

Episodes 55 j thru m

Episode 55j

Residents Against Wood Smoke Emission Particulates (see RAWSEPresidents.wordpress.com 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 and Podbean).

Episode 55 j thru m March 11, 2023 The Afterthought issue: Carbon Capture from a New York City 30 story apartment building, and giant Outdoor Air Purifiers called "Smog Towers" in India. RAWSEP believes it is better to stop carbon emissions in the first place, rather than Carbon Capture as an afterthought.

Two Framing Devices, or Personal Observations, for this Episode

1 Non-Polluting Residential Home Heating: does it need a backup, or is this new technology, heat pumps, reliable?

The short term "bridge" or backup of natural gas furnaces for residential home heating while transitioning to the future 100% use of heat pumps run on a reliable and efficient electricity grid powered by geothermal, wind and solar energy is suddenly being talked about, and FUNDED in the United States. Natural Gas Furnaces are what RAWSEP has emphasized in the past, as an immediate alternative "bridge" to cleaner energy sources, at least in the frigid winters of the Midwest. Heat pumps that work at low temperatures are suddenly here, or suddenly attainable, as alternatives to residential wood burning. As a resident of Wisconsin, I am apprehensive of immediately relying 100% on heat pumps for home heating, at least until it is proven that these heat pumps can perform as promised, with reliability down to temperatures well below zero. But irrational fear of being left in the cold should not lead to rejecting the helping hand of these new heat pumps. Fear can make you cling to old ways, even when those old ways are as idiotic as residential wood burning. But the more likely reason for clinging to residential wood burning is the advertising of the wood burning industry, and the residual belief that wood burning is Carbon Neutral, a fallacy that has been pushed for only the last few decades, in order to line the coffers of the wood burning industry and a fallacy that adversely affects the health of near neighbors of residential wood burners.

The natural gas power grab of Russia starting in 2022 had effects unintended by President Putin of Russia. The rest of the world has mobilized to make a sharp turn away from natural gas, and the world has mobilized to turn to the methods of geothermal, wind and solar that we have known for so long are the least polluting ways of home heating. Along with that, developing an electricity grid that can move this power to every household is part of that sharp turn away from natural gas, and all the even more polluting fossil fuels such as coal, and also, AWAY from the MOST polluting fuel, wood, AWAY from residential wood burning for home heat.

For the eighteen years of Residents Against Wood Smoke Emission Particulates, natural gas has been the go-to when discussing the "bridge" to cleaner energy. Among the fossil fuels, natural gas is the cleanest for home heating. Residential wood burning produces 450 times the particulates as natural gas furnaces. Residential wood burning produces slightly more particulates than coal burning. Coal burning replaced wood burning because it was cleaner than wood burning. In that way, there was some progress toward cleaner air, hundreds of years ago, from using coal burning instead of wood burning.

Again, as a resident of Wisconsin, I would like proof that the new generation of heat pumps can go the distance during the coldest winters Wisconsin can produce. I am amazed that this technology has developed to the point where the assertion can be made that it can. The future looks so much brighter with this promised helping hand out of the darkness of the pollution of residential wood burning.

2 Shoveling Snow while breathing clean air is invigorating.

I was enlisted to shovel the six inches of heavy snow that fell in my area of Wisconsin this week. This rare exercise has energized me, like power lifting requiring upper body strength, in the sunshine. I feel the oxygen surging through my body in the hours afterward, and wonder why I only do this sort of thing when required. It helped that my neighbor who burns wood had left the neighborhood briefly and was not burning wood at the time. It would have been agonizing to need to breathe clean air and only breathe in smoke, when I needed to perform the task of shoveling out.

3 RAWSEPresidents would like to solicit recipes for foods cooked WITHOUT wood burning, such as re-imagining recipes which used wood burning in the past, which can be made without wood burning.

