SB 1187 Climate Change Superfund Cost Recovery
April 7, 2025

I'm Kenneth Haapala, President, The Science and Environmental Policy Project (SEPP), a small non-profit formed in 1990 and incorporated in Virginia in 1993. I am commenting on SB 1187 Climate Change Superfund Cost Recovery.

We use the scientific method to analyze government policies on energy and environment to evaluate if the policies are based on physical evidence or speculation. The scientific method was developed over several thousands of years and did not come to fruition until the Danish Astronomer Tacho Brahe (1546-1601) recognized the only way to resolve the strong scientific controversy of the day: whether the observed planets orbited the Sun or Earth. Brahe realized that the controversy can only be resolved by careful, detailed observation and all observations must be considered.

The belief that planets and the Sun orbited Earth was supported by over a thousand years of observations and backed by elaborate mathematical (geometric) models. It was advanced by the Greek astronomer living in Alexandria, Egypt, Ptolemy (c 100-170 CE) whose calculations were later changed somewhat by Arab astronomers. Over a thousand years later, Copernicus (1473 – 1543) broke with tradition and proposed that planets orbited the sun, which was published after his death.

It was the young assistant of Brahe, Johannes Kepler (1571 – 1630) who hit on the key to solving the issue: the planets orbit the sun not in perfect circles but in an ellipse with the sun as one focus point. Later, Isaac Newton (1643 -1727) used Kepler's work and the work of Galileo (1564-1642) on acceleration to develop the laws of motion and gravitation. Newton made another discovery that is important for this hearing: he demonstrated that a prism divided white light into various colors (also called wavelengths or frequencies) and using mirrors recombined them into white light. This established the important field in physics called spectroscopy: how matter (molecules) and electromagnetic (light) energy interact.

In the early 1800s astronomers and other scientists pondered a significant problem: Given its distance from the sun, why was Earth warm enough to support life? Why didn't the land masses enter a deep freeze at night, killing all growing plants? Many speculated reasons why; but beginning in 1859 Irish/English physicist John Tyndall used instruments of spectroscopy to experimentally show that certain atmospheric gases are transparent to incoming sunlight but block certain wavelengths (frequencies) of infrared energy emitted by Earth's surface to space. These gases delay the cooling of Earth. By the 1870s Tyndall realized that the most important gas for keeping Earth warm at night was water vapor. In the early 1900s these gases were called greenhouse gases.

Decades of experiments by many laboratories confirm Tyndall's discoveries. Greenhouse gases, particularly water vapor, keep the land masses of Earth warm enough at night to support life.

In the 1970s concern arose about human emissions of carbon dioxide causing the earth to warm, these were based on early climate models. In 1979, the US National Academy of Sciences released a report headed by Meteorologist Julie Charny forecasting that carbon dioxide would cause a significant rise in global temperatures. The report was strongly influenced by weather modelers who asserted that a small warming from carbon dioxide would be amplified by a stronger warming from water vapor and other sources. This is speculation, not physical evidence. But the speculation continues in global climate models today. Thus far, no physical evidence has been advanced to support the speculated amplification.

Since 1979 satellites have been collecting physical evidence that can be used to calculate atmospheric temperature trends, globally. These are the only global measurement of temperature trends we have. Surface measurements are sporadic, and do not cover extensive areas of Earth such as oceans, jungles, mountains, etc. Three separate groups calculate the atmospheric trends, and this is where the greenhouse effect occurs. If the atmosphere is not warming significantly, it cannot warm the surface. The latest for the entire satellite record from the University of Alabama in Huntsville "Version 6.1 global area-averaged linear temperature trend (January 1979 through March 2025) remains at +0.15 deg/ C/decade" or 0.27 °F per decade. Given the history of temperature change for the world, this is insignificant.

Ice cores from Greenland show temperature increases of about 15°F over 40-year periods. These are called Dansgaard–Oeschger (DO) events and since the last interglacial about 115,000 years ago 25 such events appear. These are related to similar, but weaker, events in Antarctica. No one has satisfactorily explained these natural temperature variations. There is no physical reason to speculate such events are not occurring now. Thus, the warming we are seeing in the satellite record is well within the range of natural variation, which no one has adequately explained.

Additionally, carbon dioxide is essential for complex life on Earth. In the process called photosynthesis, green plants use energy from the sun, to combine carbon dioxide from the atmosphere and water from the soil to create carbohydrates (sugars) which are used by plants and animals for food. Without photosynthesis life would probably be limited to chemo-synthesizing bacteria. Over 40 years of photographs from Landsat satellites show that Earth is flourishing with increasing carbon dioxide.

Finally, according to Our World in Data, the largest emitters of carbon dioxide are China and South Asia (India has exceeded the EU). China more than doubles the US. Is the proposed tax going to apply to these countries? How will it be enforced?

The Climate Change Superfund Cost Recovery is a tax on supposed harm caused by increasing carbon dioxide, largely from Asia. But the physical evidence of harm is very weak, and the physical evidence of the benefits of carbon dioxide and the greenhouse effect is powerful. This is nothing but an effort to tax a faddish fear without evidence of harm.

Respectfully submitted,
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