

Episode 56EF March 12, 2023. "The Carrot, Air Purifiers in Utah and the promise of gas and electric stoves in Sierra Leone, and the Stick, PM2.5 Monitors in Missouri" issue.

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

World, World Bank

RAWSEP View: If the World Bank does more to fight air pollution in the form of particulate matter of 2.5 micrometer size, PM2.5, putting money into that effort will slow climate change, as well as improve human health around the globe. Recognizing that Biomass (wood) burning power plants pollute more than Fossil-Fuel plants will enable the World Bank to make smarter decisions about where to spend money than it has in the past. The World Bank should spend money to get developing as well as developed countries off wood burning for industry and indoor residential wood burning for residential heating and cooking. Wood burning emissions are 90% PM2.5, which is the perfect size to infiltrate the human lung, setting off a cascade of human health problems. Residents Against Wood Smoke Emission Particulates are near neighbors of residential wood burners and suffer the health effects of the emissions from wood burner's stacks. First giving out PM2.5 monitors to any near neighbors who complain of their neighbor's wood smoke, and then using the online monitor data to shut down polluting residential wood burning which emits above "safe" E P A or W H O PM2.5 limits, is the goal of Residents Against Wood Smoke Emission Particulates. Providing subsidies or directing former wood burners to government programs which hand out heating alternatives such as Heat Pumps that now work at 40 below zero Fahrenheit could be second steps for the World Bank to take. The Greenpeace representative mentions fossil fuel burning pollution but mentioning the even more polluting biomass (wood) burning pollution seems to be forbidden, as if this Greenpeace representative has acquiesced to the anti-science lie that wood burning is Carbon Neutral.

<https://www.nytimes.com/2023/05/09/climate/ajay-banga-world-bank.html?action=click&algo=geo-bandit-all-surfaces-variants-diversify-time-cutoff->

He Could Uncork Trillions to Help Fix the Planet

What steps will Ajay Banga take when he becomes World Bank chief? We asked an expert on the bank's climate affairs. Ajay Banga will take office as the World Bank's president on June 2.

May 9, 2023

Excerpts edited by RAWSEP for brevity and clarity and relationship to Residents Against Wood Smoke Emission Particulates.

What if a new world leader came on the scene and freed up trillions to help developing countries cope with climate change? What if he moves quickly to free up the vast sums needed to wean humanity from fossil fuels and adapt to climate change? Many of the bank's owners, wealthy nations, have long felt that the World Bank should have done more to help developing countries be part of the green transition. They hope Banga will change that. Will Banga need to ask wealthy countries for more money to tackle climate change? The bank could be more aggressive, innovative, creative, and smart risk-taking. Banga could look at building different partnerships with the private sector. The owners of the World Bank need the capital in the multilateral system to do more as well. Banga probably has more wind in his sails for reform than any president has had in modern times. About half of the countries in Africa at the moment, about 60 percent of low-income emerging market countries, are debt distressed. The debt is not just owned by the West. Some creditors are China, the U.S. or France. But a large part of the debt is actually held by private equity or private banks. It's very important that Banga knows all of these private financiers. Banga could empower people to take risks, to be client focused, to be solutions oriented. The bank has to be an advocate for smart development, and smart climate action. Banga's career and why the [Biden administration nominated him](#) to lead the bank.

Mr. Banga has sought to carve out a public stance signaling his concern for climate change, including at Mastercard. In 2020, under his watch, Mastercard announced the creation of the Priceless Planet Coalition, a group of about 100 firms that make corporate investments to preserve the environment.

"No matter who you are or what you do, climate change affects you. But, it has the biggest negative impact on those who are socially and economically vulnerable," Mr. Banga said at the time. Still, his selection prompted dismay from

some climate activists who have been calling on the Biden administration to nominate a president with a strong background in environmental issues. “Put simply, this is not the guy that President Biden should be nominating when a livable planet is teetering at the brink of collapse,” John Noël, senior climate campaigner at Greenpeace USA, said in a statement. “If Mr. Banga is to lead the World Bank, we hope he will follow the demands of science and justice by lending significantly more money to climate projects and ending funding for oil and gas projects.” Mr. Banga has become a close ally of Vice President Kamala Harris and is part of a group of 10 corporate executives who have worked with her office to raise \$1 billion aimed at stemming the root causes of immigration from Central America. Ms. Harris has cited poverty, corruption, climate change and political instability as the factors fueling migration. Mr. Banga has said his experience of being an immigrant to the United States inspired his ambition to bring 500 million people around the world who are “unbanked” into the financial system. Although he had a good income when he moved to the United States in 2000, the fact that he was not yet a citizen with a credit history made it a challenge to even buy a cellphone.

