

Extended written testimony for House Natural Resources Committee

Alex Epstein, May 19, 2021

Thank you for inviting me to testify. I want to begin by challenging the basic assumption of this hearing, which is that the US government is harming Americans and the world by giving unjust preferences to the highly destructive oil and gas industry. I believe this is 100% wrong.

I will make the case that the US government is actually harming America and the world by giving unjust *punishments* to the *incredibly life-giving* oil and gas industry. If we can liberate this industry, America and the world will be far better places to live.

What has led me to the conclusion that the oil and gas industry is life-giving and persecuted? It's not any financial relationship with the industry; I came to all my views before I knew anyone from that industry. My conclusion came from my background as a philosopher.

As a philosopher, I believe passionately in objective thinking methods. One crucial thinking method is "full-impact thinking." This means that when we are evaluating an industry, like oil and gas or solar, we look carefully at the full impact, positive and negative, of that industry.

When I became interested in energy 14 years ago, I was disturbed that most media and politicians didn't look at the full impact of the oil and gas industry, but just looked at the negatives. Whereas for the solar and wind industry, they just looked at the positive impacts.

When I decided to look at the full impact of the oil and gas industry myself, without the bias of most media and politicians, I found that the positive impacts far, far outweigh the negative impacts--and will continue to do so for generations to come.

What are the positives of the oil and gas industry? Along with the coal industry, the other part of the fossil fuel industry, they are the only industry that in the near future can produce the low-cost, reliable energy that 8 billion people need to survive and flourish--to live to their highest potential.

While we are told that wind and solar can provide low-cost, reliable energy just as well as fossil fuels, nothing could be further from the truth. Because solar and wind are unreliable, they don't replace reliable power plants--they add to the cost of reliable power plants.

The more wind and solar that grids use, the higher their electricity prices. German households have seen prices double in 20 years due to wasteful, unreliable solar and wind infrastructure. Their electricity prices are 3X ours--which are already too high due to wind and solar.¹

¹ Renewable Portfolio Standards, which require electric grids to procure increasing amounts of solar and wind, systematically drive up costs across the United States.

[Greenstone and Nath \(2019\) - Do Renewable Portfolio Standards Deliver Cost-Effective Carbon Abatement?](#)

But wait, what about the claim by Elon Musk and others that with enough batteries, unreliable wind/solar will work? Using Musk's best battery prices, the batteries necessary to store just 3 days of the world's energy would cost *400 trillion dollars*--that's 4.5 times global GDP!²

The fossil fuel industry is the only industry that can produce low-cost, reliable energy for 8 billion people in the next several decades. That's why globally, fossil fuel use is 4X all other energy use combined--and why oil, gas, and coal use is exploding in the developing world.³

Public generation of electricity was over 488 terawatt-hours in Germany for 2020, solar and wind combined generated over 37%. In 2002 they generated just over 3%.

[Fraunhofer ISE energy-charts.de](https://www.energy-charts.de/)

German household electricity prices have more than doubled to over 0.3€ per kWh (\$0.35 per kWh depending on currency exchange rate) since 2000 when the modern renewable energy law started to massively incentivize solar and wind capacity on the German grid.

[BDEW Strompreisanalyse Jan 2021 p. 7](#)

The average US household price in 2019 was \$0.1301 per kWh.

[U.S. Energy Information Administration Electric Power Annual table 5a](#)

California, where solar & wind generation increased from 1.5% in 2001 to 14.5% in 2018 (and imports increased from 24% to 31%), residential electricity prices escalated 70% since 2000, almost 30% faster than in the US as a whole. That doesn't even include the costs of the 2020 blackout debacle, caused by the system operators inability to secure enough electricity imports when solar and wind failed.

[U.S. energy Information Administration - Electricity data browser](#)

[California Energy Commission - California Electrical Energy Generation](#)

² "The battery pack portion of it is less than \$200/kWh. Power electronics and servicing over 15 to 20 years take the price up to roughly \$300/kWh."

[Cleantechica - Tesla Megapack, Powerpack, & Powerwall Battery Storage Prices Per KWh](#)

World energy consumption is 583.9 Exajoule annually or 4.8 EJ per 3 days \approx 1,330 TWh (1 EJ \approx 278 TWh).

1,330 TWh * \$300/kWh = \$399 trillion.

[BP Statistical Review of World Energy 2020](#)

Global annual GDP is about \$87 trillion.

