

Episode 56EA May 6, 2023, The hyper-localized fence line of near neighbors of residential wood burners, is like the fenceline of poor Americans near air polluting refineries.

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. On RAWSEPresidents.wordpress.com are links to 30 minute Youtube videos, and podcasts on Spotify, podcasts.google.com, Amazon Music Prime (free for Prime subscribers), Cast Box, and Pocket Cast (Pocket Cast is only free on the phone App. The phone App works on Apple phones).

Arizona

RAWSEP View: It is no gift to give a wood burning stove to someone in need of home heating. An electric Heat Pump would have been appropriate and would not cause air pollution in addition to whatever privations the family was experiencing.

[Local doctor and her family make medical and humanitarian treks to Central America | News](#)

Temple Daily Telegram

... her thanks after the Rivera family replaced an open fire pit inside the home with a \$180 wood-burning stove with a proper exhaust system.... the home with a \$180 wood-burning stove with a proper exhaust system. ... problems from inhaling smoke and fumes from the open cooking pits.

California

[State of the Air report finds LA-Long Beach area has worst ozone pollution in US](#)

Daily Bruin

May 4, 2023 11:44 p.m. ... An F rating indicates a failing level as per the National Ambient Air Quality Standards for PM 2.5, which refers to ...

Colorado

[Semple: Blowing my troubles away | Opinion | aspendailynews.com](#)

Aspen Daily News

Wood-burning stoves among other culprits cast a visible pallor of white smoke o'er the town each morning. It looked like there was a mandatory

Florida

[Molekule Signs Agreement to Provide Air Quality Monitoring Services to Veterans Affairs Facilities](#)

InvestorsObserver

... various parameters, including volatile organic compounds ("VOCs"), particulate matter 2.5 ("PM2.5"), CO2, temperature and humidity levels.

Molekule Signs Agreement to Provide Air Quality Monitoring Services to Veterans Affairs Facilities

Thursday, May 04, 2023 09:25 AM | GlobeNewswire via QuoteMedia

Mentioned in this article

[MKUL-6.55%](#)

[MKUL Report](#)

Molekule Signs Agreement to Provide Air Quality Monitoring Services to Veterans Affairs Facilities

Molekule to provide Veterans Affairs ("VA") center employees and veterans with real-time, **Indoor Air Quality("IAQ")** monitoring and control system across three VA service centers in **Hot Springs, SD, Ft. Riley, KS, and Topeka, KS**

Molekule and the Veterans Integrated Services Network ("VISN 23"), having successfully completed a one-year deployment of IAQ solutions, have entered into second one-year agreement with an option for up to five years, demonstrating a long-term commitment to providing advanced IAQ solutions for VA service centers.

Significant opportunity for Molekule to potentially expand deployment across 1200+ facilities at all 18 VISNs in the Veterans Health Administration ("VHA") network

PALM BEACH GARDENS, Fla., May 04, 2023 (GLOBE NEWSWIRE) -- [Molekule](#) Group, Inc. ("Molekule" or the "Company") (Nasdaq: MKUL), an emerging leader in **air purification technology** solutions, today announced a new agreement with



UN Climate Change @UNFCCC · 11m

⚡ A new era in the power sector

📈 Fossil fuel electricity generation might have peaked in 2022.

📈 Record expansion of renewable power is pushing oil, gas and coal out of the grid

