THE AMERICAN OIL & GAS REPORTER®
SEPTEMBER 2008
The "Better Business" Publication Serving the Exploration / Drilling / Production Industry

Energy And Climate Policy

Climate Distorting U.S. Energy Policies

Editor's Note: The following is the second of two parts on climate change and U.S. energy policy. Part one, which examined the science of climate change, ran in the August issue of *The American Oil & Gas Reporter.*

By S. Fred Singer

ARLINGTON, VA.–There is no question that the exaggerated concern about global warming is distorting energy policy in the United States, and indeed throughout the world. The United Nations Intergovernmental Panel on Climate Change, most of the media, and almost all politicians have demonized carbon dioxide as a pollutant whose emissions have to be reduced.

It is significant that proponents of anthropogenic global warming (AGW) have largely ignored natural climate influences, principally from changes in solar activity. Yet the evidence is overwhelming that such natural factors control the climate and that the greenhouse effect from rising carbon dioxide, while certainly present, is insignificant and as yet undetectable.

These scientific facts have not yet penetrated to decision makers and we find, for example, both the Republican and Democratic candidates for president calling for bureaucratic controls on CO_2 emissions. Even President Bush has given way partially to AGW activists' pressure and sponsored a bewildering number of programs, mainly under the auspices of the White House Council on Environmental Quality (CEQ) and the Department of Energy. While the ostensible purpose of these policies is to reduce oil imports as well as CO_2 emissions, the net effect has been to waste tax dollars and increase energy costs.

Energy And Climate Policy

As presented by CEQ Chairman James L. Connaughton in April, U.S. policies appear to be dominated by concern about AGW and reducing greenhouse gases, which is totally unjustified, in my view. Their twin goal is "long-term global . . . GHG reduction, consistent with economic growth." This is going to be difficult to achieve, since schemes to control greenhouse gases inevitably raise the cost of energy.

There is no explicit mention in CEQ's statement of increasing domestic oil and gas production, new refinery construction, or of nuclear reactors as a carbon-free and proven technology to generate electricity.

A CEQ listing of U.S. mandatory programs since 2001 estimates they will reduce GHG emissions by 6 billion-10 billion tons by 2030, but says nothing about reducing the amount of imported oil.

Most of the mandatory programs listed have little to do with reducing oil imports or increasing energy security. For example, there are lighting efficiency (including using mercury-containing fluorescent light bulbs), appliance efficiency (including 45 new standards), accelerated phase-out of hydroflourocarbons (originally mandated to reduce ozone depletion), mandating that utilities use a certain percentage of "renewable power," building codes, and "mandatory efficiency standards and renewable fuel use in government operations."

All these may well be desirable, but they have little impact on oil imports and energy security. The two programs of possible relevance are renewable fuels (which, however, may require as much imported energy as they save, and may not even reduce total CO_2 emissions) and vehicle fuel economy standards, which are being achieved by consumer choice as a result of high oil prices.

The CEQ presentation shows that $45 billion of federal funds have been spent on climate change since 2001–about $15 billion for science, $22 billion for technology, and the rest for tax provisions and international expenditures. In addition, $42.5 billion in loan guarantees is now available, and a significant proportion of the $50 billion 2008 farm bill is devoted to climate change.

Limited Progress

So what has been the return on the investment so far?

The U.S. Science and Technology Program since 2001 has supported renewable fuels, including biodiesel, ethanol and hydrogen, which are judged to be of little use. It is still not known whether cellulosic ethanol will yield an economic replacement for gasoline. Much of the program has been devoted to advanced solar and wind energy, which at best is going to replace some of the electricity that is more easily and cheaply produced by domestic coal and nuclear reactors.

Probably the worst of the programs tries to encourage carbon capture and sequestration (CCS). It is likely that up to half the output of power plants will be spent on capturing and sequestering harmless and nonpolluting carbon dioxide.

The U.S. government program has established numerous "domestic partner-

ships" and international initiatives in "global action programs" and "technology advancement." It is difficult to judge what benefits, if any, these partnerships will produce beyond proliferating conferences and travel.

Statistics provided in *Trends on Total CO_2 Emissions, 2000-2005* indicate the United States is in fourth place behind Germany, the United Kingdom and Russia on the "most improved" scale, with an increase of 12.6 percent in real gross domestic product and only a 2.0 percent increase in CO_2 emissions. It is significant to note that in this same period, Germany reduced its emissions by 1.6 percent, but has the lowest increase in GDP (3.2 percent) of all the nations listed. The conclusion is clear: The best recipe for reducing CO_2 is to stop economic growth and produce a recession.

In comparison to White House policies, an open letter to the next administration and Congress by the U.S. Chamber of Commerce's Institute for 21st Century Energy spells out a somewhat better program. It stresses domestic drilling to increase U.S. oil and gas production and the aggressive expansion of nuclear power.

On the other hand, the self-appointed National Commission on Energy Policy, with support from liberal foundations, concentrates almost completely on controlling CO_2 emissions.

