

Episode 56RH March 1, 2024. The United Kingdom on the farce of burning wood pellets.

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In biology, senescence is a process by which a cell ages and permanently stops dividing but does not die. Over time, large numbers of old (or senescent) cells can build up in tissues throughout the body. 10)PM2.5 and childhood asthma. 11)PM2.5 and effect on the brain. 12) PM2.5 and sick building syndrome. Headlines 13 to 20)Headlines sorted by locality. 13)Michigan. Michigan prepares to meet EPA new annual standard of PM2.5 of 9 micrograms per cubic meter. 14)Montana. RAWSEP View: It is not enough to regulate open wood burning. Open wood burning must be stopped. 15)Canada. Air quality advisory due to wood smoke. 16)Denmark. RAWSEP View: Operation of wood stoves installed after 2003 is still highly polluting and injurious to human health, especially to near neighbors of indoor residential wood burners. 17)Montenegro. 4 deaths from use of wood burning stove. 18)Thailand. Wildfire wood burning. 1)United Kingdom. Opinion about Drax, a wood burning power plant, and UK subsidies for a power plant that pollutes more than coal burning. [The farce of burning wood pellets | The Spectator](#) How and where the wood is sourced has a dramatic difference on the overall calculations of carbon emissions from biomass burning – quite apart from (the environmental issues involved with chopping down established forests). Burning wood does, of course, release carbon dioxide. In fact, unit of energy for unit of energy, it emits more greenhouse gases than does burning (coal). **Excerpts edited by RAWSEP for brevity and clarity and relationship to Residents Against Wood Smoke Emission Particulates, a 501c3 nonprofit organization.** The farce of Drax's wood pellets. When is the government going to stop pretending that chopping down trees in North American forests and shipping them across the Atlantic to burn them in UK power stations is a zero-carbon form of energy? The environmental-friendliness of Drax power station in South Yorkshire has been called into question yet again this week after BBC Panorama investigation reported that some of the woodchips being burned there have allegedly been sourced from established 'old growth' forests in Canada rather than recent plantations. Drax has not commented on those specific allegations, but the investigation has thrown the issue back into the spotlight. How and where the wood is sourced has a dramatic difference on the overall calculations of carbon emissions from biomass burning – quite apart from the environmental issues involved with chopping down established forests. But wherever the wood comes from, the whole business of counting biomass burning – which accounted for 11 per cent of Britain's electricity generation in 2022 – as zero carbon is deeply flawed. It isn't just Britain which is doing this – in 2022 the European Parliament (E U) voted to carry on doing the same. Burning wood does, of course, release carbon dioxide. In fact, unit of energy for unit of energy, it emits more greenhouse gases than does burning coal. A paper published in the journal Science in 2020 estimated that the effective emissions from generating a gigajoule of electrical energy from wood are 117kg of carbon dioxide equivalent. The corresponding figure for anthracite – one of the cleaner forms of coal – is 103kg and for gas it is 67kg. Yet the UK and E U continue to insist on counting biomass as a zero-carbon fuel on the grounds that the wood has only recently been grown, and will be replanted – thereby claiming that the process as a whole is carbon neutral. 2)United Kingdom. Other Drax headlines. United Kingdom. Drax. [Britain's biggest power station 'burns ancient forests for green fuel' - Yahoo Finance](#) Drax, which once burned coal but now uses wood harvested in North American forests and shipped to the UK, has been accused of destroying the. United Kingdom, Drax. [Drax profits surge 66%, but company allegedly burning rare](#)