United States

[EPA proposes new pollution standards for fossil fuel-fired power plants](#)

Green Car Congress

The proposals would also result in cutting tens of thousands of tons of particulate matter (PM2.5), sulfur dioxide, and nitrogen oxide.

RAWSEP View: Carbon capture is a waste of federal money, as some state in this article. Wind and solar are the energy sources of the future and the Texas legislature is indeed foolish in trying to stifle those industries.

Texas

<https://www.nytimes.com/2023/05/12/opinion/texas-renewable-energy.html>

Will Texas Blow Up Its Energy Miracle to Bolster Fossil Fuels?

May 12, 2023.

Excerpts edited by RAWSEP for brevity and clarity and relationship to Residents Against Wood Smoke Emission Particulates.

When the Texas grid goes down, Atlanta might not get jet fuel. When Texas gas production freezes up in winter storms, fuel prices spike in Minnesota. And because Texas is by far the nation’s largest emitter of greenhouse gases among the states, the country cannot decarbonize its economy without Texas.

The Lone Star State has seen rapid growth not only in oil and gas production but also in wind and solar generation, a boom has been called the Texas Miracle.

But now reactionary forces in the Texas Legislature want to turn the clock back to the days before the state became a national leader in producing electricity from solar and wind power.

The Texas Legislature is moving to erect barriers to clean energy development while providing incentives for fossil fuel production, even though oil and gas production has continued to grow, though not at the pace of wind and solar.

In 2020, Al Gore [found reasons for optimism](#) in the Biden presidency, borne out by the passing of [major climate legislation](#). By sine argue that [subsidies for climate capture technology](#) will be a waste.

The worst climate risks, mapped: In this feature, [select a country](#), and we'll break down the climate hazards it faces.

In [the case of America](#), our maps, developed with experts, show where extreme heat is causing the most deaths.

What people can do: [the types of local activism](#) that might be needed, and how [Australia shows the way on rooftop solar](#). Small [changes at the office](#) might be a way to cut emissions. Texas’ reactionary forces are at work as one could [put it](#), in a regulatory climate that is business-friendly and encourages economic development. The Texas energy miracle over the last 15-plus years reaped financial benefits by oil and gas exports. Large-scale wind and solar power generation has helped push a rapid decarbonization of the Texas economy (and the national one) while [lowering consumers’ energy bills](#). It has also reinvigorated rural economies by raising wages, reloaded the coffers of county governments and school districts with tax revenues from renewable power plants and provided landowners with royalties for new wind and solar farms. Texas is the No. 3 producer of natural gas in the world (behind the United States as a whole and Russia), and one of the largest economies globally for refining, wind and solar power generation, hydrogen production and consumption and carbon sequestration. Texas is also one of the world’s largest greenhouse gas emitters, on par with rich, populous

