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Articles

Whose Sustainable Development? Sustainable Development under the Kyoto Protocol, the "Coldplay Effect," and the CDM Gold Standard

Sam Headon*

ABSTRACT

The purpose of this Article is to examine the existing standards for sustainable development under the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol. It is submitted that the existing approach to sustainable development under the UNFCCC, and in particular the clean development mechanism, which defers the implementation of development decisions to host countries, is preferable to expanded supranational regulation which imposes sustainable development decisions on project host countries. This Article also addresses some of the criticisms of the existing

* Associate, Covington and Burling LLP. LLB (Honors), Australian National University. LLM, Stanford Law School. The author would like to thank his colleagues at the Stanford Program on Energy and Sustainable Development and the Stanford Program in International Legal Studies for their assistance and support in preparing this Article. The author particularly thanks the contribution of Assistant Professor Michael Wara for his comments and assistance in preparation of this Article. The author, however, bears sole responsibility for the views stated in this Article, which do not necessarily reflect the views of any client of Covington and Burling LLP.

approach to sustainable development under the UNFCCC. However, the UNFCCC system is not perfect. The existing approach has led private parties and the market to create voluntary standards in an effort to address the perceived failures of the international system. This Article concludes that the proposals for improving the environmental, social, and economic benefits of CDM projects should not focus on mandatory universal standards, but rather on support for host countries in building development capacity to facilitate rigorous standards for sustainable development.

I. INTRODUCTION

The concept of sustainable development has been widely used and publicized in modern international environmental law.[1] Its use as a normative environmental ideal is now widespread in numerous environmental law treaties and it is central to the United Nations Framework Convention on Climate Change ("UNFCCC") and to the Kyoto Protocol.[2] The Clean Development Mechanism ("CDM")[3] of the Kyoto Protocol requires that projects satisfy so-called sustainable development criteria before they are eligible for approval.[4] However, many commentators question whether the approval of project activities

[1] Some experts argue that sustainable development is not just a legal concept, but an evolving body of international law—the international law of sustainable development. *See* International Law and Sustainable Development: Principles and Practice (Nico Schrijver & Friedl Weiss eds., 2004); International Law and Sustainable Development: Past Achievements and Future Challenges (Alan Boyle & David Freestone eds., 1999); Philippe Sands, Principles of International Environmental Law (2003).

2. United Nations Conference on Environment and Development: Framework Convention on Climate Change, May 9, 1992, 31 I.L.M. 849 (1992) [hereinafter UNFCCC]. The Kyoto Protocol to the UNFCCC was adopted at the Third Conference of the Parties to the UNFCCC in Kyoto, Japan on Dec. 11, 1997. Kyoto Protocol to the United Nationals Framework Convention on Climate Change, Dec. 10, 1997, 37 I.L.M. 32. [hereinafter Kyoto Protocol]. The CDM Executive Board ("CDM EB") is constituted pursuant to Article 12 of the Kyoto Protocol.

3. The CDM defined in Article 12 provides for Annex I Parties to implement project activities that reduce emissions in non-Annex I Party countries, in return for certified emission reductions ("CERs"). The CERs generated by such project activities can be used by Annex I Parties to help meet their emissions targets under the Kyoto Protocol. Article 12 also stresses that such project activities are to assist the developing country Host Parties in achieving sustainable development and in contributing to the ultimate objective of the Convention. Kyoto Protocol, *supra* note 2, at Art. 12.

4. UNFCCC, *supra* note 2, at art. 3.4.

under the Kyoto Protocol has actually been consistent with the concept of sustainable development and have suggested that the CDM is not assisting host countries in achieving sustainable development.[5] The purpose of this Article is to examine the existing standards for sustainable development as applied by the UNFCCC under the Kyoto Protocol and by the various developing countries that are parties to the Kyoto Protocol, which are entrusted with implementing sustainable development under the CDM. This Article argues that the degree to which sustainable development impacts investment in CDM projects should be determined by host countries and the CDM market—not by increased regulation at the supranational level. The existing approach to sustainable development under the Kyoto Protocol signifies a prudent trade-off between the competing goals under the Kyoto regime of low-cost emission reductions and sustainable development for non-Annex I Parties.[6] The Kyoto Protocol was not designed to establish a universal standard for sustainable development, but to assist developing countries in making unilateral decisions about sustainable development goals on the basis of common, but differentiated, responsibilities between developed and developing countries.[7]

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5. LAMBERT SCHNEIDER, OKO-INSTITUTE.V., IS THE CDM FULFILLING ITS ENVIRONMENTAL AND SUSTAINABLE DEVELOPMENT OBJECTIVES? AN EVALUATION OF THE CDM AND OPTIONS FOR IMPROVEMENT, 5 (2007). Schneider notes that:

> Under the current CDM, a monetary value is only given for GHG emission reductions, and not for the contribution of CDM projects to sustainable development. Premium markets, in particular the Gold Standard (GS), could help in giving a value to the objective of the CDM to assist in achieving sustainable development.

