STREAMLINING NEPA TO COMBAT GLOBAL CLIMATE CHANGE: HERESY OR NECESSITY?

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This Article discusses the impact of the National Environmental Policy Act (NEPA) on the development of noncarbon energy sources and raises the question of whether the NEPA process should be altered to bring clean power online faster. The Article examines the ability of the market to respond to the call for rapid adaptation to climate change and for rapid development of noncarbon sources of energy, given the regulatory environment and existing regulatory treatment of NEPA processes. NEPA requires federal agencies to consider the environmental impacts of major projects they undertake. When an agency's environmental assessment reveals significant effects from a proposed project, it develops an environmental impact statement (EIS), which includes a detailed analysis of the proposed federal action, covering short and long-term environmental effects of that action, and possible alternatives to the proposed action. Preparing an EIS is a lengthy and expensive process, and results in significant delays to new energy projects. Absent a categorical exemption or other exception, NEPA applies to traditional energy projects such as coal-fired utilities and, additionally, to noncarbon energy sources such as concentrated solar installations and wind farms. Some traditional energy sources now receive major exceptions of some sort. NEPA exemptions for traditional sources suggest that renewable sources will not be able to compete in the market absent similar treatment.

The Article examines examples of current streamlining of the NEPA process in the energy arena. Although promotion of sustainable energy projects is a stated priority of the federal energy policy, the current regulatory environment continues to provide significant incentives for nonsustainable fuels. Regulations of the Nuclear Power Commission provide for significant streamlining of NEPA for development of nuclear energy. Similarly, the Oil Shale, Tar Sands, and

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Other Strategic Unconventional Fuels Act of 2005 shortened the NEPA process for development of specific types of fossil fuels.

As population and production continue to rise, so also do global energy needs and carbon output into the atmosphere. Responsible governmental regulation is key to cultivating sustainable energy sources while managing the long-term environmental and climate impacts. Arguably, streamlining NEPA would advance clean energy resources and the agenda of greening the grid. Nevertheless, to date, neither industry nor the public has called for streamlining of NEPA to accommodate green power. The argument for streamlining NEPA is that the intensity of global climate change makes rapid transition to clean energy a necessity. The argument against streamlining NEPA is that this venerable Act insures that the otherwise powerless stakeholders of the community are heard and, thus, protect the public interest. Debate is necessary to balance these competing views of the public good and the application of NEPA to promote the public good.

I. INTRODUCTION

Global climate change is the most pressing environmental issue of our time. Indeed, if the predictions of scientists are accurate, global climate change may be the most pressing issue of our time—environmental or otherwise.[1] Energy is at the heart of the debate on global climate change, and transitioning to clean energy is a necessary step for solving the climate change crisis.[2] The need for reliable energy promises to escalate as the world

[1] *See* Steven Ferrey, *Why Electricity Matters, Developing Nations Matter, and Asia Matters Most of All*, 15 N.Y.U. ENVTL. L.J. 113, 113 (2007) (quoting Nobel Laureate Richard Smalley, who noted that "[e]nergy is the single most important problem facing humanity today"); *see also* TIM FLANNERY, THE ETERNAL FRONTIER: AN ECOLOGICAL HISTORY OF NORTH AMERICA AND ITS PEOPLES 356 (2001) (describing likely impacts of climate change on the North American continent).

[2] The need to transition to alternative resources is clear. *See, e.g.*, Alice Kaswan, *Climate Change, Consumption, and Cities*, 35 FORDHAM URB. L.J. 253, 311 (2009). Reducing the total demand for energy would obviously be the premier adaption to a world committed to the reduction of greenhouse gases (GHGs). *See, e.g.*, John Dernbach et al., *Stabilizing and Then Reducing U.S. Energy Consumption: Legal and Policy Tools for Efficiency and Conservation*, 37 Envtl. L. Rep. (Envtl. Law Inst.) 10,003, 10,004 (2007), *available at* http://works.bepress.com/cgi/viewcontent.cgi?article=1015&context=john_dernbach.

population and production of goods rise.[3] As never seen before, all levels of government must cooperate in a comprehensive evaluation and revamping of regulation of energy production and marketing—regardless of whether the governmental controls on greenhouse gases (GHGs) are presented as a cap-and-trade program, auctioned rights for discharging GHGs, direct taxation of carbon emissions, or technological controls.

The National Environmental Policy Act (NEPA)[4] requires federal agencies to consider the environmental impacts of major projects they undertake. It added to each agency's mission the additional requirement of considering the effects on the environment of federal projects.[5] To achieve its goal, NEPA mandates that "all agencies of the Federal Government . . . utilize a systematic, interdisciplinary approach which will ensure the integrated use of the natural and social sciences and the environmental design arts in planning and in decisionmaking which may have an impact on man's environment."[6] NEPA's policy seeks to foster conditions "under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans."[7] NEPA has made significant changes in the way federal agencies go about achieving their missions.[8] Fulfilling the procedural requirements of NEPA takes time and money.[9]

NEPA results in delays in virtually all major energy projects. It applies to projects requiring federal permits because permitting requirements make energy projects federal agency actions under NEPA.[10] Thus, NEPA applies to traditional energy projects such as coal-fired utilities and, additionally, to energy projects aimed at supplying energy without the GHGs associated with combustion, such as concentrated solar installations, wind farms, and wave technology. The global climate crisis raises the question of whether the NEPA process is too slow. Should Congress streamline NEPA to bring clean power online faster? The argument for streamlining NEPA is that the intensity of global climate change makes rapid transition to clean energy a necessity. This argument suggests that a categorical approach to siting and licensing of clean energy resources may be a necessary step in the move toward greening the grid. Any reduction or shortening of the NEPA process is likely to be regarded as heresy by some. The benefits of

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3 The U.S. Department of Energy projections on natural gas consumption in the United States predict an increase of 62% by 2020. MARK A. STANSBERRY & JASON P. REIMBOLD, THE BRAKING POINT: AMERICA'S ENERGY DREAMS AND GLOBAL ECONOMIC REALITIES 13 (2008).

4 National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321–4347 (2006).

5 *Id.* § 4332(2)(C).

6 *Id.* § 4332.

7 *Id.* § 4331(a).

8 *See id.* § 4332 (establishing requirements that all federal agencies must meet).

9 COUNCIL ON ENVTL. QUALITY, EXECUTIVE OFFICE OF THE PRESIDENT, THE NATIONAL ENVIRONMENTAL POLICY ACT: A STUDY OF ITS EFFECTIVENESS AFTER TWENTY-FIVE YEARS 7 (1997), *available at* http://www.nepa.gov/nepa/nepa25fn.pdf (finding compliance with NEPA frequently takes too long and costs too much).

10 40 C.F.R. § 1508.18 (2008).

shortening the timeframe or process for input in any major federal project must be scrutinized.

This Article considers the case for streamlining the NEPA process as it relates to energy installations that provide environmental protections or comparative advantage over traditional energy sources. Part II describes the crisis of global climate change that has resulted from the carbon-based world economy. Part III discusses the requirements of NEPA and the significance of NEPA to the issue of global climate change and the need to "green" the grid. Part IV provides examples of current streamlining of NEPA in the energy context, including NEPA shortcuts for nuclear power and preferences for some fossil fuels under the Energy Policy Act of 2005. Part V examines remedial efforts of the United States in its attempts to address global climate change, including incentives in the federal stimulus package of 2009. This part also considers the feasibility of developing inexhaustible energy resources. Part VII concludes with observations about market distortions and mixed incentives resulting from the current regulatory framework and the need for methodical comparison of energy sources and innovations to create a green grid and combat global climate change.

II. THE CARBON ECONOMY

The modern world as we know it has been fueled by the carbon economy. "Reliability" has always been the watchword of energy regulation. Looking at reliability as a long-term concept, however, reveals a new perspective and a new imperative. Long-term reliability can only be achieved by a sustainable system of energy. The need for reliable energy promises to escalate as the world population and production of goods rise.[11] Reliable energy delivered by a sustainable energy grid is essential to sustaining the world economy and maintaining global markets. Moreover, it is also required to provide a sustainable climate and a livable environment.

The carbon economy has also resulted in the global climate change crisis.[12] Al Gore is no longer alone in his efforts to awaken people to the threat of global climate change.[13] The Intergovernmental Panel on Climate Change (IPCC), comprised of hundreds of scientists from around the world, has issued reports indicating that global climate change is a problem that

11 *See* ENERGY INFO. ADMIN., U.S. DEP'T OF ENERGY, INTERNATIONAL ENERGY OUTLOOK 63 (2009), *available at* http://www.eia.doe.gov/oiaf/ieo/pdf/0484(2009).pdf (projecting a 77% increase in net energy generation between 2006 and 2030).

