

Underground Nuclear Testing: The Leading Cause of Global Warming

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This paper aims to document a scientific linkage between the underground testing of nuclear weapons and global warming. An empirical analysis of CO₂ and fossil-fuel data post-1945 suggests that global warming is not clearly attributable to greenhouse gas emissions alone. Our data indicates beyond statistical doubt a direct linkage between the rise in CO₂ levels and underground bomb testing; rendering adverse consequences like global warming, radioactive contamination of terrestrial and marine ecosystems, and major disruptions to temperature patterns around the world. The derivative carbon footprint of underground nuclear testing is colossal and can bring about devastating human-induced climate changes which are not just massive but potentially irreversible.

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Key Words

PTBT, CO₂, Fossil Fuels, EMP, Underground Bomb Testing, Global Warming

Introduction

A British study published in the Physical Review Letters journal documented that nuclear bomb testing during the 1960s may have played a significant role in altering climate patterns around the world. The study concluded that nuclear bomb testing during the cold war caused large-scale radioactive fallouts up to several thousand miles from the testing sites. This fallout altered the rainfall distribution patterns and increased the cloud thickness; thereby leading to global warming and irregular temperature distributions ([El-Said](#)), ([Green Stories Org.](#)). While the consequences of radioactive fallouts have been documented by researchers from time to time; one significant by-product of the energy emission of nuclear tests has largely been overlooked by the environmental academia. The energy by-product in question is CO₂. A significant amount of Carbon Dioxide can be disgorged from the energy released by explosions of nuclear testing. If all the energy released by a 1 Kiloton nuclear bomb (an explosive force equal to that of 1000 tons of TNT) were to be absorbed by water; the CO₂ released would be the equivalent of 1250 people for 75 years (using the lifetime footprint of 20 tons). In 1971, a five-megaton explosion was detonated more than a mile below remote, windswept Amchitka Island in Alaska ([Weintz](#)). It was the most powerful underground bomb test conducted by the US to date, or perhaps by any nation on the face of the planet.

This notorious explosion was 250 times more powerful than the bomb dropped on Hiroshima. If measured on the Richter scale, the explosion would return a result of 7.0; equivalent to the earthquake that destroyed Haiti in 2010 ([Princeton University](#)). That energy had the potential to release more CO₂ than the entire city of Los Angeles, which has 4 million people. Th. A study published in the Energy & Environmental Science journal has documented that using 1/1000 of the total capacity of a full-scale nuclear war weaponry would induce 690m tonnes of CO₂ to penetrate the earth's atmosphere. This is more than the annual carbon footprint of the United Kingdom ([Clark et al.](#)). There is insurmountable evidence to suggest that the indirect carbon footprint of nuclear testing; both underground and overground, is drastically high; enough to crank up global temperatures by scores of degrees and disrupt climate patterns forever.

History and consequences of underground NB testing

The PTBT or the Partial Test Ban Treaty was signed by the erstwhile USSR, the UK, and the US in 1963, before being laid open for all countries to sign. The treaty banned the testing of weapons-grade nuclear detonations in the atmosphere, space, and underwater. The treaty however made an explicit exclusion of underground testing ([Walker](#)), ([Goldblat](#)).

The objective behind signing the PTBT was to prevent signatories from carrying out NB explosions in any setting which threatened the passing over of the radioactive debris beyond the boundaries of that country ([Nuclear Threat Initiative \(NPO\)](#)). Energy can't be created or destroyed. It can only be changed from one form to another ([University of Calgary](#)). Before the PTBT was signed, NBTs were conducted on land and most of the EMP released was sent into space. The EMP released from underground bomb testing (UBT) however, cannot find its way directly into space. The EMP has to take the shape of some other form of energy like thermal energy; which manages to find its way to the rocks on a quantum level. The energy of a 1 KTon from a nuclear explosion has the potential to evolve 25 KTons of CO₂ (heat of solution of carboxylic acid) when it's absorbed by the ocean. It is interesting to note that there has been a significant rise in global CO₂ levels since the start of underground bomb testing (UBT) in 1958 ([Lindsey](#)). The rise observed has been three times more than fossil fuel emissions indicating a drastic change in carbon emissions post-1958. Researchers have documented the atmospheric carbon content to have nearly doubled and increased to 100% above normal levels between 1963 and 1965 ([Beta Analytic Research](#)).

