

Episode 56iA August 28, 2023. Tuberculosis fought with antibiotics, & Electric, Solar, & Geothermal residential pollution solutions.

RAWSEP View: This article is about 3 diseases we thought we'd beat, which are still killing us. Tuberculosis is fought with antibiotics. For Malaria, Antibiotics can be used in areas where parasites are resistant to standard anti-malarial drugs. Antibiotics can be a good partner for combination of drugs. Because no cure for polio exists, antibiotics are not used if the polio vaccine was not available and the person contracted polio. For polio, the focus is on increasing comfort, speeding recovery, and preventing complications. Depending on the severity of disease, supportive treatments may include bed rest and pain relievers. PM2.5 is linked with antibiotic resistance. Wood burning emissions are 90% PM2.5, particulate matter of 2.5 micrometer size, the perfect size to infiltrate the human lung, setting off a cascade of human health problems and early deaths. **The Pasteur Act, which has not been passed by Congress, would address the antibiotic resistance crisis that threatens our entire system of medical care, but it's been stalled in Congress for years.** The PASTEUR Act: The Pioneering Antimicrobial Subscriptions To End Upsurging Resistance (P A S T E U R) Act seeks to address market failure and increase public health preparedness by keeping novel antibiotics on the market and improving appropriate use across the health care system. What is the S 2076 Pasteur Act of 2021? This bill authorizes the Department of Health and Human Services (HHS) to enter into subscription contracts for critical-need antimicrobial drugs, provides \$11 billion in appropriations for activities under the bill.

<https://www.nytimes.com/2023/08/28/opinion/malaria-polio-tb-prevention.html>

New York Times. We Thought We'd Beat These Three Diseases, but They're Still Killing Us. August 28, 2023.

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

Instead of presenting a unified front against Covid-19, we fought bitterly, and three years on, our shared response seems to be a shellshocked unwillingness to even think about epidemic diseases. Politicians have become particularly skittish about what ought to be common-sense steps to protect basic public health. **The Pasteur Act, for instance, would address the antibiotic resistance crisis that threatens our entire system of medical care, but it's been stalled in Congress for years.** Funding for federal pandemic preparedness programs comes up for reauthorization in September, but its passage is in doubt. Given the catastrophic losses caused by the Covid-19 pandemic, this type of inaction is baffling. Are emerging and evolving pathogens too elusive a target? Is the political payoff for these actions too small? Is the desperate desire to move on from the nightmare of the pandemic leading us to avoid the difficult realities of prevention? There are very winnable fights against three diseases with a long history of maiming, crippling, and killing humans: tuberculosis, malaria, and polio. We haven't seen (tuberculosis) much in the developed world since the arrival of antibiotic therapies in the 1940s, but as Covid deaths wane, tuberculosis has resumed its place as the deadliest infectious disease, killing some 1.5 million people a year, mostly in the developing world. The development of diagnostic technologies like GeneXpert has brought testing times for TB down from weeks to hours, a crucial difference because at present, 40 percent of TB victims don't get diagnosed or treated. Treatment of tuberculosis with a regimen of antibiotics has also gotten easier, shortened [from two years](#) down to just six months for antibiotic-resistant cases. For normal drug-sensitive cases, treatment time is also likely to drop soon, from six months to four. [Up to 13 million](#) Americans currently live with latent TB infection, according to estimates from the Centers for Disease Control and Prevention. Malaria [used to sicken](#) and kill Americans as far north as the Great Lakes until a well-funded federal initiative protected us. In June, for the [first time in two decades](#), homegrown malaria cases turned up in Texas and Florida. 247 million cases of malaria occurred worldwide [in 2021](#), and 619,000 people died. Malaria prevention has stumbled at times because of rapidly evolving [resistance to drugs](#) and insecticides. Sixteen nations, from El Salvador to China, with efforts coordinated by the World Health Organization, have [eliminated malaria](#) since 2000, with another 10 countries aiming to stamp it out in the next two years. public health agencies for the first time now have a vaccine against malaria, and [about 1.7 million](#) young children across three countries in Africa, Ghana, Kenya and Malawi, have already received at least one dose since the start of a pilot program in 2019. The vaccine is only moderately effective. Polio, finally, offers the most immediate opportunity for a major success over infectious disease. In 1988, when international agencies, national governments and nonprofits launched an eradication campaign, polio was still endemic in 125 countries and every year paralyzed an [estimated](#) 350,000 people. This year, there have been just seven [cases of wild poliovirus](#), all on the border between Pakistan and Afghanistan, the last two countries where the virus [remains endemic](#). Pakistan and Afghanistan have eliminated wild poliovirus from major cities and Taliban-dominated regions. Border crossings between the two countries now require polio vaccination. And vaccination teams, often with women taking the lead, routinely travel to remote border villages to finish the job. This is our moment to get rid of polio for good. If we fail, we could return to a time

when polio paralyzed 350,000 people a year worldwide, some of them in the United States. Last summer's brief, horrifying reappearance of polio in New York State was a potent reminder of that threat. President George W. Bush still is still seen as a hero for launching the President's Emergency Plan for AIDS Relief. It slowed the spread of the disease and has saved 25 million lives so far.

New York Times

April 14, 2023.

<https://www.nytimes.com/interactive/2023/04/14/climate/electric-car-heater-everything.html?action=>

A key part of America's plan to slash carbon emissions:

Plug in lots of manufacturing.

How electrification became a major tool for fighting climate change.

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

Particulates. The United States still gets most of its energy by setting millions of tiny fires everywhere. homes, and factories burn fossil fuels in countless engines, furnaces and boilers, creating pollution that heats the planet. To tackle climate change, those machines will need to stop polluting. And the best way to do that, experts increasingly say, is to replace them with electric versions: heating systems and factories that run on clean sources of electricity like wind, solar or nuclear power. Here's how Americans use energy today. Total energy consumed in 2021, in quadrillion B.T.U. Here's how much of that energy comes from electricity. Electricity as a percent of total energy consumed in 2021. Having more things run on clean electricity is a cornerstone of President Biden's [plan to slash emissions](#) to nearly zero by 2050.