12 *See* INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2007: SYNTHESIS REPORT, SUMMARY FOR POLICYMAKERS 5 (2007), *available at* http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr_spm.pdf [hereinafter IPCC SYNTHESIS REPORT]. The Intergovernmental Panel on Climate Change established the need for significant reductions in GHG emissions to respond to global climate change. *See id.* at 19–22.

13 Addressing the United Nations General Assembly on Global Warming, Michael Bloomberg, mayor of New York, stated, "Terrorists kill people, weapons of mass destruction have the potential to kill enormous numbers of people, global warming has the potential to kill everybody." *Bloomberg: Global Warming "Just as Lethal" as Terrorism*, MONGABAY.COM, Feb. 12, 2008, http://news.mongabay.com/2008/0212-bloomberg.html (last visited Nov. 15, 2009).

must be addressed immediately.[14] The IPCC's conclusion that "the net effect of human activities since 1750 has been one of warming"[15] was leveled with "very high confidence."[16] The role of the United States in climate change is undeniable.[17] On a per capita basis, the GHG emissions of China "remain a mere fraction of that of the United States."[18] In the past decade, many western companies outsourced industrial activities to developing countries in the East to escape environmental regulation.[19] This trend increased GHG emissions in the East and exacerbated global climate change.[20] Scholars and indigenous peoples argue that international laws have been violated by the failure of the United States to monitor GHG emissions and prevent unreasonable harm to others.[21] Traditionally the energy policy of the United States focused on making available cheap and reliable energy.[22] Recently, the need to protect public health and safety has become the focus of energy policy.[23] In 2009, the Environmental Protection Agency (EPA) issued its proposed finding of endangerment of the public health due to GHG emissions,[24] recognizing that in addition to providing reliable energy, the government must regulate energy production to "avoid adverse public health, public safety, economic, and environmental effects."[25] The United States has acknowledged that global climate change is a serious problem,

14 Intergovernmental Panel on Climate Change, Organization, http://www.ipcc.ch/organization/organization.htm (last visited Nov. 15, 2009); *see supra* note 12 and accompanying text.

15 IPCC SYNTHESIS REPORT, *supra* note 12, at 5.

16 *Id.*

17 As a matter of the existing stock of greenhouse gases in the atmosphere, the United States continues to lead as the primary source of GHGs, *see* Eric A. Posner & Cass R. Sunstein, *Climate Change Justice*, 96 GEO. L.J. 1565, 1567–68 (2008), though China has surpassed the United States in terms of total carbon dioxide emissions, Elisabeth Rosenthal, *Booming China Leads the World in Emissions of Carbon Dioxide, a Study Finds*, N.Y. TIMES, Jun. 14, 2008, at A5.

18 Posner & Sunstein, *supra* note 17, at 1567–68.

19 *See* Michael P. Vandenbergh et al., *Micro-Offsets and Macro-Transformation: An Inconvenient View of Climate Change Justice*, 33 HARV. ENVTL. L. REV. 303, 335 (2009) (discussing the recent shift of carbon-intensive production from developed countries to developing countries).

20 *See generally* Christopher L. Weber et al., *The Contribution of Chinese Exports to Climate Change*, 36 ENERGY POL'Y 3572, 3574, 3576 (2008); Catherine Brahic, *33% of China's Carbon Footprint Blamed on Exports*, NEW SCIENTIST, July 28, 2008, http://environment.newscientist.com/channel/earth/dn14412-33-of-chinas-carbon-footprint-blamed-on-exports.html (last visited Nov. 15, 2009).

21 *See* Marguerite E. Middaugh, Comment, *Linking Global Warming to Inuit Human Rights*, 8 SAN DIEGO INT'L L.J. 179, 184, 207 (2006) (arguing that, although the Inter-American Commission on Human Rights lacks enforcement powers, a ruling for Inuits would have significant influence in the U.S. judicial system to help move government policy to protect Inuit villages from the effects of GHGs, and documenting "devastating effects on the Inuit, indigenous peoples inhabiting the Arctic regions of northern and western Alaska, northern Canada, Greenland and Chukotka in the eastern Russian Federation" from GHGs).

22 *See* John C. Dernbach, *U.S. Policy*, *in* GLOBAL CLIMATE CHANGE AND U.S. LAW 61, 66 (Michael B. Gerrard ed., 2007).

23 *See id.* at 66.

24 Press Release, U.S. Envtl. Prot. Agency, EPA Finds Greenhouse Gases Pose Threat to Public Health, Welfare / Proposed Finding Comes in Response to 2007 Supreme Court Ruling (Apr. 17, 2009), http://yosemite.epa.gov/opa/admpress.nsf/0/0EF7DF675805295D8525759B00566924 (last visited Nov. 15, 2009).

25 Dernbach, *supra* note 22, at 66.

though in the past it has counted economic concerns as trumping climate issues.[26] Former President George W. Bush noted the significant security issues that arise from the nation's dependency on foreign oil.[27] The need to lower GHG emissions is clear, requiring significant changes in energy policy.[28] The IPCC reports connect the effects of global climate change to an increase in atmospheric concentrations of GHGs, primarily from the use of fossil fuels.[29] Adverse effects of GHGs predominate, including rising sea levels and a decrease in Arctic sea ice,[30] wide ranging adverse effects on human health, species extinction, agriculture, water shortages, and extreme weather as a result of global climate trends.[31]

Governments—from the international sphere to the local units of government in each country—play a vital role in regulating energy production and marketing. Indeed, the indispensible role of energy in the world economy makes this involvement of governmental regulation of energy inevitable. Failure to secure a stable energy supply would threaten political stability and political freedoms protected in democracies, as well as the world economy.[32] The role of governments is justified by the threat to public health, as well as to the climate of the planet, that carbon-intensive energy sources pose. In April 2009, EPA issued its decision that carbon dioxide and five other chemical emissions threaten the health of humans and the environment, finding that the emissions endanger "the health and welfare of current and future generations."[33] In addition to carbon dioxide, EPA included methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride as posing dangers to the public

26 S. Res. 98, 105th Cong. (1997) (enacted) (requiring the United States's refusal to ratify Kyoto Protocol because of the potential for "serious harm" to the U.S. economy).

27 *See* Press Release, White House, President Bush Discusses Energy at Renewable Energy Conference (Oct. 12, 2006), http://georgewbush-whitehouse.archives.gov/news/releases/2006/10/20061012-4.html (last visited Nov. 15, 2009) (stating the United States imports about 60% of its crude oil, which causes national security concerns because some exporting countries "don't like what we stand for").

28 EPA's website advised lowering emission rates even before the last presidential election. *See* U.S. Envtl. Prot. Agency, Climate Change Basic Information (on file with Environmental Law) (containing the archive of the EPA page as of July 18, 2008).

29 IPCC SYNTHESIS REPORT, *supra* note 12, at 5. More than 80% of the United States's total GHG emissions are from energy-related carbon dioxide emissions. ENERGY INFO. ADMIN., U.S. DEP'T OF ENERGY, EMISSIONS OF GREENHOUSE GASES IN THE UNITED STATES 2007, at 14 (2008), *available at* http://www.eia.doe.gov/oiaf/1605/ggrpt. This estimate also includes some nonfossil-fuel carbon dioxide emissions. *Id.* at 13.

30 *See* NAT'L RESEARCH COUNCIL, NAT'L ACAD. OF SCIS., SURFACE TEMPERATURE RECONSTRUCTIONS FOR THE LAST 2,000 YEARS 27–28 (2006); Michael B. Gerrard, *Introduction and Overview*, *in* GLOBAL CLIMATE CHANGE AND U.S. LAW, *supra* note 22, at 11 (noting the IPCC's 2001 assessment); *see also* IPCC SYNTHESIS REPORT, *supra* note 12, at 19.

31 *See* Gerrard, *supra* note 30, at 12.

32 MICHAEL T. KLARE, RESOURCE WARS: THE NEW LANDSCAPE OF GLOBAL CONFLICT 27 (2001) ("No highly industrialized society can survive at present without substantial supplies of oil, and so any significant threat to the continued availability of this resource will prove a cause of crisis and, in extreme cases, provoke the use of military force.").