[World Bank Data](#)

³ Oil, coal, and natural gas provided over 80% of the global energy consumed in 2019.

[BP Statistical Review of World Energy 2020](#)

As of January 2021, China is planning or constructing over 200 new coal-fired power plants with a combined capacity of over 158 GW.

[Global energy Monitor - Global Coal Plant Tracker](#)

[America's Power - China's Coal Fleet Continues to Grow](#)

The largest increase in energy consumption is projected to come from non-OECD countries, but this might be underestimating future growth potential for the poorest regions in Africa.

[U.S. EIA International Energy Outlook 2019 reference case](#)

How important is an industry that produces low-cost, reliable energy for billions of people? If you care about human life, nothing is more important. Energy is the industry that powers every other industry. The lower cost energy is, the lower cost everything is.

Low-cost, reliable energy enables billions of people to enjoy the miracle of modern machines that make us productive and prosperous--such as the oil-based agricultural machines that enable one modern farmer to do the work it used to take hundreds of farmers to do.

Low-cost, reliable energy produced by the fossil fuel industry has made humanity so productive that since 1980, the fraction of people living in extreme poverty--less than \$2 a day--has gone from more than 4 in 10 to less than 1 in 10.⁴

While billions of people today get low-cost, reliable energy from the fossil fuel industry, billions more need it. For example, there are 800 million people who have no electricity and 2.6 billion people are still using wood or dung for heating and cooking. 4.5 billion live on less than \$10/day.⁵

The global leader of the fossil fuel industry is the US oil and gas industry, which, through incredible innovation, has become a world leader in producing oil--the essential fuel for mobility--and natural gas, an amazing fuel for electricity, industrial heat, and residential heat.⁶

The US oil and gas industry has helped billions of people climb out of poverty. What could be a more positive impact on the world? And yet so few in our media and government ever even talk about this impact, denigrating this life-giving industry as "polluters."

What about the idea that the oil and gas industry should be condemned for the CO2 emissions that are supposedly causing a climate crisis? This is another example of bad thinking--wildly exaggerating negative impacts and ignoring positive impacts.

When you hear scary claims about a "climate crisis," keep in mind that climate catastrophists have been claiming climate crisis for 40 years. For example, President Obama's science advisor John Holdren predicted in the 1980s that we could have up to 1 billion climate deaths today.⁷

After 40 years of "climate crisis" predictions by climate catastrophists, human beings are safer than ever from climate. In fact, the rate of climate disaster deaths--deaths from extreme

⁴ [World Bank Data - Poverty headcount ratio at \\$1.90 a day \(2011 PPP\) \(% of population\)](#)

⁵ [IEA - Access to affordable, reliable, sustainable and modern energy for all](#)
[Our World in Data - Global poverty in an unequal world: Who is considered poor in a rich country? And what does this mean for our understanding of global poverty?](#)

⁶ [Alex Epstein - Talking Points on Fracking](#)

⁷ "As University of California physicist John Holdren has said, it is possible that carbon-dioxide climate-induced famines could kill as many as a billion people before the year 2020."
Paul Ehrlich, *The Machinery of Nature* (New York: Simon & Schuster, 1986), 274.

temperatures, droughts, wildfires, storms, and floods--has decreased by *98%* over the last century.⁸

Fossil fuels were supposed to make climate far more dangerous in the last 40 years but they have actually made it far safer by providing low-cost energy for the amazing machines that protect us against storms, protect us against extreme temperatures, and alleviate drought.

Fossil fuels' CO2 emissions have contributed to the warming of the last 170 years, but that warming has been mild and manageable— 1 degree Celsius, mostly in the colder parts of the world. And life on Earth thrived when CO2 levels were at least 5 times higher than today's.⁹

Let me be clear: fossil fuels do impact the climate. Climate change is real. But “climate crisis” is a fiction that comes from wildly exaggerating fossil fuels' negative climate-related impacts and ignoring fossil fuels' massive positive climate-related impacts.

The fossil fuel industry, led by the US oil and gas industry, makes the world a far better place to live--and is needed by billions more. We don't have a moral obligation to shrink this industry, we have an obligation to liberate and expand it.

To restrict the fossil fuel industry is to oppress billions. As Indian energy researcher Vijay Jayaraj wrote to John Kerry: “you have asked India to reduce its dependency on these life-saving fossil fuels! But your policy recommendations...threaten the energy security and livelihood of my people.”¹⁰

The US oil and gas industry could do much more to help the world, while creating enormous opportunities here at home, if we liberate this heroic industry from the many unjust punishments our government imposes on it.

