

**B5-- KYOTO, GLOBAL WARMING AND THE 21ST CENTURY,
SNR, 1997**

Note: Fred Branfman is Coordinator of the Future Generations Initiative and Global Warming Central website of the Pace University Law School Energy Project. He attended the Kyoto conference as a writer.

INTRODUCTION

"In recent years we have selfishly destroyed nature to accommodate our needs. We have been indifferent to the reality that, the more materially abundant life we pursue, the more sacrifice other people and other life forms have to make." -- Kyoto Appeal of the Inter- Religious Gathering on Prevention of Climate Change

"Do we really want to give the Federal Government the right to shut down a power plant in Nebraska? To surrender our national sovereignty?" -- Senator Charles Hagel, Head of the U.S. Senate Delegation, Kyoto, December 8, 1997

KYOTO. Many U.S. commentators dismiss the recent Kyoto global warming agreement because of very real short-run obstacles to its implementation. This is a mistake. Kyoto represents an historic turning-point as humans formally agreed for the first time to limit our consumption of energy from fossil fuels. Kyoto thus marks a major shift in consciousness on an issue that will be as central to the 21st century as was our decision to step back from nuclear holocaust at the end of the 20th.

The great challenge of our time is not external enemies or alien ideologies but our own evolutionary success. Evolution has favored the human species most because of our success in procreating, harnessing energy and transforming raw materials into useful artifacts. Yet today, for the first time, the very behaviors responsible for our success threaten our long-term survival as a species. Unless

we transform these behaviors, and do so quickly, our descendants face enormous and potentially irreversible consequences.

Kyoto is, to be sure, but a first, wobbly step in this transformation. Nationalism, ideology, and the blind pursuit of economic growth are all major obstacles to fulfilling the goals of this treaty. But the dynamics unleashed at Kyoto will not disappear for one basic reason: energy-related carbon emissions will continue to grow by more than six billion tons a year even if the Protocol is fully implemented.

And they grow, so too will international concern about their consequences. The dynamics that will determine the success of the Kyoto agreement - better scientific understanding of climate change, political debate in the United States, technological development, and international cooperation particularly with the developing world - will all increase in importance in future years.

THE KYOTO PROTOCOL: A SIGNIFICANT BUT SMALL FIRST STEP

As the press officer for the Kyoto global warming negotiations entered the Hall carrying the latest version of the negotiating document, he was mobbed by hundreds of journalists and representatives of non-governmental organizations, who pushed, shoved and yelled at each other as they grabbed for the latest version of the proposed treaty.

It had suddenly been made clear why the negotiations were necessary in the first place.

Although important symbolically, the Kyoto Protocol by itself is but a small first step toward confronting the great environmental and resource challenges of the 21st century.

To begin with, it is unclear whether it will ever be implemented. Calling for an overall 5.2% reduction in carbon emissions below 1990

levels by 2012, the Protocol will require serious cuts in fossil fuels by the 38 developed nations that it legally binds. The U.S., for example would need to curb the consumption of gasoline, natural gas and the coal used to make electricity by 30% below what is expected to be consumed in 2012.

It is also uncertain whether proposed "market-based" solutions - such as trading the right to emit carbon dioxide among industrialized nations and the joint implementation of carbon stabilizing projects such as the preservation of forest in the developing world - can work on the scale required. While emissions trading within the United States worked to reduce sulfur emissions cost-effectively, a relatively small number of power plants were involved and the preferred solution was simply to burn a different type of coal.

Global warming involves many additional sources of greenhouse gases including power plants, factories, vehicles and buildings and the technological solutions are much more complicated.

The U.S. Senate is unlikely to ratify the Kyoto Protocol without the "meaningful" participation of developing countries like China and India, who have thus far refused to set limits on their emissions. And at present there are no specific measures to punish nations failing to comply with agreed-upon targets.

But even if the Protocol is fully implemented, it will only begin to address the problem of the accumulation of greenhouse gases in the atmosphere. For a 5.2% cut by developed nations by 2012 will still see the world emit more than 6 billion tons of greenhouse gases annually for the foreseeable future, leading inexorably to the "two times carbon world" modeled by the 2,000 scientists comprising the Intergovernmental Panel on Climate Control (IPCC).

Scientists observe that carbon concentrations were 280 parts per million (ppm) at the beginning of the Industrial Revolution, and are today 360 ppm. They have warned that changes in the earth's climate "is likely to have wide-ranging and mostly adverse impacts on human

health, with significant loss of life" should concentrations reach 560 ppm.

