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## From Demon To Dinner

### The Scientific Rehabilitation of CO<sub>2</sub> and Fossil Fuels

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Soon opened by challenging the legal classification of CO<sub>2</sub> in the United States. Following the 2007 *Massachusetts v. EPA* Supreme Court ruling, he noted, carbon dioxide is officially considered an air pollutant under US law. Quoting the dissenting Justice Antonin Scalia, Soon argued that such an interpretation stretches the meaning of “pollutant” to the point of absurdity. CO<sub>2</sub>, he stressed, is indispensable to plant growth, and humans themselves constantly exhale it, so CO<sub>2</sub> is not a satanic gas, nor a demon. It is simply dinner for plants. And fossil fuels should be understood not as an environmental curse, but as a major driver of human prosperity.

**Keywords:** Carbon dioxide; plant food; biosphere; benefits of CO<sub>2</sub>

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#### 1. Introduction

Our plants provided the central theme of his presentation: “Plants do not call it a pollutant. They call it dinner.” Soon argued that atmospheric CO<sub>2</sub> concentrations are essential for the functioning of the biosphere. Below roughly 150 parts per million photosynthesis would fail for most plants. At around 425 ppm today, humanity has moved away from a CO<sub>2</sub>-starvation regime.

Soon then connected CO<sub>2</sub> with the history of fossil-fuel use and rising living standards. Over the past two centuries, he argued, more than a billion people have escaped extreme poverty, largely because of access to cheap, dense and reliable energy from coal, oil and natural gas. Wealthier societies tend to have cleaner air and water, greater forest cover and better public-health outcomes. Economic development, therefore, should be regarded as part of the solution to environmental problems rather than as their cause.

The same logic applies to energy policy. Every major successful energy transition in history has moved toward greater energy density—from wood to coal, oil, natural gas and nuclear power. A transition toward intermittent, weather-dependent energy sources such as wind and solar therefore represents a reversal rather than technological progress. Citing Professor Colin McInnes, Soon described an energy transition toward more expensive and less efficient energy as “a regression.”

Germany’s nuclear phase-out was presented as a particularly stark example. Soon contrasted Germany with Switzerland, arguing that Switzerland’s continued reliance on nuclear power has provided cheaper and more reliable electricity, while Germany has combined the closure of nuclear plants with massive investment in wind and solar and continued reliance on lignite. He characterized the destruction of functioning nuclear infrastructure as “energy vandalism.”

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<sup>1</sup> Transcript from video by Peter Baeten, Clintel

## 2. The rise of atmospheric CO<sub>2</sub>

Soon's most substantial scientific argument concerned the source of the continuing rise in atmospheric CO<sub>2</sub>. He challenged the conventional interpretation that the increase is primarily a consequence of human emissions. According to Soon, global fossil-fuel emissions have been broadly flat for more than a decade, while atmospheric CO<sub>2</sub> has continued to rise smoothly. He cited declining or flattening emissions in the United States, Germany and China as evidence that the relationship is not as straightforward as commonly presented.

The key to understanding atmospheric CO<sub>2</sub>, Soon argued, lies in the enormous natural exchanges between the atmosphere, oceans and biosphere. More than 200 gigatons of carbon move annually between the atmosphere and natural reservoirs, while the atmosphere contains only around 750–900 gigatons. This means that a substantial fraction of atmospheric carbon is exchanged every year. In Soon's interpretation, relatively small changes in the balance of these enormous natural fluxes could therefore have a major influence on atmospheric CO<sub>2</sub>.

He pointed to the seasonal CO<sub>2</sub> cycle as another indication of the dominance of natural processes. Atmospheric CO<sub>2</sub> falls during the Northern Hemisphere growing season and rises again during autumn and winter as vegetation dies back and decomposes. Soon emphasized that the magnitude of this seasonal variation is far greater than the seasonal variation in human fossil-fuel emissions. He cited earlier research concluding that fossil-fuel use cannot account for the annual cycle of atmospheric CO<sub>2</sub>.

## 3. The Biosphere

Soon also challenged the use of carbon isotopes as a decisive "fingerprint" of fossil-fuel emissions. "You cannot tell the difference between CO<sub>2</sub> emission from coal, gasoline, natural gas, and a hamburger using the Delta 13C isotope alone," he said.

A further element of Soon's argument was his estimate that the terrestrial biosphere has accumulated approximately 55.3 gigatons of carbon between 1961 and 2023. He interpreted this as evidence of a growing and increasingly active biosphere responding positively to rising CO<sub>2</sub> concentrations. Rather than being a passive victim of atmospheric change, vegetation, he argued, is itself a major component of the carbon cycle.

Soon extended the argument into paleoclimate research, questioning the assumption that pre-industrial atmospheric CO<sub>2</sub> remained essentially fixed at 280 ppm throughout the Holocene. He pointed to evidence from plant stomata and other records suggesting considerably larger natural variations in CO<sub>2</sub> before industrial fossil-fuel use. Such evidence, he argued, raises questions about the extent to which recent atmospheric changes can automatically be attributed to human emissions.

He then turned to temperature sensitivity. Using Germany's seasonal cycle as what he described as a natural experiment, Soon compared the approximately 26°C difference between winter and summer temperatures with the corresponding change in solar radiation. Applying the radiative forcing convention commonly used by the IPCC, he calculated a climate sensitivity to doubled CO<sub>2</sub> of roughly 0.5 °C, or less than 1°C under a more conservative calculation. This, he argued, is substantially below the IPCC's central estimate of around 3 °C.

## 4. The positive consequences of CO<sub>2</sub>

The second half of the presentation emphasized what Soon regards as the positive consequences of higher atmospheric CO<sub>2</sub>. Satellite observations show that the Earth has become substantially greener, with particularly pronounced greening in China and India. Higher CO<sub>2</sub> increases photosynthetic productivity and allows plants to partially close their stomata while continuing to absorb carbon, thereby reducing water loss and improving drought tolerance.

Soon cited research suggesting that rising CO<sub>2</sub> has contributed significantly to increased crop yields and that forests have also benefited. He pointed to experiments in which elevated CO<sub>2</sub> increased plant productivity and wood production, as well as research indicating increasing tree growth in the Amazon. The oceans, he added, are showing signs of increased biological productivity in some regions, while the Arctic is also experiencing greater vegetation and biological activity.

Finally, Soon discussed medical applications of CO<sub>2</sub>, citing research into transcutaneous CO<sub>2</sub> therapy for wound healing and experimental work involving tumours. These examples, he argued, further illustrate how strange it is to characterize the molecule itself as a toxic pollutant.

Soon concluded by returning to his central metaphor. CO<sub>2</sub>, he argued, is not a poison threatening the biosphere but a molecule on which the biosphere depends. The world, in his view, is not facing an “emission emergency”; instead, natural carbon fluxes remain enormous, the biosphere is expanding, and the planet is becoming greener.

His closing message was therefore as much political as scientific: energy and climate policies should be based on measurement, physics and an honest assessment of uncertainty rather than on what he sees as the politicization of CO<sub>2</sub>. “CO<sub>2</sub> is not a satanic gas, nor a demon. It is simply dinner,” Soon concluded.

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