

Episode 56DD to 56DM, April 24, 2023. The Vermont S.5 issue.

Ep 56DD Dogwood Alliance, Arizona to New York **Ep 56DE** New York to Tennessee 1 of 2 **Ep 56DF** Tennessee 2 of 2, to Utah 1 of 2 **Ep 56DG** Utah 2 of 2, to Vermont 1 of 3 **Ep 56DH** Vermont 2 of 3 **Ep 56Di** Vermont 3 of 3, Kiribati and Australia 1 of 2 **Ep 56DJ** Kiribati and Australia 2 of 2, U K Health 1 of 2 **Ep 56DK** U K Health 2 of 2, SAMHE U K, E U Children 1 of 2 **Ep 56DL** E U Children 2 of 2, Clean Tech 1 of 2 **Ep 56DM** Clean Tech 2 of 2, Lung Assoc. State of the Air

Residents Against Wood Smoke Emission Particulates (see RAWSEPresidents.wordpress.com and Scroll Down for PDFs of articles with U R L's to search on, and on the website are links to 10 minute Tiktok and Youtube videos and 30 minute podcasts on Spotify, Podbean, podcasts.google.com, Amazon Music Prime (free for Prime subscribers), Cast Box, and Pocket Cast (Pocket Cast is only free on the phone App)

United States

Dogwood Alliance.

Ask the Feds to Act Now on Biomass

<https://www.dogwoodalliance.org/actions/ask-the-feds-to-act-now-on-biomass/?fbclid=IwAR1rOAxBLY0DH112WS5nsgCl26BhP3JeHNbo1J3EeJP07wWw7ncjlwbBXvo>

The US South is the world's largest exporter of wood pellets. Our forests burn in power stations across Europe and Asia under the guise of "green" energy.

Burning trees for electricity worsens the climate crisis.

The wood pellet industry hopes to double its production across the South. We must join local communities fighting against this polluting industry.

The Biden administration has made a commitment to environmental justice. It's time they act on it.

Federal agencies must address the environmental justice and climate impacts of the biomass industry.

? Take future action with a single click.

RAWSEP View: One downside to heat pumps has been their poor performance in cold climates. To advance the technology, the DoE launched the **Cold Climate Heat Pump Challenge**. **Rheem recently announced an air-source heat pump that passed the Heat Pump Challenge**, providing uninterrupted heating under -22.9 F ambient conditions. The DoE is accepting applications from manufacturers interested in creating new US facilities or expanding existing production capacity to develop more electric heat pump systems, components, and materials. The department seeks projects that will: Construct new commercial-scale facilities or expand existing facilities to create new or additional domestic production capability. Retool or retrofit existing commercial-scale facilities to transition manufacturing from non-heat pump HVAC systems and/or water heating equipment to produce electric heat pump materials, heat pump components, and heat pump systems. Invest in the clean energy manufacturing workforce by providing good-paying, union jobs. Concept papers, required by all applicants, are due by May 19, 2023, 5 p.m. (ET). Full applications are due by Aug. 1, 2023, 5 p.m. (ET).

<https://www.pv-magazine.com/2023/04/21/us-government-commits-250-million-to-domestic-heat-pump-production/?fbclid=IwAR26RchR6XDGF4sLLZdIm5BAUZ7ruL28LMS19C5QIF8BDSIW568mED6NgYo>

Excerpts edited by RAWSEP for brevity and clarity.

US government commits \$250 million to domestic heat pump production.

The US authorities will offer new funds under the US Inflation Reduction Act (IRA) to build a clean energy economy, create new manufacturing jobs, and help families to save money on their energy bills.

APRIL 21, 2023

As part of the Biden administration's Investing in America program, the US Department of Energy (DoE) has announced a federal funding opportunity of \$250 million to incentivize domestic heat pump manufacturing in the United States. **This funding opportunity is the first to be announced since President Joe Biden invoked the Defense Production Act (DPA) in the summer of 2022**, authorizing the DoE to increase domestic production of five key clean energy technologies, including electric heat pumps.

The IRA governs the new funding, which will be used to build a clean energy economy, create new manufacturing jobs, and help families save money on their energy bills. Increased use of heat pumps for heating and cooling will lower

energy costs for more American families and businesses while creating healthier indoor spaces with American-made clean energy technologies.

“Electric heat pumps offer a cheaper, more reliable option for heating and cooling that isn't prone to dramatic price swings and helps to strengthen the nation's energy independence,”

More than 40% of all US energy is consumed in the heating and cooling of buildings, homes, offices, government, and municipal facilities. Heat pumps transfer heat rather than generate heat, making them applicable across all climates without reliance on home heating oil, gas, or other fuel sources.

The DOE's Office of Manufacturing and Energy Supply Chains (MESC) manages the DPA heat pump activities. To learn more about the MESC's mission to strengthen and secure domestic manufacturing and energy supply chains to modernize energy infrastructure and support a clean and equitable energy transition, click [here](#).

Arizona

[Arizona DEQ extends high-pollution advisory into Saturday | The Daily Independent at YourValley.net](#)

YourValley.net

Wood burning in residential fireplaces, chimeneas, outdoor fire pits and ... It includes individuals and businesses which have burn permits for ...

California, Plumas County

[Northern Sierra Air Quality Management District invites community to join in at annual event ...](#)

Plumas News

The Northern Sierra Air Quality Management District is holding a Wood Stove ... programs available, and health impacts related to wood smoke.

Illinois, McDonough County

[Shed destroyed in McDonough County fire - WGEM](#)

WGEM

They said the cause of the fire was a wood burning stove. Firefighters said no one was injured and the shed is a total loss.

Iowa, Marshalltown

[No one hurt after early morning fire in Marshalltown - KGAN](#)

KGAN

Marshalltown FD says the fire originated in the roof around the chimney pipe of a wood burning furnace. Marshalltown Police and Unity Point EMS ...

New Mexico, Hermit's Peak, Calf Canyon, Rociada and Gascon

RAWSEP View: The options for home heating in New Mexico must include clean, particulate-free, alternatives to wood burning. Installing a wood burning stove in a house rebuilt after a wildfire is not a clean option. An electric Heat Pump would be a clean option for this homeowner.

[Rising from the ashes: Rebuilding rural area has unique challenges | Local News](#)

Santa Fe New Mexican

He installed stone wall tiles around the wood-burning stove in the ... bear to see burned and blackened trees out every window in the house.

Hermits Peak/Calf Canyon Fire anniversary

Rising from the ashes: Rebuilding in a rural area has unique challenges.

Apr 22-23, 2023

Excerpts edited by RAWSEP for brevity and clarity.

ROCIADA — He installed stone wall tiles around the wood-burning stove in the corner of his main living space to represent his connection with the earth. In April 2022, more than 1,000 acres of his family land in Rociada and Gascon, including his home, grazing pastures, and heavy machinery essential to his excavation business — were burned in the devastating fire. On April 22, 2022, the Hermits Peak blaze was more than 90% contained; so corralled, the Rociada homeowner said, that he felt comfortable driving to Colorado for his business. But when the fire escaped control and merged with the Calf Canyon Fire, his property was more or less in the middle. He used his experience as a volunteer firefighter to bulldoze a fire line, keeping a distance between his cows and the flames. The homeowner said expecting any more than 50% of homes in the fire zone to be rebuilt is unrealistic. He delayed filing his notice of loss, the official claim, submitted to the Federal Emergency Management Agency, in which Calf Canyon/Hermits Peak Fire victims can outline destroyed and damaged property, personal injury and financial losses. He said he wasn't sure how to total all he'd lost.

New York, Buffalo

[Extreme weather is nearly universal experience, poll shows - Buffalo News](#)

Buffalo News

PM-2.5 causes the biggest risk to humans as it can be inhaled deep into human lungs and even enter the bloodstream.

Episode 56DE

New York

[New Stats Show NYC Continues to Clear the Air - NYC Health](#)

NYC.gov

Data from the largest urban air monitoring program of any U.S. city show annual average levels of fine particulate matter (PM 2.5), ...

North Carolina, Rowan County, Salisbury, Gold Hill

[Charges upgraded to attempted murder for alleged arsonist - Salisbury Post](#)

Salisbury Post

He saw a pile of wood burning on the front porch. Initially, he attempted to get enough water from the kitchen sink to put out the fire, ...

Excerpt edited by RAWSEP for brevity and clarity.