United States

RAWSEP View: The motivation of turning to Carbon Capture in this New York apartment building is to evade electrification. The apartment building owner is also worried about electrification working at the coldest temperatures of New York City in the winter. The owner views continuing using natural gas for heat as a “bridge” to the cleaner energy technologies of electrification sourced by wind and solar. Whether Carbon Capture, and sealing the Carbon Dioxide in concrete blocks, works in reducing the apartment building’s carbon footprint has not been proven to New York City authorities yet. The Department of Buildings, which enforces the law, said it is reviewing CarbonQuest’s system, but has a number of questions, such as how to verify the emission reductions claimed by the apartment building owners. “Until we know more about how this innovative technology is actually performing, and specifically, how and if the carbon is, in fact, being permanently sequestered, we cannot determine whether it is consistent with the intent of the law,” said a spokesman for the Department of Buildings. RAWSEP notes that many of the commenters at the last meeting of the White House Environmental Justice Advisory Council (W H E J A C) spoke against the practice of government funding for Carbon Capture, Utilization and Storage (C C U S) which advocates for industrial capture of carbon only after it is created by fossil fuel or wood burning. The commenters did not think CCUS worked, and the commenters at the WHEJAC meeting thought C C U S was “greenwashing”. The commenters against C C U S thought that it was efficient and cost effective to stop PM2.5 pollution at inception, stop fossil fuel or wood burning, rather than undertake expensive, complicated and ultimately futile, but government subsidized, and therefore lucrative to fuel burning industries, “Carbon Capture”.

New York, New York City (Carbon Capture from city buildings)

<https://www.nytimes.com/interactive/2023/03/10/climate/buildings-carbon-dioxide-emissions-climate.html>

RAWSEP View: Carbon Capture on a residential scale has the same problems of cost and inefficiency as C C U S on an industrial scale, and in RAWSEP’s view is “greenwashing” useful only because it is lucrative to industry as well as to an apartment owner in New York City. It is more cost effective and efficient to stop fossil fuel and wood burning at their sources, rather than have to deal with the residue pollution of that burning. Electrification of New York City can’t come soon enough.

Excerpt edited by RAWSEP for brevity and clarity.

A Huge City Polluter? Buildings. Here’s a Surprising Fix (Carbon Capture in Concrete Blocks).

Carbon capture might not work for all buildings. But some are giving it a try.

1.Photo of the Apartment building in Manhattan.

In New York City, boilers in the basements of thousands of apartment buildings kick on, burning natural gas or oil to provide heat for the people upstairs. Carbon dioxide from these boilers wafts up chimneys and into the air, one of the city’s biggest sources of global warming emissions. But there is one exception. At a 30-story apartment tower in Manhattan, the carbon dioxide from its two giant gas boilers is captured, cooled to a liquid, and then trucked to a concrete factory in Brooklyn. There, the carbon is mixed with cement and sealed into concrete blocks, where it can’t heat the atmosphere. “This is the first carbon capture system on a building that we’re aware of anywhere in the world,” said the CEO of [CarbonQuest](#), the company behind the system.

2.Photo of a boiler releasing carbon dioxide. The building’s owner didn’t install the (Carbon Capture) technology purely out of concern for the planet. A [sweeping new climate law](#) in New York City aims to cut greenhouse gas emissions from large buildings 40 percent by 2030 and 80 percent by 2050. Starting next year, buildings that exceed emissions limits will face steadily escalating fines. The law was designed to propel buildings to swap gas and oil for cleaner electric heating.

3.Photo of a complicated process involving lots of pipes. Carbon dioxide is captured, liquefied, and stored.

Episode 55 k

In the basement beneath the Apartment building's lobby, two industrial boilers burned natural gas for heat, as they've done since the building was built in 2004. The exhaust from those boilers was funneled through a duct to a room filled with pipes, compressors, and metal tanks. Inside those tanks were dry absorbent materials that bind to carbon dioxide, filtering out nitrogen and oxygen gas. The remaining carbon dioxide was then chilled to minus 10 degrees Fahrenheit and turned to liquid. The equipment is similar to carbon capture machinery used at [larger ethanol or natural gas processing plants](#). CarbonQuest's innovation was shrinking the system for a residential property, and designing it to run automatically, without constant human supervision.

