

Webisode 57DHYAFZZFLE March 5 2026 Rise in ultrafine particles from transition to low smoke fuels

In Webisode 57DHYAFZZFLE [0 RAWSEP View](#) [1 World](#) [2 United States](#) Rise in ultrafine particles from transition to low smoke fuels [3 California](#) [4 Colorado](#) [5 Florida](#) [6 Georgia](#) [7 Illinois](#) [8 Michigan](#) [9 New Mexico](#) [10 New York](#) [11 North Carolina](#) [12 Oregon](#) [13 Texas](#) [14 Utah](#) [15 Virginia](#) [16 Washington](#) [17 Canada](#) [18 Australia](#) [19 United Kingdom](#) [20 Europe](#) Euromonitor International US heat pump adoption accelerates as policy shifts boost energy-efficient heating and cooling driving stronger demand and long term market [21 China](#) Rise in ultrafine particles from transition to low smoke fuels Do not burn solid fuels to begin with Main Content

[0 RAWSEP View](#) If it burns it earns for realtors! If it bleeds it leads for reporters! Is owning a wood burning appliance a necessity for thrill seekers? Could the marketing of wood burning appliances as low cost self-sufficient and rural be a pretense and a pretext and a code to people who whether they live in a clean energy deprived area or not want to prove their strength endurance and obstinance? Is wood burning a risk taking endeavor rather than staid traditionalist safe harbor? Just as shooting your own game rather than choosing between sirloin and ground beef at a hopefully sanitary grocery store like an ordinary housewife is conversely like taking the bull by the horns Is hefting another log on the fireplace an endeavor that proves manliness in a way surgery can only hope for? What do the stories this week prove or disprove about that theory?

[1 World](#) PM 2 POINT 5 Global food trade can mitigate substantial health burdens attributed to ambient PM 2 POINT 5 pollution Nature Our findings show that food related emissions were responsible for an estimated 8 hundred forty thousand and 4 hundred deaths due to PM 2 POINT 5 pollution in 2017 Of these approximately [2 United States](#) Sorted by Article Title [2A United States](#) PM 2 POINT 5 Air Pollution Cutoff Could Help Shape Preventive CVD Policies TCTMD dot com Over the last decade evidence has been growing around the contribution of long term exposure to fine particulate matter PM 2 POINT 5 to CVD morbidity and [2B United States](#) PM 2 POINT 5 Air pollution tied to brain aging memory loss later in life study finds USRTK org Exposure to PM 2 POINT 5 appears especially harmful Among the key findings People aged 65 and older exposed to high pollution levels early in the decade [2C United States](#) PM 2 POINT 5 Differential effects of fine particulate matter constituents on obstructive sleep apnea severity Nature While ambient fine particulate matter PM 2 POINT 5 is linked to obstructive sleep apnea OSA the specific roles of its chemical constituents have [2D United States](#) heat pump Electric appliance expert busts common misconception about heat pump HVACs Yahoo Shopping Industry experts are continuing to dispel myths about heat pumps and show homeowners how these HVAC solutions keep homes warm in a smart [2E United States](#) heat pump rebate End of Section 25D Tax Credit Could Cut Residential Geothermal Shipments by 50 percent ACHR News HYDRONIC WAY An Enertech WV variable speed water to water heat pump in an installation that includes an Enertech hydronic air handler and a Turbo Max [2F United States](#) heat pump 4 Takeaways From The Biggest Heat Pump Expo in the Nation Clean Technica Cleantech News Residential HPWHs on display from GE Bradford White LG Ariston Navien Rinnai and Rheem All images used with permission Residential heat pump [2G United States](#) heat pump Homeowner goes on rant to debunk major myth about heat pump technology Yahoo Shopping Upgrading your heating and cooling system is one of The Cool Down One Reddit user shared how their 15 year old heat pump