[wood - Power Technology](#) Results come the day after the BBC published a report that finds the company is still burning wood from rare forests in North America. United Kingdom and Canada. Drax. National Resources Defense Council. [The U.K. is Burning Canadian Forests for Fuel - NRDC](#) Twenty-three environmental organizations stress that the U.K. government funding the incineration of imported Canadian wood pellets threatens. 3)United Kingdom. Non Drax Headlines about wood burning pollution from sources such as indoor residential wood burning. United Kingdom, Birkenhead, Wirral Council. [Wirral Council eyes wood burner restrictions to combat air pollution - Birkenhead News](#) Wirral Council is looking to bring in a blanket restriction for what people can put in their wood burners. At a tourism, communities, culture. However since then, solid fuel has shifted from coal to wood which has led to an increase of small particulates linked to “an increase in associated. United Kingdom, Liverpool. [£1,000 fine warning for everyone with wood burner - Liverpool Echo](#) Smoke coming out of a chimney. Smoke orders were first brought in following wood and coal burning stoves as well as garden bonfires. A council. United Kingdom. PM2.5 [Schools and air pollution in London - The Education Policy Institute](#) In this blog I link data on pollution, specifically annual average concentrations of Nitrogen Dioxide (NO₂) and particulate matter (PM₁₀ and PM_{2.5}). 4)EarthJustice. On EPA tightening PM2.5 annual standards from 12 to 9 micrograms per cubic meter. <https://earthjustice.org/brief/2024/soot-pm2-5-pollution-standard-stronger-biden?fbclid=> The EPA Has Tightened Standards on a Deadly Type of Air Pollution. February 7, 2024.. What happened: In a major win for public health, the EPA finalized new, tighter standards on PM2.5 air pollution, also known as soot. **Excerpts edited by RAWSEP for brevity and clarity and relationship to Residents Against Wood Smoke Emission Particulates, a 501c3 nonprofit organization.** Why it matters: Particulate matter pollution (PM2.5) is a type of air pollution that can penetrate deep into our lungs and hearts, contributing to countless chronic illnesses. In early 2023, the EPA proposed new PM2.5 standards, which health and environmental advocates argued were not strong enough. After hearing from the public, including 32,000 Earthjustice supporters, [the EPA delivered](#) stronger air quality protections. This type of pollution kills nearly 50,000 people in the United States every year, and the EPA’s new standards are expected to reduce air pollution and save thousands of lives. What is PM2.5, and why is it so dangerous? What it is: PM2.5, also known as soot, is small particulate matter measuring 2.5 micrometers or less – a size small enough to penetrate deep into your lungs and heart. It inflames the airways, gets into the bloodstream, and [impairs the body’s immune responses](#). Exposure is linked to adverse health complications: This type of pollution causes asthma attacks, hospitalizations, and emergency room visits for cardiopulmonary diseases. It is also linked to cancer. Disproportionate impacts: We know soot pollution disproportionately affects people of color — particularly [Black and brown people](#) — due to where they live and work. Strong standards matter. Multiple sources: Particulate matter pollution comes from fossil fuel combustion for electricity generation, manufacturing, transportation, and agriculture. Standards save lives: This strengthening of the PM2.5 national standards will force these polluting sources to reduce their harmful emissions, resulting in saved lives, better public health, and clearer skies. Where we come in: If a region’s current air quality is worse than a new, tightened standard, the state government must implement plans to curb air pollution so that the air quality will meet the updated standard. Earthjustice watches to make sure that the government puts forward real plans and follow through on them. If they do not, we take them to court. We’re continuing to fight for clean air for all. Industry has no right to poison our families and our neighborhoods. Earthjustice will keep working for this important new standard to be quickly and fully implemented and will continue pushing for the stronger standards we need. More work to do: Join us in advocating for the swift implementation of the strengthened standards. 5)Vermont, Rutland. RAWSEP View: Are Solor Stoves (called smokeless stoves truly smokeless?) An online search yeilded this fact, which RAWSEP’s editor has not fully researched. “Over the burns the mean (\pm 1 standard deviation) of the radiant heat flux normalized PM2.5 emissions were 13.3 \pm 2.3 g m² kW⁻¹ for the Solo (n = 4) and 6.2 \pm 2.0 g m² kW⁻¹ for the Breeo (n = 3).March 25, 2020. Are smokeless fire pits better for your health? This doesn't only affect the people immediately around the pit; lingering smoke can make its way throughout neighborhoods adjacent to wood-burning stoves and fireplaces. October 20, 2022. Solo stoves emit less smoke but do not emit no smoke. Why are they allowed to be called smokeless? The article states: This committee discussion in the city of Rutland, Vermont reveals the culture of burning wood for fun, without acknowledgement of the health effects of PM2.5 emissions, which are 2.8 times the PM2.5 emissions of coal burning. Wood burning also emits 450 times the PM2.5 as natural gas burning. Wood burning emissions are 90% PM2.5, particulate matter of 2.5 micrometer size, the perfect size to infiltrate the human lung, setting off a cascade of human health problems and early deaths. Wood Sticks can be composted to yield usable soil, which is inflammable. [Fire pit ordinance clears committee in Rutland City | Local News | rutlandherald.com](#) burning ordinance that would allow the use of smokeless fire pits for cooking. wood to

