

The Answer My Friend is NOT Blowing in the Wind II

By Joseph D'Aleo, CCM

Next week is Green Week on NBC, the GE network. GE has created a cleantech empire, having bought its way into wind, solar, and water in a big way with a belief that global warming offered a “huge opportunity”. Don't expect objective reporting from NBC or the GE owned Weather Channel on either climate change or energy. Their CEO Jeff Immelt is a member of the Obama administration as an advisor, a fact which will ensure the erroneous claim that carbon dioxide is a dangerous pollutant despite all the evidence emerging to the contrary. It will likely be worse than the ethanol debacle under Bush.

Though there is a place for renewables like solar and wind and geothermal, except for a few special places globally (like Iceland and maybe Yellowstone for geothermal, and the desert southwest for solar and wind), they are no more than supplemental sources.

I have for decades been a strong believer in conserving energy. I am all for innovation and cleaner burning fuels. I am old enough to recall the soot from burning coal in the big cities and the morning mixing down of sooty pollution from incinerators when the first mixing of the new day took place. We often had to brush the soot and particulates off windshields. I remember when cars gave off choking levels of hydrocarbons, nitrous oxides and carbon monoxide as well as particulates and we yearned for the day the internal combustion engine would burn clean and only gave off harmless water vapor and carbon dioxide. We got there. Then suddenly carbon dioxide was demonized thanks in part thanks to the efforts of [ENRON](#) looking for the next big opportunity after in the early 1990s Enron had helped establish the market for, and became the major trader in, EPA's \$20 billion-per-year sulphur dioxide cap-and-trade program, a story for another day.

The quest to reduce carbon dioxide emissions and greater efficiency led us to the ethanol debacle. California is now stopping the use of ethanol in their gasoline and that will gradually spread. It turns out, in addition to driving up the prices of food, it actually nets out less efficient than plain gasoline when considering the entire end to end processing and total emissions are up not down.

I support solar and understand the technology has improved to provide more energy from the sun even on partly cloudy days but it is expensive and though it makes a lot of sense in the desert, can be nothing more than a part-time supplemental energy source in the north where there is little sunshine in fall and winter and of course, the sun doesn't shine at night.

Today we are going to compile recent findings about another of the renewables - wind power, potentially another very expensive boondoggle, despite the T. Boone Pickens and GE hype.

SPAIN'S GREEN DEBACLE

The administration regularly mentions Spain as the model for where they want to take our country in terms of wind energy and “millions of green jobs”. Countries in Europe moved to wind energy faster so we can learn from their experience.

Very instructive is [the study](#) by Dr. Gabriel Calzada, an economics professor at Juan Carlos University in Madrid that found for every green job you create, you can count on 2.2 lost real jobs. AND only 1 in 10 green jobs are permanent. The study calculated that, since 2000, Spain spent \$774,000 to create each “green job”, including subsidies of more than \$1.3 million per wind industry job. It found that creating those jobs resulted in the destruction of nearly 113,000 jobs elsewhere in the economy, or 2.2 jobs destroyed for every “green job” created. Principally, jobs were lost in the fields of metallurgy, non-metallic mining and food processing, beverage and tobacco.

“The loss of jobs could be greater if you account for the amount of lost industry that moves out of the country due to higher energy prices,” Dr. Calzada said recently in an interview with Bloomberg News.

Ironically, as noted recently by the Institute for Energy Research, the U.S. Energy Information Administration (EIA) has calculated that Spain’s annual emissions of carbon dioxide have increased by nearly 50 percent since the launch of the subsidized “green jobs” program as conventional fossil fuel energy sources were needed in ready back up mode to keep electricity flowing when the wind abated. Wind is a very unsteady force.

“The price of a comprehensive energy rate, paid by the end consumer in Spain, would have to be increased 31 percent to begin to repay the historic debt generated by this rate deficit mainly produced by the subsidies to renewables, according to Spain’s energy regulator. Spanish citizens must therefore cope with either an increase of electricity rates or increased taxes (and public deficit), as will the U.S. if it follows Spain’s model,” the study found.