debunked a common myth keeping their home toasty during near single digit temperatures 2H United States heat pump rebate Homeowner questions financial logic of upgrading to popular HVAC tech after tax credits disappear The Cool Down heat pump Find out the rebate programs of your utility one user suggested CO had great state and utility rebates Start getting quotes and 2i United States heat pump Homeowner shares candid heat pump review after frigid winter storm slams neighborhood The Cool Down This Lennox heat pump performance review reinforces that heat pumps perform well in cold weather and even during snow and ice storms 2j United States PM 2 POINT 5 How Does Exposure to Fine Particulate Matter Air Pollution Impact CV Mortality Hospital American College of Cardiology 2 point 5 and cardiovascular mortality and the impact of long term exposure to PM 2 POINT 5 from wildfire smoke on hospitalizations due to cardiovascular disease 2K United States referring to an article from China Coverage at the end of this podcast under the topic of China PM 2 POINT 5 Low smoke fuels for residential heating linked to an increase in ultrafine particle emissions Nature A major driver behind this alarming statistic is exposure to airborne fine particulate matter PM with PM 2 POINT 5 being less than 2 point 5 micrometers in diameter 2L United States heat pump New data reveals the opinions of homeowners on upgrading to heat pump HVACs Yahoo Shopping However in a survey of over 70 thousand homeowners who participated in a program to upgrade their HVAC systems to energy efficient heat pumps 95 percent 2M United States heat pump rebates New 2025 to 2026 Energy Rebates Squeaks Services Explains How to Qualify heat pump rebate Courier press dot com Heat Pump Water Heaters 1 thousand 7 hundred fifty dollars Heat Pumps Cold Climate 8 thousand dollars Heat Pumps Space Heating and Cooling 3 thousand dollars Electric Stove Cooktop Range or 2N United States PM 2 POINT 5 Rescinding the EPA endangerment finding hurts our health and welfare | The Invading Sea particulate matter is called PM 2 POINT 5 referring to their diameter size of 2 point 5 micrometers They are dangerous because they 2O United States PM 2 POINT 5 Trans Net a transport informed graph neural network for forecasting PM 2 POINT 5 concentrations – Nature Foremost among the current air quality concerns fine particulate matter PM 2 POINT 5 has been a major issue despite rigorous regulatory interventions 2P United States Vortex Inverter Series heat pump New electronics platform for heat pumps and cooling systems Diehl Controls Diehl Group

**3A** California wants millions of heat pumps heat pump High power bills might get in the way KVUE If you are a California homeowner and you have been feeling chilly this winter there are plenty of reasons to go get a heat pump LA Times dot com Mitsubishi Electric heat pump installed on the exterior of a building in Santa Rosa California in 2024 AOL dot com 3B California PM 2 POINT 5 Advancing The Application of Real time Toxic Air Contaminant Hazardous Air Pollutant California Air Resources Board – CA dot gov particulate matter PM 2 POINT 5 through secondary organic aerosols SOA The CARB current monitoring methods lack sufficient temporal resolution to 3C California LADWP Is Paying Los Angeles Homeowners 3 thousand dollars to fifty five hundred dollars heat pump rebate open PR dot com The LADWP heat pump rebate is open to all LADWP electric utility The LADWP heat pump rebate runs until the funding is depleted and when

**4A** Colorado wood smoke Fire puts up thick black smoke over the Denver metro area YouTube A fire put up a lot of thick black smoke over Thornton on Wednesday 4 Colorado wood burning 10 acres charred 5 injured in Thornton grass fire evacuation orders lifted The Denver Post Additional

information on their injuries was not available A firefighter rakes smoldering wood chips in an outdoor exercise

5A Florida wood burning Brush fire burning in north Collier County completely contained fire officials say YouTube Brush fire burning in north Collier County completely contained fire officials say

5B Florida ordinance and wood burning Code compliance and beach vendors discuss recent ordinance changes ahead of tourist season my pan handle dot com code compliance on the same page This includes the revised beach bonfire permit rules 1 hundred dollars for a propane fire and 1 hundred fifty dollars for a wood fueled fire 5C Florida Drivers hit with thick smoke on I 75 in Collier County as Big Cypress fire grows YouTube Fire data shows at least 1 hundred structures are threatened Thick smoke hovered over I 75 on Wednesday 5D Florida wood smoke The Smoke from 24 thousand acre brush fire blankets parts of Alligator Alley YouTube