countries such as Germany and South Korea. The difference is that while those countries pledged to reduce emissions quickly, their per capita emissions have not dropped as quickly as they have in Texas. The state is lowering its emissions because it has made it easy to build clean energy projects there, in the process pushing dirtier and more expensive options like coal out of the fuel mix. Texas makes it easy to build what is needed. Now Texas stands to benefit more than any other state from the recent federal Inflation Reduction Act and Infrastructure Investment and Jobs Act. Tens of billions of dollars of new clean energy projects have been announced in Texas, which will further boost the state economy while accelerating cuts in emissions. That is, unless the Texas political leadership gets its way. The Texas Legislature is pushing a slate of backward-looking measures that would stop the Texas energy miracle in its tracks. Rather than taking credit for these huge successes and letting market forces continue, legislators, the governor (who recently received the 2023 “[Champion of the Oilfield](#)” award from an industry group) and the lieutenant governor, who presides over the Senate, are tossing aside long-held beliefs in the power of markets and hands-off governance. They are turning instead to heavy-handed regulation and central control to pick winners and losers. And renewable energy would be the loser. Lawmakers are debating a range of bills that would **mandate and subsidize more natural gas power plants, provide tax incentives for fossil fuels**, punish renewables and make it easier to stop clean energy projects. One measure, for instance, would reinstate a tax abatement program for oil and gas projects but **exclude renewable energy developments from those tax benefits**. Another would impose **setback requirements for new wind farms**, requiring those projects to be set back at least 3,000 feet from any property line unless the nearby owners grant waivers. **There are no statewide setback requirements for oil and gas operations**. Yet another measure, bordering on the preposterous, would impose **retroactive permitting requirements for already operating renewable power plants**, which could end up invalidating their licenses. This fast-growing renewable energy industry provides more than 37,000 jobs in the state, including some 25,000 in wind generation — **four times as many jobs as there are for mining coal and using it at power plants and 12 times as many as there are in the nuclear power sector in Texas**. Republican leaders say they are focusing on dispatchable energy sources — **fossil fuel and nuclear generation, which can be easily turned on and off** — following the **disastrous 2021 winter storm** that left more than 10 million people without power for hours or days and resulted in more than 200 deaths. **(Numerous reports have blamed the blackout on the failure of natural gas infrastructure.)** But a wide array of energy companies and consumers have testified that **these (Republican) bills would make energy more expensive, dirtier and less reliable**, and would **stall the rapid pace of investment** in the state. The legislation is moving forward anyway.

Colorado, Pueblo County

[Stage 1 fire restrictions lifted in Pueblo County](#)

Pueblo Chieftain

Open burning, except fires and campfires within constructed fire grates inside developed camp and picnic grounds, charcoal grills and wood burning ...

Missouri, St. Louis

RAWSEP View: The PM2.5 monitor used in Saint Louis looks like a PurpleAir PM2.5 monitor.

<https://news.stlpublicradio.org/health-science-environment/2023-05-11/st-louis-environmental-group-helps-urban-farmers-detect-air-pollution-with-monitors?fbclid>

St. Louis environmental group helps urban farmers detect air pollution with monitors.

St. Louis Public Radio | By [Andrea Y. Henderson](#)

May 11, 2023.

St. Louis Public Radio

Excerpts edited by RAWSEP for brevity and clarity and relationship to Residents Against Wood Smoke Emission Particulates.

Thi Nguyen, co-founder of Climate Changents, shows Mitchell Pearson of Phi Global how to access his air quality data from the machine she installed on his farm in north St. Louis County. Pearson worries that potential air pollution from the Mississippi River and from local manufacturing companies could harm his farmland and the food that he grows.

A St. Louis environmental community group is helping urban farmers monitor harmful pollution levels in north St. Louis and north St. Louis County.

[Climate Changents](#) received a \$50,000 grant from Burroughs Wellcome Fund to install 10 air quality monitoring machines in historically polluted areas to detect fine particles that can be released through combustion.

Monitoring air quality can determine if crops will be healthy to consume, said Thi Nguyen, co-founder of Climate Changents.

“In north county, there are so many unique challenges that this community faces,” Nguyen said. “It would be a matter of collecting that data and then working together to make those changes.”

After taking air samples, the machines will show real time air quality data similar to that collected by the Environmental Protection Agency to determine if air quality is hazardous. Each monitor’s location is shown on an online map that updates air quality numbers every 10 minutes.

Nguyen said the data could help spark conversations about environmental issues in communities of color.

“When they get a monitor like this and put it on their property and collect the data to try to understand where it’s coming from, then [they could] advocate for local government or industry to do something because they can show a direct line to ‘this is our air and it’s affecting my breathing and it’s related to what you’re doing,’” she said.



St. Louis Public Radio

Janett Lewis of Rustic Roots Sanctuary places her air quality monitor on the side of her outdoor bathhouse on her farm in Spanish Lake. She is excited to monitor the air quality levels on her farm, because it will give her a better estimate of when air pollution is hazardous and when to protect her crops and animals.

The air quality monitoring machines do not pick up the type of pollutants that are in the air, nor do they signify where the pollutants come from. Users can see the time of day that their air quality is higher than normal and begin to investigate or bring it to the attention of officials or industry leaders.

