

Chapter 10c – The Environment: Global Warming

What policies should governments adopt concerning the use and care of the environment?

B. Global Warming and Carbon Fuels

a. Earth's atmosphere brings both warming and cooling influence

- Warming effects from the atmosphere

- i. "greenhouse effect" - the atmosphere retains the heat energy that comes from the sun. Nitrogen, 78% of atmosphere, oxygen, 21%, does not retain heat. 99% of atmosphere doesn't function as "greenhouse gas."
- ii. 1% of the atmosphere = 14 elements, most do not retain heat. "greenhouse gases" = 0.45% of the atmosphere; 89% of which is water vapor.
- iii. Other greenhouse gases: carbon dioxide (about 0.039% of the total atmosphere), methane (about 0.00018%), nitrous oxide (about 0.00003%), ozone (less than 0.000007%), and miscellaneous trace gases—all of these other greenhouse gases (apart from water) totaling under 0.05% of the atmosphere. 0.55% of the atmosphere = elements/compounds that do not retain heat
- iv. 80% of the total warming effect of the entire atmosphere = Water Vapor, 15% = high-altitude cirrus clouds
- v. For convenience we can say: water = 95% of "greenhouse warming." Remaining approximately 5% = carbon dioxide (about 3.6%), methane (about 0.36%), nitrous oxide (about 0.95%), & miscellaneous gases including ozone (about 0.072%).
- vi. Does not actually work like a greenhouse: 1) energy comes from the sun mostly in the form of light, 2) the earth absorbs light energy, 3) radiates it back in the form of *infrared energy*—what we call heat.
- vii. Greenhouse gases *absorb* infrared energy (heat) and then, radiate it outward. Some goes up into space, thus cooling the earth, some of it radiates heat back down to the earth's surface warming the earth.
- viii. It is good for us that not all of the sun's energy stays at earth's surface, or we would cook. It is also good that not all of it bounces back into space, or we would freeze.

- Cooling effects from the atmosphere

- i. Without the "greenhouse effect," earth's average surface temperature = 0°F and with it, actually = 59°F.
- ii. However, *without balancing factors to modify the greenhouse effect* = would average 140° temp. on earth
- iii. Cooling influences - Climate "Feedbacks" = changes in the atmosphere that are caused by other changes in the atmosphere, which then lead to other changes.
- iv. Feedbacks = evaporation, precipitation (rain, snow, dew, and sleet), convection (upward movement of warm air), and advection (sideways movement of air—that is, wind!). AKA *weather* (gentle breezes to hurricanes, from the violent downdrafts of wind shear to the massive, twisting updrafts of tornados, + much more)
- v. Other feedbacks = changes in cloudiness (which can warm or cool the earth), expansion or contraction of ice (ice reflects solar energy away from earth and so cools it), expansion or contraction of forests and grasslands and deserts, and changes in how rapidly plants take up or give off water through their leaves.
- vi. On balance, these feedbacks decrease the greenhouse effect by 58% (no greenhouse effect = 0° earth, w/greenhouse effect minus feedbacks = 140°, w/greenhouse effect + feedback = 59°; 59 is about 42% of 140 = 58% elimination of greenhouse warming).

- Then what is the controversy about carbon dioxide (CO₂)?

- i. Global Warming alarmists say: human activities are causing the concentration of greenhouse gases—primarily carbon dioxide, secondarily methane, and to a much lesser extent ozone and chlorofluorocarbons—to increase, and that their increased concentration could warm the earth enough to cause significant, perhaps even catastrophic, harm to people and ecosystems.
- ii. CO₂ = biggest culprit, is responsible for 3.6% of the total greenhouse effect – according to this position.
- iii. CO₂? = colorless, nearly odorless gas used to produce carbonation. In a frozen form = dry ice. Organic material, like wood, burn – releases CO₂. Also released when coal or gasoline or natural gas (methane) burns. In our bodies, CO₂ plays an important role in regulating our blood flow & rate of breathing. Humans breathe in oxygen, exhale CO₂. All insects, animals, and people emit carbon dioxide. Oceans, volcanoes, and other natural sources emit it too. Also crucial for plants, needed for photosynthesis. During photosynthesis, plants absorb carbon dioxide and release oxygen. Thus, animals and people continually use up oxygen and release carbon dioxide for plants to use, and then plants use up that carbon dioxide and release oxygen for people and animals to use. So, rather than a pollutant, *CO₂ is essential to all the major life systems on the earth.*
- iv. According to many atmospheric scientists: increase in CO₂. 270 to about 385 parts per million by volume (ppmv), 0.027% to 0.039%, since 1750.
- v. Effect of increase? *doubling (from 270 to 540 ppmv) CO₂ concentration* = raising the earth's average surface temperature, *before feedbacks*, by about 1.8° to 2.16°F. This = small increase that does not scare anybody.
- vi. Cause of fear of greater warming? = belief that climate "feedbacks" magnify this warming.
- vii. All of the computer models used by the United Nation's Intergovernmental Panel on Climate Change (IPCC) assume that climate feedbacks magnify the warming that comes from greenhouse gases.
- viii. Fears of future global warming rest on *predictions of future weather produced by computer "models"* that give different weights to different factors; they will predict whatever is required by the data & formulas fed to them.
- ix. Therefore the fears of future global warming rest on *hypotheses* represented by computer models, *not on empirical observations* of the real world. These models, *by assuming various feedbacks that add to the greenhouse effect*, predict that

