

**STATEMENT TO THE PENNSYLVANIA
ENVIRONMENTAL RESOURCES & ENERGY COMMITTEE MARCH 27, 2019**

Gregory R. Wrightstone

Geologist, Author and Expert Reviewer for the Intergovernmental Panel on Climate Change
(AR6)

I want to thank the Chairman and the Committee for the opportunity to provide my science and fact-based analysis on Governor Wolf's proposal to add the Keystone state to the Regional Greenhouse Gas Initiative (RGGI).

My qualifications include degrees in Geology from Waynesburg University (BS) and West Virginia University (MS). I am the author of a bestselling book on climate change, write weekly commentaries on the subject for national publications, and I was recently approved as an "Expert Reviewer of the Intergovernmental Panel on Climate Change" Sixth Assessment Report (AR6).

Governor Wolf's proposal to abate greenhouse gases in the state, as described in his Executive Order 2019-07, issued on October 3, would have serious ramifications for the state and its citizens. Because of this, the Governor and this Committee should make recommendations that are based on science and facts, not on a politically and media-driven narrative of the Keystone State facing imminent and catastrophic consequences from our actions.

My testimony today will focus on two issues:

- Justification presented within the Executive Order for this action
- Effects on temperature of proposed reduction in carbon dioxide (CO2)

I. Justifications for Implementation

Several negative impacts on the Commonwealth were listed in the Executive Order as justification for the increases in electricity costs proposed.

Claim: Current warming trends are expected to accelerate by 2050 and increase by 5.4 degrees by 2050.

Fact: There has been about 1.5 ° Fahrenheit increase in temperature since the early 20th century, but this trend of warming began nearly 200 years earlier. Since we only began emitting CO2 in earnest in the mid-20th century, those first 250 years of warming were necessarily naturally driven.

Fiction: The claim of recent accelerating temperature increase is categorically false as documented by data from the National Oceanic and Atmospheric Administration's US Climate Reference Network (USCRN) which is the gold standard for monitoring surface temperatures in the United States, having been established in 2003 in order to remove any "heat island" effects

from the records. There has been no statistically significant warming for the last 16 years (figure 1).

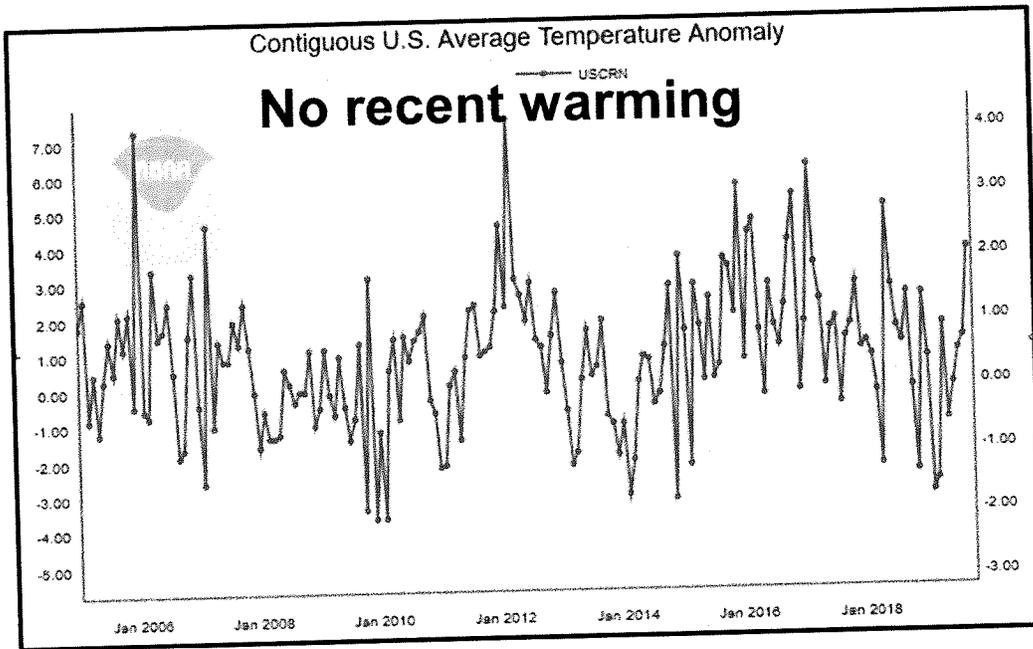


Figure 1 - US Climate Reference Network (USCRN) Accessed 10/12/19

Claim: Increasing precipitation due to man-made global warming is leading to an increase in extreme weather events and flooding

Fact: Precipitation in 2018 was the highest recorded in Pennsylvania and was the result of several unusual weather events, not a long-term overall increase in extreme weather.