4. Photo of liquefied CO₂ is pumped outside the Apartment building. Workers load it into a truck. The system captures 60 percent of the carbon dioxide emitted by the building's boilers. That reduces the building's overall emissions by about one-quarter, enough to meet the limits set by the new climate law. (The rest of the building's emissions come from electricity consumption, which increased moderately to power CarbonQuest's compressors and cooling systems.) What to do with the liquefied carbon dioxide? Make concrete. Every week or so, a small tanker truck pulls up to the building and workers connect a hose to the side of the building that sucks out the liquid carbon. They truck it to a concrete manufacturer beside a residential neighborhood in East Flatbush, Brooklyn. Next stop: a concrete plant in Brooklyn. The concrete plant makes thousands of concrete blocks per day used in construction all over New York City. One stack of blocks outside was marked for an Amazon warehouse in Queens. On this day, workers at the plant took the liquid carbon from the Apartment building, used [a new technique](#) to convert the liquid into a powder resembling dry ice and dumped it into giant mixers, along with cement, sand and aggregate. The cement reacted with the carbon dioxide to turn it into a mineral, calcium carbonate, which was then sealed into concrete that was formed into blocks. Even if the blocks are later smashed up, the carbon dioxide can't escape.

6. Photo of CO₂ being transferred from the truck to this tank. More pipes.

"LOWER-CARBON CONCRETE"

Some proponents of injecting carbon dioxide into concrete claim that it can make the blocks stronger or reduce the amount of cement needed, but company officials are not charging a premium for their blocks. But there is a potential business case: In New York, some architects are interested in using "greener" materials for their buildings. New Jersey [recently passed a law](#) providing incentives for lower-carbon concrete.

7. Photo of CO₂ being converted to a solid that looks like dry ice. Then this solid is added to a cement mix. Questions remain about whether this elaborate carbon capture process makes sense as a strategy to fight climate change. In the Apartment building, the owners had made all the easy changes to save energy and reduce emissions: the owners replaced incandescent light bulbs with LEDs, upgraded old fan motors and improved insulation. But it wasn't enough: The Apartment building was set to face roughly \$100,000 per year in fines starting in 2024, rising to \$400,000 per year in 2030, because of those two giant carbon-spewing boilers in the basement. When the CO₂ reacts with cement, it turns into a mineral, no longer able to heat the planet.

8. The company explored replacing the boilers with electric heat pumps, a solution favored by environmentalists, but that posed serious challenges. Building-wide renovations and rewiring would have been required. The building owner had questions about how well New York City's already-strained electric grid would hold up during the coldest days of winter, when heating demand spiked. Capturing the carbon looked far simpler. The company just had to clear six spots in the underground parking garage for CarbonQuest to install its equipment. And the boilers could keep burning gas.

9. Photo of the resulting mixture of solid CO₂ and concrete being poured and shaped. The building owner sees electrified buildings powered by clean energy as the ultimate goal, but carbon capture can offer a "bridge" for now. The building owner wouldn't disclose what the company paid for the Apartment building's system but said it was cheaper than electrification and will pay for itself within six years through avoided penalties as well as the sale of hundreds of tons of carbon dioxide to another business. CarbonQuest officials are hoping to capitalize on the discomfort with electrification as the new climate law bites down.

10. Photo of a carbon-sequestering concrete block. For now, however, carbon capture faces an enormous hurdle: It has not been approved by the city as a solution that complies with Local Law 97, since the technology didn't exist when the law was drafted. The Department of Buildings, which enforces the law, said it is reviewing CarbonQuest's system but has a number of questions, such as how to verify the emission reductions claimed by the Apartment building. "Until we know more about how this innovative technology is actually performing, and specifically, how and if the carbon is, in fact, being permanently sequestered, we cannot determine whether it is consistent with the intent of the law," said a spokesman for the Department of Buildings. If CarbonQuest expands its business, it will have to persuade more concrete companies to stash all that carbon dioxide. The concrete company has all it needs at the moment. Experts and environmentalists point out electrification still has considerable advantages, like [curbing indoor air pollution](#) and being

insulated from swings in gas prices. The technology is also improving quickly: New York State is [currently funding a round](#) of novel [electric heat pump](#) and efficiency projects that could serve as models for other buildings. “The main way we decarbonize is still likely to be doing everything we can on energy efficiency, [electrifying most buildings, and greening the grid](#),” said the chief executive of the Urban Green Council, an umbrella group that includes real estate developers and environmentalists. “But we’re still in the early stages of what’s going to be a massive market transformation,” he added. [“The changes required are so big that I don’t think we can rule out any approach just yet.”](#)