Charges upgraded to attempted murder for alleged arsonist April 23, 2023. GOLD HILL — A woman accused of arson and assault with a deadly weapon after an incident in July 2022 is now also facing attempted murder charges. A 50 year old woman was offered a plea deal by the Rowan County District Attorney's Office, but she declined. Rowan County jurors found enough evidence to amend the charges to include attempted murder, saying that she acted with malice and forethought when she attempted to murder. After the incident, it was discovered that the alleged arsonist had gone to the wrong house. The Rowan County Sheriff's Office responded to a report of attempted arson just before 7:30 a.m. on July 22, 2022, when a woman homeowner called to say **a woman neither she nor her husband knew was outside trying to set their house on fire**. Reports say that the victims' neighbor called and woke the wife of the couple who live in the home just after 7 a.m., saying they could see a woman on their porch, and it looked like **she was trying to set the porch on fire**. The wife woke her husband, who then went downstairs to investigate. **He saw a pile of wood burning on the front porch**. The male homeowner went to the backyard to get a water hose. In the backyard **someone had piled wood that was on fire around a propane tank**. The male homeowner tried to turn on the water hose but only a trickle of water came out. The man said he keeps a spray bottle of water sealant nearby for use on their above-ground pool, and he realized **someone had used that sealant on the hose to prevent water from getting out**. The man realized the **fires were intentional**, and while his wife called 911, he went into the house and retrieved his rifle. The alleged arsonist **used a vehicle to push the male homeowner out of her way**. The male homeowner described the woman and her car, and gave her **license plate number** to authorities. A **neighbor gave deputies the woman's name**. The woman lived in Stanly County and deputies there arrested the alleged arsonist.

Oregon, Portland

Sharing from a group:

Hi,

My name is Alicia, and I am air quality advocate in Portland and a mom of two kids, one of whom has respiratory health issues. We love pizza and would really love to support your delicious restaurant but we cannot in good conscience vote with our pocketbook to harm the health of our community. Did you know air pollution from people burning wood in Portland is the leading cause of dangerous, health and climate harming air pollution? One eco stove run perfectly for 24 hours creates more air pollution than driving a car for an entire year.

I am sure you were not aware of the damage your burning does to our community's health and hope that you will make changes.

Thank you so much.

Alicia

Portland

Pennsylvania, Lock Haven

[Police news – April 24 - Lockhaven.com](#)

Lockhaven.com

The stove was connected to a wooden box for a “smoke effect,” police said. ... resulting in the fire getting out of control and burning a wood box ...

Tennessee, Smokey Mountains

RAWSEP View: The term power plant could include biomass (wood burning) power plants. Wood produces more particulates of 2.5 micrometer size (PM2.5) than coal burning and produces 450 times the particulates as natural gas burning. PM2.5 is the perfect size to infiltrate the human lung, producing a cascade of human health problems. Wood smoke from biomass plants is the same wood smoke as from residential wood burning, 90% PM2.5, and the smoke from residential wood burning is hyper-localized, affecting near neighbors by entering near neighbors' yards and infiltrating near neighbor's homes.

[Our Nation—and Its National Parks—Has a Smog Problem - NRDC](#)

NRDC National Resources Defense Council

The Particulars of PM 2.5 ... “That haze is made up of fine particulate matter, nitrogen oxides, and volatile organic compounds,” says Ulla-Britt ...

Excerpts edited by RAWSEP for brevity and clarity on the subject of Residential Wood Smoke Emission Particulates and PM2.5 (particulate matter of 2.5 micrometer size).

Our Nation—and Its National Parks—Has a Smog Problem

The U.S. Environmental Protection Agency has proposed new rules to address air pollution. But experts worry it's not enough.

April 21, 2023

“Mmm, smell that fresh mountain air!” said a friend years ago while we hiked through the Great Smoky Mountains National Park, which lies half in Tennessee and half in North Carolina. “The Smokies have some of the worst air quality of any national park,” I said. I could feel the vibe dying as I said it. These days, the Smokies are smokier than ever—instead of blue, it's an off-white haze. It cuts visibility from 110 miles on clear days to just 5 miles during “[severe haze episodes](#).” The quality of your Instagram and TikTok posts is not the only thing in danger. “That haze includes fine particulate matter, PM2.5” The smog isn't coming from within the park—it's from coal-fired power plants owned by the Tennessee Valley Association and **other industrial sources**. “Air pollution doesn't respect state borders. Perennial air pollution problems in New England and the mid-Atlantic are caused not just by local traffic or even local industry but in some cases, at greater than 50 percent, by power plants in Illinois, Indiana, Ohio, Pennsylvania, and West Virginia. [Haze]

is a soup of manmade pollution—If you're seeing it, you're breathing it. PM2.5 is known to bioaccumulate in the same way that mercury does, so it's really not safe for wildlife.”

Why PM2.5 matters.

A major contributor to smog is [fine particle pollution](#). At 2.5 microns, these particles can penetrate deep within your lungs and into your bloodstream. PM2.5 causes many health issues, from asthma to heart attacks to death. A 2019 study found that, globally, PM2.5 [kills roughly one in five people](#) prematurely. In 2022, another [huge study](#) looked at the health data and outcomes of 68.5 million older Americans and found that even a slight decrease in allowable levels of PM2.5 would have saved 143,000 lives over 10 years.

The good news is that in 2023, the U.S. Environmental Protection Agency (EPA) proposed lowering the allowable levels for PM2.5. The bad news is that the E P A still needs to go lower.

Since 1970, the National Ambient Air Quality Standards, or NAAQS, have set limits on six major air pollutants. The EPA bases the limits on how levels of exposure affect public health. For PM2.5, the standards seek to limit how much someone breathes in over the course of a single day as well as over a year.

The EPA [current proposal](#) suggests limiting the annual standard for PM2.5 from 12 micrograms (mg) per cubic meter to between 9 and 10 mg.

Why the EPA needs to be stronger on PM2.5

[The American Lung Association](#) and other nonprofit groups, including NRDC, are urging the Biden administration to go as low as it can on limits of PM2.5 The EPA is currently reviewing public comments on annual and daily standards for PM2.5 that go as low as 8 mg annually and 25 mg per cubic meter daily.

The E P A decision not to lower the standard for how much particulate matter a person might encounter in a 24-hour period is particularly disappointing, because that's the one that would [protect people living closest to the sources of this pollution](#) the most. “They're marginalized communities, often people of color, often [people of low income](#), and people who [deserve way more protection than the EPA is affording them.](#)”

Episode 56DF

While “micrograms per cubic meter” is not a metric most of us are familiar with, we understand that less pollution in our lungs is better. Limits being advocated for by NRDC and NPCA are not arbitrary—they are based on a decade's worth of scientific [research that has found that PM2.5 is harmful at lower levels than previously thought](#).

[Further proof that the current limit for annual exposure is too high is seen in how seldom it's exceeded](#). “Southern California is just about the only part of the country that regularly violates the current annual standard for PM2.5,”. It's certainly no coincidence that in 2018, two parks in that region—[Joshua Tree National Park and Mojave National Preserve](#)—both had air that was unhealthy for visitors to breathe for more than two months of the year.

Today's forecast: PM2.5 levels inform the Air Quality Index that, in turn, informs you about what you may be breathing in on a daily basis.

“These are air quality warning systems,” [“Code red, code orange, code yellow](#). That's how that the government communicates with you, the population, about whether the air is safe or unsafe.”

Health advocates will continue to push the EPA to strengthen its protections against particle pollution, which the agency will finalize later in 2023. Check out sites and apps like [AirNow](#), and when levels tip into orange and red, consider staying indoors instead.

The Particulars of PM 2.5

Why particulate matter...matters.

May 20, 2022

PM 2.5 (n.): Air pollution consisting of particles less than 2.5 microns across

New Delhi has the [most polluted air on earth](#). In 2019, particulate matter in the city reached levels more than 20 times higher than the worst air pollution measured in Manhattan that same year. Specifically, it got to 900 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$); for reference, the U.S. Environmental Protection Agency's (EPA) scale to measure particulate matter maxes out at 500 $\mu\text{g}/\text{m}^3$, at which point the air is considered “hazardous.”

What is particulate matter pollution?

Particulate matter, or PM, is one of the [primary contributors to air pollution](#). Any solid or liquid substance that is suspended in the air counts as particulate matter pollution, including dust, dirt, or soot.

particulate air pollution is defined by size rather than the chemicals it contains. Typically reported in micrograms per cubic meter, the smaller these particulates are, the more damage they can wreak on the human body. Which is why

they're regulated in the United States by the [Clean Air Act](#) (and why our air no longer approaches the dirtiness of China's or India's).

Where does PM 2.5 come from?

You can trace PM 2.5, on the other hand, primarily to combustion—[fireplaces](#), car engines, and coal- or fracked (natural) gas-fired power plants are all major PM 2.5 sources. That's why the five U.S. cities with the [highest PM 2.5 levels](#) are all in car-crazy California. Other problem cities have large coal-fired power plants ([Pittsburgh](#)), rely heavily on [wood stoves](#) for heat ([Fairbanks, Alaska](#)), or are prone to wildfires ([Medford, Oregon](#))

What are the health effects of PM2.5

Your body isn't good at blocking PM 2.5. These particles are small enough to bypass your respiratory system's defenses, getting into your lungs, where they can even penetrate the bloodstream. Research has shown that an increase of just 10 µg/m³ of PM 2.5 in the air increases the risk of someone dying from heart disease by [10 percent](#). Exposure can also [lead to higher rates](#) of bronchitis, depressed lung function, asthma attacks, and even premature death. PM 2.5 is responsible for an estimated [4.2 million deaths](#) around the world every year. In other words, when it comes to air pollution, size matters.