@EmberClimate | #ClimateChange



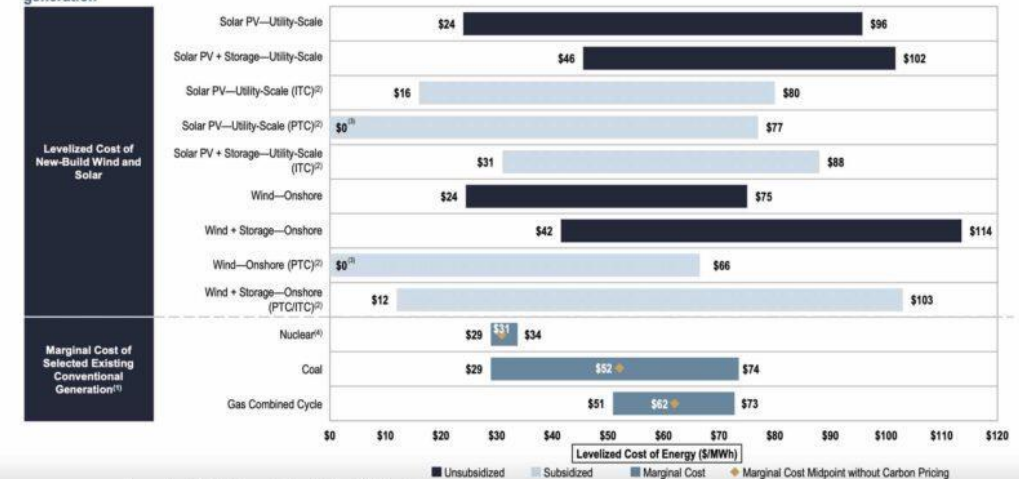
Ember and 2 others

LCOE

LAZARD'S LEVELIZED COST OF ENERGY ANALYSIS—VERSION 16.0

Levelized Cost of Energy Comparison—Renewable Energy versus Marginal Cost of Selected Existing Conventional Generation Technologies

Certain renewable energy generation technologies have an LCOE that is competitive with the marginal cost of existing conventional generation



VISN 23 to monitor IAQ across three VA service centers in Hot Springs, SD, Ft. Riley, KS, and Topeka, KS. Molekule and VISN 23 have agreed to a one-year base period and four one-year option periods providing VISN 23 with an advanced risk mitigation platform to monitor and control IAQ across several facilities from one single location so that VA employees and veterans can breathe clean and healthy indoor air. The mobilized solution allows the VA administration to access real-time IAQ data and receive alerts when IAQ levels exceed predetermined thresholds. The system gives VISN 23 operators recommendations for maintaining optimal air quality and evidence of the current state of IAQ. Molekule implemented advanced IAQ monitoring technology and services in three VA service centers in Hot Springs, SD, Ft. Riley, KS, and Topeka, KS, and the solution has been running successfully for over a year.

The comprehensive IAQ monitoring system provides valuable insights into the IAQ of the facilities and tracks various parameters, including volatile organic compounds (“VOCs”), particulate matter 2.5 (“PM2.5”), CO2, temperature and humidity levels. The Company believes that the new agreement with VISN 23 will continue to demonstrate the versatility of Molekule’s technology while delivering the potential to expand deployment across all 18 VISNs in the VHA network, which includes over 1200 facilities.

“We are proud to support our veterans and the staff at VISN 23 by providing advanced IAQ technology to help keep our service men and women safe and healthy,” said Jason DiBona, Chief Executive Officer of Molekule. “With our technology, VISN 23 can maintain a daily, real-time IAQ report, which details any threats and provides actionable intelligence to control their air. We look forward to working with our VA partners to showcase the POV of our IAQ monitoring technologies.”

“Having a detailed, real-time view of the IAQ conditions in our facilities is a game changer,” said Rick Grubb, Facilities Operations Specialist at VISN 23. “Our number one priority is the safety and health of our staff and veterans. The advanced monitoring platform puts us in control of our IAQ for the first time and helps VISN better manage energy costs by ensuring our HVAC system works effectively and efficiently.”

Molekule has the largest range of proprietary and patented FDA-cleared air purification devices, which have been proven to destroy SARS-CoV-2, RSV, H1N1 flu virus, VOCs, allergens, mold, and many other airborne pollutants. The devices are part of a state-of-the-art advanced solutions platform, which includes IAQ monitoring and internet-of-things (“IoT”) device control.

If you are interested in a quote for your organization, please inquire at: <https://molekule.com/business>

About Molekule

Molekule is on a mission to provide clean indoor air to everyone, everywhere. With the largest range of proprietary, FDA-cleared air purification devices on the market, Molekule is providing consumers, business owners and medical professionals with hardware and software solutions to better understand and improve indoor air quality. Its Air Pro, Air Mini+ and Pürgo™ purification devices can be applied to virtually any indoor space, including homes, classrooms, offices, hospitals and more. For more information and customer reviews, visit <https://investors.molekule.com/>.