Fiction: Review of NOAA data by decade (figure 2) show that large precipitation events peaked in the 1940s and 1950s and recent decades have seen near historic lows in these large rainfall events. The EPA's National Drought Severity Index (figure 3) shows zero increase in wet conditions in the lower 48 states over the last 100+ years.

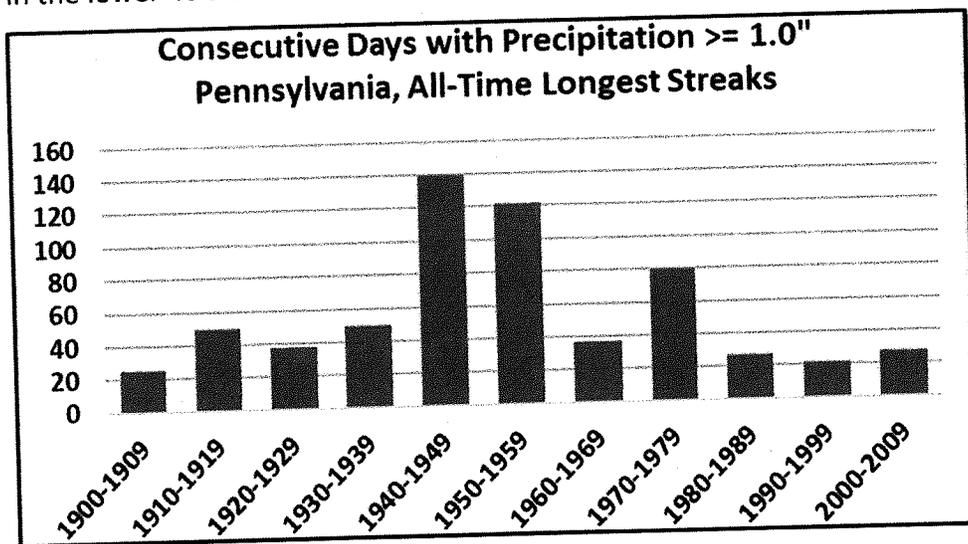


Figure 2 - All 721 PA weather stations NOAA NCDC 2018

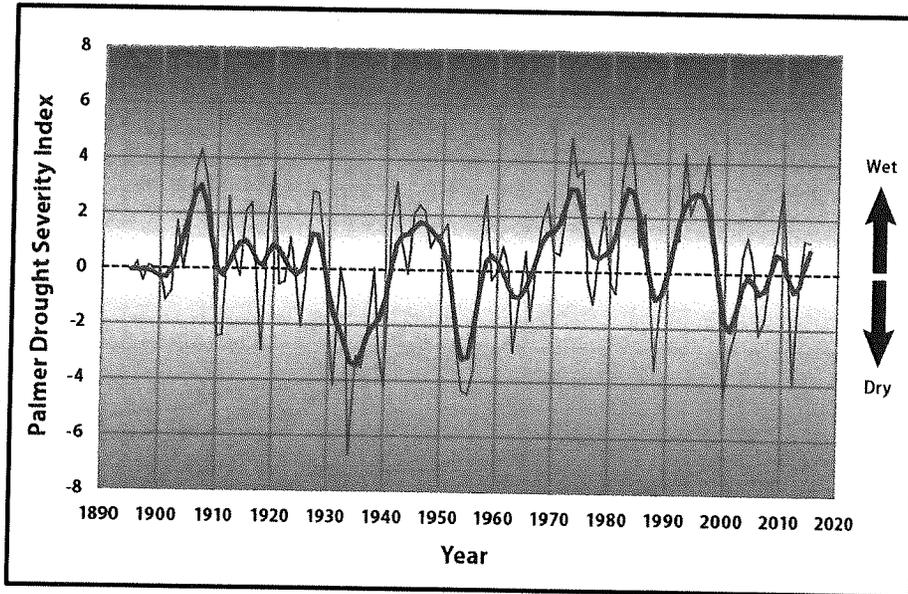


Figure 3 - Palmer United States drought-severity index data (accessed 10/25/19)

Claim: Deaths will increase linked to man-made warming due to heat-related illness and increasing air and water pollution.

