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## 300 Scientists Request Explanation for Temperature Shenanigans

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Approximately 300 scientists, engineers, economists, and other climate experts sent a letter to U.S. House Science Committee Chairman Rep. Lamar Smith (R-TX) in support of his ongoing investigation of the National Oceanic Atmospheric Administration (NOAA). In June 2015, NOAA issued a report purporting to find Earth had continued to warm during a nearly two-decades-long period when every other data set found a pause or hiatus in rising temperatures.

Many scientists have expressed doubts about the quality and objectivity of NOAA's findings since their publication in *Science*. The letter's signers included 25 climate or atmospheric scientists, 23 geologists, 51 engineers, 74 physicists (including a Nobel laureate), and 12 economists.

The letter said NOAA's research failed to comply with Data Quality Act (DQA) guidelines established by the U.S. Office of Management and Budget requiring agencies to "ensure and maximize the quality, objectivity, utility, and integrity of information, including statistical information." DQA notes it is especially important for data to be accurate and of the best quality when it involves "highly influential scientific assessments" used to inform the public and shape public policy.

The researchers who signed the letter noted this was not the first time the government failed to comply with DQA in order to produce results supporting the Obama administration's preference for regulatory action to restrict carbon dioxide emissions, despite limited evidence carbon dioxide is causing climate harm. They wrote, "We remind you that controversy previously arose over EPA's apparent failure to comply with these [DQA] guidelines in connection with its Greenhouse Gas Endangerment Finding, which was the subject of a report by the EPA Office of the Inspector General in 2011. In that case, EPA failed to comply with peer review requirements for a 'highly influential scientific assessment.'"

NOAA's adjustments to ocean temperature data between 1998 and 2012 made recent global temperature changes appear two times warmer than original data recorded. Scientists questioned why ocean temperatures from buoy-based monitors were adjusted upward to more closely correspond to readings taken from the cooling-water intake-tubes of ships, which are biased by heat absorbed and reflected from ship's hulls and pouring off engines. For instance, Patrick

Michaels, director of the Cato Institute's Center for the Study of Science, Paul Knappenberger, the center's assistant director, and MIT Professor Emeritus of Meteorology Richard Lindzen, a distinguished senior fellow of the center, wrote, "As has been acknowledged by numerous scientists, the engine intake data are clearly contaminated by heat conduction from the structure, and as such, never intended for scientific use. ... Adjusting good data upward to match bad data seems questionable."

In addition, NOAA's adjusted temperature record ignored global satellite sea surface measurements – the best data available – and NOAA revised earlier raw data in a way to consistently make past temperatures cooler. Each step taken by NOAA biased current temperature records upward, making the more-than-18-years pause in rising temperatures recorded in other data sets disappear.

Interestingly, even under NOAA's reconstructed data set, its reported warming trend is still significantly lower than the trend projected by climate models cited by the most recent report of the United Nations' Intergovernmental Panel on Climate Change (IPCC).

Smith expressed concerns about the soundness of NOAA's research nearly immediately after its publication. He sent a letter to NOAA requesting the agency provide the methodologies used, data produced, and e-mail exchanges between scientists in relation to the *Science* study. NOAA initially refused to supply much of the requested material, citing confidentiality concerns. After a congressional subpoena was issued for the material, NOAA grudgingly complied – or at least appeared to comply, since it remains unclear whether everything requested was turned over.

The scientists' letter encouraged Smith to stay vigilant and pursue every means at his disposal to ensure all relevant information pertaining to NOAA's study is available for public examination and peer review.