

REVIVING THE NUCLEAR POWER OPTION IN THE UNITED STATES: USING DOMESTIC ENERGY LAW TO CURE TWO PERCEPTIONS OF INTERNATIONAL LAW ILLEGALITY

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I. INTRODUCTION

This Idea begins an exploration of the relationships between law and policy, and between domestic and international law in the context of climate change, the war in Iraq and the domestic law and policy of the United States on nuclear energy. All too often, a nation's broad foreign policy positions are formulated without a full consideration of the international law implications of that policy. Even more often, the potential role of existing domestic law to serve those foreign policy objectives is not considered. Conversely, the foreign policy benefits of domestic law's application are rarely a meaningful factor in domestic law and policy decision-making.

Two perceptions, right or wrong, of international law illegality on the part of the United States have arisen in the last few years with regard to both the use of military force in Iraq and to global warming. The first perception is that the United States invaded Iraq illegally to secure a significant source of foreign oil. The second perception is that the United States ignores the letter and spirit of the evolving international climate change regime to reduce greenhouse gas ("GHG") emissions.

Both perceptions of international law illegality directly reflect the domestic growth energy policy of the United States that is anchored by a present and future reliance almost exclusively on fossil fuels (oil, coal and natural gas), which both emit GHG and contribute to the dependence

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of the United States on foreign oil.¹ Those perceptions of illegality could be fully cured by an aggressive use of existing domestic law to revive the nuclear power industry in the United States to replace its fossil fuel-based electric supply. This would put the United States in compliance with the climate change regime (whether or not it ever participates in it) and would help both to greatly reduce the dependence of the United States on foreign oil as a factual matter and to eliminate the perception that it uses force to secure foreign oil sources as a policy matter. In turn, the benefits of removing perceptions of international law illegality ought to play a significant and positive role in weighing the benefits and costs of future domestic nuclear energy production.

II. PERCEPTIONS OF INTERNATIONAL LAW ILLEGALITY

The first perception of illegality is that the invasion of Iraq was all about securing a foreign oil supply. Three considerations fuel that perception: the absence of an international law justification for the invasion, the presence of large oil reserves in Iraq, and the growing dependence of the United States on foreign oil for most of its oil needs.

There was little justification in international law for the invasion by the United States and the coalition of willing states. International law forbids “the threat or use of force by states against the territorial integrity or political independence of any state,” except in an act of legitimate individual or collective self-defense or if authorized to maintain or restore international peace and security by the U.N. Security Council.² The invasion of Iraq was not an act of self-defense under either the U.N. Charter,³ or under customary international law. Iraq had not actually attacked anyone for twelve years prior to March 2003.⁴ The invasion

1. Vice President Dick Cheney, on April 30, 2001, announced the administration’s new comprehensive energy policy. He stated that “the reality is that fossil fuels supply virtually a hundred percent of our transportation needs, and an overwhelming share of our electricity requirements” and will do so for the long term. Conservation, he said, “is not a sufficient basis for a sound, comprehensive energy policy,” alternative energy sources would not be sufficient to sustain “our economy and our own way of life,” and renewable energy sources (hydro, wind, solar, and so forth) would never meet more than “six percent” of our foreseeable energy sources. Dick Cheney, Vice President of the United States, Remarks at the Annual Meeting of the Associated Press (Apr. 30, 2001), http://www.pbs.org/newshour/bb/environment/energy/cheney_4-30.html [hereinafter Cheney, Remarks].

2. U.N. Charter art. 2, para. 4, art. 25, art. 51.

3. The U.N. Charter provides in Article 51 that states may individually or collectively use armed force “if an armed attack occurs.” U.N. Charter art. 51.