What level of PM 2.5 is unhealthy?

While the EPA marks the upper limit for "good" air quality at 12 µg/m³ over 24 hours, [evidence shows that there is no safe level of air pollution exposure](#). This problem is a global menace and is imposing huge [costs on our society](#) in terms of deaths, illnesses, lost wages, and reduced worker productivity.

How can you filter out PM 2.5 particles?

First, check the Air Quality Index of your city [here](#). If PM 2.5 concentration is high, it is recommended you avoid the outdoors. If you have to go outside, you can wear a [face mask with a PM 2.5 filter](#) to help reduce your exposure. If you're shopping for one, be sure it has "NIOSH" (National Institute for Occupational Safety and Health) as well as either ["N95"](#) or ["P100"](#) printed on it, it has two straps, and it fits over your nose and under your chin, sealing tightly to your face. [Air purifiers](#) can be used inside your home to get rid of pollutants in the air.

Texas, Houston

Year-long air quality data reveals alarming health hazards for Houston-area residents

https://airalliancehouston.org/year-long-air-quality-data-reveals-alarming-health-hazards-for-houston-area-residents/?fbclid=IwAR3uiksTm2OA44ifP6-QVWwOD2I99nxs5wPjHVRt5zC6xH6zM-B_Gz1wB7I

RAWSEP View: Community Air Monitoring Program (C.A.M.P.)The results come from [multiple low-cost air monitors](#) installed and maintained by Air Alliance Houston and their community partners during 2022. The C.A.M.P. program aims to make information about air quality easily accessible to residents in environmentally vulnerable communities, so they can take steps to protect their health and then take action to protect their neighborhoods. Residents in these [five C.A.M.P. communities are now using these real-time neighborhood-scale data to pinpoint ways to reduce pollution](#).

[April 22, 2023](#)

Excerpts edited by RAWSEP for brevity and clarity.

Local organization presents one-year findings from its Community Air Monitoring Program

Contact: Riikka Pohjankoski, riikka@airalliancehouston.org, 713.589.7079

Houston, TX – [Air Alliance Houston](#) and community partners unveiled today the findings from the first year of their Community Air Monitoring Program (C.A.M.P.), a citizen-science initiative to improve air quality and health. The data highlights, with local precision, the air pollution hazards present in five environmentally vulnerable communities in the Greater Houston Area: Gulfton, Kashmere Gardens, and Near Northside/Northline in the city of Houston and the cities of Pasadena and Galena Park/Jacinto City in Harris County.

[In Galena Park/Jacinto City, fine particulate matter \(PM2.5\) which can penetrate deep into the lungs and enter the bloodstream, triggering serious health conditions, exceeded the annual EPA maximum standard for 11 months compared to all other C.A.M.P. communities.](#)

More details of the C.A.M.P. air monitoring data for 2022 may be downloaded [here](#).

the community is taking air monitoring into their own hands creating an air monitoring network located right in the middle of neighborhoods and close to homes, schools, churches, parks and other places where our community members live, learn, work, and play. Thankfully, we now have the tools to see and track in real time what the air quality is like, when it's safe for our kids to spend time outside, and we look forward to using the data to demand for better policies that do not endanger our community's health.

For more information about the Air Alliance Houston's Community Air Monitoring Program, including program videos and our live dashboards, visit airalliancehouston.org/community-air-monitoring-network/.

Utah

RAWSEP View: These high school students recognize that car idling creates PM2.5 that pollutes the air. The PM2.5 pollution from residential wood smoke is not mentioned in this article.

https://www.sltrib.com/news/2023/04/23/cough-gag-wheeze-how-utah-teens/?fbclid=IwAR3Tyr2vMfmsXKDgekiBj7dSgyOrKC_FJdHoDvhSppzNx-qhmYDw2uy7TdQ

Episode 56DG

Cough, gag, wheeze — how Utah teens visualize the air they breathe.

Granger High students create artwork in the fight against pollution.

April 23, 2023

Excerpts edited by RAWSEP for brevity and clarity.

West Valley City. A high school girl in Utah formed a stark memory during her first year in the Salt Lake Valley. She was about 6 years old when she pointed her finger at a gray cloud concentrating under the mountains. She hadn't seen anything like that in her native Arizona. That's when her father introduced her to a word that would prevail in her vocabulary for the next years of her life: Inversion. Her family then lived in a student housing unit close to the University of Utah in east Salt Lake City. But for the past seven years, the 16-year-old's home has been in West Valley City, and that cloud is no longer at a distance. It's part of her daily life. An art class at the school helps West Valley City teens reflect on their air quality and the solutions they would like to see. Like her, many other teenagers who grew up on the Salt Lake Valley's west side have heard about the bad air. An interschool program helps them explore both that cloud's cause and potential solutions to mitigate it. All of this, through art. Utah State University organizes a competition since 2015 among young students to market solutions to the pollution that pervades the valley. "Most students tell us that the contest is the only formal education they receive about Utah's air pollution." The Wasatch Front and Cache County are familiar with poor air. Both areas are known for exceeding [National Ambient Air Quality Standards](#) in the winter. But while collecting data from the air quality competition, a teacher discovered some students' answers suggested "they're getting a haphazard understanding of air pollution." A high school girl drew a winning entry. Her piece portrays a car with a body of its own and a passenger holding a key. Swirls blended with words in cursive surround it with words that represent the state's air — death and lung cancer. A teacher said some students didn't know why they couldn't see the mountains in the winter. "Which is surprising to me that a child would be unfamiliar with that at the high school level. Our state is too, and pollution is just something that we can't talk about in the schools. It's too politically divisive." From three art classes the students submitted 75 pieces to the contest. A junior at Granger drew Uncle Sam, added a gas mask, and modified the iconic message to "I want you to stop (car) idling." He wants to bring change to his community whenever he becomes a driver.

Vermont, Burlington

RAWSEP View: On March 7, Burlington voters approved Burlington, Vermont Ballot Question 2, which allows the city to impose a fee on certain buildings that install fossil fuel rather than renewable heating for the stated purpose of reducing greenhouse gas emissions. The proposal failed to inform voters that systems fueled by wood are considered "renewable."

Not all hope is lost, according to Stop Biomass; the City Council still has to make the proposal into an ordinance, which provides an opportunity for the council to bring the question back before voters about whether to put an impact fee on biomass, liquid biofuels, and renewable natural gas.

It is critical that Vermonters contact their city councilors to express their concerns about the carbon impact fee and to state their opposition to the McNeil expansion. As an statewide example in New York, ReEnergy Black River biomass power facility in Fort Drum, New York, is set to close this spring because New York no longer considers biomass to be renewable, and the plant is unable to stay open without the subsidy provided by renewable energy credits. 350Vermont is advocating for amending the statewide Vermont Affordable Heat Act S.5 so it disqualifies liquid biofuels, renewable

natural gas, biomass and hydrogen from earning clean heat credits, allowing for more accurate emissions counting that would effectively transition us away from all combustion fuels for heating.

Disqualifying biomass would likely be the downfall of McNeil, as has been the case with other biomass plants in the region.

"McNeil should have been shut down long ago, like its contemporary [Midland SECO](#), [Stored Solar Ryegate](#), [ReEnergy Black River](#), and other wood chip plants are in trouble and closing because they are simply too expensive to operate in a competitive energy market," Duval said. "McNeil is kept on life support with REC subsidies. Those subsidies are disappearing and are widely opposed by environmental groups."

[Claire Greenburger: Coalition of Vermont residents opposes McNeil plant expansion](#)

VT Digger

The troubling reality is that burning wood emits more carbon dioxide per unit of energy produced than burning fossil fuels, destroys forests, ...

Claire Greenburger: Coalition of Vermont residents opposes McNeil plant expansion

Excerpts edited by RAWSEP for brevity and clarity.

This commentary is by Claire Greenburger, a student at Middlebury College, and the media & communications fellow at 350Vermont, an environmental justice organization based in Burlington.

A 10-foot-high barbed-wire fence encloses the McNeil Generating Station, a nine-story building routinely encircled by trucks and tractors. Every hour, 76 tons of wood chips are hauled inside the plant and burned.

The McNeil Generating Station began operations in 1984. [Burlington Electric Department](#) today claims that biomass is a zero-emission alternative to fossil fuels.

Burning wood emits more carbon dioxide per unit of energy produced than burning fossil fuels, and releases air pollutants that are harmful to human health.

Burlington Electric Department and Vermont utilities depend on renewable energy credits.

"McNeil generates renewable energy certificates as it generates electricity. In New England, electrical utilities exchange environmental attributes. In some states, regulations for this trading process assume — wrongly — that burning biomass is zero emission, comparable to solar or wind energy."

