

an exam and we would write answers about what the lessons were that we learned from the books.

This reading time helped us to develop our personal and interpersonal skills. Sometimes we may tend to be shy or sometimes it's hard to express ourselves. But through Shakespeare, through *Don Quixote*, other authors—I remember Albert Camus as one that we read and Homer from the Greek culture. We had to understand their visions in that time, which were challenges. And we were analyzing, in the classes, how we can take it into the current stage.

In 10 years? In 50 years?

For the next ten years, I would really like to promote more programs for graduate students. I know sometimes in our countries the educational system is not created for all of us to go for graduate education. But I'll be very happy if at least, from the people who graduate with a bachelor's, at least half, or 20% or 30%, can go for a master's degree, because we end up [with] very few people doing a Ph.D.

And it's not that it's hard—it's just consistency and being disciplined. At least, we must help people to develop their talents. To see whether you're good doing it, and how you can adjust or contribute to the world. And also, to see policy makers adjusting their educational plans, maybe for more energy topics. Because, hearing

the opinions of many people, more now expressing more positive thoughts about nuclear energy. Not everyone shares the same opinion. But at least they can go through it; they can understand what is nuclear, or how they can adjust to many other energy sources to create sustainability in all the world.

I think that will be the plan for the next 10 years. And if every other student can have the opportunity, as I had, to go to Korea or come to China or even in your own country, just to keep developing your talents. Maybe create a system of scholarships for everyone, to develop their abilities.

For the next 50 years, I'll be very happy if we can reach fusion, the fusion projects, and to see in more countries, an economy where everyone can have a perfect balance of energy. There are still a lot of countries, like African countries or Asian countries, where they don't have access to electricity or water. Those are essential services for having a quality of life. If we cannot have electricity, we cannot learn, you cannot use Internet, you cannot even have access to a smartphone.

For some people it is a big dream to have this opportunity. Of course, we have the privilege to have it in our daily life. At least everyone should have the available tools in the next 50 years to keep developing ourselves, and create this synergy and these projects to keep developing technologies of their own countries.

Paul Driessen

Biden/Ocasio-Cortez Green New Deal Fraud: Unsustainable, Unaffordable, Eco-Destructive, Carbon-Colonialist

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Paul Driessen

Schiller Institute

Not Rules Benefiting the Few!"

Good afternoon! It's an honor to join you today and I look forward to engaging with you more personally during the Q&A.

The proposed Biden Green New Deal is so all-encompassing, deceptive and destructive, we could spend weeks discussing it. Just addressing the junk science and useless climate models behind it would take days. So, this afternoon, I'm going to focus on six myths or scams about

fossil fuels, carbon dioxide, and supposedly clean, green renewable wind and solar, and battery energy.

Green New Deal Scam No. 1

Fossil fuels, coal, oil and natural gas are evil, we need to get rid of them, right now, without resorting to nuclear power, or damming more rivers or hydroelectric power.

What a crazy idea! Fossil fuels built the United States and the developed world. They're the foundation for our industries, jobs, living standards, revenues, healthcare, and countless other social, economic and environmental benefits. They still account for over 80% of America's and the world's total energy. To suggest that the United States could, or should, make them disappear and somehow replace them with renewable energy is sheer insanity and fantasy.

Green New Deal Scam No. 2

Carbon dioxide is poisonous, an existential threat to humanity and planet.

Absolutely ridiculous. Carbon dioxide is the miracle molecule, the gas of life! Yes, it comes from burning fossil fuels. But it also is what humans and animals exhale and what plants absorb and use to grow and release oxygen. CO₂ or carbon dioxide makes life on Earth possible. More CO₂ in the atmosphere enables plants to grow better and faster, even under adverse conditions, like limited water, hotter air temperatures, and insect and other infestations. These enhanced rates of photosynthesis and biomass production occur for virtually every kind of plant, every part of the plant, in every ecosystem, and on every continent.

Higher atmospheric CO₂ levels mean higher crop yields, so that more people have greater quantities of nutritious food from less land, with less water. Higher levels let plants absorb carbon dioxide through smaller pores in plant tissues, improving water use efficiency and helping to green desert areas, like the Sahara.