The data could help Janett Lewis, who runs the Rustic Roots Sanctuary farm in Spanish Lake. She grows vegetables, fruits and herbs. She also raises animals including chickens and goats and has a few beehives on her property.

Lewis said her farm has been a bit dry and dusty lately. She’s worried that the pollutants from the Mississippi River and the future demolition of Jamestown Mall, which are both nearby, could affect her plant growth and yield.

“You can do everything in your power to make sure the food is organically grown and no toxic chemicals are put on them, but if they’re in the air, then obviously it’s still going to affect the quality of your food and what we’re taking into our bodies,” Lewis said.

She is also worried that air pollution could harm the bees on her property.

“Last year, we lost 50% of our hives, from colony collapse disorder, it’s pollutant related,” Lewis said.

Yong Soo Kim, an employee at Rustic Roots Sanctuary, will use the monitor to see if more trees need to be planted on the farm to help trap some of the particulate matter that flows in the air.

Climate Changents also used the grant funds to place monitors on other urban farms, including Phi Global Farms in Spanish Lake. And the group placed monitors in schools and churches across north St. Louis and north St. Louis County.

“Communities can do something about [air pollution] — it is working together and installing these monitors and having conversations,” Nguyen said. “By showing different schools, churches and communities doing this, I hope it can empower and inspire people.”

New York

[Air Quality Health Advisory Issued for Eastern Lake Ontario Region - NYS Dept. of ...](#)

New York State Department of Environmental Conservation

reduce or eliminate outdoor burning and attempt to minimize indoor sources of PM 2.5 such as smoking. A toll-free Air Quality Hotline (1-800-535-1345) ...

New York, Nassau

[Nassau community reps get update on state monitoring aimed at reducing air pollution - Newsday](#)

Newsday

PM 2.5 can come from sources such as vehicle exhausts and the burning of fuels such as heating oil, according to the state Department of Health.

Utah

RAWSEP View: Handing out air purifiers is like barring the door after the horses have escaped the barn. It is better to stop the emissions in the first place, by looking at the usual suspects and requesting that they desist. In some cases, in Utah, that would mean replacing gas-fueled cars with electric cars and replacing residential indoor wood burning stoves with heat pumps that work at temperatures down to 40 degrees Fahrenheit.

Utah Physicians for a Healthy Environment (UPHE)

Excerpts edited by RAWSEP for brevity and clarity and relationship to Residents Against Wood Smoke Emission Particulates.

Every child deserves to breathe clean air. We know that indoor air quality can be 2-5 times WORSE than the air quality outdoors. Imagine what that means for students along the Wasatch Front during a particularly bad inversion day, or for students down south during wildfire season. On average, children spend around 900 hours each year in school. If we can give them the cleanest possible air to breathe during those hours, it may benefit their long term health.

The program is only funded through July of this year, so make sure your local school, districts, and teacher friends are aware of the program benefits!

UPHE has been working with the Utah Department of Health and Human Services (UDHHS) to put free HEPA air purifiers in schools and daycares.

Thanks to a federal grant, over 60% of Utah schools and about half of Utah daycare centers have received air purifiers for their classrooms at no cost to them. The program allows for portable HEPA air purifiers in each classroom, office, and shared areas such as gyms, cafeterias and auditoriums.

Every child deserves to breathe clean air. We know that indoor air quality can be 2-5 times WORSE than the air quality outdoors. Imagine what that means for students along the Wasatch Front during a particularly bad inversion day, or for students down south during wildfire season. On average, children spend around 900 hours each year in school. If we can give them the cleanest possible air to breathe during those hours, it may benefit their long term health.

[The program is only funded through July of this year, so make sure your local school, districts, and teacher friends are aware of the program benefits!](#) Benefits of the program

How do air purifiers help? UPHE was in a unique position to help facilitate this program because of our extensive knowledge on the health effects of poor air quality.

As UPHE board member John Macfarlane wrote in an op-ed, "Acute, air pollution increases the permeability of cells that line the respiratory tract, allowing easier penetration by the virus. Air pollution allows greater viral replication by decreasing the immune response, the scavenging of viruses by white blood cells, and the activity of antioxidants."

Basically, cleaner air can help reduce the spread and severity of illnesses that commonly run rampant in schools.

