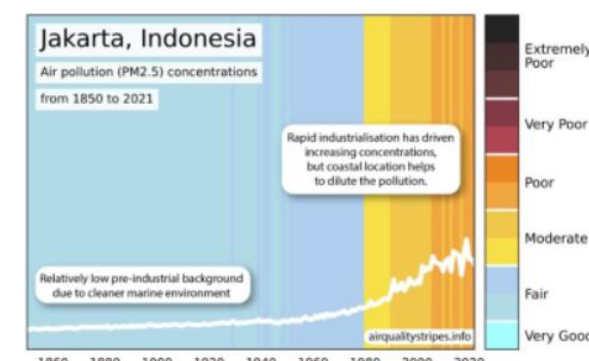
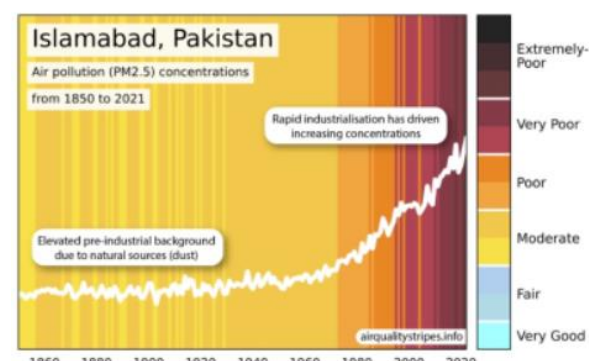
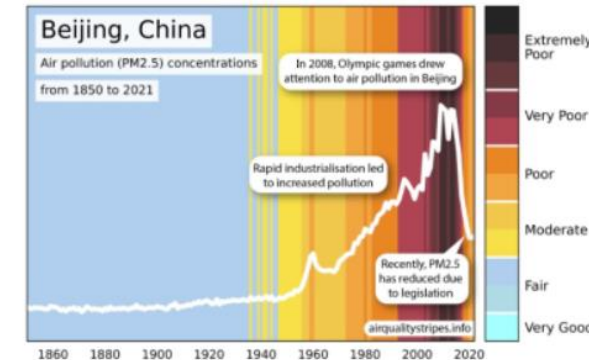
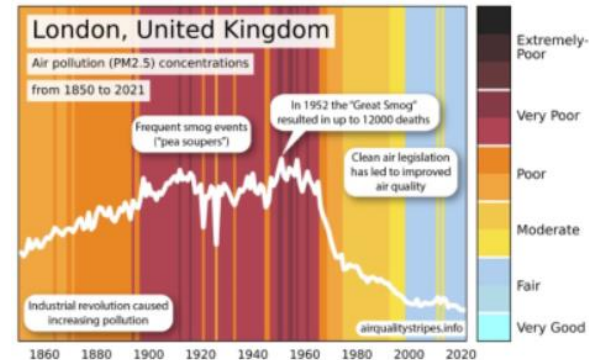


Episode 56Xi August 30 2024. UK Drax wood burning industry ordered to pay 25 million dollar fine.

In Episode 56Xi 1 World 2 United States 3 Alabama 4 Arizona 5 California 6 Colorado 7 Georgia. Georgia Power wants to burn wood for fuel but environmentalists say no. Who decides? 8 Idaho 9 Indiana 10 Kentucky 11 Montana 12 Nevada 13 New Jersey 14 New York 15 Ohio 16 Oregon 17 Pennsylvania 18 Texas 19 Canada 20 Australia 21A United Kingdom and North Carolina. Air Quality Stripes illustrate changing concentrations of particulate matter since beginning of Green Car Congress 21B United Kingdom Drax wood burning industry ordered to pay 25 million dollar fine. 21D United Kingdom London. Magazine Article. Environmental Pollution Volume 360 1 November 2024 124720 Environmental Pollution. Associations between short term exposure to airborne carbonaceous particles and mortality A timeseries study in London during 2010–2019 21E United Kingdom Miliband energy secretary. Green groups urge Ed Miliband to scrap Drax subsidies. 22 Europe. Environment statistics at regional level. European Commission European Union Air pollution is a major cause of premature death and disease 23 Sweden. 24 Germany and Finland. German company to build world's largest heat pump in Helsinki. Euractiv woodburning a practice harmful to forests and human lungs. After all Finland is one of the EU's most enthusiastic burners of wood. e in the EU, with fine particulate matter (PM2.5) deemed to have the most severe impacts. 25 Kazakhstan 26 China 27B India and PM2.5 polluting wood fired bakeries.28 Nepal 29 Singapore 30 PM2.5 and human health. Main Content.1A World. PM2.5 and Life Index. Air Quality Life Index (AQLI) 2024 - Drishti IAS PM2.5 particulate matter that are 2.5 micrometres or less in diameter. 94 countries have established PM 2.5 standards, of which 37 fail to.1B World. Global study reveals mixed success in tackling deadly air pollution MSN. Fine particulate matter PM 2.5 has a negative impact on air quality.1C World. Air Pollution Cuts Global Life Expectancy by 2 Years Deadlier Than Smoking Study Down To Earth. The report revealed that if PM2.5 (particulate matter that are 2.5 According to the report 94 countries have established PM 2.5 standards of which. 2A United States. Researchers make disturbing air pollution discovery in small rural town Why The Future Of Wood Burning Stoves In Homes Is Uncertain. MSN. A recent U.S. study discovered that indoor wood burning increased the risk of lung cancer in women by 43%. PAHs are also crucial to limit. They note that using woodburning stoves increases the amount of carbon dioxide and methane released into the planet's air which contributes to pollution and could be a factor in climate change. 2B United States. Smokeless or not smokeless? **RAWSEP View** is that Outdoor Fire Pits are not smokeless. Where is the Public Health intervention that is needed? A grate is not a Public Health intervention. When cowed by advertising when sheeplike people endure and inhale a crowd size version of sharing a thousand cigarettes all at once are they thinking of their near neighbors who also breathe in the cancer causing air pollution? From the headline slash advertisement. **Excerpts edited by RAWSEP for brevity and clarity and relationship to Residents Against Wood Smoke Emission Particulates, a 501c3 nonprofit organization.** Reviewers Call This Smokeless Fire Pit A 'Game Changer For Outdoor Gatherings' HuffPost Four Seasons 30inch Courtyard Wood Burning Outdoor Fire Pit. Although not smokeless this budget friendly firepit has a grate to protect against. **RAWSEP View** What would a family intervention for an indoor residential wood burner be like? At least the alcoholic at an intervention could plead alcohol addiction and the rejoinder from family members could be asking the alcoholic to go to rehab. The cigarette addict at an intervention could agree to slap on a nicotine patch and speak to his loved ones to get support in his struggle or talk to a counselor weekly in person or daily by phone. Maybe the problem is that there is no pricey rehab hotels to which an indoor residential wood burners could be sent to break each habit of indoor residential wood



burning. A stay at a resort hotel could separate the indoor residential wood burner from his device of choice that pollutes the air of his neighborhood and specifically pollutes the air of his near neighbors. But wait indoor residential wood burning is not physically addictive like alcohol or nicotine is! The indoor residential wood burner could just stop indoor residential wood burning and suffer no physical withdrawal symptoms! Withdrawal from indoor residential wood burning advertising is also not necessary unless the indoor residential wood burner is unable to separate fantasy from reality! The indoor residential wood burner will also have to think of ways to socialize without risking cancer and early death. Or more likely the solitary indoor residential wood burner will have to fill his former air polluting solitary death spiral with healthier activities. Wracking his brain he may come up with sports on a playing field running jogging walking gardening walking the dog playing with the cat or reading the latest online news aggregator **Residents Against Wood Smoke Emission Particulates a 501C3 nonprofit organization!**