In the Wall Street Journal report [here](#) titled Green Joblessness, they conclude: Spanish policy shows that green dreams like renewable energy are achievable only through massive transfers of money from productive sectors to those seeking to get rich quick thanks to government mandates. And that the few jobs created greatly depend on maintaining impossible levels of growth. Even in Mr. Obama's Washington, you can't print enough greenbacks to pay for these green jobs.

Wind power operates at 20% efficiency, Shell oil found before they abandoned their offshore wind project off the UK. That compared to 85% for coal, gas, nuclear.

Britain’s wind farms have stopped working during the January 2009 cold snap due to lack of wind, it has emerged, as scientists claimed half the world’s energy could soon be from renewables. The Met Office said there has been an unusually long period of high pressure across the UK for the last couple of weeks, causing the cold snap and very little wind.

For weeks, much of the country suffered sub-zero (C) conditions with frozen rivers and lakes and even the sea in the south of England, at Sandbanks in Dorset. In the last few days temperatures in southern England plunged as low as 17.6F (-8C). Sources in the

energy industry say that the lack of wind has caused the country's wind farms to grind to a halt when more electricity than ever is needed for heating, forcing the grid to rely on back up from fossil fuels or other renewable energy sources.



Wind turbines near Liverpool, UK

John Constable, director of policy and research at the Renewable Energy Foundation, a think tank, said wind has been generating at a sixth of total capacity for much of a couple of weeks, dropping to almost zero at times. “This shows that wind provides very little firm, reliable capacity,” he said. “At times of high demand in cold weather there is a tendency for there to be no wind.” Power generator E.On said wind energy supplies dipped 60 per cent in the last couple of weeks, when compared to the last fortnight in December.

A spokesman said: “As a country we need to keep the lights on, reduce our environmental impact, and do that in the most affordable way for our customers. Sadly there is no single miracle cure to do that. “Renewables, such as wind, have a big part to play now and in the future but in order to guarantee a secure electricity supply it’s clear we need a mix of power stations including cleaner coal, new nuclear and gas.”



A UK [Telegraph story](#) in early December reported a report by the Committee on Climate Change (CCC), published in late fall in the UK, maintained that wind farms could play a major role in helping Britain cut its harmful carbon emissions by 34 per cent in 2020 and 80 per cent by 2050.

John Constable challenged this and said: "To generate 30 or 40 per cent of our electrical energy from wind power would present unmanageable and unaffordable difficulties at the present.

"The CCC's assertion to the contrary is simply out of step with the state of theoretical and empirical knowledge in the field. Betting on very heavy commitment to wind for carbon reduction is irrational and will result in the inevitable failure of our climate change policy. Wind has a role, but this role will be modest in scale."

A report by the House of Lords Economic Affairs Committee, published last month, also cast doubt on the merits of wind turbines.

The committee, headed by Lord Vallance of Tummel, said the Government was relying too heavily on wind to help it meet an EU target for the UK to generate 15 per cent of its electricity from renewable sources by 2020. The peers' report states: "An over-reliance on intermittent power generation, in pursuit of the target, could prove both costly and risky."

Instead, the report favoured the expansion of nuclear power and the development of carbon capture technology to allow "clean" coal fired power stations.

We have found the same here in the United States in areas that have tried wind power early. An Investor's Business Daily [editorial](#) reported "Because of the intermittent nature of wind, the Electric Reliability Council of Texas uses a figure of only 8.7% of wind power's installed capacity when determining available power during peak periods."

On cloudy and windless days, solar and wind are useless and require conventional power sources as backup. Output is not steady and cannot be increased on demand. You can't make the sun shine brighter or the wind blow harder during peak periods.