warming from *doubled* carbon dioxide since preindustrial time would result in an increase of 3.5°F to a midrange estimate of 5.4°F to a high estimate of about 7°F.

- x. Then some *other* computer formulas (other models) have used the *upper range* of this first set of predictions and have gone on to predict serious harm from such warming. (But remember: model results are not *evidence*; they are merely *hypotheses*. Only empirical observations are evidence.)
- xi. Other scientists, however, point out that there is no reason to think the feedbacks will act differently on man-made “greenhouse gases” than on natural ones. Since the feedbacks currently eliminate about 58% of the warming effect of natural greenhouse gases, it stands to reason that they will do the same to the warming effect of man-made ones.
- xii. These scientists say that the proponents of global warming *have the feedbacks backward in their computer formulas*. Appealing to what we already know *by observing the real world*, they say that although some feedbacks may be positive and tend to warm the earth, *the combined feedback effect* must be negative—very strongly negative—and therefore the feedbacks will tend to have an overall cooling effect on additional manmade greenhouse gases.
- xiii. The result? Doubling CO₂ *before feedbacks* (270-540 ppmv)= increase by about 1.8° to 2.16°F. But if feedbacks *subtract* from warming as has always been the case = lower the warming effects by about 58% to between 0.76°F to 0.9°F—in other words, actually *doubling* the amount of carbon dioxide from preindustrial times would lead to a total “global warming” of less than 1°F. An increase of 1°F is *not dangerous*.
- xiv. Possible Beneficial result? *Longer growing seasons in cooler climates, less crop damage* from frost, and *fewer deadly cold snaps* (which tend to kill about ten times as many people per day as heat waves). Longer growing seasons would make food more abundant and therefore more affordable, a great benefit to the world’s poor.
- xv. Richard Lindzen and Yong-Sang Choi, Earth Radiation Budget Experiment, = less warming than 1°F.

b. *The Bible’s Teaching About the Earth*

- Did God design a fragile earth or a resilient one?

- i. Would an architect designed a building so that if someone leaned against one wall, its structural feedbacks would so magnify the stress of that person’s weight that the building would collapse? No!
- ii. Genesis 1:31, “God saw everything that he had made, and behold, it was very good.”
- iii. God created, more reasonable to think that the fundamental mechanisms of the earth’s climate system are robust, self-regulating, and self-correcting—that they are designed to operate somewhat like a thermostat, cooling the planet when it begins to warm, and warming it when it begins to cool.
- iv. Evidence that the earth has warmed and cooled cyclically throughout its history is consistent with this view. See Fred Singer and Dennis Avery, *Unstoppable Global Warming—Every 1,500 Years*.

- God’s promises to maintain stability in seasons and oceans

- i. God promised, “While the earth remains, seedtime and harvest, cold and heat, summer and winter, day and night, shall not cease” (Gen. 8:22).
- ii. God promised, “Never again shall there be a flood to destroy the earth” (Gen. 9:11; see also v. 15).
- iii. And in Jeremiah, God says, I placed the sand as the boundary for the sea, a perpetual barrier that it cannot pass; though the waves toss, they cannot prevail; though they roar, they cannot pass over it (Jer. 5:22)

- People displease God when they fail to acknowledge his control of the weather.

- i. In the verses after Jeremiah 5:22, God rebukes Israel for not acknowledging that he controls their weather (Jer. 5:23–25); a passage sounds remarkably similar to the proponents of dangerous global warming today
- ii. The underlying cause of fears of dangerous global warming might not be science, but rejection of belief in God.
- iii. Paul speaks similarly of people who “suppress the truth” about God’s existence and attributes (Rom. 1:18-25). Such a description could be applied to much of the environmentalist movement, for whom “Mother Earth” rather than the one true God is their highest object of devotion.
- iv. Many other passages of Scripture also affirm God’s control over the earth’s weather (see Lev. 26:18–20; Deut. 28:12, 23–24; 2 Sam. 21:1; 1 Kings 17–18; Job 37:9–13; Pss.107:23–38; 148:8; Amos 4:7–8; Jonah 1:4–16; Matt. 8:26–27).