In 2019, renewable energy credits constituted 35% of McNeil's revenue.

Burlington's [Net Zero Roadmap](#) sets the goal of reaching Net Zero Energy by 2030. It is one of the most aggressive municipal climate plans in the country. The plan omits two of Burlington's largest sources of emissions: the McNeil biomass plant and the Burlington airport.

"They're cooking the books from the start" .

In December 2022, concerns about Vermont statewide greenwashing, along with emergence of a decades-old plan to expand the McNeil plant, led to the beginning of [Stop BTV Biomass](#), a coalition of Burlington residents, including both Duval and Gish. Members are concerned that biomass, biofuels, and "renewable" natural gas are being promoted as solutions to the climate crisis.

Stop BTV Biomass opposes a new plan to expand McNeil by constructing a mile-long steam pipe that would supply heat to the UVM Medical Center, costing \$40 million.

The steam pipe would act as justification for keeping the McNeil plant open long-term, despite its harmful environmental impacts.

"If you say 'McNeil is the critical steam supplier for the hospital,' then that becomes the excuse to keep running McNeil all the time. The right thing to do is to shut it down and make sure every new building is super insulated and requires no heat."

The steam pipe will allow McNeil to qualify for additional thermal renewable energy credits, traded via a local scheme enabled by [Town Meeting Day Ballot Question 2](#) and S.5, the [Affordable Heat Act](#), now under consideration in the Legislature.

The Affordable Heat Act supports biomass as a heating fuel alternative. It would require fossil fuel dealers to earn "clean heat credits" by switching their fuel supply over time from fossil fuels to approved alternatives. As written, the act would award McNeil clean heat credits.

"The incentive to transition to carbon-intensive and polluting fuels like wood, biofuels and renewable natural gas is appearing in so many places that we are deeply concerned about the direction we are heading as a state," contends [Stop BTV Biomass](#).

Stop BTV Biomass believes in the importance of education campaigns to raise awareness and educate the public about the plant.

Gish believes in exposing these mainstream climate solutions as a “kind of desperate attempt to fit climate action within our existing unsustainable economic system.”

Episode 56DH

Vermont, Bennington

RAWSEP View: The letter writer below uses fossil fuel, not wood burning for heat. She doesn't want to move to electric heat, which she thinks will be more expensive. She thinks that Vermont is the greenest state, probably because the Vermont's biomass (wood burning) plants are counted as “green” and their particulate PM2.5 emissions are not counted along with fossil fuel emissions as polluting because burning wood is considered “carbon neutral” because trees grow back. But the PM2.5 the wood burning plants create does not magically disappear just because trees grow back, in decades or centuries. But she recognizes that wood stoves are very polluting and says that Vermont is number one in use of wood burning stoves. She wants low taxes.

Does she want wood burning power plants and wood burning stoves to stop being considered renewable and stop being left out of the count of polluting PM2.5 emissions in the state of Vermont? It is unclear from this letter. She does not want to stop burning fossil fuels. Indeed, the cleanest fossil fuel natural gas is hundreds of times less polluting from PM2.5 than wood burning or coal burning. The letter writer seems to be using propane or oil to heat her home, which are more polluting than natural gas, and is satisfied with the price of these fuels, in comparison to paying for electric heat. Until recently, the cleaner fossil fuel natural gas was considered the best “bridge” fuel between solid fuel burning like wood burning and coal burning and the perceived far off future widespread availability and low cost of solar, wind and geothermal powering a new electric grid. But now solar, wind and geothermal prices have plummeted, and government incentives are here this year for electric heat from heat pumps that can work at temperatures well below zero Fahrenheit. If the letter writer knew of these new developments, would she embrace these new ways to heat her home, which are now cost effective?

It is true, as environmentalists in Vermont argue, that adding wood burning and industrial biomass burning to the ways of heating to be discarded by Vermont's S.5 statewide law along with propane and fuel oil, would hasten the development of truly clean industrial power and residential heating, such as solar, wind and geothermal, but it is unclear if the letter writer is arguing along with environmentalists. She seems to be arguing for any system that would enable her to pay less taxes and pay less for heating her home. If she is interested in greater access to health care, could that be because of health problems she sees caused by air pollution in the form of PM2.5 from the many wood stoves she has observed in use in Vermont?

[Vermont is headed in the wrong direction | Opinion | benningtonbanner.com](#)

Bennington Banner

Vermont ranked number 1 in the U.S. as a state that has the most wood burning stoves. The purpose of our Vermont government is to listen to the

Excerpts edited by RAWSEP for brevity and clarity, and relationship to the issue of wood burning stoves emitting particulates PM2.5 which harm the health of near neighbors.

Vermont is headed in the wrong direction.

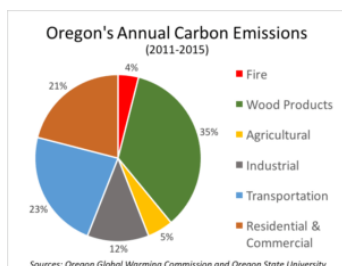
Vermont's House of Representatives voted 98 to 46 in favor of S.5, a clean heat standard, that is designed to lower gas emissions by moving away from propane and oil and instead towards costly electric heating systems. Thousands of Vermonters wrote to their legislators to oppose S.5 and their voice was ignored.

There are a few points that must be considered: First, Vermont ranks number 51 in the US. (including Puerto Rico) for carbon emissions. S.5 is not an issue when we have the lowest rate of carbon emissions in the U.S. We should be celebrating being the greenest state and instead those of us who heat with fossil fuels will be punished by higher costs. Second, if S.5 continues, why aren't people with wood burning stoves being looked at with this green initiative? Yes wood is a renewable source of energy, but it is also a significant source of pollution. Vermont ranked number 1 in the U.S. as a state that has the most wood burning stoves.

I am disappointed with our legislators who do not listen to Vermonters or listen to Gov. Phil Scott's recommendations, who was not in favor of S.5.

Vermont, Burlington

RAWSEP View: This article does not mention the health effects from PM2.5 emissions from biomass (wood) burning. However, this article lists many reasons why biomass (wood) burning is PM2.5 polluting, and that pollution is not negated by the false construct of Carbon Neutrality (pollution not counted because trees will grow to replace felled trees within decades or centuries). The article also lists reasons why wood burning is not economical. Taxpayer paid government subsidies hide the fact that wood burning is not economical. The wood burning power plants discussed are 1) The McNeil Biomass Burner in Burlington Vermont, is the state's single source of air pollution 2) the City of Prineville, Oregon, promotes the construction of a 20 MW biomass burner, 3) in California, another biomass burner is about to be constructed in [Burney](#), 4) Mount Bachelor's proposed biomass burner in Bend, Oregon, 5) [Red Rocks Biofuel plant](#) in Lakeview, Oregon (now defunct). The article also mentions the government action of 6) Logging on the Deschutes National Forest (NF) in Oregon done to "reduce" wildfire. The adverse health effects from PM2.5 emitted from wood burning mentioned in this article are: regarding 3) Burney the same delusional remarks about "clean" energy made to justify construction of the plant at Burney, California. Regarding 1) McNeil in Burlington, Vermont. "POLLUTION. Another problem with the moniker that biomass is "clean" is that they pollute the atmosphere with PM2.5 that is damaging to health. Particulate matter from burner emissions is continuous throughout the year rather than associated with one-time seasonal events like wildfires. People with asthma and other breathing issues are vulnerable to emissions. The McNeil Biomass Plant in Burlington Vermont emitting air pollution even in winter. Biomass plants produce air pollution year round, while wildfire is seasonal. Proponents argue that biomass burners operate at high temperatures that eliminate most toxins. But they don't tell the public that during the start-up and shutdown phase, burners operate at far lower temperatures and emit significant amounts of pollutants during these periods. Even worse for the atmosphere and human health is that biomass burners often consume the available nearby wood and then start to include building waste, railroad ties, tires, and other materials that contain numerous toxic materials in the mix." Regarding 6) Logging in Oregon is not carbon neutral: CARBON RELEASES. Logging the forest releases stored carbon. Industry shills suggest that burning wood is different from burning natural gas or other fossil fuels because it is "biogenic carbon," meaning the growth of trees produces it, thus carbon "neutral." Logging in Oregon easily contributes far more carbon into the atmosphere than even the worst large blazes. Indeed, 35% of Oregon's carbon is the result of logging. Overall, about two-thirds of the carbon in trees that are logged for lumber quickly become greenhouse gas emissions." Since biomass operations burn an even greater amount of the tree (like branches), the amount of carbon released is significantly greater. The green piece of the pie represents WOOD CARBON the amount of Carbon emissions from logging and wood products in Oregon. However, this biocarbon has taken decades to centuries to accumulate but is released immediately when burned. Since most biomass operations use whole trees, they effectively release the bulk of all stored carbon. Even a forest fire does not release most of the stored carbon. Instead, carbon remains on site as snags, down wood, roots in the ground, and charcoal. Plus logging emissions are far greater than those resulting from wildfires says OSU [researcher Bev Law](#) : "When you have a disturbance such as fire, and when wood is removed and harvested and put into wood products, you have to follow the carbon," "And it turns out that ... harvest-related emissions are five to seven times that of the fire emissions in Oregon."



