Beyond Hot Air

Will the world adopt strict limits on greenhouse gas emissions?

By RICHARD MONASTERSKY

In June 1992, representatives of more than 150 nations gathered at the Earth Summit in Rio de Janeiro and signed a historic treaty designed to protect humankind from the dangers of climate change. The U.N. Framework Convention on Climate Change, as the agreement is called, sets an ultimate objective of stabilizing "greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic [human-caused] interference with the climate system."

Five years later, this grand agreement has produced little substantive action toward its stated goal.

Industrialized nations pledged at Rio to limit their emissions of greenhouse gases, with the aim of returning to 1990 emissions values by the year 2000. Now, many of those countries, including the United States, acknowledge that they will probably not meet this voluntary target.

In December, the world will take another shot at limiting emissions of carbon dioxide and other heat-trapping gases. At a meeting in Kyoto, Japan, the climate convention nations are scheduled to adopt a follow-on treaty that will set strict emissions limits for developed countries in the next century. As the negotiations heat up, however, countries appear to be diverging rather than drawing together on critical issues. Many observers of the negotiations are beginning to suspect that the outcome at Kyoto may fall short of setting substantial limits.

"Things are very far apart at the moment," comments treaty supporter Annie Petsonk of the Environmental Defense Fund, an environmental lobbying group in Washington, D.C. Petsonk attended the most recent meeting of international negotiators, in Bonn, Germany, in March.

Opponents of the treaty offered a similar assessment. "The bullet train to Kyoto has slowed to a crawl, and for good reason," pronounced John Shlaes, director of the Global Climate Coalition, a business lobbying group in Washington, D.C.

While the political discussions are far from any consensus, the international scientific community has presented a united front regarding the most basic conclusions about greenhouse gases. Since the beginning of the Industrial Revolution, atmospheric concentrations of carbon dioxide gas have climbed from 280 parts per million (ppm) to the current value of 360 ppm, and the number is rising at the rate of 1.5 ppm each year. Added to that is the effect of other heat-trapping gases such as methane, nitrous oxide, and chlorofluorocarbons, many of which are also growing more concentrated in the atmosphere.

Climate theory and computer models predict that loading the air with greenhouse gases will turn up Earth's thermostat, effectively raising surface temperatures, shifting patterns of precipitation, and swelling the seas. According to the Intergovernmental Panel on Climate Change, which represents a consensus of thousands of scientists, there is significant uncertainty about how fast these changes will take shape. From computer simulations, the panel estimates that mean global temperatures will climb somewhere between 1.5° and 3.5°C by 2100.

Although the climate convention pledges nations to work toward stabilizing greenhouse gas concentrations, that goal would require extreme cuts in emissions—a step no country is currently willing to undertake. The talks leading up to Kyoto are therefore focusing on reducing emissions by a more modest amount in the next decade or so.

The negotiations for a new climate treaty are particularly complex because they reach into the very heart of national economies. Greenhouse gas pollution comes from such mainstays of modern life as electric power plants, automobiles, and heavy industry. Nations do not want to shackle themselves to a plan that will inhibit future economic growth.

Fairness is a central issue. Countries are striving to keep the economic playing field level so future emissions caps won't bestow unequal advantages.

Furthermore, the industrialized nations have agreed to take action first because they have emitted the bulk of the greenhouse pollution. The convention grants developing countries a temporary reprieve from restrictions on emissions, providing them time to build their economies. By prior agreement, the negotiators have barred the Kyoto treaty from imposing any new obligations on developing countries beyond those mentioned in the Rio treaty.

Early in the next century, however, developing nations will account for the major fraction of greenhouse gas pollution—a fact that complicates the current round of negotiations.

The strictest proposal to emerge thus far comes from the countries most threatened by climate change—island nations, which could lose precious living space or even cease to exist as sea levels rise. The Alliance of Small Island States (AoSIS) has proposed that industrialized nations reduce their emissions of carbon dioxide by 20 percent from 1990 readings by 2005.