Studies have correlated air pollution with decreased performance on school cognitive tests, greater attention deficits, slower development of memory capability, impaired gross and fine motor skills, and overall worse academic performance.

Wisconsin, Department of Natural Resources Magazine, Spring 2023

https://issuu.com/wisconsinnaturalresources/docs/wnr_spring_2023_singles/s/21001588

Excerpts edited by RAWSEP for brevity and clarity and relationship to Residents Against Wood Smoke Emission Particulates.

The 1963 Clean Air Act prevents 230,000 premature deaths annually.

But even with these improvements, the work is not finished. Health-related impacts of poor air quality lead to more early deaths than all other natural disasters combined.

Whether respiratory, cardiovascular or neurological, every system in both healthy and vulnerable bodies can be affected by polluted air. Clean air can be the difference between life and death.

SMALL SIZE, BIG IMPACTS.

While ozone might be the most discussed air pollution issue in Wisconsin, it's not the only one.

"The health impacts of aerosol pollutions are more significant than ozone,"

Particulate matter 2.5, or PM2.5, are tiny aerosol particles 2.5 microns or smaller in diameter. Consider that a single hair from your head is 70 microns, so PM2.5 is nearly 30 times smaller.

These particulates might be familiar to anyone who has read about wildfires out West since PM2.5 also is produced by fires. Some particulates can travel via the jet stream hundreds or even thousands of miles and reach Wisconsin.

PM2.5 can trigger and worsen health issues, from respiratory and cardiovascular disease to neurological problems.

Research also indicates PM2.5 increases our risk of neurological diseases like Parkinson's, Alzheimer's, and dementia.

KNOWLEDGE IS KEY.

The good news is that researchers continue to make strides toward better understanding and management of air quality.

This spring will be exciting for scientists who study air quality when a NASA-funded mission sends a satellite into space carrying an instrument called Tropospheric Emissions: Monitoring Pollution. TEMPO will provide scientists with hourly data on ozone precursor emissions.

"We'll have an unprecedented amount of measurements to help understand air quality,"

With more data comes more informed regulations, which Gail Good, Director of the DNR's Air Quality Program, thinks will be key as Wisconsin moves toward compliance with National Ambient Air Quality Standards. The Clean Air Act requires the EPA to set standards, NAAQS, for common outdoor air pollutants that are considered harmful to public health and the environment.

More data also may be key as climate change begins having a greater effect on air quality. Research has shown, for example, that even a small increase in summer temperatures results in increased ozone and PM2.5 concentrations.

"We learn new things every day," Good said. "We keep better understanding the science and the health impacts of air pollution."

Australia, Tasmania

CAN YOU IMAGINE THE WORLD'S CLEANEST AIR MEETING THE WORLD'S CLEANEST LUNGS?

<https://stlukes.com.au/imagine>

Excerpts edited by RAWSEP for brevity and clarity and relationship to Residents Against Wood Smoke Emission Particulates.

St Luke's Health is running this advertising campaign in Tasmania.

On the 2nd May I wrote the following email:

Good evening, St Luke's

I refer to your marketing campaign being aired on Tas television.

In particular the advert mentioning clean air, smoking and vaping.

Ben Davis: Chief Marketing Officer

Kate Marshall: Head of Marketing

Jo Mohr: Marketing Manager

You left out wood smoke.

Planned burning, fuel reduction burns, wood heating, back yard burning, solid fuel fire pits, incinerators, and so on are all burning vegetation. Smoking is burning vegetation.

St Luke's wants to, "...work to make Tasmania the healthiest island on the planet'. And yet you left the big smoke out of your campaign.

I am wondering if this was an oversight, or was it intentional?

Your thoughts please.

Thank you.

Launceston had approximately 5 hours of good air on the 9th May. Below 5ug/m3 is considered good air quality.– EPA graph below.

Other areas of Tasmania had degraded air quality also.

This was not because of smoking and vaping I am sure, but from the burning mentioned above.

Tasmania will never have the cleanest air and Tasmanian's will never have the cleanest lungs while people keep burning stuff.

The Australian Government's Bureau of Meteorology (BOM) operates a Smoke and Air Quality Forecasting System (AQFx) for predicting smoke prior to burns taking place and from existing planned burns or wildfires.