be left out of the list of allowed cooking fuels. clears committee in Rutland City. February 28, 2024. City residents could soon have more options for backyard barbecues, but lighting a fire pit just for fun remains illegal. Another argument against loosening standards on wood burning, from fire chiefs, in hopes of avoiding numerous nuisance (neighbor complaints on wood smoke entering their properties, harming near neighbors' health). (A Rutland Alder), Lovett said he had spoken to fire chiefs in a number of other municipalities who were envious of the city's ordinance. The wider restrictions, he said, meant they had fewer legal hairs to split in dealing with nuisance fires. He also said there was a potential for liability on the city's part if lax regulations resulted in negligently operated fire pits causing brush fires. Excerpts edited by RAWSEP for brevity and clarity and relationship to Residents Against Wood Smoke Emission Particulates, a 501c3 nonprofit organization. The Charter and Ordinance Committee voted Wednesday to recommend the full Board of Aldermen adopt changes to the outside burning ordinance that would allow the use of smokeless fire pits for cooking. Current regulations limit grillers' options to charcoal or propane. The issue remains in committee for further discussion of recreational backyard fires. Fire Chief William Lovett said the fire pits recently brought to the market by companies like Solo do not produce the sort of smoke that caused wood to be left out of the list of allowed cooking fuels in the ordinance. "Because technology has changed, I think we have to stay current," "We've never had a complaint based on a Solo heater causing smoke. We've had a couple complaints based on people seeing the glow, and they were upset because they couldn't have a fire." Some board members are advocating for changes that would allow fires for fires' sake. Alderman John McCann said he had looked at ordinances from a number of other communities and they had language banning the burning of trash, lawn trimmings or other problematic fuels. He also said the city's ban on backyard fire pits is widely ignored. "I think that rather than having people doing it knowing it's illegal ... I think there's some language we can try to borrow from other municipalities," he said. Lovett said he had spoken to fire chiefs in a number of other municipalities who were envious of the city's ordinance. The wider restrictions, he said, meant they had fewer legal hairs to split in dealing with nuisance fires (neighbor complaints on wood smoke entering their properties, harming near neighbors' health). He also said there was a potential for liability on the city's part if lax regulations resulted in negligently operated fire pits causing brush fires. Alderwoman Anna Tadio said she understands the liability issue but she also wants to be able to have a fire in her backyard. "I'd like to see us move in that direction, but obviously I'll defer to the fire chief," she said. "I don't know what the middle ground is." Alderwoman Sharon Davis said different backyards had different amounts of space and that it was difficult to craft an ordinance allowing fires in one but not another. McCann replied that other communities had regulations about distance from a building. board president Michael Talbott noted the referral had been made three years ago and that he would prefer to get the current language adopted and talk about further deregulation later. 6)Ohio, Trumbull County. RAWSEP View: This following article is partial acknowledgement that wood burning is discourteous and could cause a spreading fire, but this article does not discuss the adverse health effects of wood burning on near neighbors of wood burners. This article states "Smoke can be a nuisance and a health hazard for some people". RAWSEP View: Wood smoke is a health hazard for all people, all human beings. [On the Farm: Be safe, courteous when burning debris this spring - Tribune Chronicle](#) Clear all dead grass, wood, and other flammable materials (other than the burn pile) from the area to help prevent your fire from spreading. February 29, 2024. Excerpts edited by RAWSEP for brevity and clarity and relationship to Residents Against Wood Smoke Emission Particulates, a 501c3 nonprofit organization. Hello, Trumbull County. Are you enjoying the unseasonable warm and dry weather? I know I have been. We've been busy cleaning up sticks. a time when outdoor fires can get out of control quickly. Yard waste can quickly pile up when you include woody debris from downed tree branches. Many townships and municipalities have events where small amounts of this kind of debris can be collected and shredded. outdoor fires that can take care of your waste pile can easily spread to the dead grass, leaves or even trees nearby. there is a ban on open outdoor burning in Ohio for the months of March, April, and May in the spring, as well as October and November in the fall, all between 6 a.m. and 6 p.m. You also should consult with your local zoning office as there may be additional local ordinances in effect in your area. Remember, that just because something will burn does not mean that it is safe or legal to do so. Generally speaking, if you live within city limits outdoor burning will be limited to barbecues and campfires. Other burning activities within city limits will likely require further restrictions and / or permits. These can include heating for outdoor workers, heating roofing tar, et cetera. Unless restricted by local zoning, townships allow residents to burn land clearing waste such as stumps, leaves, wood and paper products. Burning garbage, rubber, petroleum products, plastics and dead animals are never permitted in the state of Ohio. Smoke can be a nuisance and a health hazard for some people. I suggest you be mindful of your neighbors and wait until the wind is blowing away from them, or at least provide them some