3 Alabama. Woods Fire On Old Range line Road City of Mobile A fire line has been cut around the fire containing hotspots. Within the burned area hotspots are expected to smolder and emit smoke until they burn

4A Arizona Coconino and Mohave Counties. Breaks in main water pipeline for Grand Canyon prompt shutdown of overnight hotel stays FOX 13 Seattle Fire restrictions prohibit all wood burning and charcoal fires, including campfires, warming fires, and charcoal barbeques. For more information Grand Canyon National Park halts overnight stays after 'significant breaks' in water supply KTLA Grand Canyon National Park is halting overnight hotel stays and imposing fire restrictions after All wood burning and charcoal fires, including. Grand Canyon Closes Hotels Ahead Of Labor Day Weekend Over Water Pipe Break iHeart. In addition, no wood burning and charcoal fires will be allowed in the South Rim and the inner canyon areas. The park will remain open for day use

4B Arizona. The Arizona Department of Environmental Quality has issued an Ozone High Pollution. Arizona Emergency Information Network Conserve electricity. HPA Restrictions. Wood burning in residential fireplaces chimeneas outdoor fire pits and similar outdoor fires is prohibited

5A California. Where to Have a Beach Bonfire in Orange County Orange Coast Magazine. **RAWSEP View** It is irresponsible to create air pollution with wood smoke from beach fires in a state that is already inundated with wildfire smoke. From the article 200 wood burning fire rings available. Corona Del Mar State Beach Newport Beach. 24 total fire rings 16 wood and charcoal eight charcoal only

5B California Escondido. Resident recounts Escondido apartment fire as she figures out next steps - 10News.com smoke alarm going off. And by the time he got to my door; I'm like (sniffs) sniffing and all of a sudden, I smelt the wood burning, Walker said.

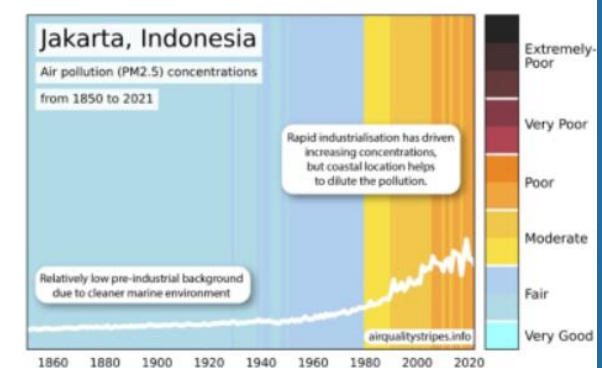
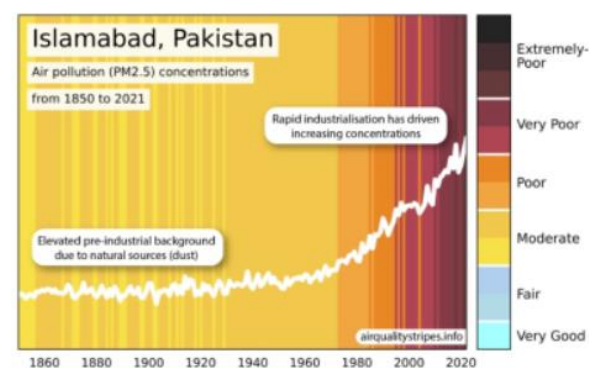
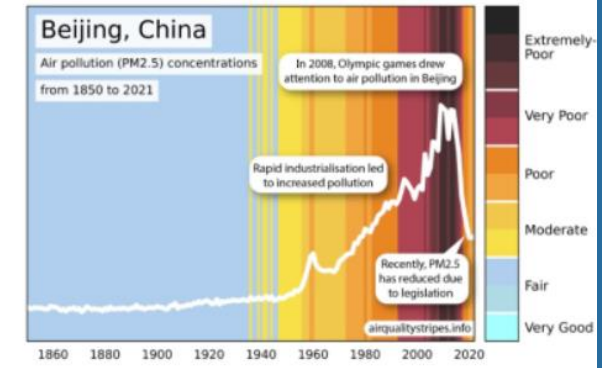
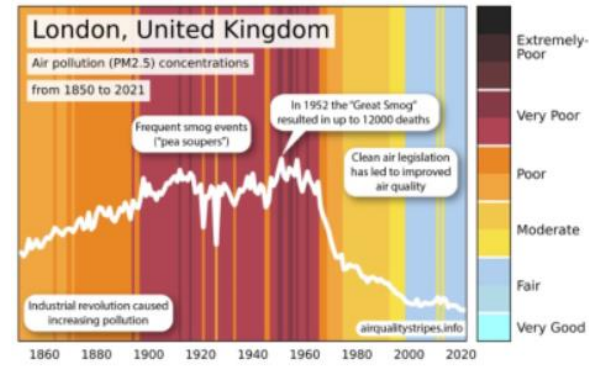
6A Colorado. Smoke beginning to subside at Sugar Mill fire in Longmont Denver7 When firefighters arrived they found that the fire was concentrated around wood materials stored in a machine shed. Crews could not go into the

6B Colorado. BLM prescribed fires planned on Carpenter Ridge and West Dolores Rim Bureau of Land Management Prescribed fire smoke may affect your health. For more information visit <https://www.colorado.gov/pacific/cdphe/woodsmokeandhealth>.

6C Colorado. Fire burning at abandoned sugar mill in Longmont Denver 9News Crews found the fire concentrated around wood materials that had been stored in a machine shed for years. They were able to use a tower truck to

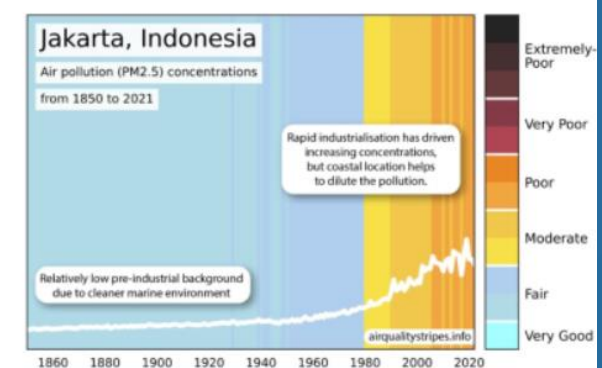
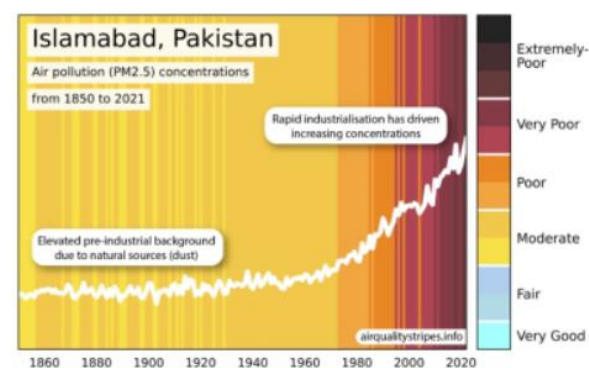
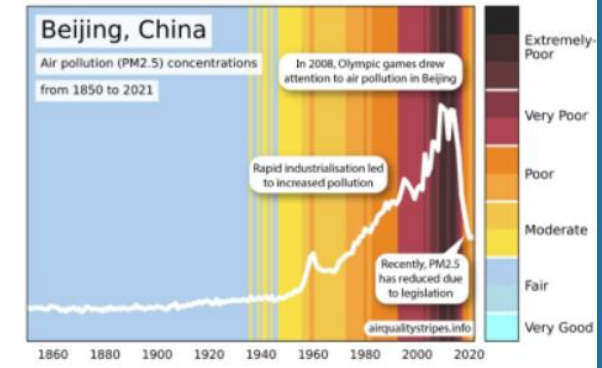
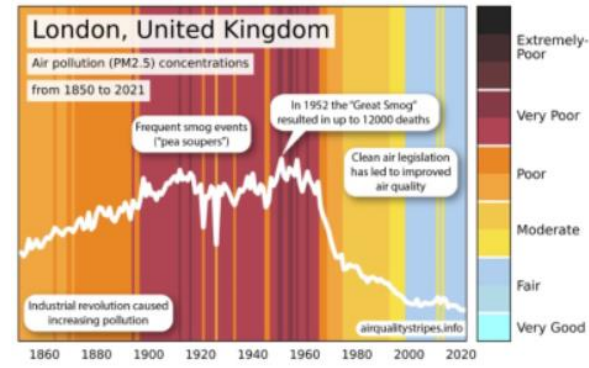
7 Georgia. Georgia Power wants to burn wood for fuel but environmentalists say no. Who decides? Columbus Ledger Enquirer. Burning of wood pellets for power emits more carbon per megawatt produced than burning coal said Othellious Cato an organizer for Georgia. Critics blast Georgia Power plan to burn wood for fuel as critics warn of costs, pollution Georgia Recorder Wood is still the largest energy resource for biomass, which is energy produced from plant or animal waste. Critics argue that wood burning plants. Georgia