Press@molekule.com

Investor Relations Contacts

Ryan Tyler

Chief Financial Officer, Molekule

Ryan.Tyler@molekule.com

MATTIO Communications

olekule@mattio.com

Forward-Looking Statements

This press release contains “forward-looking statements” within the meaning of the “safe harbor” provisions of the Private Securities Litigation Reform Act of 1995. These forward-looking statements are based upon current beliefs and expectations of our management and are subject to known and unknown risks and uncertainties. Words or expressions such as “expects,” “anticipates,” “intends,” “plans,” “believes,” “estimates,” “may,” “will,” “projects,” “could,” “should,” “would,” “seek,” “forecast,” or other similar expressions help identify forward-looking statements. Factors that could cause actual events to differ include, but are not limited to:


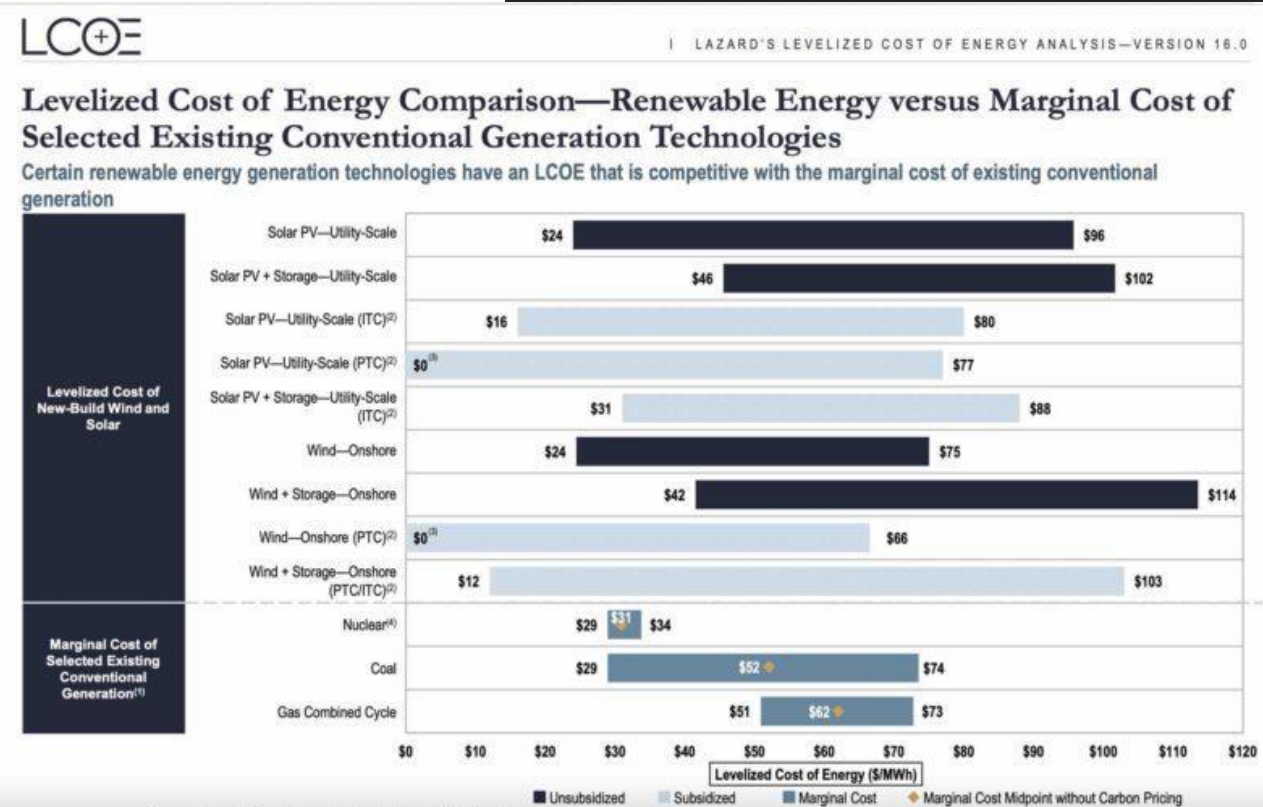
- general economic conditions in the markets where we operate;
- the impact of the COVID-19 pandemic and related prophylactic measures;
- expected timing of regulatory approvals and product launches;
- non-performance of third-party vendors and contractors;
- risks related to our ability to successfully sell our products and the market reception to and performance of our products;



Moms Clean Air Force

2d · 🌐

Electricity from solar and wind surpasses coal generation in first two months of 2023

our compliance with, and changes to, applicable laws and regulations;