Distorting Energy Decisions

A rational energy policy starts with the realization that natural factors control the climate, and the human contribution is relatively minor and hardly detectable. In other words, carbon dioxide is not a pollutant and any attempt to limit its emission is pointless and very costly–in addition to being quite ineffective as long as China and India keep building coal-fired power plants.

On the contrary, since CO_2 is also the basic plant food, higher levels of atmospheric CO_2 promote more rapid plant growth, and improve agricultural crops and forestry. In any case, there are a number of economic studies that demonstrate that a somewhat warmer climate is, on the whole, beneficial to human health and welfare.

In my article on the science of climate change in the August issue of *The American Oil & Gas Reporter,* I displayed the evidence for natural forcing and against any appreciable anthropogenic contribution to global warming. Briefly, it consisted of comparing the pattern of warming calculated from climate models with the pattern actually observed in the atmosphere.

TABLE 1

Main Conclusions of NIPCC Report

- Nature, not human activity, rules the climate.
- The human contribution to warming is minor.
- Climate models overestimate the effect of greenhouse gas warming
- Natural forcings may account for observed climate change.
- Carbon dioxide is not a pollutant.
- Current climate changes, including sea level rise, are not unusual.
- Global warming would not produce more hurricanes or severe storms.
- Global warming will cause more rain and fresh water.
- A warmer climate and more CO_2 improve crop growth and increase prosperity.

The strong disparity between the two is interpreted to mean that AGW is so small as to be undetectable. This is not to deny the existence of the greenhouse effect; it simply means that the climate models greatly overestimate the importance of greenhouse gases in controlling climate.

We also showed in part one that climate models do not properly include a negative feedback within the atmosphere that diminishes the effects of CO_2. Furthermore, the models do not include the natural forcing from internal oscillations of the atmosphere-ocean system and the even more important contribution from variations in solar activity.

These scientific matters that contradict the conclusions of the IPCC are fully explained in the NIPCC's report, *Nature–Not Human Activity–Rules the Climate* (www.sepp.org/publications/NIPCC_final.pdf). Table 1 provides the primary conclusion of the report.

CO_2 Mitigation

Turning briefly to the various energy sources that AGW activists tend to tout as replacements for fossil fuels, a good place to start is by noting the counterproductive effect biofuels from corn or other food crops are having. They have raised the price of all food products, including meat, eggs and milk.

Meanwhile, they do not substantially reduce CO_2 emissions. In fact, investigations show that overall emissions of CO_2 may actually increase when one takes into account the use of marginal agricultural land and the destruction of forests to grow crops for biofuels.

Biofuels made from waste agricultural materials are still in the research stage and may not become economic. Certainly, present biofuel production is uneconomic and depends entirely on governmental subsidies.

Using hydrogen as a transportation fuel is feasible in principle, but prohibitively expensive in practice. Its storage, distribution and handling infrastructure problems are daunting. Furthermore, considerable energy is lost in producing hydrogen, no matter what method is used.

The primary hydrogen feedstocks are methane, which can better be used directly as a transportation fuel, or the electrolytic dissociation of water. If nuclear energy is used to produce the electric power, there may be some reduction in CO_2 emissions, but we already have concluded that is not important enough to justify hydrogen.

Energy from wind and solar is certainly possible, but of little actual value for supplying large quantities of electricity. Both methods are intermittent, requiring standby generation capacity, and they consume large areas. The electricity they produce requires subsidies to be economic. But most importantly, electric power generation is not a problem since we have essentially unlimited secure coal and nuclear power available.

Probably the worst of all the "clean" technologies suggested is carbon capture and sequestration. Fortunately, CCS is still in the research stage and may never come to fruition. It is very costly, consuming up to half the electricity produced. (Note that the use of "clean" in clean technologies seems to mean "no CO_2 emissions." This choice of words essentially mislabels CO_2 as a pollutant.)

Finally, we have nontechnological ways to limit CO_2 emissions, such as taxes and cap-and-trade schemes. The two methods are essentially equivalent, but politicians don't like to vote for taxes, which are too transparent, so they put the burden on industry by requiring cap-and-trade, which forces companies to pass the costs along to consumers.

Probably the worst idea is to have cap-and-trade with "soft caps," which allows politicians to raise the cap whenever they believe costs are running too high. One may think of this as the full employment act for lobbyists.

A Rational Energy Policy

The nation's goal should be to make energy cheap and secure. Lowering energy costs promotes economic growth and advances societal goals of greater

prosperity and a safer and cleaner environment. A rational policy accepts the fact that fossil fuels and CO_2 present no threat.

A rational energy policy for the United States must make increased use of domestic coal. It is secure and relatively low cost. Today's technology allows us to burn coal and capture almost all the resulting pollution, making coal a "clean" fuel. (The word "clean" is often misused these days to mean low CO_2 emissions, but CO_2 is not toxic, noxious, nor harmful in any way.)