Fact: None

Fiction: Numerous studies confirm that significantly more people die due to cold-related deaths as from heat-related deaths. A study of 74 million temperature-related deaths revealed that 20 times as many people die from cold as from heat (figure 4 – Gasparrini, 2015). A similar study in the U. K. and Australia documented that 15 times as many deaths are linked to cold as to heat (Vardoulakis 2014). The facts show that warming temperatures would save millions of people from a premature death due to cold. Global warming saves lives.

Allegations of increasing pollution are not supported by the facts. The latest EPA report stated that there has been long term improvement in unhealthy air days and by every metric pollution has been in significant and continuing decline (figure 5).

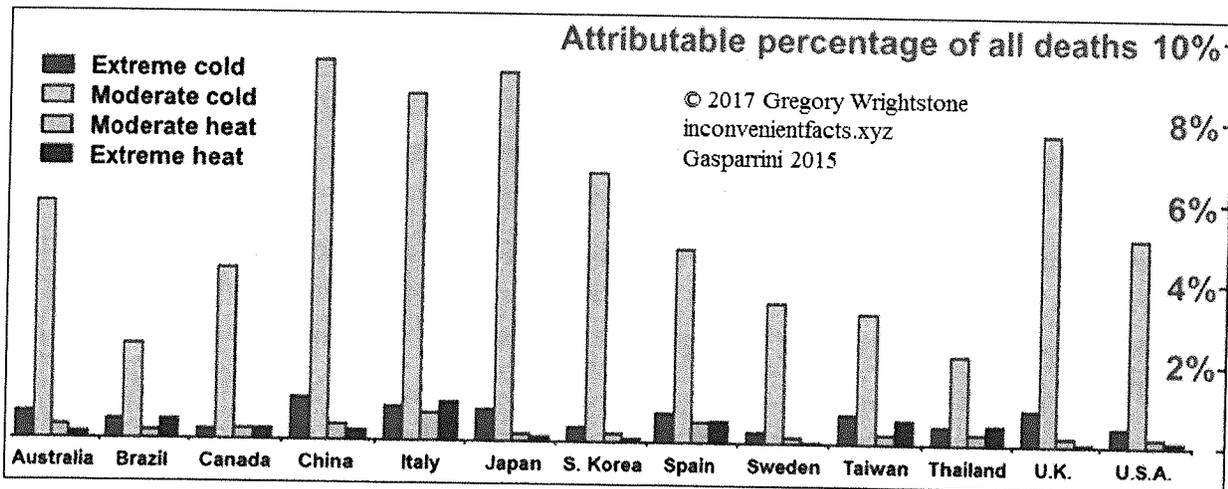


Figure 4 - Mortality risk attributable to high and low ambient temperature

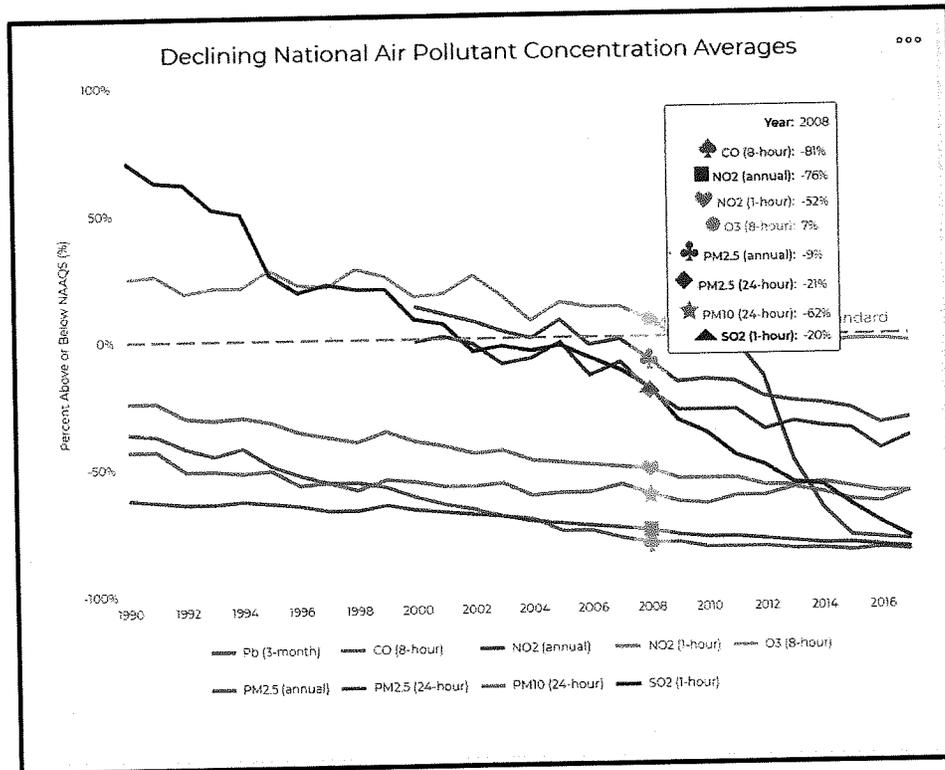


Figure 5 - EPA – Our Nation’s Air (2018)

II. Effects on temperature from CO2 reductions

The primary goal of Pennsylvania’s participation in the RGGI is to alter the Earth’s temperature by reducing CO2 emissions in the state. Likely the most important factor that will be discussed this morning is just how much temperature rise would be averted by a reduction in CO2 emissions.

According to the latest U. S. Energy Information Administration (EIA) data, Pennsylvania’s emissions accounted for 217 million metric tons, or 4.2% of the total United States output. Of that amount, 37%, or 80 million metric tons were generated by the electricity sector. Estimates of how much future warming will be averted can be calculated using the Model for the Assessment of Greenhouse-gas Induced Climate Change (MAGICC) developed by the National Center for Atmospheric Research. According to this model and assuming that 100% of the state’s electricity generation CO2 emissions were eliminated, only 0.001-degree Fahrenheit in warming would be averted by the year 2050 and 0.003 degrees by 2100 (figure 6).