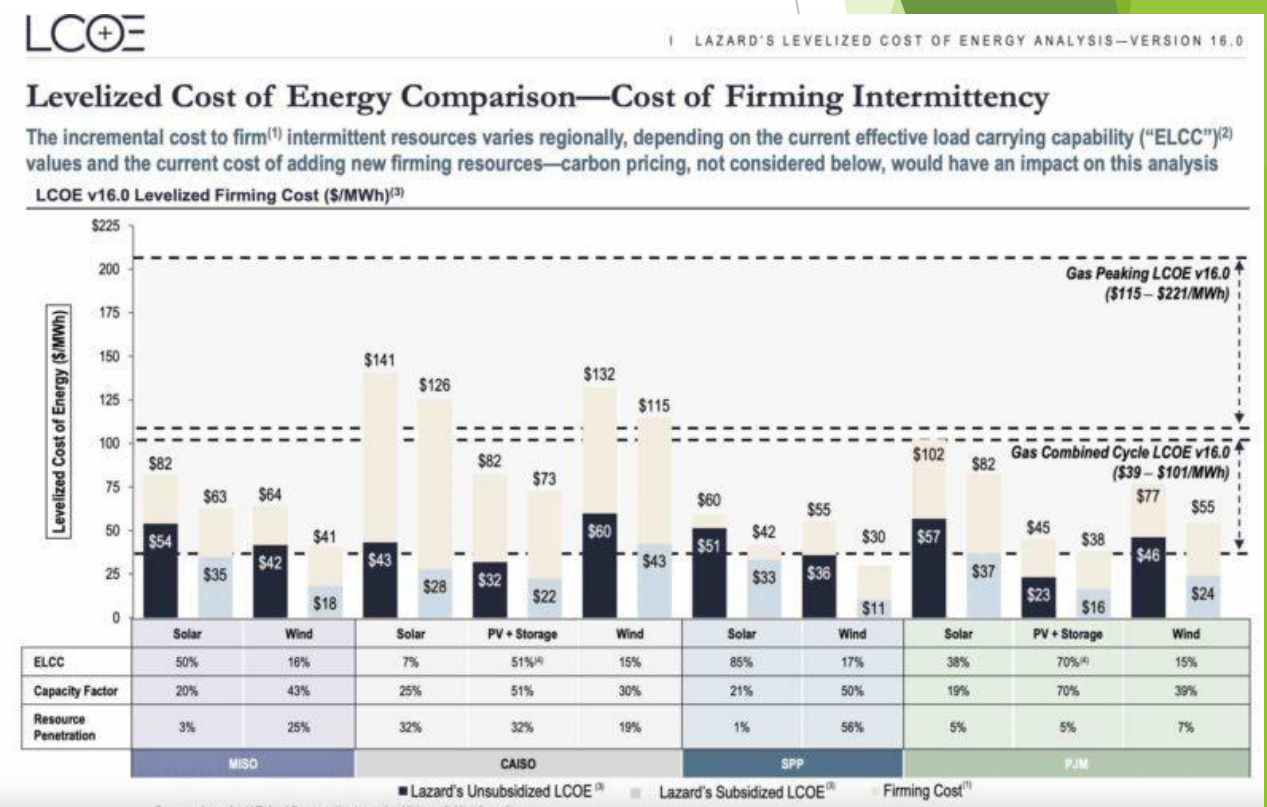
- our limited operating history;
- our ability to manage growth;
- our ability to obtain additional financing when and if needed;
- our ability to expand product offerings;
- our ability to compete with others in our industry;
- our ability to protect our intellectual property;
- the ability of certain stockholders to determine the outcome of matters that require stockholder approval;
- our ability to retain the listing of our common stock on Nasdaq;
- our ability to defend against legal proceedings;
- success in retaining or recruiting, or changes required in, our officers, key employees or directors;
- the risk that the merger between Molekule and Aura may not be completed; and other economic, business, competitive, and regulatory factors affecting the businesses of the Company generally, including but not limited to those set forth in the Molekule’s filings with the Securities and Exchange Commission (the “SEC”), including in the “Risk Factors” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” sections of Molekule’s latest annual report on Form 10-K, as amended, and other SEC filings.

Forward-looking statements are not guarantees of future performance and involve risks and uncertainties, and actual results may differ materially from those in the forward-looking statements as a result of various factors. Although we believe that the expectations reflected in the forward-looking statements are reasonable based on information currently available, we cannot assure you that the expectations will prove to have been correct. Accordingly, you should not place undue reliance on these forward-looking statements. In any event, these statements speak only as of the date of this release. We assume no obligation to revise or update any of the forward-looking statements to reflect events or circumstances after the date of this release or to reflect new information or the occurrence of unanticipated events.