4. In 1990, the United Nations condemned Iraq for its invasion of Kuwait, ordered its withdrawal and imposed severe sanctions. S.C. Res. 660, U.N. Doc. S/RES/660 (Aug. 2, 1990);

also was not justified as an act of anticipatory self-defense because Iraq neither had the capability nor demonstrated any intention of launching an imminent armed attack against the United States or other coalition states.⁵ The alternative notion that the invasion was legally justified in international law to preempt an armed attack at some remote point in time in the distant future is a dangerous and discredited international law justification for the use of force and there is no record to support that Iraq had such long term intentions. The invasion also could not be justified in international law as an act of humanitarian intervention.⁶ Finally, the invasion of Iraq was not legally justified by resolutions of the U.N. Security Council.⁷ The only two Security Council resolutions that could be invoked to justify the invasion were Resolution 678,⁸ and Resolution 1441.⁹ Neither resolution authorized the invasion of Iraq in March 2003. Resolution 678 was over a dozen years old and only authorized force to oust Iraq from Kuwait in the Desert Storm war.¹⁰ If the United States thought Resolution 678 provided a legal predicate to invade Iraq in 2003, it would not have sought Resolution 1441 from the Security Council. Resolution 1441 did not authorize the use of force because it did not contain the “magic words” of authorization—“use all necessary means.” Two permanent members of the Security Council (Russia and France) said in voting for 1441 that they did not intend to authorize the use of force, and that the resolution itself clearly required the Security Council to take an additional decision if Iraq violated

S.C. Res. 661, U.N. Doc. S/RES/661 (Aug. 6, 1990). While compliance with terms of these and future resolutions is questionable, Iraq did not affirmatively use force against the territory of a foreign state during the sanctions period.

5. See James E. Hickey, Jr., *Challenges to Security Council Monopoly Power over the Use of Force in Enforcement Actions: The Case of Regional Organizations*, 10 *IUS GENTIUM* 69, 100-02, 109-10 (2004); see also 1 CHARLES DUELFER, *COMPREHENSIVE REPORT OF THE SPECIAL ADVISOR TO THE DCI ON IRAQ'S WMD* 28-30 (2004), available at http://www.lib.umich.edu/govdocs/pdf/duelfer1_b.pdf.

6. Hickey, *supra* note 5, at 112-14. The doctrine is very controversial as a legal matter and there was no showing that a use of force was necessary in March 2003 to prevent Iraq's mistreatment of Iraqis in a way that shocks the conscience of the global community, triggering a right to invade as the doctrine requires.

7. See Christopher Greenwood, *International Law and the Pre-emptive Use of Force: Afghanistan, Al-Qaida, and Iraq*, 4 *SAN DIEGO INT'L L.J.* 7, 33-34 (2003).

8. S.C. Res. 678, U.N. Doc. S/RES/678 (Nov. 29, 1990).

9. S.C. Res. 1441, U.N. Doc. S/RES/1441 (Nov. 8, 2002).

10. S.C. Res. 678, *supra* note 8, ¶2. Security Council Resolution 687, which governed the ceasefire that ended the Persian Gulf War, also did not authorize the use of force to enforce the ceasefire terms, U.N. Doc. S/RES/687 (Apr. 8, 1991).

1441.¹¹ The Security Council subsequently never issued any resolution authorizing the use of force against Iraq.

In the absence of international law justifications for the invasion, the perception persists in some quarters, rightly or wrongly, that the United States invaded Iraq primarily to secure long term foreign sources of oil. After all, the United States depends mostly on foreign oil for much of the country's energy needs.¹² "In 2005, total U.S. demand for petroleum was 20.8 million barrels per day, of which 12.5 million barrels per day, or 60 percent, was from net imports."¹³ Domestic oil production is mature, is increasingly under environmental constraints, and is not expected to rise significantly in the future.¹⁴ Under the present growth energy policy of the United States, grounded in fossil fuel use, secure foreign sources of oil must be found. In this regard, Iraq is estimated to have up to 216 billion barrels of untapped oil reserves in the ground, the third highest reserves in the world behind Saudi Arabia and Canada.¹⁵

The second perception of international law illegality is that the United States is acting contrary to the letter and spirit of the emerging international law regime to deal with climate change, in particular, efforts to reduce GHG emissions that contribute to global warming that are found in the 1992 United Nations Framework Convention on Climate Change ("Climate Change Convention")¹⁶ and later in the 1997 Kyoto Protocol to the Climate Change Convention ("Kyoto Protocol").¹⁷