A February 27, 2008 Reuters story illustrated the point. Headlined "Loss Of Wind Causes Texas Power Grid Emergency," it told of an electric grid operator forced to curtail 1,100 megawatts of power to customers on just 10 minutes' notice. The wind simply stopped blowing.

Wind turbines generally operate at only 20% efficiency compared with 85% for coal, gas and nuclear plants. A single 1,000-megawatt nuclear power plant would generate more dependable power than 2,800 1.5-megawatt, occasionally operating wind turbines sitting on 175,000 acres.

Nuclear power is clean energy, and you wouldn't have to wait for a sunny or windy day to plug in your electric car. And the cost is another major issue.

A just published study by the Texas Public Policy Foundation, "Texas Wind Energy: Past, Present and Future," says that to achieve even modest amounts of wind energy would cost rate payers and taxpayers at least \$60 billion through 2025. That includes transmission costs, production costs, subsidies, tax breaks, economic disruption costs and grid-management costs.

Here in the United States, the night it was -50F in Maine, a new all-time state record for cold and tying the record for New England this past winter, the wind was calm. Often the hottest summer days find light or calm winds.



This [National Post story](#) reported Denmark most wind intensive country with 6000 turbines generating 19% of electricity from wind power. However, they have not been able to close A SINGLE fossil fuel plant AND to their dismay, 50% more electricity was needed to cover wind's unpredictability. Oh and CO2 emissions rose 36%.

Flemming Nissen, the head of development at West Danish generating company ELSAM (one of Denmark's largest energy utilities) tells us that "wind turbines do not reduce carbon dioxide emissions." The German experience is no different. Der Spiegel reports

that “Germany’s CO2 emissions haven’t been reduced by even a single gram,” and additional coal and gas-fired plants have been constructed to ensure reliable delivery.

Vaclav Klaus from the Czech Republic in his book “Blue Planet in Green Shackles” asked the question “Could the Czech Republic replace the power output from the Temelin nuclear power plant by wind?” Using conservative estimates the answer is yes but it would take 7,750 wind turbine power plants requiring 8.6 million tons of material and would cover a 413 mile long line of turbines 492 feet high, corresponding to a distance from Temelin in the southern Czech Republic to Brussels in Belgium or in the US, the distance from Concord, NH to Washington DC.

Speaking of New Hampshire, Dr. Fred Ward has calculated you could put a wind turbine on every hill in NH and not get half the power of one nuclear power plant.

Also on the negative side of the environmental ledger are adverse impacts of industrial wind turbines on birdlife and take a major toll on bats, voracious insect predators. Some environmental groups are fighting wind farms based on this issue, one in Georgia has fought an off-shore wind farm based on the threat to whales. In Oregon, some environmentalists are fighting getting transmission lines from the wind turbines to the grid because of disruption to the environment.

WIND AND SOLAR BUT NOT HERE

They oppose fossil fuels insisting on renewables but then fight their implementation. With regards to solar, you may recall recently Senator Diane Feinstein joined conservationists in opposing the [Mohave Desert solar project](#) because of what it might do to the aesthetics of the region and its tortoise population.

NO ONE TALKING ABOUT ENERGY STORAGE

The wind doesn’t always blow nor does the sun always shine. Renewable energy like wind or solar is not produced when needed, so storage is needed, and this is expensive. All the promoters of renewable energy ignore the need for storage. What is needed is a large-scale, efficient, low-cost technology that can store huge amounts of electrical energy for weeks or months. No suitable technology exists or has even been contemplated. Hydro-pumped storage is the best we have.

It is expensive - at least \$1500 /kW - and requires two very large storage lakes not far from each other and with one lake something like 700 m higher than the other. The losses are 25%. The cost, the losses, and the difficulty of finding a suitable site are insuperable barriers to large-scale adoption of hydro-pumped storage. So people who tell us that it is possible to run modern power systems from wind power, solar power and marine energy are not telling the truth.