U.S. Climate Policy

A Six Decade Sketch

David Hawkins

June 4, 2024
Moana Loa Mean Annual CO2 (ppm)

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ENERGY RESOURCES

A Report to the
Committee on Natural Resources
of the
National Academy of Sciences—National Research Council

by
M. King Hubbert

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National Academy of Sciences—National Research Council
Washington, D. C.

1962
ENERGY RESOURCES

There is evidence that the greatly increasing use of the fossil fuels, whose material contents after combustion are principally H₂O and CO₂, is seriously contaminating the earth's atmosphere with CO₂. Analyses indicate that the CO₂ content of the atmosphere since 1900 has increased 10 per cent. Since CO₂ absorbs long-wavelength radiation, it is possible that this is already producing a secular climatic change in the direction of higher average temperatures. This could have profound effects both on the weather and on the ecological balances.

In view of the dangers of atmospheric contamination by both the waste gases of the fossil fuels and the radioactive contaminants from nuclear power plants, Professor Hutchinson urges serious consideration of the maximum utilization of solar energy.
“Air Pollution Affects Our Weather”

“As stated earlier, there is evidence that the amount of carbon dioxide in the atmosphere is increasing as a consequence of human activities. This increase is raising the temperature of the earth's atmosphere by intercepting infrared heat waves going out from the earth into space. An increase in heat will lead to more violent air circulation and thus to more destructive storms.”

Air pollution is no longer confined to isolated places. This generation has altered the composition of the atmosphere on a global scale through radioactive materials and a steady increase in carbon dioxide from the burning of fossil fuels. Entire regional airsheds, crop plant

TRANSMITTING

A MESSAGE ON NATURAL BEAUTY OF OUR COUNTRY

FEBRUARY 8, 1965.—Referred to the Committee of the Whole House on the State of the Union and ordered to be printed
tain an unchanging content of carbon dioxide in the atmosphere. Within a few short centuries, we are returning to the air a significant part of the carbon that was slowly extracted by plants and buried in the sediments during half a billion years.
The combustion of coal, oil, and gas in our homes, vehicles, and factories results in the discharge into the air of sulfur dioxide, carbon dioxide, carbon monoxide, oxides of nitrogen, and partially burned hydrocarbons. Some of these gases, together with gasoline and natural gas vapors, undergo chemical change in air and in sunlight, and become the noxious constituents of smog; others, like carbon dioxide, are accumulating in such large quantities that they may eventually produce marked climatic change. Large amounts of lead are dis-
Carbon dioxide is being added to the earth's atmosphere by the burning of coal, oil and natural gas at the rate of 6 billion tons a year. By the year 2000 there will be about 25% more CO₂ in our atmosphere than at present. This will modify the heat balance of the atmosphere to such an extent that marked changes in climate, not controllable though local or even national efforts, could occur. Possibilities of bringing about countervailing changes by deliberately modifying other processes that affect climate may then be very important.
AIR QUALITY ACT OF 1967

AMENDING THE CLEAN AIR ACT
AS AMENDED

The immediate need is to develop methods to control the emission of sulfur compounds, oxides of nitrogen, carbon monoxide and carbon dioxide, and other substances which are products of man's activities.

TO ACCOMPANY

S. 780
Moynihan Heads-Up to Ehrlichman, 1969

hypothesis has been refined, and more evidence has come along to support it. It is now pretty clearly agreed that the CO$_2$ content will rise 25% by 2000. This could increase the average temperature near the earth's surface by 7 degrees Fahrenheit. This in turn could raise the level of the sea by 10 feet. Goodbye New York. Goodbye Washington, for that matter. We have no data on Seattle. An example, an increase of dust in the atmosphere would tend to lower temperatures, and might offset the CO$_2$ effect. Similarly, it is possible to conceive fairly mammoth man-made efforts to countervail the CO$_2$ rise. (E.g., stop burning fossil fuels.)
Summary of Impacts: Table II summarizes the potential impacts on climate for the several scenarios and options. Clearly, the use of fossil fuels should be curtailed so that atmospheric CO₂ concentration does not exceed 400 to 420 parts per million, and the
Resources in plentiful supply should be used more widely as part of a process of moderating use of those in short supply. Although coal comprises 90 percent of United States total fossil fuel reserves, the United States meets only 18 percent of its energy needs from coal. Seventy-five percent of energy needs are met by oil and natural gas although they account for less than 8 percent of U.S. reserves. This imbalance between reserves and consumption should be corrected by shifting industrial and utility consumption from oil and gas to coal and other abundant energy sources.