Ohio, Clyde
 RAWSEP View: This article is about Augusta, Maine; Ann Arbor, Michigan; and Clyde, Ohio. Climate change is spurring interest in remaking local infrastructure to accommodate renewable energy, minimize power failures and expand consumer choice. A new, better electric grid can better power Heat Pumps, which can work at temperatures well below zero Fahrenheit, and can replace residential wood burning.

Frustrated by Outdated Grids, Consumers Are Lobbying for Control of Their Electricity
https://insideclimatenews.org/news/05052023/electric-grid-customer-control/?utm_source=InsideClimate+News&utm_campaign=314fa79ef4-

Excerpts edited by RAWSEP for brevity and clarity and relationship to Residents Against Wood Smoke Emission Particulates. Clyde, Ohio, population 6,000, has two electric grids. One is owned by the city. The other, now serving just a handful of customers, is controlled by a subsidiary of a utility that provides electricity to 6 million customers across five states. When Clyde residents voted to localize their electricity in the 1980s, buying the existing grid was exceedingly expensive, so **they built their own**. When electricity began flowing through the new lines, customers of the new utility **paid 25 percent less** than they had to the legacy provider. From Ann Arbor, Michigan, to Augusta, Maine, consumers, governments, and clean energy advocates are lobbying to form local utilities that they say would make grids more resilient amid severe weather and **speed the deployment of clean energy**. In 2019, Ann Arbor’s City Council passed a “climate emergency” ordinance and set a target of **making the town reliant on renewable energy for 100 percent of its electricity by 2030**. Dealing with weather-related outages did not work with the old grid: Winter storms in February encrusted power lines and poles with ice and left 40 percent of customers in Ann Arbor without electricity. Annual weather-related power outages in the United States have **doubled** over the last two decades as ever more powerful storms batter the nation’s aging grid. “I don’t think this is the electrical system that’s going to bring us into the next 100 years,” an expert said. In Maine, residents will vote in a November referendum on whether to replace the legacy utilities Versant Power and Central Maine Power, the state’s two biggest electricity providers, with a **nonprofit public utility called Pine Tree Power** governed by an elected board and run by a private operator. A former Maine state legislator says the state’s investor-owned utilities, which do not own generation projects, have obstructed small-scale clean energy



installations in favor of bigger ones that require large power lines that bring in money. And he argues that “direct, democratic control” of electricity would be better suited to a future in which electricity powers more of daily life. Maine ranked second to last nationwide for electricity reliability on the basis of power failures in a 2021 report Maine, like many other states, has struggled with delays in connecting small solar projects to the grid. And in 2016, regulators frustrated solar advocates by changing how homeowners’ small systems were metered, reducing compensation for the electricity they generated. The former Maine state legislator sponsored a bill that reversed that metering policy three years later. In Boulder, Colorado, a decade-long effort to form a publicly owned utility to address climate change ended in 2020 with an agreement with the legacy utility, Xcel Energy, to reduce emissions from its electricity supply by 80 percent by 2030 and to help the city reach 100 percent renewable energy by 2030. In California, the city government of San Francisco, which controls much of its own electricity generation, has been fighting since 2019 to buy its grid infrastructure from the utility Pacific Gas & Electric. The article concludes with an expert who says, “We have new technology that is in direct contrast to a system that’s not working well,” citing microgrids, batteries, and distributed energy resources. Instead of embracing that, “investor-owned utilities are putting up walls around their existing infrastructure or making it really, really hard and cumbersome for people to embrace those alternative techs.”