By contrast, if we had to feed the world and replace oil and natural gas fuels and petrochemical feedstocks with biofuels, we'd have to plant biofuel crops on *millions of acres*, that are currently food-crop fallow, scenic, and wildlife habitat lands. Hundreds of plant and animal species would simply disappear.

These enormous benefits vastly overwhelm any

conceivable harm from carbon dioxide's tiny role in natural climate change and extreme weather.

Green New Deal Scam No. 3

We can easily replace fossil fuels with renewable energy.

Not a chance! Wind and sunlight absolutely are clean, green, renewable, and sustainable, but *harnessing* them to meet humanity's huge and growing energy needs *is not*. Harnessing them requires minds, lands and raw materials that are anything but renewable, using fuels and methods that are absolutely *not* clean, green, ecological or sustainable.

President Biden, Miss Ocasio-Cortez, and their political media and corporate allies, want the United States to have 80% hydrocarbon-free electricity gener-



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Fossil fuels account for over 80% of the world's energy. Shown here is the Francisco I. Madero Refinery, one of six in Mexico.

ation by 2030, and 100% by 2035. They want to totally eliminate fossil fuels from all sectors of the U.S. economy by 2050. They want to replace all reliable, dispatchable, affordable coal, oil and natural gas energy, with expensive, intermittent, weather-dependent, wind and solar power.

Their Green New Deal requires replacing coal and natural gas for generating electricity, gasoline and diesel for powering vehicles; natural gas for smelting and manufacturing; natural gas for cooking, heating, and water heating in homes, hospitals, schools, and factories, and businesses of all kinds. Together, this would mean the nation's annual electricity requirement would skyrocket, from about 2.7 billion MW-hours, which is the fossil fuel portion of total U.S. electricity generation in 2018, to almost 7.5 billion MW-hours a year by 2050. Substantial additional generation would be re-

quired to constantly recharge backup batteries for windless, sunless days, and safeguard society against cyberattacks and blackouts.

Generating all that electricity without new nuclear and hydroelectric plants would require tens of thousands of 800-foot tall offshore wind turbines, hundreds of thousands, maybe even millions of somewhat smaller onshore turbines, and billions of solar panels. Backing up sufficient nationwide electricity for even one week of windless, sunless days, would involve well over a billion half-ton battery modules, like those in Tesla cars, so that blackouts don't shut down our economy and lives. Connecting all those facilities to energy dependent communities, industrial centers and data hubs would require thousands of miles of new underwater and onshore transmission lines.

These are incredible numbers, to be sure, but that's because wind and solar generate electricity only 25-50% of the year in the *best* U.S. locations, and less than 33% on average nationwide. It's because the more wind and solar electricity we need, the more we have to put turbines and panels in lower-quality areas, where they might generate power only 15-20% of the time. Hundreds of millions of acres would be impacted, a huge swath of the continental U.S.A.

Looking more closely at offshore wind energy, President Biden wants to install 30,000 MW of wind power off America's coasts by 2030. That's over 2,000 monstrous, 14 MW turbines. Even if they operated at full capacity, 24/7, these turbines wouldn't meet peak summer electricity needs for New York State, much less the entire U.S.A.

Just as crazy, in a Green New Deal United States, we'd have to throw out trillions of dollars' worth of still, perfectly good fossil fuel generating and industrial systems. Home furnaces, stoves and water heaters; gasoline and diesel vehicles; and other equipment that are far from the end of their useful lives, and replace them with electric versions. We'd also have to expand and upgrade home and business, community, state and national electrical systems to handle the added power demands and fast charge electric vehicles. That's more trillions of dollars, tens of thousands of dollars per family.

Even if wind and solar facilities avoided the most highly sensitive ecological areas, they would still disrupt or destroy scenic areas, croplands, and wildlife habitat. Turbine blades would kill millions of birds and bats. Vibration noise from offshore turbines would dis-

rupt whale and dolphin navigation and communication. Wind turbines would interfere with military and civilian air and sea radar and navigation. Their light flicker and infrasound would impair human sleep and health.