6 Georgia wood burning Suspect in custody after little fires found burning in multiple wooded areas in Sandy Springs 11Alive dot com According to officials the fires were set intentionally and they were small wood fires As of 620 a m no injuries or damage to any property

7 Illinois wood burning Firefighters Prevent Spread of Brush Fire in East Alton Neighborhood | River Bender dot com a request for mutual aid Wood River Fire Department and Roxana Fire Department also responded to assist Upon arrival crews encountered smoke and

8 Michigan PM 2 POINT 5 Flint air monitoring station is up and collecting data State of Michigan Fine particulate on a continuous basis particulate matter less than or equal to 2 point 5microns per cubic meter in diameter or PM 2 POINT 5 Ozone and PM 2 POINT 5

9A New Mexicans Can Get Up To 14 thousand dollars For Home Energy Upgrades heat pump rebate Los Alamos Reporter These rebates make energy efficiency upgrades easier and more affordable A heat pump for instance is a dual purpose appliance offering an 9B New Mexico wood smoke UNM researchers link heavy wildfire smoke exposure to poorer mental health measures

PreventionWeb net wood smoke Wintertime use of wood burning stoves and fireplaces can raise those levels significantly Leng said and plumes from wildfires may significantly 9C New Mexico wood smoke Wood working instead of wood burning? RAW Smoke from grass fire billows over I 25 YouTube

10 New York City Man cannot live on chocolate alone Excerpts edited by RAWSEP for brevity and clarity and relationship to Residents Against Wood Smoke Emission Particulates a 501C3 nonprofit organization A pastry chef of a restaurant opened a Chocolate Shop made by hand next door to the restaurant in 2016 It specializes in iced hot chocolate During the COVID 19 pandemic the store closed in February 2020 and they now sell their chocolates and pastries via their website New York City At a new wood fired bar and grill the restaurateur trades White Tablecloths for Wood Smoke Opening on the ground floor of a conic skyscraper on Monday March 2 2026 Very simple things smoky flavors wood grilled venison with blistered cherries cooking closer to the farm smoky bacon dinner tastes better with a little live fire The menu revolves around the wood fired grill Sourcing the right products from the right people is essential I have wanted to do a woodfire concept for a long time RAWSEP View This is the time to bring out the tiny violins to accompany the complaints of a hopeful polluter The difficulty

was permits Live fuel regulations are strict especially in a tower 66 floors up Wood fired cooking has become increasingly difficult everywhere including Europe We are losing many small places that were doing wood fired pizza because of the regulatory burden But bringing that element of the countryside into the city the smell of wood fire the warmth the glow it feels very meaningful Nothing was off limits everywhere When people talk about haute cuisine they picture stiff white tablecloths and a formal setting Of course the way we eat evolves For a while it became almost a competition People would come back from Europe and say We had 36 courses or 38 and then someone else would serve 42 customers still interested? Yes but in moderation We do six or seven courses not 25 Even today people still enjoy getting dressed getting ready for the theater for the opera or for dinner There is a certain ceremony to it And it is about respecting the person you are with [RAWSEP View This concern about respect extends only to those who are voluntarily sharing your interest in wood smoke pollution](#)

**11** North Carolina heat pump rebate New program lets Wake County homeowners slash utility bills Here is how [Press Reader](#) and Appliance Rebates [HEAR](#) This program provides an up to 14 thousand dollars rebate for high efficiency electrical appliances like a heat pump water heaters

**12** Oregon Portland heat pump rebate Advantageous and affordable ways homeowners can update their property [KATU](#) It provides rebates for installing Electric heat pumps for heating and cooling Heat pump water heaters Electric stoves and dryers [Electrical](#)

**13** Texas wood burning Artist etches Black culture through wood burning [ABC13 Houston](#) Artist etches Black culture through wood burning [HOUSTON Texas KTRK](#) Artist Kara Crowley shares the stories that shape her surroundings through wood burning Artist etches Black culture through wood burning – [Yahoo](#) Visual artist Kara Crowley shines a light on Black identity culture and pride