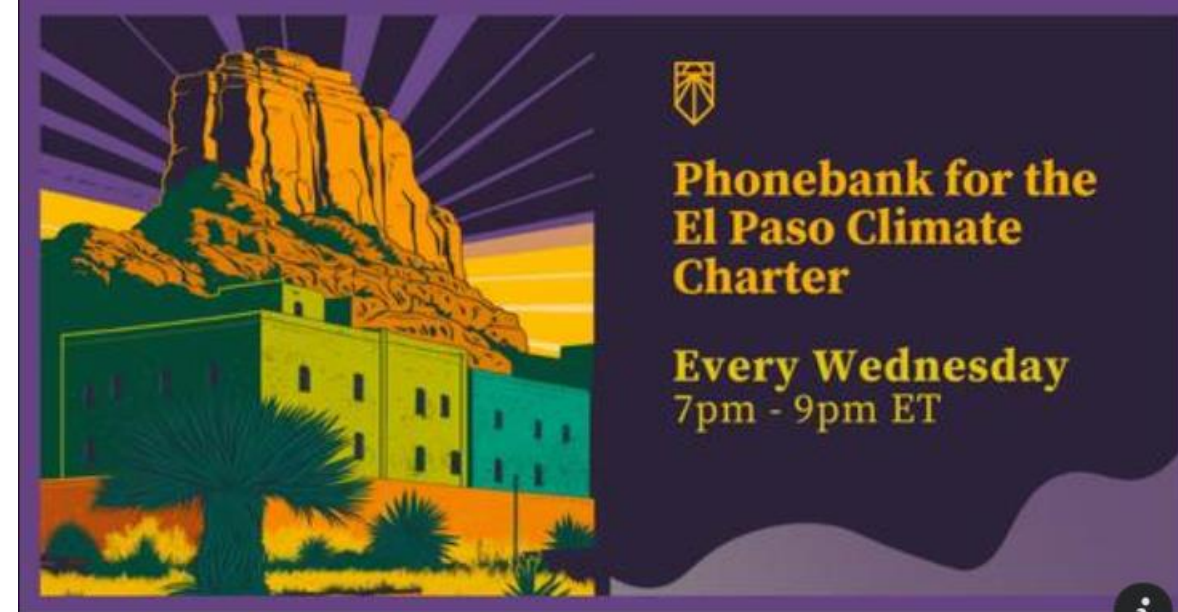
Michigan, Detroit
 Air Quality Awareness Week spotlights the main pollutant impacting the climate - FOX 2 Detroit
 FOX 2 Detroit
 One of them is fine particulate matter, consisting of dust, soot, ash, or wood smoke caused by burning fossil fuels or other chemical processes.
 New Hampshire, Keene
 Despite particle-prompted dip, county scores high marks in air-quality report - The Keene Sentinel
 The Keene Sentinel
 Cheshire County has an historic issue with particulates from wood stoves becoming trapped in the air due to the area’s topography, according to ...
 Despite particle-prompted dip, county scores high marks in air-quality report - The Keene Sentinel
 The Keene Sentinel
 The U.S. Environmental Protection Agency’s Burn Wise project advises minimizing wood smoke by using an EPA-certified wood pellet stove, ...

Texas
 RAWSEP View: Carbon capture has a history of not working and being expensive and a time consuming procedure. It is better not to emit pollution in the first place, by not burning fuel, especially solid fuel such as wood. Carbon capture is pushed by industry because it usually is a way to obtain subsidies from the federal government.
 Carbon Removal Projects Leap Forward With New Offset Deal. Will They Actually Help the Climate?
 Finance and insurance giants hope to offset their carbon emissions with “direct air capture” from a plant in Texas and smokestack carbon capture from Midwestern ethanol plants that would rely on a pipeline that may never be completed.

Texas, El Paso
 Ambitious Climate Proposition Faces Fossil Fuel Backlash in El Paso
 BY MARTHA PSKOWSKI
 Sunrise El Paso put forward a charter amendment to transition the city off fossil fuels and explore creating a municipal electric utility. The chamber of commerce and the fossil fuel industry are mounting a scorched earth campaign to kill it.
 Texas, Port Arthur
 RAWSEP View: The hyper-localized fence line of near neighbors of residential wood burners, is like the fence line of poor Americans near air polluting refineries.

Q&A: Linda Villarosa Took on the Perils of Medical Racism. She Found Black Americans ‘Live Sicker and Die Quicker’
 Excerpt edited by RAWSEP for brevity and clarity and relationship to Residents Against Wood Smoke Emission Particulates
[https://insideclimatenews.org/news/03052023/linda-villarosa-linda-villarosa-medical-racism/?utm_source=InsideClimate+News&utm_campaign=314fa79ef4-](https://insideclimatenews.org/news/03052023/linda-villarosa-linda-villarosa-medical-racism/?utm_source=InsideClimate+News&utm_campaign=314fa79ef4-May 3, 2023)
 May 3, 2023