There is no disputing the incredibly small temperature rise that would be averted by a reduction on carbon dioxide emissions from Pennsylvania. This infinitesimally small change in temperature is well below our ability to actually measure such small changes in global temperature.

In defense of enacting the economically harmful regulations and energy cost increases that participation in RGGI would bring, proponents tell us that the world’s countries must act in concert in order to make meaningful changes. That, however, is definitely not occurring (figure 7). The world’s top two coal consuming countries, China and India are, instead steeply

accelerating their build out of new coal-fired facilities. Only last week, China revealed plans to open 17 new coal mines.

The newly nominated Secretary of Energy Dan Brouillette stated last week that “(w)e have reduced our energy-related emissions by 14 percent. That has been offset exponentially by the Chinese in probably a month or maybe a month and a half. They are making near-zero progress regarding these types of issues.”

India’s Prime Minister Modi has stated categorically that he plans to lift an estimated 600 million Indians out of crushing poverty by providing them with abundant, reliable and affordable energy that coal-fired plants provide.

Jurisdiction	CO2 emissions by state (2016)*	% of US emissions	Temperature rise averted by decreasing CO2 by 100% (Climate sensitivity of 2.0°C)			
			by 2050 (°C)	by 2050 (°F)	by 2100 (°C)	by 2100 (°F)
United States	5,161.00	100.0%	0.041	0.0738	0.1040	0.1872
Pennsylvania All	217.4	4.2%	0.0017	0.0031	0.0044	0.0079
PA Electric Generation	80.438	1.6%	0.0006	0.0012	0.0016	0.0029

Figure 6 - Emissions: U.S. Energy Information Administration, State Energy Data System Forecast: Model for the Assessment of Greenhouse-gas Induced Climate Change