"My group is pressing for immediate, short-term action. We feel there is reason for urgency. The science tells us that immediate action is now needed if we are [eventually] to stabilize concentrations of greenhouse gases," says Tuiloma N. Slade, vice chairperson of AoSIS and ambassador to the United Nations from Western Samoa.

Among the developed countries, the 15-nation European Union has stepped forward as a leader in the effort to set emissions targets. Just before the meeting in Bonn, the environmental ministers of E.U. nations surprised international observers by forging a common negotiating position that calls for specific cuts in greenhouse gases.

The E.U. proposal would require industrialized nations to reduce combined emissions of carbon dioxide, methane, and nitrous oxide 15 percent by 2010. It also notes that countries should set an interim target for 2005, although it posits no specific numbers for that date.

As part of its proposal, the European Union will ration emissions unequally among its member nations to account for inherent differences in their economies. Nations with lower standards of living would be able to increase their emissions, while richer countries would bear the brunt of the emissions reductions. For instance, Greece, Portugal, and Spain would be allowed to increase their emissions by 30 percent, 40 percent, and 17 percent, respectively, over 1990 values. Germany and Denmark, in contrast, would each cut their emissions by 25 percent.

The allocation also takes into account a country's current emissions. France, for example, gets much of its electricity from nuclear power plants and would have a much tougher time cutting emissions than a country that relies mostly on coal. For that reason, France would maintain emissions at 1990 values.

These targets get the European Union only partway toward its proposed goal. Taken together, the unequal allocations would reduce E.U. emissions 10 percent by 2010. If the Kyoto agreement prescribes a full 15 percent decrease, the European Union can meet this goal, the environmental ministers say, although they cannot currently describe how they will do so.

Although the United States has yet to put forward specific numbers regarding emissions targets and timetables, it has offered a general proposal that sparked quite a bit of heat at Bonn.

The U.S. concept calls for establishing emissions budgets over several years for industrialized countries. For example, the Kyoto agreement might stipulate a 10-year-long budget period beginning in 2010. Each developed nation would get a certain emissions allowance for the first budget period and an equal or smaller allowance for the second budget period, starting in 2020.

By setting multiyear instead of annual budgets, countries would gain flexibility in how they reduce emissions, according to U.S. negotiators. If a nation's economy were to surge and boost emissions for one year, that country could make up for the increase in subsequent years.

The U.S. proposal also sets up a system for treating emissions as a commodity. If a country does not use all its budgeted emissions in one period, it could bank those emissions for use in a future period. Alternatively, it could sell unused emissions to another country.

The proposal would even allow nations to borrow a certain amount of emissions from their own future budgets, like a worker drawing an advance on next year's salary. The country would have to reduce its emissions during the subsequent budget period by the borrowed amount, plus some additional penalty.

The United States contends that the system would minimize costs by giving countries as much leeway as possible in deciding how to reduce greenhouse gas pollution.

Other nations have trouble with the U.S. concept. The European Union and developing countries see the idea of trading as too complicated to include in the current agreement, which must be finished prior to the Kyoto meeting in December.

Controversy also surrounds the idea of borrowing emissions. "People have no problem with the saving idea, but borrowing from the future is considered to be fairly dangerous because it would be an excuse not to take action," says Bert Metz, head of the Netherlands' delegation to the negotiations.

The issue has split environmentalists in the United States. While some groups find the idea of budgets and trading too complicated, the Environmental Defense Fund supports the flexibility of these methods for reducing emissions, says Petsonk.

The United States drew still more fire in Bonn with its proposal for broadening limits on greenhouse gas pollution. The United States wants the Kyoto agreement to set a specific date, perhaps 2005, by which all the treaty countries will adopt binding emissions limits. It also wants to set up a system governing how developing countries could voluntarily adopt emissions budgets that would be consistent with the treaty.