9th March 2023 - "The AQFx system is not yet fully operational in Tasmania. The Bureau is working to deliver a national smoke forecasting system as part of the Australian Smoke Dispersion System (ASDS) Project.

The system output will be available to fire and land management agencies, not the public. In Tasmania that will include the Tasmanian Fire Service and the EPA."

What is AQFx:

Air purifiers and fire pits.

Many people being told to lock themselves inside with the droning and blast of an air purifier are going to want to get outside to their firepit as ambient smoke levels drop.

Careful being told to lock yourself up doesn't BACKFIRE. Excuse the pun.

Oral Corticosteroids...

"We want to see reduced use of these medicines in routine asthma care, reduced flare-ups requiring these medicines and strict and controlled prescribing when these medicines are required."

I feel Asthma Australia should first be lobbying for strict and controlled use of wood heating appliances and open burning.

This must lead to reduced asthma flare-ups and therefore less use of ALL asthma drugs.

This survey is not addressing the asthma problem.

In balance Asthma Australia should do a survey asking who has BENEFITTED by taking oral corticosteroids. We are here for asthma sufferers, aren't we?

Let's start by looking at this survey:

1080 is a small number of people with these tablets or a script at home when according to 2018 figures 2.17 million people have asthma in Australia.

56% did have instructions in their asthma plan, 45% of those who have used corticosteroids did not experience side-effects, 90% did not report side-effects of osteoporosis, high blood pressure, problems with vision, increased number of infections. And, 95 – 99% did not report diabetes, bone fractures, heart problems, kidney problems, blood clots.

2 in 3 felt they were informed by their health care team on the side-effects of these tablets.

50% did not feel themselves or their doctor could be better educated on their use or potential side-effects.

Oral corticosteroids are used for many other diseases. Are those patients going to be targeted in a similar manner to those with asthma? Now you know Asthma Aust advice. Stick to your asthma plan people. Stay indoors. Use air purifiers.

Only bushfire smoke is bad. Wood smoke can be harmful to, you know those sensitive people. And Apparently planned burns come under another category of safe smoke.

No one benefits from taking any drug long term. Whilst it fixes one problem it causes others, at least it does for me.

Imagine if we all had fresh breathable air, less chemical, herbicide, pesticide, smoke exposure.

But I guess that healthy people don't keep drug companies in the life style of rich they are accustomed to.

We live in a toxic polluted filthy air world. Just what the drug companies thrive on.

Asthma Aust need to either speak out with more intent towards a ban on wood heating and outdoor burning and planned burning so people can be less drug reliant.

And for those where corticosteroids work without side effects well let them keep using them.

These surveys and studies are becoming mind numbingly stupid.

The figure 1080 is laughable. It is also a poison for rabbits and foxes lol. The irony.

It's honestly hell on earth. When there is not a single day that we don't have to see smoke, smell and taste smoke or witness daily outdoor burning, there's something seriously wrong with today's society. It's no wonder people are forced to self-medicate. But the government makes it painful to get the most basic of medication from doctors so then people simply give up or snap and go crazy. If I wasn't broke and chronically ill I'd be looking at leaving Australia because of the burning and addiction to heating home with wood. They are burning our beautiful country to death and killing us slowly and painfully.

Look at this blah, blah, blah.... Averages, blah, blah, bla

Population based, blah, blah, blah Unless of course they are factoring in the population's lungs to clean the air?

HOW WILL PROGRESS TOWARDS THE CLEAN AIR FOR NSW GOAL

BE MEASURED?

No way do they want you to have access to real-time readings straight off the monitors for each pollutant.

What is wrong with KISS? Keep It Simple Stupid.

IMO, if someone, or actually, ANYBODY ... complains. Then STOP what you are doing, think carefully about it ... and STOP. This includes EVERYTHING. Think about it ... STOP DOING ANYTHING that others disagree with. And expect the SAME from them ... for a better CLEANER world! Especially with WOOD BURNING ... and FOSSIL FUELS ... wear warm clothes in a cold house if necessary ... and EXPECT others to do the same.

What I would like to know is why the WHO only set Guidelines for ambient air quality?

Guidelines are open to different interpretation in almost every jurisdiction around the world.

It has led to much confusion.

What's in Smoke

This is what you breathe. It goes into your lungs, crosses over into your blood stream and travels to every organ in your body. Particulate matter is a Group 1 (the highest) carcinogen.