A committee will study the health effects of increased coal production and use, and the environmental constraints on coal mining and on the construction of new coal-burning facilities. A study will also be made of the long-term effects of carbon dioxide from coal and other hydro-carbons on the atmosphere.
tion to insuring that ERDA constantly balances the need to protect and enhance the quality of the environment with the equally urgent need to provide tools to the Nation for securing the energy it needs. Let me make very clear, then, that my discussion does not suggest that there is an impending enormous crisis caused by the increase in CO₂ derived from combustion of fossil fuels which is a cornerstone of the President’s energy program.
Because our knowledge of the global carbon cycle is still inadequate, it is not possible to put limits on the rate of fossil fuel utilization that could be tolerated worldwide. Very crude estimates suggest some small increase in the current rate would be acceptable, leading only to a small temperature increase, but this is very uncertain. What is clear is that it will take a long time for the increased CO₂ to leave the atmosphere once it is put there. Several thousand years may be needed to return the world’s atmosphere to its preindustrial state after it has been “loaded” with fossil fuel CO₂.
Mr. O’Leary. I think we are not at the moment prepared to come to those sorts of conclusions on an organized basis. I think you have to say, Mr. Chairman, that at the moment the very, very long-term meteorological effects of what we are doing here is essentially a hobby of a few individuals. I do not mean “hobby” in the pejorative sense, but in the sense that there are no organized efforts. I know one of the
Public Law 95–367
95th Congress

An Act
To establish a comprehensive and coordinated national climate policy and program, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the “National Climate Program Act”.

SEC. 2. FINDINGS.
The Congress finds and declares the following:

(1) Weather and climate change affect food production, energy use, land use, water resources and other factors vital to national security and human welfare.
Too Busy to Think About It: Hawkins 1979
Carbon Dioxide and Climate: A Scientific Assessment

to scientists but disturbing to policymakers. If carbon dioxide continues to increase, the study group finds no reason to doubt that climate changes will result and no reason to believe that these changes will be negligible. The conclusions of prior studies have been generally reaffirmed. However, the study group points out that the ocean, the great and ponderous flywheel of the global climate system, may be expected to slow the course of observable climatic change. A wait-and-see policy may mean waiting until it is too late.
CEQ CO2 Rept: last week of Carter Admin.
U.S. Study Warns of Extensive Problems From Carbon Dioxide Pollution

By PHILIP SHABECOFF
Special to The New York Times

WASHINGTON, Jan. 13 — The President’s Council on Environmental Quality warned today that national and international energy policies must immediately start addressing the problem of carbon dioxide pollution if major long-range climatic and economic problems were to be avoided.

In a report, the council said that carbon dioxide currently in the atmosphere is 38% above pre-industrial levels and that a doubling of carbon dioxide in the atmosphere from pre-industrial levels would raise the average global temperature by about 3 degrees centigrade and by 7 to 10 degrees centigrade at the poles. The report said that if the warming pattern persisted long enough it could melt polar ice and raise ocean levels by over 20 feet in several decades.

“This rise would force a gradual evacuation of coastal areas,” the report said.

The council also said that national and international energy policies need urgent attention in order to avoid the problem of carbon dioxide pollution.