And what about the trash? Solar panels and wind turbine blades the length of football fields cannot be recycled: Where are we going to put them? Who's going to pay for it?

Green New Deal con artists simply sweep all of this right under the rug.

Green New Deal Scam No. 4

The metals, plastics, concrete, and other raw materials for all these wind turbines, solar panels, batteries, and power lines, would just be there, through a process best described as "materials acquisition for global industrial change," abbreviated as MAGIC, magic!

The problem is, there's no such thing as magic. Even the International Energy Agency has now finally admitted that manufacturing fossil fuel replacement technologies would require tens of billions of tons of nonrenewable iron, copper, aluminum, cobalt, lithium, rare earth elements, plastics, cement, and other materials. That would mean mining, crushing, processing, refining, and transporting, tens of billions of tons from thousands of mines, various ores of all different kinds, from thousands of mines and quarries, using gigantic gasoline and diesel equipment.

These fuel-intensive activities often employ hazardous chemicals and release toxic pollutants. They require enormous volumes of water, often in the world's most water-deprived regions. They cause acid-mine drainage, create mountains of waste, often result in vast lakes of toxic chemicals from refining the ores.

Foreign laws governing these operations are often well below U.S. standards. Wind, solar, battery, and electric vehicle technologies require far more metals and minerals than their fossil fuel counterparts: Electric cars, for example, require three times more copper than gasoline versions. Onshore wind turbines need 9 times more copper and other materials per megawatt than a modern gas-fired power generating plant. Offshore wind turbines require 14 times more materials. Just that initial Joe Biden offshore wind program would require nearly 110,000 tons of copper, plus millions of tons of other materials.

At an average of .44% copper in all types of copper ore deposits around the world today, that means just those initial 2,100 offshore wind turbines would require

mining and crushing and processing 25 million tons of copper ore, after removing some 40 million tons of overlying rock to reach the ore bodies.

Add in materials for solar panels, additional wind turbines, backup battery systems, subsea electrical cables, onshore transmission lines, electrical vehicles, electric heating systems, and other technologies to run the entire U.S.A. and the green energy transformation would require tens of billions of tons of metals and minerals, trillions of tons of ores, trillions of tons of overburden and thousands of mines, processing plants and factories.

The Green New Deal would require raw materials in excess of the entire world's current and foreseeable mining and processing capabilities. A global Green New Deal would probably require mining the entire galaxy!

Green New Deal Scam No. 5

The United States can outsource all this mining activity, mostly to China, probably, without compromising our national security or commitment to environmental protection and human rights.

Hogwash! The United States permits very little mining for the metals and minerals that are essential for the energy transformation that climate alarmists demand. Even worse, Mr. Biden, AOC (Alexandria Ocasio-Cortez), and their fanatical allies have made it clear that they intend to have nearly all of the Green New Deal's minerals extracted overseas, often by Chinese companies which also control the processing of many minerals mined in Africa, Asia, Russia, and Latin America; and the manufacturing of increased percentages of wind turbines, solar panels, and batteries.

The United States will go from being an exporter of oil, natural gas, and refined products in recent years, to being almost totally dependent on often unfriendly foreign sources, for the materials required for our energy, economy, manufacturing, living standards, health, communication, transportation and defense.

In addition, China and many of these other foreign countries do not apply U.S. laws and standards for environmental protection, pollution control, mined land reclamation, workplace safety, fair wages, child and slave labor, or human rights, which activists demand for clothing and coffee, but not for green energy.

Some 40,000 children as young as four years old, already toil with their parents in Democratic Republic of Congo mines for a few dollars a day, under constant threat of cave-ins, and exposure to toxic, radioactive, mud, dust, and water—just to meet today's cobalt needs, which would skyrocket under any Green New Deal.

The cobalt ore is sent to China for processing in plants with equally abominable safety and pollution conditions. They've been linked to alarming cancer, blood diseases, and other health problems. An enormous toxic dump for effluents from rare earth mining and processing in Inner Mongolia, has destroyed agriculture and created serious health issues for workers and residents. China also uses Uighur slave labor to



CGTN

The need for cobalt, lithium, and copper would skyrocket under any Green New Deal. Shown: mining copper and cobalt in the Democratic Republic of Congo.

build solar panels for sale to the United States. If there have been any calls for responsible sourcing of these critical materials, I sure haven't heard them.

