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The Kyoto Protocol to the United Nations Framework Convention on Climate Change: Survey of Its Deficiencies and Why the United States Should Not Ratify this Treaty

I. Introduction

Global warming is currently one of the most prominent and hotly debated environmental issues. As parties to the United Nations Framework Convention on Climate Change, over 160 countries have come together to negotiate a treaty in an effort to curb the effects of global warming. These countries' most recent efforts have produced a treaty called the Kyoto Protocol¹ (hereinafter "the Protocol"). Although the spirit of the Protocol is commendable, the Protocol is unacceptable in its current form and should not be ratified by the United States.

This comment is intended to familiarize the reader with the broad array of reasons that the United States should not ratify the Protocol. The second part provides a background on the Climate Change Conventions held in Kyoto, Buenos Aires, and Bonn and discusses how the negotiations in Buenos Aires and Bonn shaped the Protocol. The third part is divided into three sections and examines the Protocol itself. The first section addresses the scientific problems with the Protocol and how the Clinton Administration has responded. The second section details the substantive problems with the Protocol. The final section speaks specifically to why the Protocol, in its current form, should not be ratified by the United States. The final part concludes and offers some suggestions for the future.

1. See A copy of the Protocol is available on the Internet at the web site of the Climate Change of the Secretariat at <<http://www.unfccc.de>>.

II. Background

It is a long accepted fact that the Earth's atmosphere traps heat. This trapping effect, called the greenhouse effect, has been essential to the evolution of life on Earth. The concern about greenhouse gas production is that human activities are steadily increasing the concentration of greenhouse gases in the atmosphere and that as a result, the global average temperature and sea levels are steadily rising.²

A. *The Kyoto Conference and Agreement to the Protocol*

The origination of the Protocol can be traced back to 1992, the first convention of the United Nations Framework Convention on Climate Change.³ Since that first meeting, each subsequent convention has built upon the idea that a global response to the problem of global warming is necessary.⁴ The Kyoto Protocol, named for the third climate change convention in Kyoto, Japan, was the first agreement to impose binding restrictions⁵ on the production of greenhouse gas emissions.⁶

Signed by nearly 160 countries⁷, the Kyoto Protocol is an attempt to reduce heat trapping gases (greenhouse gases) that are generated mostly by the burning of fossil fuels in factories, cars and power plants.⁸ The Protocol requires that developed countries cut their carbon dioxide and other greenhouse gas emissions by an average of 5.2% from their 1990 levels in the five year period between 2008 and 2012.⁹ The United States would be

2. See Edward A. Smeloff, *Utility Regulation and Global Warming: The Coming Collision*, 12-SPG NAT. RESOURCES & ENV'T 280 (1998); see also <<http://www.ucsusa.org>>.

3. For background on the previous conferences see Charlotte Booncharoen and John Case, *International Commitment toward Curbing Global Warming: The Kyoto Protocol*, 4 ENV'TL LAW. 917 (June, 1998).

4. See *id.*

5. Sanctions that would be imposed on a nation that failed to meet its emission reduction target are one part of the Protocol that has not been agreed to. See Michael D. Lemonick, *Turning Down The Heat To Their Surprise, Negotiators In Kyoto Hammer Out A Historic Pact To Curb Global Warming*, TIME MAGAZINE Vol. 150 No. 26 (Dec. 22, 1997).

6. The conference in Kyoto was held December, 1997. See *Senate Legislation Would Block Funds To Implement Kyoto Accord*, UTIL. ENV'T REP. 8 (McGraw-Hill) (May 8, 1998).

7. *Id.*

8. See Lemonick, *supra* note 5.

9. *Japan, EU To Lobby U.S. On Kyoto*, UTIL. ENV'T REP. 12 (McGraw-Hill) (June 5, 1998).

required to cut its greenhouse gas emissions by seven percent below 1990 levels.¹⁰ By the year 2012, Japan would be required to cut emission six percent below 1990 levels and the fifteen nations of the E.U. are required to cut emissions by eight percent.¹¹

B. *The Buenos Aries Conference*

From November 2th to 13th 1998 the delegates from more than 170 nations to the Convention on Climate Control met for a fourth time in Buenos Aries.¹²

1. *The Accomplishments*—The Buenos Aries conference built upon the Protocol in several ways. First, the delegates set 2000 as a deadline for creating a global mechanism to police the participating nation's compliance to the emissions levels and to hold the nations accountable to those reduction targets.¹³ This shows a common understanding by all parties that a strong and comprehensive regime is necessary to ensure effective implementation of the Protocol. The tougher task of deciding how to monitor compliance or who will do the policing if the targets are not met is still to be decided.¹⁴ Second, the delegates agreed to establish rules governing the market-based schemes by 2000.¹⁵ Although this agreement puts off real decision-making on the important market-based schemes until 2000, the Buenos Aries conference outlines a process that allows for a transfer of environmentally-sound technology.¹⁶ Finally, advocates of the Protocol note that participation in this conference by organized labor and industry signal a shift in attitude among the business world.¹⁷ They claim that the attendance of these business groups

10. See *Rep. McIntosh Launches Inquiry Into White House Policies*, UTIL. ENV'T REP. 3 (McGraw-Hill) (Mar. 17, 1998).

11. See Lemonick, *supra* note 5.

12. See *Climate Change: Countries Set Deadline For Elaborating Rules On Trading, Emission Offset Projects Abroad*, BNA INT'L ENV'T DAILY NEWS at D2 (Nov. 17, 1998).

13. See Sebastian Rotella, *Degrees of Progress at Environmental Summit Global Warming: Delegates set Compliance Deadline, U.S. Hails Shift in Developing Nations' Attitude*, LOS ANGELES TIMES, Nov. 15, 1998 at A17.

14. See *id.*; see also note 5 and accompanying text.

15. See Rotella, *supra* note 13. These market based schemes are described in Part III as flexibility instruments

16. See *Climate Change: Buenos Aries Conference Adopts A Timid Programme*, EUROPE ENVIRONMENT ISSN: 0778-7928 (Nov. 17, 1998).

17. See *Climate Change: Countries Set Deadline For Elaborating Rules On Trading, Emission Offset Projects Abroad*, *supra* note 12..

demonstrates their recognition of the global warming problem and a willingness to adapt their policies to address the problem.

2. *The Lack of Accomplishments*—The conference was not a complete success. From the United States' perspective this was especially true; neither of its two objectives were accomplished.¹⁸ The first objective was to begin to design flexible, market based measures, as previously agreed to at the last round of talks.¹⁹ The second objective was to gain meaningful participation from developing countries.²⁰

Other critics are more concerned with the overall tone of the talks than with the specific points of discussion.²¹ They feel that the negotiations are becoming a trade and economic negotiation while the climate is getting pushed further and further down on the agenda.²² They are concerned specifically with the fact that carbon-trading markets are replacing science as the purpose for the negotiations.²³

Still other critics find that the delay of establishing a timetable for compliance to the year 2000, when establishing a timetable was the declared objective for the Buenos Aries conference, makes the reduction targets anything but binding and largely theoretical.²⁴ Despite the voluntary reduction pledges made by some developing countries,²⁵ critics note that the Protocol still makes no reference to participation by developing countries.²⁶

3. *The United States Signs the Protocol*—One important result of the conference was the November 12th signing of the treaty by the United States.²⁷ The signing was expected in January

18. See AMERICAN POLITICAL NETWORK, *Spotlight on Buenos Aries Climate Change: Buenos Aries Talks Begin Among Pessimism*, GREENWIRE 7 (Nov. 2, 1998).

19. See *id.*

20. See *id.*

21. See Rotella, *supra* note 13.

22. See *id.*

23. See *id.*

24. See *Climate Change: Buenos Aries Conference Adopts A Timid Programme*, *supra* note 16.

25. See *infra* notes 179-219 and accompanying Text.

26. See *Climate Change: Buenos Aries Conference Adopts A Timid Programme*, *supra* note 16.

27. See *Climate Change: United States Signs Kyoto Protocol; White House Lauds Pledge By Argentina*, BNA INT'L ENV'T DAILY NEWS at D2 (Nov. 13, 1998). Peter Burleigh, the acting U.S. ambassador to the United Nations, carried out the formal act of signing the Kyoto Protocol on behalf of the United States. *Id.*

of 1999.²⁸ By signing the Protocol the United States became the 60th country to take the first step toward ratifying the treaty.²⁹ Vice-President Al Gore, in a statement about the signing, points out that the Protocol will only become binding with the advice and consent of the Senate.³⁰ He further cautions that although the signing is an important step in the negotiation process it does not impose any obligations on the United States.³¹

Signing the treaty has brought mixed reactions.³² Some critics have spoken out strongly against the signing.³³ They say that the move violated the July, 1998 Senate resolution that said that the United States should not sign the treaty without meaningful participation by developing nations.³⁴ Critics also claim that if the Clinton administration has the conviction to sign the flawed

28. See AMERICAN POLITICAL NETWORK *Worldview Climate Change: Countries Prep For Buenos Aries Talks*, GREENWIRE 7 (Oct. 30, 1998).

29. See *Climate Change: United States Signs Kyoto Protocol; White House Lauds Pledge By Argentina*, *supra* note 27.

30. See *id.*

31. See *id.* On November 9th the Caribbean nation of Antigua and Barbuda became the second country to ratify the Protocol, following Fiji. *Id.* These are the only two countries that have ratified the Protocol. *Id.* 55 countries must ratify the Protocol for it to be effective. See Booncharoen, *supra* note 3, at 929.

32. See AMERICAN POLITICAL NETWORK *Spotlight on Buenos Aries Climate Change II: Signature Sparks Strong Reactions*, GREENWIRE 7 (Nov. 13, 1998).