Avoiding such a "2x carbon world" seems impossible, as IPCC scientist Mark Levine has noted, as long as we remain a carbon based economy powered by coal, oil and natural gas. To avert disastrous global warming, we must move to a hydrogen-based economy powered by such renewable energy sources as solar, wind, biomass, fuel cells, and transported by far more fuel- efficient vehicles than those in use today.

While technology enthusiasts like Amory Lovins argue this is technically feasible in the near future, it is likely that political, technical and business barriers could delay the transition for decades.

A member of an international group charged with verifying the Kyoto Protocol summed up its impact after it was clear it would pass: "This is a significant political achievement, but it means little in terms of climate change itself. A two times carbon world is a given, and the real question is whether we can avoid going to a 3 times world."

International negotiations have been the main force propelling governments to address the issue of global warming. The main countervailing force has been U.S. business, through their influence on domestic U.S. politics. Third World involvement will be the key to implementation of the Protocol, both because the U.S. Senate has stated that this is required for ratification, and because Third World carbon emissions will skyrocket otherwise. Breakthroughs in technology will be the long-term key to averting global warming. Only if nations like China and India can grow without relying on fossil fuels will carbon concentrations in the atmosphere be stabilized.

I. THE INTERNATIONAL NEGOTIATION PROCESS

"Any Party not included in Annex 1 (i.e., developing ation) may notify the Depository that it has opted to be bound by

this Article." -- From proposed Article Nine to the Kyoto Protocol

"Most of our country has been laid waste by phosphate mining. My people live on the coastal belt, our back to a wasteland and at our front a rising flood of biblical proportions." --President Kinza Clodumar, Naura, Kyoto, December 8, 1997

"If the result of Kyoto is not ratified, it will mean international chaos, a return to the situation of the 1930s! How can the world function if its member states decide to just ignore international agreements?" -- Netherlands delegate, 3 a.m. subway ride home

The tension was mounting at 4 a.m. on the final day of the Kyoto negotiations. Dozens of Third World delegates were objecting to Article 9 calling for voluntary participation by developing nations. The vehemence of the Chinese representative surprised many.

The United States indicated that inclusion of Article 9 in the Protocol was critical for U.S. agreement. Matters seemed at an impasse.

The Conference Chair - Argentine diplomat Raul Estrada - said he feared there would be no agreement. The tension notched up. What would he do? Keep in Article 9, and the Third World nations might bolt. Remove it, and the U.S. might refuse to sign. Was the treaty doomed?

At a critical moment, Estrada announced that he had reached a decision. "Article 9 is removed from the Protocol," he stated, striking his gavel and announcing that this was now the position of the Conference. A global warming activist blanched, though she opposed Article 9, because she feared this meant there would be no treaty.

Estrada was able to remove Article 9 because the Protocol is approved not by vote but a process that allows the Chair, presiding over the debate and receiving reports on closed-door negotiations, to

periodically announce a "consensus" position. It is a delicate job. If he alienates too many nations, they will not support the treaty. If he opts too much for the lowest common-denominator, the treaty will have no teeth.

The U.S. delegation eventually endorsed the treaty despite the deletion of Article 9. But the fact that the U.S. was submitting to a decision made by a Third World diplomat was not lost on Senator Chuck Hagel and Representative James Sensenbrenner, the Republican heads of the Congressional Delegation attending Kyoto. They frequently complained that the U.S. was surrendering its sovereignty to foreigners.

The key moment in the negotiations occurred on December 8, when Vice-President Gore announced the U.S. had instructed U.S. negotiators to show "flexibility." His speech signaled a U.S. willingness to compromise, and eventually led to significant changes in the U.S. position - including moving from a zero to 7% cut, accepting the fact that there would be not immediate limits on greenhouse gas emissions by Third World nations and deferring the development of an emissions trading program.

These U.S. shifts, however, were almost entirely due to international not domestic pressure. It is unlikely that the U.S. would have acted on climate change on its own, given oil, coal and auto industries' \$13 million TV campaign opposing global warming, and their close working relationship with the Republicans controlling Congress. ("We communicate with the negotiators directly through the Republican delegation," a business lobbyist proudly explained.)