33 Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 18,886, 18,886 (proposed Apr. 24, 2009) (to be codified at 40 C.F.R. ch. 1).

health and the environment.[34] Under these principles, indigenous peoples filed a petition with the Inter-American Commission on Human Rights against the United States for the role it has played in relation to global climate change, claiming both deleterious health effects and economic damages.[35]

Examples of the difficulties inherent in changing to a green economy abound. The international policy on climate change is set forth in the United Nations Framework Convention on Climate Change (UNFCCC), which the United States ratified on October 13, 1992.[36] The Convention took effect in 1994 and in 2001 President George W. Bush reaffirmed the nation's commitment to the Convention.[37] The Convention expressed multiple concerns and concluded that "human activities have been substantially increasing the atmospheric concentrations of greenhouse gases, that these increases enhance the natural greenhouse effect, and that this will result on average in an additional warming of the Earth's surface and atmosphere and may adversely affect natural ecosystems and humankind."[38] Despite these concerns, the United States declined to join the Kyoto Protocol based on economic considerations.[39] The House of Representatives provides a microcosm of the problem of transitioning to clean power. In 2007, the House announced its intention of becoming the first carbon-neutral legislature in the world.[40] The House did reduce its carbon emissions by nearly seventy-four percent.[41] It accomplished this reduction by purchasing wind energy, increasing the use of natural gas, and purchasing carbon credits.[42] Its hopes were short lived, however, primarily because efforts to update the aging power plant that provides energy for Congress failed.[43]

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34 *Id.*

35 *See* SHEILA WATT-CLOUTIER, PETITION TO THE INTER AMERICAN COMMISSION ON HUMAN RIGHTS SEEKING RELIEF FROM VIOLATIONS RESULTING FROM GLOBAL WARMING CAUSED BY ACTS AND OMISSIONS OF THE UNITED STATES 35, 50, 68–69 (2005), *available at* http://www.ciel.org/Publications/ICC_Petition_7Dec05.pdf (noting that "[i]ndigenous communities are facing major economic and cultural impacts," as well as health impacts, as a result of climate change).

36 Dernbach, *supra* note 22, at 63.

37 *Id.*

38 United Nations Framework Convention on Climate Change pmbl., May 9, 1992, 1771 U.N.T.S. 107, *available at* http://unfccc.int/resource/docs/convkp/conveng.pdf.

39 *See, e.g.*, President's Remarks on the Federal Budget and a Question-and-Answer Session in Rogers, Ark., 43 WEEKLY COMP. PRES. DOC. 1334, 1345 (Oct. 15, 2007), *available at* http://0-www.gpo.gov.library.colby.edu/fdsys/pkg/WCPD-2007-10-22/pdf/WCPD-2007-10-22.pdf.

40 In 2007, Speaker Pelosi announced the intention of the House to "lead by example" by operating "in a carbon neutral manner at the earliest possible date with a deadline of the end of this Congress." Press Release, Nancy Pelosi, Speaker of the House of Representatives, Pelosi, Democrats Launch 100 Percent Carbon Neutral 'Green the Capitol Initiative' (Apr. 19, 2007), http://speaker.house.gov/newsroom/pressreleases?id=0149 (last visited Nov. 15, 2009). Congress considered legislation to reduce its own carbon output. The "Green the Capitol" initiative was intended to reduce the House building complex's carbon footprint. *Id.*

41 OFFICE OF THE CHIEF ADMIN. OFFICER, U.S. HOUSE OF REPRESENTATIVES, GREEN THE CAPITOL YEAR END REPORT (2008), *available at* http://cao.house.gov/greenthecapitol/GTC-2008YE-Report-WEB.pdf.

42 *See id.* at 2–3.

43 The major part of the congressional carbon footprint comes from a source less than four blocks away, the Capitol Power Plant, which was the second largest fixed source of sulfur dioxide and carbon monoxide in the District of Columbia in 2002. Lyndsey Layton, *Reliance on Coal Sullies*

Although the plant "now burns more natural gas and only 35 percent coal,"[44] Senators representing coal-producing states have successfully frustrated attempts to eliminate coal from the Capitol Power Plant.[45] In an email to a few reporters, the House announced in March 2009 that it would discontinue its carbon credit purchasing.[46]

III. THE SIGNIFICANCE OF NEPA TO GLOBAL CLIMATE CHANGE

The National Environmental Policy Act (NEPA) was passed by Congress in 1969 at the beginning of the most active legislative period for environmental protection.[47] It has been called the "grandfather" of U.S. environmental law because it was the first major congressional act to insert environmental considerations into federal decision making.[48] Although the title of the Act is the National Environmental *Policy* Act, many people think of NEPA as the National Environmental *Protection* Act—an act for the protection of the environment. This is because, before NEPA, the charge for federal agencies did not include consideration of the effects on the environment of federal projects, and the effects of many projects undertaken or approved by federal agencies is enormous.[49] Moreover, the Act's goal of considering environmental impacts has an implicit purpose of protecting the environment.[50] NEPA states that:

> [I]t is the continuing policy of the Federal Government, in cooperation with State and local governments, and other concerned public and private organizations, to use all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in

'Green the Capitol' Effort, WASH. POST, Apr. 21, 2007, http://www.washingtonpost.com/wp-dyn/content/article/2007/04/20/AR2007042002128.html (last visited Nov. 15, 2009). In 2007, the plant produced 118,851 tons of carbon dioxide according to the Department of Energy. Dina Cappiello, *Protest Puts Spotlight on Congress' Power Plant*, ABC NEWS, Mar. 2, 2009, http://abcnews.go.com/Technology/GlobalWarming/wireStory?id=6987204 (last visited Nov. 15, 2009). The plant has repeatedly been found to be in violation of the Clean Air Act. *See* Layton, *supra*.

44 Dina Cappiello, *Capitol Power Plant Dims Clean Energy Hopes*, ABC NEWS, Mar. 1, 2009, http://abcnews.go.com/Politics/wireStory?id=6983408 (last visited Nov. 15, 2009).

45 Jim Spellman & Andrea Koppel, *Effort to 'Green' U.S. Capitol Complicated by Coal*, CNN.COM, May 11, 2007, http://www.cnn.com/2007/POLITICS/05/10/capitol.green/index.html (last visited Nov. 15, 2009).

46 Dina Cappiello, *Promised, Promises: House Fails to Zero Out Carbon*, ABC NEWS, Mar. 10, 2009, http://abcnews.go.com/Politics/wireStory?id=7044724 (last visited Nov. 15, 2009).

47 National Environmental Policy Act of 1969, Pub. L. No. 91-190, 83 Stat. 852 (codified as amended at 42 U.S.C. §§ 4321–4347 (2006)).

48 *See, e.g.*, NANCIE G. MARZULLA & ROGER J. MARZULLA, PROPERTY RIGHTS: UNDERSTANDING GOVERNMENT TAKINGS AND ENVIRONMENTAL REGULATION 103 (1997) (referring to NEPA as the "grandfather of all environmental statutes").

49 S. REP. NO. 91-296, at 4, 8 (1969).

50 As Judge Skelly Wright noted in the famous *Calvert Cliffs' Coordinating Committee, Inc. v. United States Atomic Energy Commission*, 449 F.2d 1109 (D.C. Cir. 1971), NEPA "makes environmental protection a part of the mandate of every federal agency and department." *Id.* at 1112.

> productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans.[51]

Additionally, NEPA "recognizes that each person should enjoy a healthful environment and that each person has a responsibility to contribute to the preservation and enhancement of the environment."[52] The primary focus of litigation under NEPA is its requirement that federal agencies consider the environmental consequences of their projects. NEPA mandates that "all agencies of the Federal Government . . . utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decisionmaking which may have an impact on man's environment."[53] Although courts have held that NEPA is primarily procedural and does not require that agencies choose the least environmentally harmful course of action, many people continue to see the Act as a protection of the environment from adverse federal actions.[54] Among other things, NEPA requires that agencies prepare an impact statement for major federal actions significantly affecting the quality of the human environment.[55] Hundreds of such federal actions occur each year in the form of permits or authorizations by federal agencies.[56] Section 2 of the Act states that agencies must do the following:

> [I]nclude in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on—
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> (i) the environmental impact of the proposed action,
>
> (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented,
>
> (iii) alternatives to the proposed action,
>
> (iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and
>
> (v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.[57]

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51 National Environmental Policy Act of 1969, 42 U.S.C. § 4331(a) (2006).

52 *Id.* § 4331(c).

53 *Id.* § 4332(2).

54 *See, e.g.*, NICHOLAS C. YOST, NEPA DESKBOOK 5 (3d ed. 2003).