33. Some Congresspersons have spoken out against the signing. U.S. Rep. JoAnn Emerson attended both conferences in Buenos Aries and in Kyoto and has called the signing ill-advised and has called the protocol economic warfare. See Tim O'Neil, *Emerson Says U.S. Should Beware Agreement To Fight Global Warming It's Economic Warfare, Congresswoman Charges*, ST. LOUIS POST-DISPATCH, Nov. 18, 1998, at A13. Other critics have gone so far as to charge President Clinton with signing the United States' rights away. See *Worldview Climate Change: Hagel Says Scrap The Pact; More Opinions*, *supra* note 28.

34. See *Climate Change: Hasty Signing of Protocol Now Will Weaken U.S. Bargaining Position, Democrat Says*, BNA INT'L ENV'T DAILY NEWS at D3 (Nov. 12, 1998). Sen. Robert Byrd (D.-W.Va.) claims that now that the United States has signed the treaty, it has placed the United States in a weaker position to bargain for emission reductions from developing countries. *Id.* He also adds that signing the treaty fuels critics' charges of back-door implementation and seriously jeopardizes funding for existing climate change programs. See AMERICAN POLITICAL NETWORK, *Spotlight on Buenos Aries Climate Change: Talks Enter Key Phase; U.S. to Sign Pact?*, GREENWIRE 7 (Nov. 11, 1998).

treaty;³⁵ then the administration should have the courage to send it immediately to the Senate.³⁶

Other critics find that the signing is nothing but symbolism, and that this is clearly a priority for the Clinton Administration.³⁷ Others agree that the signing was a necessary and important symbol to show the United States' commitment to the Protocol but unfortunately the symbol may have been made too late to impact the negotiations in Buenos Aires.³⁸

Some Senators support the signing of the Protocol, stating that the United States needs to be at the negotiating table if it wants to influence global decision-making.³⁹ They also know that their constituents want both jobs and clean air and that these two objectives are not necessarily mutually exclusive.⁴⁰

Assuming successful negotiations at the fifth conference in Bonn, Germany, the Clinton Administration plans to submit the Kyoto Protocol to the Senate for ratification in early 2001.⁴¹ International leaders hope that the Protocol will be ratified and ready to be implemented internationally by 2002.⁴²

35. See *Key Congressmen Denounce Estrada For Calling Congress 'Out Of Touch'*, Util. Env't Rep. 5 (McGraw-Hill)(Mar. 27, 1998). Representative James Sensenbrenner (R-Wis.), chairman of the Science Committee and Representative John Dingell (D-Mich.) ranking member of the Commerce Committee feel that the United States should reject this treaty and start anew. They feel that the treaty is so seriously flawed that it is unsalvageable. Their main concern is that the United States will not be treated fairly once the power over their future is transferred. They insist that it is based on immature science, costs too much, leaves too many procedural questions unanswered, is grossly unfair because developing countries are not required to participate, and it will not solve the speculative problem that it is intended to solve. *Id.*

36. See John J. Fialka, *Clinton Administration Signs Treaty Intended To Restrain Global Warming*, WALL ST. J., Nov. 13, 1998, at A2.

37. See AMERICAN POLITICAL NETWORK, *Spotlight on Buenos Aires Climate Change: Nations Agree To Set Rules By 2000*, GREENWIRE 7 (Nov. 16, 1998).

38. See *Climate Change: Groups See Progress In Buenos Aires, But Look For More Action Before 2000*, BNA INT'L ENV'T DAILY NEWS at D3 (Nov. 18, 1998).

39. See AMERICAN POLITICAL NETWORK, *Spotlight on Buenos Aires Climate Change: Talks Enter Key Phase; U.S. to Sign Pact?*, GREENWIRE 7 (Nov. 11, 1998).

40. See *id.*

41. See *Climate Change: Technology Initiatives Public Education Remain Short-term White House Priorities*, BNA DAILY ENV'T REP. NEWS at A2 (Jan. 12, 2000).

42. See *id.*; a list of the Kyoto Protocol signatories and their ratification status is available at <<http://www.unfccc.de>>.

C. *The Bonn Conference*

The fifth conference to the Kyoto Convention was held in Bonn Germany, October 25 through November 5, 1999.⁴³ In preparation for this conference an interim meeting was held in Bonn from May 31 through June 11, 1999.⁴⁴ The objectives of both the interim meeting and the conference were to work toward agreements on how the Protocol's flexible mechanisms will be implemented, how to regulate compliance, and how to encourage developing nations to participate.⁴⁵

Although the fifth conference was intended to prepare a package of draft decisions for the sixth conference,⁴⁶ the delegates only managed to complete some preparatory work on emissions trading, joint implementation, the clean development mechanism and carbon sinks.⁴⁷ Of these issues, caps on emissions trading remains the biggest hurdle to overcome - a hurdle that was put aside at the fifth conference to be taken up at the sixth conference.⁴⁸

The sixth conference is scheduled to be held November 13 through November 24, 2000 in the Hague.⁴⁹ This conference is the final conference provided for under the Kyoto Accord.⁵⁰

III. Why the United States Should Reject the Protocol

A. *Scientific Problems*

From a scientific point of view, the Protocol overlooks two problematic areas. First, the Protocol is premised upon the still uncertain fact that global warming exists and that it is a serious threat to life on earth. Second, methods for measuring greenhouses gases and for monitoring emissions are not reliable.

43. See *Climate Change: No Major Decisions Expected From Upcoming Deliberations in Bonn*, BNA DAILY ENV'T REP. NEWS at A1 (May 24, 1999).

44. See *id.*

45. See *id.*

46. See *Climate Change: Bonn Meeting to Lay Groundwork for Decisions in Late 2000 or Early 2001*, BNA DAILY ENV'T REP. NEWS at A3 (Oct. 12, 1999).

47. See *id.* at A1.

48. See *id.*

49. See *European Union: Unrestrained Purchase of Emission Credits Not Way to Meet Kyoto Aims, Official Says*, BNA DAILY ENV'T REP. NEWS at A3 (Jan. 3, 2000).

50. See *id.*

1. *The Threat of Global Warming*—Scientists are in disagreement about global warming and its effects. Some scientists cite statistics that they claim are evidence of global warming. For example, scientists point to the extraordinary number of natural disasters as evidence of global warming.⁵¹ Others note that land temperatures in 1997 were the hottest on record.⁵² Finally, residents of island countries say that some sacred sites, wells, roads and some small islands have already felt the effects of rising sea levels.⁵³

The scientists that support the theory of global warming offer grim possibilities for the future if global warming is not harnessed. They predict that every ecosystem on the planet will feel its pervasive effects.⁵⁴ They claim that we will see diseases that are now under control reach epidemic proportions and that tens of thousands of people will have to be relocated as small island nations disappear as a result of rising sea levels caused by the melting of glaciers.⁵⁵ In addition to these predictions, scientists say that catastrophic changes, such as the melting of Antarctica, may prove too difficult for humans to adapt to in short amounts of time.⁵⁶ Climate change could also put 30 million more people at risk of hunger.⁵⁷

Other scientists either do not accept these observations as proof of global warming⁵⁸ or are not convinced that global warming is a threat to life on earth. The Greening Earth Society is

51. See *And Finally*, ENV'T BUS. ISSN: 0959-7042 (Jan. 15, 1998). Depending on what part of the world you look at, 1997 has been the hottest, coldest, wettest, and driest year on record. *Id.*

52. See *Climate Treaty Debate NPR's Christopher Joyce Reports On The Debate In Congress To Ratify The Treaty That The U.S. Government Made In Kyoto, Japan To Curb The Emission of Greenhouse Gases*, (Morning Edition Radio Broadcast, Feb. 4, 1998).

53. See AMERICAN POLITICAL NETWORK, *Spotlight on Buenos Aries Climate Change: Vignettes From the Talks In Buenos Aries*, GREENWIRE 7 (Nov. 5, 1998).

54. See Smeloff, *supra* note 2, at 280.

55. See *id.*

56. See *id.*

57. See *Spotlight on Buenos Aries Climate Change: Vignettes From the Talks In Buenos Aries*, *supra* note 53. Although this is predicted to become a problem by the year 2050, analysis of crop yields predict that as global temperatures increase over the next 100 years, countries at lower latitudes will suffer. West Africa and South America are the areas that are most like to be affected. *Id.*

58. Some climatologists say that satellite data ranked 1997 as only the 12th hottest in the past 19 years. See *Climate Treaty Debate NPR's Christopher Joyce Reports On The Debate In Congress To Ratify The Treaty That The U.S. Government Made In Kyoto, Japan To Curb The Emission of Greenhouse Gases*, *supra* note 52.

a group that boasts several prominent environmental scientists and takes the position that global warming is not detrimental to the earth, but instead is beneficial.⁵⁹ Using the slogan “warm is good and cold is bad” the group hopes to spread the message that a greener atmosphere will result in more lush vegetation and would help to ease the food shortages in many developing nations.⁶⁰ Dr. Patrick Michaels predicts⁶¹ that if carbon dioxide levels continue to grow at present rates, in 50 years soybean yields in the Midwest will increase by 25%, winter wheat yields in Europe will rise by 30%, and trees will grow 27% better.⁶²

Other researchers feel that global warming is not as serious of a problem as reduced economic growth.⁶³ This analysis weighs the harm caused by global warming with the benefits of increased wealth and economic growth that carbon production and emission makes possible.⁶⁴ The argument advances the idea that even though small nations may be harmed by global warming, the overall increase in wealth may outweigh the harm.⁶⁵ This argument points to the unresolved questions surrounding global warming and reminds us that wealth and the opportunity to create wealth make more solutions possible.⁶⁶

2. *Gas Monitoring*—A second scientific problem that underlies the Protocol is the monitoring of greenhouse gases. David Victor, fellow in science for the New York City-based Council of Foreign Relations, a policy analyst group, finds the quality of monitoring data on emissions of greenhouse gases to be poor.⁶⁷ He says that data on the carbon dioxide that is released by the burning of fossil fuels is good, but that data on other gases

59. See *And Now For A Different Take: New Group Sees Benefits From Global Warming*, UTIL. ENV'T REP. 2 (McGraw-Hill) (May 8, 1998).