- God did not design the earth so that we would destroy it by obeying his commands

- i. “Be fruitful and multiply and *fill the earth and subdue it* and have dominion over the fish of the sea and over the birds of the heavens and over every living thing that moves on the earth” (Gen. 1:28).
- ii. Do we really think God set up the earth to work in such way that *the more we do these morally right things*, the more we will *destroy the earth*?
- iii. Resources can be used foolishly, and I am not advocating reckless dangerous use of the earth’s fuels.
- iv. But, Global Warming Alarmists are warning against *clean and safe use of all these fuels* and that there is *no safe use* of these fossil fuels, because even if they are burned with 100% pollution-free flames, *they will still necessarily emit carbon dioxide* because that is an unavoidable byproduct of combustion. They object not just to *abuse*, but to all *use*.
- v. God has placed in the earth and its atmosphere a number of self-regulating, self-correcting mechanisms by which it can manage its own temperature.

- Global warming alarmists remove our motivation to thank God for his gifts of cheap, abundant energy resources

- i. The Bible praises God for his creation of the earth (Gen. 1:31, Ps. 24:1, 1 Tim. 4:4).
- ii. Therefore, we should give thanks and praise to God for the excellence of the earth that he created.

iii. God wants us to develop and use the earth's resources because "he formed it to be inhabited!" (Isa. 45:18).

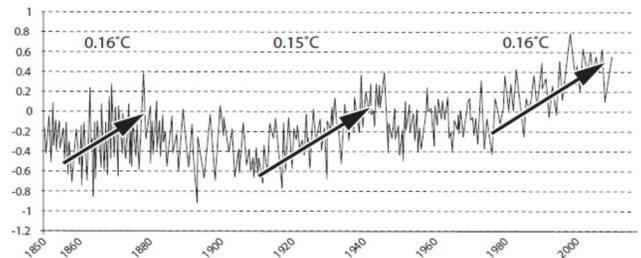
-What does the scientific evidence say about global warming?

- i. Scientific opinion is strongly divided about global warming
- ii. List compiled by a US Senate panel = *more than 700 scientists* have published their rejections of the whole or significant parts of the global warming hypothesis.
- iii. *More than 31,000 degreed scientists* (over 9,000 with PhDs) have signed the "Global Warming Petition"
- iv. L. Solomon's book *The Deniers: The World-Renowned Scientists Who Stood Up against Global Warming Hysteria, Political Persecution, and Fraud.*
- v. No consensus found in studies of published literature (N. Oreskes' which did was found to be badly flawed)
- vi. A study of the same database Oreskes' used actually showed a significant shift away from large scale agreement re. global warming.

-The earth's temperature has fallen or remained steady for the past fifteen years, a result not predicted by global warming computer models

- i. Dr. Phil Jones, long-time director of the Climatic Research Unit at the University of East Anglia: positive warming trend of 0.12°C per decade (0.216°F per decade, or an average of 0.02°F per year, too small to be statistically significant) from 1995-2009.
- ii. + Negative (cooling) trend of -0.12°C per decade if you calculate from January 2002 to 2009!
- iii. Such stability or even cooling in the presence of *increased* carbon dioxide is not the predicted result from the global warming computer models.
- iv. Earlier changes in average global temperatures have not coincided with changes in atmospheric concentrations of carbon dioxide. See 10.22 above.
- v. 10.22: The increase in temperature from 1910 to 1940 was *prior* to most of the world's increasing production of carbon dioxide (after World War II).
- vi. 10.22: Cooling period from about 1945 to 1975, then a warming period from 1975 to 2000, then a cooling period from 2000 to the present. (And all of these changes are relatively small).
- vii. Reliability of temperature measurements in question, especially considering "urban heat island" effect.

Figure 10.22
GLOBAL AVERAGE TEMPERATURES 1850–2009



- Should the UN's Intergovernmental Panel on Climate Change (IPCC) be trusted to have the last word?