[Evolved Energy Research](#), an energy modeling firm, used data to visualize what the nation's energy use might look like in 2050 if the United States were able to meet the president's climate change goals. By 2050, electricity would play a much bigger role: Electric heat pumps [outsold gas furnaces](#) for the first time in 2022. A [new climate law](#) is providing billions of dollars in subsidies to hasten the transition. the most straightforward solution is to go electric. "If you ask, 'How on Earth are we going to power the modern economy cleanly,' nothing else makes sense. All roads point to electrification." Still, widespread electrification faces huge obstacles. It would mean replacing more than 200 million home appliances that run on natural gas such as furnaces, water heaters, stoves, and dryers. Many Americans might balk at switching due to costs, logistics or a simple lack of interest. It's also not enough to shift to electric machines if their electricity comes from power plants that burn fossil fuels. Power plant emissions [have declined 40 percent](#) since 2005 as cheaper and cleaner gas, wind and solar energy sources have replaced coal. But much of the nation's electricity is still generated by burning gas and coal, and [it is getting harder](#) to build and connect new sources of renewable power to antiquated grids. Most homes and businesses already use electricity to power air-conditioners, lights, refrigerators. and other appliances. But millions of buildings also burn fossil fuels, mainly natural gas or fuel oil, to power furnaces, hot water heaters, stoves, ovens and clothes dryers, together producing 13 percent of U.S. greenhouse gas emissions. Electric heat pumps, for instance, essentially act as two-way air-conditioners that can provide cooling in the summer and heating in the winter. Heat pump technology [has steadily improved](#) in recent years, with many models able to operate efficiently in subzero temperatures. But for many single-family homes or apartment buildings, the economics of switching [may be forbidding](#), since natural gas is cheap. Some homes require costly upgrades to electric panels, or new ductwork. And while last year's climate law offers subsidies for electric appliances, many contractors are still unfamiliar with heat pumps and [electricians are in short supply](#). The gas industry [has also fought hard](#) against electrification policies. Many electric grids today are set up to deal with power demand peaking in the summer, when air-conditioners run full blast. But if electric heating becomes widespread, utilities will have to figure out how to handle [surging demand in the winter](#) — when, incidentally, there is less solar power available. (Currently, utilities stockpile vast quantities of natural gas underground for wintertime, which is much tougher to do with electricity.) not fast enough to meet our climate goals." Can the Grid Handle It? Electrification would require sweeping changes to power grids. Under the scenario visualized, total electricity demand in the United States would roughly double by 2050, even as overall energy use went down. To meet that demand, electric utilities would need to add staggering amounts of new emissions-free power while making sure that all those newly electrified cars, homes and factories don't cause blackouts. They would also have to construct large new power lines across the country, both to accommodate far-flung renewable projects and to improve the reliability of the grid. Yet transmission projects have become hard to build. some experts [have warned](#) that the clean energy transition will falter without them. Last summer, amid a severe heat wave and electricity crunch, California [asked residents](#) to avoid charging their electric cars during peak hours. Utilities [could get better at scheduling](#) when electric vehicles and other appliances are charged, so that they don't all power up at the same time. More battery storage could help, too. rigid electric vehicle mandates such as those [by California](#) or [the Biden administration](#) may be too aggressive, potentially driving up costs. electrifying everything will have broad benefits, including deep cuts in air pollution. Evolved Energy

Research's modeling is available in its [2022 ADP report](#). Current U.S. energy and electricity consumption data from the Energy Information Administration's 2022 Annual Energy Outlook has been modified by Evolved Energy Research. It reflects only energy consumed by end users.

New York Times

your money adviser

<https://www.nytimes.com/2023/08/25/business/solar-panels-tax-credits.html?action=click&module=editorContent&pgtype=Article&region=CompanionColumn&contentCollection=Trending>

At 30%, Solar Panel Tax Credits Are at a High Point for Now. For about the next decade, homeowners can take advantage of the U.S. tax code to save on installation and reduce their electric bills.

Aug. 28, 2023.

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

the [Inflation Reduction Act](#), passed last year, expanded and extended Tax breaks for solar panels as part of the government's effort to reduce greenhouse gases that contribute to climate change. If you buy and install a solar energy system at your home by the end of 2032, you are eligible for a federal tax credit for 30 percent of the cost, including the panels, related equipment, wiring, installation, permits and fees. The credit shrinks to 26 percent in 2033 and 22 percent in 2034. (The [solar credit](#) is one of several residential clean energy credits included in the 2022 law.) the Energy Department's Solar Energy Technologies Office, promotes development and deployment of [solar technology](#). Solar panels convert sunlight into electrical energy. Last year, residential installations topped 702,000, more than double the total for 2018, according to data from the Solar Energy Industries Association. The group estimates that [15 percent](#) of homes in the United States will have solar panel systems by 2030. The solar tax credit reduces your tax bill dollar for dollar; if you don't owe federal tax, you won't get any of the credit as a refund. You can, however, carry over any unused credit to future tax years, said April Walker, lead manager of tax practice and ethics at the American Institute of Certified Public Accountants. The typical residential solar system size is nine kilowatts, said Vikram Aggarwal, chief executive of [EnergySage](#), an online marketplace that connects consumers with solar companies. Based on pricing reported by the National Renewable Energy Laboratory, the bill for such a system would be about [\\$27,000 installed, and a credit would help you recoup \\$8,100](#). there's no cap on the credit. On average, lower electric bills, along with tax credits and incentives, help homeowners recoup the cost of the system in about eight years. Your actual savings depend on factors like how much electricity you use, the number of panels installed, the orientation of your home (south-facing roofs get the most sun in the Northern Hemisphere) and how shady your lot is, said the senior director of sales with SunPower, a national solar installer. SunPower has an online [calculator](#) that can estimate your potential savings. Some states offer their own tax incentives, and utilities may offer rebates for installing solar. In some cases, rebates may affect the size of the federal credit, so consult a tax professional for help calculating your potential benefit. If you are due for a new roof, it may make sense to replace it before you invest in solar, because it can be expensive to remove and reinstall the panels, Dr. Jones-Albertus said. Some solar contractors also do roofs or work closely with roofing companies, so you may be able to economize by having them done at the same time. Some solar contractors offer the option to lease the system rather than buy it, but in that case you won't own it — so you don't qualify for the tax credit. Here are some questions and answers about home solar: How can I find a reliable solar installer? The Solar Energy Industries Association recommends looking for a contractor certified by a reputable group like the [North American Board of Certified Energy Practitioners](#). Seek quotes from at least three firms, and preferably five, including local, regional and national operators. Ask who will do the work; some use in-house installers, while others hire outside labor. The association offers a [guide](#) that walks consumers through the process. Often, the initial assessment can be done remotely, using satellite images of your home. Like any home-improvement project, solar installations may attract disreputable contractors, said a spokeswoman for the International Association of Better Business Bureaus. A legitimate installer will answer your questions, provide a detailed cost estimate, and allow time for you to consider it. [Ask for references](#), and research the company's reputation online. Move on if the representative pressures you to sign a contract immediately, or says a price is good only for that day.: "That's a red flag." Can I get the federal tax credit if I install solar panels on my vacation home? Maybe. Solar panels installed on a second home may be eligible, as long as you live there part time and don't rent it to others. If I install solar panels, will I still need electricity from my utility? In most cases, yes. Solar panels rely on the sun, so your system must still be connected to the utility grid to get power at night and on cloudy days. Many utilities offer "net metering," which lets you send extra electricity to the grid in exchange for credits on future bills. But some states, like [California](#), are reducing the value of credits given, pushing

consumers to consider solar batteries for storing electricity instead. Solar batteries can add thousands of dollars to your installation cost, but are eligible for the federal tax credit as long as they can store at least three kilowatt-hours of electricity, the Internal Revenue Service says. What if my house isn't suitable for solar panels? Consider subscribing to a [community solar](#) project, which lets you get credit on your electric bill for energy generated from part of the solar field or "farm." Forty-one states and the District of Columbia have [at least one](#) community project. Subscribers save between 5 and 15 percent a year on average, and can cancel at any time.

The New York Times

<https://www.nytimes.com/2023/08/28/climate/geothermal-energy-projects.html>

There's a Vast Source of Clean Energy Beneath Our Feet. And a Race to Tap It. The United States has enough geothermal energy to power the entire country. Some are trying to unlock it by using techniques from the fracking boom. A drilling rig used by Fervo Energy outside Milford, Utah. The geothermal start-up aims to extract heat from underground granite to produce electricity. Beaver County, Utah to visit geothermal projects there and spoke with dozens of people involved in the industry.

Aug. 28, 2023.

