

Dear Mr. Noyes,

I would like to provide additional comments to my letter of November 9th with regard to the offshore wind working group's study of options for Delaware offshore wind power. In particular I wish to address each of the supposed benefits of wind power.

Claim: Offshore wind power will create economic development.

Response: Assuming components are manufactured in the United States and that installation is made by American owned companies using American labor there are temporary jobs that would be created. However, the number of permanent maintenance jobs would be minimal.

The country of Spain has made a large investment in renewable energy. A study conducted by the University of Juan Carlos in Madrid found that renewable energy caused significant increases in the nation's electricity prices which forced energy intensive industry to relocate out of the country. For every 1 job created by green energy 2.2 were lost in the general economy. Subsidized green jobs were replacing unsubsidized jobs in the general economy. As a result of the last economic crisis Spain was forced to considerably scale back green energy subsidies since they were no longer affordable and the cost to the general economy was greater than the benefits.

Offshore wind power costs 3-400% more than power sourced from conventional power sources. Offshore wind power will replace lower cost conventional power which will reduce the purchasing power of Delaware residents. Higher cost electricity will make Delaware businesses less competitive. The two nations that have the highest reliance on wind power (Denmark and Germany) also have the highest average cost of electricity of all industrial nations. High prices of electricity in Europe have caused 'energy poverty, people can no longer afford the cost of rising energy prices. This is easily confirmed, simply Google "European Commission energy poverty".

In total, more jobs will be lost in Delaware due to higher cost electricity from offshore wind power than the handful of maintenance jobs created by the wind turbines.

Claim: Energy produced by the wind turbines is clean.

Response: Wind power will not replace any power plants that operate using conventional energy sources (gas, coal, hydro, nuclear). The reason for this is quite simple. Wind is not predictable nor does it blow all the time. Conventional power plants must remain to back up wind power when there is not sufficient wind. Often these plants must be run on spinning reserve, ready at a moments notice to produce power. When running on spinning reserve

conventional power plants consume fuel even though they are not producing electricity at the time. While some natural gas power plants can start up very quickly, these types of plants are much less efficient to operate and thus they produce more CO₂ per unit of energy.

When there is an abundance of wind there is no known energy storage technology that can store the extra power so it can be used at a later time. What is produced must be consumed immediately.

Wind power causes higher energy prices because the cost of power it produces is more expensive and conventional power plants must remain in place to back them up. The consumer pays to maintain and operate two power sources instead of just one.

Claim: Sea level is rising and there is more coastal flooding.

Response: Sea level has been rising for 20,000 years and since the end of the last ice age. The rate of sea level rise has not increased in over 150 years of observation. There is no observable increase in sea level rise that is attributed to mankind. The current rate of sea level rise is approximately three inches per century. According to NASA, there has been no measureable increase in sea level rise in the past two years. It is very easy to verify this information, simply Google “rate of sea level rise” and look at images.

There are many claims that the Arctic sea ice is melting and this will cause flooding. While there has been some reduction in Arctic sea ice since measurement began by satellite in 1979, 100% of sea ice in the Arctic is floating ice. The melting of floating ice cannot cause sea level to rise. This can be proven simply by filling a glass to the brim, half with ice and half with water. As the ice melts note that the water level does not change, nor does water spill out of the glass as it melts.

For sea level to rise ice on land must melt. 10% of the ice on land is in Greenland and 90% is in Antarctica. That the rate of sea level has not increased in over one and one half centuries of observation is evidence that the rate of land ice melt is not increasing. According to the Danish Meteorological Institute, considered the experts in Greenland ice measurement, the Greenland ice cap has been growing for several years and had near record ice growth within the past year.

As for Antarctica, NASA says that Antarctic ice gains exceed losses. Ice growth between 1992 and 2001 was 112 billion tons, and from 2003-2008 ice growth was 82 billion tons of new ice each year. This information is easily confirmed, simply Google “NASA report Antarctic ice gains exceed losses”.

Temperatures remain well below freezing in both Greenland and Antarctica for almost the entire year. There is no evidence that we can expect anything different in the coming years. Man has had no impact on sea level rise.

Claim: Delaware citizens have sacrificed their health for decades due to the reliance on fossil fuels to produce electricity.

Response: Air quality in the United States has been improving for decades. According to the EPA the six common air pollutants in the USA have declined 73% since 1970 and in spite of the population increasing 54% in this period. This information is easily confirmed using Google "EPA six common air pollutants in the USA". US air quality is significantly improved and in spite of rising population.

Some confuse CO₂ with air pollution. CO₂ is essential for life to exist on this planet. Something that is essential for life to exist cannot also be a pollutant. It is plant food. Plants cannot grow without CO₂. If there are no plants then there would be no animals. CO₂ levels today are among the lowest in the past 600 million years. The benefits of rising CO₂ are overlooked. Plants grow more quickly with rising CO₂. According to NASA the Earth is 8% greener than in 1980 due mostly to rising CO₂. Plants evolved in a period when CO₂ levels were significantly higher than today. With rising levels of CO₂ plants water management improves, they need less water. Much of the greening is in arid areas. There is less drought and record crop production. This is easily confirmed, simply Google "NASA CO₂ greening the planet".

One can learn about the effects of rising CO₂ by simply studying the past. CO₂ levels were 5 times greater than today in the dinosaur period which we all know had an explosion of life and biodiversity. There were also three ice ages with more CO₂ than today, one had fifteen times more, one with five times more. CO₂ has never been observed to be a driver of the climate in the geological record. To confirm this simply Google "geological record CO₂ and temperature".

CO₂ is a very weak warming agent. Its warming qualities are logarithmic, meaning the more CO₂ there is, the less warming it can cause. Most are unaware that rising CO₂, by itself, cannot possibly cause dangerous warming. For rising CO₂ to cause dangerous warming there must be positive feedbacks that would amplify the warming. The man made global warming theory is based on the prediction that slightly warming temperatures would cause increases in atmospheric humidity. Water vapor is a very powerful greenhouse gas and comprises 95% of such gasses. Observation shows that atmospheric water vapor is not increasing, in fact it is decreasing in the mid and upper levels of the atmosphere. Positive feedbacks have not been observed to exist in the geological past and when CO₂ levels were significantly greater than today. Absent positive feedbacks, it is impossible for rising CO₂ to cause warming much above 1 deg C. Much of this warming has already occurred.

If the CO2 warming theory was completely true adaptation would be the only reasonable action. The world is rapidly developing and most nations can only afford fossil fuel energy. Over 1,600 new coal fired power plants are now in the planning stages or under construction. Energy availability is often a matter of survival in these places. If the USA stopped emitting CO2 entirely our nation's output would easily be replaced in a matter of a few years by increases from the other nations such as India, China, and Malaysia.

While it is true that we must continue to find ways to produce more abundant and cleaner energy we must also be cautious that this investment makes sense. States that take action on their own will do nothing to change the global climate but can have very adverse effects on their local economy.

Offshore wind turbines that are highly visible from the shore will do little if anything to change the global climate but could have catastrophic impact on the local economy that is based largely on their being an unobstructed natural view of the ocean.

Sincerely

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