60. See *id.*

61. See *id.* Dr. Michaels is an environmental sciences professor at the University of Virginia who is one of the group's advisors. This study cites his own research. *Id.*

62. *Id.* Better means they will have more extensive root systems and use nutrients more efficiently. *Id.*

63. See Thomas J. Dolan, *Getting Warmer?: Climate Data Change Faster Than Climate Politics* BARRON'S, Editorial Commentary (Nov. 16, 1998).

64. See *id.* This theory accepts as reality that if poor countries limit their emissions they will be condemned to poverty forever. Conversely if only industrial nations limit their emission production they will be impoverished and global warming will still increase. *Id.*

65. See *id.*

66. See *id.*

67. See *Climate Change: U.S. Rejection of Kyoto Protocol Urged Due to Data, Russia Funding Concerns*, BNA DAILY ENV'T REP. NEWS at A3 (Sep. 17, 1998).

covered by the Protocol, such as methane, nitrous oxide, sulfur hexafluoride, hydrofluorocarbons, and perfluorocarbons, is lacking or poor.⁶⁸ In addition, the quality of data that is available on carbon dioxide sub-emissions, related to emissions to or absorption from the atmosphere by changes in land use or forestry, is poor.⁶⁹ High quality monitoring data is crucial in terms of the Protocol because the data determines if a country has met its reduction goal.⁷⁰

3. *The Clinton Administration's Perceptions of the Scientific Problems*

The Clinton Administration's policies on climate control do not accept global warming as a theory but as a fact.⁷¹ They have based their theories of how the United States should approach the problem of global warming on what they refer to as the overwhelming balance of evidence and scientific opinion show that global warming is a serious problem.⁷²

Public opinion and politics, rather than science may be influencing the Clinton Administration's decision to accept global warming without hesitation. An independent national survey concluded that Americans believe that global warming is a problem and that the federal government should do something about it.⁷³ In addition, insurance companies from around the world urge climate negotiators to adopt the Protocol as they present evidence on how climate change has caused global catastrophes.⁷⁴

B. *Why the Protocol is Unworkable*

Even if Policy makers ignore the global warming debate, there are several problems with the Kyoto Protocol that make it

68. *See id.*

69. *See id.*; *see generally* notes 87-94 and accompanying text

70. *See id.*

71. *See Clinton Launches Campaign to Win Support for Climate Change Action*, UTIL. ENV'T REP. 3 (McGraw-Hill) (Aug. 1, 1997).

72. *See id.*

73. *See Resources For the Future Poll Gauges U.S. Public Opinion About Climate Change*, UTIL. ENV'T REP. 4 (McGraw-Hill) (July 31, 1998). The study conducted by the Resources for the Future and funded by OSU, the National Science Foundation, the U.S. Environmental Protection Agency and the National Oceanic and Atmospheric Administration. The results are detailed in the RFF report entitled, "The Impact of the Fall 1997 Debate About Global Warming on American Public Opinion." *Id.*

74. *See Spotlight on Buenos Aries Climate Change: Vignettes From the Talks In Buenos Aries*, *supra* note 53.

an unworkable instrument to reduce global warming.⁷⁵ First, the emissions targets are problematic for several reasons. Studies indicate that the goals within the Protocol's timetable are unreachable. Second, other researchers find that even if targets are met, global warming would continue. Third, carbon sinks blur the target goals even further. Fourth, implementing the flexibility instruments within the Protocol could prove to be an impossible task.

1. *The Emission Targets Can Not be Achieved*—The emission reduction targets established by the Protocol are unachievable because carbon production is increasing. Currently the United States⁷⁶ leads the world in the production of greenhouse gases.⁷⁷ In 1996 the United States showed an increase of 3.1% from 1995.⁷⁸ From 1996-1997, the total greenhouse-gas emissions increased an additional 1.3 to 1.4 percent.⁷⁹ The economic boom in the U.S. has driven energy use and emission production steadily upward.⁸⁰ By the year 2000, Americans will be pumping out 8% to 10% more greenhouse gases than in 1990.⁸¹

75. There are additional reasons beyond the main reasons that I have listed to show that the Protocol is not the appropriate instrument to combat the global warming problem. For example, a report from MIT proposes that the Protocol fails to address long-term key issues. It finds that the next decade may be spent haggling over short-term goals thereby diverting attention from the more important century-scale issues and postponing the involvement of the developing world. See *MIT Report: Kyoto Pact Shortchanges Critical, 'Century-Scale' Problems*, UTIL. ENV'T REP. 4 (McGraw-Hill) (July 31, 1998).

76. With only 4% of the world's population, the United States accounts for more than 20% of the global greenhouse emissions. Marvin S. Soroos, *Preserving the Atmosphere as a Global Commons*, ENVIRONMENT Vol. 40, No. 2, ISSN: 0013-9157 (Mar. 1, 1998). The United States produced 25% of the global carbon emissions in 1996. *Reports: U.S., Global Carbon Dioxide Emission take big leap from 1990-1996*, UTIL. ENV'T REP. 3 (McGraw-Hill) (Aug. 29, 1998).

77. In comparison to developing nations the United States, with a population of 260 million people, produces carbon dioxide emissions roughly equal to the combined emissions of 135 developing countries, with a combined population of 3 billion people. Texas alone, with 20 million residents, produces more carbon dioxide than 93 developing countries with a combined population of nearly 1 billion. The combined emissions of 88 developing countries nearly equals California's emission production. *BNA Spotlight on Buenos Aires Climate Change III: Developing Countries; Futures; More*, GREENWIRE (Nov. 13, 1998).

78. *Reports: U.S., Global Carbon Dioxide Emission take big leap from 1990-1996*, UTIL. ENV'T REP. 3 (McGraw-Hill) (Aug. 29, 1998).

79. *Climate Change: Greenhouse Gas Emission Inventory Shows Increase Over Previous Year's Level*, BNA DAILY ENV'T REP. NEWS at A8 (March 11, 1999).

80. See Lemonick, *supra* note 5.

81. See *id.*; see also *Climate Change: Greenhouse Gas Emission Inventory Shows Increase Over Previous Year's Level*, *supra* note at D4.

Energy related emissions are on the rise globally as well as locally.⁸² Globally, carbon dioxide emission increased 2.7% from 1995 with the most noticeable increase in emissions in the developing Asian-Pacific nations.⁸³ Only the former Soviet Union is expected to exceed the emission standards by a “significant margin.”⁸⁴ Emissions from the Commonwealth of Independent State republics that include Russia and Central Europe have declined 31% during the period from 1990-1996.⁸⁵ European Union member states have no chance of meeting their Kyoto emissions targets by the year 2010.⁸⁶ One study verifies these predictions. According to a study by WEFA Ltd., a United Kingdom based environmental and economic forecasting group, by the year 2010 global carbon dioxide emissions are likely to exceed the Protocol targets by 15% or more.⁸⁷

2. *The Emission Targets are Ineffective*—Even if the emission targets were met, global warming would still continue.⁸⁸ The Protocol calls for an average of 5.2% reduction in greenhouse gas emissions.⁸⁹ In order to make a dent in greenhouse gases that have been building up in the atmosphere since the start of the industrial revolution, a 60% reduction would be necessary.⁹⁰ An immediate reduction of 60 to 80 percent in greenhouse gases worldwide would be needed to keep the greenhouse gases in the atmosphere at current levels.⁹¹

Jay Haikes, the head of the U.S. Government’s Energy Information Administration estimates that from 1990 to 2010 carbon emissions are likely to rise by 34% even if the United States and other industrialized countries meet the objectives of the

82. See Reports: U.S., *Global Carbon Dioxide Emission take big leap from 1990-1996*, *supra* note 78. Carbon dioxide production rose more than total energy use because of the disproportionate increase in the use of coal, which is the most carbon intensive fossil fuel for the production of energy. *Id.*

83. See *id.*

84. *Id.*; see generally notes 168-178 and accompanying text.

85. *Id.*

86. See *Pessimism on Kyoto Goals*, UTIL. ENV’T REP. 11 (McGraw-Hill) (Feb. 27, 1998).

87. See *Global CO2 Emissions To Exceed Kyoto Protocol By 15% - Study*, DOW JONES ENERGY SERV. (Nov. 18, 1998).

88. It is important to note, however, that if the Protocol is not implemented global emissions of carbon will climb to 44%. See *EIA: World Carbon Emissions will Soar Even if Kyoto Protocol Mandates Met*, UTIL. ENV’T REP. 3 (McGraw-Hill) (Apr. 24, 1998).