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

In a sagebrush valley full of wind turbines and solar panels in western Utah was a drilling rig, of all things, transplanted from the oil fields of North Dakota. But the whirring rig wasn't searching for fossil fuels. It was drilling for heat. Fervo Energy wants to unlock geothermal energy from Earth's hot interior, a source of renewable power that could help displace fossil fuels. Geothermal doesn't use much land, and doesn't produce emissions, so it can complement wind and solar power. Traditional geothermal plants, which have existed for decades, work by tapping natural hot water reservoirs underground to power turbines that can generate electricity 24 hours a day. Few sites have the right conditions for this, however, so geothermal only produces 0.4 percent of America's electricity currently. But hot, dry rocks lie below the surface everywhere on the planet. And by using advanced drilling techniques developed by the oil and gas industry, it's possible to tap that larger store of heat and create geothermal energy almost anywhere. The Energy Department [estimates](#) there's enough energy in those rocks to power the entire country five times over and has [launched a major push](#) to develop technologies to do so. obstacles to geothermal expansion loom. Investors are wary of the cost and risks of geothermal projects. Some worry about water use or earthquakes from drilling. Permitting is difficult. geothermal gets less federal support than other technologies. the United States has gotten good at drilling since the 2000s. horizontal drilling and magnetic sensing [have pushed oil and gas production to record highs](#), much to the dismay of environmentalists. these innovations can be adapted for geothermal, where drilling can make up half the cost of projects. "Everyone knows about cost declines for wind and solar, and we can bring (cost declines) to geothermal" Photo of Pipes from the Blundell geothermal plant carrying hot water to generate electricity. In July, FORGE [announced](#) it had successfully sent water between two wells. Two weeks later, Fervo [announced its own breakthrough](#): A 30-day test in Nevada found the process could produce enough heat for electricity. Fervo is now drilling wells for its first 400-megawatt commercial power plant in Utah, next to the FORGE site. geothermal could supply [12 percent of America's electricity by 2050](#) if technology improves. Drilling deeper and hotter can make projects more cost-effective, since more heat means more energy. But existing oil and gas equipment wasn't designed for temperatures above 350 degrees, so FORGE is testing new tools in hotter rock. Underground geology is complex, and it's [tricky to create fractures](#) that maintain heat and don't lose too much water over time. Drillers must avoid triggering earthquakes, a problem that plagued geothermal projects in [South Korea](#) and [Switzerland](#). Permitting is tough. enhanced geothermal could, in theory, work anywhere, but the best resources are on federal land, where regulatory reviews take years and [it's often easier](#) to win permission for oil and gas drilling because of exemptions won by fossil fuel companies. California is struggling with electricity shortfalls and had to [extend the life of three old, polluting gas plants](#). Regulators have ordered utilities to add 1,000 megawatts of electricity from clean sources that can run at all hours to backstop fluctuating wind and solar supplies. One electricity provider, Clean Power Alliance, [agreed to buy](#) 33 megawatts from Fervo's Utah plant. Underground radiators and superhot rocks. Fervo faces fierce competition for the future of geothermal. One alternative is a ["closed loop" system](#), which involves drilling sealed pipes into hot, dry rocks and then circulating fluid through the pipes, creating a giant radiator. This avoids the unpredictability of water flowing through underground rock and doesn't involve fracking, which is banned in some areas. The downside: more complicated drilling. Eavor, a Calgary-based company, has already tested a closed-loop system in Alberta and is [now building its first 65-megawatt plant in Germany](#). "If geothermal is ever going to scale, it has to be a repeatable process you can do over and over," In Texas, Sage Geosystems is pursuing fracked wells [that act as batteries](#). When there's surplus electricity on the grid, water gets



pumped into the well. In times of need, pressure and heat in the fractures pushes water back up, delivering energy. The most audacious vision for geothermal is to drill six miles or more underground where temperatures exceed 750 degrees Fahrenheit. At that point, water goes supercritical and can hold five to 10 times as much energy as normal steam. If it works, experts say, “superhot” geothermal [could provide cheap, abundant clean energy](#) anywhere. GA Drilling, a Slovakian company, is [developing plasma torches](#) for drilling at high temperatures. Quaise, a Massachusetts-based start-up, wants to use [millimeter waves](#) — high-frequency microwaves — to pulverize rock and reach depths of up to 12 miles.. Replacing coal at thousands of coal plants around the world. That’s the level of geothermal we’re trying to unlock. lawmakers often overlook geothermal. The [recent infrastructure bill](#) provided \$9.5 billion for clean hydrogen but just \$84 million for advanced geothermal. Project InnerSpace is a Texas-based nonprofit that promotes geothermal. Devon Energy [invested \\$10 million](#) into Fervo, while BP and Chevron [are backing](#) Eavor. Nabors, a drilling-service provider, [has invested](#) in GA Drilling, Quaise and Sage. In Oklahoma, a consortium of oil and gas firms led by Baker Hughes [recently launched an effort](#) to explore converting abandoned wells into geothermal plants.

Ireland, China & India

RAWSEP View: A firelighter is a small solid fuel tablet for fire making. Firelighters marketed as consumer products may be used to start a wood or coal fire in a fireplace, wood-burning stove, or solid-fuel portable stove. Firelighters ‘hidden culprit’ behind black carbon air pollution, study finds. Previously unknown health and climate effects from firelighters exposed by researchers from Ireland, China, and India.

United Kingdom

[Firelighters pose massive risk to climate and health, Irish scientists discover | Independent.ie](#)

Independent.ie

It may burn for mere minutes but Irish scientists leading an ... Wood-burning and other kinds of stoves were installed in their tens of thousands ...

August 28, 2023.

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

Domestic firelighters are a “hidden culprit” behind air pollution and emit more black carbon than all biomass fuels combined, a new study has found. Researchers from Ireland, China, and India, led out of University of Galway, have exposed previously unknown health and climate effects from the use of domestic firelighters.

The study found firelighters, even if used in small quantities and for a short period of time, emit more black carbon, a major contributor to global climate change, than all biomass fuels put together. The research was published in the scientific journal npj Climate and Atmospheric Science – Nature, and is part of the pilot Aerosource initiative, funded by the Environmental Protection Agency (EPA) and the Department of Environment, Climate and Communications. The analysis of air quality took place in south Dublin in 2016 and subsequent years, and included data recorded by the monitoring stations controlled by the EPA. The researchers found that in 2016, average black carbon levels in Dublin rivalled those in Beijing. More recent data, from last winter, showed Beijing has since had a higher concentration of the pollutant. Black carbon, which is emitted by firelighters, and organic aerosol, which is produced by solid biomass burning, combine to result in a more powerful climate warming effect. Despite generally good air quality in Ireland due to Atlantic weather patterns, the Aerosource research revealed that extreme air pollution events, spanning most populated areas across the country, occur frequently in wintertime and during these times concentrations of air pollutants exceed levels recommended for health. Prof Jurgita Ovadnevaite, coordinating scientist of the international research project, said black carbon is one of the main pollutants that affect air quality which acts “as a climate forcer or driver, second only to carbon dioxide”. “It has a toxic effect on the respiratory system, even if they’re tiny. Black carbon are usually very tiny particles that can go deep in the blood and the cardiovascular system,” she said.

