

# How the US Could Slash Its Carbon Emissions and Put the Fossil Fuel Industry Out of Business in America: An Interview With Energy Expert S. David Freeman

By John J. Berger, *Sustain Europe* U.S. Correspondent



S. David Freeman

**D**avid Freeman is one of the most knowledgeable energy and utility policy experts in the U.S. An attorney and engineer, Freeman was a top adviser to three American Presidents and to the governors of California, New York, and other states.

He also was the Chairman of the powerful Tennessee Valley Authority (TVA), a federally controlled corporation established in 1933 as part of President Franklin Roosevelt's New Deal. TVA provides electricity in seven states and operates dozens of power plants and dams generating 35,000 million watts of power for 10 million people.

While in the White House, where he was the nation's first national energy adviser under President Lyndon Johnson, Freeman was responsible for coordinating energy policy across the entire Federal government.

In that capacity, he recommended abolishing the U.S. Atomic Energy Commission and the creation instead of an independent energy department and a nuclear regulatory commission to invigilate the commercial nuclear industry. The recommendations, though blocked at the time, were later implemented.

Freeman also played an important role in the creation of the U.S. EPA.

Back in the private sector, Freeman directed a landmark energy policy study, *A Time to Choose*, through the Ford Foundation in 1974. It prepared the way for legislation that set the U.S. on the path of improving auto efficiency by instituting what is today commonly referred to as CAFÉ standards.\*

*A Time to Choose* also lay the groundwork for President Jimmy Carter's strong support for energy efficiency, and Freeman was instrumental in developing President Carter's energy policy. A symbol of Carter's support for clean energy and efficiency was his decision to put solar power collectors on the roof of the White House, which President Ronald Reagan later famously dismantled.

While at TVA, Freeman was responsible for

aggressively pursuing energy conservation and for stopping the construction of eight large and unnecessary multi-billion-dollar nuclear power plants, whose costs were skyrocketing.

He also led the effort to reduce caustic emissions from the utility's coal burning power plants, investing a billion dollars to do so over the objections of customers who bridled at even spending a fraction of a cent more for power to clean the region's air.

Under Freeman, TVA was the only U.S. utility that supported Congressional acid-rain legislation, which subsequently was adopted. (Before that, the usual practice at most U.S. utilities was to just spew sulfur dioxide out of tall stacks that simply dispersed the pollution and did nothing to reduce it.) We had learned, however, Freeman said, "that dilution was not the solution to pollution." During his tenure, he also launched solar power and electric vehicle initiatives.

After TVA, Freeman also ran the Los Angeles Department of Water and Power, The New York Power Authority, the Sacramento Municipal Utility District, and the Lower Colorado River Authority.

Today at the age of 93, Freeman, the son of early 20th century Jewish immigrants from Lithuania and Russia, is still observing Jewish holidays and traditions, but sports a jaunty cowboy hat and travels around the country to provide energy advice to utilities and to newspaper editorial board. As this August 28, 2019 telephone interview reflects, Freeman today is a bold and outspoken advocate of strong Federal mandates to force utilities, auto manufacturers, builders, and building owners to phase out their fossil fuel emissions within 20 years. He is not a proponent of carbon taxes, an idea strongly favoured by many environmentalists and economists.

\*Corporate Average Fuel Efficiency (CAFE) Standards.

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S. David Freeman in 1993 while invited as a guest to the White House by personal friend and 42<sup>nd</sup> President of the United States Bill Clinton

**John J. Berger: Energy-related CO2 emissions are still rising by about 1.3% globally every year for the past five years to 2018. How, in the United States, could we align our energy policy with enhanced climate objectives? What would the best way be to decarbonise the nation as quickly as possible?**

**David Freeman:** I think part of the problem is that we're using 170 IQs to solve a 128-IQ problem. The electric utility industry has a lifelong record of being told what to do by regulators and laws what to do. We have a long history of that.

Under Richard Nixon, where I worked as a liberal democrat, we passed the EPA.