⁸ For every million people on earth, annual deaths from climate-related causes (extreme temperature, drought, flood, storms, wildfires) declined 98%--from an average of 247 per year during the 1920s to 2.5 in per year during the 2010s. Data on disaster deaths come from EM-DAT, CRED / UCLouvain, Brussels, Belgium - www.emdat.be (D. Guha-Sapir). Population estimates for the 1920s from the [Maddison Database 2010](#) come from the Groningen Growth and Development Centre, Faculty of Economics and Business at University of Groningen. For years not shown, the population is assumed to have grown at a steady rate. Latest population estimates from [World Bank Data](#).

[Bjorn Lomborg - Welfare in the 21st century: Increasing development, reducing inequality, the impact of climate change, and the cost of climate policies](#)

⁹ The decadal smoothed data from the UK Met Office HadCRUT4 dataset shows an increase of 0.974°C between 1850 and 2019.

[UK Met Office HadCRUT4 dataset](#)

“The best estimate of CO2 concentration in the global atmosphere 540 million years ago is 7,000 ppm, with a wide margin of error.”

[Patrick Moore - THE POSITIVE IMPACT OF HUMAN CO2 EMISSIONS ON THE SURVIVAL OF LIFE ON EARTH](#)

¹⁰ [Vijay Jayaraj - An Open Letter to John Kerry from People Living in Energy Poverty](#)

The focus of this hearing is the alleged unfair preferences that the US oil and gas industry gets. But if we look at the full impact of our energy and environmental policies, it is clear that our policies unjustly punish the oil and gas industry, harming America and the world.

The oil and gas industry is penalized via exorbitant subsidies for solar and wind, mandates for solar and wind, unfair payment policies for solar and wind, and numerous prohibitions on development.

Consider subsidies. The proper way to measure energy subsidies is: How much taxpayer money does the government pay per unit of energy? Every per-unit analysis using data from the US Energy Information Administration is clear: solar and wind get dozens of times more subsidies than fossil fuels.

For example, a comprehensive analysis of federal subsidies per unit of electricity generated from 2010-2019 found that solar got 211 times more subsidies than natural gas and wind got 48 times more subsidies than natural gas.¹¹

Claims that fossil fuels get more subsidies than solar/wind involve many distortions, such as using "total subsidies," not per-unit subsidies. By that logic Walmart is more expensive than Nordstrom because Walmart has more total revenue than Nordstrom.

Or take mandates. Dozens of states, including my home state of California, mandate that we use unreliable wind and solar electricity at exorbitant cost--no matter how much more expensive than natural gas it is. These mandates are leading us to shut down natural gas and nuclear plants, making blackouts more and more likely every year.¹²

Oil and gas companies are also penalized by unfair payment policies that force consumers to pay the same amount of money for unreliable solar and wind electricity as they do for reliable natural gas electricity. That's like paying the same wage to someone who only shows up to work a third of the time, and someone who has never missed a day in 5 years.

¹¹ [Texas Public Policy Foundation - Federal Energy Subsidies and Support from 2010 to 2019 \(p.13\)](#)

"Despite renewable energy receiving almost half the federal subsidies, EIA reported that fossil energy in the form of coal, oil, natural gas and natural gas plant liquids made up 78.1 percent of primary energy production in FY 2016.

...

In FY 2016, certain tax provisions related to oil and natural gas yielded positive revenue flow for the government, resulting in a negative net subsidy of \$773 million for oil and natural gas, based on estimates from the U.S. Department of Treasury."

[Institute for Energy Research - EIA Report: Renewable Energy Still Dominates Energy Subsidies](#)
[Terry Dinan - U.S. House of Representatives testimony, 2017 \(p. 4\)](#)

¹² More US nuclear power capacity is scheduled to go offline than coal power capacity in 2021.
[U.S. Energy Information Administration - Nuclear and coal will account for majority of U.S. generating capacity retirements in 2021](#)

Finally, the oil and gas industry is penalized by anti-development policies--including those on federal lands. We have already seen this year that the Federal government has given itself the power to shut down a major pipeline project and shut down all new leasing on Federal lands. Such punishments to oil and gas companies make it harder and harder for them to develop.¹³

One of the policies at issue in this hearing is whether the government should increase the onshore royalty rate of 12.5% to 18.75%. But this is exactly the wrong direction. What the government should be focused on is liberating development on Federal lands.