55 42 U.S.C. § 4332 (2006).

56 *See, e.g.*, LEE LARSON ET AL., BUREAU OF LAND MGMT., REPORT AND RECOMMENDATIONS ON THE RESULTS OF A BUREAU OF LAND MANAGEMENT DATA CALL FOR INFORMATION ON NEPA RECORDS ASSOCIATED WITH CERTAIN SPECIAL RECREATION PERMITS 2 (2005), *available at* http://www.blm.gov/pgdata/etc/medialib/blm/wo/Planning_and_Renewable_Resources/planning_images.Par.97684.File.dat/CX_Report-Recreation.pdf.

57 42 U.S.C. § 4332(2)(C) (2006).

In addition to the statement required by section 2, now referred to as an environmental impact statement (EIS), NEPA imposes consultation requirements on federal agencies to contact and confer with other agencies having "special expertise with respect to any environmental impact" of a project and requires that agencies provide copies of the EIS and consider the input of federal, state, and local agencies.[58] The Act also created the Council on Environmental Quality (CEQ), a new federal agency charged with overseeing the implementation of the Act and reporting to the President on the state of the environment and implementation of NEPA.[59] The Council on Environmental Quality promulgated regulations to implement NEPA.[60] The CEQ defines "major federal action" as "actions with effects that may be major and which are potentially subject to Federal control and responsibility."[61] These include projects of different scopes and impact, ranging from general programs such as regional plans for forest management to specific construction projects of all kinds, and from roads to mineral sales and exploration for energy resources on public lands.[62]

Clearly NEPA applies to alternative energy projects as well as traditional energy projects. The time-consuming processes of NEPA increase the costs of green projects. "Existing land use plans and planning efforts may be amended as necessary, with appropriate level of NEPA analysis and decision, to address this change in wind energy and [Areas of Critical Environmental Concern] policy . . . ."[63] The Bureau of Land Management (BLM) policy for the management of energy and minerals on public lands (part of multiple use mandate) states that "energy and mineral-related permit applications will be reviewed consistent with the requirements of NEPA and other environmental laws."[64] The BLM Instruction Memorandum provides "guidance for the processing of right-of-way applications for wind energy projects on public land administered by the BLM."[65] When an evaluation indicates that constructing a meteorological tower on adjacent nonfederal land could provide the ability to characterize wind patterns on public lands, the regulations require that a NEPA document be prepared

58 *Id.*

59 *Id.* § 4342.

60 *See* 40 C.F.R. §§ 1500–1508 (2008).

61 *Id.* § 1508.18. The regulations note that federal actions include "[a]pproval of specific projects, such as construction or management activities located in a defined geographic area. Projects include actions approved by permit or other regulatory decision as well as federal and federally assisted activities." *Id.* § 1508.18(b)(4).

62 *E.g.*, U.S. Envtl. Prot. Agency, Environmental Protection in Southern California, http://www.epa.gov/region09/socal/nepa.html (last visited Nov. 15, 2009) (describing various EISs for federal actions in California that EPA has commented on).

63 Bureau of Land Mgmt., U.S. Dep't of the Interior, Instruction Memorandum No. 2009-043 (Dec. 18, 2009) http://www.blm.gov/wo/st/en/infor/regulations/Instruction_Memos_and_Bulletins/national_instruction/2009/IM_2009-043.html (last visited Nov. 15, 2009) [hereinafter BLM Instruction Memorandum].

64 BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, ENERGY AND MINERAL POLICY (2008), *available at* http://www.blm.gov/pgdata/etc/medialib/blm/wo/Information_Resources_Management/policy/ib_attachments/2008.Par.15798.File.dat/IB2008-107_att1.pdf.

65 BLM Instruction Memorandum, *supra* note 63.

"describing the Federal action as the issuance of a right-of-way grant with limited activities on the public land."[66]

IV. EXAMPLES OF CURRENT STREAMLINING OF NEPA IN ENERGY LAW

The fact that no NEPA streamlining applies to green energy such as wind installations should not lead us to assume that NEPA has retained its full force in relation to energy production generally. Many agencies have developed regulations that streamline the NEPA process, truncating or curtailing the application of NEPA. For example, the Oil Shale, Tar Sands, and Other Strategic Unconventional Fuels Act of 2005 (OSTSOSUFA)[67] declares that "it is the policy of the United States that . . . shale, tar sands, and other unconventional fuels are strategically important domestic resources that should be developed to reduce the growing dependence of the United States on politically and economically unstable sources of foreign oil imports."[68] The declaration portion of the Act also states that the "development of oil shale, tar sands, and other strategic unconventional fuels, for research and commercial development, should be conducted in an environmentally sound manner, using practices that minimize impacts."[69] Similarly, OSTSOSUFA notes the need for the "development of those strategic unconventional fuels" with an "emphasis on sustainability."[70]

To implement its purposes, the Act empowers the Secretary of the Interior to make land available for leasing as necessary "to conduct research and development activities with respect to technologies for the recovery of liquid fuels from oil shale and tar sands resources on public lands."[71] The Act applies to public lands within Colorado, Utah, and Wyoming.[72] It instructs the Secretary of the Interior to prepare a programmatic EIS and establish a commercial leasing program for oil shale and tar sands in an expeditious manner—"not later than 18 months after August 8, 2005."[73] The Act also instructs the Secretary of the Interior to issue final regulations on a fast time frame (within six months after completion of the programmatic EIS).[74] In November of 2008, the BLM issued its final regulations opening state lands for commercial development of oil shale.[75] The regulations allow for a single lease holder to develop up to 50,000 acres of public lands and 50,000 acres of acquired lands in each of Colorado, Utah, and Wyoming.[76] This allows a

66 *Id.*

67 42 U.S.C. § 15927 (2006).

68 *Id.* § 15927(b).

69 *Id.*

70 *Id.*

71 *Id.* § 15927(c).

72 *Id.*

73 *Id.* § 15927(d)(1).

74 *Id.* § 15927(d)(2).

75 Oil Shale Management—General, 73 Fed. Reg. 69,414 (Nov. 18, 2008) (to be codified at 43 C.F.R. pts. 3900, 3910, 3920, 3930)

76 43 C.F.R. § 3901.20 (2009), http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&rgn=div5&view=text&node=43:2.1.1.4.88&idno=43 (last visited Nov. 15, 2009).

leaseholder to develop up to 300,000 acres of land throughout the three states. Federal lands in the affected states are subject to leasing, with the exception of national parks, land within cities, and lands specifically excluded by either the Oil Shale Act or by BLM.[77]

Before offering a lease, BLM must prepare the normal analysis mandated by NEPA.[78] If the regulations required NEPA analysis on each tract of land, they would substantially maintain the NEPA process. The possibility of significant streamlining of NEPA exists, however, because the regulations provide for a cumulative review of tracts of land by means of a land use planning action by BLM.[79] Such cumulative action can virtually dispense with the NEPA inquiry on significant portions of public lands and acquired lands. After an agency develops an EIS, NEPA normally requires a comment period before the agency may act on its proposal. This period is ninety days for a draft EIS, or thirty days for a final EIS.[80] However, an agency may adopt a draft or final EIS in lieu of preparing a new one.[81] As long as "the actions covered by the original environmental impact statement and the proposed action are substantially the same," the adopting agency can merely recirculate the EIS as a final statement.[82] Even in cases that do not meet the criteria of "substantially the same" action, the adopting agency can "treat the statement as a draft and recirculate it."[83] Together these regulations allow an agency to complete an EIS analysis on a relatively small section of land (perhaps a thousand acres), and then through adoption apply the results to tens or hundreds of thousands of additional acres. While agency regulations often contemplate the creation of a programmatic EIS, the possibility of an individual or project EIS under the umbrella of the programmatic EIS ensures full consideration of environmental values. Adjustment of the steps required by NEPA process in a way that dispenses with the project level analysis creates a real risk that decision makers ignore environmental values at a crucial stage of the process. When significant streamlining of the NEPA process occurs, the likely result is a reduction or loss of public input and scientific analysis relating to the affected lands.

OSTSOSUFA creates a tight schedule for the Secretary of the Interior to follow for beginning commercial leasing of oil shale and tar sands.[84]

77 *Id.* § 3900.10.

78 *Id.* § 3921.20, http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr;rgn=div5;view=text;node=43%3A2.1.1.4.90;idno=43;sid=e3e4d6dc3aef4376a6ad9e8d7226ace4;cc=ecfr (last visited Nov. 15, 2009).

79 *Id.*

80 40 C.F.R. § 1506.10(a) (2008).