89. See *Japan, EU To Lobby U.S. On Kyoto*, *supra* note 9.

90. See *Lemonick*, *supra* note 5.

91. See *Soroos*, *supra* note 76.

Protocol.⁹² This is because by the year 2010, developing nations' emissions should nearly equal emissions from industrialized nations, and should surpass them by 2015.⁹³

3. *Carbon Sinks Blur the Targets even Further*—Another problem with the Protocol's emissions targets involves the inclusion of carbon sinks. The term "sink" is commonly used to refer to the uptake of greenhouse gases by forests and soils.⁹⁴ Including sinks in the Protocol has the effect of lowering reduction targets for countries with sinks.⁹⁵ For example forested countries would get a break in their quotas because trees absorb carbon dioxide.⁹⁶

The inclusion of sinks may be prove to be the worst problem with the Protocol's targets.⁹⁷ There are several reasons for this. First, scientists are uncertain how much global warming will be reduced by the activities that countries will get offsets for.⁹⁸ Second, the language of the protocol is not clear, and a wide range of interpretations about the applicability of the sinks is possible.⁹⁹ Finally, the inclusion of sinks considerably reduces a number of countries' obligations.¹⁰⁰ For example, the United States obligation of 7% will be reduced to 4% when sinks are included.¹⁰¹

4. *Flexibility Instruments*—The other major drafting problem with the Protocol is the flexibility instruments designed to help countries meet their emissions targets. The Protocol refers to two types of instruments: (1) joint implementation the clean development mechanism; and (2) emissions trading.¹⁰²

92. See EIA: *World Carbon Emissions will Soar Even if Kyoto Protocol Mandates Met*, *supra* note 88; see also *Climate Treaty Debate NPR's Christopher Joyce Reports On The Debate In Congress To Ratify The Treaty That The U.S. Government Made In Kyoto, Japan To Curb The Emission of Greenhouse Gases*, (Morning Edition Radio Broadcast, Feb. 4, 1998).

93. See EIA: *World Carbon Emissions will Soar Even if Kyoto Protocol Mandates Met*, *supra* note 88.

94. See Hermann E. Ott, *The Kyoto Protocol: Unfinished Business*, ENVIRONMENT Vol. 40, No. 6, (July 1, 1998).

95. See *id.*

96. See Lemonick, *supra* note 5.

97. See Hermann E. Ott, *The Kyoto Protocol: Unfinished Business*, ENVIRONMENT Vol. 40, No. 6, (July 1, 1998).

98. See *id.*

99. See *id.*; see also *Climate Change: Kinds of Activities that would Qualify for Offset Credit Debated at U.N. Meeting*, Daily Env't Rep. News at A1 (April 29, 1999).

100. See *id.*

101. See *id.*

102. See Booncharoen, *supra* note 3, at 924-26. Along with the specific

a. *Joint Implementation and the Clean Development Mechanism*—Joint Implementation is an idea that was discussed at previous conferences and incorporated into the Kyoto Protocol in the form of the Clean Development Mechanism.¹⁰³ Joint implementation involves an agreement between two countries.¹⁰⁴ As a part of the agreement, a country with high costs of pollution abatement or environmental conservation invests in abatement or conservation in another country with lower costs and the investing country receives credit for some or all of the reductions.¹⁰⁵ The major promise of Joint Implementation is to improve cost-effectiveness of meeting reduction targets.¹⁰⁶ Other advantages include transfer of technology to developing countries¹⁰⁷ and allowing private businesses and non-governmental organizations to be investors.¹⁰⁸

The Kyoto Protocol includes a modified version of joint implementation called the clean development mechanism.¹⁰⁹ The clean development mechanism would serve as a clearinghouse for emission offset projects in developing countries that would be sponsored by companies or governments in the industrialized world.¹¹⁰ The clean development mechanism is designed to enable

problems of each instrument, there has been some dispute as to the priority of the mechanisms. Developing countries that are anxious to gain the investment in their economies wanted to establish rules and regulations for the clean development mechanism first. The United States on the other hand feared that if the clean development mechanism received priority then the developing countries would refuse to set up the rules and regulations for emissions trading. Developing nations have been suspicious of emissions trading, fearing that it might be used by industrial countries as an excuse for not making reductions that it could or should make. For these reasons, the two mechanisms have been worked on simultaneously. See William K. Stevens, *Last-Minute Discord is Evident in Global Warming Negotiations// ENVIRONMENT: The Parties in Argentina are Working on the Details of Implementing Emissions Controls*, The Orange County Register, Nov. 14, 1998, at A27.

103. See Booncharoen, *supra* note 3, at 924-26.

104. See *id.*; for a more complete explanation of Joint Implementation see Alex G. Hanafi, *Joint Implementation: Legal and Institutional Issues for an effective International Program to Combat Climate Change*, 22 HARV. ENVTL L. REV. 441.

105. See Booncharoen, *supra* note 3, at 924-26.

106. See *id.*

107. See Soroos, *supra* note 76. Agreements by developing countries to control their emissions are unlikely without the promise of technological and economic assistance to enable developing countries to utilize energy sources other than fossil fuels. See *id.*

108. See Hanafi, *supra* note 104, at 463-4.

109. See Ott, *supra* note 97.

110. See *Climate Change: Emission Trades Among Private Entities Part of*

richer, industrialized countries to invest emission-reduction projects in poorer, developing countries and receive emission credits toward their targets.¹¹¹ Like joint implementation, with the clean development mechanism the developing country would reap both environmental and economic benefits and the investor would receive credit for the emission reductions.¹¹² The United States opposes any limit to the amount of credits a country could earn through clean development projects.¹¹³

A second purpose for the clean development mechanism is to allow the proceeds from clean development projects to go into a fund that will help developing countries adapt to climate change.¹¹⁴ An example would be to build sea walls around low-lying islands to protect them from rising sea-levels. The fund also allows utilities or other parties to make contributions for use in assisting developing nations in reducing their emissions by financing clean power projects and other emission reducing activities.¹¹⁵ Contributing nations would then receive credits for any certified emissions reductions in proportion to their contributions to the fund.¹¹⁶

The clean development mechanism has several problems. First, it does not encourage the United States to make reductions domestically. Second under the Protocol, contributing nations can only get allowances for contributions made in the years 2000-2008.¹¹⁷ U.S. negotiators have been unable to win credits for actions taken prior to 2000.¹¹⁸ This remains a serious point of disagreement because utilities are adamant about receiving credit for things they have already done to reduce greenhouse gas emissions.¹¹⁹ This reluctance to give early credits discourages the

Japanese Proposal at Buenos Aires, BNA INT'L ENV'T DAILY NEWS at D2 (Nov. 5, 1998).

111. See Stevens, *supra* note 102, at A27.

112. See *id.*

113. See *Climate Change: U.S., Others May Form Bloc For Trading Emissions If EU Insists On Caps, Official Says*, BNA INT'L ENV'T DAILY NEWS at D3 (Oct. 30, 1998).

114. See Ott, *supra* note 97.

115. See *Industry Finds Slow Going in Bid to Win Credit for Early GHG Cuts*, UTIL. ENV'T REP. 1 (McGraw-Hill) (May 22, 1998).

116. See *id.*

117. See *EDF Backs Utility Call For Credit For Early Action To Reduce CO₂*, UTIL. ENV'T REP. 6 (McGraw-Hill) (Feb. 13, 1998).

118. See *id.*

119. See *Industry Finds Slow Going in Bid to Win Credit for Early GHG Cuts*, *supra* note 115.

utilities from making efforts to reduce greenhouse gas production now, and makes it even more difficult to meet the targets in 2008.¹²⁰

One example of how the clean development mechanism can work has begun already. Several mid-western utility companies paid for the construction of a gas-burning power plant in the Czech Republic.¹²¹ This plant that operates a eighty-five percent efficiency replaces coal-burning units that operated at forty percent efficiency.¹²² It also immediately eliminated twenty percent of the city's soot and smog.¹²³ The program is based on the principle that it is cheaper to eliminate greenhouse gases in developing nations than in highly industrialized nations with stronger environmental protections.¹²⁴

b. Emissions Trading—The other flexibility instrument is emissions trading. This highly problematic mechanism would allow the market, not politics and governments decide how to achieve cutbacks.¹²⁵ The trading scheme would allow a country that had overshoot its goals to sell its excess percentage points to a country that had fallen short.¹²⁶ More specifically, permits to emit specific amounts of carbon dioxide (or other greenhouse gases) would be distributed to countries that are parties to the international agreement.¹²⁷ After this distribution, these permits could be bought and sold by anyone with an interest in participating in an emissions market.¹²⁸ For example, if a company is able to lower its emissions, requiring it to hold fewer permits, it can sell the excess permits to other companies that may need additional permits.¹²⁹

Some researchers believe that emission trading is the best way to achieve the Protocol's goals. Bruce Humphrey, director of research for electric power and author of the Cambridge Energy Research Associates' ("CERA") report finds that emissions

120. *See id.*

121. *See* AMERICAN POLITICAL NETWORK, *Spotlight on Buenos Aries Climate Change II: US-Czech Project Illuminates Issues*, GREENWIRE 7 (Nov. 2, 1998).

122. *See id.*

123. *See id.*

124. *See id.*

125. *See* Lemonick, *supra* note 5.

126. *See id.*

127. *See* "Emission Trading Cheapest Way to Combat Global Warming," INDUS. ENV'T Vol. 9, No. 1, (Jan. 1, 1998).