Prof Ovadnevaite said black carbon also has an impact on the dispersal of air pollution, which amplifies the concentration of other pollutants that are concurrently emitted. “Unfortunately, there is no silver lining in this cloud over human health and climate change until the promotion of solid biomass fires and the use of firelighters for ignition is replaced by a co-benefit policy.” Prof Colin O’Dowd, director of the Ryan Institute Centre for Climate and Air Pollution Studies at University of Galway, said compounds consisting of carbon are known to be diverse, meaning it can be complex to determine their contribution to air pollution and in determining their sources. “Without this, effective pollution control and climate change mitigation strategies cannot be developed,” he added. - The Irish Times

Australia, Canberra

Disappointing to see the

[@canberratimes](#)

ignore decades of science on air pollution in favour of focusing on the "small pleasures" in life. The Office continues to advocate for good air quality and a safe, healthy environment for all Canberra

[canberratimes.com.au](http://canberratimes.com.au)

[How will we police wood-fired heaters ban? Excerpts edited by RAWSEP for brevity and clarity and relationship to Residents Against Wood Smoke Emission Particulates.](#)

[One day be looking back on the days of wood heaters as a quaint relic of the past.](#)

Louisiana

[Hazy skies caused by wildfires in western Louisiana - WDSU](#)

WDSU

The National Weather Service has since confirmed the cause of the haze and smokey smell is from the wildfires currently burning in western ...

Washington

[UW research links wildfire smoke to increased risk of emergency room visits for people of all ages](#)

University of Washington

For every 10 µgm<sup>-3</sup> increase in the concentration of fine particle pollution — PM 2.5 or particulate matter 2.5 micrometers or smaller — the odds ...

Canada

[Wildfire smoke is an increasing threat to Canadians' health, say researchers](#)

Medical Xpress

PM2.5 particles can deposit deep in the lungs and long-term exposure can ... Wildfires produce enormous quantities of PM2.5 and several other ...

Europe

[New study discovers a hidden culprit driving air pollution and climate change: Domestic firelighters](#)

Phys.org

They noted that there are an estimated 70 million wood burning stoves, open fires and other solid fuel heating appliances in homes across Europe ...

Turkey

[Rural rules: 10 sustainable practices by villagers in Türkiye | Daily Sabah](#)

Daily Sabah

They burn wood for heating, cooking. Most, if not every, home will have a fireplace, many of which are either outdoors or in the kitchen. This is ...

India, Hyderabad

[Hyderabad: Rising air pollution levels a serious concern, say doctors - Deccan Chronicle](#)

Deccan Chronicle

PM 2.5 is the deadliest variety, as it can penetrate deep into body tissues due to its small size. During Question Hour, Minister Baghel quoted a ...

India

['If we can land on the moon, can't we keep air pollution in check?' Experts wonder - The Hindu](#)

The Hindu

Yet another study by the Centre of Science and Environment showed that the city had one of the fastest worsening PM 2.5 levels.

Indonesia

[Agency prescribes spraying water from buildings to curb pollution - ANTARA News](#)

ANTARA News

"We sprayed water mist from the top of the Pertamina building and it was directly measured by a PM 2.5 monitor. It turned out (that spraying water ...

Indonesia

[Wear masks to prevent pollution-related diseases : Minister - ANTARA News](#)

ANTARA News

"We recommend at least KF94 or KF95 masks because harmful PM 2.5 can enter the blood vessels," Sadikin said after attending a limited meeting held ...

PM2.5 and Human Health

[Wildfire PM2.5 Linked to Increase in Incidence of Asthma ED Visits - Consumer HealthDay](#)

Consumer HealthDay

Wildfire fine particulate matter is associated with a significant ... 28, 2023 (HealthDay News) -- Wildfire fine particulate matter (PM2.5) is ...

PM2.5 and Human Health

[Wildfire PM2.5 Linked to Increase in Incidence of Asthma ED Visits - Crossroads Today](#)

Crossroads Today

28, 2023 (HealthDay News) -- Wildfire fine particulate matter (PM2.5) is associated with a significant increase in the incidence of same-day ...

PM2.5 and Human Health

[Rising Air Pollution Helps Deadly Bacteria Build Resistance to Antibiotics - The Energy Mix](#)

The Energy Mix

"Evidence suggests that particulate matter PM 2.5 can contain antibiotic-resistant bacteria and resistance genes, which may be transferred between ...

PM2.5 and Human Health

[How Wildfire Smoke Can Alter Brain Health and Trigger Inflammation - Neuroscience News](#)

Neuroscience News

Using rodents exposed to wood smoke, the scientists identified changes in neurotransmitters and signaling molecules in the brain that lasted for ...

PM2.5 and Technology

[Can AC protect against wildfire smoke? - Phys.org](#)

Phys.org

Fine particles from wildfire smoke can make their way indoors in many ways ... from smoking cigarettes, using gas, propane or wood-burning stoves, ...

PM2.5 and Technology

[Can AC protect against wildfire smoke? - Yahoo News](#)

Yahoo News

Keep the room clean by refraining from smoking cigarettes, using gas, propane or wood-burning stoves, spraying aerosol products, frying food and ...

RAWSEP's editor makes a succinct argument (below). Please copy and paste into your own email to 13 Assistant Attorney Generals and to Dr. Jeanne Marrazzo the new Director of NIAID (succeeding Dr. Anthony Fauci), Dr. Hugh Auchincloss of NIH and Dr. Lawrence Tabak, Director of NIH.

Dear Assistant Attorney General,

Attached is a letter I sent to National Institute of Allergy and Infectious Diseases (NIAID) Director Dr. Jeanne Marrazzo, former acting NIAID Director Dr. Hugh Auchincloss and National Institutes of Health (NIH) Director Dr. Lawrence Tabak regarding regulation and potential shutdown of PM2.5 polluting indoor residential wood burners. The letter asks Dr. Jeanne Marrazzo to apply a "Parallel Track" in 2023 to indoor residential wood burning pollution: allowing a "Parallel Track" of both EPA wood stove certification which is known to be ineffective in controlling PM2.5 pollution, which is known to cause antibiotic resistance, which makes pandemics of infectious disease more likely and uncontrollable, alongside a complaint based system based on PurpleAir PM2.5 monitor data from the yards of near neighbors of indoor residential wood burners. Dr. Anthony Fauci, Dr. Jeanne Marrazzo's predecessor at NIAID, in 1989, allowed a "Parallel Track" of both Food and Drug Administration (FDA) use of AZT following Clinical Trials rules of use of that one AIDS drug which had a side effect of blindness, alongside allowing use of a second drug during a clinical trial, Ganciclovir, which cured the blindness that was a side effect of AZT. I previously sent you a letter asking for you to include in your suit against the EPA, a suit that will commence if the EPA does not reply by 8/24/2023, an ask for a complaint based system of regulating indoor residential wood burning, using data from PurpleAir PM2.5 monitors in the yards of near neighbors who complain of PM2.5 from hyper-localized indoor residential wood burners, even and especially those indoor residential wood burners which are already ineffectually certified by the EPA, that violate the EPA's own National

Ambient Air Quality Standards (NAAQS) emission limits of 35 micrograms per cubic meter in a 24 hour period. Currently, if a near neighbor's complaint is made to a local health department, a complaint using federal NAAQS exceedance data is not considered as a basis for a complaint against neighboring indoor residential wood burning, nor a basis for shutting down the wood burning appliance if the indoor residential wood stove is federally EPA certified. Lawsuits for nuisance are expensive and beyond the means of the average American, and not considered precedents in courts, generally. Contacting state agencies or other means of shutting down polluting wood stove use affecting the health and lives of near neighbors are not effective because decisions made by the EPA affect the decisions of state agencies.