81 *Id.* § 1506.3(a).

82 *Id.* § 1506.3(b).

83 *Id.*

84 Oil Shale, Tar Sands, and Other Strategic Unconventional Fuels Act of 2005, 42 U.S.C. § 15927(e) (2006) ("Not later than 180 days after publication of the final regulation . . . the Secretary shall consult with the Governors of States with significant oil shale and tar sands resources on public lands, representatives of local governments in such States, interested Indian tribes, and other interested persons, to determine the level of support and interest in the States in the development of tar sands and oil shale resources. If the Secretary finds sufficient support and interest exists in a State, the Secretary may conduct a lease sale in that State under

Regulations promulgated under OSTSOSUFA call for "diligent development," requiring the Secretary to "designate work requirements and milestones to ensure the diligent development of the lease."[85] The Act requires the Secretary to report to the Committee on Resources of the House of Representatives "within 90 days after August 8, 2005" on the interim actions necessary to "develop the program, complete the programmatic environmental impact statement, and promulgate the final [required] regulation."[86] It also mandates within the same 90 days that the Secretary report on the interim actions necessary to "conduct the first lease sales under the program as required by subsection (e)" of the section.[87]

The Act establishes ways to speed development of oil shale energies regardless of NEPA processes. One example of this is the use of land exchanges. The Act mandates the Secretary of the Interior to "consider the use of land exchanges where appropriate and feasible" to "facilitate the recovery of oil shale and tar sands, especially in areas where Federal, State, and private lands are intermingled."[88] The Act also instructs the Secretary to identify deposits of oil shale within identified basins and "give priority to implementing land exchanges within those basins."[89] This provision apparently empowers the Secretary to create lease areas attractive to developers. The Act also requires the Secretaries of Energy, Interior, and Defense to cooperate to form a task force "to coordinate and accelerate the commercial development of strategic unconventional fuels."[90] The Act emphasizes the mandate of moving forward with fossil fuels by its express inclusion of the two fossil fuels identified in the Act. Subsection (h) expressly applies the duty to "coordinate and accelerate" commercial development of "oil shale and tar sands resources within the United States."[91]

The focus on fossil fuel development is emphasized again by the Act's mandate of "[c]ost-shared demonstration technologies."[92] It requires that the Secretary of Energy "identify technologies for the development of oil shale and tar sands that[] are ready for demonstration at a commercially-representative scale; and have a high probability of leading to commercial production."[93] To ensure such development, the Act expressly states that the Secretary of Energy may provide technical assistance and cost-sharing assistance.[94] It also expressly authorizes the Secretary of Energy to provide

the commercial leasing program regulations. Evidence of interest in a lease sale under this subsection shall include, but not be limited to, appropriate areas nominated for leasing by potential lessees and other interested parties.").

85 *Id.* § 15927(f).

86 *Id.* § 15927(g).

87 *Id.*

88 *Id.* § 15927(n)(1).

89 *Id.* § 15927(n)(2).

90 *Id.* § 15927(h)(1).

91 *Id.*

92 *Id.* § 15927(*I*).

93 *Id.* § 15927(*I*)(1) (subsection numbers omitted).

94 *Id.* § 15927(*I*)(2)(A), (C).

"assistance in meeting environmental and regulatory requirements."[95] Finally, the Act mandates that "[t]he Secretary shall carry out a national assessment of oil shale and tar sands resources for the purposes of evaluating and mapping oil shale and tar sands deposits, in the [described] geographic areas."[96] Each of these types of assistance requires expenditures of public funds.[97]

The most dramatic streamlining of NEPA is found in the concept of categorical exclusions from the Act. The CEQ defines a categorical exclusion as a "category of actions which do not individually or cumulatively have a significant effect on the human environment and which have been found to have no such effect in procedures adopted by a Federal agency in implementation [of NEPA regulations]."[98] The regulation also specifies the effect of finding that an action is within the definition of categorical exclusion. The regulation indicates that "therefore, neither an environmental assessment nor an environmental impact statement is required."[99] Finally, the regulation also makes clear that finding an action falls within a categorical exclusion does not prohibit an agency from conducting an environmental assessment. The regulation states the following:

> An agency may decide in its procedures or otherwise, to prepare environmental assessments for the reasons stated in § 1508.9 even though it is not required to do so. Any procedures under this section shall provide for extraordinary circumstances in which a normally excluded action may have a significant environmental effect.[100]

The use of categorical exclusions seems to undercut the original purposes of NEPA and provide a dramatic softening of the NEPA requirements, and categorical exclusions have been the subject of significant criticism.[101] There is no doubt that the mandates of NEPA give way to a clear congressional mandate to restrict the NEPA process.[102] Moreover, the mechanism of categorical exclusions was established early in the process of implementing NEPA through regulations.[103]

Some energy sources have already received categorical exclusions under NEPA. For example, legislation charges both the Secretary of the Interior and the Secretary of Agriculture with managing public lands and

95 *Id.* § 15927(*l*)(2)(B).

96 *Id.* § 15927(m)(1)(A).

97 *Id.* § 15927(s).

98 Categorical Exclusions, 40 C.F.R. § 1508.4 (2008).

99 *Id.*

100 *Id.*

101 U.S. GOV'T ACCOUNTABILITY OFFICE, ENERGY POLICY ACT OF 2005: GREATER CLARITY NEEDED TO ADDRESS CONCERNS WITH CATEGORICAL EXCLUSIONS FOR OIL AND GAS DEVELOPMENT UNDER SECTION 390 OF THE ACT 29–33 (2009), *available at* http://www.gao.gov/new.items/d09872.pdf; *see also* Jeffrey A. Berger, *False Promises: NEPA's Role in Airport Expansions and the Streamlining of the Environmental Review Process*, 18 J. ENVTL. L. & LITIG. 279, 318–320 (2003) (discussing the expansion of categorical exclusions under NEPA during the Bush Administration for airport expansions).

102 DANIEL R. MANDELKER, NEPA: LAW AND LITIGATION § 7:10.1 (2d ed. 2009).

103 *Id.* § 7:10.

National Forest System Lands by applying "a rebuttable presumption that the use of a categorical exclusion" under NEPA would apply "if the activity is conducted pursuant to the Mineral Leasing Act . . . for the purpose of exploration or development of oil or gas."[104] The activities classified as falling within the rebuttable presumption include the following:

> (1) Individual surface disturbances of less than 5 acres so long as the total surface disturbance on the lease is not greater than 150 acres and site-specific analysis in a document prepared pursuant to NEPA has been previously completed.
>
> (2) Drilling an oil or gas well at a location or well pad site at which drilling has occurred previously within 5 years prior to the date of spudding the well.
>
> (3) Drilling an oil or gas well within a developed field for which an approved land use plan or any environmental document prepared pursuant to NEPA analyzed such drilling as a reasonably foreseeable activity, so long as such plan or document was approved within 5 years prior to the date of spudding the well.
>
> (4) Placement of a pipeline in an approved right-of-way corridor, so long as the corridor was approved within 5 years prior to the date of placement of the pipeline.
>
> (5) Maintenance of a minor activity, other than any construction or major renovation o[f] a building or facility.[105]

The Nuclear Regulatory Commission has created numerous categorical exclusions by its regulations. Licensing nuclear power plants, and facilitating the operation of the plants, is aided by such exclusions. For example, NRC regulations indicate specifically that "[e]xcept in special circumstances . . . an environmental assessment or an environmental impact statement is not required for any action within a category of actions included in the list of categorical exclusions."[106] The list also covers a broad range of activities, including recordkeeping, inspection, and reporting requirements, modifications of licenses regarding fuel transportation, waste disposal, safeguards on nuclear materials, and even requirements of the Clean Water Act.[107] For example, NRC has the power to amend nuclear operating licenses to remove limiting conditions and monitoring requirements established by the Clean Water Act,[108] allowing operation of nuclear plants without water pollution oversight. In some cases, an NRC staff director may decide which NRC licensing and regulatory actions fall under the purview of categorical

104 Energy Policy Act of 2005, 42 U.S.C. § 15942 (2006).
105 *Id.*
106 10 C.F.R. § 51.22(b) (2009).
107 *Id.* § 51.22(c).
108 *Id.* § 51.22(c)(17).

exclusion, or whether these actions require an EIS or environmental assessment.[109] Such an approach would likely surprise the drafters of NEPA.