Asia

RAWSEP View: The motivation of Carbon Capture in the form of giant Outdoor Air Purifiers called “Smog Towers” in Indian Cities like Mumbai, Delhi, and Gurugram, is to evade dealing with stopping the particulate matter of 2.5 micrometer size, PM2.5, from being created in the first place. In India some PM2.5 is created by domestic wood burning and burning of stubble in agricultural fields. Whether giant Outdoor Air Purifiers, or Air Purifiers almost exclusively placed inside expensive buildings is effective in reducing India’s air pollution is questionable. Restricted Hyper-localized monitoring, caused by moving PM.5 monitors to only the elite areas of a city, was done in Mumbai when the city’s 20 outdoor PM2.5 monitors were moved closer to Mumbai’s “Smog Towers”, also located in elite areas of the city. Mumbai is the capital of the State of Maharashtra in India. Following Mumbai’s air quality crisis this winter, [critics accused](#) the Maharashtra Pollution Control Board of moving air quality sensors to “cleaner” parts of the city. Air pollution is the new inequality of the poor in India. A pulmonologist named K says. “I don’t think people should live with this,” adding that everyone needs to demand solutions. “If you don’t get something as basic as fresh air, then what’s the point of living in our country?”

India

https://www.wired.com/story/breathing-is-a-luxury-in-indias-air-crisis/?fbclid=IwAR3oxuNqXZHPUxHBycRmNVFm_lIEI7Sc3HwWTdqfvUph2SOU1f2MO_iFY4

“The Alarming Rise of India’s Pay-to-Breathe Industry” from Wired.com

RAWSEP View: “Smog Towers” are located to clean the air in the wealthiest areas of India. Air quality sensors are located in those wealthy areas in hopes that cleaner air will be detected in these wealthy areas, and the less clean air in hyper-localized poor areas can be overlooked. Also, indoor Air Purifiers, because of their high price, are often available only to the well-off in India.

Episode 55 L

Excerpt edited by RAWSEP for brevity and clarity.

In India, as the state’s solutions to pollution fail, the need for expensive air purifiers is driving inequality. In Mumbai, in November 2022, a drop in ocean temperatures slowed winds that normally shift the [construction dust, debris, and traffic fumes](#). A Mumbai bridge disappeared behind smog. Mumbai’s air quality dropped to “very poor,” briefly overtaking Delhi, [the world’s most polluted city](#). “A lot of patients were coming in with a wheeze,” said a Mumbai pulmonologist, named K. From November 2022 through January 2023, Mumbai doctors reported a rise in chronic and persistent coughs. “Patients who’ve never had any allergic symptoms in the past but now have [symptoms resembling] acute bronchitis,” says K (who, like many Indians, uses an initial as her last name.) A [2022 report](#) by the Centre for Research on Energy and Clean Air think tank found “almost the entire population of India” exposed to air pollution above World Health Organization (W H O) guidelines. In 2019, air pollution killed an estimated [1.6 million Indians](#). As attempts to fix the problem at the source fail, inequality is taking hold in Indian cities. Facing potentially deadly air quality outside, wealthier Indians are paying to breathe free, creating a booming market for air purifiers, forecast to [grow 35 percent to \\$597 million by 2027](#). India is already [economically divided along caste, gender, and religious lines](#), [63 percent of people pay for health care out-of-pocket](#) and the [top 10 percent of the population hold 77 percent of the wealth](#). As a [cold spell](#) swept through Mumbai in January and the city’s poorer residents resorted to dumpster fires, burning scraps of wood, rubber, and plastic to stay warm. Carter Road promenade, is flanked by Bollywood celebrities’ apartments looking out onto the Arabian Sea. On Carter Road you can’t see the horizon clearly. A Mumbai