128. *See id.*

129. *See id.*

trading is the quickest, cheapest way to reduce pollution.¹³⁰ He finds that a trading system encourages the lowest cost, fastest solutions, and also promotes rapid technological change.¹³¹ Humphrey's study found that a global trading system would focus efforts on the lowest-cost solutions and would ensure the widest reach.¹³² It found specifically that a trading system that includes the full range of emission sources would allow cost savings to be captured across energy systems, agriculture, livestock, forest systems, and industrial systems.¹³³

The report also admits that the allocation of the emission trade allowances is an especially daunting step.¹³⁴ Calling the political complexities formidable, the report finds that in allocating emissions trade allowances, the central tensions of climate control debate, such as substantial cost, reduced economic growth and conflicts between industrialized and developing countries all will have to be confronted.¹³⁵ Additionally, on July 31, 1998, the White House Council of Economic Advisors released a report that estimated the costs of the Protocol could be reduced by as much as eighty percent by an international trading mechanism.¹³⁶

There are many concerns and problems with the idea of an emission trading mechanism. First, some countries are concerned that the United States stands to benefit more than any other country.¹³⁷ Specifically, their major concern of this flexibility instrument is that it will allow richer countries, and specifically the United States, to buy their way out of having to meet their reduction targets.¹³⁸ Eizenstat refutes this and has said that the United States is not attempting to escape its obligations through

130. *See id.*

131. *See id.* As evidence Humphrey points to operations of successful trading systems in the United States for more limited purposes such as sulfur dioxide emissions. *Id.*

132. *See "Emission Trading Cheapest Way to Combat Global Warming," supra note 127.*

133. *See id.*

134. *See id.*

135. *See id.*

136. *See White House: Emission Trading to Cut Costs of Kyoto Protocol By Up To 80%, UTIL. ENV'T REP. 4 (McGraw-Hill) (Aug. 14, 1998).*

137. *See Climate Change: No Country Can Meet All of Its Limits Under Protocol by Trading, Eizenstat Says, BNA INT'L ENV'T DAILY NEWS at D3 (Nov. 2, 1998).*

138. *See id.*

trading.¹³⁹ He adds that no country can completely trade its way into meeting obligations.¹⁴⁰

A second problem with the trading mechanism is that some trades may actually do more harm than good by resulting in net increases in emissions.¹⁴¹ This will result when industrialized countries are able to increase their emissions because they are paired with other countries that reduce their emissions more than the treaty requires.¹⁴²

Critics also point to the unresolved issue of how to allocate credits. They claim that there is no simple and fair way to decide how many credits each nation will receive.¹⁴³ Early suggestions were to divide countries into either the industrialized or developing world.¹⁴⁴ A more recent suggestion made by Eileen Claussen, the executive director of the Pew Center on Global Climate Change, has suggested that countries be divided into three tiers.¹⁴⁵

The first tier covers thirty countries that "must act now."¹⁴⁶ The second tier includes fifty-two countries that "should act now," meaning that their efforts to reduce greenhouse gas emissions may vary depending on their level of income and responsibility for gas

139. *See id.*

140. *See id.*

141. *See* AMERICAN POLITICAL NETWORK *Spotlight on Buenos Aries Climate Change II: OP-Ed Blasts Emissions Trading*, GREENWIRE 7 (Nov. 3, 1998).

142. *See* SOROOS, *supra* note 76.

143. *See* AMERICAN POLITICAL NETWORK *Spotlight on Buenos Aries Climate Change II: OP-Ed Blasts Emissions Trading*, *supra* note 141.

144. *See* *Climate Change: Divide Nations into Three Groups to Assign Fair Emission Cuts, Report Says*, BNA INT'L ENV'T DAILY NEWS at D2 (Oct. 30, 1998).

145. *See id.* The criteria that should be considered in developing the tiers included:

1. The cumulative greenhouse gas emission of the country since 1950, which demonstrates the country's responsibility for the build up of greenhouse gases in the atmosphere.
2. The country's gross domestic product per capita, a measure of standard of living and the ability to pay for emission cuts.
3. The number and cost of opportunities within a country to cut greenhouse gas emissions. *Id.*

146. *See* *Climate Change: Divide Nations into Three Groups to Assign Fair Emission Cuts, Report Says*, *supra* note 144; *see also* AMERICAN POLITICAL NETWORK *Spotlight on Buenos Aries Climate Change II: Pew Center Addresses Equity Concerns*, GREENWIRE 7 (Nov. 2, 1998). This group includes the United States, Japan, Mexico, the Czech Republic and many but not all of the members of the European Union. It also includes developing countries such as Argentina, Chile, Venezuela, Malaysia, South Korea, Israel, Kuwait, Thailand, Singapore, Saudi Arabia, and the United Arab Emirates. *Id.*

emission as well as their opportunity to cut emissions.¹⁴⁷ The third tier includes seventy-four countries that are among the poorest countries of the world.¹⁴⁸ These developing countries have very low incomes, but most importantly have produced very little greenhouse gas and have very limited opportunities to cut greenhouse gas emissions.¹⁴⁹ Consequently tier three countries would not be required to take action against the production of greenhouse gases until their situations changed.¹⁵⁰

A fourth problem with an emissions trading mechanism is getting the participating countries to agree to terms that are necessary to establish the mechanism. Possibly the most important example of this type of problem relates to trading caps. The United States has been firm in its insistence that no limits be placed on emissions trading.¹⁵¹ Along with the United States, eight other countries oppose restrictions on emissions trading.¹⁵² The EU opposes unlimited trading for two reasons. First, because it fears that the United States will meet its emission reduction target by purchasing allowances from other countries and will not take any domestic action to reduce greenhouse gas production.¹⁵³ Second, there is a fear that the umbrella group will become a trading bloc, trading emission credits only among themselves.¹⁵⁴ This would effectively cut off the EU from purchasing credits from

147. See *Climate Change: Divide Nations into Three Groups to Assign Fair Emission Cuts, Report Says*, *supra* note 144; see also *Spotlight on Buenos Aires Climate Change II: Pew Center Addresses Equity Concerns*, *Greenwire* (American Political Network) 7 (Nov. 2, 1998). These second tier countries include most of the former Soviet bloc countries, EU members Finland and Ireland, Iceland, India, Algeria, South Africa, and several Central and South American countries. *Id.*

148. See *Climate Change: Divide Nations into Three Groups to Assign Fair Emission Cuts, Report Says*, *supra* note 144; see also AMERICAN POLITICAL NETWORK *Spotlight on Buenos Aires Climate Change II: Pew Center Addresses Equity Concerns*, *GREENWIRE* 7 (Nov. 2, 1998). The third tier includes Indonesia, most African nations, small islands, central Asian nations and some Latin American countries. *Id.*

149. See *Climate Change: Divide Nations into Three Groups to Assign Fair Emission Cuts, Report Says*, *supra* note 144.

150. See *id.*

151. See *Climate Change: U.S., Others May Form Bloc For Trading Emissions If EU Insists On Caps, Official Says*, *supra* note 133, at D3.

152. See *id.* These countries include Australia, Canada, Iceland, Japan, New Zealand, Norway, the Russian Federation, and the Ukraine. Collectively these 9 countries have been called an umbrella group. *Id.*

153. See generally *id.*

154. See *id.*

Russia and the Ukraine, the two nations with the greatest amount of credits to sell.¹⁵⁵

Other groups believe that trading caps must be implemented because the demand for credits will outweigh the availability by a factor of ten to one by the year 2010.¹⁵⁶ They argue that there will not be sufficient countries earning emission deficits to support a trading scheme.¹⁵⁷ This group believes, contrary to accepted belief, that with economic recovery Russia will not have the abundance of emission credits to trade by the year 2010.¹⁵⁸

This critical issue of trading caps remains unresolved.¹⁵⁹ The dispute, primarily between the United States and the EU, was put aside at the fifth conference in Bonn and is scheduled to be discussed at the next talks in 2000 in the Hague.¹⁶⁰

The fifth problem is the unresolved issue among participating countries as to when trading will start. The United States and Canada believe that trading should start immediately while the European Union and others claim that trading must not begin until the rules of the trading mechanism have been established.¹⁶¹ This is a serious concern for the companies that have already begun to make changes in order to meet reduction targets that would like to get credit for these changes.¹⁶² They are anticipating credits for early action under the trading system that will enable them to use those credits to meet their emissions restrictions when they become binding.¹⁶³

A sixth problem with an international trading system is that the United States currently has no domestic policy on how to meet its reduction targets. Joe Goffman, senior attorney for the Environmental Defense Fund, encourages the United States to establish a national emissions trading program for carbon dioxide

155. *See id.*

156. *See Global CO₂ / Study-2: Pressure For Emission Credit Limits*, DOW JONES ENERGY SERV. (Nov. 18, 1998).

157. *See id.*

158. *See Global CO₂ Emissions To Exceed Kyoto Protocol By 15% - Study*, *supra* note 87.

159. *See Laurie Goering, UN Summit On Climate OK's Emission Timetable Standards to Be Set By the Year 2000*, CHICAGO TRIBUNE, Nov. 15, 1998.

160. *See supra* note 47.

161. *See Ott, supra* note 97.

162. *See Climate Change: Business Said To Need Clear U.S. Policy For Cost-Effective Investment Planning*, BNA DAILY ENV'T REP. NEWS at A8 (Sep. 15, 1998).

163. *See id.*

and other greenhouse gases.¹⁶⁴ Goffman feels that if the U.S. had a domestic program in place, it would be in a better position to influence the design of an international trading program.¹⁶⁵

Some businesses believe that an early national standard and policy on climate control would also encourage industry to begin reduction efforts now rather than waiting for the Protocol to be ratified.¹⁶⁶ Eileen Claussen, executive director for the Pew Center on Climate Change is calling for the U.S. to establish a clear policy on climate change so that business directors can adopt an effective strategy for investing in new energy efficient technology.¹⁶⁷ She states that many businesses are hesitant to take any actions now because they fear that if they get no credit for early action they will end up at a competitive disadvantage when limits on greenhouse gas are imposed in the future.¹⁶⁸ In addition, if companies that are willing now to cut emissions and do not do so and are eventually forced to reduce greenhouse emissions in a short period of time, their costs will be higher than if they progressively cut their emissions of a longer time.¹⁶⁹ The utility industry disagrees.¹⁷⁰ They feel that national efforts to reduce emissions such as establishing a domestic trading program should follow a fully fleshed out international trading system.¹⁷¹

Some scientists have stated that this trading system is not the best method of achieving the reduction targets. They suggest that the government impose gradual increases in taxes on fuel and energy consumption rather than requiring specific emission reductions and the specific types of technologies to achieve them.¹⁷² They propose that a hint may be taken from the emission trading system developed as a result of Title IV of the 1990 Clean Air Act Amendment.¹⁷³ Analysts estimate that the trading system

164. See *EDF Backs Utility Call For Credit For Early Action To Reduce CO₂*, *supra* note 117.

165. See *id.*

166. See *Climate Change: Business Said To Need Clear U.S. Policy For Cost-Effective Investment Planning*, *supra*. Note 162, at A8.