11. S.C. Res. 1441, *supra* note 9, ¶¶ 2, 4, 11, 12; see Press Release, Security Council, Security Council Holds Iraq in 'Material Breach' of Disarmament Obligations, Offers Final Chance to Comply, Unanimously Adopting Resolution 1441 (2002), U.N. Doc. SC/7564 (Nov. 11, 2002) (reporting that "France welcomed the two-stage approach required by the resolution," which obviated "the concept of 'automaticity' for the use of force," and that representatives of "the Russian Federation stressed that only [two investigatory agencies] had the authority to [enter Iraq and] report violations" of the resolution).

12. Oil, of course, provides gasoline and diesel fuel for our cars and trucks, jet fuel for our airplanes, fuel to make electricity in power plants, and lubricants for our manufacturing processes.

13. Energy Information Administration ("EIA"), Energy Information Sheets Index: Petroleum Products Consumption, <http://www.eia.doe.gov/neic/infosheets/petroleumproductsconsumption.html> (last visited Apr. 10, 2007).

14. ENERGY INFO. ADMIN., SHORT-TERM ENERGY OUTLOOK 3 ("U.S. Petroleum Markets"), tbl.5a (2007), available at <http://www.eia.doe.gov/emeu/steo/pub/mar07.pdf>.

15. ENERGY INFO. ADMIN., COUNTRY ANALYSIS BRIEFS: IRAQ 2 (2006), <http://www.eia.doe.gov/emeu/cabs/Iraq/pdf.pdf>; see also *Iraqi Oil Wealth 'Going Untapped'*, BBC NEWS, <http://news.bbc.co.uk/1/hi/business/6570623.stm> (last visited Apr. 18, 2007).

16. United Nations Framework Convention on Climate Change art. 2, done May 9, 1992, S. TREATY DOC. NO. 102-38, 1771 U.N.T.S. 107 [hereinafter Climate Change Convention].

17. Kyoto Protocol to the United Nations Framework Convention on Climate Change arts. 2-3, done Dec. 11, 1997, 37 I.L.M. 22 [hereinafter Kyoto Protocol].

The United States is a party to the Climate Change Convention along with 188 other nations.¹⁸ The Climate Change Convention establishes an administrative mechanism for governments to cooperate in stabilizing and ultimately reducing man-made GHG emissions to stop global warming. It establishes a largely aspirational framework to address the problem of climate change by urging cooperation among nations, by calling for the gathering of data on GHG emissions, by the launching of strategies to facilitate needed financing and technologies, and by articulating principles (like equity, sustainable development, and the precautionary principle) to guide more substantive rules.¹⁹ An overall goal of the Climate Change Convention is to have developed nations reduce GHG emissions to their 1990 levels and to have them assist developing countries in dealing with GHG.²⁰

While still a party to the Climate Change Convention, the United States, in 2001, withdrew from the Kyoto Protocol.²¹ The Kyoto Protocol, which entered into force in February 2005 and has 169 parties to it, imposed binding international law obligations on industrialized nations to cap GHG emissions.²² If the United States had not withdrawn from the Kyoto Protocol, it would have been obligated to reduce its GHG emissions seven percent below 1990 levels.²³ Just the opposite happened. From 1990 through 2000, for example, total GHG emissions by the United States rose from 1647 million metric tons annually to 1885 million metric tons.²⁴ In 2005, GHG emissions from the United

18. Website of the United Nations Framework Convention on Climate Change, Parties to the Convention and Observer States, http://unfccc.int/parties_and_observers/parties/items/2352.php (last visited Apr. 10, 2007); see also Kevin A. Baumert, Note, *Participation of Developing Countries in the International Climate Change Regime: Lessons for the Future*, 38 GEO. WASH. INT'L L. REV. 365, 370-74 (2006).