Global warming is quite possibly the first global issue that will require actions by humans in all walks of life across the planet. While conventional and nuclear war affected the entire species, the solution lay primarily in the hands of a tiny number of super-powers, and small elites within them.

Global warming is the responsibility and problem of every nation, from tiny nations like 9,000-person Nauru living under danger of

submersion, to the Third World nations who will produce 50% of emissions in coming decades and whose agriculture and health will be most affected by it, to the developed world which created the problem in the first place.

Action on the problem has been driven by the international community, from the formation of the IPCC ten years ago, to the Rio Conference in 1992 where the world pledged to reduce greenhouse gas emissions to 1990 levels by 2000, to Berlin in 1995 where nations agreed to set mandatory limits because of its failure to meet the goals set at Rio.

And international dynamics will drive action in the future. The Europeans, who entered Kyoto advocating a 15% cut (Great Britain pushed for 20%), and only accepted an 8% cut so as to "converge" with the U.S. and Japan (6%), will continue to push for stronger action.

And though the developing nations resisted making firm commitments, their vulnerability to climate change will compel them to eventually participate, particularly if developed nations go first as envisioned by Kyoto.

As the international dynamic becomes increasingly powerful, it may prove more difficult for the U.S. business community to maintain its opposition to the treaty. Already U.S auto companies are recognizing the need to produce more fuel-efficient automobiles, both because of those domestic consumers who prefer fuel-efficient cars and the threat of losing markets to Japanese companies like Toyota if they get a headstart on new technologies like hybrid electric vehicles and fuel-cell powered cars.

And ultimately, the U.S. government is likely to go along. For, as the Dutch delegate suggested, what is really at stake is a functioning world community - in which no nation on earth has a greater overall stake than the U.S.

(2) DOMESTIC U.S. POLITICS: GORE IN THE BALANCE

"If we cannot embrace the preservation of earth as our new organizing principle, the very survival of our civilization will be in doubt." --Vice-President Al Gore, Earth In The Balance, 1992

"Q. Are you prepared to go over the head of the Senate and take the issue (of global warming) to the public? A. Vice-President Gore : I believe it's possible that a treaty that has meaningful participation by key developing countries could be the basis for the American people to influence their elected representatives."

"I'm not prepared to see a little old lady on Social Security in my district see her electric rates go up so her money can be sent to other countries, it's unfair," -- Cong. James Sensenbrunner, chief, U.S. Congressional delegation

There was nothing quite so striking at Kyoto as the sight of the heads of the 17-member U.S. Congressional delegation, waxing indignant at the "unfairness" of the Protocol at a stream of press conferences and meetings. No other country had a visible Parliamentary delegation, let alone one lobbying against the agreement.

Hagel and Sensenbrunner's main argument against the Protocol - that Third World nations need to participate for global warming to be averted - is valid. Emissions of greenhouse gases by developing nations are expected to exceed those of the U.S., Europe and Japan combined by 2030.

But the Senator and Congressman clearly signaled that they would oppose the treaty even if developing nations were significantly involved, particularly when they challenged IPCC science. Senator Hagel's claim that his reading of the full IPCC report on climate change led him to question the need for the Kyoto Protocol seemed particularly puzzling. It has been the IPCC scientists, after all, who have taken the lead in calling for action.

Given this stance by Republicans, who are expected to increase their 54-46 majority in 1998, near-term prospects for Senate ratification are unlikely. And long-term failure to ratify would doom the Protocol since, as Chairman Estrada said, "we need to have the US in the system for it to work. U.S. emissions are 25% of the total and growing and growing. So if the U.S. is not involved, it's useless."

The main political factor working for ratification is the remarkable coincidence that the leading contender for President in 2000, Vice President Gore, has long made global warming a priority. Were Gore not Vice-President it is highly unlikely that President Clinton would have become as involved as he did. And of course there would have been no dramatic Gore flight to Kyoto to break the logjam.

Gore is one of the few American politicians who has a personal political stake in implementing a global warming agreement. His effort to get the treaty ratified will reflect both on his competence to lead, and answer the key question many have about him: the extent to which he holds deep personal principles.

If he is elected President in 2000 having campaigned on global warming, it should increase the chances for eventual ratification of the Protocol.

The N.Y. Times published a poll just before Kyoto indicating that 65% of the public would support unilateral action to curb global warming. It is possible that if the President and Vice President try to capitalize on those pro-environmental feelings, as they did after the Republican capture of the House in 1994, that they could trump the Republicans again.