Discretionary power in the area of nuclear energy presents particularly troubling scenarios. Indeed, it seems radically out of step with the principles of NEPA to allow NRC to decide whether its licensing actions count as an exclusion since such an approach significantly neutralizes safeguards. Examples of the types of powers that NRC can deem to fit the categorical exclusion are issuance, amendment, or renewal of operators' licenses, and amendments to a permit or license for nuclear reactors.[110] The conditions for allowing such a designation include findings of no significant considerations relating to changes in the "types or significant increase in the amounts of any effluents that may be released offsite."[111] This proviso is reassuring except for the clear negative implication that significant increases of amounts of effluents released onsite are left unregulated. Likewise, the regulations provide the same offsite limitation for categorical exclusions for "amendments to licenses for fuel cycle plants and radioactive waste disposal sites" so long as the changes are "administrative, organizational, or procedural in nature."[112] Similarly, the Act provides for NRC to determine a categorical exemption for an amendment to a permit or license that "changes recordkeeping, reporting, or administrative procedures or requirements."[113]

The regulations also create a categorical exclusion for "issuance of an amendment to a license . . . relating solely to safeguards matters (*i.e.*, protection against sabotage or loss or diversion of special nuclear material)."[114] The power is conditioned. This condition is that the amendment must not involve "any significant construction impacts."[115] Additionally, NRC's power under this provision relates only to "[m]odifications to systems used for security and/or materials accountability; [a]dministrative changes; and [r]eview and approval of transportation routes pursuant to 10 CFR 73.37."[116] Combining exclusions could result in dramatic actions, such as transporting radioactive materials without NEPA oversight.[117] Such open-ended conditions do little to rein in the power of NRC.

The Indian Tribal Energy Development and Self-Determination Act of 2005 (ITEDSDA)[118] (part of the Energy Policy Act of 2005) provides another example of an off-ramp from the standard NEPA process. The Bureau of Indian Affairs (BIA) rule authorizes tribes to assume authority for approving and managing leases, business agreements, and rights of way for energy

109 *Id.* § 51.25.
110 *Id.* § 51.22(c)(8)–(9).
111 *Id.* § 51.22(c)(9)(ii).
112 *Id.* § 51.22(c)(11).
113 *Id.* § 51.22(c)(10)(ii).
114 *Id.* § 51.22(c)(12).
115 *Id.*
116 *Id.* (subsection numbers omitted).
117 *See, e.g.*, *id.* § 51.22(c)(12)(iv), (14)(xii), (17).
118 Pub. L. No. 109-58, §§ 501–06, 119 Stat. 594, 763–79 (2005) (codified as amended in scattered sections of U.S.C., primarily 25 U.S.C. §§ 3501–3506 (2006)).

resource development on tribal land.[119] ITEDSDA makes NEPA inapplicable to energy agreements between tribal authorities and developers when a project meets the requirements of ITEDSDA.[120] Under the terms of ITEDSDA, the Secretary of the Interior must apply the NEPA analysis when considering approval of a tribal resource energy agreement (TERA).[121] Once the TERA has been approved, however, the tribe no longer needs Department of the Interior (DOI) approval for specific energy agreements entered pursuant to a TERA.[122] The result of the removal of DOI approval is that NEPA no longer applies to the issuance of the specific energy agreements. This effect is clear from the statement in the regulations that the "scope of the Secretary's evaluation will be limited to the scope of the TERA."[123] A TERA application can be fairly broad. Tribal authorities may even acquire control over activities normally administered by DOI by specifying the type of energy resource in the TERA application.[124]

The environmental criteria for TERA approval include identification and evaluation of "all significant environmental effects," identification of "proposed mitigation measures," a process ensuring public input on the environmental effects, proper administrative support and technical capability, and tribal oversight of any third parties related to the TERA.[125] To the extent that a project meets the requirements of ITEDSDA, environmental considerations will be taken into account.[126] It is not clear, however, that there is no effect of outsourcing environmental considerations from NEPA to ITEDSDA. One clear effect of this shift from NEPA to ITEDSDA is that the project no longer meets the category of a "federal action" of NEPA. Accordingly, judicial oversight provided for federal projects no longer applies. ITEDSDA also requires a quick response from the Secretary of the Interior in evaluating TERAs, and provides criteria under which the Secretary must approve the application. The Secretary is required to approve or deny TERA applications "[n]ot later than 270 days after the date on which the Secretary receives a tribal energy resource agreement."[127] Even if the TERA is denied, the Secretary must, within ten days, notify the tribe of why the TERA was disapproved, identify what changes are required, and allow

119 *See* Klint A. Cowan et al., *Native American Resources*, *in* SECTION OF ENV'T, ENERGY, & RES., AM. BAR ASS'N, ENVIRONMENT, ENERGY, AND RESOURCES LAW: THE YEAR IN REVIEW 2008, at 255, 263 (2009).

120 25 C.F.R. § 224.70 (2008).

121 *Id.*

122 *See id.* §§ 224.70, .82 (showing no requirement for Department of Interior involvement in the approval process).

123 *Id.* § 224.70.

124 *Id.* § 224.52.

125 *Id.* § 224.63(c).

126 *Id.* § 224.103 (stating that tribes are required to address environmental concerns through public participation only to the extent required by the Act).

127 Indian Tribal Energy Development and Self Determination Act of 2005, 25 U.S.C. § 3504(e)(2)(A) (2006).

the tribe to resubmit the TERA.[128] If the tribe does this, the Secretary must approve or deny the revised TERA within sixty days.[129]

Achieving involvement of disadvantaged groups in developing policies is central to the purposes of NEPA as well as to a democratic approach. Participatory justice is an important value of environmental law and of environmental justice. It can play a major role in achieving a just regime of energy regulation. While the democratic values implicated in citizen participation in NEPA are of great significance, the climate change debate must not allow the process to produce calcification of the status quo of energy production or doom the move toward truly inexhaustible energy, which is required to further economic development while reducing the threat of global climate change. Clearly it will be difficult for tribal governments to pursue TERA effectively without technical and financial assistance from Congress. A failure of Congress to support the goal of tribal self-determination under the Act could result in support and control by private power companies and other entities, stripping the energy projects on tribal land of the NEPA process without effectively substituting the process envisioned by the ITEDSDA.

The government's action of incentivizing fossil fuel as a strategic fuel while devoting significant resources to green versions of energy seems to attempt to realize two possibly contradictory goals. NEPA presents a significant barrier to development of green energy, particularly in light of the streamlined process already in place for some fossil fuels and nuclear energy. The foregoing are merely examples of some of the ways that agencies streamline the NEPA process. The decision to streamline NEPA suggests that in these areas the purposes of NEPA give way to other needs. Whether Congress will make the move toward a green grid is unknown at this time. Given the shortcuts available in other energy sectors such as nuclear power and fossil fuel, green energy does not yet have a level playing field in the NEPA process.

V. THE GREEN ECONOMY: THE MOVE TOWARD SUSTAINABLE ENERGY AND INEXHAUSTIBLE RESOURCES

The reality of global climate change seems to demand a significant move to a green grid. Although Congress has provided incentives for such a move, incentives for other fuel sources remain strong and significant barriers to a green grid continue to pose problems. Streamlining the NEPA process would clearly create a push toward the green grid, particularly because NEPA relates to wind and solar installations. While biofuels compare favorably with fossil fuel in terms of co-pollutants, biofuels are similar to fossil fuel in relation to the problem of GHG emissions.[130] This means that biofuels are not the solution to the global climate crisis.

128 *Id.* § 3504(e)(4).

129 *Id.* § 3504(e)(2)(A).

130 *See* Richard L. Ottinger, *Biofuels—Potential, Problems and Solutions*, 19 FORDHAM ENVTL. L. REV. 253, 255 (2009).

