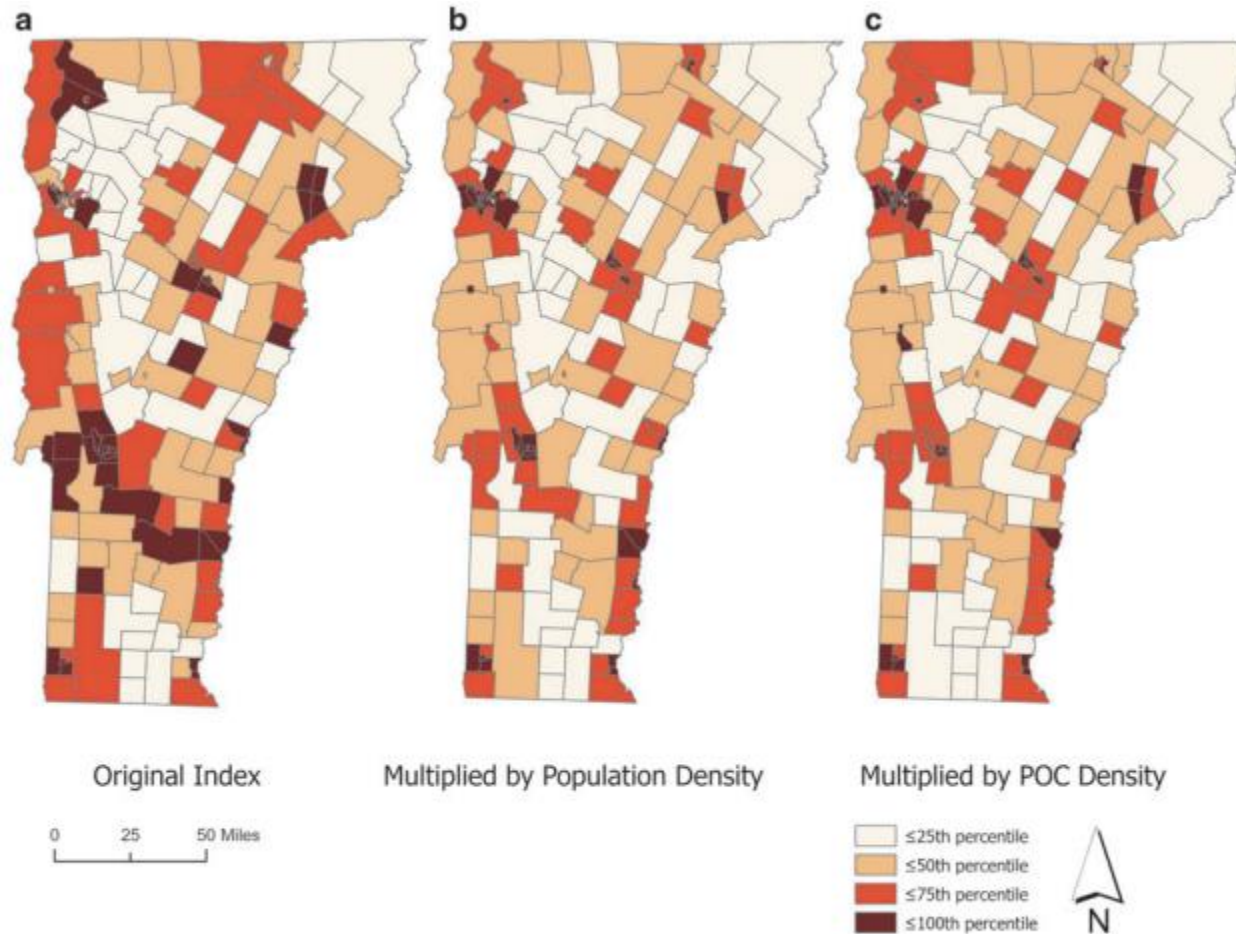


# Vermont's New Environmental Justice Law – May 2022

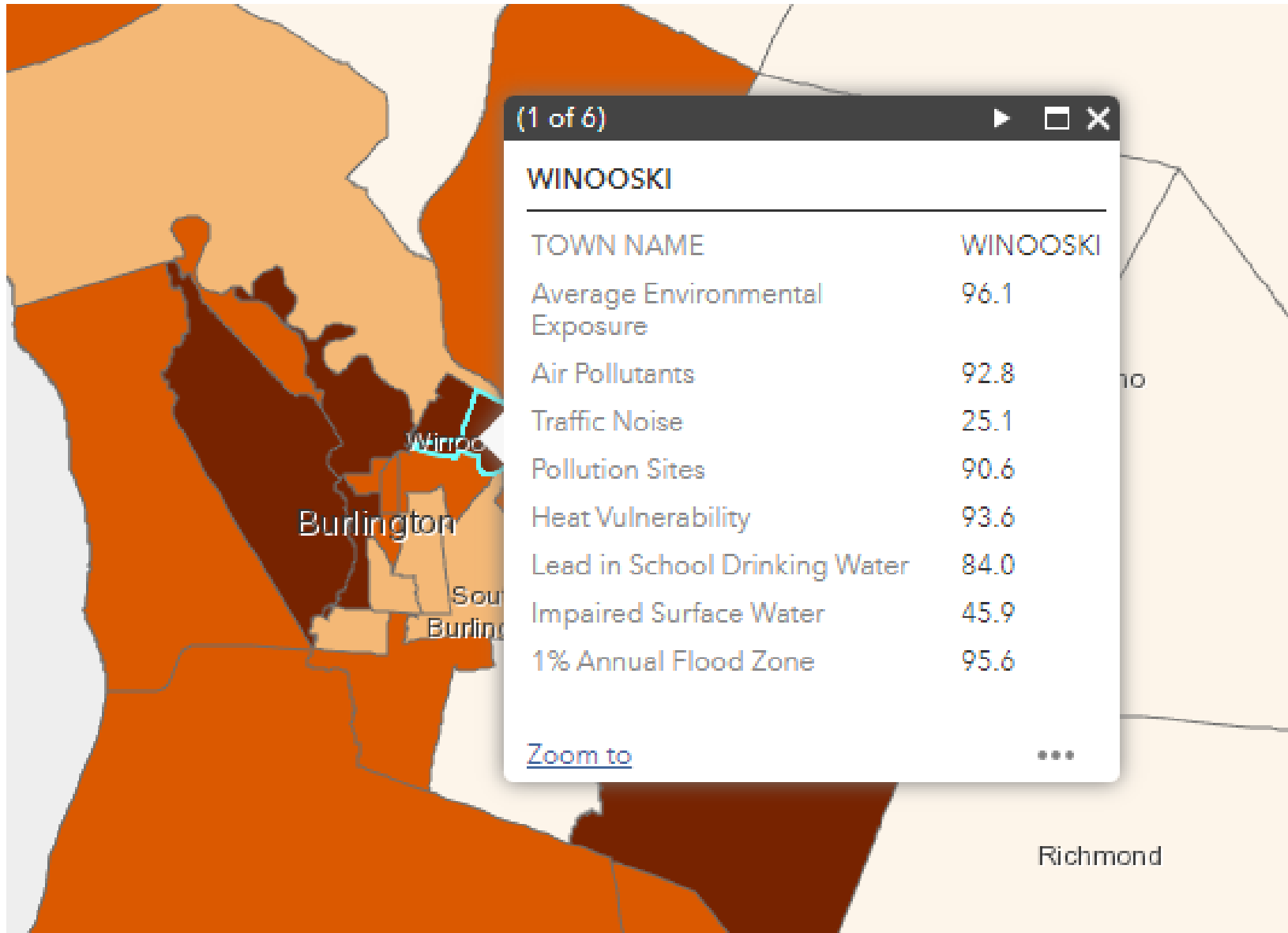
## **Act No. 154 (S.148). An act relating to environmental justice in Vermont**

This act establishes an environmental justice policy for the State of Vermont and requires the State agencies to incorporate environmental justice into their work, rules, and procedures. It establishes the Environmental Justice Advisory Council and the Interagency Environmental Justice Committee to advise the State on environmental justice issues. It also requires the creation of an environmental justice mapping tool. Effective Date: May 31, 2022

Vermont Environmental Disparity Index shows area around McNeil Generating Station are more vulnerable to higher environmental risks



**FIG. 6.** VTEDI (a); weighted by population density (b); and density of people of color (c).



<https://www.liebertpub.com/doi/10.1089/env.2021.0063>

## Wood Heating: A Significant Source of Harmful Emissions

- New information continues to emerge regarding the health impacts of fine particulate matter emissions (PM<sub>2.5</sub>), the leading cause of air pollution-related illness and death in the U.S.
- Although only a small fraction (less than 2%) of Massachusetts residents heat with wood, the latest EPA emissions data show that wood heating accounts for 83% of all PM<sub>2.5</sub> emissions from Massachusetts' heating sector, and 22% of the state's total PM<sub>2.5</sub> emissions.
- About 60% of Vermont households heat with petroleum products and 13% use wood, both the highest shares of those two fuels in any state. More than one-third of Vermont schoolchildren attend facilities heated by wood products. [Source: [EIA](#)]

# NESCAUM Assessment of EPA's Residential Wood Heater Certification Program (2021)



“The unavoidable conclusion of this [report](#) is that EPA’s certification program to ensure new wood heaters meet clean air requirements is dysfunctional.”



“To counter climate change, we need to stop burning things” - [Bill McKibben](#)







**For More Information:**

**Laura Haight**

**U.S. Policy Director**

**Partnership for Policy Integrity**

**[www.pfpi.net](http://www.pfpi.net)**

**[lhaight@pfpi.net](mailto:lhaight@pfpi.net)**

**518-949-1797**