Developing nations protested the idea, noting that the ground rules for the current negotiations forbid placing any new obligations on them. "The developing countries are not happy. They want to see the developed world get its act together first," notes Michael Zammit Cutajar, executive secretary of the United Nations Climate Convention secretariat, the body that oversees the negotiations.

The United States may be unwilling to back down, despite the criticism, because internal political forces favor expanding the treaty's reach. Business and industry lobbying groups have traditionally demanded commitments from developing countries, and now the labor lobby has added its voice.

Bill Cunningham of the AFL-CIO argued in Bonn that if developed countries act alone, they may lose jobs and businesses to countries whose environmental laws are less strict. The treaty could inadvertently boost emissions by causing energy-efficient industries to relocate to developing nations and become less efficient, according to Cunningham.

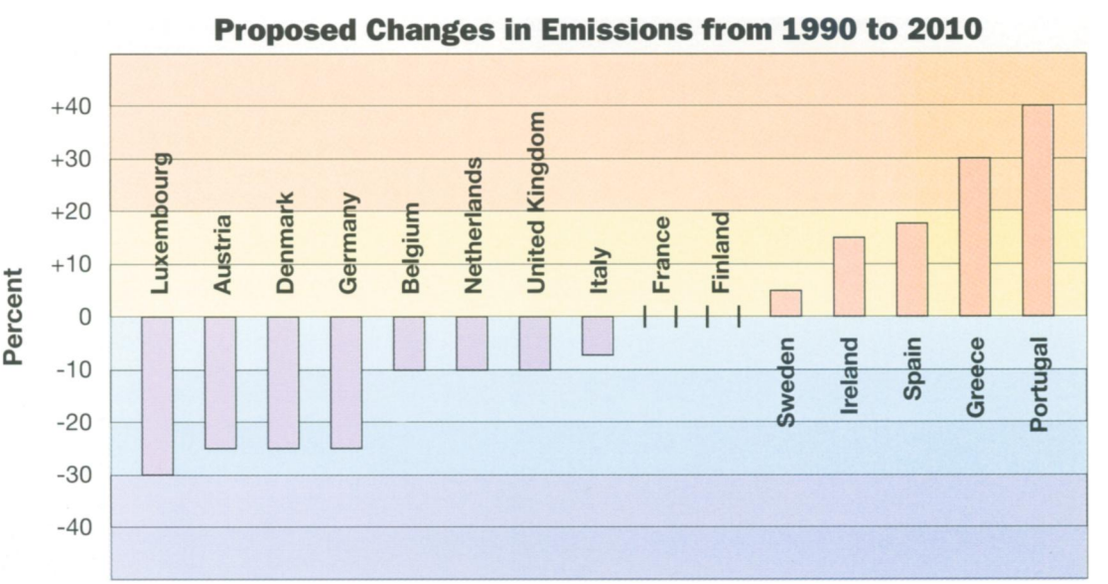
"If the enhanced greenhouse effect is a global environmental problem that must be addressed, and there seems consensus here that it is, then measures to address it must also be global. The burden must be shared, and shared equitably," said Cunningham.

U.S. negotiators echo that point. "We believe very strongly that we have to keep in mind that future growth in emissions will come largely from the developing world. Despite the difficulties it poses for reaching international agreements, we must face that fact and incorporate provisions that require all nations to accept obligations under whatever agreement we come up with," says one U.S. State Department official.

Complicating the negotiations even more, Australia is arguing strongly for a concept called differentiation, which would tailor the emissions limits of each nation to its own circumstances.

With little negotiating time left before December, some observers hold scant hope that countries can resolve their major differences.

Zammit Cutajar, though, remains cautiously optimistic as he oversees the talks. "I'm convinced that there will be resolution and that there will be political pressure for results," he says. □



The 10 percent solution: The European Union has proposed this unequal rationing among its member states to reach a 10 percent cut in total E.U. emissions of carbon dioxide, methane, and nitrous oxide.