Statistical Analysis of CO2 and Fossil Fuels

Carbon-dioxide concentration is directly proportional to fossil fuel consumption ([Prentice](#)). The change in CO2 in PPM using NOAA data alongside the change in fuel consumption can be observed from the figures. The rise of the two events is mutually exclusive till 1945 after which the graph demonstrates irregularities, indicating the presence of an alternate source to fossil fuels for the surge in global carbon emissions. We went ahead and performed a linear regression on the data before 1945 and graphed the resulting error. The error in predicted CO2 change based on fossil fuel consumption is relatively low pre-1945 but irregular post-1945. The CO2 change in $\Delta \text{ppm} = 0.00138$, indicating a change in fossil fuel use in $\text{TWH} + 0.0802$ with a 91% correlation.

The Al Gore Equation is in the linear form of $y = mx+b$.

Here, y: CO2 change in ppm, x: change in fossil fuel consumption

b: change from solar cycle

Before the onset of atomic bomb testing, the fundamental reason behind the global rise in temperatures was fossil fuel consumption. This was followed by the period of above-ground NBT making use of more fuel, leading to a cooling effect (Nuclear winter). On the contrary, UBT induces a reverse effect by propelling tremendous CO2 into the atmosphere, leading to a warming effect (nuclear summer).

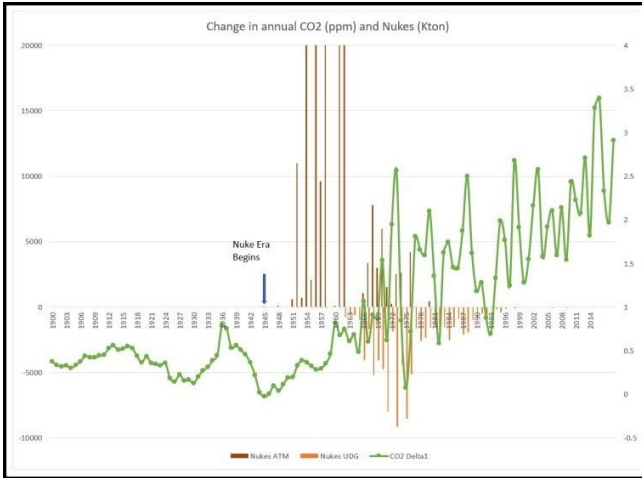


Figure 1 – Change in annual CO2 (ppm) vs nuclear weapons (KTon)

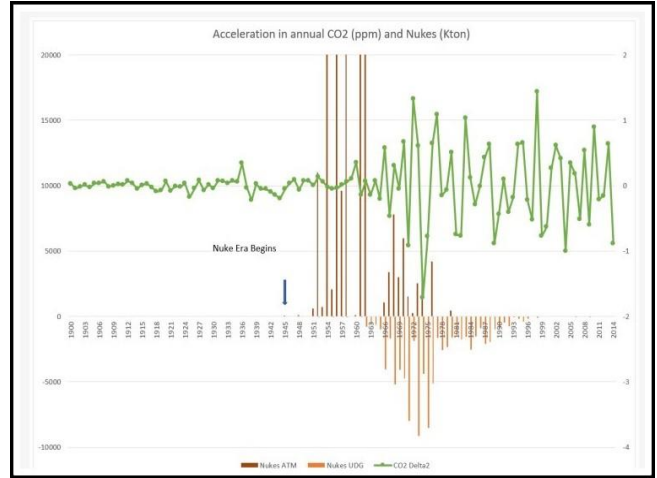


Figure 2 – Acceleration in annual CO2 (ppm) vs nuclear weapons (KTon)

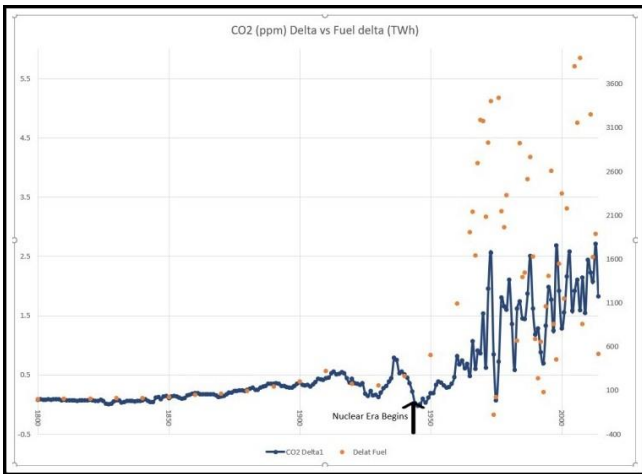


Figure 3 – CO2 (ppm) concentration delta vs fuel delta (TWh)