19. Climate Change Convention, *supra* note 16, arts. 4-7, 9, 11.

20. See *id.* art. 4, ¶¶ 2-10.

21. While the United States was a signatory to the Kyoto Protocol, it only could become binding after Senate approval of ratification. The Senate refused to approve the ratification of the agreement. S. Res. 98, 105th Cong. (1997). President George W. Bush formally announced U.S. departure from the Kyoto Protocol in June 2001. See Press Release, The White House Office of the Press Sec'y, President Bush Discusses Global Climate Change (June 11, 2001), <http://www.whitehouse.gov/news/releases/2001/06/20010611-2.html>.

22. Website of the United Nations Framework Convention on Climate Change, Kyoto Protocol, http://unfccc.int/kyoto_protocol/items/2830.php (last visited Apr. 10, 2007).

23. See Kyoto Protocol, *supra* note 17, Annex B.

24. RONALD E. HAGEN ET AL., ENERGY INFO. ADMIN., IMPACT OF U.S. NUCLEAR GENERATION ON GREENHOUSE GAS EMISSIONS 3 tbl.1 (2001), available at <http://tonto.eia.doe.gov/FTP/ROOT/nuclear/ghg.pdf> [hereinafter IMPACT OF NUCLEAR GENERATION].

States were seventeen percent higher than in 1990.²⁵ The United States alone produces roughly one quarter of all the world's energy-related carbon emissions.²⁶ Forty percent of that total comes from electric power plants burning coal, oil, and natural gas.²⁷ In addition, the United States domestically has refused to regulate GHG emissions from automobiles under the Clean Air Act.²⁸ By any measure, this is a domestic energy policy position out of step with the international law regimes emerging to deal with climate change.

III. REVIVING THE NUCLEAR POWER OPTION

Nuclear power is one of the most readily available domestic energy sources that can be used to achieve energy independence. It has a fifty-year record of safe operational experience with over one hundred power plants.²⁹ There are an estimated 498 million tons of uranium ore reserves in the United States³⁰ to fuel a revived nuclear power industry. In addition, Australia and Canada, two close U.S. allies, have most of the world's uranium reserves. Unlike fossil fuel electric power, nuclear electric power does not produce any GHGs. In 2005, over 200 million barrels of oil were used directly for electric generation.³¹ This consumption can be replaced by nuclear generation, which would help to reduce U.S. foreign oil dependence. In addition, the heavy reliance on the automobile in the United States is a major source of both oil consumption and of GHG emissions. The movement to introduce electric and electric hybrid cars to the U.S. automobile market is an attempt to reduce oil use and GHG emissions. However, if electric batteries used in these cars are recharged with fossil fuel generated

25. ENERGY INFO. ADMIN., EMISSIONS OF GREENHOUSE GASSES IN THE UNITED STATES 2005, at ix (2006), available at <ftp://ftp.eia.doe.gov/pub/oiaf/1605/cdrom/pdf/ggrpt/057305.pdf> [hereinafter EMISSIONS OF GREENHOUSE GASSES].

26. IMPACT OF NUCLEAR GENERATION, *supra* note 24, at 3.

27. *See id.*

28. *See* Massachusetts v. Envtl. Prot. Agency, No. 05-1120 (U.S. Apr. 2, 2007).

29. The only significant accident with a nuclear plant occurred in 1979 at the Three Mile Island nuclear power plant in Pennsylvania, which accidentally released radioactive emissions in the containment building. U.S. Nuclear Regulatory Comm'n, Fact Sheet: Three Mile Island Accident 1-2 (2004), <http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/3mile-isle.pdf>.

30. EIA, Estimation of Uranium Reserves, <http://www.eia.doe.gov/cneaf/nuclear/page/reserves/ures.html> (last visited Apr. 11, 2007).

31. ENERGY INFO. ADMIN., ANNUAL ENERGY REVIEW 2005, at 243 tbl.8.5b (2006), available at <http://www.eia.doe.gov/emeu/aer/pdf/aer.pdf> (charting the United States's increasing use of combustible fuels for electricity generation, from over 66 million barrels of petroleum in 1949 to over 200 million barrels of petroleum in 2005) [hereinafter ANNUAL ENERGY REVIEW].

electricity, little is achieved to reduce GHG emissions because the source of those emissions is simply moved from the tailpipe to the smokestack. In a revived nuclear power industry, additional GHG emission reductions could be achieved by recharging electric car batteries with electricity produced from nuclear power plants.