'Every single disease that is non-communicable is impacted by air pollution. It is not only involved in worsening diseases but in causing them, and new diseases, that wouldn't otherwise occur are happening because of air pollution.' - Sir Stephen Holgate, Professor of Immunopharmacology and a respiratory physician

United Kingdom

U K, Leicester

[Wood burning stoves linked to developing arthritis in new report - Leicestershire Live](#)

Leicester Mercury

Researchers have found a shocking new link between wood burning and the development of rheumatoid arthritis.

Europe

Africa

Sierra Leone, Freetown

RAWSEP View:

1) Gas or Electric Stoves may arrive in Sierra Leone in the future. Governments elsewhere in Africa and [around the world](#) have launched [mass stove distribution programs](#) and made [clean energy investments that could help pave the way for gas or electric stoves](#). Sierra Leone is rolling out similar efforts as part of its commitment to the Paris climate agreement. **In 2021, Sierra Leone set out to increase the share of the population that uses gas for cooking to 25 percent — up from less than 1 percent as of 2019** — and make energy-saving cooking solutions accessible to all households by 2030. In February 2023, the Energy Ministry launched a drive to distribute an initial supply of **2,000 stoves**, with a goal of a million over five years. If distributed one per household, that would cover about 80 percent of the country's estimated 1.2 million households. But advocates say the amount of available funding for clean cooking falls far short of meeting needs. Meanwhile, the movement to transition the country away from open-fire cooking to Wonder Stoves and similar more efficient solid-fuel-burning-stoves, rather than three stone wood open fire cooking, has created economic opportunities for some rural villages.

2) What are Wonder Stoves? Wonder stoves have been around since 1990. They are insulated metal, designed to be better at containing heat and can cook food more quickly than open fires. They have been improved recently to have legs. Instead of insulating clay liners, they have ceramic wool insulation, which makes the stoves lighter. The inner basket of the stove, which holds the charcoal during cooking, is removable, so that users no longer need to haul in the entire stove to a repair shop when repairs are needed. Many women, says the woman who produces Wonder stoves, want Wonder cookstoves. “They just can’t afford it upfront. That’s the biggest bottleneck.”

3) What are other new stoves in Sierra Leone? Two Freetown-based companies recently launched, called Teranga and Women in Energy Sierra Leone improve the fuel by producing **briquettes made of agricultural residue or waste** that should burn cleaner than traditional firewood or charcoal.

4) Where do the clay liners for new cookstoves, similar to Wonder Stove except for Wonder Stove’s ceramic wool lining material, come from? Matainkay, a rural village in Sierra Leone, a known source of clay, has become a makeshift factory of clay liners for cookstoves, with dozens of artisans. With their clay liners, the village’s workers are helping put thousands of cookstoves into the market. Every three months they prepare 100,000 pieces. They supply private companies, such as Teranga and Women in Energy Sierra Leone.

5) Those innovative clay stove liners are also used by artisanal stove makers, who fashion versions of the clay-lined charcoal appliances out of scrap metal and sell them for much lower prices. One stove maker said he sells his products in Freetown for 25 leones, or about a dollar. These units, which are usually made and sold in front yards or along roadsides, often lack health and environmental standards or certifications, said a member of Sierra Leone’s parliament and former chair of UN-Energy, who has been a leading voice in the country advocating clean cooking. Still, the member of Sierra Leone’s parliament said, they probably make up the vast majority of the cookstoves used in the country.

6) This article from the Washington Post is about open burning for cooking in Africa, in Sierra Leone, being replaced by cleaner cookstoves still burning solid fuel like charcoal and wood, but in some places using briquettes fashioned from agricultural waste, which is still a solid fuel emitting many more particulates than the cleanest fossil fuel natural gas.. Wood burning produces more CO₂ and PM_{2.5} than coal burning, but coal emissions are very unhealthy to inhale. This article begins by saying “Globally, about 30 percent of greenhouse gas emissions from forest degradation are connected to harvesting **wood fuel**, according to a [report released last year](#) by the nonprofit Clean Cooking Alliance. About **one gigaton of carbon dioxide equivalent is produced every year from burning wood fuels** — which accounts for about 2 percent of global emissions, roughly the same share as aviation, the report notes.” The push for cleaner cookstoves face the obstacles of cost and unwillingness to embrace new technology, even if it is cleaner. Having a gas or electric stove is a luxury in Sierra Leone.