Id. at 10; Christoph Sutter & Juan Carlos Parreño, *Does the Current Clean Development Mechanism Deliver Its Sustainable Development Claim? An Analysis of Officially Registered CDM Projects*, 84 CLIMATIC CHANGE 75, 75 (2007); Axel Michaelowa, *Climate or Development: Is ODA Diverted from Its Original Purpose?* 84 CLIMATIC CHANGE 5, 14 (2007); Karen Olsen, *The Clean Development Mechanism's Contribution to Sustainable Development: A Review of the Literature*, 84 CLIMATIC CHANGE 59, 59-60 (2007).

6. Annex I to the United Nations Framework Convention on Climate Change ("UNFCCC") sets out a list of developed country Parties and economies-in-transition Parties that commit themselves under Article 4 to achieve certain quantified emission limitation and reduction objectives. UNFCCC, *supra* note 2. If they have ratified the Kyoto Protocol, these Parties can authorize the participation of entities in CDM projects. Countries that are Parties to the Kyoto Protocol, but are not listed in Annex I to the UNFCCC, are known as non-Annex I Parties. These are generally developing countries that are eligible to be host Parties for CDM projects.

7. *See* HANS CHRISTIAN BUGGE & CHRISTINA VOIGT, SUSTAINABLE DEVELOPMENT IN INTERNATIONAL AND NATIONAL LAW, 533 (2008).

This approach has also led private firms to create standards for sustainable development—including the CDM Gold Standard—in an effort to address the perceived failures of the international system.[8] This article will also consider how the "Coldplay Effect"—a growing private sector awareness of the importance of environmental integrity in carbon market projects—has necessitated new approaches to the interpretation of, and standards for, sustainable development by private firms involved in the CDM and the carbon market. The market has indicated a willingness to apply a price to sustainable development and to undertake measures to assist sustainable development outcomes.

Part I of this article considers the proliferation of the concept of sustainable development and traces its origins in international environmental law and its contested status even prior to its adoption in the Kyoto Protocol. Part II explains the use and implementation of sustainable development as a deferential standard within the UNFCCC framework and within the project approval process for the CDM, as well as the consequences for project approval by host countries. In particular, this section focuses on the existing regime for the influence of sustainable development on the types of projects that are registered. Part II also discusses the emergence of private sector responses to the perceived failures of the sustainable development criteria and further argues that the case against the existing framework for sustainable development under the UNFCCC has been overstated. This section also suggests that proposals for improving the environmental, social, and economic benefits of CDM projects should not focus on mandatory universal standards, but rather should focus on support for host countries in building development capacity in an effort to facilitate rigorous standards for sustainable development in host countries. Such an approach may ultimately necessitate removing sustainable development from the Kyoto Protocol, thus leaving its implementation to host countries and private parties.

8. The CDM Gold Standard is the "best practice" guideline established by the World Wildlife Fund and created for sustainable CDM projects to address the perceived failings of the existing Kyoto Protocol sustainable development criteria. In summary, the CDM Gold Standard establishes additional environmental and social benchmarks that must be achieved before a CDM credit is eligible for "Gold Standard" labeling. Such credits trade at a premium in the CDM carbon credit market because of their perceived additional environmental integrity. WWF, *The Gold Standard – Quality Assurance for CDM and JI Projects, available at* http://www.panda.org/about_wwf/what_we_do/climate_change/solutions/business_industry/offsetting/gold_standard/ (last visited Feb. 4, 2008).

II. SUSTAINABLE DEVELOPMENT IN INTERNATIONAL LAW

A. Background

According to the International Law Association ("ILA") Committee on Legal Aspects of Sustainable Development, "sustainable development has become an established objective of the international community and a concept with some degree of normative status in international law."[9] The term "sustainable development" first received international recognition in 1987 by the World Commission on Environment and Development ("WCED" or "Brundtland Commission").[10] The principal definition of sustainable development emerged from the Brundtland Commission report, which provides that sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.[11] It contains within it two key concepts. First, the "concept of 'needs,' in particular, the essential needs of the world's poor, to which overriding priority should be given."[12] Second, the "idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs."[13]

In response to the Brundtland Commission, the European Council adopted the 1990 Dublin Declaration on the Environmental Imperative, which identified sustainable development as one of the objectives of the European Community.[14] The 1992 United Nations Conference on Environment and Development in Rio De Janeiro, Brazil ("Rio Declaration") signified the United Nations' ("UN") confirmation of

9. INTERNATIONAL LAW ASSOCIATION, SEARCHING FOR THE CONTOURS OF INTERNATIONAL LAW IN THE FIELD OF SUSTAINABLE DEVELOPMENT 5 (2002).