Power biomass projects spark opposition. Capitol Beat. Burning wood pellets releases more greenhouse gas emissions per unit of energy than burning fossil fuels like gas, oil, or even coal 8 Idaho. Idaho Boise. Hazy skies Wildfire smoke is hitting the Treasure Valley hard ktvb.com KTVB Air quality indexes have soared into the 'Very Unhealthy' in Stanley and the Wood River Valley/Sun Valley before sunrise. Boise is also in the red. Wapiti Fire makes run toward Lower Stanley State/Regional mtexpress.com Idaho Mountain Express Wood River Valley crews head north The Wapiti Fire was about 2 miles west of Stanley on Tuesday evening Aug. 27. Update 11 a.m. on Wednesday Aug Idaho. Wapiti Fire smoke smothers Ketchum Sun Valley State/Regional mtexpress.com Idaho Mountain Express. smoke south and southeast toward Blaine County instead of northeast 830 p.m. Wood River Valley fire agencies were asked to send five 9 Indiana. Air Quality Alert in Effect Vincennes PBS. The alert has been issued due to elevated levels of fine particulate matter known as PM 2.5 which are expected to reach the Unhealthy for Sensitive 10 Kentucky. Louisville GE Appliances' FirstBuild nugget ice creator turns 10 The Courier Journal [RAWSEP View](#) Polluting wood burning should not be included in this appliance. From the article The most recent models feature flush installation electric heating zones that combine a coal and woodburning cook and an LED touch screen in a 11 Montana. Behavioral Responses to Wildfire Smoke A Case Study in Western Montana Springer Ward T. & Lange T. (2010). The impact of wood smoke on ambient PM2.5 in northern Rocky Mountain valley communities. 12 Nevada. Local Nevada Woman dies on first day of Burning Man Las Vegas Review Journal [Excerpts edited by RAWSEP for brevity and clarity and relationship to Residents Against Wood Smoke Emission Particulates, a 501c3 nonprofit organization.](#) 26 2002 file photo the sun rises behind a wood and neon statue the center piece of the annual Burning Man festival north of Gerlach Nev. Burning Man's emergency service team responded to an unresponsive person at 11:29 a.m. Sunday morning, according to the Burning Man Project. They attempted lifesaving measures but she was unresponsive. The Pershing County Sheriff's Office was notified by the team of a potential death at 11:37 a.m., according to Pershing County Sheriff. The death remains under investigation while the cause and manner are determined, and the sheriff said he will not release the name until the next of kin can be notified. Sunday was the first day of the weeklong event in Nevada's Black Rock Desert. Nevada. Death of woman on 1st day of Burning Man festival under investigation WOODTV.com Authorities are investigating the death of a 39-year-old woman on the first day of the Burning Man Festival in Nevada's Black Rock Desert. Burning Man's emergency services personnel found the festival attendee, Kendra Frazer, unresponsive around 11:30 a.m. Sunday, according to the Burning Man Project and Pershing County Sheriff. 13 New Jersey. Family owned pizza catering biz launches brick and mortar in Point Pleasant NJBIZ [RAWSEP View](#) one more addition to the establishments that use an unnecessarily highly polluting way to bake a simple pizza. RAWSEP recommends using a variety of delicious spices instead of employing wood burning that smothers a pizza with carbon that resembles the dirt usually found on a restaurant floor. From the article synopsis. A Jersey Shore based mobile pizza company known for its woodfired pies is making its brick and mortar debut woodburning oven imported from Naples. 14A New York Verona. \$50M expansion at Point Place Casino Oneida Dispatch [RAWSEP View](#) this unnecessary wood burning pollutes unnecessarily. From the article an update for the Fireside Lounge that will double its current size and add a 360degree view of the woodburning fireplace with cozy new seating. 14B New York. Air Quality Health Advisory Issued for Long Island Region NYSDEC New York State Department of Environmental Conservation NY.gov PM 2.5 such as smoking. Additional information on ozone and PM 2.5 is available on DEC's website and on DOH's