Development of inexhaustible energy sources such as wind and solar power can help meet the need for reliable and sustainable energy while advancing the battle against climate change. The last presidential election provided increased focus on the need to develop green energy sources for a variety of reasons. For example,

> [i]n the 2008 presidential election, the candidates debated sweeping reforms to U.S. energy policy in order to meet domestic energy needs, reduce U.S. dependence on foreign oil, protect against terrorism, and address global climate change. Central to the energy debate was the need to expand alternative sources of energy, such as wind, solar, and geothermal.[131]

The public expected the new administration to increase funding for alternative energy sources such as wind, solar, geothermal development, and wave technology,[132] and the 2009 Economic Stimulus Package[133] took steps toward developing incentives for sustainable energy. The Package provided dramatic funding for energy efficiency. For example, it authorized $4.5 billion for repair of federal buildings to increase energy efficiency, $4.5 billion for "electricity delivery and energy reliability," and $3.2 billion for Energy Efficiency and Conservation Block Grants to help state and local governments make investments that make them more energy efficient and reduce carbon emissions.[134] It allocated $5 billion for the Weatherization Assistance Program to help low-income families reduce their energy costs by weatherizing their homes.[135] It provided specific grant funding for advanced battery systems and components and vehicle batteries produced in the United States to the tune of $2 billion,[136] and $6 billion for new loan guarantees aimed at renewable projects such as wind or solar projects.[137] The stimulus legislation allocated additional significant funding for other energy efficiency programs,[138] including alternative fuels for trucks and buses, transportation infrastructure, and smart and energy-efficient appliances.[139]

The Stimulus Package provided significant support for scientific research in energy.[140] It allocated $2.5 billion for the National Science Foundation, including funds for the Major Research Instrumentation program and modernization of academic research facilities.[141] It set aside

131 Frederick R. Anderson & Geraldine E. Edens, *Alternative Energy and the Rebirth of NEPA*, NAT. RESOURCES & ENV'T, Spring 2009, at 22, 22.

132 *See id.*

133 American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, 123 Stat. 115.

134 *Id.* div. A, tits. IV, V, 123 Stat. at 138–39, 149.

135 *Id.* div. A, tit. IV, 123 Stat. at 138.

136 *Id.*

137 *Id.* div. A, tit. IV, 123 Stat. at 140.

138 *See id.* div. A, tit. IV, 123 Stat. at 138–40.

139 Recovery Accountability & Transparency Bd., Department of Energy—REC—Energy Efficiency and Renewable Energy Recovery Plan, http://www.recovery.gov/Transparency/agency/reporting/agency_reporting5program.aspx?agency_code=89&progplanid=7813 (last visited Nov. 15, 2009).

140 American Recovery and Reinvestment Act, div. A, tit. IV, 123 Stat. at 138–140.

141 *Id.* div. A, tit. II, 123 Stat. at 131.

$1.6 billion for the Department of Energy (DOE)[142] for basic research into the physical sciences including high-energy physics, nuclear physics, and fusion energy sciences and improvements to DOE laboratories and scientific facilities.[143] It allocated $400 million for the Advanced Research Project Agency[144] to support high-risk, high-payoff research into energy sources and energy efficiency.[145] Funding for NASA included $400 million[146] to put more scientists to work in climate change research, including earth science research recommended by the National Academies.[147] In related areas, the Stimulus Package allocated $600 million to the National Oceanic and Atmospheric Administration (NOAA)[148] for construction and repair of facilities, and ships and equipment to improve weather forecasting, and to support satellite development and address critical gaps in climate modeling.[149]

Despite the dazzling figures of such allocations, implementation issues remain unaddressed. Moreover, some significant implementation problems appear to be the result of policy rather than technology or economic factors. For example, approximately 100 aging nuclear reactors at sixty-five sites produce twenty percent of the electricity used in the United States.[150] Currently, 300,000 megawatts (MW) of wind energy projects (or about twenty percent of U.S. energy needs) are "waiting in line to connect to the grid because there is inadequate transmission capacity to carry the electricity they would produce."[151] In California, for example, 13,000 MW of solar power plants are waiting to connect to the grid.[152] The joint report of the American Wind Energy Association and the Solar Energy Industry Association stated that the necessary deployment of renewable generation "cannot occur without a renewed investment in our country's transmission

142 *Id.* div. A, tit. IV, 123 Stat. at 139.

143 Recovery Accountability & Transparency Bd., Department of Energy—REC—Science Recovery Plan, http://www.recovery.gov/Transparency/agency/reporting/agency_reporting5program.aspx?agency_code=89&progplanid=7816 (last visited Nov. 15, 2009).

144 American Recovery and Reinvestment Act, div. A, tit. IV, 123 Stat. at 140.

145 Recovery Accountability & Transparency Bd., Department of Energy—REC—Advanced Research Projects Agency—Energy Recovery Plan, http://www.recovery.gov/Transparency/agency/reporting/agency_reporting5program.aspx?agency_code=89&progplanid=7817 (last visited Nov. 15, 2009).

146 American Recovery and Reinvestment Act, div. A, tit. II, 123 Stat. at 131.

147 Recovery Accountability & Transparency Bd., National Aeronautics and Space Administration Agency Recovery Plan, http://www.recovery.gov/Transparency/agency/reporting/agency_reporting5.aspx?agency_code=80 (last visited Nov. 15, 2009).

148 American Recovery and Reinvestment Act, div. A, tit. II, 123 Stat. at 129.

149 Nat'l Oceanic & Atmospheric Admin., U.S. Dep't of Commerce, NOAA Information Related to the American Recovery and Reinvestment Act of 2009, http://www.noaa.gov/recovery (last visited Nov. 15, 2009).

150 U.S. Nuclear Regulatory Comm'n, Map of Power Reactor Sites, http://www.nrc.gov/reactors/operating/map-power-reactors.html (last visited Nov. 15, 2009); Drew Thornley, *The Growing Need for Nuclear Energy*, INFOCUS, Fall 2009, http://www.jewishpolicycenter.org/1410/growing-need-for-nuclear-energy (last visited Nov. 15, 2009).

151 AM. WIND ENERGY ASS'N & SOLAR ENERGY INDUS. ASS'N, GREEN POWER SUPERHIGHWAYS: BUILDING A PATH TO AMERICA'S CLEAN ENERGY FUTURE 1 (2009), *available at* http://www.awea.org/GreenPowerSuperhighways.pdf.

152 *Id.*

infrastructure," such as high voltage lines to replace lower voltage lines currently in use.[153] Moreover, the impressive dollar figures do not tell the full story. The effectiveness of an incentive can only be judged in relation to other incentives available in the market.

VI. FEASIBILITY OF INEXHAUSTIBLE ENERGY SOURCES

Clean energy seems to be the star of half the television advertisements on any given night. Companies advertising a diverse range of products paint an exciting picture of their involvement in clean energy and the clean environment movement.[154] Wishful thinking is not enough, of course. A careful assessment of the feasibility of supplementing the grid with inexhaustible energy sources is a necessary step in the transition to the green grid. Recent studies indicate that the technological challenges of harvesting inexhaustible energy are not necessarily more difficult than the challenges found in making nuclear energy safe or providing for sequestration of carbon produced by coal plants.[155] According to the Department of Energy, more than 900,000 MW of potential wind energy exists off the coasts of the United States, with half of that off the New England and mid-Atlantic coasts.[156] The Outer Continental Shelf Lands Act (OCSLA)[157] gave the Secretary of Interior authority over the seabed of the outer continental shelf (OCS)[158] and authorized creation of a five-year oil and gas leasing program.[159] The Energy Policy Act of 2005[160] amended OCSLA to allow DOI to issue leases to produce energy from sources other than oil or natural gas and utilize existing facilities for energy related purposes, for example by converting existing oil rigs to alternative energy production facilities.[161] The Energy Policy Act requires that twenty-seven percent of the revenues that the federal government receives from alternative energy projects located within the first three nautical miles of the OCS be shared

153 *Id.*

154 *See, e.g.*, *Coke Leads Movement for Clean Energy Billboards*, ENVTL. LEADER, Dec. 30, 2008, http://www.environmentalleader.com/2008/12/30/coke-leads-movement-for-clean-energy-billboards (last visited Nov. 15, 2009); *Sharp Bows Solar Ad Campaign*, ENVTL. LEADER, July 16, 2008, http://www.environmentalleader.com/2008/07/16/sharp-bows-solar-ad-campaign (last visited Nov. 15, 2009).

155 *See generally* AM. WIND ENERGY ASS'N & SOLAR ENERGY INDUS. ASS'N, *supra* note 151, at 1, 13 (describing the lack of technological and economic barriers to renewable generation, and potential uncertainties in carbon sequestration and nuclear power).

156 MINERALS MGMT. SERV., U.S. DEP'T OF THE INTERIOR, TECHNOLOGY WHITE PAPER ON WIND ENERGY POTENTIAL ON THE U.S. OUTER CONTINENTAL SHELF 2 (2006), *available at* http://ocsenergy.anl.gov/documents/docs/OCS_EIS_WhitePaper_Wind.pdf.

157 43 U.S.C. §§ 1331–1356a (2006).