**14** Utah Large mulch fire burns for hours overnight in Woods Cross [KSL NewsRadio](#) He estimated residents nearby would likely continue to see smoke for hours afterward

**15** Virginia wood smoke The Smoke Alarms Alert Lovettsville Residents to Early Morning Fire • [Loudoun County VA](#) Loudoun County Sheriff Office Loudoun County Government The LCFR FMO determined the fire was accidental caused when the fire escaped the chimney of a wood burning stove Damages are estimated at

**16** Washington wood burning Burn wood for heat? Gather wood now for next winter [My Bellingham Now](#) Bellingham Spring will soon be here so it is a good time to start thinking about next winter if you use wood for home heating [KPUG](#) First a note Wood burning for heat can produce harmful levels of smoke You can easily inhale the too tiny to see particles in smoke deeply into

**17A** Canada heat pump rebate Keep your home warm with oil? Province feds say you may qualify for a free heat pump [Innis fil Today ca](#) At the same time Natural Resources Canada was also opening up its federal rebate based Oil to Heat Pump program for provincial delivery [17B Canada](#) British Columbia heat pump rebate Your spring checklist Get stuff done then have some fun [BC Hydro](#) heat pumps and heat pump water heaters And if you have been thinking about solar this might be your year [Explore our rebates on solar panel](#)

18 Australia heat pump rebate Substandard Battery Installs Trigger Inspection Blitz Solar Quotes Regulators say two thirds of battery installs are substandard with a crackdown launched amid the federal rebate surge Top 5 Heat Pump Brands · Heat

19 United Kingdom wood burning Drax power plant to stop burning controversial Canadian wood within next year RAWSEP View Old growth or new growth forest makes no difference in the amount of PM 2 point 5 emitted Old growth forests have greater stature than young trees so they sequester more Carbon through photosynthesis of Carbon Dioxide in the air into Oxygen per tree But trees close their pores in the presence of PM 2 point 5 from nearby wood burning and when their pores are closed they sequester less Carbon in the form of Carbon Dioxide So planting trees in the place of burned trees is not a solution that lowers the amount of Carbon in the air and planting trees in the place of burned trees does not sequester PM 2 point 5 at all Just do not burn trees either old growth or new growth to begin with Canadian wood is controversial because it is old growth trees but burning any trees should be controversial The Drax solution is that they will burn only trees from the United States starting in 2027 That is not a solution and digs the United States deeper into the morass of pollution that is Drax These changes at Drax were made for purely monetary reasons because The decision to end its imports of Canadian biomass to the UK was linked to the Ottawa Canada decision to impose tariffs on Canadian biomass exports Drax may still continue to produce wood pellets in Canada but these will be exported to third party buyers primarily in Asia The UK government has moved to curtail the company subsidies by offering a new contract covering the period of 2027 to 2031 that will support a limited amount of biomass generation at a set price Excerpts edited by RAWSEP for brevity and clarity and relationship to Residents Against Wood Smoke Emission Particulates a 501C3 nonprofit organization February 26 2026 The Guardian Drax to stop burning controversial Canadian wood within next year Yorkshire plant has been criticized for taking material from some of the British Columbia most environmentally important forests The owner of Drax power plant has started reducing the amount of Canadian wood pellets it burns and will stop burning trees from British Columbia entirely within the next year FTSE is owned by the London Stock Exchange FTSE 250 company Drax Group said its Canadian wood pellet plants which once supplied millions of tons of biomass to be burnt in its North Yorkshire power plant had cost the company almost 2 hundred million pounds in financial impairments last year

20 Europe heat pump US Heat Pump Adoption Continues to Rise Amid Shifting Policy Support Euromonitor International US heat pump adoption accelerates as policy shifts boost energy-efficient heating and cooling driving stronger demand and long term market