The oil, coal and auto industries, on other other hand, have said they intend to launch mass advertising campaigns to turn public opinion against the treaty, as was done with health insurance despite initial support for the Clinton position. It is not inconceivable they could succeed.

Amidst all the uncertainty, one thing is clear: domestic U.S. politics will have a decisive impact on whether the Kyoto Protocol is ever implemented.

(3) THIRD WORLD INVOLVEMENT

"The Vice President missed a golden opportunity today to make clear that the Clinton-Gore Administration will not sign any treaty that does not include China, India, Mexico, Brazil, and every other country in the world." --From "Reaction of Rep. Jim Sensenbrunner, Head of U.S. House Observer Delegation, To Gore Remarks," Kyoto, December 8, 1997

"We cannot believe any promises the developed nations make on global warming. They have broken every promise they have made to us over the years." --Mark Mwandosya, Tanzania, spokesperson for "The G77 Nations and China"

Perhaps the greatest gap at the Kyoto Conference was that between the heads of the U.S. congressional delegation and Third World delegates. Third World representatives expressed burning resentments dating back to colonial times. Congressman Sensenbrunner and Senator Hagel ignored them, speaking only of their concerns for U.S. economic competitiveness. Third World delegates were genuinely outraged that they were being pressured to make commitments after it had already been decided that the Kyoto Protocol would be limited to so called "Annex One" or 38 developed nations. They complained that the U.S. had unilaterally begun to insist on Third World inclusion, with no discussion, just prior to Kyoto.

They argued that developed nations had both created the problem and enjoyed most of the fruits of industrialization, but were now seeking all sorts of "loopholes" to avoid cleaning up the mess they had created. And they noted that the developed nations had not kept the commitments they made at Rio to voluntarily reduce emissions to 1990 levels by 2000, increase development aid, and help Third World nations implement renewable technologies.

Although the gap between the U.S. Congress and Third World proved overwhelming at Kyoto, however, it is likely to narrow in coming years, for several reasons:

-- developing nations have a bigger stake in averting global warming than developed nations. A September 18, 1997 IPCC report issued stated that "those (nations) that experience low rates of growth, rapid increases in population, and ecological degradation may become increasingly vulnerable to potential (global warming) changes."

-- if developed nations do go first, as envisioned by the Protocol, there will be increasing pressure on developing nations to make commitments as well.

-- In bilateral negotiations, the U.S. can link other benefits such as financial aid, to action on global warming.

-- Western involvement in transferring renewable energy technology to the Third World, e.g. through the Clean Development Fund called for in the Protocol, can provide profits for U.S. businesses and help Third World nations already choking from the planet's worst pollution.

(4) TECHNOLOGY: THE PAINLESS SOLUTION?

"The earth's climate can be protected, not at a cost but at a profit - just as many industries are already ruing the costs of environmental compliance into the profits from pollution prevention ... By 2050, we can double the world's population and triple or quadruple per capita affluence, while reducing carbon intensity 50-75%" --Amory and Hunter Lovins, The Rocky Mountain Institute

"The only way to reduce future fossil fuel use is to impose larger energy taxes, which would cost the economy two

***million jobs and \$150 billion annually." -- William O'Keefe,
Chair, Climate Change Coalition***

The only gap approaching the chasm between U.S. Republicans and Third World nations was that between the economic pessimists and technology optimists. The former predict the loss of millions of American jobs and a precipitous drop in GNP if the Protocol is implemented.

Dennis Stolfe of the Farm Bureau stated that "the livelihood of 2 million American farmers is at stake. A twenty five cent increase in gasoline prices would lead to a 25% net reduction in farm income." Gene Trisco, an attorney for the United Mineworkers said, "we conservatively estimate that 1.6 million American jobs hang in the balance." Congressman Sensenbrunner stated that "75% of Wisconsin Electric's Utility's plants are coal-generating, and would be out of compliance with the U.S. proposal. For the utility to generate power, they will have to increase their rates by as much as 50% to buy credits from China and Russia."

The technology optimists say just the opposite. They claim that implementing the Protocol can lead to an economic renaissance, creating new renewable energy industries, and hundreds of thousands of new jobs.

The Tellus Institute circulated a study at Kyoto, paid for by leading U.S. environmental organizations, which asserted that we could reduce carbon emissions 22% below 1990 levels by 2010, while generating a net increase of \$14 billion in GNP and 770,000 jobs.