dog walker says that sometimes breathing is a problem. He has seen air purifiers in the hospital, but the cost, cheaper models start at 6,000 rupees (\$72), is out of reach. Like most people he knows, he fell ill with a cough and cold this winter and couldn't work. Sixty percent of India's nearly 1.3 billion people live on less than \$3.10 a day, below the World Bank's median poverty line. Not counting farm workers, [18 percent of the country's population work outdoors](#). High levels of ambient PM 2.5 (particulate matter under 2.5 micrometers, which gets stuck in people's lungs) [can cause](#) deadly illnesses such as lung cancer, strokes, and heart disease. Deaths linked to PM 2.5 pollution have [more than doubled in the past 20 years](#), claiming 979,900 lives in 2019. The World Air Quality Report 2022 reported that air pollution costs India [\\$150 billion a year](#). In [2021, the Supreme Court](#) ordered the Delhi government to install two massive, 24-meter-high "smog towers" to filter particulates from the air. Gurugram has put [outdoor air purifiers](#) in place. In February, Mumbai's civic body announced plans to install [14 outdoor air purifiers across the city](#). However, experts believe these measures are a dead end. "Purifiers don't work," said the founder of Respirer Living Sciences, which monitors air pollution. Outdoor purifiers are a last resort when other methods of controlling pollution have failed, according to a senior research scholar at the International Institute for Applied Systems Analysis in Austria. "It makes sense to use air purifiers only when traditional methods of pollution control are insufficient," he says. "The shortfall with most outdoor air purification systems is a limited area of coverage, limited efficacy, and high cost." The researcher says the purifiers create narrow columns of purified air that only really benefit people who are close to them for an extended period of time. Following Mumbai's air quality crisis this winter, [critics accused](#) the Maharashtra Pollution Control Board of moving air quality sensors to "cleaner" parts of the city. People who can afford to do so move from air-purified homes (where each room often has its own purifier) to air-purified shops and malls, driven in air-purified cars. Brands use [cricket stars](#) and [Bollywood celebrities](#), and ads in English-language newspapers, on social media, and on billboards. Ads and news articles say breathing air in Delhi is equivalent to [50 cigarettes a day](#) during Diwali, a Hindu festival where many people help burst firecrackers, and [10 cigarettes a day](#) during the winter. For an Indian Independence Day [advert](#), Sharp suggests "Impurities Quit India," referring to the "Quit India" movement from India's freedom struggle. The founder of AirOK Technologies says his company's air purifier sales have grown 18 percent since 2018. (AirOK Technologies' air purifiers are largely used in hospitals and offices.) To work on the air in India's cities, purifiers need to filter out fine particulate matter (PM2.5). The borders of private offices and, increasingly, hotels, are sometimes marketed [based on their air purification](#). Workers at the entrances and exits to these buildings don't breathe the purified air available to those inside. Such inequality has severe consequences, as those from disadvantaged castes already face considerable [barriers in accessing health care](#). K says. "I don't think people should live with this," adding that everyone needs to demand solutions. "If you don't get something as basic as fresh air, then what's the point of living in our country?"

United States

RAWSEP View: In a usually warm climate, going without a backup clean method of space heating, leads to panic use, in an emergency, of the worst polluting methods of home heating, including residential wood burning. Being prepared is a bedrock value of responsible home ownership or a bedrock of responsibly making a rental or other home resilient to any heating emergency.

United States Energy Information Administration (E I A) Report

RAWSEP view: The number of households in the Northeast and Midwest regions that did not use space heating was [statistically insignificant](#).

[Nearly 5% of U.S. households did not use space heating in 2020, especially in warm regions - EIA](#)

U.S. Energy Information Administration - EIA - Independent Statistics and Analysis

... such as natural gas furnaces; plug-in, electric space heaters; and **wood-burning** stoves. Of the 5.8 million households that did not use heating ...