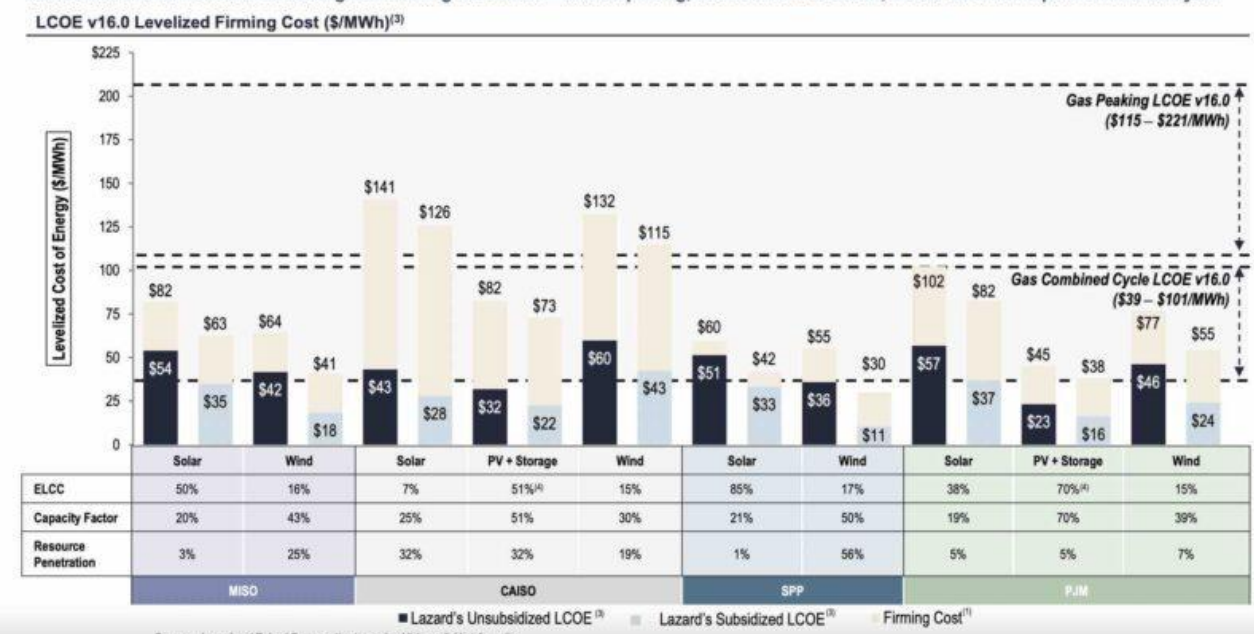
What does climate change mean for the health of Black Americans?
 We are already 75% more likely to live at a fenceline community, which means that you’re near a refinery, you’re near a landfill, you’re near some kind of toxic dump. You’re near some kind of facility that’s going to make you less healthy already, so that’s just the bottom line. I think of Port Arthur, Texas, a fenceline community where I have family. And if anything happens at this gigantic refinery—if it rains, if there’s a hurricane, if there’s any weather event—then it means that the land around there, the water already contaminated by the refinery, gets worse. People already living in a place that isn’t healthy have to flee someplace else. We are the ones who are going to be most affected and have been most affected by climate change. Climate change will have an outside effect on people of color in this country.
 Washington, DC (District of Columbia



LCOE LAZARD'S LEVELIZED COST OF ENERGY ANALYSIS—VERSION 16.0

Levelized Cost of Energy Comparison—Cost of Firming Intermittency

The incremental cost to firm⁽¹⁾ intermittent resources varies regionally, depending on the current effective load carrying capability (“ELCC”⁽²⁾) values and the current cost of adding new firming resources—carbon pricing, not considered below, would have an impact on this analysis



<https://reneweconomy.com.au/gas-cant-compete-with-wind-solar-and-storage-even-in-worlds-biggest-market/?fbclid=...>
Gas can't compete with wind, solar and storage, even in world's biggest market.

April 14, 2023.
Excerpts edited by RAWSEP for brevity and clarity and relationship to Residents Against Wood Smoke Emission Particulates.

The latest levelised cost of energy assessment has been released by global investment bank Lazard, confirming – as CSIRO and the market operator have done **in Australia – that wind and solar, even “firmed” by battery storage, still beat the fossil fuel competition.**

In fact, the Lazard assessment shows that on pretty much any assessment – cost of energy, cost of energy and firming, marginal cost of energy, and cost of capital – wind and solar win easily. And that’s without counting the carbon cost of their competitors, and the impact of the U S President Joe Biden’s Inflation Reduction Act.

“The central findings show, among other things, that even in the face of inflation and supply chain challenges the LCOE (levelised cost of energy) of best-in-class renewables continues to decline,” Lazard notes.

It also says the IRA will have a dramatic impact on the market and will boost more investment in renewables, that storage will grow in scope and importance, and that even hydrogen could play a significant role.