website (Ozone / PM 2.5). A new DEC 15 Ohio. Several central Ohio counties under an Air Quality Alert on Monday MSN Partly to mostly sunny skies with temperatures in the mid90s and regional smoke will enhance ozone production throughout the day MORPC said. 16 Oregon. Wallowa Whitman National Forest Lowers Public Use Restrictions to Phase B Elkhorn Media Group NORTHEAST OREGON Release from the U.S. Forest Service. Wallowa Whitman National Forest fire Woodburning stoves may be used if equipped with a. Liquefied and bottled gas stoves and heaters may be used but charcoal fires are not allowed. 17 Pennsylvania Lehigh Valley. The Lehigh Valley warehouse boom has brought prosperity problems and a notable LehighValleyNews.com PM 2.5 are particles so small that they're invisible to the naked eye but are made up of a mix of chemicals that can get deep into the lungs and can. Pennsylvania. A year ago a \$100K Lehigh Valley air monitoring project launched. What we've learned so far LehighValleyNews.com The focus of Lehigh Valley Breathes is to detect and measure concentrations of PM 2.5 amid that increased truck traffic and emissions. PM 2.5 are 18 Texas Harris County Aldine. Chrisman Road fire Scrapyard up in flames, smoke seen in air MSN No injuries have been reported at this time. Aldine Fire & Rescue reports the first party stated they were burning wood pallets outside.19A Canada British Columbia. Trigon Pacific Terminals Area A Project Advance Notice of Planned Burn Nation Talk. Trigon's goal is to burn waste wood with minimal risk to human and environmental health and to minimize smoke from open burning. Test burns of a small 19B Canada. Canadian wildfire emissions dwarfed most countries Cosmos Magazine. From that data he says his team could back calculate how much wood must have burned and from that how much carbon dioxide must have been 19C Canada. Thousands still out of homes in Manitoba and Saskatchewan due to wildfires CTV News Winnipeg. Wildfire smoke causing air quality and visibility issues in northern Manitoba (Daphne Wood). Report an error · Editorial standards & policies. 20 Australia Sydney. Restaurant owner fights to save outdoor smoker after council ban notice Daily Telegraph **RAWSEP View** A wood smoker hurts everyone because air travels and the pollution from wood burning affects the people in the restaurant the near neighbors of the restaurant and each polluting wood burning adds to the incremental pollution of the world and hastens climate change. **Excerpts edited by RAWSEP for brevity and clarity and relationship to Residents Against Wood Smoke Emission Particulates, a 501c3 nonprofit organization.** The smoker isn't hurting anyone it's far away from neighbors and because it uses wood and smoke it's not like cooking charcoal chicken. 21A United Kingdom and North Carolina. Air Quality Stripes illustrate changing concentrations of particulate matter since beginning of Green Car Congress **Excerpts edited by RAWSEP for brevity and clarity and relationship to Residents Against Wood Smoke Emission Particulates, a 501c3 nonprofit organization.** This new guideline is a concentration which is generally classed as very good air quality. There is no safe level of PM2.5 recognized by medical Air Quality Stripes illustrate changing concentrations of particulate matter since beginning of industrial revolution. 26 August 2024. The global concentrations of particulate matter have been graphically illustrated for the first time by a team of scientists. Data from computer simulations and satellite observations were combined to estimate the changing concentrations of particulate matter since the beginning of the industrial revolution, with the color palette for the stripes devised by an artist who analyzed more than 200 online images of air pollution to identify the dominant color palettes. The Air Quality Stripes, which were created by the University of Leeds, the University of Edinburgh, North Carolina State University, and the UK Met Office, starkly contrast the significant improvements in air quality across much of Europe with the deterioration in parts of Africa and Central Asia. The project's findings highlight both the successes and ongoing

challenges in tackling air pollution worldwide. There are stripes for the capital city of every nation worldwide with two additional cities for China, India, and the United States. The research team also included their own cities of Leeds, Edinburgh, and Exeter. Aq. AQ stripes for Islamabad, illustrating the timeline from 1850 to 2021, with black for very poor and blue for fair. the latest data shows that air quality is still very poor. The lightest blue stripes meet the World Health Organization Air Quality Guidelines which were introduced in 2021, with all other colors exceeding the guideline values. Key findings Europe's Air Quality Gains The images show substantial reductions in particulate matter levels across most of Europe (predominantly Western Europe). Stricter air quality regulations and technological advancements have successfully reduced particulate matter concentrations in most European cities (e.g. London, Brussels, Berlin). Worsening Conditions in Central Asia and parts of Africa The visualizations reveal a concerning rise in particulate matter pollution in many cities in central Asia and Africa (e.g. Islamabad, Delhi, Nairobi). Rapid urbanization, industrial growth, and limited regulatory frameworks are contributing to this troubling trend, which poses significant health risks to local populations. Global Disparities The images highlight the stark disparities in air quality progress between different regions. The influence of natural sources was particularly notable in some locations, these sources include desert dust and wildfires, proximity to the coast was often quite noticeable with locations such as Jakarta having lower levels than might be expected. The World Health Organization recommends that the annual average concentration of PM2.5 should not exceed a concentration of 5 micrograms per cubic meter air (5 ug/m³). This new guideline is a concentration which is generally classed as very good air quality. There is no safe level of PM2.5 recognized by medical science. At present, 99% of the world's population live with concentrations above this value, with the highest PM2.5 levels typically found in low- and middle-income countries. The AQ stripes use an annual average to take account of the ups and downs due to changes in weather patterns throughout the year, and to make comparison between locations simpler. However the researchers point out that even short-term exposure to very high levels can quickly have acute health effects requiring medical treatment 21B United Kingdom Drax. After wood pellet reporting failures, it's time for a proper review of Drax's subsidies Nils Pratley The Guardian. smoke against a grey sky, viewed from across a. Drax to pay £25m burning wood pellets to generate electricity. It should cover both the Drax to Pay £25 Million Following Ofgem Biomass Probe Markets Insider Business Insider. Drax, which receives hefty Government subsidies from burning biomass wood chips, lacked the necessary data governance and controls in place, according. Drax to pay £25m after regulator finds wood pellet reporting failures The Guardian. burning wood pellets imported from overseas forests. A spokesperson for the Department for Energy Security and Net Zero said We expect full United Kingdom. Drax to pay £25m penalty for data reporting breach after woodburning probe The National. Ofgem carried out a 15month investigation into the power station operator after it was accused of burning wood from unsustainable sources. United Kingdom. Government subsidized energy giant Drax agrees to pay £25m fine for misreporting data on Sky News. Energy firm Drax gets multi million pound government subsidies to burn wood to generate electricity. But an investigation by the energy watchdog. United Kingdom Drax security. Police acting as 'private security' for Drax power station say climate activists. The Guardian woodburning power station an unreasonable restriction of free speech. Burning wood pellets can be as bad for the environment as coal. Greenpeace and Friends of the Earth have accused police of acting as private security for the UK's biggest carbon emitter after dozens of preemptive arrests forced the cancellation of a climate protest camp near Drax power station. 21C United Kingdom Energy Saving Trust.



Wood burner regulations and fines explained Energy Saving Trust. As local authorities start issuing fines to people for illegal log burner use we look at the regulations around wood burners. You can only be fined for using a wood burning stove if you do not follow the proper legislation – for example, if you burn the incorrect fuel. Councils can issue on-the-spot civil penalties for these offences, ranging from £175 to £300. If you repeatedly break this legislation, you could be taken to the criminal courts. 21D United Kingdom London. Magazine Article. Environmental Pollution Volume 360 1 November 2024 124720 Environmental Pollution. Associations between short term exposure to airborne carbonaceous particles and mortality A timeseries study in London during 2010 through 2019 <https://doi.org/10.1016/j.envpol.2024.124720> Excerpts edited by RAWSEP for brevity and clarity and relationship to Residents Against Wood Smoke Emission Particulates, a 501c3 nonprofit organization. There is a growing understanding of the health effects of specific PM components. Short term exposure to carbonaceous particles is associated with increased mortality. The most convincing evidence of an effect was found for woodburning carbon particles. This is important given the rising popularity of woodburning for heating and energy production. More targeted PM abatement policies are needed across the UK and Europe. Abstract. Exposure to ambient particulate matter (PM) has been identified as a major global health concern; however the importance of specific chemical PM components remains uncertain. Recent studies have suggested that carbonaceous aerosols are important detrimental components of the particle mixture. Using time series methods we investigated associations between short term exposure to carbonaceous particles and mortality in London UK. Daily counts of nonaccidental respiratory and cardiovascular deaths were obtained between 2010 and 2019. For the same period daily concentrations of carbonaceous particles organic (OC) elemental (EC) woodburning (WC) total carbon (TC) and equivalent black carbon (eBC) were sourced from two centrally located monitoring sites (one urban traffic and one urban background). Generalized additive models were used to estimate the percentage change in mortality risk associated with interquartile range increases in particulate concentrations. Lagged effects up to 3 days were examined. Stratified analyses were conducted by age sex and season separate analyses were also performed by site type. For nonaccidental mortality positive associations were observed for all particle species at lag1 including statistically significant percentage risk changes in WC (0.51% (95%CI 0.19% 0.82%) per IQR (0.68 µg/m³)) and OC (0.45% (95%CI 0.04% 0.87% per IQR (2.36 µg/m³)). For respiratory deaths associations were greatest for particulate concentrations averaged over the current and previous 3 days with increases in risk of 1.70% (95%CI 0.64% 2.77%) for WC and 1.31% (95%CI -0.08% 2.71%) for OC. No associations were found with cardiovascular mortality. Results were robust to adjustment for particle mass concentrations. Stratified analyses suggested particulate effects were greatest in the summer and respiratory associations more pronounced in females. Our findings are supportive of an association between carbonaceous particles and nonaccidental and respiratory mortality. The strongest evidence of an effect was for WC; this is of significance given the rising popularity of woodburning for residential space heating and energy production across Europe. 1.