Episode 56D i

[What's Wrong With Biomass Burning? Everything. | The Wildlife News](#)

The Wildlife News

Those promoting biomass fuel and energy suggest that burning wood is “clean energy “and carbon neutral. However, biofuels and biomass energy are ...

What’s Wrong With Biomass Burning? Everything.

April 21, 2023 · In [Wildlife News](#)

Excerpts edited by RAWSEP for brevity and clarity.

The McNeil Biomass Burner in Burlington Vermont, is the state’s single source of air pollution.

Presently around the West, the Forest Service (FS), timber advocates, and far too many conservation organizations are promoting biofuels and biomass energy as “Green Energy.” The FS and its allies want to cut more wood (which they term fuels or “waste” while I call it wildlife habitat and carbon storage) from the forest and use it to produce some products that society values, like jet fuel or even heating buildings.

But the only thing “green” about biomass energy or fuel is the subsidies that government agencies bestow.

Those promoting the biomass fuel and energy juggernaut suggest that burning wood is “clean energy “and carbon neutral. However, biofuels and biomass energy are not clean, not carbon neutral, and not sustainable.

Virginia, Virginia Commonwealth University (VCU)

[VCU students mark Earth Day with protest saying school needs to do more](#)

Richmond Times-Dispatch

Particulate matter refers to airborne pollutants that can be inhaled and ... The two types that are typically monitored are PM-10 and PM 2.5.

VCU students mark Earth Day with protest saying school needs to do more

Apr 21, 2023

Excerpts edited by RAWSEP for brevity and clarity.

VCU students led climate protest calling on President of VCU to declare a climate emergency.

The protest, which was student-organized by Green Action! VCU, was supported by the Richmond Sunrise Movement and Third Way.

Last summer, the university declared [a commitment to sustainability as part of the school’s Quest 2028 strategic plan](#). It lists sustainability as one of the plan’s key initiatives. A committee is currently developing a detailed climate plan known as the “ONE VCU Sustainability Plan.”

The demonstrators staged the protest even though the school has 22 LEED-certified buildings, meaning they are environmentally friendly. VCU also received a “gold” rating from an [independent environmental auditing group](#) that rates universities based on their transparency around sustainability initiatives.

But protesters say the university has watered down a commitment to reduce greenhouse gases by 2025. VCU’s own data substantiates the claim.

In 2008, VCU developed a sophisticated dashboard for tracking the university’s greenhouse gas emissions. The dashboard includes everything from air travel to fertilizer purchased by student programs. Then, in 2010, the university released a [climate action plan targeting a 30% reduction in greenhouse gas emissions by 2025](#).

The university has quietly rolled back that target. VCU’s current climate action plan tasks the school to achieve a 17% reduction by 2025.

The [dashboard shows that VCU’s net emissions climbed 9% since 2008](#).

More current data is not available. Many transparency tools it once provided online — such as the tracking dashboard — appear to be defunct and no longer publish data around VCU’s greenhouse gas emissions.

The protest was also attended by members of [Third Act](#), a national organization founded by environmentalist Bill McKibben. The group rallies [environmentalists over age 60](#) to work on issues of climate and racial justice.

A VCU doctoral student from Chicago, left, and a protestor with Sunrise Richmond led the crowd in song during a VCU Student Climate Protest in Richmond on Friday.

“The president of VCU has a lot of power,” “You have the power to put up new buildings that are sustainable, that are green. And it all needs to come from the top down.”

You may also like: [Notable events in the history of Earth Day](#)

President Joe Biden is seeking to switch American drivers from [gas guzzlers to cars that run on electricity](#), combating climate change through the creation of cheaper electric vehicles, in addition to tax credits and rebates to incentivize the transition.

Conference of the Parties is the decision-making entity of the [United Nations Framework Convention on Climate Change](#), an environmental treaty that took effect in May 1992. Annual meetings of the COP (begun in March 1995) negotiate the

Kyoto Protocol, review the state of climate change and how countries are dealing with it, and decide to implement aspects of the convention. Today, every country in the world is part of the UNFCCC with the goal of drafting and meeting climate goals. A UNFCCC [report in August 2019](#) outlined how various countries are reacting to its mandates and looked at the status of support for countries in achieving different climate goals, while a [2021 virtual meeting](#) emphasized the need for swift action on the part of the world's governments.

Particulate matter refers to airborne pollutants that can be inhaled and negatively impact health. Think dust, smoke, soot, and microscopic drops of liquid. The two types that are typically monitored are PM-10 and PM 2.5. PM-10 includes aerosols that are 10 micrometers or less in diameter and PM-2.5 refers to finer particles no larger than 2.5 micrometers in diameter. PM-2.5 causes the biggest risk to humans as it can be inhaled deep into human lungs and even enter the bloodstream.

West Virginia

[Trapped Dog Dies From Car Fire - Yahoo](#)

Yahoo

In a related incident, two dogs in Oregon died during a house fire ignited by stray embers from a wood-burning stove. While accidents can and do ...

Australia ([Boigu and Saibai](#) islands in the Australian Torres Strait) and the neighboring island nation of Kiribati

RAWSEP View: Kiribati is near Australia. Excerpts from Wikipedia on Kiribati. The Republic of Kiribati is an [island country](#) in [Oceania](#) in the Central [Pacific Ocean](#). Its permanent population is over 119,000 (2020), with more than half of whom live on [Tarawa](#) atoll. The state comprises [32 atolls](#) and one remote [raised coral island](#), [Banaba](#). Its total land area is 811 km² (313 sq mi) dispersed over 3,441,810 km² (1,328,890 sq mi) of [ocean](#). The islands' spread straddles the [equator](#). Kiribati's easternmost islands, the southern [Line Islands](#) south of Hawaii, are in the same day as the [Gilbert Islands](#) and are in the most advanced time zone on Earth: [UTC+14](#). Kiribati became a [sovereign state](#), independent of the United Kingdom, in 1979. The capital, [South Tarawa](#), is the most populated area, [fisheries](#) and export of [copra](#) the economy. Copra is the dried, white flesh of the coconut from which coconut oil is extracted. Kiribati is one of the [least developed countries](#) in the world and is highly dependent on international aid for its economy. Kiribati is a member of the [Pacific Community](#), [Commonwealth of Nations](#), the [International Monetary Fund](#), the [World Bank](#), and the [Organisation of African, Caribbean and Pacific States](#), and became a full member of the [United Nations](#) in 1999. As an island nation, the islands are [vulnerable to climate change](#) and tsunamis. [Addressing climate change](#) has been a central part of its international policy, as a member of the [Alliance of Small Island States](#).

https://www.theguardian.com/australia-news/2023/apr/24/former-president-of-kiribati-backs-legal-case-against-australia-over-inaction-on-climate-change?fbclid=IwAR0iUIGbGQ8X4i36ny2_v9_mod40vym17NibmP91ZLHEN84vCfs-nuiwDfk

Episode 56DJ

Former president of Kiribati backs legal case against Australia over inaction on climate crisis.

Excerpts edited by RAWSEP for brevity and clarity.

Anote Tong says that Australia needs to take responsibility for emissions caused by the export of its fossil fuels.

A former Pacific Island president has backed a Torres-Strait Islander-led legal case to hold the Australian government accountable for climate crisis inaction.

On Monday, Anote Tong, the former president of Kiribati, signed a statement of solidarity with Paul Kabai and Pabai Pabai, who have taken the government to court, demanding further emissions reductions in line with science.

The [two Torres Strait Islander men](#) hail from the [Boigu and Saibai](#) communities on two of [Australia's](#) northernmost inhabited islands. Low-lying Saibai is just four kilometres from Papua New Guinea, and both islands are regularly flooded by seawater.

The pair are leading a [landmark class action](#) on behalf of their island communities, arguing the commonwealth of Australia is acting unlawfully in failing to stop climate change that, if unchecked, will destroy their homelands.

Tong lent his support and said Australia needed to do more to cut emissions.

“The Australian government is stepping up with cutting domestic emissions and committing to a zero emission level by 2050, which is good. The real challenge is exported fossil fuels, oil and gas which are a lot more substantial than what would be emitted domestically.” he said.

“The [Australian] government sometimes feels exporting is not their problem. It’s the problem of the importing country but exporting contributes to global emissions.”

Tong backed the case after a week-long visit to the two Indigenous communities.

Pabai Pabai and Paul Kabai on Boigu Island in the Torres Strait. The pair filed a lawsuit in 2021 aimed at forcing the Australian government to protect them from climate change through deeper cuts to carbon emissions.