167. See *id.*

168. See *id.*

169. See *id.*

170. See *Utilities Watch and Wait as Clinton Administration Ponders Carbon Gap*, UTIL. ENV'T REP. 1 (McGraw-Hill) (Jan. 16, 1998).

171. See *id.*

172. See Paul R. Portney, *Counting the Cost: the Growing Role of Economics in Environmental Decisionmaking (Environmental Policy)*, ENVIRONMENT Vol. 40, No. 2, ISSN: 0013-9157 (Mar. 1, 1998).

173. See *id.*

lowered the cost of reducing sulfur dioxide emissions by \$1 billion to \$3 billion dollars.¹⁷⁴

A final serious problem with the emission trading program has come to be known as the "hot air" debate. The term hot air comes from extra emission credits that some nations will have without having to make any reductions.¹⁷⁵ Critics blame the problem on the fact that baseline emission levels have been set too high.¹⁷⁶ The result is that huge numbers of low-cost emissions are available, specifically from Russia and the Ukraine.¹⁷⁷

Hot air causes several potential problems. The first problem is that critics claim that the U.S. will actually be allowed to increase its emission by purchasing credits from countries with excess credits or at the very least the U.S. will not make any domestic reductions in greenhouse gases and will meet its target by purchasing it through credits.¹⁷⁸

The second problem is that other developing nations that are not currently participants in the Protocol may insist on the same sort of sweetheart deals.¹⁷⁹

A third problem with hot air is that it would transfer an inappropriately large amount of funds to the former Soviet Union.¹⁸⁰ Russia and Ukraine are expected to sell all of their emission allowances to other industrialized nations.¹⁸¹ These two former Soviet nations are anticipated to have allowances to sell on the international market because the Protocol calls for participating countries to return to 1990's emission levels by the year 2012.¹⁸² For most nations a return to 1990 levels involves reductions. But Russian and Ukrainian greenhouse gases are, and are projected to remain for decades, far below 1990 levels because of their serious economic problems.¹⁸³ These low targets were set to encourage them to participate in the Protocol.¹⁸⁴ The problem is not with the compensation system that encourages

174. *See id.*

175. *See U.S. Emissions Trading Proposals Stir Controversy at Bonn Session*, UTIL. ENV'T REP. 7 (McGraw-Hill) (June 19, 1998).

176. *See id.*

177. *See id.*

178. *See id.* at 191

179. *See id.* This would create what has been called "tropical air." *Id.*

180. *See Climate Change: U.S. Rejection of Kyoto Protocol Urged Due to Data, Russia Funding Concerns*, BNA DAILY ENV'T REP. NEWS at A3 (Sep. 17, 1998).

181. *See id.*

182. *See id.*

183. *See id.*

184. *See id.*

these countries to join, but rather the size of potential of money that could potentially flow to these countries.¹⁸⁵

The fourth problem is that “hot air” does nothing to reduce greenhouse gas emissions globally. Russia, even with all of the credits it will have for trading remains the world’s third largest emitter of carbon dioxide from energy production.¹⁸⁶ In fact, if the former Soviet Union and Eastern European nations sell emission allowances to other industrialized countries, purchasing nations on average could allow their greenhouse gas production to rise 7 percent over 1990 levels and still meet the terms of the Protocol.¹⁸⁷

C. *Why the United States Should Not Ratify the Protocol*

Even given the drafting problems of the Protocol that face all of the participating nations, there are specific reasons why the United States should not ratify this Protocol. There are two main reasons: the lack of meaningful participation by developing countries and the potential economic impacts on the United States.

1. *Meaningful Participation*—The most significant problem facing the Protocol is the lack of meaningful participation by developing countries. China, India and other developing countries are rapidly increasing their consumption of fossil fuels and thus their emissions of greenhouse gases, which are projected to exceed those of industrialized countries by the mid-21st century.¹⁸⁸ Specifically, the larger developing countries such as Brazil, India and China will overtake the United States in the next 25-30 years.¹⁸⁹ In fact fourteen of the world’s top twenty energy producers would not be required to limit their emissions under the

185. See *Climate Change: U.S. Rejection of Kyoto Protocol Urged Due to Data, Russia Funding Concerns*, *supra* note 180, at A3.

186. See *Internations Issues: OCED Urges Russia to take Quick Action to Address Serious Environmental Problems*, BNA DAILY ENV’T REP. NEWS at A5 (Dec. 20, 1999).

187. See *Climate Change: Economic Woes in Former Soviet Union May Cut Kyoto Protocol Implementation Cost*, BNA DAILY ENV’T REP. NEWS at A1 (March 31, 1999).

188. See Soroos, *supra* note 76..

189. See *Senate Defines Its Minimum Terms For Climate Change Treaty Talks*, UTIL. ENV’T REP. 1 (McGraw-Hill) (Aug. 1, 1998).

Protocol.¹⁹⁰ Meaningful participation would require developing countries to make some commitment to emissions reductions.¹⁹¹

For this reason, critics of the Protocol are demanding “meaningful participation by developing countries.”¹⁹² Critics of the Protocol demand meaningful participation because without meaningful participation by China, India and other large members of the developing world, these nations would be free to emit as much greenhouse gas as they like would and would negate any benefit derived from reducing emissions by the industrial nations.¹⁹³ In fact, the incredible increases in carbon-based emissions that will result as developing countries continue to grow will dwarf any reduction efforts that the U.S. has been committed to.¹⁹⁴

The phrase meaningful participation comes from a Senate resolution. In late September, 1997 the Senate approved by a vote of 95-0 a non-binding “sense of the Senate” resolution that was sponsored by Sen. Robert Byrd (D-W.Va.).¹⁹⁵ It spelled out the minimum conditions necessary for the ratification of the Protocol and stated that it would not ratify the Protocol without meaningful participation by developing countries.¹⁹⁶ Meaningful participation would require binding commitments to limit or reduce greenhouse gas emissions for participating developing countries within the same time period.¹⁹⁷

The resolution was a response to the concerns of the utilities, and industrial and fossil fuel providers who are concerned that the White House is rushing into a policy that could harm the U.S. economy by hiking energy prices and encouraging a shift in production and jobs overseas to developing nations.¹⁹⁸

190. See *Climate Change: Groups Spotlight Energy Companies, Call for Accounting of Fossil Fuel Production*, BNA DAILY ENV'T REP. NEWS at A3 (Aug. 2, 1999).

191. See *Climate Change: Economic Output Instead of Fixed Targets Best for Developing Countries, Study Says*, BNA DAILY ENV'T REP. NEWS at A3 (June 7, 1999).

192. See Soroos, *supra* note 76..

193. See *Senate Defines Its Minimum Terms For Climate Change Treaty Talks*, *supra* note 189.

194. See Lori Tripoli, *Greenhouse Gas: Who's Happy About Kyoto?*, 13 NO. 8 ENV'TL COMPLIANCE & LITIG. STRATEGY 1 (1998).

195. See *id.* *Senate Defines Its Minimum Terms For Climate Change Treaty Talks*, UTIL. ENV'T REP. 1 (McGraw-Hill) (Aug. 1, 1998).

196. See Tripoli, *supra* note 194.

197. See *id.*

198. See *Senate Defines Its Minimum Terms For Climate Change Treaty Talks*, *supra* note 189.

The Senate is also concerned that the Clinton Administration is seeking to impose measures aimed at allowing the United States to meet the terms of the Protocol without submitting the accord to the Senate for ratification.¹⁹⁹ The Administration requested \$6.3 billion dollars over five years to be appropriated to the U.S. Environmental Protection Agency to implement the Clinton Administrations' Climate Change Technology Initiative, an effort aimed at reducing greenhouse gases that comprises various programs that would encourage energy efficiency, cut pollution, and address global warming.²⁰⁰ Also involved are the EPA's efforts to include in the administration's legislative electric utility restructuring proposal provisions that would control carbon emissions.²⁰¹

Rep. David McIntosh has launched an inquiry into possible initiatives to jump-start the Protocol prior to Senate ratification.²⁰² McIntosh, chairman of the subcommittee on national economic growth, natural resources and regulatory affairs, said that the request directly contradicts the promises by numerous administration officials that they would not try to implement the treaty through the "back door".²⁰³ McIntosh points out that efforts to bypass the Senate ratification are unconstitutional as well as premature and possibly counterproductive.²⁰⁴ Sen. John Ashcroft has called the budget request²⁰⁵ an effort to begin implementing

199. See *White House Threatens Veto Of EPA Funding Bill In Climate Change Fight With Congress*, UTIL. ENV'T REP. 1 (McGraw-Hill) (July 17, 1998).

