Dr. Kelvin Kemm

An Engineer's Approach to Power and 'Renewables'

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Schiller Institute

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Twenty years ago, the world did not seem to have any energy problem. We didn't hear about all the snags we seem to hear about today. In fact, if we look back, we will find that currently the world is using double the amount of electricity it was using about 25 years ago. Twenty-five years, and electricity has doubled.

Now there seem to be all sorts of problems. Why is that? Is this because the scientists and engineers are not doing a good job? Why is it? Is it the case, that somebody else is involved? Henry Ford, further back than 25 years of course, was building cars, and he had a factory going. He didn't seem to have an energy problem. When NASA was launching spacecraft into space to the Moon, we didn't hear all the time about "there's not going to be enough electricity to drive the economy."

Politics Interfering with Science

We haven't had this problem until now. So, what is going on? It appears to be that politics is interfering with the decisions that scientists and engineers would be making.

Let us imagine another topic for a moment.

Let's take open heart surgery. Imagine now, if there was this type of involvement. Imagine if we had a G7 agenda item, deciding on open heart surgery, and the leaders of G7 are deciding how should surgeons remove hearts? How should surgeons cut arteries? Imagine if there was the equivalent of a COP26, everybody voting on heart surgery techniques. Surely, you'd find people saying, "Wait a minute, why don't you leave heart surgery to the cardiac surgeons, who know what they're doing? Tell them to do a good job, and then judge them afterwards."

Why aren't we telling the power engineers and scientists "Provide the electricity, and we will judge you." No, that's not happening. There seem to be energy problems all over the place, because there's political intrusion! Now why is there political intrusion like this? It's because decisions are being made on the basis of an argument that there is some climate issue involved. So, therefore there's something else. So, you're not saying to the scientists and engineers, "Fellows, go ahead and produce electricity in the most reliable way, at the best possible price." That's not happening. They're being told: "You have to produce energy using wind turbines. You've got to produce it using solar power."

But then you only get the Sun in the daytime. And what's more, you only get the Sun in the daytime, optimally, over a couple of hours straddling lunchtime. You only get less than 50% of the solar before morning tea break and after afternoon tea break. So even during the daytime, you don't get it all. So now what do you do at night if you've got a large solar investment? What do you do with wind power when the wind is not blowing?

Ah, then you come up with other solutions. You say, "Well, how about batteries? Why don't we come along and put in hydrogen systems? Why don't we come along and put in this "smart switching?" So, you have massive computerization, switching on and off, on and off, this turbine in, that turbine field out—this in, that out, and so on. All of the batteries, the hydrogen, the smart switching, smart grid, all this type of thing, is coming about now to fix the system, because the solar and the wind does not give adequate power.

I must emphasize, I'm not in the slightest bit anti-solar and wind as technologies. If you have a use for solar, like running a woodworking factory or something where you only need to use your large machines over

lunch time, and in the early morning, you're doing your drawings and your layouts, and in the afternoon, you're gluing and forming, and you can design a consumption that goes up at lunchtime, and down after, that's fine. Similarly, with wind: If you want to use wind to pump water, up into water tanks and things like that, I'm not opposed to them philosophically.

But when people tell you, you can run large electric trains across the country based on solar and wind, then I say, "Wait a minute, I'm not so happy about it."

So, what has happened? We've had this idea coming along, that we have to "save the planet" and "save the planet" means "from carbon dioxide." So, the carbon dioxide issue, now, is being determined by politicians. Supposedly, the CO_2 is warming the planet. And everybody seems to believe this, or very many people seem to believe it, because they read it in populist magazines, and Leonardo DiCaprio and people like that tell you that that's what he's fighting for as well, and so do other film stars.

Two Parameters of Electricity Production: Quantity and Availability

But is this true? So we have to say, "Why is it that we are seeing this proliferation of wind systems, solar systems, and then batteries, and then hydrogen now, and switching and computer controls, and all sorts of things now?" All to try and take a power supply that inherently looks like a range of mountains—trying to make it flat, so that it looks like the open plains. Because ideally, you want a flat energy source that you can rely on all of the time, 24 hours a day reliably—not something that may or may not be available.

I must say at this point, point out that electricity is sold in two different manners: One is the amount that you buy—that is measured in kilowatt-hours, in the case of big systems—megawatt-hours. But the other one is kilowatts, and that is how much is available, right now when you switch on. That's the service element.