Tong served as president of Kiribati from 2003 to 2016, and has met with global leaders including former US president Barack Obama on climate advocacy.

United Kingdom

U K, Leicester

[Key reason why wood burning stoves won't be banned in Britain - Leicestershire Live](#)

Leicester Mercury

Wood burning stoves and log burners have come under much scrutiny over the pollution they produce

U K, London

<https://threadreaderapp.com/thread/1648986424098652160.html?fbclid=IwAR397bA3aKOJiosh1f3UbEhCo0GvIJCSQY4k0R0J9EOjtSAW78oGV1uzHGM>



[Patrick Lee](#)

[@PatrickjaLee](#)

Apr 20 • 19 tweets • 7 min read [Read on Twitter](#)

SE London. Communications Manager at [@ImpUrbanHealth](#) focusing on the health effects of air pollution. Views are my own. Lots of talk about air pollution and it seems a lot of disagreement about why poor air quality is such a big deal. So, what are the health effects of air pollution? (Brace yourself, it's a difficult read but links to research included). 📢 📄

The more air pollution you breathe, the more likely it is you'll develop cancer.

For every 10 microgram per cubic meter ($\mu\text{g}/\text{m}^3$) of increased exposure to PM2.5, the risk of dying from any cancer rises by 22 percent.

[Exposure to particulate air pollutants associated with numerous cancers - University of Birmingham Researchers have found that long-term exposure to environmental pollutants was associated with increased risk of mortality for many types of](#) <https://www.birmingham.ac.uk/news-archive/2016/exposure-to-particulate-air-pollutants-associated-with-numerous-cancers>

“The more fine particulate matter pollution you are exposed to, the more likely you are to die from cardiopulmonary disease or lung cancer.”

[An association between air pollution and mortality in six U.S. cities - PubMed](#) Although the effects of other, unmeasured risk factors cannot be excluded with certainty, these results suggest that fine-particulate air pollution, or a more complex pollution mixture associated with... <https://pubmed.ncbi.nlm.nih.gov/8179653/>

"Each 10- $\mu\text{g}/\text{m}^3$ elevation in fine particulate air pollution was associated with approximately a 4%, 6%, and 8% increased risk of all-cause, cardiopulmonary, and lung cancer mortality, respectively."

[Lung Cancer, Cardiopulmonary Mortality, and Long-term Exposure to Fine Particulate Air Pollution Context Associations have been found between day-to-day particulate air pollution and increased risk of various adverse health outcomes, including cardiopulmonary mortality. However, studies of heal...](#)
<https://jamanetwork.com/journals/jama/fullarticle/194704>

Air pollution affects people throughout their entire lives.

From before birth to death, air pollution increases the risk of stroke, dementia, cancer, multiple longer-term illness including respiratory and cardiovascular disease, and early death.

[Review highlights lifelong health impacts of air pollution | Imperial News | Imperial College London](https://www.imperial.ac.uk/news/244355/review-highlights-lifelong-health-impacts-pollution/) A new review of evidence highlights the impact air pollution has on health across the life course, from before birth through to old age. <https://www.imperial.ac.uk/news/244355/review-highlights-lifelong-health-impacts-pollution/>

In the UK, this means outdoor air pollution is thought to contribute up to 43,000 deaths in the UK every year.

post.parliament.uk/research-brief...

<https://post.parliament.uk/research-briefings/post-pn-0691/#:~:text=Key%20Points-,Air%20pollution%20is%20the%20greatest%20UK%20environmental%20public%20health%20threat,%C2%A31.6%20billion%20in%20England>

Globally, air pollution is thought to contribute to one in five deaths:

hsph.harvard.edu/c-change/news/...

[Fossil fuel air pollution responsible for 1 in 5 deaths worldwide](https://www.hsph.harvard.edu/c-change/news/fossil-fuel-air-pollution-responsible-for-1-in-5-deaths-worldwide/?active_tab=1&articles_page=11&research_page=2#:~:text=Worldwide%2C%20air%20pollution%20from%20burning,population%20of%20New%20York%20City) New research finds that deaths from fossil fuel emissions are higher than previously thought—more than 8 million people per year, worldwide. https://www.hsph.harvard.edu/c-change/news/fossil-fuel-air-pollution-responsible-for-1-in-5-deaths-worldwide/?active_tab=1&articles_page=11&research_page=2#:~:text=Worldwide%2C%20air%20pollution%20from%20burning,population%20of%20New%20York%20City

[@dwallacewells](https://twitter.com/dwallacewells) summarises it pretty well:

Air pollution is cutting short the lives of billions of people by up to six years, making it a far greater killer than smoking, car crashes or HIV/Aids.

[Home - AQLI Produced by the Energy Policy Institute at the University of Chicago \(EPIC\), The Air Quality Life Index, or AQLI, converts air pollution concentrations into their impact on life expectancy.](https://aqli.epic.uchicago.edu/) <https://aqli.epic.uchicago.edu/>

Even low levels of air pollution damages health

healtheffects.org/system/files/b...

Good news! The more a city cleans up its air, the longer the life expectancy of its inhabitants.

<https://www.nejm.org/doi/full/10.1056/nejmsa0805646>

Air pollution affects babies in the womb.

Air pollution causes lifelong health problems for babies in the womb and is causing a "global health catastrophe".

[Impact of London's road traffic air and noise pollution on birth weight: retrospective population based cohort study](https://www.bmj.com/content/359/bmj.j5299) Objective To investigate the relation between exposure to both air and noise pollution from road traffic and birth weight outcomes. Design Retrospective population based cohort study. Setting Greater...

<https://www.bmj.com/content/359/bmj.j5299>

Air pollution is as bad for pregnant women as smoking in raising the risk of miscarriage.

[Air pollution 'as bad as smoking in increasing risk of miscarriage'](https://www.theguardian.com/environment/2019/jan/11/air-pollution-as-bad-as-smoking-in-increasing-risk-of-miscarriage) Scientists called study's findings upsetting and said toxic air must be cut <https://www.theguardian.com/environment/2019/jan/11/air-pollution-as-bad-as-smoking-in-increasing-risk-of-miscarriage>

Air pollution is already known to harm fetuses by increasing the risk of premature birth and low birth weight. Recent research has also found pollution particles in placentas.

<https://www.sciencedirect.com/science/article/abs/pii/S0013935112001764?via%3Dihub>

Air pollution is a social justice issue.

“...in countries of every level of income, the health effects of air pollution are most frequent and more severe among the poor and the marginalized.”

[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(17\)32345-0/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(17)32345-0/fulltext)

And air pollution affects people who contribute the least, like children, older people, people with health conditions...

People most affected by air pollution from cars often can't afford to drive. It's unfair!

Air pollution is an example of racial injustice.

Episode 56DK

Deprived and BAME schoolchildren in London experience greater air pollution burden.

[Deprived and BAME schoolchildren in London experience greater air pollution burden Using a powerful new dataset, we found that deprived and BAME children breathe in significantly more pollution at their primary school.](#)

<https://www.globalcleanair.org/health/deprived-and-bame-schoolchildren-in-london-experience-greater-air-pollution-burden/>

Black residents are being exposed to more levels of illegal air pollution than any other ethnic group in some of the UK's major cities

[Black residents living in 'sacrifice areas' amid air pollution dangers Black people in London and Birmingham are exposed to more polluted air](#) <https://www.voice-online.co.uk/news/uk-news/2022/08/23/black-residents-living-in-sacrifice-areas-amid-air-pollution-dangers/>

This is a short list of research that have stood out to me. There are loads more. Would be interested in hearing from experts like [@DrGaryFuller](#), [@0jhl](#), [@dwallacewells](#), [@charlie_baker23](#), [@sabrodrigues61](#)...

What are the pieces of air pollution research that have stuck with you?

<https://samhe.org.uk/?fbclid=IwAR3gU41c0k4ugcwF70K1csO9CixMk90ZG2f0gm534NXajCc9xR0kbMX-2EA>

Samhe.org.uk

[Register your school Web App](#)

If you work or study at a school in the U K, we need YOUR help!

Get a free monitor.

View data on air quality in your classroom using our specially designed Web App.

Access curriculum linked resources and example experiments.

Help scientists learn how to make schools healthier places.

[Find out more](#)

Quicklinks

[Getting involved](#)[Guidance on monitor readings](#)[Ventilation tips](#)

News and Updates

[NEWS](#)

Join SAMHE now!

24th April 2023

We're delighted to officially launch SAMHE this week and invite UK schools to [register now!](#) The first 100 schools to register for SAMHE will receive a special [launch pack](#) along with their monitor, so don't delay!

SAMHE launch week

We're delighted to announce the official launch of SAMHE!

SAMHE launch week is 24-28 April.

From Monday 24 April we invite schools across the UK to register as SAMHE schools to receive a high spec air quality monitor and access to the SAMHE Web App. SAMHE will be available to 1500+ schools and we hope to recruit a wide diversity of schools across England, Scotland, Wales and Northern Ireland, representative of the whole UK school community.