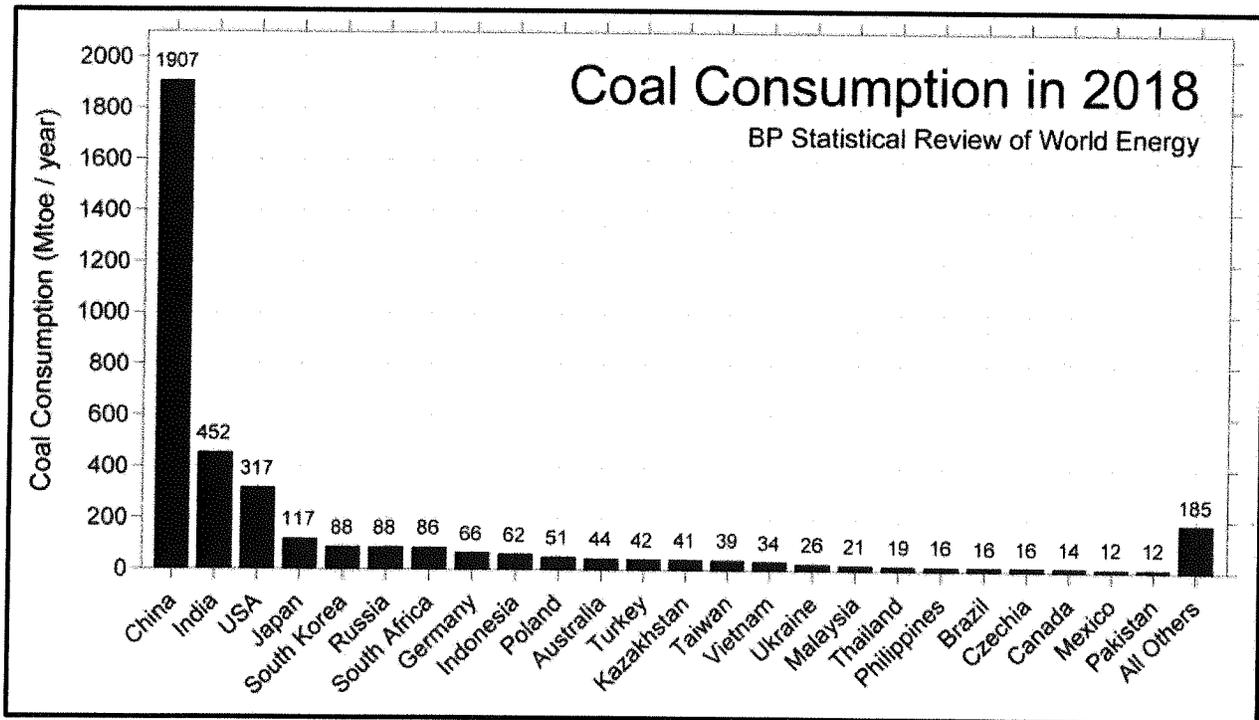


Figure 7 - Coal consumption in 2018

Conclusion

We have seen that the justifications provided for joining the Regional Greenhouse Gas Initiative are not supported by the facts and the science. Also, any effect of reductions in Pennsylvania's carbon dioxide emissions are so small as to be indistinguishable from zero.

This proposal would infringe on the freedoms of people and make them significantly poorer for virtually no advancement of the stated intention to avert global warming. The legislature, the business community and all right-thinking citizens should stand against this economically crippling and unneeded proposal. In short, it is a solution in search of a problem.

BP Statistical review of world energy (2108) <https://www.bp.com/en/global/corporate/energy-economics/statistical-review-of-world-energy.html>

EPA Our nation's air <https://gispub.epa.gov/air/trendsreport/2018/#welcome>

EPA (2017) Palmer United States drought-severity index data. <https://www.epa.gov/climate-indicators/climate-change-indicators-drought>

Gasparri A, et al (2015) Mortality risk attributable to high and low ambient temperature: a multicountry observational study, The Lancet, Vol 386 July 25, 2015

MAGICC (2019) Model for the Assessment of Greenhouse-gas Induced Climate Change
<http://www.cgd.ucar.edu/cas/wigley/magicc/>

NOAA National Center for Environmental Information (2018)
<https://www.ncdc.noaa.gov/extremes/streaks/>

US Climate Reference Network (USCRN) [https://www.ncdc.noaa.gov/temp-and-precip/national-temperature-index/time-series?datasets\[\]=uscrn¶meter=anomtavg&time_scale=p12&begyear=2004&endyear=2014&month=12](https://www.ncdc.noaa.gov/temp-and-precip/national-temperature-index/time-series?datasets[]=uscrn¶meter=anomtavg&time_scale=p12&begyear=2004&endyear=2014&month=12)

Vardoulakis S, Dear K, Hajat S, Heaviside C, Eggen B, McMichael AJ (2014) Comparative Assessment of the Effects of Climate Change on Heat- and Cold-Related Mortality in the United Kingdom and Australia, Environmental Health Perspectives, volume 122, number 12