

LIMITING CARBON EMISSIONS

By Charles McElwee

Were it not for the burning of the earth's natural resources, the people of the world would be living in a primitive state, most of the comforts and pleasures humans take for granted would not exist, and the aspirations of millions of the human race for a better life would be thwarted.

These resources when burned, specifically fossil fuels consisting of coal, natural gas, and oil, provide us with artificial light, conditioning of hot and cold temperatures, housing, food, clothing, transportation, communication, entertainment (movies, TV, etc.), internet services, an array of labor- and time-saving devices (washing machines and dryers, etc.), and on and on.

Coal, natural gas, and oil are known as fossils because they are remnants of plants and organisms that had life in a prior geologic age, about 300 million years ago. These plants and organisms captured energy from the sun through photosynthesis to create the compounds that made up their tissues. The most important element in these fossilized remnants is carbon, which gives these fuels their stored energy, and which when burned combine with oxygen to emit carbon dioxide into the atmosphere.

Carbon dioxide is known as a greenhouse gas, because it, as claimed by a host of climate scientists, along with lesser gases such as methane, trap in the atmosphere, like panes of glass of a greenhouse, some part of the sun's heat as it is re-radiated from the earth's surface back into space. This trapping, according to a number of scientists, causes over time an increase in the earth's temperature, and that increase, according to the same sources, can be expected to cause climate changes that will be detrimental or disastrous to living species, including human beings.

There has existed for quite some time a belief among a large number of scientists and citizens of this and other countries that the nations of the world need to unite to curb the human-caused emissions of these greenhouse gases by imposing increasingly absolute limits on such emissions in relation to an historic level, say 1990 or 2005.

President Obama has made the imposition of such limits through federal legislation one of his three initiatives in the early part of his administration. As of this writing, legislation is moving through the Congress to that end. Also, negotiations are taking place between the United States and China, an indispensable partner in this endeavor, in an effort to achieve a mutually acceptable agreement on the reduction of greenhouse gas emissions prior to the Copenhagen conference on the climate scheduled to convene in December.

Capping greenhouse gas emissions is perceived by many as the world's most significant long-term policy challenges, and as constituting "one of the most complex diplomatic negotiations in the history of the world."

As with a lot of public issues, there exist two conflicting interests. With respect to climate legislation, those interests the world over are (1) the maintenance and growth of the nations'

economies, and (2) the restricting of greenhouse gas emissions so as to avoid the possible climate consequences as foreseen by a number of scientists and those who agree with them.

I have completed a lengthy paper on the subject of greenhouse gas emissions wherein I discuss its various aspects including (1) Emitters and Sources of Greenhouse Gases (a lot of data); (2) Claimed Effects of Greenhouse Gases on Earth's Temperature; (3) Global Climate Change as a Policy Challenge for the World; (4) The Politics of Coal and Coal-Fired Generation in the United States (which includes the present status of the Waxman/Markey Climate Bill in Congress), as well as The Politics of Coal and Coal-Fired Generation in West Virginia and in China; (5) Renewable Energy; (6) Clean Coal (Carbon Capture and Sequestration); and (7) Coal and Renewable Energies. I also provide certain Conclusions. For those interested, the more lengthy paper may be accessed at the following website: www.ramlaw.com/capandtrade.php. The paper is captioned "Will the United States and China in 2009 Commit to a Measurable, Reportable, and Verifiable Obligation to Cut Their Emissions of Greenhouse Gases Below an Historic Level?", and "How Would a Commitment Affect West Virginia?" I answer the first question as Unlikely and the second as Unknown.

In the referenced paper, I note certain significant facts and express some opinions, each being here partly and randomly stated:

1. The main issue at the December Copenhagen conference on the climate will be that of binding "burden sharing," the "burden" being, according to climate scientists, to cut by 2050 world emissions of greenhouse gases by 80% compared with 1990 levels in order to limit global warming to a two centigrade (2C) average rise, a level described as "dangerous."

2. A poll reveals that nine out of ten climate scientists do not believe political efforts to restrict warming to an additional 2C will succeed.

3. China is the largest emitter of greenhouse gases, being responsible for 57% of the increase within this decade. The United States is second largest, and on a per capita basis the largest (four times that of China with China being above the world's average in this regard).

4. Generating electricity is the largest single source of carbon dioxide emissions. In the United States, it contributes 41% of all such emissions, with coal being the principal fuel.

5. In half of the States, more than 50% of the electricity generated therein is from coal. West Virginia has the highest percentage (98%). (In Vermont and Rhode Island, the percentage is 0.) West Virginia is, among the States, the fourth largest emitter of greenhouse gases on a per capita basis.

6. About half of China's coal use is for generating electricity, comprising 80% of its electric generation, the highest of any nation.

7. The United States has the world's largest supply of coal reserves. In terms of recoverable coal reserves from producing mines, West Virginia has the second largest such reserves in the Nation after Wyoming. West Virginia leads the Nation in coal production from underground mines.

8. China produced over twice the coal as the United States in 2006, 38% v. 17% of the world's total for that year.

9. It is questionable whether the electric generating industry can achieve a 17% reduction in greenhouse gas emissions by 2020 as compared to 2005 levels as provided in the proposed American Clean Energy and Security Act of 2009 ("ACES Act") now pending in the House of Representatives. (An Opinion.)

10. While the United States as provided in the proposed ACES Act is seeking to impose an absolute cap on carbon emissions, China is unlikely, for understandable reasons as noted in the referenced paper, to accept an absolute cap on, but may accept a growth rate reduction of, its greenhouse gas emissions. It appears that the President of the United States may be willing to accept on China's part a growth rate reduction, assuming that all of the multiple details of such a reduction can be agreed upon. Whether the United States would be willing to accept an absolute cap on its part and a growth rate reduction on China's part presents a serious question. (Opinions.)

11. It is unlikely that renewables can supplant coal as the source of the energy needs of the United States and of the world in the foreseeable future. (An Opinion.)

12. The only way the United States and the world can sustain their development and meet targeted greenhouse gas emissions reduction is by making coal clean through the capture and sequestration of the carbon released in its burning. (An Opinion.) That was the view apparently expressed by U.S. Secretary of Energy Stephen Chu recently when he said, "Developing this technology [carbon capture and sequestration] is critically important for reducing greenhouse gas emissions in the U.S. and around the world."

13. There appears to exist the world over a political will to develop commercially-feasible carbon capture and sequestration technology, a technology that is being perceived as critical to the achievement of targeted reductions in greenhouse gas emissions. That will is increasingly becoming evident in the United States by Secretary Chu's recent remarks, by the restart of the FutureGen project in Illinois, by the number of dollars in the economic recovery plan for the development of this technology, by the dollars for this development in legislation pending before Congress, and by the numerous private projects that are underway in many countries to achieve commercially-viable carbon capture and sequestration technology, all of which are sketched in more detail in the referenced paper. (Part Facts; Part Opinions.)

14. The developing culture that coal is a "dead duck" must be reversed, not only in the interests of West Virginia's, the United States', and the world's economies, but also in the interests of making significant reductions in carbon emissions through developing technologies.

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