Urges limiting CO2 to 1.5 times pre-industrial (438 ppm)
In my opinion, it would take an extremely compelling scientific evidence of impending disaster to convince most countries, particularly developing countries, to endure the economic penalties associated with major changes in energy policy.
A Brief Policy Flourish

• 1988 — IPCC established
• June 23, 1988 — James Hanson Testifies. (Inhofe attack [https://bit.ly/3mVabVF])
• July-Oct 1988 — Multiple bi-partisan regulatory climate bills introduced
• 1989 — More bipartisan bills introduced. Pushback from coal and utilities.
The Nineties: Bush Père & Clinton

Moana Loa Mean Annual CO2 (ppm)
The Early 90s—Promises of Action

• 1990—EPA, Policy Options for Stabilizing Global Climate

• 1992—UNFCCC adopted. No binding targets
The Clinton BTU Tax: Cl*m*t* Policy?

• “Our plan includes a tax on energy as the best way to provide us with new revenue to lower the deficit and invest in our people. Moreover, unlike other taxes, this one reduces pollution, increases energy efficiency, and eases our dependence on oil from unstable regions of the world.” Clinton SOTU Feb. 17, 1993

• White House deliberations:
Katie McGinty subject matter files BTU tax
https://clinton.presidentiallibraries.us/items/show/76884
Clinton—Post-BTU Tax Defeat

• 1993-2000 -- Clinton Admin— voluntary actions
• 1997 – Byrd-Hagel Resolution
• 1997— Kyoto Protocol
• 1998 — S.2636, Leahy power plant CO2 bill and CO2 tax (no cosponsors). No Administration support.
• 1999 – Petition EPA to regulate CO2 under CAA
The Aughts: Bush Fils & Obama

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• 2001 Bush Rejects Kyoto Protocol
• 2001 Bush Rejects CO2 stds under CAA
• 2003 McCain-Lieberman bill
• 2007 USCAP Principles Report
• 2007 Mass. v. EPA
• 2009 USCAP Blueprint
• 2009 Waxman-Markey passes House; dies in Senate
Obama Acts

• 2010-2012 – EPA adopts auto CO2 standards
• 2010 – NGOs shift to force EPA to adopt power plant CO2 rules
• 2015 – EPA adopts Clean Power Plan (CPP)
• 2015 – Paris Accord
• 2016, February -- Sup Ct stays CPP
Trump Reacts

• Trump ditches Paris Accord
• 2017-2020 – Trump rollbacks of GHG rules
• 2018 – IPCC Special Report on 1.5 degrees
• 2019 – Green New Deal bill introduction
• 2020, Oct. – DC Cir 9 hours argument on Trump CPP repeal and ACE replacement. Rules against Trump Jan. 19, 2021
• 2020, Nov. – Biden/Harris elected
• 2021, Jan.– GA election shifts Senate control.
The ‘20s: Biden

Mauna Loa Mean Annual CO2 (ppm)


317 326 339 354 370 390 414 421

The line graph shows the increase in Mauna Loa Mean Annual CO2 (ppm) from 1960 to 2020. The CO2 levels have increased significantly over the years, with a notable rise in the 2010s.
Tug of War

• WV v. EPA, 2022: Sup Ct. strikes down EPA power plant standards.
• Inflation Reduction Act, Aug. 2022. Massive $ for clean energy & climate programs. No mandatory action
• EPA issues new power plant standards, May 2024
• Petitions for Review and Stay Motions filed immediately by 27 states and most power companies, including EEI. Now before DC Cir, likely headed to Sup. Ct.
IRA is a BFD

percent below 2005 historical emissions¹

Under Current Policies scenarios, U.S. emissions in 2030 fall to
~37-41% below 2005 emissions levels, falling short of the
50-52% goal set by President Biden.

Frozen Policies
(Jan. '21)

Current Policies,
incl. IRA

Net-Zero
Pathway

1 - 2005 historical net U.S. greenhouse gas emissions were 6,686 million metric tons of CO₂-equivalent (EPA Inventory of Greenhouse Gas Emissions and Sinks). CO₂ equivalent emissions calculations use IPCC AR4 100 year global warming potential as per EPA Inventory of Greenhouse Gas Emissions and Sinks.
Miles to go…

Annual clean electricity capacity additions vs projections
GW net summer capacity vs. projection range from Energy Innovation, REPEAT Project, and Rhodium Group

Source: Rhodium Group/MIT-CEEPR Clean Investment Monitor, Energy Innovation, REPEAT Project