If you ever see somebody say, "Oh, there's this new solar plant, it'll produce so many megawatt-hours per annum." It sounds impressive. And they say, "which will supply 20,000 houses" or something. They don't say to you only at lunchtime, when you don't need the lights. This is a completely false type of impression. You need to know how many kilowatt-hours can you get out of a system, but also how many kilowatts are available, when you want to turn the switch on. If you get up at midnight and you flip the switch, you expect a service; and the service, the power must be there, *now*.

Electricity is not just the megawatt-hours' quantity, like buying milk. If somebody says you buy 30 liters of milk in a month—here in Africa where I am, we buy our milk in liters; you fellows no doubt, buy pints over there in the U.S. But if somebody says, do you want 30 liters of milk per month, you say, "Great," on the assumption that that means a liter every day, not 10 liters on the fourth of the month, nothing for the next four days, five liters after that, nothing, then two liters, and so on. That is no good getting milk delivered that way. It's no good getting electricity delivered that way.

So, what is going on? This is supposedly to save CO_2 by cutting back on fossil fuel production, through coal, for example. Gas is not in the same bracket, but it's also a fossil fuel that produces other things, so it's an interim measure. But they want to act against the supposed problem of carbon dioxide.

Psychological Tricks of Climate Doomsayers

Now, say to yourself, you flip a coin 50 times. How many times do you expect it to be heads, and how many times do you expect it to be tails? The answer is, it'll come out 25 heads and 25 tails, if you do it long enough.

Why is it that somebody tells you, "We're getting global warming, and then all the results are going to be bad." In other words, you're going to get 50 heads in a row. We hear, "Oh, it's going to be dryer in the dry areas. Oh, it's going to be wetter in the wet areas. There's going to be floods in the wet areas. All the animals will die in the dry areas. This is going to get worse; that is going to get worse." It's like flipping 25 heads in a row.

Why don't we hear that if there's global warming, it means the dry areas will get some rain and the wet areas will get less rain, therefore, there'll be less floods; and overall, there'll be crops growing in places that couldn't grow crops before? That's the first clue to tell you that the people that keep punting this, might not be right.

Let me make it quite clear: There *is* global warming taking place. There's been about 1° Celsius warming in the last 150 years, which is since the time that Abraham Lincoln was President in the United States, about the same time as Queen Victoria was Queen in England, about the same time as the Crimean War. The industrial revolution starting in Europe also happened to start round about that period of time. So why is it, that every

time we hear that there's been some global warming in the last 150 years, the phrase is used "since the Industrial Age." The implication is it's *because* of the Industrial Age. They don't say it's because of Abraham Lincoln, or because of the Crimean War. So why do that? It's a psychological trick to imply that the Industrial Age has something to do with it.

It's not necessarily true at all. Yes, since the Industrial Age, there has been some extra carbon dioxide. But if you look at the amount of carbon dioxide that is being produced, you will find that a while ago, the concentration in the atmosphere was 0.03% of the total atmosphere. That's very, very little CO_2. Now, it has risen to 0.04%, a minute increase.

Is that causing global warming? I have my doubts. I really don't think so. In fact, if you look back at history, the temperature of the planet, you'll find that around the 1300-1400s there was a period, the "Medieval Warm Period," where grapes were grown in England. There were crops grown in Europe that can't grow now. The temperatures appear to have been warmer then, than they are now. After that the world plunged down into what is known in Europe as the "Little Ice Age." It went very cold. In fact, the Thames froze over to such a degree, that they were able to have ice fairs on the Thames, and they could ride up and down the river in horse-drawn carriages. You can't do that today.

This really is something that we need to think about. It's affecting society—people that have got small businesses, people that are running farms, people that are doing all sorts of things. They are part of the electricity system, in that electricity is the lifeblood of any country: Like a human being, if your blood stops flowing, you stop working. If the electricity stops flowing, the country will stop working. It's not something that you can allow the Greta Thunbergs of this world to go around, waving banners and so on, when African children are having to dig the cobalt out of the ground by hand to build the batteries that some want, because they want a power source that is seen to be politically palatable for them.

We really have to think a lot more. The so-called science is not settled, the way some of the politicians, like Al Gore and others like to stand up and say, in this superior type of manner. It's not. There's much more to this, than meets the eye.