And the EPA didn't put a tax on coal-fired power plants. [US EPA Administrator William J Ruckelshaus ordered them to put on scrubbers—the best available technology. That's the only thing that has made a difference. In California, we've passed laws that said that you have to have an increasing percentage of your electricity from greenhouse-gas-free sources. It's not hard.

We need to pass a law that says that every utility in this country must reduce their greenhouse gas emissions 5% of 2020 emissions every year, starting now, and until you get down to zero. The biggest problem with all of the so-called environmental activists now is they're focused on a big debate, whether it should be 2030 or 2040. They're not doing a damn thing in 2020, except in California and a few states, but even there, the pace is rather slow, if we're going to take the climatologists seriously.

The force of law must be used to require utilities to start now to reduce their greenhouse gas emissions at least 4 or 5% a year. The same reasoning has to be applied to the automobile industry. We need to tell them that the average of the cars that they produce each year, the greenhouse gas emissions have to go down 5% a year.

That means they have to have a larger and larger percentage of zero-emission cars until they get to 100%, and the same thing with new housing—we shouldn't be building any new housing that require greenhouse gases. We know what to do.

This is not a hard problem to solve. It is politically but we're not talking about what we need to do, which is to at least advocate. . . .

Now, I'm not stupid. I know that this Congress isn't going to pass the time of day, but if we don't ask for something that will get the job done, then we are guilty of being an intelligent denier. We have to have the courage of the young people and fight.

It might take a while, but if we don't fight for it, we'll never get it, and if we don't advocate it, we're not going to win this fight, and Mother Nature has not experienced any action on our part up to now. [Greenhouse gas emissions are] still going up, and no one is focusing on what we do in 2020. Now, I understand it won't pass in 2020, but unless we start putting the focus on what we do immediately, it ain't going to happen. It could happen in many of the states if we just advocated it.

**JJB: Do you think it's just a matter of advocacy, or do you think that we need to mobilize stakeholder groups, labour unions, medical professionals, construction workers, electrical workers, and constituency by constituency, talk to each stakeholder group about the potential benefits to them of a rapid decarbonisation program and see if we can get them to lean in, so to speak, and exert political muscle to make this politically possible?**

**SDF:** We should go about selling the program that will be proposed, but my problem is we're not proposing anything straightforward. People can understand. We don't need to put a tax on anything, and that's not going to get the job done. We're dealing with the electric power industry, which is in the habit of being regulated and where we pass laws in I think 20 states telling them what to do in a mild way, but now we got to focus on kick-starting this thing and making sure that we are on a path of reducing greenhouse gas emissions.

The place to start is a law that says all new power plants have to be zero emission and the existing fleet has to be reduced 4 or 5% a year. Why is no one advocating something that simple to explain? And also not telling people that those plants are going to be replaced by investments in solar, wind, and batteries that will reduce the cost of electricity over time compared to what we have now.

**Below:**  
S. David Freeman meets former United States President Jimmy Carter at the Oval Office in 1977 to brief him on his agenda at the Tennessee Valley Authority. The inscription reads: "To my friend David Freeman - Jimmy Carter, 5-18"

**Opposite page:**  
Alexandria Ocasio-Cortez unveils the Green New Deal at the Capitol

“These guys that have been a rich partner in building that greenhouse in the sky can go straight to hell, as far as I’m concerned, financially, and I want to put them out of business. That is an objective.

**JJB: I wonder what kind of responses you’ve received from the leaders of the major environmental organizations, for example, or from organized labour or from political figures? How have people you know responded to this idea?**

**SDF:** I’ve never spoken to an audience that didn’t applaud, cheer, and indicate support for what I’m saying, and then getting in their damn cars and airplanes and flying off and resuming their life. It’s because the political leadership. . . I mean, the Democratic Party leadership, will not even agree to a debate on climate. The fossil fuel industry still is feeding those people; it’s not just the Republicans.

Young AOC [New York Congresswoman Alexandria Ocasio Cortez] and the Sunrise Movement are all by themselves, really, in the Democratic Party. Even in the Democratic Party we do not have the leadership of this country dedicated to this. For example, [former U.S. Senator Joe] Biden doesn’t talk the way I’m talking. No one does, except Senator Bernie Sanders, and Bernie, you know, is written off by a lot of people.