The most optimistic - and influential - of the technological optimists are Amory and Hunter Lovins who, through a steady stream of writings and consulting, have probably done as much as anyone to promote energy conservation and efficiency.

The Lovinses' arguments form the basis for much of the Clinton program for combating global warming, particularly the

proposals for tax incentives and increased spending on R&D for renewable energy. Sources close to the President say that he eagerly endorsed the Lovins position as an alternative to having to call for higher taxes or increases automobile fuel efficiency standards.

Businesses comprising the Global Change Coalition assume that implementing Kyoto will require raising energy prices because we are using energy as efficiently as possible right now.

Technologists say that that there is so much energy to save that industry, utilities and consumers can actually save money by using energy more efficiently. The Lovinses suggest we can save \$300 billion by implementing on-the-shelf technology, and far more by developing new renewable technologies.

Some examples of how differently the optimists and pessimists view the world:

-- Wisconsin Electric assumes that it cannot produce energy more efficiently than it currently does, and will thus have to pay Russia or some other country for credits to subtract from actually make a profit and reduce emissions by helping their customers use energy more efficiently.

-- William O'Keefe assumes that only higher gasoline prices, reducing GNP, will force consumers to switch to more fuel- efficient automobiles. The Lovinses assert that "hybrid" cars will soon prove so attractive -- offering 100 miles to the gallon and more without sacrificing size or speed - that consumers will flock to buy them.

-- Manufacturers assume that they have no choice but to pay more for energy as they grow. The Lovinses argue that they can often reduce their energy bills sufficiently to increase profits by 50% or more.

The Lovinses argue that our key competitors - Europe and Japan - both use energy far more efficiently than we. They say that increased energy efficiency would thus increase not decrease

competitiveness for U.S. automakers, manufacturers and power companies.

Some argue the Lovinses have gone too far in suggesting that the Clinton program and the marketplace will produce the vast changes they envision without government regulation. Groups like the Sierra Club argue that tough government actions, like higher fuel efficiency standards, can only spur renewable technology development.

Economics and policy aside, however, the politics of global warming suggest that Kyoto will only be implemented if the optimists prove correct. The world is unlikely to take decisive preemptive action to avert global warming if it causes large-scale economic hardship. Only if new technologies can be massively introduced over the next 25-50 years, with little relative pain, will we be able to reduce emissions by the 50-75% necessary to avoid a two times carbon world.

CONCLUSION

"The United States agreed to a last-minute compromise on 'greenhouse' gas emissions that was rendered more or less meaningless when Clinton made it clear that he would not submit the treaty to the Senate unless developing nations made concessions they had refused to make at the conference." -- R.W. Apple, The New York Times, December 18, 1997

It is easy to predict a future in which the Kyoto Protocol is never implemented, and humanity continues its steady march to a two or even three times carbon world. Indeed, some observers have begun to write off Kyoto before the ink is even dry on the agreement.

Such pessimism, however, may be premature. Although more difficult, it is possible to envision a future in which global warming is averted:

-- During the next 11 months the Kyoto participants work out the details of emissions trading, joint implementation, and the administration of the Clean Development Fund to the general satisfaction of developed and developing nations;

-- Developed nations begin to implement measures to reduce greenhouse gas emissions. U.S. businesses, realizing that the handwriting is on the wall, introduce new technologies like fuel cell vehicles and reduce carbon emissions through efficiency, conservation and development of renewable energy sources.

-- The larger developing nations, seeing that developed nations are serious, realizing that they are the most threatened by climate change, motivated by help from the Clean Development Fund, and anxious to increase trade and other benefits with the developed world, agree to limit their own emissions.

-- The Senate - either still controlled by Republicans anxious to avoid being tagged as anti-environmental, or led by Democrats in 2000 as a result of a Presidential victory - ratifies the Convention.

-- Emission trading and new technological developments in the years 2000-2012 prove successful in implementing the Kyoto Protocol targets.

-- The successes of these years lead to a determined effort to reduce emissions by 75% beginning in 2012, and CO2 concentrations are stabilized within the next 20 years, well short of a 2x carbon world.

Whether or not this scenario can be realized may well depend on such unforeseen factors as whether the weather grows worse. One thing seems certain, however. As many delegates to the Kyoto Conference said, "you can't fool the weather." If the climate really is changing, we will know about it -- and pressure to act can only grow.