158 Outer Continental Shelf Lands Act, 43 U.S.C. § 1334 (2006).

159 *Id.*

160 Pub. L. No. 109-58, 119 Stat. 594 (codified as amended in scattered sections of U.S.C.).

161 *Id.* § 388, 119 Stat. at 744–45 (codified as amended at 43 U.S.C. § 1337(p)(1)(C)–(D)).

with nearby coastal states.[162] The Secretary of Interior delegated this authority to the Minerals Management Service (MMS).[163]

Wind power has been only a small part of the energy picture in the United States. Nevertheless, the role of wind is growing because of the recent increases in oil prices and the public's enthusiasm for alternatives to fossil fuel. "The United States recently overtook Spain as the world's second-largest wind power market, after Germany, with $9 billion invested last year."[164] States are considering whether wind could play a more significant role in the future. The Oklahoma legislature created the Oklahoma Electric Power Transmission Task Force to study the feasibility of wind generation in the Oklahoma Panhandle.[165] "The Oklahoma Panhandle alone has the potential to house more than 8,400 megawatts of wind-generated capacity."[166] The fact that wind is intermittent (and thus currently lacks day-to-day reliability) has not foreclosed investment in wind power, however,[167] and more than one state has declared itself the Saudi Arabia of wind.[168]

Likewise, other countries have moved to harness inexhaustible energy resources. For example, solar energy is one of the most important forms of alternative clean energy in Turkey due to the country's geographical location.[169] Solar roofing panels—used primarily for hot water production—have been installed in over 30,000 Turkish homes since the 1980s.[170] Turkey is thus one of the leading countries in the world in the use of flat plate collectors for domestic hot water systems with a total installed capacity of 8.2 million square-meters of collector area as of 2001.[171] Turkey's increasing reliance on solar and other alternative forms of energy appears to be a direct result of government initiatives. Generally speaking, "[t]he protection of environment and public health from pollution arising from energy

162 *Id.* § 388, 119 Stat. at 745 (codified as amended at 43 U.S.C. § 1337(p)(2)(B)).

163 On January 16, 2009, the last day of the Bush administration, MMS issued the Draft Proposed OCS Oil and Gas Leasing Program for 2010 to 2015. MINERALS MGMT. SERV., U.S. DEP'T OF THE INTERIOR, DRAFT PROPOSED OUTER CONTINENTAL SHELF (OCS) OIL AND GAS LEASING PROGRAM 2010–2015 (2009), *available at* http://www.mms.gov/5-Year/PDFs/2010-2015/DPP%20FINAL%20(HQPrint%20with%20landscape%20maps,%20map%2010).pdf.

164 Clifford Krauss, *The Energy Challenge: Move Over, Oil, There's Money in Texas Wind*, N.Y. TIMES, Feb. 23, 2008, at A1.

165 Janice Francis-Smith, *Oklahoma to Get Free Wind Power Study This April*, J. REC., Jan. 11, *available at* 2009 WLNR 757351.

166 *Id.*

167 Krauss, *supra* note 164 (noting a study by Emerging Energy Research, a consulting firm in Cambridge, Massachusetts, that projected $65 billion in wind investment from 2007 to 2015).

168 Posting of Kate Galbraith to N.Y. Times Green Inc. Blog, Contest: Replace the 'Saudi Arabia' Trope!, http://greeninc.blogs.nytimes.com/2009/07/01/contest-replace-the-saudi-arabia-trope (July 1, 2009, 09:11 EST) (last visited Nov. 15, 2009).

169 World Energy Council, Energy Related Environmental Policy of Turkey, http://mail.worldenergy.org/tech_papers/17th_congress/1_3_13.asp (last visited Nov. 15, 2009) [hereinafter WEC Policy of Turkey].

170 AHMET KOYUN, PLAN BLEU, ENERGY EFFICIENCY AND RENEWABLE ENERGY: TURKEY—NATIONAL STUDY 48 (2007), *available at* http://www.planbleu.org/publications/atelier_energie/TR_National_Study_Final.pdf.

171 *Id.*

production and consumption activities is one of the principles of the Turkish national energy policy."[172]

In April of 2009, DOE set aside $12 million to support the research and development of advanced water power technologies, including both marine and hydrokinetic and conventional hydropower technologies.[173] The technologies intended to compete for this funding are marine and hydrokinetic.[174] The announcement noted that the funding could be used to study the environmental impacts of the "installation, testing, and operation of marine and hydrokinetic energy conversion devices."[175] It also anticipated funding water power "market acceleration projects" for "offshore, in-stream, ocean thermal and advanced hydropower resources."[176]

The announcement of this funding opportunity noted the need for such studies and innovation in water power:

> In working to develop technologies that harness the power of our water resources, DOE is furthering the United States' energy security, environmental quality, and economic vitality in public-private partnerships and dramatically increasing clean-energy research funding to develop cleaner, lower cost, and more reliable alternative energy sources. The Energy Independence and Security Act of 2007 authorizes DOE to establish a program of research, development, demonstration, and commercial application to expand marine and hydrokinetic renewable energy production.[177]

Such funding opportunities are attractive to researchers and scholars. They thus seem to provide generous incentives. As a practical matter, however, the significance of any incentive depends on the other incentives that are in competition with it. In other words, the power of incentives is relative—it depends on a comparison with other incentives in the marketplace. For example, even though some scholars are particularly drawn to the study of water power, the force of the incentive to draw attention to the area of water power depends on the other incentives in the market place or provided by government to attract researchers.

VII. CONCLUSION

Meeting the energy needs of today and the future through the production of clean fuel may be the single most significant challenge facing government today. Modern markets and the global economy depend on

172 WEC Policy of Turkey, *supra* note 169.

173 Wind & Hydropower Techs. Program, U.S. Dep't of Energy, DOE to Invest up to $12 Million to Support Development of Advanced Water Power Technologies, http://www1.eere.energy.gov/windandhydro/news_detail.html?news_id=12447 (last visited Nov. 15, 2009).

174 *See id.*

175 *Id.*

176 *Id.*

177 *Id.*

reliable and affordable energy.[178] Energy is the indispensible driver of the modern economy, and the strategy of greening the grid by production and distribution of clean energy appears to be a crucial first step in achieving sustainable energy. Supplementing or replacing fossil fuel production with inexhaustible sources as solar, energy, geothermal, and wind is one step toward reducing global climate change. While scientists and scholars agree that quick action is called for to reduce the nation's use of fossil fuel for energy,[179] the question of what steps are necessary to make the transition to a green grid remains problematic. Embracing multiple strategies and multiple energy sources is a crucial step toward the goal of sustainability.

Making a commitment to green the grid is the key to adaptation to global climate change. Reliable energy is essential to sustaining the economy, an organized and productive market, and individual survival. While government regulation has always been integral to energy production in the United States, the current state of energy development is by no means a level playing field for all energy sources. Government regulation is arguably a necessary ingredient to insuring political stability, especially in the modern economy in which control of energy resources affects political regimes as well as markets. Addressing the challenge of sustainability is essential to a serious response to current environmental and public health threats posed by global climate change and other hazards.[180] The recent concerns about global climate change have led many to refocus on energy as an integral part of the sustainability challenge.[181] A comprehensive energy policy of incentives coordinated at all levels of government is necessary to meet the challenge of sustainable energy and a sustainable environment. The less-explored but equally important point is that political freedom as well as economic development depends on stable energy production and stable regulation of energy.

Streamlining NEPA to encourage the greening of the grid is controversial. Some may argue that such streamlining reduces the importance of NEPA and endangers the important goals of this venerable environmental statute. Advocates for minorities and underrepresented groups may oppose reduction in NEPA on the basis that such reduction inevitably impairs the rights of minority and underrepresented groups to have input in major federal projects that could have significant impact on the human environment. Such input is indispensible to reasoned agency decision making. Nevertheless, if the threat of global climate change is as severe as scientists now claim, leveling the NEPA playing field for inexhaustible resources in comparison with traditional fuels may be necessary to combat global climate change.

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178 Timothy E. Wirth, *New Energy Technologies: Necessities and Opportunities*, BRIDGE, Summer 2003, at 10, 10.

179 *See, e.g.*, Ferrey, *supra* note 1, at 119; IPCC SYNTHESIS REPORT, *supra* note 12, at 2, 17 tbl.SPM.5, 19.

180 Motor vehicles powered by fossil fuel produce toxic emissions in addition to GHGs. *See* Lowell Rothschild & Margaret N. Strand, *Mobile Source Air Toxics: What's Known, Not Known, and What to Do About It*, NAT. RESOURCES & ENV'T, Fall 2006, at 10, 10.

181 *See* IPCC SYNTHESIS REPORT, *supra* note 12, at 15 tbl.SPM.4.