It has no doubt where this will lead: The continued retirement of conventional generation “at pace” – an assessment that is supported by the US Energy Information Administration which predicts

It is now well understood by all bar Sky News viewers in Australia that wind and solar offer by far the cheapest form of generation, even when “firmed” by storage and including transmission costs.

This is critically important given that Australia has to replace its ageing and increasingly decrepit coal plants, even if climate change was not a factor.

The fact that this is also the case in the US – the biggest energy market of all – is deeply significant. Best in class wind and solar cost a fraction of their fossil fuel competitors, the Lazard study shows.

More than that, but shows that even based on the “marginal” cost of generation – essentially the cost of maintenance and burning the fuel – wind and solar still win. And the **technologies most affected by the cost of capital (rising interest rates), are the conventional generators too – nuclear in particular.**

The interesting new addition to the Lazard study is the “cost of firming intermittency” analysis on wind and solar, and its comparison to the existing “flex” load, gas generation.

The study is limited to the main grid markets in the US from the east coast to the west coast. But it’s worth noting that even in the US, where gas is relatively cheap, the lowest cost gas peaking plants are more expensive than the most expensive “firmed” wind and solar.

The only exception is California, but in that state it is only the cheapest gas peaking plants that win out. And in no cases does gas beat the combination of solar PV and battery storage. Interesting.

Lazard also notes that despite moderate to significant increases in the LCOE of new renewable assets in the last year, costs for so-called “best in class” renewable assets continue to decline.

This, it says, is the result of supply chain and other economies of scale and it means that there will be continued consolidation across the sector, as the big global players suck up smaller actors.

India, Gurugram
[New air quality monitors installed in Gurugram - Tribune India](#)

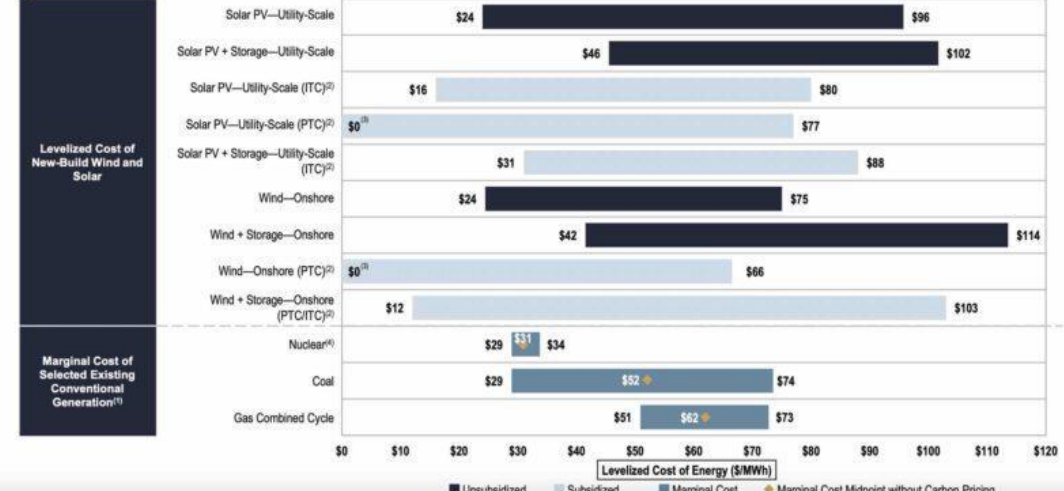
Tribune India
... PM 2.5 and PM10 sensors to measure microscopic fractions of particulate matter or PM (a mixture of solid particles and liquid droplets) in the ...

PM2.5 and Health Effects
[Study of gestational parent exposure to ambient air pollution and diet characteristics on ...](#)

BMC Public Health - BioMed Central
We assessed risk of PTB in humans in relation to fine particulate matter (PM2.5), ozone (O3), and nitrogen dioxide (NO2) and variation by diet.

Levelized Cost of Energy Comparison—Renewable Energy versus Marginal Cost of Selected Existing Conventional Generation Technologies

Certain renewable energy generation technologies have an LCOE that is competitive with the marginal cost of existing conventional generation



Levelized Cost of Energy Comparison—Cost of Firming Intermittency

The incremental cost to firm⁽¹⁾ intermittent resources varies regionally, depending on the current effective load carrying capability (“ELCC”)⁽²⁾ values and the current cost of adding new firming resources—carbon pricing, not considered below, would have an impact on this analysis

LCOE v16.0 Levelized Firming Cost (\$/MWh)⁽³⁾