Although the scope of your lawsuit seems confined to asking the EPA to continue their wood stove certification program as is, only at a faster pace, consider the intent that should be behind asking the EPA to tighten their standards for wood stove certification on a regular basis. The intent of an Environmental Protection Agency is to protect the environment, perhaps narrowly construed to be protecting air, water and ground from contamination from industries. But people who live in the United States should actually benefit from the environment being protected, even if getting the EPA to act quickly to continue as they have been acting, only incrementally changing, is the narrow aim of this lawsuit. Tightening wood stove standards on a regular basis should have the result of protecting the environment, as well as protecting the people of the United States from harm from the air, water, and ground if contaminated, and protect the world from hastening of climate change. That is a broad scope, but by contacting NIAID I am pointing out that the EPA's responsibilities are intertwined with public health responsibilities of other government agencies such as NIAID. Please try to accomplish something for the American people with this lawsuit, as well as keeping our air, water, and ground theoretically pristine. As a state administrator, you may think that, taking a narrow focus, I am not your constituent, but by commencing to sue a federal agency, you are representing me as a citizen of the United States and as your constituent.

Thank you,

Sent to

[cody.doig@alaska.gov](mailto:cody.doig@alaska.gov) Alaska Senior Assistant Attorney General Cody Doig  
[Jason.james@ilag.gov](mailto:Jason.james@ilag.gov) Illinois Assistant Attorney General Jason James  
[Sgoldstein@oag.state.md.us](mailto:Sgoldstein@oag.state.md.us) Maryland Special Assistant Attorney General Steven Goldstein  
[Turner.Smith@mass.gov](mailto:Turner.Smith@mass.gov) Massachusetts Assistant Attorney General Turner Smith  
[Peter.Surdo@ag.state.mn.us](mailto:Peter.Surdo@ag.state.mn.us) Minnesota Special Assistant Attorney General Peter Surdo  
[Lisa.Morelli@law.njoag.gov](mailto:Lisa.Morelli@law.njoag.gov) New Jersey Deputy Attorney General Lisa Morelli  
[Nicholas.Buttino@ag.ny.gov](mailto:Nicholas.Buttino@ag.ny.gov) New York Assistant Attorney General Nicholas Buttino  
[Paul.Garrahan@doj.state.or.us](mailto:Paul.Garrahan@doj.state.or.us) Oregon Attorney-in-Charge Paul Garrahan  
[Steve.Novick@doj.state.or.us](mailto:Steve.Novick@doj.state.or.us) Oregon Special Assistant Attorney General Steve Novick  
[Nick.persampieri@vermont.gov](mailto:Nick.persampieri@vermont.gov) Vermont Assistant Attorney General Nick Persampieri  
[Caroline.cress@atg.wa.gov](mailto:Caroline.cress@atg.wa.gov) Washington Assistant Attorney General Caroline Cress  
[Chris.reitz@atg.wa.gov](mailto:Chris.reitz@atg.wa.gov) Washington Assistant Attorney General Chris Reitz  
[Jenniferd@psccleanair.gov](mailto:Jenniferd@psccleanair.gov) General Counsel, Puget Sound Clean Air Agency Jennifer A. Dold

[Jeanne.marrazzo@nih.gov](mailto:Jeanne.marrazzo@nih.gov) Director of National Institute of Allergy and Infectious Diseases Jeanne Marrazzo  
[Hugh.Auchincloss@nih.gov](mailto:Hugh.Auchincloss@nih.gov) January to July 2023 acting Director of National Institute of Allergy and Infectious Diseases Hugh Auchincloss

[Lawrence.Tabak@nih.gov](mailto:Lawrence.Tabak@nih.gov) Director of the National Institutes of Health Lawrence Tabak  
<https://rawsepresidents.wordpress.com/1-please-attach-pdf-letter-to-niaid-director-dr-jeanne-marrazzo-to-an-email-from-you-to-jeanne-marrazzonih-gov/>

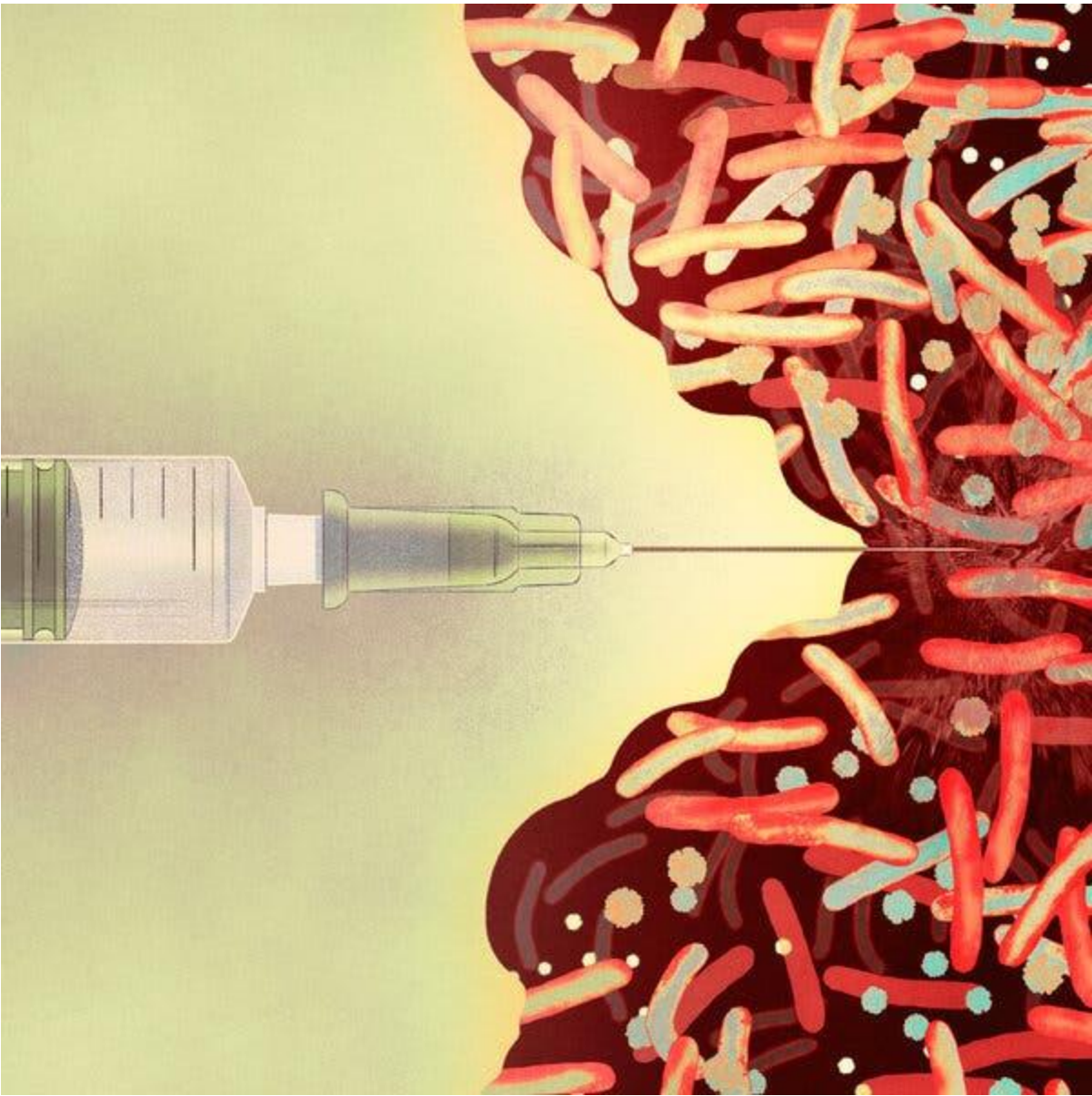
Episode 56GF July 19, 2023. The Ask: Request a complaint-based system from 10 Attorney Generals suing the E P A to give wood stove users "certainty". The Ask: Emails of 3 NIH officials [jeanne.marrazzo@nih.gov](mailto:jeanne.marrazzo@nih.gov); [hugh.auchincloss@nih.gov](mailto:hugh.auchincloss@nih.gov); [Lawrence.tabak@nih.gov](mailto:Lawrence.tabak@nih.gov) Emails of 13 Assistant Attorney Generals, Deputy Attorney Generals and General Counsel preparing to sue the EPA to provide clarity for indoor residential wood stove manufacturers, vendors, and users. Instead, the assistant attorneys general should ask for a PM2.5 pollution complaint based system in place of the failed wood stove certification program. The states involved are Alaska, Illinois, Maryland, Massachusetts, Minnesota, New Jersey, New York, Oregon, Vermont, and Washington, as well as the Puget Sound Clean Air Agency. A new icon has been added to the RAWSEPresidents Website, which is now the nearest right icon. The icon is an ask that has already been described in Episode 56G B (description of the parties who should be at the table when deciding on "safe" wood stove emission limits and fenceline measurements, rather than wood stove certification) and