Excerpt

[Nearly 5% of U.S. households did not use space heating in 2020, especially in warm regions](#)

Data source: U.S. Energy Information Administration, 2020 [Residential Energy Consumption Survey](#) (RECS)

Nearly 5%—or 5.8 million—U.S. households did not use any space-heating equipment in 2020, according to our most recent [Residential Energy Consumption Survey \(RECS\) data](#). Space-heating equipment is any [equipment that generates heat for warmth](#), such as natural gas furnaces; plug-in, electric space heaters; and [wood-burning stoves](#). Of the 5.8 million households that did not use heating equipment, the majority—or 3.9 million U.S. households—indicated that they had space-heating equipment but did not use that equipment, accounting for 3.2% of total U.S. households. Another 1.5%—1.9 million households—indicated they did not have any space-heating equipment. The most common reason that households did not use space heating equipment in 2020 was that the home was located in a warm region and heating was not needed. The number of households that did not use space-heating equipment varied by U.S. census region. In the warmest regions—the South and West—an average of 5% of households did not use their available space-heating equipment. Similarly, 1.9% of households in the South and 3.1% in the West did not have any space-heating equipment.

Episode 55 M

Note: The number of households in the Northeast and Midwest regions that did not use space heating was [statistically insignificant](#).

In Florida, 8% of households do not have any space-heating equipment, and an additional 20% of households have space-heating equipment but do not use it. The majority of households in Hawaii, or 85%, do not have any space-heating equipment.

Although almost 5% of U.S. households do not use space heating, by comparison, [11% of U.S. households do not use air conditioning](#). It is more common to not have air-conditioning equipment than space-heating equipment.

We collected the 2020 RECS household energy-use data from 18,496 households, which is the largest responding sample in the program's history. Respondents completed the survey using self-administered web or mail questionnaires during late 2020 and early 2021. For the first time in RECS program history, these data are available at the state level for all 50 states and the District of Columbia. [Final household characteristics tables and square footage tables](#) are now available for the 2020 RECS.

United States, Alaska, Fairbanks

RAWSEP View: Irrational fear of being left in the cold should not lead to rejecting the helping hand of these new heat pumps. Fear can make you cling to old ways, even when those old ways are as idiotic as residential wood burning. But the more likely reason for clinging to residential wood burning is the advertising of the wood burning industry, and the residual belief that wood burning is Carbon Neutral, a fallacy that has been pushed for only the last few decades, in order to line the coffers of the wood burning industry and a fallacy that adversely affects the health of near neighbors of residential wood burners.

[EPA Hearing Draws Robust Public Feedback on Proposed Air Quality Plan Actions | KUAC](#)

KUAC FM The agency is looking beyond the primary culprit of **wood smoke**, and as KUAC's Dan Bross reports, heard a mix of frustrations from the public.

The Environmental Protection Agency held a public hearing in Fairbanks Wednesday to gather feedback on proposed rulings on a state plan to bring an area of Fairbanks and North Pole into compliance with federal fine particulate pollution regulations. The agency is looking beyond the primary culprit of wood smoke, and as KUAC's Dan Bross reports, heard a mix of frustrations from the public.

<https://fm.kuac.org/local-news/2023-03-08/epa-hearing-draws-robust-public-feedback-on-proposed-air-quality-plan-actions> to hear a three-minute recording of some comments at the hearing.

The deadline to comment is March 22, 2023.

RAWSEP Transcript of some comments from the six-hour meeting. There were dozens of commenters, but only a few commenters were on the recording. A Coal Fired Plant employee was critical of the cost of living affected by cleaning the air.

One commenter talked about the health impacts of air pollution. Air Pollution affects brain development in children. Air pollution causes elderly dementia. Recognize the unique environment of (Alaska), but ensure we are breathing healthy air.

One commenter said there should be robust enforcement of clean air laws.

One commenter asked the government to subsidize electricity on bad air days. The same commenter asked that the government allow heat pumps to be covered by subsidies without destruction of backups. RAWSEP agrees with the commenter's request to continue using natural gas furnaces as backup (but RAWSEP thinks natural gas furnaces should be discontinued, once it is established that heat pumps continue to work at even the lowest Alaskan temperatures), but RAWSEP disagrees with the same commenter's request for continued heat pump backup with wood burning stoves for heat.