Introduction. Exposure to ambient particulate matter (PM) has been identified as a major global health concern. Over the past decades a large literature has amassed documenting the adverse effects of long term and indeed short term exposure to PM on health. Previous studies have demonstrated relationships between short term exposure to carbonaceous particles and adverse health especially cardiorespiratory diseases. In the meta analysis by Yang et al. which reviewed evidence from existing timeseries of PM composition and health both BC and OC were shown to be

robustly associated with cardiovascular and respiratory mortality and cardiovascular hospital admissions. Furthermore the health risks associated with carbonaceous particles specifically BC have been shown to be similar per interquartile range increase in mass concentration ($\mu\text{g}/\text{m}^3$) to those of PM10 and PM2.5. In spite of these findings there has been limited assessment of the short term effects of carbonaceous particles in the UK largely because long time series of data are not readily available. Of the few studies that have been conducted the primary focus has been traffic emissions considering only EC/BC with estimates based on only 2 years of data. In this study we used timeseries methods to evaluate associations between daily concentrations of carbonaceous particles and daily all cause and cause specific mortality in London UK based on data collected over the 10 year period 2010–2019.

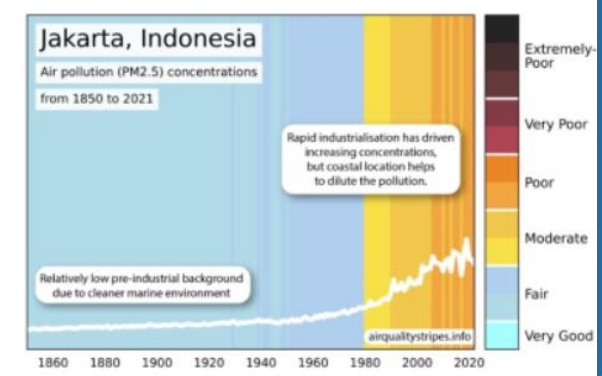
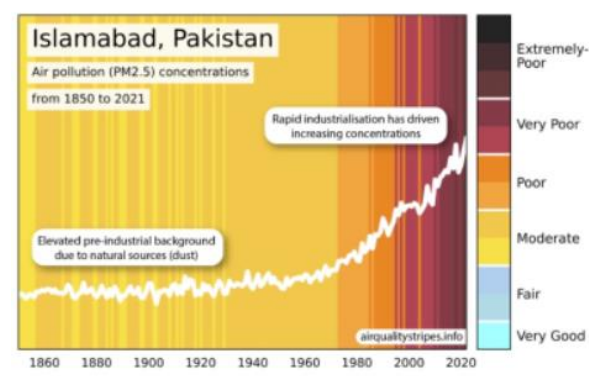
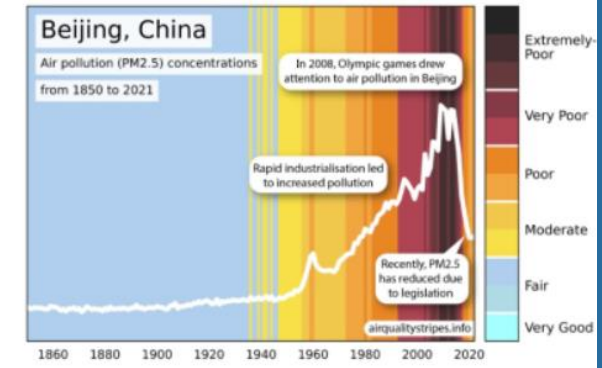
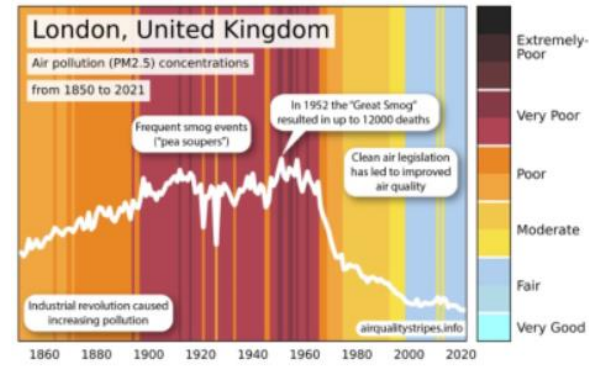
2. Methods.

2.1. Health data. For the study period January 1 2010 to November 17 2019 (3608 days) details of all deaths registered in the administrative region of Greater London were obtained from the Office for National Statistics (ONS). This information was used to establish a database of daily counts of mortality for all nonaccidental (International Classification of Diseases version 10 (ICD10 A00R99) cardiovascular (ICD10 I00I99) and respiratory (ICD10 J00J99) causes. Sub aggregations of the data were also created stratifying counts by age (<65 years and ≥ 65 years) and sex (male/female).

2.2. Exposure data. Particulate data were sourced from two fixed site monitoring stations within the London Air Quality Network Marylebone Road (urban traffic) and North Kensington (urban background). These data consisted of daily average concentrations of organic carbon (OC) elemental carbon (EC) total carbon (TC) and PM mass including PM10 and PM2.5. Measurements of equivalent black carbon (eBC) were also obtained. At both sites particulate concentrations were collected according to standardized measurement procedures and where necessary were aggregated into daily metrics in line with Local Air Quality Management (LAQM) guidance. Measurement data were obtained for the whole study period January 2010–November 2019 with the exception of EC OC and TC at North Kensington that were only available up to November 2018 due to relocation of monitoring equipment. Where possible missing values were imputed for days where particle concentrations were available at only one of the two study monitoring sites. Here we opted for a simple ratio based approach with missing values at site X calculated by multiplying the corresponding values at site Y by the overall monthly average between the two sites. See equation below = $C_{y\text{md}} * (C_{x\text{m}}/C_{y\text{m}})$ where x/y represent the two monitoring stations m the month and d the day of measurement. For cases where missing values fell within months with less than 50% data availability multiplier ratios were based on seasonal as opposed to monthly averages. To estimate a daily average citywide concentration mean measurements was taken across the two sites. As an additional metric of carbonaceous exposure daily concentrations of PM from woodburning hereafter woodburning carbon (WC) were also obtained for the study period (available from January 2010–November 2019). These measurements were derived using dual wavelength aethalometers to estimate the concentration of PM2.5 from wood and solid fuel burning. The method relies on PM2.5 from wood and solid fuel burning being more strongly light absorbing at short wavelengths when compared with soot from diesel emissions. Notably values were only able to be reliably calculated for North Kensington. Further details regarding the derivation of WC concentrations can be found elsewhere.

2.3. Meteorology. Meteorological data including daily mean temperature ($^{\circ}\text{C}$) and relative humidity (%) for London City Airport were extracted from the NOAA Integrated Surface Database (ISD).