200. See *id.*

201. See *Rep. McIntosh Launches Inquiry Into White House Policies*, UTIL. ENV'T REP. 3 (McGraw-Hill) (Mar. 17, 1998).

202. See *id.*

203. See *id.*

204. See *id.*

205. See Part of the EPA's budget bill from the House of Representatives contained language that specifically prohibited the Agency from conducting educational outreach or information seminars on policies underlying the Protocol until or unless the Protocol is ratified by the Senate. *White House Threatens Veto Of EPA Funding Bill In Climate Change Fight With Congress*, *supra* note 199. It also stipulated that the EPA may not use any of the 1999 funding to develop, propose, or issue rules for implementation of the Kyoto Protocol or in anticipation of implementation of the Protocol. *Id.* The Senate took similar action by giving the EPA only \$20 million of the proposed \$116 million increase and included similar language blocking the administration's freedom to discuss the Protocol. *Id.* The restrictive language was modified so that the so called gag-order was removed, but the bill still called for cuts in energy efficiency programs and prohibits the EPA from even contemplating how it would implement the Kyoto Protocol should it be ratified. See *Addressing Global Warming NPR's Richard Harris Reports That The Clinton Administration Has Scored A Victory In*

the treaty without Senate ratification, which amounts to a violation of the Constitution.²⁰⁶ Additional legislation has been proposed to give credits to companies that make early reductions in emissions.²⁰⁷ This legislation has been criticized as rewarding larger companies who can afford the high costs of voluntary reductions with a competitive edge at the expense of smaller businesses.²⁰⁸

There are no plans to submit the treaty to the Senate any time soon.²⁰⁹ In fact, Stuart Eisenstat says that the treaty will not be submitted for ratification until it received more commitments from developing nations.²¹⁰ This type of commitment could take several years.²¹¹ As policy develops no one can predict exactly how much support the treaty can expect in the Senate.²¹² At the earliest, the treaty could be submitted to the Senate in 2001.²¹³

The meaningful participation by developing countries may have shifted slightly at the Buenos Aries conference, but no real change in commitments has been made. Two nations that had formerly opposed binding participation in the Protocol have now agreed to voluntarily reduce their emissions.²¹⁴ More importantly, this shift by Argentina and Kazakstan reveals a split in the bloc of Seventy-seven developing nations that has insisted that the United States and other top polluters reduce emissions domestically before requiring sacrifices of others.²¹⁵ The block of Seventy-seven developing nations is lead by China, India and Saudi Arabia.²¹⁶ China and India are large poor countries that believe

Congress Over Global Warming (Morning Edition Radio Broadcast, Feb. 4, 1998).

206. See *Senate Legislation Would Block Funds To Implement Kyoto Accord*, UTIL. ENV'T REP. 8 (McGraw-Hill) (May 8, 1998).

207. See *Climate Change: Bills to Credit Voluntary Emission Cuts Expected to Move in Late 1999, Early 2000*, BNA Daily Env't Rep. News at A13 (Sept. 14, 1999).

208. See *Climate Change: Early Action Credit would Discriminate Against Small Business, Kemp Testifies*, BNA DAILY ENV'T REP. NEWS at A5 (July 19, 1999).

209. See John J. Fialka, *Clinton Administration Signs Treaty Intended To Restrain Global Warming*, WALL ST. J., Nov. 16, 1998, at A2.

210. See *id.*

211. See *id.*

212. See *id.*

213. See *supra* note 41.

214. See AMERICAN POLITICAL NETWORK *Spotlight on Buenos Aries Climate Change II: Argentina, Kazakstan Pledge Limits*, GREENWIRE 7 (Nov. 12, 1998).

215. See Rotella, *supra* note 13, at A17.

216. See *Climate Change: Once-Solid Developing Country Bloc Dividing up*

they must increase energy use if their economies are to develop.²¹⁷ Saudi Arabia also opposes the Protocol because it relies completely on the sale of oil to maintain its economy.²¹⁸ Saudi Arabia has repeatedly tried to delete specific deadlines for further work on the treaty because of their concern that the purpose of it will be to promote more efficient energy use.²¹⁹ They feel that the overall effect will lower oil prices.²²⁰ As a result, Saudi Arabia wants a clause giving them financial compensation.²²¹ The United States and the European Union oppose this clause.²²² Although voluntary pledges to reduce emissions by Argentina and Kazakstan are commendable, critics point out that until countries like China and India get into the game, the global climate treaty will be neither fair nor global.²²³

For the past six years developing countries spoke through one voice with the Group of Seventy-seven and China.²²⁴ The Group represents large developing nations such as China India and Brazil, Latin American nations, African nations, small island nations, and OPEC countries.²²⁵ Prior to the Buenos Aries conference, arguments and disagreements that arose between the more than 130 countries in the Group were left behind closed doors.²²⁶ The distinct identities of the factions within the group are beginning to fragment the Group of Seventy-seven's unified front.²²⁷

into Five or More Factions, BNA INT'L ENV'T DAILY NEWS at D3 (Nov. 17, 1998).

217. See *Climate Change: Groups See Progress In Buenos Aries, But Look For More Action Before 2000*, *supra* note 38, at D3.

218. See *id.*

219. See Fialka, *supra* note 209, at A16.

220. See *id.*

221. See *id.*

222. See *id.*

223. See AMERICAN POLITICAL NETWORK, *Spotlight on Buenos Aries Climate Change: Nations Agree To Set Rules By 2000*, GREENWIRE 7 (Nov. 16, 1998).

224. See *Climate Change: Once-Solid Developing Country Bloc Dividing up into Five or More Factions*, *supra* note 216, at D3..

225. See *id.*

226. See *id.*

227. See *id.* . One divisive point is the Clean Development Mechanism. The large countries of India, China and Brazil point to the fact that the industrialized world has pumped the lion's share of greenhouse gasses into the atmosphere. They feel that those countries should reduce their emissions before the developing countries have to curb their emissions. They oppose the Protocol and resist efforts to move forward on the Clean Development Mechanism for this reason. Latin American countries want to take advantage of the foreign money and technology that will accompany the Clean Development Mechanism.

The other issue at the Buenos Aries Conference that related to meaningful participation was the provision providing that existing emissions reduction commitments would not be reviewed.²²⁸ Developing nations opposed the review of commitments.²²⁹ For this reason, the lack of review was seen to have been a victory for the developing nations and a loss for the industrialized nations.²³⁰ Industrialized nations say that developing nations should be more thoroughly involved while developing nations say that industrial-ized nations have not done enough and should be required to do more.²³¹

2. *Economic Impacts*—The other concern for the United States is the economic impact that the Protocol will have on Americans. Some scientists feel that the Protocol does not pose any threat to American jobs or to the cost of living.²³² One study found that a good portion of cuts could be made through efficiency, without harming productivity.²³³ Another study done by the Department of Energy demonstrated that the United States could hold down the costs of meeting greenhouse gas reduction goals through technological solutions such as advanced natural gas turbines, biomass and biofuels and energy saving appliances.²³⁴ They ambitiously claim that the U.S. can meet its reduction target

Argentina's voluntarily reduction agreement is evidence of this. The African nations also would like to get their share of the foreign money and technology that the Latin American countries have been receiving. The small island countries are seen as having the moral high ground as some of the lowest producers of greenhouse gases with the most to lose as sea levels rise as a result of global warming. They are most concerned with a provision of the Protocol that will provide funds to the developing countries that are most vulnerable adapt to the effects of climate change. Finally the OPEC countries are concerned with their economic losses as the world moves away from the use of fossil fuels toward more efficient energy sources. *Id.*

228. See *Climate Change: Groups See Progress In Buenos Aries, But Look For More Action Before 2000*, *supra* note 38, at D3..

229. See *id.*

230. See *id.*

231. See *id.*

232. See *Climate Change: Curbing Emissions would Boost Jobs, Economic Growth in U.S., Study Says*, BNA DAILY ENV'T REP. NEWS at A7 (Aug. 11, 1999).

233. See *Efficiency Makes Big Contribution to Cutting Pollution, Study Shows*, UTIL. ENV'T REP. 6 (McGraw-Hill) (June 5, 1998). The 1998 study was prepared by the Leonardo Academy in Madison Wisconsin for the Department of Energy's Energy Fitness Program. *Id.*

234. See *DOE Study on Greenhouse Gas Cuts Bolsters Environmentalist Position*, UTIL. ENV'T REP. 6 (McGraw-Hill) (Oct. 10, 1997).

by 2010, at no cost to the economy, through aggressive investment in energy efficiency and clean air technologies.²³⁵

Other scientists believe that the United States can meet its greenhouse gas reduction target with technology that is available today without significantly harming the economy. The Union of Concerned Scientists believes that in many cases, the resulting savings on energy bills from the use of more efficient methods of energy production will outweigh the costs of implementing those measures.²³⁶

The White House Council on Economic Affairs predicts that the Protocol will translate into an increase of \$70-\$110 per year for the average family's electric bill. However, they think that the price increase could be substantially reduced by the restructuring of the electric industry.²³⁷

Other authorities have responded by calling these estimates "rosy scenarios" designed to help the Clinton Administration build support for its climate change policy.²³⁸ Critics point to the low estimates of implementing the Protocol and are disturbed that the analysis is predicated upon assumptions that may never materialize, such as developing nations joining in the Protocol and limiting their production of emissions and the implementation of a workable trading system.²³⁹ Connie Holmes, the chair of the Global Climate Coalition that represents the utilities and other industries, called the report's conclusions totally unsupported and based on assumptions that are totally unrealistic in today's world.²⁴⁰

Other critics point out that studies that the Clinton Administration relies upon to support its signing of the Protocol all have been done by the government or by researchers being

235. *See id.* The report estimated that it would cost between \$50 and \$90 billion dollars per year to achieve the reduction of 390 million metric tons that would be necessary to reach 1990 levels by 2010. However the study also estimates that energy savings through 2010 would total between \$70 and \$90 billion dollars per year. *Id.*

236. *See UCS: U.S. Can Meet Kyoto Protocol Mandate Without Harming Economy*, UTIL. ENV'T REP. 1 (McGraw-Hill) (July 31, 1998).

237. *See White House Analysis of Economic Impacts of Kyoto Protocol Provokes Skepticism*, UTIL. ENV'T REP. 7 (McGraw-Hill) (Mar. 13, 1998).