Scam No. 6

Other countries will follow our lead, rapidly eradicate their fossil fuels and join America in preventing the heavily hyped, but phony climate catastrophe.

Fat chance! China, India and other major emerging economies are doing nothing of the sort. They're rapidly increasing their carbon-based fuel use and greenhouse gas emission to modernize, improve their people's living standards, and conduct the mining, processing and manufacturing needed to support our Green New Deal ambitions. That means, even if the United States *completely eliminated* its fossil fuel use and greenhouse gas emissions, there would be no global

emission benefits from doing so. But there'd be a lot of human rights, economic and ecological abuses, from this misguided Green New Deal fiasco.

Over the past decade, the United States actually significantly reduced its carbon dioxide emissions by replacing coal-fired capacity with natural gas-powered generation. Meanwhile, Asian and other countries opened new coal-fired power plants, in addition to those they already have in operation. In 2020 alone, China put 38,000 megawatts of new coal plants into operation. Beijing is also building, planning or financing more than 300 coal plants in Turkey, Vietnam, Indonesia, Egypt and other nations. African countries are planning to build more than 1,250 new coal-fired and gas-fired generating plants by 2030 or so, many financed by Chinese banks and built by Chinese companies because "woke" EU and U.S. banks and companies refuse to do so.

Coal still supplies 62% of electricity generation in India, the world's second largest coal user, after China. India and Russia plan to mine much more coal and build many more generating units in the coming years. Norway is planning to pump a lot more oil and natural gas; countless other countries have the same intentions and aspirations. Any American energy transformation would simply transfer emissions, sources, and other ecological impacts, from the United States to these and other countries. Worldwide fossil fuel use, greenhouse gas emissions, and pollution would increase significantly. That's eco-imperialism by the United States at its worst.

Even if we assume for the sake of argument that greenhouse gases are the primary factor controlling Earth's climate, there would thus be no climate or extreme weather benefits even from completely eliminating fossil fuel use in the United States, and attempting to replace that energy with wind, solar, battery, and bio-fuel power, at enormous, environmental, social and human costs.

Stand for the Truth

So, what should you do, and we do? Challenge these totalitarians. Refuse to be conned and bullied. Refuse to have your jobs, health, living standards, and environment compromised or destroyed. Persuade cities, counties and states to declare themselves fossil fuel sanctu-

aries, where Green New Deal mandates do not apply and will not be enforced; where wind and solar installations are prohibited, or strictly regulated under the same wildlife and environmental laws that apply to all other projects, including fossil fuel projects.

Tell cities, counties, states, and countries, to demand independent certification that wind turbine, solar panels, batteries, metal, and minerals have come from sources that did not involve child, slave, or forced labor, and were operated in full compliance with all U.S. environmental workplace safety, and human rights laws. Encourage cities, counties, states and public interest groups like the Schiller Institute and the Committee for a Constructive Tomorrow to file more lawsuits, or join other plaintiffs in their lawsuits to block climate change and other Green New Deal mandates and junk science.



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China and other major emerging economies are rapidly increasing carbon-based fuel use to improve their people's living standards today, while preparing to transition to nuclear fission and fusion tomorrow. Shown: a Chinese coal-fired power plant.

Demand Green New Deal mining, right here in the U.S.A. Not only will it create thousands of jobs and reduce our dependency on foreign sources for these critical metals and minerals, it's the ethical, responsible thing to do.

Above all, tell your legislators, regulators, climate activists and other Green New Dealers, "You first. You be the guinea pigs for the laws and policies you want to impose on us. You go 100% wind, solar and battery, and let us watch how it works for you and your families. You be the first to have your electricity cut off when there's a blackout and the last to have it turned back on. You pay the full cost of your climate and energy ambitions out of your own pockets, then come talk to us. We'll let you know if we're interested."

Thank you.