2.4. Statistical analysis. Generalized additive quasi Poisson regression models (GAMs) were used to quantify associations between daily concentrations of carbonaceous particles and mortality by cause. GAM extends the traditional



generalized linear modelling approach by replacing linear predictors with unspecified nonparametric functions. The GAM approach has been widely adopted in time series studies of air pollution and health mainly due to its inherent flexibility enabling nonparametric adjustments for nonlinear confounding effects of seasonality trends and weather variables. In the current study we specified a natural spline function of calendar time with 8 degrees of freedom (df) per year to control for seasonality and long term trends. Meteorological confounding was addressed using smooth splines of daily mean temperature (tempt) and relative humidity (rht) with 6 df and 3 df respectively. The smoothing applied to each of the splines was selected according to previous literature. To investigate for latency in the exposure response particle concentrations were lagged between the current and previous 3 days (single day lag0 to lag3 and moving average lag03). This period was selected in accordance with previous studies which have shown associations between PM and mortality to be greatest within the 0–3day lag interval. In line with previous studies age and sex specific analyses were performed to identify potentially vulnerable groups. Stratified analyses were also performed by season (warm May to October or cold November to April) with models adjusted for time segmentation temperature and humidity. To assess whether estimates differed according to exposure site type analyses were repeated using measurement data from Marylebone Road and North Kensington individually. Two pollutant models were used to evaluate the extent to which estimated associations were confounded by particle mass with EC OC and TC being adjusted for PM10 and eBC and WC for PM2.5 reflecting the particle size for each measurement. Sensitivity to modelling assumptions was tested by varying the degree of smoothing applied to both meteorological (2–10 df for daily mean temperature and relative humidity) and temporal trend adjustments (4–12 df/year). Analyses were also performed using the raw exposure data that is prior to the imputation of any missing values. Diagnostic plots were used to assess for deviances from linearity. All models were fitted in R (version 4.0.4; R Development Core team (2021)) using functions from the GAM package (version 1.20; T. Hastie (2020)). Effect estimates were expressed as a percentage change in the risk of mortality per interquartile range (IQR) increase in mass particle concentrations. Significance was evaluated at a confidence level of 95%.

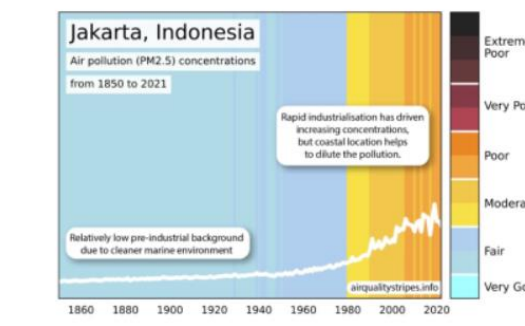
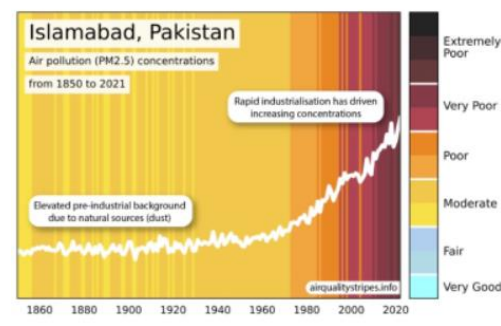
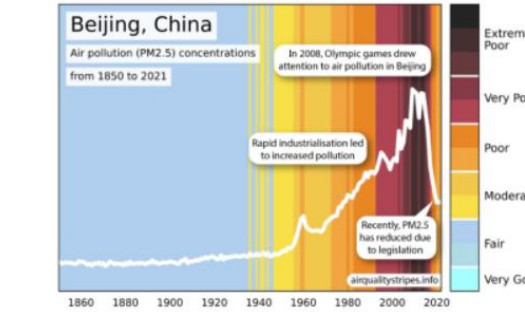
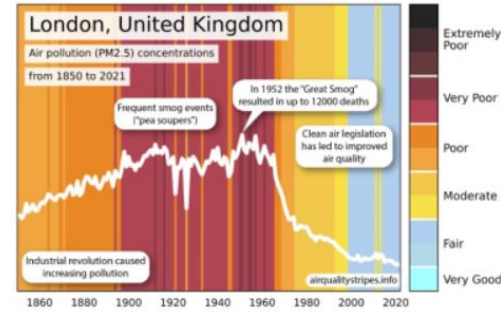
3. Results 3.1. Descriptive analyses Descriptive characteristics of the study exposure and health outcome data are shown in Table 1 Between January 1 2010 and November 17 2019 a total of 456300 nonaccidental deaths were registered in Greater London equating to an average of 126 deaths per day (IQR = 24). The mean daily number of deaths from cardiovascular causes was 37 (IQR = 11) and 18 (IQR = 7) for respiratory causes.

Table 1. Descriptive characteristics of study exposure and health outcome data collected for London between 2010 and 2019. Mean SD Minimum Median Maximum

	Mean	SD	Minimum	Median	Maximum
IQR					
Particulate Data					
Elemental Carbon (24h Avg µg/m3)					
Marylebone Road	96%	4.57	2.87	0.40	4.00
North Kensington	99%	0.93	0.77	0.04	0.73
City Average	99%	10.65	0.65		

b

2.85	1.61	0.32	2.54	10.74	2.10			
Organic Carbon (24h Avg µg/m3)								
Marylebone Road	96%	5.99	2.63	1.34	5.45	29.04	3.04	
North Kensington	99%							
3.47	2.09	0.58	2.91	29.86	2.08			
City Average 99%								
4.76	2.20	1.18	4.22	29.45	2.36			
Total Carbon (24h Avg µg/m3)								
Marylebone Road	96%	10.54	4.97	1.99	9.65	38.12	6.35	
North Kensington	99%							
4.41	2.74	0.78	3.69	36.68	2.76			
City Average 99%								
b								
7.60	3.41	1.57	6.94	37.40	4.12			
Equivalent Black Carbon (24h Avg µg/m3)								
Marylebone Road	100%	6.10	4.21	0.26	5.13	27.41	5.47	
North Kensington	100%	1.22	1.01	0.13	0.93	12.81	0.90	
City Average	100%	3.66	2.34	0.28	3.11	17.44	3.11	
Woodburning Carbon (24h Avg µg/m3)								
North Kensington	92%	0.86	0.82	0.002	0.60	10.02	0.68	
PM10 (24h Avg µg/m3)								
Marylebone Road	98%	27.73	12.57	6.42	24.86	110.41	14.41	
North Kensington	93%	19.40	10.92	3.16	16.61	84.65	10.90	
City Average	93%	23.63	11.32	4.88	20.74	90.67	12.18	
PM2.5 (24h Avg µg/m3)								
Marylebone Road	96%	18.25	10.15	3.05	15.50	95.77	10.96	
North Kensington	99%	12.85	9.65	1.65	9.79	102.19	8.72	
City Average	96%	15.57	9.66	2.76	12.73	98.98	9.31	
Mortality Data								



Nonaccidental

Total	100%	126	18.79	76	124	215	24
<65 years	100%	22	5.11	8	22	46	7
65 years	100%	104	17.00	62	102	185	22
Male	100%	62	10.47	33	62	106	14
Female	100%	64	11.50	31	63	126	15

Cardiovascular

Total	100%	37	7.69	16	36	74	11
<65 years	100%	5	2.41	0	5	17	3
65 years	100%	31	7.05	13	31	66	10
Male	100%	19	4.93	5	19	39	7
Female	100%	18	4.96	3	17	39	7