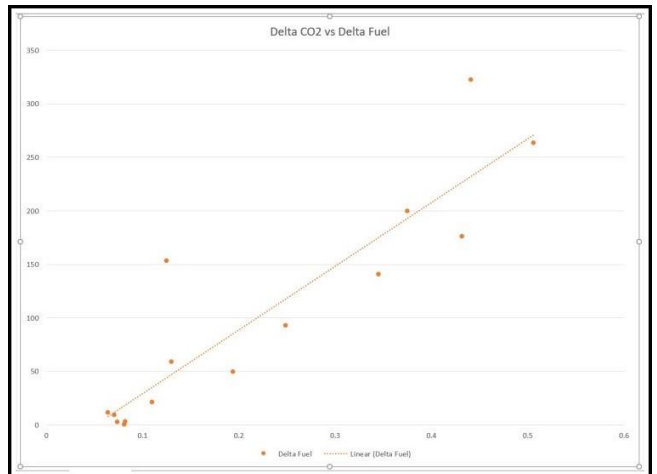


Figure 4 – Delta CO2 vs delta fuel

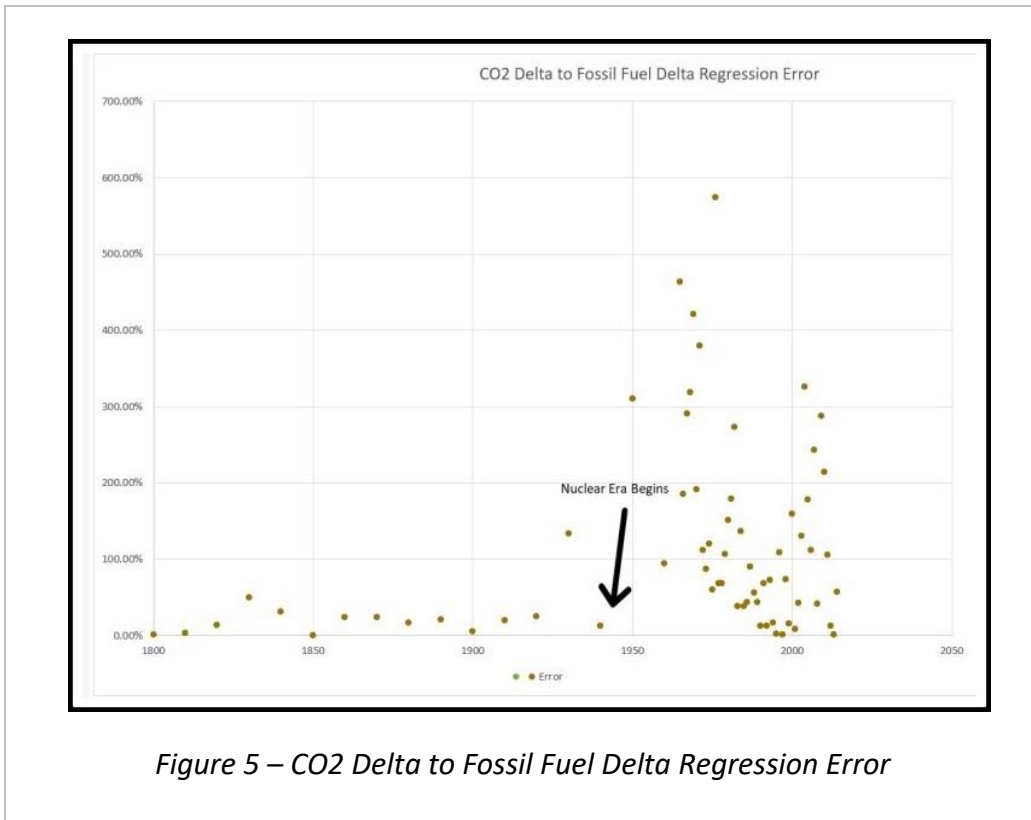


Figure 5 – CO2 Delta to Fossil Fuel Delta Regression Error

The Cycle & Three Theories

Every process on the planet follows a cyclic pattern. The natural cycle which occurs inside the sun involves the breaking and mending of subatomic bonds ([Siegel](#)). This systematic joining, structural reorganization, and breaking away of combined atoms and bonds are symbolic of the Quantum cycle. Likewise, inside the earth, the movement of particles and matter is a continuous process and can be associated with a kinetic cycle. The natural climate system of our planet ensures that it is always in a homeostatic energy balance with the sun. The earth receives energy from the sun, uses this energy, stores this energy, and emits excess energy.