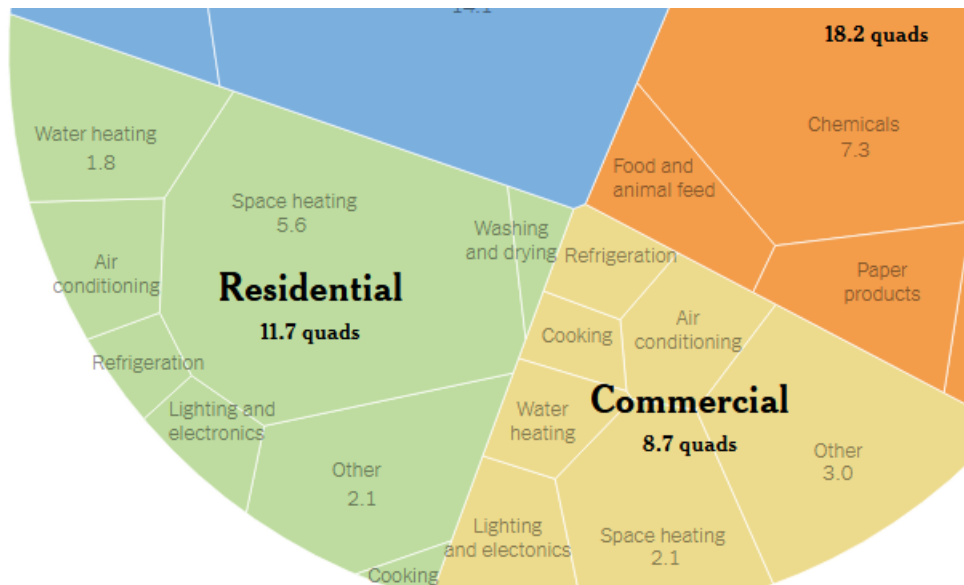


(emails to contact 10 Deputy or Assistant Attorney Generals and one General Counsel) (those PDFs are included at the icon link). Residents Against Wood Smoke Emission Particulates, see <https://rawsepresidents.wordpress.com> and click on the nearest right icon for The Ask: 1)Email PDF letters to 3 officials of the National Institutes of Health (NIH) and NIAID <https://rawsepresidents.wordpress.com/1-please-attach-pdf-letter-to-niaid-director-dr-jeanne-marrazzo-to-an-email-from-you-to-jeanne-marrazzonih-gov/> The Ask 2)Email PDF letters to 13 Assistant Attorneys Generals, Deputy Attorney Generals and General Counsel <https://rawsepresidents.wordpress.com/1-please-contact-10-attorneys-general-about-august-2023-suit-versus-e-p-a-asking-for-certainty-for-wood-stove-users-rawsep-asks-for-complaint-based-sytem-based-on-pm2-5-monitor-data-exceeding-e-p/> To the right of that 3)"Barbie Goes To The Dating Game" <https://rawsepresidents.wordpress.com/1-barbie-goes-to-the-dating-game/> To the right of that 4)"Cookies that may contain Rocks are recalled" <https://rawsepresidents.wordpress.com/cookies-that-may-contain-rocks-are-recalled/> to the right of that 5)"The Fox Owns the Forest" card game <https://rawsepresidents.wordpress.com/the-fox-owns-the-forest-card-game-tba/> then to the right of that, the latest months, 6)August & 7)July 2023, of PDFs of articles with U R L's to search on <https://rawsepresidents.wordpress.com/1-august-2023-pdfs-of-urls/> and <https://rawsepresidents.wordpress.com/1-july-2023-pdfs-of-urls/> To the right of that, 8)Stickers to handout for RAWSEP, Games such as 9a)Bingo for RAWSEP, 9b)Crosswords for RAWSEP 9c)PM2.5SJeopardyFree game <https://youtu.be/Lnsg32pYDnc> 9d)PM2.5FreeMonopoly <https://youtu.be/cUCK1pscQnQ> & EndWoodSmokeMonopoly 9e)"Vending Machines for PM2.5 monitors", and 10)icon links to 30 minute Youtube videos and Spotify podcasts as well as podcasts.google.com, Castbox and PocketCast. PocketCast is only Free on the phone App. Pocket Cast works on Apple phones) and, below those icons, icon links to monthly URL's of PDFs from June 2023 to May 2022.