Respiratory

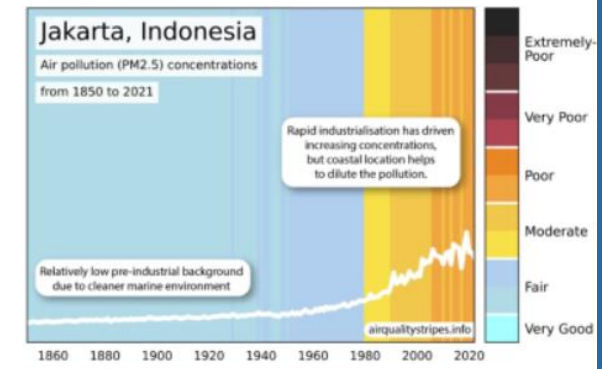
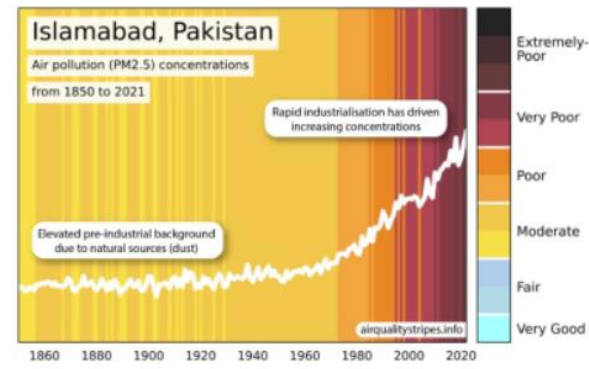
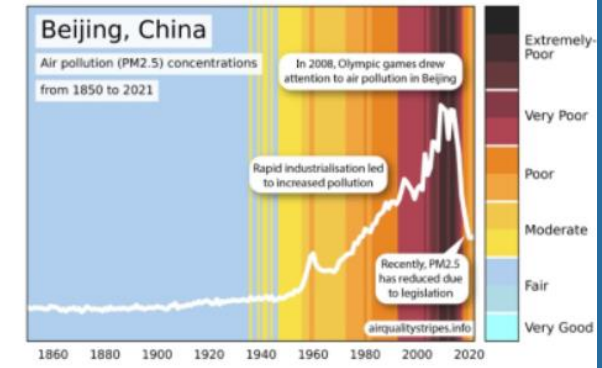
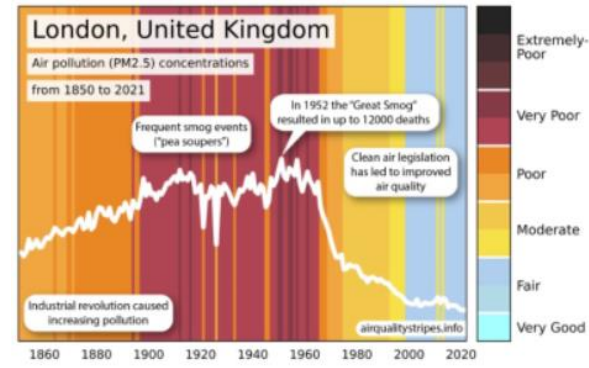
Total	100%	18	6.39	4	17	54	7
<65 years	100%	2	1.34	0	1	9	1
65 years	100%	16	5.96	4	15	50	8
Male	100%	9	3.68	0	8	30	5
Female	100%	9	4.06	0	9	32	5

Meteorological Data (24h Avg)

Temperature (°C)	100%	12.24	5.54	-3.00	12.21	29.06	8.44
Relative humidity (%)	100%	73.33	9.99	41.93	73.68	99.48	14.51

Footnote. Abbreviations Avg = Average IQR = Inter Quartile Range PM2.5 = Particulate matter with aerodynamic diameter <2.5 µm in mass concentration (µg/m3) PM10 = Particulate matter with aerodynamic diameter <10 µm in mass concentration (µg/m3) SD = Standard Deviation. Availability of data is expressed as a percentage of the total number of study days (3608 days) and was calculated following the imputation of missing values. Measurement data available between January 1 2010–November 12 2018 availability evaluated up to last recorded date. Particulate concentrations at Marylebone Road were greater than those at North Kensington as expected. Across the sites daily mean concentrations (and IQR) of EC OC eBC and TC were 2.85 (2.10) 4.76 (2.36) 3.66 (3.11) and 7.60 (4.12) µg/m3 respectively while the average daily concentration of WC at North Kensington was 0.86 (0.68) µg/m3. Particle concentrations varied seasonally peaking in the winter this was particularly evident for WC and eBC. Downward trends in particle concentration were observed over the study period most

notably for eBC with annual average concentrations decreasing from 5.16 $\mu\text{g}/\text{m}^3$ in 2010 to 1.42 $\mu\text{g}/\text{m}^3$ in 2019. Large reductions were also observed in EC (from 3.88 $\mu\text{g}/\text{m}^3$ in 2010 to 1.69 $\mu\text{g}/\text{m}^3$ in 2018; 5. Conclusion In summary our results are supportive of an association between short term exposure to carbonaceous particles and all cause and respiratory mortality. The strongest evidence of an effect was for WC; this is particularly important given the rising popularity of wood burning for residential heating and energy production across the UK and Europe. Additional studies are required to confirm our findings. 21E United Kingdom Miliband energy secretary. Green groups urge Ed Miliband to scrap Drax subsidies. Biomass and bioenergy The Guardian. Open letter to Labour energy secretary from 41 groups says woodburning biomass plants are putting forests and biodiversity at risk. United Kingdom. Miliband urged to end subsidies for firms burning wood for electricity Jersey Evening Post. Energy Secretary Ed Miliband is facing calls to end financial support for companies generating electricity from burning wood including Britain's United Kingdom. Miliband urged to end subsidies for firms burning wood for electricity News Chain. Campaigners from wood pellet exporting countries are calling on the new Government to end financial support for firms burning them for United Kingdom. Campaigners urge UK Energy Secretary to end biomass subsidies Bioenergy Insight. We urge you not to grant any new subsidies to woodburning power stations in the UK they said. It comes as the current system of biomass 20A United Kingdom. Miliband urged to end subsidies for firms burning wood for electricity Perspective Magazine. Campaigners from wood pellet exporting countries are calling on the new Government to end financial support for firms burning them for electricity United Kingdom. Miliband urged to end subsidies for firms burning wood for electricity The Independent. Campaigners from wood pellet exporting countries are calling on the new Government to end financial support for firms burning them for 21F United Kingdom Sudbury. UThe Fixer Sudbury man runs afoul of city's openair burning rules Northern News. Greater Sudbury has strict rules on the matter. For example only clean wood can be burned within municipal boundaries. United Kingdom Sudbury. The Fixer Sudbury man runs afoul of city's openair burning rules Sudbury 21G United Kingdom Warwickshire. Get Ready for Chimney Fire Safety Week Warwickshire County Council burning wet unseasoned wood and leaving fires smoldering overnight. To keep your woodburning stove safe and efficient make sure you use quality 21H United Kingdom Wirral. Wirral Council streamlines smoke control regulations across borough Birkenhead News Unauthorised fuels such as wood or ordinary coal can only be burned in a smoke control area when using a DEFRA approved appliance one that is on 21i United Kingdom Yorkshire. How to get ready and avoid a fine during wood burning stove season Yorkshire Post. The first day of Autumn September 22 is creeping closer and there is no doubt that thoughts will be turning to woodburning and multifuel stoves. 22 Europe. Environment statistics at regional level. European Commission European Union Air pollution is a major cause of premature death and disease in the EU, with fine particulate matter (PM2.5) deemed to have the most severe impacts. 23 Sweden. Updated data Uppsala has cleanest city air in Europe European Environment Agency European Union particulate matter (PM2.5). The data was collected from over 500 monitoring stations at urban locations across EEA member countries over the past 24 Germany and Finland. German company to build world's largest heat pump in Helsinki. Euractiv woodburning a practice harmful to forests and human lungs. After all Finland is one of the EU's most enthusiastic burners of wood. Up to 20% of 25 Kazakhstan. Air quality impacts of ArcelorMittal's Temirtau steel plant in Kazakhstan 1996 to 2023 Centre for Research on Energy and Clean Air We estimate that exposure to PM2.5 from the Temirtau steel plant has led to deaths among the local adult population due to ischemic