Despite these advantages, the growth of the nuclear power industry has been moribund since the late 1970s because of domestic concerns about cost, accidents, and waste disposal.³² As a result, the nuclear energy contribution to meet the nation's total electric demand hovers at about twenty percent.³³ If nothing changes in the calculus of the benefits and costs of nuclear power production, the contribution of nuclear energy to meet the rising energy needs of the United States will decline in the future. Existing nuclear plants are operating at top efficiency and they are near the end of their useful lives, with no new plants on the horizon.³⁴ In turn, U.S. electric demand is expected to increase by forty-three percent over the next twenty years requiring between 1300 and 1900 new power plants.³⁵ Without nuclear power plants, the primary fuel source for those plants will be fossil fuels (coal, natural gas and oil), which are the major contributors of GHG to the atmosphere from electric generation.³⁶ Renewable energy sources presently contribute little more than two percent of the nation's total electric generation, excluding hydroelectricity (i.e. wind, solar, geothermal).³⁷ Even if renewable capacity was trebled, it would still constitute only a very small portion of the total electric energy needs of the country. Hydroelectric power provides between six and seven percent of the country's electricity.³⁸ It is fully developed in the sense that nearly all rivers and streams capable of being used for production of

32. See James E. Hickey, Jr., *Mississippi Power & Light Company: A Departure Point for Extension of the "Bright Line" Between Federal and State Regulatory Jurisdiction over Public Utilities*, 10 J. ENERGY L. & POL'Y 57, 63-64 (1989).

33. See ANNUAL ENERGY INFO. ADMIN., *supra* note 31, at 275 tbl.9.2.

34. See ENERGY INFO. ADMIN., ANNUAL ENERGY OUTLOOK 2007: WITH PROJECTIONS TO 2030, at 9-10 (2007), available at [http://www.eia.doe.gov/oiarf/aeo/pdf/0383\(2007\).pdf](http://www.eia.doe.gov/oiarf/aeo/pdf/0383(2007).pdf) [hereinafter ANNUAL ENERGY OUTLOOK]; Donald N. Zillman, *Nuclear Power*, in THE ENERGY LAW GROUP, ENERGY LAW AND POLICY FOR THE 21ST CENTURY 10-1, 10-1 to -2 (2000); see also JOSEPH P. TOMAIN & JAMES E. HICKEY, JR. WITH SHEILA S. HOLLIS, ENERGY LAW AND POLICY 389-443 (1989).

35. Cheney, Remarks, *supra* note 1.

36. EMISSIONS OF GREENHOUSE GASES, *supra* note 25, at xii.

37. ENERGY INFO. ADMIN., ELECTRIC POWER ANNUAL 2005, at 1 fig.ES1 (2006), <http://www.eia.doe.gov/cneaf/electricity/epa/epa.pdf>.

38. *Id.*

hydroelectricity have been exploited. It is estimated that fossil fuels, without a change in energy laws and policies, will provide eighty-six percent of the energy supply of the United States in 2030.³⁹

There is also in place a comprehensive legal and administrative regime for revival of the nuclear power industry. For example, the 1954 Atomic Energy Act allows private ownership of nuclear power plants under licenses issued by the federal Nuclear Regulatory Commission.⁴⁰ The 1957 Price-Anderson Act limits investment risks and encourages investment in nuclear power plants by limiting the overall liability of commercial nuclear plant operators.⁴¹ The 1969 National Environmental Policy Act requires environmental impact statements to be prepared.⁴² The 1982 Nuclear Waste Policy Act addresses disposal of nuclear wastes associated with nuclear power production.⁴³ The 1992 Energy Policy Act simplifies nuclear plant licensing procedures and encourages research and development of advanced nuclear power facilities.⁴⁴ Finally, the 2005 Energy Policy Act renews the Price-Anderson Act, provides for loan guarantees for new nuclear power reactors, and establishes nuclear power production tax credits.⁴⁵

What then prevents a shift in domestic growth energy policy towards aggressive nuclear power development and away from reliance on fossil fuels? There are four areas of concern about the nuclear power industry that inhibit its revival: costs, safety, proliferation, and waste.