The earth stays here at homeostasis, being only a function of quantum energy. The harmony in the climate system is centered around radiation from the sun, of which 49% is soaked by the Earth's surface, and 20% is taken up by the atmosphere ([Loubere](#)). The earth is not designed to deal with any tertiary quantum reactions which run contrary to the natural climate system. Due to nuclear explosions, heat is induced into the earth's atmosphere from the fission reactions. This heat has to be absorbed by the kinetic cycle. Also, the released energy cannot go back to its original quantum state. This naturally forces the temperature of the closed system to go up; causing the release of excess energy, and returning the system to the homeostatic condition. If we closely examine a nuclear explosion, we will notice that there's an intense flash of light (bomb) followed by a combination of radioactive fallout, heat, and pressure ([Freudenrich and Kiger](#)). A nuclear test conducted on the ground causes the light to go away from the planet into the atmosphere. However, during an underground nuclear test, the light doesn't go out. When the tests are conducted underwater, a bright stream of light is visible. This is followed by the intense heating of the water causing it to release tremendous amounts of CO₂. Since this is a lot of energy released in a small amount of time, the waters become unstable and shaky. The concentration difference causes a change in the overall CO₂ levels as natural heat and mass transfer return slowly back to equilibrium.

The natural balance of the water body is destroyed causing abnormal warm spots, and unfitting high and low tides. 2/3 of the earth's surface is covered by water. Due to underwater bomb testing, a huge share of radionuclide particles has accumulated in the marine environment over the years. These radionuclides get indirectly transferred into the geosphere and in human beings via the food chain causing monumental levels of radioactive contamination of terrestrial ecosystems besides global warming ([Právělie](#)).

Statistical Analysis of CO2 data from NOAA

The SPC charts attached to this section highlight the change in CO2. The charts are sought to separate normal variations from anomalies. The normal statistical parameters; mean and standard deviation are first established. That sets the limits, plus or minus three standard deviations. Over 99% of the normal data variation lies inside the established two limits. Data that lies outside the established limits are caused due to fresh disturbances. Because the acceleration chart was showing a false (pseudo) mean while conducting the analysis; a new mean was established in a non-noisy time period. The same was used for establishing a new trigger point. The chart without the trigger picked up the following: the 2016 underground nuclear test, the 1971 Cannikin test in Alaska, and fires in 2020/2021.

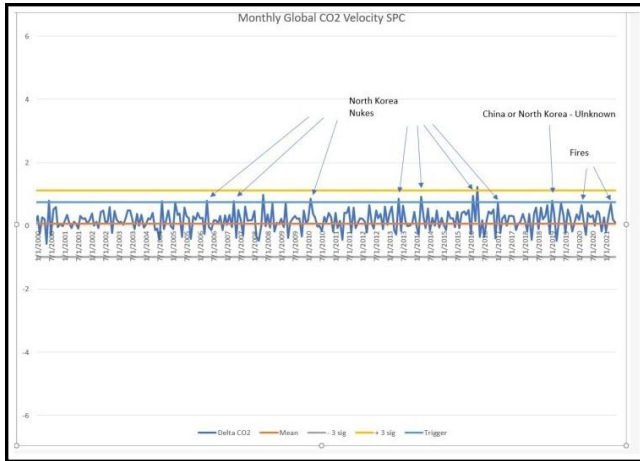


Figure 6 – Monthly global CO2 velocity SPC

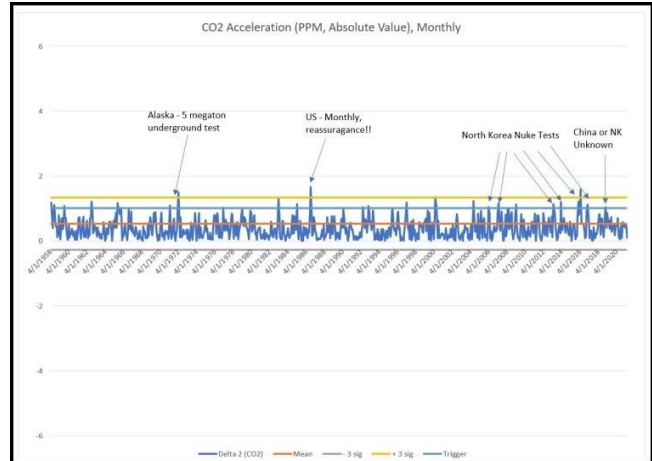


Figure 7 – CO2 acceleration (PPM, Absolute Value); monthly basis

A hypothesis analysis was conducted on the derived data. With all the residual noise generated from the energy impulses, it is strongly conceivable that the signals were generated by underground nuclear testing. The false signals received could be weather anomalies or atmospheric disturbances. The results of the statistical analysis demonstrate beyond doubt that nuclear testing caused a change in CO2 levels. The data also indicate beyond any empirical uncertainty that nuclear testing was not conducted in a closed system as was initially conceived, but in an open system that allowed the energy to channel directly to the deep, cold, and dissolved gas-rich water.