heart disease 26A China. Health co benefits of postCOVID19 low carbon recovery in Chinese cities Nature Following the lockdown the PM2.5 level rebounded rising to levels higher than that during the lockdown but still lower than pre pandemic levels 26B China. Zhejiang drives green electricity Chinadaily.com.cn China Daily woodburning stoves to electric ones by installing heating elements Now there's less smoke from burning wood more convenient and cost . woodburning stoves to electric ones by installing heating elements circuits and control systems at the base of the traditional stoves. 27A India. Govt inaction on pollution deadly, reducing people's lifespan. The Tribune India PM 2.5 in the air. In Delhi alone, 12,000 people die annually because of this, which accounts for 11.5 percent of the total deaths each year 27B India. Impacts of current and climate induced changes in atmospheric stagnation on Indian surface Nature Elevated fine particulate matter (PM2.5) concentrations have severe adverse health impacts. India experiences some of the highest ambient PM2.5 levels. Marginal decrease in PM2.5 levels in 2022 added 1 year to avg life expectancy Hindustan Times. A mere 10 microgram — a strand of human hair weighs 600 microgram — decline in the concentration of PM2.5 (particulate matter with a size of 2.5 Delhi dwellers losing 7.8 years to PM2.5 pollution Report Hindustan Times. It said that even containing the level of PM2.5 particulate matter having diameter less than 2.5 Last year's EPIC report based on 2021 data. Haryana Hry & Punjab Pb Rank Among Most Polluted States Chandigarh News Times of India. Meanwhile the annual average PM 2.5 concentration has been recorded at The life expectancy gains for Haryana and Punjab are 1.8 years and 1.1 years. Centre must increase funding for antipollution measures Congress Daily Pioneer. NCAP must adopt measurement of PM 2.5 levels as the yardstick for performance NCAP must reorient its focus to key sources of emissions – burning of. Rupees Rs 5000 cr needed to control air pollution in four TN cities says study The New Indian Express. The report said that among the cities except Thoothukudi vehicular movement was the major source of particulate matter (PM) 2.5 emissions with Air Pollution Bad Air Costing Ludh Almost 7 Yrs Of Life Ludhiana News Times of India. The report highlights Tarn Taran with a potential life expectancy increase of 7.6 years — the highest in the state— if the PM 2.5 level were. Global health organization hails PMUY LPG scheme for poor Bizz Buzz. Wood coal stove smoke in household kitchens according to a study by global public health organization Vital Strategies. image for illustrative. A targeted subsidy of Rs.200 per 14.2 kg LPG cylinder for up to 12 refills per year is being provided to PMUY consumers. Without continuation of PMUY, eligible poor households may not be able to get their due benefit under the scheme. Here's why PM 2.5 pollution dipped in 2022 in India The Indian Express. The report by the Energy Policy Institute at the University of Chicago said meeting the World Health Organization (WHO)'s pollution guidelines. Marginal dip in PM 2.5 levels in 2022; year added to avg life expectancy Report Hindustan Times. The report suggested the drop in PM 2.5 concentrations in 2022 in South Asia may be linked to meteorological causes such as above normal rainfall. India's Air Quality Improved In 2022 But Still At Concerning Levels Indiaspend. PM 2.5 particles are capable of infiltrating the lungs and occasionally entering the bloodstream resulting in serious health consequences. India records 19.3% reduction in particulate pollution but air pollution remains the biggest Times of India. The annual average PM 2.5 concentration has been recorded at 58.5 $\mu\text{g}/\text{m}^3$ in Haryana and 51.6 $\mu\text{g}/\text{m}^3$ in Punjab which are respectively 4th and 5th place. South Asia air pollution fell in 2022 but remains major killer report The Hindu. While it is difficult to conclusively determine what reduced P.M. 2.5 levels across South Asia it is safe to posit that favorable. Cong slams govt over 'rapidly deteriorating' air quality 'policy chaos' in its response Energy News. PM 2.5 that are the leading causes of mortality Ramesh said. Advt. Ad. To make matters worse in the past five

years the Central Pollution Control Board (CPCB) slams the government over 'rapidly deteriorating' air quality 'policy chaos' in its response. PM 2.5 that are the leading causes of mortality Ramesh said. To make matters worse in the past five years the Central Pollution Control Board. Shocking disclosure from a study regarding huge rise in the emissions in Chennai Madurai Live Chennai. While the industries have led to 97% of PM 2.5 emissions in Thoothukudi the transportation sector contributed to an increase in the PM 2.5 emissions. Antipeople' environmental law amendments made in past 10 yrs must be rolled back Cong The Statesman. PM 2.5 that are the leading causes of mortality Ramesh said. The Congress MP further said To make matters worse in the last five years the 27B India and wood burning bakery pollution. BMC mandates Mumbai bakeries to obtain licenses to move to cleaner fuels Deccan Herald. Surveying over 200 bakeries the study titled Envisioning a Sustainable Bakery Industry for Mumbai found that most bakeries still use woodfired ovens. Emissions from wood fired ovens are a major source of PM10 and PM2.5 tiny particles that can penetrate deep into the lungs causing respiratory an.d BMC Mandates Mumbai Bakeries To Transition To Cleaner Fuels By 2027 To Combat Air Pollution Curly Tales. The emissions from woodburning ovens are dangerous. They release PM10 and PM2.5 particles which are small enough to enter the lungs and cause severe. 28 Nepal. Nepal ranks as the third most-polluted country in the world – myRepublica Nagarik Network. According to the report, the annual average of Nepal's PM 2.5 in 2022 was 39.2 micrograms per cubic meter. Particulate matter with a diameter of 2.5 Dhulikhel becomes Nepal's first 'healthy city' and second healthiest city in Asia News on AIR. This news comes amidst reports of Nepal being the third most polluted country in the world based on satellite derived particulate matter 2.5 data. 29 Singapore. Air pollution linked to 135 million premature deaths researchers claim MSN Researchers at Singapore's Nanyang Technological University (NTU) said high levels of particulate matter 2.5 (PM 2.5) from manmade emissions and 30A PM2.5 and cerebrospinal fluid. Association between air pollution and cerebrospinal fluid alpha-synuclein in urban elders Frontiers We aimed to explore the associations of air pollution (including ozone [O3], nitrogen dioxide [NO2], and particulate matter [PM2.5]) with CSF α -syn 30B PM2.5 and NAFLD. Associations of ambient air pollution and lifestyle with the risk of Nonalcoholic fatty liver disease NAFLD BioMed Central BMC Public Health Air pollution assessment. The annual average estimates of particulate matter with aerodynamic diameter less than or equal to 2.5 micrometer PM2.5 the coarse particulate