First, nuclear power remains at present relatively expensive under current financial comparisons. The cost of new nuclear plant construction per kilowatt hour is roughly \$1500 compared to half that for a new coal plant.⁴⁶ However, those cost comparisons do not fully internalize the associated global warming costs associated with GHG

39. *Id.* at 19 tbl.2.24, 20 tbl.2.5; ANNUAL ENERGY OUTLOOK, *supra* note 34, at 2.

40. Atomic Energy Act of 1954, Pub. L. No. 83-703, §§ 101, 103, 68 Stat. 919, 936 (codified as amended at 42 U.S.C. §§ 2131, 2133 (2006)).

41. Price-Anderson Act, Pub. L. No. 85-256, § 4, 71 Stat. 576, 576-78 (1957) (codified at 42 U.S.C. § 2210 (2006)).

42. National Environmental Policy Act of 1969, Pub. L. No. 91-190, § 101, 83 Stat. 852, 853 (codified at 42 U.S.C. § 4331 (2006)).

43. Nuclear Waste Policy Act of 1982, Pub. L. No. 97-425, 96 Stat. 2201 (codified at 42 U.S.C. §§ 10,101-10,226 (2006)).

44. Energy Policy Act of 1992, Pub. L. No. 102-482, §§ 2801, 2903, 106 Stat. 2776, 3120, 3125 (codified as amended at 42 U.S.C. §§ 2235, 2214(c) (2006)).

45. Energy Policy Act of 2005 (Price-Anderson Amendments Act of 2005), Pub. L. No. 109-58, §§ 602-04, 638, 119 Stat. 594, 779-80, 791-93 (codified as amended at 42 U.S.C. §§ 2210, 16,014); see Marla E. Mansfield, *Prospects for Nuclear Generation*, TRENDS, (ABA Section of Env't, Energy, & Res., Chi., Ill.), Nov./Dec. 2006, at 1, 13.

46. *Id.* at 1.

emissions from coal fired power production. In addition, the cost benefits of reducing GHG emissions by using nuclear power plants is also not reflected in current cost calculations. The cost comparisons also do not reflect any of the benefits achieved by curing the perceptions of illegality with regard to the use of force or to global warming. Cost calculations could also be reduced on a short term basis with government subsidies for the first few plants until economies of scale kick in with a revived nuclear industry, which would further reduce the cost per kilowatt hour.

Second, since the Three Mile Island accident in 1979 and the 1987 Chernobyl plant meltdown in the Ukraine, there are concerns about plant safety and harm from accidents. Since those accidents, many industry and government measures have been undertaken to improve safety margins at nuclear plants in the United States. In addition, nuclear plant technology has changed greatly and is continuing to change to produce safer plants. In any event, the old Chernobyl type technology has never been used in the United States.⁴⁷ There is also a new concern about the possibility of terrorist strikes against nuclear power plants and those safety concerns must be taken into consideration.⁴⁸ In weighting safety concerns, it must be appreciated that global warming from GHG emissions can potentially produce far more catastrophic harms to the planet than local significant releases of radiation from a nuclear plant accident or terrorist strike for that matter.⁴⁹

Third, there are concerns about nuclear weapons proliferation

47. RICHARD RHODES, *NUCLEAR RENEWAL: COMMON SENSE ABOUT ENERGY* 85-90 (1993). The Chernobyl accident involved an RBMK (*reaktor bolshoy moshchnosti kanalniy*) reactor, which used natural uranium, was graphite-moderated and cooled by water. An RBMK reactor is more efficient because it is fueled by natural uranium, reducing costs of uranium input, but also can become more hazardous because it does not have a containment structure and it becomes unstable if there is a decrease in the water level. This type of reactor could never be licensed in the United States. *See id.*

48. *See, e.g.*, Steven Mufson, *Panel Rejects Anti-terrorist Shields for Nuclear Plants*, WASH. POST, June 30, 2007, at A4. For a report of the Nuclear Regulatory Commission's efforts to reinforce nuclear plant security and congressional proposals aimed to achieve the same ends, see CARL BEHRENS & MARK HOLT, CONG. RESEARCH SERV., *NUCLEAR POWER PLANTS: VULNERABILITY TO TERRORIST ATTACK* (2005), <http://www.fas.org/sgp/crs/terror/RS21131.pdf>.