In the coming weeks you will see some changes to this website as we prepare for more traffic from people looking to register their school, find out more about the project or learn about indoor air quality.

Beta testing nearly complete

24th February 2023

Today is the International Day of Education and we want to celebrate our wonderful SAMHE Pioneer Schools! Over the last few months, they have been testing and reviewing important aspects of SAMHE to ensure that it meets schools' needs before it is shared more widely.

With their feedback we have revised our instructions for schools logging in and connecting their SAMHE monitors and improved the functionality of the data views on the Web App. They have also tried out our first Web App Activities and helped us refine our in-app 'Achievements' structure and the rewards strategy for how badges and certificates are gained. In our next release, Pioneer schools will be invited to start testing our new 'Data Detectives' activity, which will help students investigate 'spikes' in their data (big but short-lived changes in the readings) and explore what could be causing them.

That will bring our beta testing process with schools to an end. Our designers and software developers will continue to implement the feedback, create new activities and tidy up the Web App and this website ready for the SAMHE launch. We hope to share a date for that with you soon!

[TWITTER](#)

[NEWSLETTERS](#)

[SAMHE Newsletter #3](#)

March 2023

Discover the 7 types of activity the Web App will offer, including 'Data Detectives' which Pioneer schools are testing this week. See how they have helped us refine the air quality data plots, making them more useable and useful for pupil and teachers. Get excited about the in-app achievement pathways and rewards and the upcoming SAMHE launch!

[SAMHE Newsletter #2](#)

December 2022

Find out how our pioneer schools are helping us, and what the Web App looks like.



Europe

[Air pollution remains above WHO guidelines, kills 1200 children in Europe each year](#)

MM News

Exposure to nitrogen dioxide and ozone in the short term, and fine particulate matter (PM 2.5) in the long term, can affect children's lung ...

[Air pollution is killing 1,200 children and teenagers in Europe each year, EEA warns](#)

Yahoo News UK

Exposure to nitrogen dioxide and ozone in the short term, and fine particulate matter - also known as PM 2.5 - in the long term can affect ...

[Air Pollution Causes Premature Deaths In European Children - Health Policy Watch](#)

Health Policy Watch

Some 97% of the urban population was exposed to concentrations of fine particulate matter (PM2.5) above the 2021 WHO annual guideline of 5 µg/m³.

[Air pollution levels across Europe still not safe, especially for children](#)

European Environment Agency - European Union

In 2021, upwards of 90% of the EU's urban population was exposed to harmful levels of nitrogen dioxide, ozone and fine particulate matter (PM2.5).

[Air pollution is killing 1200 children and teenagers in Europe each year, EEA warns](#)

Euronews

Exposure to PM 2.5 - the most damaging pollutant to human health - was even higher at 97 per cent. Fine particulate matter is a leading cause of ...

https://www.theguardian.com/environment/2023/apr/24/europe-failing-its-children-on-air-pollution-eea-says?fbclid=IwAR0iUIGbGQ8X4i36ny2_v9_mod40vym17NibmP91ZLHEN84vCfs-nuiwDfk

Europe 'failing its children' on air pollution, EEA says

Dirty air causes premature death of at least 1,200 children across Europe every year, says European Environment Agency
23 Apr 2023

Excerpts edited by RAWSEP for brevity and clarity and relationship to the subject of PM2.5 from residential wood burning.

[Breathing dirty air](#) causes the premature death of at least 1,200 children across Europe each year, and many thousands more are afflicted with physical and [mental health](#) problems that could have lifelong impacts, according to the latest assessment of air pollution by the European Environment Agency (EEA).

Children are more exposed to filthy air than adults because they have a faster breathing rate, are closer to the ground and are outdoors more. About 110,000 disability adjusted life years are lost across Europe each year in people under the age of 18, according to the study published on Monday by the EEA.

Reducing the sources of air pollution – including coal and solid fuel burning, and industrial emissions, is

The UK was not included in the EEA's assessment, as the UK government has opted out of EEA membership post-Brexit, even though several other non-EU countries – including Norway, Switzerland and Iceland – are members. The EEA's publication, [entitled Europe's Air Quality Status 2023](#), published on Monday, covers 37 countries, including all EU member states and countries such as Turkey, Serbia, Kosovo and Montenegro, and examines air pollutants including particulates.

Eastern European states came out worst, largely owing to the burning of coal for **domestic heating**, along with Italy, where industrial pollution in the Po Valley was identified as a key problem.

Across Europe, 97% of the population, of all ages, were exposed to levels of air pollution higher than those deemed safe by the World [Health](#) Organization, according to the EEA.

The EU is aiming to limit **PM 2.5 (particles that are 2.5 microns or less in diameter) to 10 micrograms a cubic metre by 2030**, among actions which should cut premature deaths owing to air pollution by 55% by 2030. WHO guidelines are for 5 micrograms a cubic metre for PM 2.5

Episode 56DL

In the UK, the environment secretary, Thérèse Coffey, said earlier this year that the government [would not limit air pollution in line with the EU until 2040](#), despite expert advice that it was possible to do so this decade.

She said: "evidence shows us that with the best will in the world we cannot achieve that everywhere by the end of the decade, particularly in London."

But air pollution experts pointed to research by King's College London and Imperial College London that has shown the UK government could achieve the more stringent targets, which are supported by the public in polls, if it took stronger action on the sources of pollution, which include **wood-burning stoves**.

The Netherlands

Dutch Power Prices Turn Negative as Green Power Floods Grid

https://www.bloomberg.com/news/articles/2023-04-19/dutch-power-prices-turn-negative-as-green-power-floods-grid?fbclid=IwAROV1zdPEI7_Qi-MRyubpu0_gS1fNUUigawaMq2azivUX6sSuAldjQbdZ8Q&leadSource=uverify%20wall

The Haringvliet energy park in Middelharnis, in the Netherlands.

April 19, 2023

Excerpts edited by RAWSEP for brevity and clarity.

Power prices in the Netherlands turned negative on Wednesday with the market so overloaded with green electricity that consumers are getting paid to use the excess supply. **Prices fell** to as low as -€739.96 a megawatt-hour between 1 and 2 p.m. in Amsterdam's Epex Spot SE exchange, with the weighted average staying negative for every hour from 10 a.m. to 5 p.m. The **surge of clean electricity has outstripped demand**, showcasing power grids' struggle to accommodate large variations in renewables. While strong availability is usually a good thing, **the Netherlands had about 16 gigawatts of clean power flooding the grid at a time when consumption was low**, according to consultant Enappsys. Power cables connected to neighboring markets weren't exporting much either, reducing demand. "This was unexpected and something we will see again," said Jean-Paul Harreman, a director at Enappsys. **The situation is another example of how far Europe has come from the energy crisis that had driven prices to record highs last year** and threatened shortages over the winter. The region's gas market too has flipped from being being short of supply to a glut. Negative prices are common in the summer and during public holidays if it's particularly windy. Grid managers have the option to turn down supply or boost demand. The Dutch operator, Tennet BV, issued an alert on Wednesday asking for less flows into the market. An initial day-ahead power auction was canceled on Tuesday as traders struggled to price contracts **as more supply than was needed** hitting the grid. A second auction cleared with a negative price for the peak-load contract.

Africa

Namibia

[Projects Open for Public Comment: 24 April, 2023 - Verra](#)

Verra

... Installation of high efficiency wood burning cookstoves in Namibia – closes 18 May; Feicheng Composting Project – closes 18 May ...

Asia

India

https://energy.economictimes.indiatimes.com/amp/news/renewable/121-airports-to-be-made-carbon-neutral-by-2025-scindia/99653983?fbclid=IwAR0EJiBKsHqSjgyLXqFmxnOBNygSRqL179yKg4KPk12RCM2Ze8n80H_hkpo

121 airports to be made carbon neutral by 2025: Scindia.

"We are encouraging airports to use 100 per cent green energy by 2024, and achieve net zero by 2030. 25 AAI airports are already using 100 per cent green energy. Our target is to make another 121 airports carbon neutral by 2025," he added.

RAWSEP View: The Airports Authority of India, or AAI, is a statutory body under the ownership of the Ministry of Civil Aviation, Government of India. ATF is aviation turbine fuel. MRO is the Maintenance, Repair and Overhaul (MRO) industry for Airlines in India.

Excerpts edited by RAWSEP for brevity and clarity.