Earth's process control system – Radiant energy and greenhouse gases

A five (5) megaton bomb only yields 2924 KTons of TNT. Taking energy conservation into consideration, 42% of the KTons of TNT in energy are missing in an open system. But the system in question is closed with multifarious parameters like concussive forces, heat, and radiation. The energy that is missing from the calculations left the blast site as electromagnetic pulses (EMP) and discharged into the water where it evolves CO₂. It's interesting to note that the irradiation of the planet is a direct function of its outer skin temperature. The temperature in turn is controlled by the regulation of CO₂ within the marine ecosystems. The massive quantity of EM entering the earth will cause CO₂ to evolve. This causes an energy pull from the water (by the heat of the solution of carboxylic acid). The pulled energy is distributed to the air concurrent with a small temperature increase in water. The air temperature rises as a result of the CO₂ concentration and thus, the earth's irradiation increases. If the air cools, the water cools; and CO₂ gets re-absorbed back into the water, and the cycle restarts. This systematic regulation with varying solar activity causes the earth's temperature to be maintained. This is how the cycle operates in near-perfect conditions. Now let's add the detrimental constraint of underground nuclear testing. The energy that is released from these tests is considered an impulse function in process control terms.

It involves the dissemination of huge portions of energy, over a short time, in a small area. These are the direst circumstances for a control loop to operate.

Followed by this, the heat transferred and immediate mass release of CO₂ exceeds the normal mass transfer/heat transfer rates in marine ecosystems. This will in turn cause an imbalance in temperature regulation and provoke instability in the earth's process control system rendering life-threatening consequences.

Discussion and Solution

A global blanket ban on nuclear testing is not just necessary but absolutely mandatory to control the horizontal and vertical proliferation of nuclear technology and safeguard the world from global warming viz rising CO₂ levels. Unless such a blanket ban is imposed, nations will continue to maintain their unilateral moratoria on nuclear testing which would serve as a blow to any hopes of lessening environmental menaces caused due to abnormal CO₂ concentration. The energy control system of the planet is destabilizing. Even though reaching a monumental decline in CO₂ concentrations is impossible without a global ban on nuclear testing, we cannot undermine the positive contribution that can be rendered by reducing carbon footprints on primary, secondary, and tertiary levels. A global test ban cannot offer a panacea, but it can serve as a fundamental barrier to the persistent rise of CO₂ levels which are expected to reach 75 billion tons per year

or more by the end of the century. At such a state, the atmospheric carbon dioxide could be 800 ppm or higher — conditions not seen on Earth for close to 50 million years. Supercharging of the natural greenhouse effect at this stage could render serious, irreversible alterations to the climate system of the planet bringing about unquantifiable levels of devastation. Alternatively, we could reflect the energy back into space thereby preventing it from getting into the oceans; while allowing the oceans to permeate their gases.

Conclusion

Through the statistical analysis of change in CO₂ and fuel consumption, we detected irregular and asymmetrical patterns after 1945 indicating the presence of an alternate source for the surge in global carbon concentrations. The genesis of this uneven pattern was the underground testing of nuclear weapons which commenced post-1945. The chart that we plotted from the statistical analysis of CO₂ data from NOAA picked up significant energy emission events like the 2016 underground nuclear test, the 1971 Cannikin test in Alaska, and fires in 2020/2021. Most signals were generated by underground nuclear testing, and the results of the statistical analysis demonstrate beyond doubt that nuclear testing caused a change in CO₂ levels thereby inducing global warming.

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Glossary

CO₂ - Carbon Dioxide

EMP - Electromagnetic Pulse

NBT - Nuclear Bomb Testing

NOAA - National Oceanic and Atmospheric Administration

PPM - Parts Per Million

PTBT - Partial Test Ban Treaty

SPC - Statistical Process Control

TNT – Trinitrotoluene

UBT - Underground Bomb Testing

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