Drilling on Federal lands already has huge costs that don't exist on private or State lands. It can be stopped at the stroke of a pen. Even when drilling is approved, the approval takes far longer on Federal lands than on private or State lands.

Now, many elected officials, including those complaining about the 12.5% royalty rate, say we should ban oil and gas leasing forever. Well, if you ban it forever that's a royalty rate of 0%--which means huge tax losses. In 2019 it would have meant \$8.6 billion in lost taxes.¹⁴

That's just the lost royalties from federal lands. Economic damage from suffocating the oil and gas industry would be much higher. Industry estimates show that just a federal ban would cost hundreds of thousands of jobs, hundreds of billions in GDP, and half a trillion dollars sent to foreign suppliers.¹⁵

Everything we do to punish oil and gas in this country makes our energy more expensive and moves it to other countries, depriving Americans of job opportunities.

This Administration and many in Congress assure us that their fossil fuel elimination policies will create millions of well-paying "green jobs"--far more than will be destroyed in the fossil fuel industry. This is impossible.

A largely solar-and wind-based energy system will necessarily destroy far more well-paying US jobs than it creates because the "green jobs" will be 1) far less productive, 2) largely in China, and 3) cause job losses in other industries via skyrocketing energy prices.

Reason #1 why this Administration's energy policies will destroy productive US jobs: "green jobs" are far less productive than the fossil fuel jobs that Biden is destroying--so they cannot possibly pay as well.

¹³ [S&P Global - Biden issues broad moratorium on oil and gas leases on federal lands and waters](#)
[The White House - Executive Order on Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis](#)

¹⁴ [Office of Natural Resources Revenue](#)

¹⁵ [API - New Analysis Shows Ban On Leasing And Development On Federal Lands And Waters Would Threaten U.S. Energy Security, American Jobs And Environmental Progress](#)

The only way well-paying jobs are sustainable in the long-term is if they are highly productive. For example, the reason US oil-and-gas extraction jobs pay very well is that they produce an average of \$2 million per worker annually. Nothing in wind or solar can compare.¹⁶

*Reason #2 why this Administration's energy policies will destroy productive US jobs: "green jobs" mostly exist in China, which has a huge competitive advantage in mining, processing, and manufacturing.*¹⁷

The main jobs involved in solar and wind energy are mining jobs (to get the raw materials), processing jobs (to transform the raw materials into valuable form) and manufacturing jobs (to make solar panels and wind turbine components). Those jobs exist largely in China.¹⁸

China's dominance of "green energy" is due to a combination of vices (low environmental standards, human rights abuses) and virtues (lower energy costs, valuing mining and manufacturing). The anti-mining, anti-fossil fuel Biden administration will make us even less competitive.¹⁹

Consider Tesla's "green jobs" debacle in Buffalo. Tesla got almost \$1 billion plus artificially low electricity rates (at other customers' expense) in exchange for a promise of 1460 jobs--that's over \$650,000 a job! This kind of welfare work is totally unsustainable.²⁰

¹⁶ In 2019 the US oil and gas extraction industry employed over 143,000 people (12 month arithmetic average) according to the [Bureau of Labor Statistics](#). This workforce produced an estimated [4.49 billion bbl of oil and condensate](#) and [40,892,458 million cf of natural gas](#) in 2019.

At an average price of [\\$40 per bbl](#), the oil had a market value of \$179 billion.

At an average export price of [\\$3 per Mcf](#), the gas had a market value of \$122 billion.

This means the workforce of the US oil & gas sector created about \$2 million per worker annually.

¹⁷ China's primary energy consumption from coal, oil, and natural gas was over 85% of the total in 2019.

[BP Statistical Review of World Energy 2020](#)

China has a tight grip on many critical minerals in the rare earth category, controlling the mining of a large share and processing of close to 100% of them.

[Power Hour - Maxwell Goldberg on Our Dangerous Material Dependence on China](#)

[Investingnews.com - 10 Top Countries for Rare Earth Metal Production](#)

[Defensenews.com - The collapse of American rare earth mining – and lessons learned](#)

In 2019 more than 8 times as much solar PV module capacity was imported as manufactured in the US. Most of the US imports come from Southeast Asia and China has a tight grip on key mineral production, refining, and across the supply chains of components.