New Delhi: Twenty-five airports in the country are using 100 per cent green energy while another 121 airports will be made carbon neutral by 2025, [Union Aviation Minister Jyotiraditya Scindia](#) said on Thursday. Scindia made these comments in his virtual address at the two-day EU-India aviation summit. He could not attend the event in person after

testing Covid positive. "The emission contribution of the aviation industry has been under immense scrutiny. We have taken several measures to minimize the carbon footprint and mitigate emissions from the aviation industry," he said, asserting that India and the [European Union](#) have a common goal of tackling climate change. "We are encouraging airports to use 100 per cent green energy by 2024 and achieve net zero by 2030. 25 AAI airports are already using 100 per cent green energy. Our target is to make another 121 airports carbon neutral by 2025," he added. India has 148 operational airports including 137 airports, 2 water aerodromes and 9 heliports. Carbon neutral airports have zero carbon footprints and **operate completely on green energy such as hydro and solar power** for all their energy needs. These airports also offset any residual CO2 emissions under their direct control. Carbon neutral airports are ones that have taken on green practices on a larger scale, have **purchased carbon credits**, and have things such as **wastewater recycling, solar energy, LED lighting and more that can offset carbon emissions**. The minister informed that the government has mandated the use of renewable energy as part of the bid documents for upcoming airports. "We are also working towards encouraging the use of sustainable aviation fuel. Indian airline operators have already conducted demonstration flights using **bio-fuel** blended with ATF," he said. Scindia also invited EU players to partner India in developing adaptive technologies and support the objective of tackling emissions from the aviation industry. The summit, which began on Thursday, will focus on EU-India air transport relations and the mutually shared challenges and opportunities of the two regions (India and the E U), such as the post-Covid recovery of air traffic, increasing sustainability, maintaining safety and the development of unmanned aircraft systems. The summit will bring together top-level policy makers, industry executives and stakeholders from both the EU and India. The aviation minister noted that India has reformed the regulatory mechanism to promote aircraft manufacturing in the country. "We have reformed the regulatory environment to make it as conducive as possible for MROs - reduced [GST](#) rates on MRO services from 18 per cent to 5 per cent and allowed 100 per cent [Foreign Direct Investment](#) into the sector. New MRO guidelines have also been rolled out for rationalization of the charges leviable on MRO service providers for ease of doing business.

Nepal

https://kathmandupost.com/national/2023/04/24/an-air-bear-to-highlight-impact-of-air-pollution-on-children?fbclid=IwAR2AICpRdbnOVJehGCKZ_OmX_9Bj-xFzvTtKOOcd1b8xdXptnY1VPm6dPoU

Excerpts edited by RAWSEP for brevity and clarity.

An over 12 foot tall white bear will travel across Nepal with a group of young climate activists to raise awareness about air pollution in Nepal, said Save the Children Nepal. Save the Children in Nepal introduced 'Saathi' the 'Air Bear' who will travel to different parts of Nepal over the next six months. The bear's fur will gradually get darker to highlight the impact of air pollution. 'Saathi' will travel in an Electric Vehicle, ahead of this year's G20 in India in October and the COP28 climate change summit in Dubai.

Thailand

[Air quality in northern Thai city improves after storm, but some areas damaged | Thaiger](#)

Thaiger air pollution levels, making the environment substantially healthier, although PM 2.5 levels remained slightly above the acceptable standard.

[Understanding Phuket's 'haze season'](#)

The Phuket News

"The PM 2.5 readings were very high last week in Chiang Mai, Chiang Rai and Bangkok. The northeast monsoon that brings this to Phuket has been ..

Clean Technology

[Electric vehicle fleet penetration helps address inequalities in air quality and improves ... - Nature](#)

Nature

A separate study used 2017 data from 20 U.S. cities to document that concentrations of particulate matter with diameter less than 2.5 µm (PM2.5) ...

https://cleantechnica.com/2023/04/20/this-earth-day-invest-in-a-heat-pump-water-heater-do-the-equivalent-of-planting-a-tree-or-forest/amp/?fbclid=IwAR2AICpRdbnOVJehGCKZ_OmX_9Bj-xFzvTtKOOcd1b8xdXptnY1VPm6dPoU

Episode 56DM

This Earth Day, Invest In A Heat Pump Water Heater & Do The Equivalent Of Planting A Tree (Or Forest)

The energy efficiency, cost savings, and versatility of heat pump water heaters (HPWHs) make them a clear choice for the environment and households across the U.S. With 120 million water heaters in the U.S. alone, we could save over 100 million tons in carbon emissions every year if all the water heaters in U.S. buildings were transitioned to heat pump technology. This Earth Day, join us in spreading the word about HPWHs and their many benefits. Here's why ...

HPWHs Shrink Your Carbon Footprint

Water heating accounts for 17–32% of a typical home's energy usage, according to the [U.S. Energy Information Administration](#). HPWHs are two to three times more efficient than gas or electric resistance water heaters, [according to the U.S. Department of Energy](#). We [ran the numbers](#) and found that an average HPWH saves the same amount of energy as six solar panels produce annually. Plus, HPWHs use electricity, which is rapidly decarbonizing (emissions from electricity have [dropped 36% since their peak in 2007](#)).

Health Effects of PM2.5

Non-smoking lung cancer is on the rise. Blame pollution, says American Lung Association.

<https://www.morningstar.com/news/marketwatch/20230422294/non-smoking-lung-cancer-is-on-the-rise-blame-pollution-says-american-lung-association?fbclid=IwAR2-p5NcBes6iogfAO3Kdm9P1Br7dfgvPumrqa0X7aGs6PSkOkDy20VZKwM>

Provided by Dow Jones

Apr 22, 2023

Excerpts edited by RAWSEP for brevity and clarity and relationship to the subject of PM2.5 emitted by residential wood burning.

American Lung Association's 24th 'State of the Air' report card says people of color face much higher risk of pollution, while severe wildfires hand California, Oregon and other western states worrisome grades.

A long-established report card grading air quality around the country has uncovered worrisome takeaways. For one, the American Lung Association, which issues the grades, finds that lung cancer among non-smokers is on the rise, with pollution considered a likely contributor.

Second, communities of color are disproportionately exposed to unhealthy air and the serious pulmonary conditions and other medical concerns that come with it.

And third, severe wildfires in recent years made outdoor life in the scenic U.S. West, where population is on the rise, increasingly difficult and dangerous. The lowest grades for shorter periods of daily air quality cropped up largely in western states.

In all, nearly four in 10 Americans --119.6 million people -- live in places with failing grades for unhealthy levels of ozone pollution and both short-term and longer-lasting particle pollution, the American Lung Association said in its latest "State of the Air" report.

The Lung Association has issued the report for 24 years, grading American cities and counties based on the population's exposure to unhealthy levels of annual particle pollution, and short-term spikes in particle pollution. This year's report covers 2019-2021. Users can type in their location and see the grade for their air quality. The study reconfirmed that long-term exposure to pollution particles was associated with elevated risks of early death. The increased risk was primarily associated with death from cardiovascular and respiratory causes, including heart disease, stroke, influenza and pneumonia. Researchers also found a similar association between exposure to fine particle pollution and an increased risk of death from lung cancer among never-smokers.

And yet another study, all detailed in the air-quality report card, found that 68.5 million Medicare-enrolled adults in the United States between 2000 and 2016 experienced a 6%-8% increase in risk of all-cause mortality for every 10ug/m3 increase in particles.

Plus, for lung-cancer patients, regardless of the source, their vulnerable state can be made worse by exposure to air pollution.

More than 55,000 people diagnosed with lung cancer in 2019 live in counties that received an F for at least one pollutant, the report found. And nearly 6,900 people diagnosed with lung cancer live in counties failing all three measures.

Particle pollution comes from factories, power plants, and diesel- and gasoline-powered motor vehicles and equipment, which either directly emit fine particles or generate other pollutants. Other sources of particle pollution include wildfires, **burning wood in wood stoves or residential fireplaces and burning biomass for electricity.**

Although cities most affected by western drought and wildfires, including eight in California, three in Oregon, and three others in **Alaska**, Arizona, and Washington, still represented the largest share, cities with high power plant emissions as well as local industrial and mobile sources of year-round particle pollution continued to show up on this list. These included Indianapolis, Detroit, Pittsburgh, Augusta, Houston, Cincinnati, Birmingham, McAllen, Louisville, Chicago, and Laredo.

The "cleanest cities" because they had zero days high in particle pollution or ozone and are among the 25 cities with the lowest year-round particle levels included newcomers to the list Asheville and Greenville, N. Car., and Rochester N.Y. They joined Bangor, Maine, Lincoln, Nebr., Wilmington, N. Car. and Honolulu.

The lung-health advocates aren't the only ones looking at how pollution has gotten increasingly dangerous for public health.

In recent years, a 9-year-old British girl was the first known global case whose **medical cause of death** included an official ruling of air pollution as a contributor. The patient, who passed away in 2014, died of acute respiratory failure, severe asthma, and **air pollution exposure.**

And, in 2022, a separate study found that senior citizens who breathe in even low levels of pollution from industry, traffic, wildfires and other sources face greater odds of dying earlier as a result.

[Kern ranks No. 1 in nation for indicators of poor air quality | News | bakersfield.com](#)

The Bakersfield Californian

Pollution from PM 2.5 can be deadly and causes nearly 48,000 premature deaths in the United States every year, according to the report.