49. *See* Ari Rabl & Joseph V. Spadaro, *Public Health Impact of Air Pollution and Implications for the Energy System*, 25 ANN. REV. ENERGY & ENVT. 601, 614-23 (2005). This European study, using the ExternE (External Costs of Energy) analysis, quantifies health and environmental implications of the oil, coal, natural gas and nuclear power fuel cycles. The study reports that while the environmental costs of GHG emissions in producing one kilowatt hour of electricity with oil is €0.00445, the environmental costs for the same production unit in a nuclear plant is "negligible." *See id.* at 616 tbl.4, 619-20 & tbl.5.

resulting from the conversion of nuclear power plant fuel into nuclear weapons. However, proliferation is not a problem inside the United States. It is a problem abroad in countries like Iran and North Korea. In any event, the July 18, 2005 agreement of the United States to share advanced nuclear plant technology with India, which is not a party to the Nuclear Non-Proliferation Treaty, should remove concerns about proliferation from a revived U.S. nuclear power industry from the calculus.⁵⁰ If the United States is not concerned about nuclear proliferation from its nuclear power plant technology being used to make bombs in India, then it should hardly be much of a factor in considering the revival of the U.S. nuclear power industry.

Fourth, there are legitimate concerns about disposal and storage of nuclear waste. Throughout the fuel cycle, low level and high level radioactive waste is created. Of particular concern, is spent nuclear fuel from fuel rods that can no longer produce enough heat to make electricity.⁵¹ Those highly radioactive spent fuel rods require storage permanently and safely to prevent exposure to humans, animals and flora and fauna. The waste disposal problem can be significantly ameliorated if the United States would lift its ban on nuclear fuel reprocessing, which would allow spent fuel rods to be used again rather than stored.⁵²

What is not taken into account in considering the revival of the nuclear power industry are the substantial and real benefits in removing perceptions of international law illegality that have arisen in the context of climate change and the use of force. These benefits are admittedly hard to quantify. However, they belong firmly in the revival calculations.

IV. CONCLUSION

From the 1950s through the 1970s there was a pro-nuclear power consensus in the United States that resulted in the birth and vigorous growth of the nuclear power industry. Rising costs, construction delays, accidents, and waste disposal concerns shattered the pro-nuclear power

50. See Dana Milbank & Dafna Linzer, *U.S., India May Share Nuclear Technology*, WASH. POST, July 19, 2005, at A1 (reporting that R. Nicholas Burns, undersecretary of state for political affairs, believed the agreement to be within the scope of a responsible non-proliferation strategy).

51. Zillman, *supra* note 34, at 10-5 to -6.

52. The ban on nuclear fuel reprocessing has been in place since 1977. See President Jimmy Carter, Remarks Announcing His Decisions Following a Review of U.S. Policy (Apr. 7, 1977) in 13 WKLY. COMPILATION OF PRESIDENTIAL DOCUMENTS 112, 113 (1977).

consensus and stopped the growth of the industry in its tracks.

It may now be time to rebuild that consensus and revive the growth of the nuclear power industry in the United States. Our dependence on foreign oil has grown to an unacceptable degree and evidence of the dangers of irreversible global catastrophe from global warming is mounting, while the energy policy of the United States remains a prisoner of fossil fuels. This has resulted in widely held perceptions, right or wrong, that the United States violated international law on the use of force by invading Iraq to secure foreign oil sources and that it now is violating the letter and spirit of the emerging international law regime to deal with climate change. Those perceptions can be removed by a domestic growth energy policy resting on existing domestic energy laws that moves away from fossil fuels and expands nuclear power production. If fossil fuels continue to be the centerpiece of long term domestic energy policy, those perceptions of international law illegality will persist to the detriment of U.S. foreign policy for decades.