238. *See id.*

239. *See id.*

240. *See id.*

paid by the government.²⁴¹ Other critics simply call the studies “exercises in wishful thinking” or not serious economic studies.²⁴²

The differences in the estimates of the cost of compliance between the Clinton Administration and the industry are very extreme.²⁴³ Janet Yellen, the chair of the President’s council of Economic Advisors has testified that reductions will cost between fourteen dollars and twenty-three dollars per ton.²⁴⁴ However the industry’s analysis places the figure at more than \$100 per ton.²⁴⁵

Another study performed by the WEFA Group done for the petroleum industry does not rely upon the assumptions of an emissions trading system nor the participation of developing countries.²⁴⁶ They estimate that the Protocol will reduce the gross domestic product by 3.2% and cost 2.5 million jobs.²⁴⁷

Another related concern is the possibility that if the United States implements the Protocol, businesses will close plants and move jobs to developing countries that have no emission limits.²⁴⁸ Not only would jobs be lost for American workers, but these companies could claim emission credits for the closed facilities and continue or expand their greenhouse gas emissions.²⁴⁹

3. *Reactions to Economic Impacts*—Many politicians and business leaders oppose the Protocol. Politicians worry that if emission limits are imposed only on the United States and other industrialized nations, U.S. jobs will flow overseas to China and other developing countries.²⁵⁰ Others, such as Sen. John Ashcroft (R.-Mo.) have said that the Protocol would impose severe penalties on the U.S. steel, aluminum, petroleum refining, chemical, iron, paper products and cement industries.²⁵¹

241. See *DOE Study on Greenhouse Gas Cuts Bolsters Environmentalist Position*, *supra* note 234.

242. See *id.*

243. See *Business, Industry Groups Blast Kyoto Protocol In House Hearing*, UTIL. ENV’T REP. 3 (McGraw-Hill) (May 22, 1998).

244. See *id.*

245. See *id.*

246. See *White House Analysis of Economic Impacts of Kyoto Protocol Provokes Skepticism*, *supra* note 237.

247. See *id.*

248. See *Climate Change: Land Management, Forestry Practices, Will Cut Cost of Kyoto Protocol, Yellen Says*, BNA DAILY ENV’T REP. NEWS at A2 (April 30, 1999).

249. See *id.*

250. See *Senate Defines Its Minimum Terms For Climate Change Treaty Talks*, *supra* note 189.

251. See *Senate Legislation Would Block Funds To Implement Kyoto Accord*, *supra* note 206.

Businesses have had strong reactions to the Protocol. Two of the industries that are most vocal are the coal and the utility industries.²⁵² Business and industry leaders accuse the Protocol of being unworkable while promising to harm the U.S. economy, including loss of thousands of American jobs. The coal industry is among the leaders of industry that oppose the Kyoto protocol.²⁵³ In what they believe is an effort to save their industry the UMWA and the nation's coal operators, historically long time enemies, have united to collectively oppose the Protocol.²⁵⁴ Coal states such as West Virginia, Kentucky, Alabama, Illinois, and Virginia have either passed or narrowly missed passing resolutions or legislation that prevent state agencies from enforcing or regulating greenhouse gases until the U.S. Senate has passed on the issue.²⁵⁵

The utility industry is another group that has opposed the Protocol. One study found that compliance with the Protocol by 2010 could cost the utilities \$10 billion dollars a year, primarily in higher fuel costs as companies switch from high polluting coal to cleaner natural gas.²⁵⁶

Another possible problem that supporters of the Protocol face is the impending conflict of utility deregulation and reducing carbon emissions. Currently there is significant momentum at state and local levels of government to reform the electric utility industry to lower the costs of electricity.²⁵⁷ Deregulation of the electric utility has the potential, more than any other government action to increase the production of carbon emissions and make it extremely unlikely that the United States can reach its goal mandated in the Protocol.²⁵⁸

252. See *EEI Study: New Air Regulations, Kyoto Protocol Put Power Industry at Risk*, UTIL. ENV'T REP. 7 (McGraw-Hill) (June 5, 1998). The electricity industry accounts for 37 % of the total United States carbon dioxide emissions and of that percentage, coal fired generation accounts for 82% of those emissions. *Id.*

253. See *U.S. Grassroots War Against Kyoto Pact is Reaping Support, Mine Workers Claim*, UTIL. ENV'T REP. 7 (McGraw-Hill) (July 17, 1998).

254. See *id.*

255. See *id.*

256. See *ESAI Study: Meeting Kyoto Protocol Could Cost Utilities \$10-Billion/Year*, UTIL. ENV'T REP. 3 (McGraw-Hill) (Jan. 30, 1998). The study was entitled *Electricity & Climate Change, Estimating the Effects of Compliance with the Kyoto Treaty* and was prepared by Energy Security Analysis based on data compiled by the Department of Energy's Energy Information Administration. *Id.*

257. See Smeloff, *supra* note 2.

258. See *id.*

Business groups almost uniformly consider the emission goals to be unrealistic.²⁵⁹ Michael Shanahan, of the American Petroleum Institute, says that the treaty's goals can only be met by dramatically reducing the consumption of energy in this country.²⁶⁰ The only way to do that is to ration the use of gasoline or heating oil or coal or other products which can be accomplished by driving up the price.²⁶¹ The other thing that would have to be done would be to change American's driving habits by taking people out of their sport-utility vehicles or forcing people to double up when they commute.²⁶² Both of these necessary changes are unlikely to be acceptable by the public and therefore unlikely to be voted for by Senators.²⁶³

However, more recently, some businesses and industries are coming to support the Protocol and are taking pro-active steps to meet the reduction targets even before climate change regulations are in place. Persuaded by mounting evidence that climate change is underway and regulations are inevitable, a growing number of U.S. and foreign businesses have split with their former industrial allies and are leading the way in emission cuts.²⁶⁴

Some industry giants have announced new efforts to reduce emissions production. Royal Dutch/Shell Group, the world's biggest oil producers, has announced that it is investing in new types of cars and renewable fuels, and that it will voluntarily reduce emissions ten percent below 1990 levels by 2002.²⁶⁵ DuPont Co. says that it has already increased energy efficiency by fifteen percent and hopes to reduce greenhouse gases by half by 2000.²⁶⁶ Intel Corp. is working on a deep-sleep mode for computers that will dramatically cut power usage.²⁶⁷ British Petroleum that is in the process of acquiring Amoco Corp. is heavily investing in solar research and has promised to cut its emissions ten percent below 1990 levels by 2010.²⁶⁸ United Technologies Corp., which produces

259. See Sallie L. Gaines, *A Cooling Foes Say Treaty Unfair to U.S.*, CHICAGO TRIBUNE, Nov. 18, 1998.

260. See *id.*

261. See *id.*

262. See *id.*

263. See *id.*

264. See Laurie Goering, *A Cooling Resistance Firms Pledge Emissions Cuts*, CHICAGO TRIBUNE, Nov. 18, 1998.

265. See *id.*

266. See *id.*

267. See *id.*

268. See *id.*

jet engines, elevators and air-conditioning equipment, has promised to cut energy use by twenty-five percent by 2007, at a cost of about \$200 million.²⁶⁹

Businesses allied with the Pew Center such as Boeing Co., International Paper Co., Maytag Corp., and Toyota Motor Corp. hope to have a hand in writing any eventual regulations and are hopeful that the Protocol's flexible mechanisms will reward their efforts with reduction credits.²⁷⁰ These voluntary reductions have less to do with lofty ideals than calculated business risks.²⁷¹ They also see new markets opening overseas if they can be the first to develop clean technology to create power or produce more efficient cars, appliances and other products.²⁷²

However, at this time, the effects of voluntary business cuts can not be relied upon to achieve reduction goals. Most companies have not shown an interest in voluntarily reducing emissions.²⁷³ For example, the automobile industry, that is responsible for about forty percent of the overall U.S. emissions, has shown little interest in quick boosts in fuel economy because consumers have shown little concern for fuel efficiency.²⁷⁴ Additionally only a handful of power companies, the largest producers of greenhouse gases in the United States, have embraced the early reduction effort.²⁷⁵ Specifically, through the Global Climate Coalition, companies such as Illinois Power Co., General Motors Corp., Exxon Corp. and Texaco Inc. continue to doubt the validity of global warming and oppose the Protocol.²⁷⁶

IV. Conclusion

After considering all of the viewpoints and evidence on the Protocol's underlying issues, the question of ratification becomes clear. All of the collective uncertainties and potential adverse effects make the Kyoto Protocol an unacceptable solution to the problem of global warming. First, science is still debating the problem of global warming and how to effectively measure it. Second, the emission targets are unachievable if not because of

269. See Goering, *supra* note 264.

270. See *id.*

271. See *id.*

272. See *id.*

273. See *id.*

274. See Goering, *supra* note 264.

275. See *id.*

276. See Gaines, *supra* note 259.

the reduction called for, then because the political agreement necessary to achieve these goals would require unprecedented unity of purpose among the participating nations. Third, the Protocol's instruments that are designed to help nations reach their targets give the targets a malleable quality that make them ineffective. Fourth, unless developing countries make commitments to binding reductions, global warming will continue because of the failure to address it globally. Finally, the Protocol's supporters are unrealistic if they believe Americans will agree to the economic and lifestyle costs that will accompany ratification.

This is not to suggest that if evidence of global warming becomes clear, the United States should not lead the effort to combat its effects. In that event, the United States should consider all types of methods of achieving reductions including non-binding commitments, eco-taxes and geo-engineering. With regard to all of the Protocol's deficiencies, the United States should accept its responsibilities as the world's greatest greenhouse gas emitter and work to negotiate a more effective treaty.

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