Coal plants have become more efficient at converting Btus into electric energy. As we move toward integrated-gasification, combined-cycle technology, the efficiencies can approach 60 percent or higher, particularly when co-generation, which uses the waste heat, is included.

Nuclear generation, at least in the United States, has been bedeviled by high capital costs. But these can be lowered considerably by streamlining the licensing process and eliminating the delays that arise from litigation against constructing nuclear reactors. Considerable cost savings also can be achieved by standardization and, most importantly, by factory production of major components rather than onsite construction.

There are a wide variety of reactor designs available throughout the world:

- Pressurized-boiling water reactors;
- A Canadian design that uses heavy water;
- High-temperature, gas-cooled reactors;
- Pebble fuel, which was pioneered in South Africa and is finding applications in China; and
- An ultrasafe reactor of Swedish design known as PIUS.

All these designs work well, but standardization would help reduce costs.

Operating costs for nuclear reactors are relatively low. Low-cost uranium is quite abundant and much nuclear material is available from the reduction in nuclear weapons. Nevertheless, fuel prices will rise as these low-cost sources are depleted. It is therefore essential to plan for this eventuality.

Breeder reactors would convert nonfissionable uraniuim-238 into fissionable plutonium. Hybrid fusion/fission reactors would use neutrons from fusion or other sources to achieve the same purpose.

Finally, we have the possibility of converting plentiful thorium into a fissionable material to serve as a reactor fuel. These are all areas where government can play an important role in stimulating the necessary research to take care of needs for decades and centuries.

Role Of Natural Gas

Natural gas should not be used as a boiler fuel to generate electricity. This has come about mainly because of the irrational desire to reduce CO_2 emissions. A rational energy policy would phase out this use of natural gas and reserve it for other applications, such as transportation, where it can reduce the need for imported oil.

Gas-fired electric generation can be replaced by much cheaper coal or nuclear plants. The massive use of wind power, as suggested by T. Boone Pickens, is unlikely to be economic and would require subsidies.

Natural gas is relatively plentiful and secure in the United States, and additional supplies can be imported by pipeline from Canada and Mexico. But there is much natural gas onshore and offshore, provided Congress removes barriers to exploration. It seems irrational to forego domestic production and import liquefied natural gas from insecure sources in the Middle East in tankers that can serve as targets for terrorists. This is not to mention the high costs of liquefying, transporting and regasifying LNG.

Special mention should be made for handling stranded gas. Perhaps the best method for utilizing this resource is to convert it into synthetic gasoline, dimethyl ether, or methanol. All of these are excellent transportation fuels that can lower the need for imported oil.

Research is essential for exploiting the huge resource of natural gas locked in the form of methane clathrates in ocean sentiments.

Petroleum For Transportation

Oil is an ideal fuel because it can be used for almost every application, from power production to transportation. The problem is our increasing rate of imports and the consequent outflow of dollars. The remedies are mainly up to Congress, which has been resisting White House initiatives to explore and produce oil from the Arctic National Wildlife Refuge, and from other public lands on- and offshore. Conservative estimates place potential reserves as high as 70 billion barrels, worth $10 trillion at today's prices.

Besides conventional crude oil, there are other hydrocarbons that can serve as transportation fuels from tar sands, oil shales, and from converting coal to liquids. All these processes are costly, but may become economic if the world price of oil remains high. Such fuels may require special processing and therefore new refinery construction.

Finally, Congress can do a great deal to make domestic oil production more efficient and secure. The leasing process can be streamlined. A variable import fee can provide a floor to protect domestic oil prices to guard against manipulation by foreign producers.

Congress may also have to review the way in which government manages the Strategic Petroleum Reserve. It is well recognized that the SPR does not provide specific protection to U.S. consumers, but that releasing oil simply lowers world prices for a short time. A rational SPR policy would consist of "buying low and selling high."

It is very clear that the so-called energy crisis in the United States is basically the rising rate of oil imports from countries that do not share our political goals of liberal democracy. While true energy independence probably cannot be achieved, much can be done to reduce the rate of imports, first by increasing domestic production, but also by reducing demand.

A partial solution for fleet vehicles, buses and most trucks may be to substitute compressed natural gas, dimethyl ether, or methanol for gasoline and diesel. This could be done without raising the cost of infrastructure appreciably.

The most radical approach is to move to hybrid-electric and/or plug-in cars. It

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may turn out that families will own two cars: one for family trips and the other for in-town commuting, shopping and similar applications.

Many policy approaches are available to improve conservation and reduce traffic congestion. Note that all the policy steps discussed have nothing to do with "saving the climate" or limiting CO_2 emissions. We are simply talking about improving efficiency, conserving resources, and advancing national security.

Policies that are not constrained by AGW fears can lower the cost of energy and thereby advance economic growth. They also will reduce oil imports and the need for LNG, providing more security and improving the U.S. trade balance. Finally, they would lower urban pollution and congestion, and provide a better quality of life. ❐