[U.S. Energy Information Administration - Annual Solar Photovoltaic Module Shipments Report](#)

[U.S. Energy Information Administration - U.S. imports of solar photovoltaic modules mainly come from Asia](#)

¹⁸ [Mark P. Mills - Green Energy's Overseas Dependence](#)

[Mark P. Mills - If You Want 'Renewable Energy,' Get Ready to Dig](#)

¹⁹ Alaska's Pebble mining project, originally discovered in 1988. The deposit features high yields in gold, copper, and other crucial metals. After many years of struggle and re-planning to accommodate environmentalist concerns, the project is now abandoned.

[Mining Technology - The end of the road for Alaska's Pebble Mine project](#)

²⁰ [The Buffalo News - Tesla's Buffalo plant gets \\$884 million write-down](#)

New York state has an average industrial electricity rate of 5.61 cents per kWh, 17.6% lower than the US average for states because of its cross-subsidized ReCharge program. All other sector rates in NY are significantly higher than the

Now that Joe Biden is destroying US fossil fuel projects, Climate envoy John Kerry says the unemployed workers "can be the people that go to work to make the solar panels." But solar panel makers will remain in China--because China's mines and factories are cheaply powered by fossil fuels.²¹

Reason #3 why Biden's energy policies will destroy productive US jobs: by making American energy unaffordable and unreliable, it will destroy American industry and with it, American jobs.

The biggest cost of "green jobs" is unaffordable and unreliable energy. Because unreliable solar and wind can't replace our reliable power plants, they always add costs to the grid. And if we try, like CA and TX, to cut costs by closing reliable power plants, we get blackouts.²²

By driving up industrial energy costs, Biden's "green energy jobs" will make every American-made product more expensive and every American company less competitive. That means more productive jobs lost to other countries where energy costs less and is more reliable.

For a preview of what this Administration's "green energy jobs" will do to American industry, consider rising "green joblessness" in Europe and Australia. Like the workers at the Australian recycling company that, after 37 profitable years, went under when "green" policies doubled power costs.²³

This Administration's policies, by shifting us from productive, America-centered energy production to unproductive, China-centered energy production, would be the largest destroyer of productive jobs in American history. It's not a "green jobs" policy, it's a "green joblessness" policy.

Penalizing US oil and gas even more than we already do will harm America and harm most of the world. The only people it won't harm are the leaders of dictatorships that seek to overtake America, such as China.

China has a clear strategy of running its economy on fossil fuels, while encouraging others to run on inferior, unreliable solar and wind--that is made using Chinese fossil fuels, which produce 85% of Chinese energy.²⁴

US average.

[ReCharge NY](#)

[Politico - For some users, cheap electricity in high-priced New York](#)

[U.S. energy Information Administration - Electric Power Annual](#)

²¹ [David Wojick - CHINA LOVES COAL FAR MORE THAN WIND](#)

²² [Alex Epstein - Talking Points on the Texas Electricity Crisis](#)

[Alex Epstein - Talking Points on California Blackouts](#)

²³ [Alex Epstein - Talking Points on Green Energy Jobs](#)

²⁴ China's primary energy consumption from coal, oil, and natural gas was over 85% of the total in 2019.

[BP Statistical Review of World Energy 2020](#)

China's electricity grid is overwhelmingly low-cost, reliable coal--a major reason why China generates 5 times more industrial electricity than we do. In 2020 China added 38 GW of coal plants and has 247 GW²⁵ (enough to power 3 Texas) in development. All designed to last 40+ years.²⁶

In 2020 they imported record amounts of oil--and announced a 25-year partnership with Iran to get more oil. In just the next 4 years China is planning 15,000 miles of new oil/gas pipelines--enough to travel halfway around the world--along with new oil refineries and new gas processing facilities.²⁷

America is not being a leader by punishing our ultra-productive oil and gas industry and rewarding the China-based, unreliable solar-and-wind industry. We are being a sucker--a sucker whose economy and security will collapse.

It's not too late to change course. If we liberate every energy industry, including oil, gas, coal, and nuclear, America can make the world a better place to live--and continue being a prosperous and secure country for generations to come. I welcome your questions.

²⁵ <https://www.wsj.com/articles/how-to-add-gas-to-u-s-china-climate-cooperation-11619402874#:~:text=In%20early%202021%2C%20China%20had,of%20Germany's%20entire%20coal%20fleet>

²⁶ [David Wojick - CHINA LOVES COAL FAR MORE THAN WIND](#)

²⁷ [Reuters - China's 2020 crude oil imports hit record on stockpiling, new refineries](#)
[World Oil - China inks 25-year oil investment deal with Iran, straining U.S. ties](#)