notice that you intend to burn. Don't allow the fire to smolder as it will struggle to stay lit, burn longer than intended and create thick smoke that can obscure roads. Select a safe burning location that is at least 1,000 feet from neighboring inhabited buildings. Clear all dead grass, wood, and other flammable materials (other than the burn pile) from the area to help prevent your fire from spreading. Have water available, open soil barriers, and never leave the fire unattended. Fires should be extinguished or covered when finished. Ohio burning laws here: <https://farmoffice.osu.edu/blog/thu-11302023-356pm/open-burning-restrictions-lift-december-1-don't-get-burned-laws> More information on what is permissible to burn: https://epa.ohio.gov/stat ic/Portals/47/facts/open_burn.pdf beers.66@osu.edu.

7) Korea. PM2.5 and ST elevation. ST elevation refers to a finding on an [electrocardiogram](#) wherein the trace in the [ST segment](#) is abnormally high above the baseline. [Long-term air pollution exposure is associated with higher incidence of ST-elevation](#) Nature. Excerpts edited by RAWSEP for brevity and clarity and relationship to Residents Against Wood Smoke Emission Particulates, a 501c3 nonprofit organization. The concentration measurement of PM 2.5 µm or less in diameter (PM2.5) began in January 2015; therefore, annual average concentration values were. Long-term air pollution exposure is associated with higher incidence of ST-elevation myocardial infarction and in-hospital cardiogenic shock [The Korea Acute Myocardial Infarction Registry study group Scientific Reports](#) volume 14, Article number: 4976 (2024) [Cite this article](#)

7 Altmetric [Metrics details](#) Abstract. Previous studies have reported the association between myocardial infarction (MI) and air pollution (AP). However, limited information is available regarding the long-term effects of AP on the relative incidence rates of ST-elevation MI (STEMI) and Non-ST-elevation MI (NSTEMI). We investigated the association between long-term exposure to AP and the incidence of STEMI. Between January 2006 and December 2015, a total of 45,619 eligible patients with Acute Myocardial Infarction (AMI) were enrolled in the Korea Acute MI Registry (KAMIR) and KAMIR-National Institutes of Health. Mixed-effect regression models were used to examine the association between the annual average ambient AP before MI onset and the incidence of STEMI, and to evaluate the association of AP with the incidence of in-hospital cardiogenic shock. After mixed-effect regression model analysis, particulate matter (PM) 10 µm or less in diameter (PM10) was associated with increased incidence of STEMI compared with NSTEMI For in-hospital cardiogenic shock complication, PM10 (was) associated with increased risk, This study has several limitations. First, because of the limited sampling data available for PM2.5, the associations with clinical events may have been relatively low. PM2.5 data was only available for 2015, the final year of our study period, limiting longitudinal analysis. Evidence suggests that PM size is related to cardiovascular morbidity and mortality^{29,38,39}. Further studies with new data are needed to evaluate the impact of PM2.5 in AMI patients in the future with our KAMIR data with later than 2015 registry database.

8) United States Government. Environmental Protection Agency (EPA) Burnwise Program, which content is supervised by the Wood Stove Industry in conflict with known adverse human health effects of wood burning, continues to publicize EPA certified wood stoves, EPA qualified fireplaces and outdoor wood boilers, despite numerous scientific studies showing the adverse health effects of wood burning. In February 2023 the Office of the Inspector General (OIG), watchdog of the EPA released a report stating that EPA wood stove certification program is deeply flawed, resulting in most wood stoves since the inception of the certification program only in 1988 (only 36 years ago, hardly a longtime tradition of wood stove certification) are highly polluting and non-compliant even with the lax PM2.5 2 gram per hour (cord wood as of 2021) level "safe" emission limits set for wood stove certification. These cord wood burning wood stove PM2.5 limits of 2 grams per hour routinely result in PM2.5 emissions above NAAQS standards of 35 micrograms per cubic meter in a 24 hour period or 9 micrograms per cubic meter annually in the yards of near neighbors of indoor residential wood burners, as measured by PurpleAir PM2.5 monitors hanging in the yards of near neighbors of indoor residential wood burners. Instead, the EPA should be directing current wood burners to Wood Stove Changeout programs for cleaner heating alternatives for home heating such as Heat Pumps that work down to 40 degrees below zero (Fahrenheit and Centigrade scales converge briefly at 40 below zero). Heat Pumps run on electricity, which the overwhelming majority of United States households have been connected to through rural electrification across the United States, rural electrification that took place over 75 years ago, by shortly after the Second World War. Excerpts edited by RAWSEP for brevity and clarity and relationship to Residents Against Wood Smoke Emission Particulates, a 501c3 nonprofit organization. [Are You Using a Wood Stove to Supplement Your Heating Needs? | ENERGY STAR](#) Consider switching to a more efficient gas or wood pellet stove or buy a new EPA-certified wood stove that is 50 percent more efficient than older models. Get a [list](#) of more efficient EPA-certified wood stoves. View two videos: [Split, Stack, Cover and Store](#) and [Wet Wood is a Waste](#). Consider a catalytic stove to get higher efficiency and lower emissions. For more information EPA certified wood stoves, as well as EPA qualified fireplaces and outdoor wood boilers, visit