**JJB: How about Washington Governor Jay Inslee?**

**SDF:** Inslee has a lot of comprehensive proposals and Jay is a friend of mine, but he’s a guy that wasted his time, unable to pass a damn carbon tax [in the state of Washington]. It is way too late to think that putting a tax which might increase the price of gasoline by 15 or 20 cents. . . it’s a joke if you’re serious about really listening to the climatologists and actually reducing greenhouse gases starting now. You know, people have tried to put a tax on energy going all the way back to Richard Nixon. Even Bill Clinton.

**JJB: If we did tax gasoline at several dollars per gallon, wouldn’t that have an appreciable effect in reducing the number of fossil fuel vehicles?**

**SDF:** It wouldn’t cause people to buy an electric car. It’s inadequate. The problem with a partial solution is if you passed it and people thought that was going to solve the problem, you’re doing more damage than good. When we had lead in toys, we didn’t think about putting a tax on toys with lead. We just outlawed it. We have not yet accepted the fact that fossil fuels are poisoning our environment and need to be outlawed. Quite frankly, that’s sort of fundamental, and I don’t think the Democratic Party, much less the Republican Party, has fully accepted that.



I’m not proposing some grandiose scheme that can’t be implemented like shutting down all the power plants today. The climatologists have said that we have 10, 15 years to get there. If we start now and reduce 5% a year, we’ll get there in 20 years.

**JJB: Well, David, I know that you’re focused mostly on the electric power industry, and you’ve also extended that analysis to the transportation industry, but how about let’s say the heavy industrial sector, the commercial sector, and . . .**

**SDF:** Most of the greenhouse gases are from transportations. Another fourth is from the electric sector, and if we cover electricity, if we cover transportation, and if we cover housing where we make the people that are heating their homes with oil and gas convert to electricity...

**JJB: How do we do that?**

**SDF:** By the force of law.

**JJB: In other words, phasing it out according to the same 5% a year?**

**SDF:** My plan would give people a 50% tax credit to help pay for the retrofitting [of existing homes] and all new homes would have to be zero. At the time of sale of an existing home, you would have to retrofit, and everybody would have to retrofitted by 20 years from now, and you provide a tax credit for that. So by the force of law, we can eliminate almost all of the fossil fuel use, and also, I don’t want to get into details, but we can make steel with electricity.

There’s a fundamental decision that we have not made, and our leaders are not trying to make this, and that is: we’ve got to decide that, putting cost aside, we’ve got to do this. And the beauty of it is that it’s not going to require increased cost to the consumer. It is going to require a massive exercise in capitalism.

We usually think of this as a sacrifice that’s going to cost more, but the truth is, we’ve invented a better mousetrap—the ability to harness the sun and the wind and use batteries to store it. This is a breakthrough that is far more important than with the steam engine or anything else in the last couple of hundred years. We now have a completely adequate supply of free energy. The only cost is the capital needed to build the plants, the solar panels and the windmills, and capital happens to be very cheap right now.

Instead of making all these damn excuses and using our IQs to ask all kind of complicated questions, if we just accept the fact that the modern day Edisons have given us a better energy supply, and as capitalists, we should invest our money into converting from what we got to what we could have, [but] the marketplace will never do it. We have to use the force of law. Until we understand that and advocate that, we’re playing with ourselves.

**JJB: In the example that you gave, where somebody who buys a building is going to have to retrofit it and is going to get tax credits, that may not work for somebody that has virtually no income or inadequate income to enjoy the tax credit. What other means can you make a person like that whole in this transaction?**

**SDF:** A tax credit can also be the equivalent of a cash payment to someone who doesn’t pay taxes. We have an earned income credit thing in this country, but the tax credit concept could be applied to everyone. . . . The problem is people don’t have the capital. It could

be that a green bank can just loan everybody the money. You can get into the details pretty quickly, and that’s what a 178-IQ guy does, and that’s why we failed to sell the basic idea.