21 China Low smoke fuels for residential heating linked to an increase in ultrafine particle emissions Nature a d The normalized particle number size distribution for submicron aerosol emission from the burning of peat smoky coal and wood a and biomass RAWSEP View Just do not burn wood to begin with Just do not burn dry wood to begin with Just do not burn solid fuels to begin with Maybe low smoke fuels produce less visible smoke but the particulates they emit are smaller than normal combustion and so according to this research paper are able to infiltrate the human lung more efficiently RAWSEP Question What are low smoke fuels? Answer from AI Low smoke fuels are solid fuels designed to burn with minimal visible smoke improving air quality and reducing health risks What Are Low Smoke Fuels? Low smoke or smokeless fuels are solid fuels that emit little to no visible smoke when burned making them suitable for areas where smoke producing fuels are restricted or banned They are

commonly used in domestic heating multi fuel stoves open fires and smokeless fire pits Unlike traditional bituminous coal or **wet wood** low smoke fuels contain fewer impurities and volatile compounds which reduces the production of soot tar and harmful gases such as sulfur dioxide SO<sub>2</sub>

### Common Types of Low Smoke Fuels

**Anthracite** A naturally occurring hard coal with high carbon content and minimal impurities It burns slowly with a blue flame and produces very little smoke though it is more expensive than other coals **Coke** Produced by heating bituminous coal in the absence of air which removes volatile compounds It burns cleanly and is often used in stoves and industrial applications **Charcoal Made from biomass** such as **wood** heated without oxygen to **remove moisture** and volatile substances Charcoal burns with minimal smoke and is widely used for cooking and heating

### Manufactured Smokeless Briquettes

Compressed mixtures of coal dust petroleum coke or **biomass with binders** These are designed to burn efficiently with low emissions and are commonly used in domestic heating

### Bio based Options for Fire Pits

**Natural fiber logs bioethanol** and gel fuels are increasingly used in **smokeless fire pits** offering clean combustion and portability

### Benefits of Low Smoke Fuels

**Environmental** **Reduced smoke** and particulate emissions improve local air quality and lower the carbon footprint compared to traditional coal **Health** Minimizes exposure to harmful pollutants like SO<sub>2</sub> and nitrogen oxides reducing respiratory risks **Efficiency** Many low smoke fuels **burn longer** and more consistently providing steady heat with less fuel consumption **Regulatory Compliance** In areas previously designated as low smoke zones using manufactured smokeless fuels ensures **compliance with air quality regulations**

### Practical Considerations

**Cost** High carbon fuels like anthracite are more expensive but environmentally preferable **Coke and charcoal** are moderately priced alternatives **Appliance Compatibility** Always check that your stove fireplace or fire pit is suitable for the chosen low smoke fuel **Availability** Manufactured smokeless fuels are widely available from specialized retailers and some may include **blends with biomass for improved sustainability** Using low smoke fuels is an effective way to maintain warmth reduce environmental impact and protect health while complying with modern air quality standards

**Excerpts edited by RAWSEP for brevity and clarity and relationship to Residents Against Wood Smoke Emission Particulates a 501C3 nonprofit organization** Abstract

Despite national variations current air quality standards worldwide focus on reducing mass concentrations of atmospheric particulate matter to lower public health risks However these standards fall short in addressing the adverse health effects associated with **ultrafine particles which can penetrate deeper into the human lungs and even pass the blood-brain barrier** Here we present experimental model and field data in addition to a lung deposition analysis to show there is a **rise in ultrafine particle resulting from the transition to low smoke fuels in the residential sector** These low smoke fuels designed to lower particulate mass emissions have **unexpectedly led to a two to threefold increase in the emissions of ultrafine particle numbers** resulting in **a higher contribution to lung deposition particles than all their smoky counterparts combined** Current air quality models underestimate ultrafine particles by a factor of ten suggesting an underestimation of the health impacts when only particle mass was considered These ultrafine particle events contrast sharply with the haze events that typically involve larger accumulation mode particles Our findings highlight the urgent need to **revise air quality standards to include ultrafine particles** ensuring air quality management strategies reduce mass concentration without the cost of increasing ultrafine particle number