EPA's [Burnwise program](#). 9 to 12)Headlines on PM2.5 and adverse health effects. 9)PM2.5 and a senescent state. (seh-NEH-sents). Definition of senescence. **The process of growing old.** In biology, senescence is a process by which a cell ages and permanently stops dividing but does not die. Over time, large numbers of old (or senescent) cells can build up in tissues throughout the body. [PM2.5 induces a senescent state in mouse AT2 cells - ScienceDirect](#) ScienceDirect.com PM2.5 is known to induce lung injury, but its toxic effects on lung regenerative machinery and the underlying mechanisms remain unknown. 10)PM2.5 and childhood asthma. [Early-Life Exposure to Air Pollution and Childhood Asthma Cumulative Incidence - JAMA Network](#) Findings In this cohort study of 5279 children, mean fine particulate matter (PM2.5) and mean nitrogen dioxide (NO2) air pollution during the first 3. 11)PM2.5 and effect on the brain. [How Air Pollution Affects Our Brains | Harvard Magazine](#) PM 2.5 (particles that are 2.5 microns or smaller in diameter) deadly. The group discussed both outdoor and indoor air pollution, 12) PM2.5 and sick building syndrome. [Comparing classic regression with credit scorecard model for predicting sick building syndrome risk](#) ScienceDirect.com DT model indicated that PM2.5 as key predictors for total SBS symptoms. Bio-aerosols are a heterogeneous group of particulate matter (PM). Headlines 13 to 20)Headlines sorted by locality. 13)Michigan. Michigan prepares to meet EPA new annual standard of PM2.5 of 9 micrograms per cubic meter. [Michigan prepares to meet new, more stringent federal standards on fine particulate pollution](#) State of Michigan. Fine particulate matter is also called PM2.5. It refers to small particles that are less than 2.5 microns in diameter. Why are we concerned about PM. 14)Montana. RAWSEP View: It is not enough to regulate open wood burning. Open wood burning must be stopped. [DEQ Announces Open Burning Season - State of Montana Newsroom](#) Montana.gov Open burning must comply with local regulations. Only clean, untreated wood and plant material can be burned. Do not burn: food wastes, plastics, wood. 15)Canada. Air quality advisory due to wood smoke. [Ministry issues air quality advisory - Yahoo News Canada](#) Wood smoke is a common contributor to PM2.5: according to Health Canada, the matter "typically consists of a mix of things like soot, smoke. particulate air filter or air conditioning – when particulate matter levels are high. 16)Denmark. RAWSEP View: Operation of wood stoves installed after 2003 is still highly polluting and injurious to human health, especially to near neighbors of indoor residential wood burners.[What you should know if you have a wood-burning stove in your Danish home](#) The Local Denmark. Home buyers in Denmark are obliged to inform authorities if they have a wood-burning stove in their properties, and **they face fines if they do not replace or remove stoves installed before 2003.** 17)Montenegro. 4 deaths from use of wood burning stove. [Montenegro: ERRC calls for action following blaze which killed four Roma](#) European Roma Rights Centre. Montenegro. Roma. victims indicated that the fire was caused by a wood burning stove. Vucinic said preliminary findings indicated the fire was caused by a wood-burning stove. The ERRC complaint calls on the Ombudsman to press all. Three victims are minors, one is an adult." Vucinic said preliminary findings indicated the fire was caused by a wood-burning stove. The ERRC. 18)Thailand. Wildfire wood burning. [Smoke engulfs forest as wildfire rages on mountain in northern Thailand | victoriaadvocate.com](#) Dangerous levels of deadly PM 2.5 particles are recorded every year in Thailand between December and April. Despite paying lip service for several.



AIR POLLUTION

- STROKE**
- HEART DISEASE**
- COPD**
- LUNG CANCER**
- PNEUMONIA**