But I can tell you from personal knowledge that in most parts of the country, an investment in a heat pump will pay off over time compared to the furnace they have now. The heat pumps now are very efficient, and so we have the technology, [and] certainly, the electric car is a lower-cost car. The electricity to run an electric car costs about 70 cents a gallon.

**JJB: So, on a lifecycle basis, these technologies are much cheaper, and the problem is the front-end cost. Would you please speak to the notion that maybe we should have, for example, a huge federal loan program or some other financing, like you suggested, a green bank . . . .**

**SDF:** Even if there were no climate problem, over 100 years, we will go that way, but the market operates much too slowly in this very capital-intensive field of energy, and therefore, we need to use the force of the law to make these monopoly-type companies go there at a pace that the climatologists tell us we must.

**JJB: Can you speak to the issue of subsidies that we’re now providing to the fossil fuel industry and also to the issue of these trillions and trillions of dollars in fossil fuel stranded assets? Internationally, it’s close to 8 trillion dollars in fossil fuel stranded assets.**

**SDF:** What do you mean when you say stranded?

**JJB: Let’s say oil refineries, or oil pipelines or ports that are designed for offloading tankers.**

**SDF:** Well, let me answer your second one first. We have got to put the fossil fuel people, the oil and gas people, and the coal people out of business. Of course, part. . . and that’s why AOC and her Green New Deal have got a good point. Money needs to be appropriated for a just transition so that these workers in these companies can be retrained, but right now, I say to the Exxons and the gas companies and all, you can read and write as well as I can. Start putting your



money into solar and wind, and stop investing in stuff that is poison.

If they want to keep investing in stuff that’s poison, they’re going to be put out of business, and I have no more sympathy for them than I do for somebody who owns a bunch of buggy whips and they’re not good anymore. I mean, our economy has always been a very vibrant one where a lot of people go out of business, and these guys that have been a rich partner in building that greenhouse in the sky can go straight to hell, as far as I’m concerned, financially, and I want to put them out of business. That is an objective. So that’s not a problem. That’s an objective.

**JJB: I was also wondering about these hundreds of billions of dollars of subsidies that we’re paying every single year to the fossil fuel industry.**

**SDF:** That’s a liberal rabbit trail to go after that. I want a positive program. I want to pass the laws and rebuild America and put a million people to work. I don’t care about their goddamn subsidy. We’re going to put them out of business. I don’t want to waste my political capital on that. I think the problem is that we’re not smart politically. We have a beautiful, simple message to sell. We’ve invented a better mousetrap, and the goddamn fossil fuel industry and the nuclear industry has got enough clout, and the marketplace is too slow, and they’re stopping it. We need to overcome all that with the force of law, implement it, save money, save the planet, and put millions of people to work.

**JJB: How do we build the political capital to make this happen—to take it from the realm of logic to the realm of praxis?**

**SDF:** We need to get with [Alexandria Ocasio Cortez and the Sunrise Movement] and support them and feed them this message, and there’s a call tonight, that’s what I’m trying to do. They are the future. I met with AOC’s think tank, and I’m trying to bring this point of view into the movement of the young people who will carry this fight.

**JJB: We’ve talked a lot about transportation, and we’ve talked about the electric utility sector. What are your thoughts about the need for liquid fuels for long-distance flight? We could use electricity for small planes and maybe even medium-sized planes, but what about hydrogen?**

**SDF:** The Russians at least had designs in the 1990s for airplanes that fly on hydrogen. Hydrogen is so much lighter than jet fuel. You can fly around the world nonstop in a hydrogen-powered airplane.