[Open fires and dirty stoves kill millions. Can this country embrace clean cooking?](#)

The Washington Post

... over large charcoal-burning stoves preparing food for 600 students. ... produced every year from burning wood fuels — which accounts for about ...

Getting a silent killer out of the kitchen

May 11, 2023.

Excerpts edited by RAWSEP for brevity and clarity and relationship to Residents Against Wood Smoke Emission Particulates.

FREETOWN, Sierra Leone — For years, Hawa Augusta Kamah, a cook at a private school here, spent hours every week in a cramped open-air kitchen toiling over large **charcoal-burning stoves** preparing food for 600 students. With every breath, she inhaled smoke and ignored the uncomfortable feeling in her chest that would grow more intense the longer she was exposed to the heat emanating from the stoves.

But, she said, everything changed about two years ago when the school swapped out the old stoves for **models designed to cook more cleanly.**

“This one is better,” Kamah, 45, said on a sweltering day in February at 9 AM. The new stoves were already fired up, steam rising from each of the massive silver pots on top.

These stoves are part of a [decades-long global movement](#) to displace open-fire cooking and uninsulated stoves, which can be significant sources of climate-warming emissions and hazardous indoor air pollution. The replacements, insulated metal contraptions, are designed to be better at containing heat and can cook food more quickly. While they’re not as clean as gas or electric appliances, they’re meant to be an improvement for people who rely on burning solid fuel, such as wood, charcoal or other forms of biomass.”

Globally, about 30 percent of greenhouse gas emissions from forest degradation are connected to harvesting **wood fuel**, according to a [report released last year](#) by the nonprofit Clean Cooking Alliance. About one gigaton of carbon dioxide equivalent is produced every year from burning wood fuels — which accounts for about 2 percent of global emissions, roughly the same share as aviation, the report notes.

Exposure to smoke and other pollutants from household cooking fires is linked to an [estimated 3.2 million premature deaths](#) annually around the world and remains [one of the main drivers](#) of pollution-related disease and death in Africa. Yet making the switch to cleaner cookstoves has been difficult. As of 2020, about a third of the global population still doesn't have full access to clean fuels and technology for cooking, [according to the World Health Organization](#). In Sierra Leone, roughly 99 percent of people are still primarily using dirty cooking methods, despite years of efforts to spread the use of improved technology.

Traditional open fire cooking using three stones and **firewood**. Even Kamah, who said she prefers to cook with the improved stoves at school, is **using an inefficient hand-me-down stove at home**. "I don't have money," said Kamah, who **previously cooked over firewood** and three stones set up on a corrugated metal sheet. Now **a local effort in underway to push cookstoves** addressing **obstacles, such as cost and a lack of willingness to use new technology**. The managing director of a Freetown-based company that helped supply the new cookstoves to Kamah's school, said women like Kamah remind her of **her own mother, who died at 46 after a lifetime of smoking fish over open fires**. Anecdotally most people are still using less efficient cookstoves or three stone wood-burning open fires. Having **a gas or an electric stove** is a luxury accessible to only a small minority. In comparison, traditional three-stone fires cost little to nothing to operate and are often the preferred cooking option in more rural areas. In Matainkay, a village more than 25 miles from the heart of Freetown, Sallay Koroma is one of many residents who cook over open fires. On an unshaded patch of dirt, she prepared food in a scorched black pot that sat several inches off the ground on top of three large stones darkened by soot. Charred branches shoved between the rocks jutted out in every direction. Koroma, who is in her early 30s, said she is bothered by the smoke and knows there are other options available. "But I got used to it so much that I can't do away with it," she said as she ladled a thick, reddish-brown sauce from another pot into a plastic container. And, she added, firewood is cheap and easy to get.

PM2.5 and Health Effects. Wood smoke is 90% PM2.5

[Air Pollution and Its Adverse Effects on the Central Nervous System | Article - Cureus](#)

Cureus

PM2.5 was significantly associated with overall stroke, stronger with ischemic stroke than hemorrhagic stroke. Long-term exposure to air pollution and ...