One commenter voiced support of renewable energy products.

Indiana, Washington City

[Fire displaces at least 10 people - Yahoo News](#)

Yahoo News

"We did not find any working smoke detectors in the building," said Walden. ... "It appears the fire began around a **wood burning** stove in the back ...

Excerpt

A man walked into the West End Fire Station and reported a fire in the building across the street. "Our crews responded within a minute of the report," "The first guys in found the fire in the rear of building in a shop area." "It appears the fire began around a wood burning stove in the back shop area," "The fire did spread toward the back apartments in the building." Firefighters report the fire did enough damage to the two-story apartment building that it wound up displacing 10 to 12 people. The Red Cross was called in to assist those who were affected by the fire.

Texas

Texas, Dallas

[Dallas tackles environmental concerns: 40 air monitors by end of 2023](#)

Dallas Morning News

The city has bought eight AQ Mesh air monitors that will measure particulate matter — **PM 2.5**, PM 10 — nitrogen dioxide, and ozone.

Wisconsin, Sturgeon Bay

[Outdoor **Wood** Furnaces Banned in City of Sturgeon Bay - Door County Pulse](#)

Door County Pulse

A ban on those types of heaters – which pipe heat into houses in the form of hot water and resemble a small outdoor shed or shanty with a **wood-burning** ...

Excerpt

The Sturgeon Bay Common Council gave final approval Tuesday to a citywide ban on outdoor wood furnaces used to heat homes. The Fire Chief said that not many properties in Sturgeon Bay have enough land for a setback to install those furnaces without causing a nuisance with smoke, and it would be best to prohibit their use throughout Sturgeon Bay. The ordinance wording: "No person shall construct, install, operate or use, or suffer to construct, install, operate or use any outdoor wood-fired furnace upon any property in the City of Sturgeon Bay." The penalty for violating the ordinance on the first offense will be a fine of not less than \$15 nor more than \$500, together with the costs of prosecution. The minimum fine would be increased to \$75 for a second offense within one year.

Canada, British Columbia, Houston

[Large-scale air monitoring program to measure fine particulate matter - Houston Today](#)

the Houston Today

... sources including **wood smoke**, large industries, dust and motor vehicles. ... when **wood burning** increases, the air remains still so that smoke ...

Large-scale air monitoring program to measure fine particulate matter. Houston and area consistently has had high rates of particulate emissions. Monitors are being installed to come to grips with the amount of fine particulate matter in the air in Houston and area. The 13 monitors, purchased by the provincial environment ministry, the District of Houston, the federal environment ministry and the Bulkley Valley Lakes District Airshed Management Society from a company called PurpleAir will be in place for two years.

Asia

India, Hyderabad

[Air pollution levels up 8% this winter in Hyderabad - Times of India](#)

Times of India

The city's peak **PM 2.5** concentration levels during 2022-23 saw an 8% spike compared to the previous corresponding period of 2019, according to the ...

India, Kochi

[Is it mist? Is it fog? No its poisonous smoke: Kochi residents on waking up to smog in the city](#)

ThePrint

These are carcinogenic pollutants, he said. "These dioxins and furans have the ability to cling on to dust particles, especially the **PM 2.5** which can ...

[Kochi struggles to breathe amid toxic smoke: What led to Brahmapuram plant fire?](#)

Hindustan Times

... continues to remain engulfed in toxic smoke as the the air quality index remained more than 300 **PM 2.5** in the days following the massive fire.

India, Mumbai

[CSE Report Flags Rising Winter Pollution In Megacities Like Mumbai, Bengaluru, Kolkata](#)

The Weather Channel

... Environment (CSE) has revealed that irrespective of their geo-climatic zones, all Indian megacities faced worsening **PM 2.5** levels this winter.

Thailand, Bangkok

[Health warnings as Bangkok chokes on pollution - World News - WION](#)

WION

PM 2.5 levels have been above safe limits for most of Bangkok for the past three days, according to the government's pollution control department.