- i. The "Summary for Policymakers" published by the IPCC generally exaggerates actual scientific conclusions.
- ii. The IPCC is *highly politicized*.
- iii. charter called for it to study *human* influence / largely ignores *natural* influences.
- iv. Staff workers' jobs depend on continuing to find and publish evidence supporting the theory of dangerous man-made global warming.
- v. Chapter 9 of its 2007 Assessment Report, which assesses likely temperature change from human "greenhouse gas" emissions relies heavily on the work of a small group of scientists prone to "group think" for lack of adequate interaction with others.
- vi. IPCC's authority undermined by scandals 2009-2010 ("Climategate," discovery of predictions based on unscientific sources, such as press releases from environmental groups, when actual scientific evidence refuted these releases).
- vii. "Climategate" = the CRU, NASA's Goddard Institute for Space Studies, the National Oceanic and Atmospheric Administration, the National Center for Atmospheric Research, the National Climatic Data Center, the UK Meteorological Office, and elsewhere—on which the IPCC and national governments relied for data basic to global warming projections, had committed serious scientific misconduct. The misconduct was so serious and systemic that *it simply undercuts the credibility of all historic and contemporary temperature data* published in the IPCC's Scientific Assessment Reports.
- viii. National Oceanic and Atmospheric Administration (NOAA) began systematically eliminating climate-measuring stations in cooler locations around the world.

- Are glaciers melting and sea levels rising?

- i. If yes, cause could = variations in sun activity, in ocean currents, and ordinary long-term weather cycles.
- ii. However, none of the claimed disasters is well supported by evidence.
- iii. Glaciers have been shrinking slowly ever since the end of the last Ice Age (about 18,000 years ago)
- iv. No current data show accelerated shrinkage due to increased warming.
- v. Short-term observations do not prove anything. Ice melts in warmer seasons and freezes in cooler seasons.
- vi. Pictures of melting Arctic ice prove nothing.
- vii. If people do want to rely on short-term observations, the most recent ones show *expansion* at the poles.
- viii. Sea Level: All the alarming stats from an Inconvenient Truth have been found alarmist and severely flawed.
- ix. Sea Levels have been slowly rising since the last ice age, yet only 6.3 inches in the 20th cent. Gore claims will be a 20 ft increase in an Inconvenient Truth – wholly unfounded claim.
- x. Gore's movie banned from British Gov't Schools unless shown w/proper refutation of its serious errors.

- There has been no more frequent or intense severe weather caused by a warming earth.

- Benefits from increased Carbon Dioxide in the atmosphere:

- i. Effect on *plant life*—and therefore on all other life—is large and *overwhelmingly beneficial*.
- ii. Hundreds of peer-reviewed scientific studies claimed increased CO₂ = increased plant growth.
- iii. Atmospheric CO₂ level is now very low compared to past geologic periods—when plant & animal life thrived.
- iv. CO₂ levels throughout the earth's history have drastically changed to much higher and much lower than today's levels with no significant correlation to temperature change.
- v. CO₂ released now, by our burning of fossil fuels, is restoring some of it to the atmosphere and greatly benefiting life on earth (*much more prolific plant growth*).
- vi. Intentionally forcing people to reduce carbon dioxide emissions would actually do enormous harm, not only to human economies but also to the whole biosphere.

- Government control of energy = unacceptable loss of human freedom.

- i. The controversy over global warming is to a controversy over human liberty versus government control.
- ii. Liberal politicians believe enlightened governing officials can run people's lives better than individual's can.
- iii. Such people will eagerly flock in large groups to the global warming crusade, because it appears to be a wonderful mechanism by which government can control more people's lives.
- iv. A government that tightly controls energy is a government that tightly controls society.
- v. Václav Klaus, president of the Czech Republic – Environmentalism/Global warming is the most dangerous threat to human freedom since communism.

- The unacceptable costs of reducing our use of carbon fuels

- i. Abundant affordable energy is crucial to economic production.
- ii. Using energy sources: increases work efficiency of humans, makes possible all human economic progress, allows us to use our time in higher levels of intellectual endeavor.
- iii. Fossil fuels are (along with nuclear energy) the most abundant and affordable sources of energy available.
- iv. Alternative energy sources cost 2-8 times as much, too much for the poor to afford.
- v. Christians who are concerned about alleviating poverty in the world cannot ignore the tremendous economic harm that would come from forcing reductions in carbon based energy sources.
- vi. See: *A Renewed Call to Truth, Prudence, and Protection of the Poor: An Evangelical Examination of the Theology, Science, and Economics of Global Warming.*

- The warnings about dangerous man-made global warming are based on poor scientific evidence and poor scientific method, are not proven by previous empirical data, conflict with the Bible's teachings about the nature of the earth and man's purpose on the earth, and propose solutions that would cripple the world's economies and bring immense harm to the poor.

All of the class lessons and outlines are posted on the class website www.christianessentialssbc.com.

To order CDs, e-mail tech@christianessentialssbc.com. Someone is also available in the sound booth before and after the class.