**JJB: A full-sized jet with, like, 100 passengers or 300 passengers?**

**SDF:** Yeah, but the issue is how do we get renewable hydrogen? One approach is that there is a lot of solar that can’t all be used, and rather than storing it, you can just use it to split water and make hydrogen, and so that’s not impossible, and I think that’s one approach. I do think you can shrink airplane travel to a very small percentage by building what I propose, what Bernie proposes—a new Railroad Electrification Authority (REA), that will go out and build a electric railroad system in America, just like Eisenhower built a damn highway system. If we had passenger trains to connect all of our cities, it would cut out more than half the airplane traffic, but people still want to fly, and I think that we can make enough hydrogen, We ought to give NASA [the National Aeronautics and

**We're building things that will bring in revenue. These things pay out. The money in the solar power plants are cost effective. The electric cars, when mass produced, are a cheaper car. Electric train, we'll get revenues for carrying the damn traffic. I mean, we're not talking about socialism. We're talking about capitalism.**

Space Administration] the job of designing airplanes that can fly on hydrogen, and give them a deadline just like we did going to the moon.

**JJB: That sounds like a terrific idea. What about safety concerns?**

**SDF:** Hydrogen is safer than gasoline. I've looked into this. The statistics are very clear that gasoline causes more deaths than hydrogen ever would.

**JJB: The idea would be to liquefy the hydrogen under pressure and then pump it into sort of tanks that could contain that pressure?**

**SDF:** Yeah, we have hydrogen tanks that are very safe. Ford actually built a car. It was the Model U, an SUV that's run on hydrogen. They built it 10, 15 years ago.

**JJB: Not a fuel cell vehicle?**



S. David Freeman hosts the former leader of the Soviet Union Mikhail Gorbachev at a water quality meeting during his tenure as the General Manager of the Los Angeles Department of Water and Power in 1999

**SDF:** No, a car that will run on hydrogen called the Model U, and they're engineers, and I worked with them and perfected hydrogen tanks that are very, very safe. The automobile companies are actually interested in the fuel cell car, and it can emerge as a competitor to the other electric cars.

**JJB: Returning to the subject of electric trains, we have them now, but the idea would be to build high-speed electric rail with the Railroad Electrification Administration?**

**SDF:** We do not have electric trains in this country anywhere, except maybe one little corridor. The country as a whole does not have electric trains. Why do you say that?

**JJB: Well, we use it for, let's say, the Bay Area Rapid Transit System [which is a heavy rail system] and we have light rail that's electrified. I didn't see that it has a technological obstacle. I thought we could have electric trains for years.**

**SDF:** That's kind of my point. There's electric trains all over Europe, all over Japan and in China, but not in the USA.

**JJB: We just have to do it, in other words.**

**SDF:** Right—and that's why we need an REA. We need the financial strength, and we need somebody that will make it happen. The existing railroads are very small companies, and they don't have the interest or the resources to build a rapid train system in this country.

**JJB: So how do we pay optimally for the upfront capital required for a national decarbonisation? Do we restructure the tax system or new taxes or deficit spending or just Congressional authorization?**

**SDF:** No. We're not building monuments. We're building things that will bring in revenue. These things pay out. The money in the solar power plants are cost effective. The electric cars, when mass produced, are a cheaper car. Electric train, we'll get revenues for carrying the damn traffic. I mean, we're not talking about socialism. We're talking about capitalism.

Now, it is true a new birth of public power would cut out the profits and get cheaper money maybe, but my green bank ought to provide 2% money to everybody. I've been in this business a long time. You know what the really cheap power today is? It's the dams that we built in the '30s and '40s. I ran the New York Power Authority at Niagara. I sold electricity for one cent a kilowatt-hour and I made 90% profit on it.

Let's say I had seven people up there and a huge array of hydropower comes out. Well, the solar and the wind are very similar to dams. It's almost all capital. Doesn't take any jobs to run a solar panel or a windmill, and so with cheap capital, it's just going to be lower in cost, and that's why a new burst of public power with public ownership would make it even cheaper, and so it kind of breaks my heart that we don't have leadership that understands that and trying to sell it.

**JJB: I mean, it seems like with 10-year treasuries at 1.2%, if you're going to lend money out at 2%, the green bank could actually be making money.**

**SDF:** Well, yeah.

**JJB: How much money, by the way, would you...**

**SDF:** How in the hell do you think we electrified rural America?

**JJB: How we did it? In the New Deal, the Rural Electrification Administration.**

**SDF:** By creating the REA and the organized co-ops, they had 2% loans, and you know, socialism lives in the reddest part of America. In rural America, the electric systems are almost all electric co-ops, which is pure socialism! So we need to just kind of chill out on the ideology here and recognize that this is not selling oranges and apples.