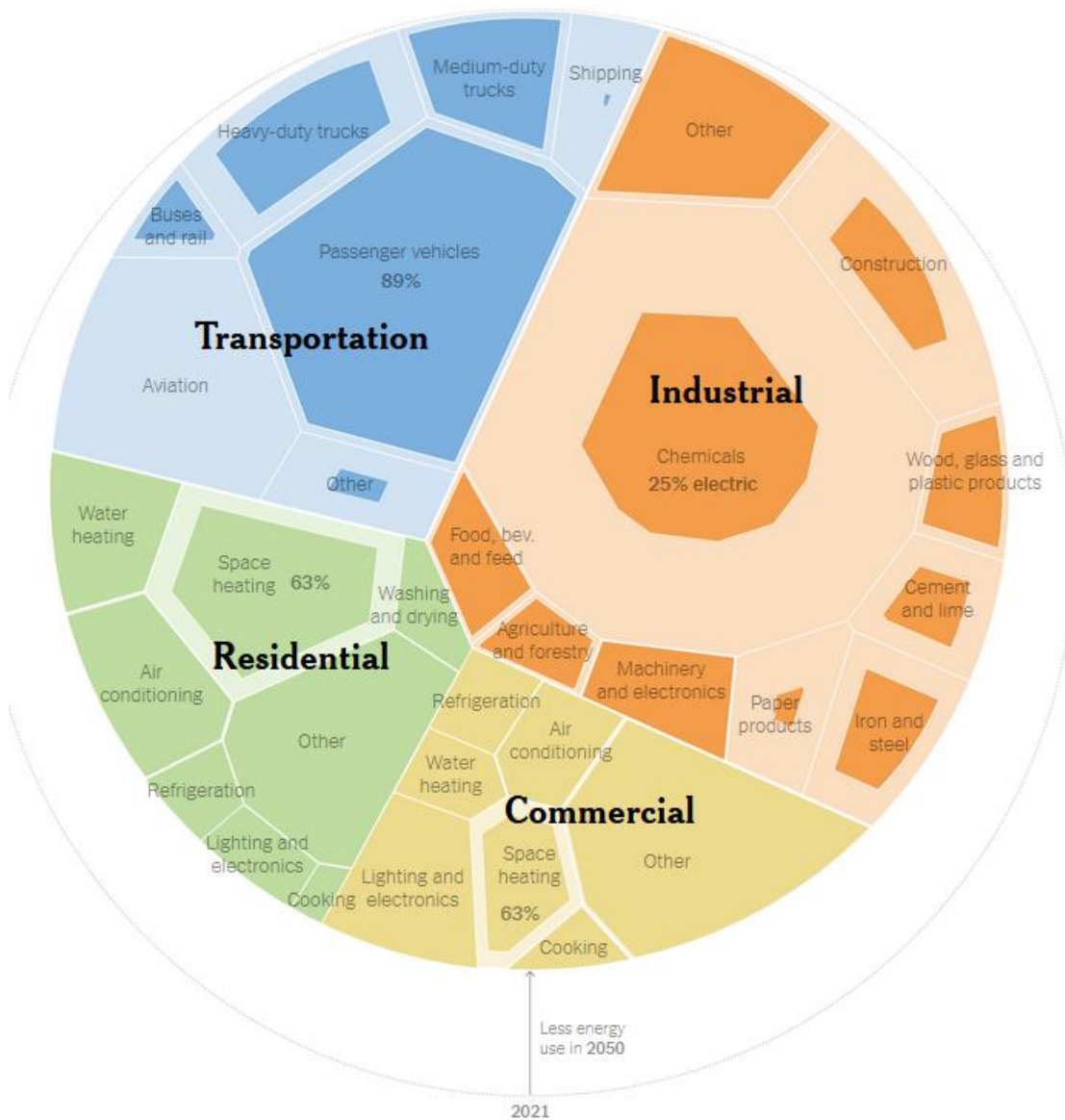
## Here's how much of that energy comes from electricity.

Electricity as a percent of total energy consumed in 2021

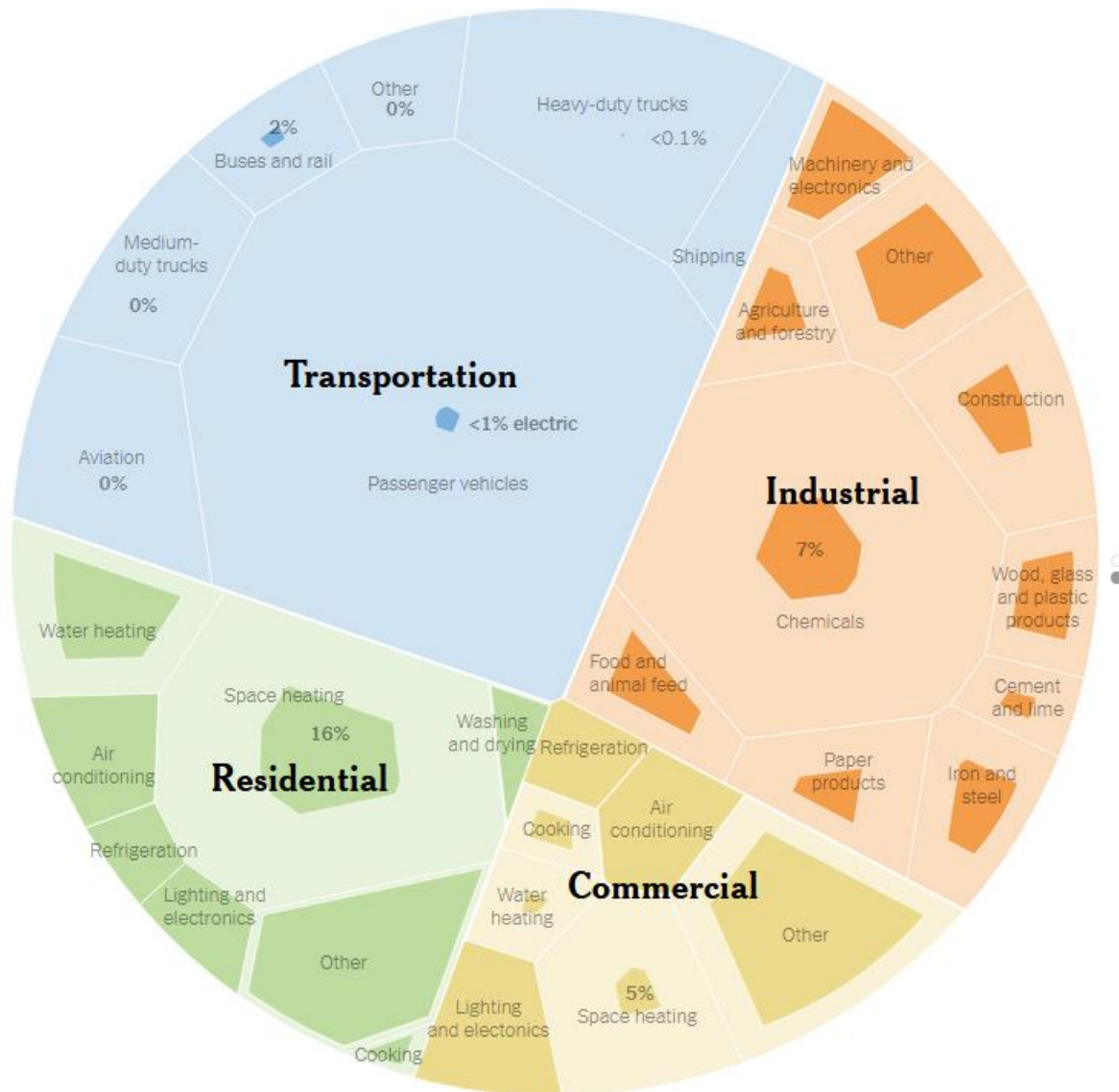


# By 2050, electricity would play a much bigger role:

Electricity as percent of total energy consumed in a high-electrification scenario

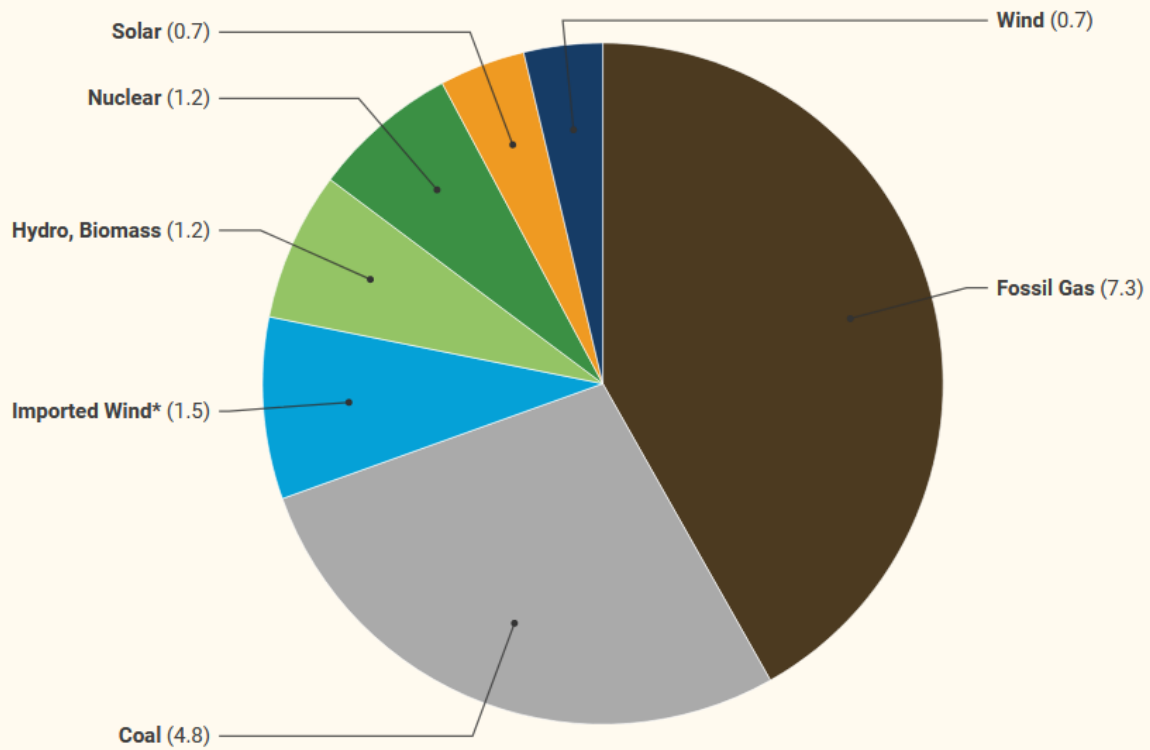






The following pie chart is listed in Gigawatts (GW).

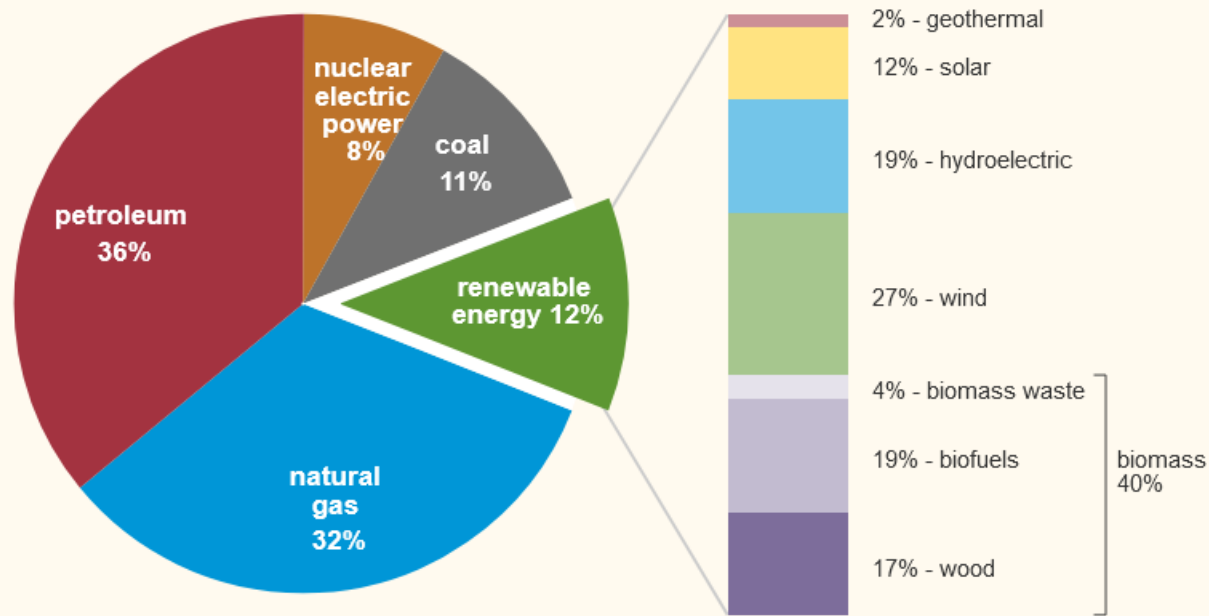
## WISCONSIN CAPACITY IN 2022 (IN GW)



# U.S. primary energy consumption by energy source, 2021

total = 97.33 quadrillion  
British thermal units (Btu)

total = 12.16 quadrillion Btu



Data source: U.S. Energy Information Administration, *Monthly Energy Review*, Table 1.3 and 10.1, April 2022, preliminary data

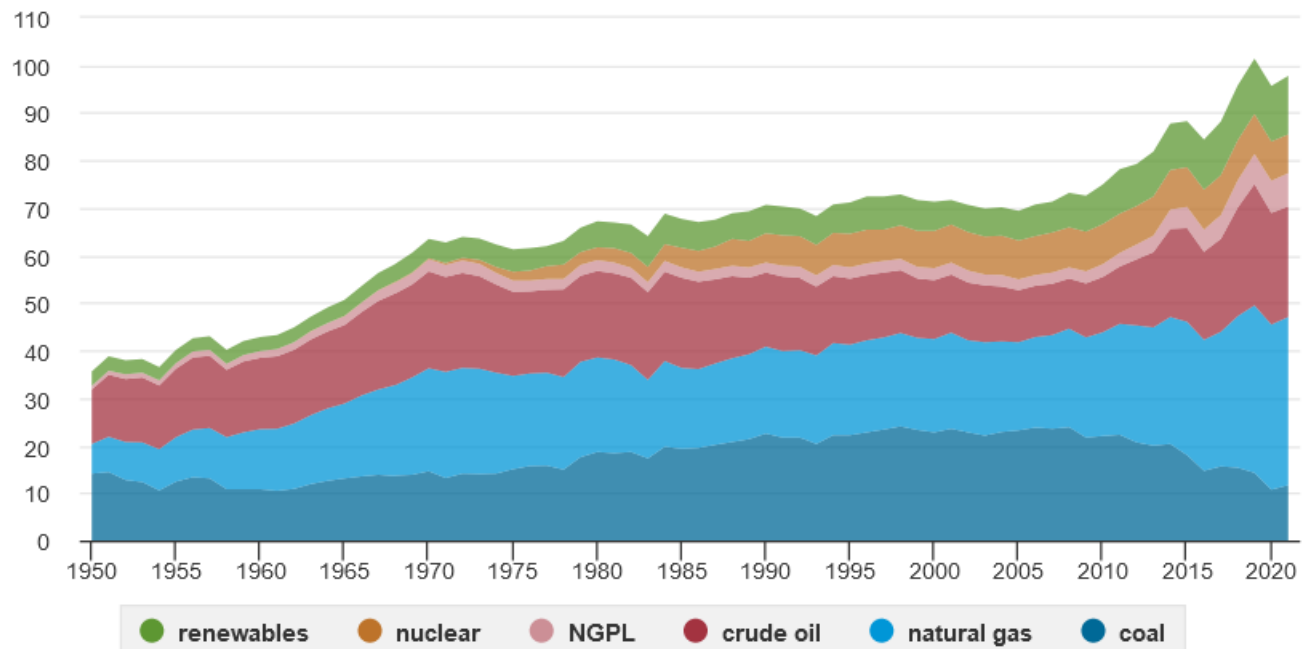


Note: Sum of components may not equal 100% because of independent rounding.

## U.S. primary energy production by major sources, 1950-2021



quadrillion British thermal units



Data source: U.S. Energy Information Administration, *Monthly Energy Review*, Table 1.2, April 2022, preliminary data for 2021



Note: NGPL is natural gas plant liquids.