**JJB: David, if I am, the Secretary of the Treasury or somebody in Congress, and I decide that we ought to have a green bank, how much money do you want to capitalize it for the first year and for the first decade?**

**SDF:** Well, it needs to be capitalized at whatever levels that are needed to get this thing up and going. I mean, you know, the electric power industry is the most capital-intensive part of our economy to begin with. So we're talking about trillions of dollars. It needs to be capitalized at, I would say, at a couple of trillion dollars to start with, but we certainly don't have a shortage of capital. We have a shortage of... listen, if you want to avoid a recession, man, I can't think of a better way to do it than to get this ballgame going.

**JJB: What do you think about the call for a national mobilization based on the idea of a climate emergency?**

**SDF:** Well, that's up to the politicians. All I can do is suggest what we ought to be trying to sell. . . . I think we need to get a president elected that really wants to do this and he or she could figure out how to sell it. My job right now is to be sure that a package that will get the job done is laid out very plainly. I think it's easier to sell something on the basis that you're going to save money over time, and we're going to put millions of people to work, and by the way, we're also going to save the planet.

**JJB: Have you any thought about the numbers of people that we could put to work? Millions? Tens of millions, perhaps?**

**SDF:** I can't say, but all I know is that it takes a lot of people to build this, and these are good paying jobs. I think you can easily use the word millions per year. It depends on the build-up, but it could easily be tens of millions at the peak. Franklin Roosevelt didn't count the number of jobs before he built the dams. He built the dams, and the jobs were created.

**JJB: I'm really interested in the idea of a carbon credit for farmers who can sequester carbon in the soil, for example.**

**SDF:** That's part of my program. They get a 50% tax credit for investments in proper farming methods and for using farm equipment that is also zero greenhouse gas. You need to treat them the way you do the homeowners. I think tax credits, you call them carbon credits, are part of the program.

Indeed, I'm suggesting that we have a goal of planting a billion trees, and then we give each citizen a 10-dollar tax credit for every sizable tree they plant. I think that tree planting has got to be a huge thing. We need to plant billions of trees in this world, and the United States ought to start off by agreeing to plant a billion trees and get private citizens involved by giving them a—you call it a carbon credit for each tree they plant.

**JJB: By the way, in Ethiopia, they had a tree-planting day, and these were not big trees, but they planted 350 million trees in Ethiopia in a single day according to. . .**

**SDF:** After all is said and done, the fundamental thing is to accept the fact that we have not accepted the enormity of the revolutionary change in technology. We're still thinking in terms of satisfying market considerations, and we haven't decided that this is the equivalent of World War III, and we just got to do these things no matter what they cost, but the beauty is that, over time, they're going to save money. That thought process has not infiltrated the dialogue.

**JJB: Yeah. David, I sure appreciate your point of view here. I couldn't agree more, and I wish that it was a point of view that was resounding from the mountaintops and into the valleys.**

**SDF:** Well, you can help make it so, and you are, so good for you, okay?

**JJB: This is a win-win situation that it can be a huge economic boost and increase productivity and increase employment, increase GNP, and put things on a sustainable basis.**

Apart from directing the Ford Foundation study, [A Time to Choose: America's Energy Future](#) (discussed above), S. David Freeman wrote [Energy: the New Era, Winning Our Energy Independence: An Energy Insider Shows How](#), and [All Electric America](#). For more about S. David Freeman, see [The Green Cowboy: An Energetic Life](#) (Bloomington, Indiana: AuthorHouse, 2016).

John J. Berger, PhD. ([www.johnberger.com](http://www.johnberger.com)) is an energy and environmental policy specialist who has produced ten books on climate, energy, and natural resource topics. He is the author of [Climate Peril: The Intelligent Reader's Guide to the Climate Crisis](#), and [Climate Myths: The Campaign Against Climate Science](#), and is at work on a new book called [Transformation: Turning Climate Crisis Into Jobs and Prosperity](#).

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