10. INTERNATIONAL UNION FOR CONSERVATION OF NATURE AND NATURAL RESOURCES, THE WORLD CONSERVATION STRATEGY: LIVING RESOURCE CONSERVATION FOR SUSTAINABLE DEVELOPMENT (1980). The World Conservation Strategy defined sustainable development as "the integration of conservation and development to ensure that modifications to the planet do indeed secure the survival and well-being of people." *Id.* at 2.

11. IAN BROWNLIE, PRINCIPLES OF PUBLIC INTERNATIONAL LAW 287 (Oxford University Press 1990) (1966).

12. WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT, OUR COMMON FUTURE 43 (1987).

13. *Id.*

14. Declaration by the European Council on the Environmental Imperative, Bull. E.C. No. 6 at 17 (1990).

sustainable development as a fundamental principle of international law.[15] The first principle of the Rio Declaration provides that "human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature."[16] This basic normative framework has since been adopted by numerous international treaties and international organizations including the World Trade Organization ("WTO"),[17] the World Summit for Social Development,[18] the Convention on Biological Diversity,[19] and most recently, as part of the plethora of mechanisms adopted with the Millennium Development Goals.[20]

B. A Contested Notion?

Despite its acceptance as a fundamental principle of international law, precisely what the term "sustainable development" encompasses has been contested from its inception.[21] The terms used in the debate make

15. U.N. Conference on Environment and Development, June 3-4, 1992, *Rio Declaration on Environment and Development*, U.N Doc. A/CONF.151/5/Rev.1, prin. 1 (1992) [hereinafter *Rio Declaration*], *available at* http://un.org.

16. *Id.* Further, Principle 5 of the Rio Declaration provides that "all states and all people shall cooperate in the essential task of eradicating poverty as an indispensable requirement for sustainable development, in order to decrease the disparities in standards of living and better meet the needs of a majority of the people of the world." *Id.* at prin. 5.

17. Marrakesh Agreement Establishing the World Trade Organization, Apr. 15, 1994, 33 I.L.M 15 (1994), *available at* http://www.wto.org/english/docs_e/legal_e/04-wto.pdf. In 1994, sustainable development was recognized as an objective of the WTO in the preamble to the Marrakesh Agreement establishing the WTO. *Id.* at ¶ 5.

18. World Summit on Sustainable Development, Aug. 26–Sept. 4, 2002, *Johannesburg Plan of Implementation*, U.N. Doc. A/CONF.199/20 (Sept. 4, 2002), *available at* http://un.org. The World Summit on Sustainable Development, WSSD or Earth Summit 2002 took place in Johannesburg, South Africa. The summit was convened to discuss sustainable development by the United Nations.

19. United Nations Convention on Biological Diversity, June 5, 1992, *Art. 10: Sustainable Use of Components of Biological Diversity*, 1760 U.N.T.S. 79, U.N. Doc. DPI/130/7 (June 5, 1992), *available at* http://un.org. The convention's objective is to develop national strategies for the conservation and sustainable use of biological diversity.

20. United Nations Millennium Declaration, Sept. 8, 2000, G.A. Res. 55/2, U.N. GAOR, 55th Sess., U.N. Doc. A/RES/55/2 (Sept. 8, 2000) [hereinafter Millennium Declaration], *available at* http://un.org. The goals include reducing extreme poverty, reducing child mortality rates, fighting disease epidemics such as AIDS, and developing a global partnership for development.

21. *See* Jacqueline Peel, *New State Responsibility Rules and Compliance with Multilateral Environmental Obligations*, 10 REV. OF EUR. COMM. AND INT'L ENVTL. L. 82, 82 (2001); Farhana Yamin, *The Kyoto Protocol: Origins, Assessment and Future Changes*, 7 REV. OF EUR. COMM. & INT'L ENVTL. L. 113, 122 (1998).

practical implementation difficult.[22] For instance, it is assumed that environmental protection is one integral part of sustainable development.[23] It is also widely accepted that the world's poor must have rights, including a right to development and the elimination of abject poverty.[24] This theoretical and normative framework presents a tension between competing economic, social, and environmental policies. The principal difficulty relates to the conflict that arises when a country prioritizes development over sustainability. Is it possible to transparently evaluate the costs and benefits of a development project based on goals of environmental protection *and* poverty eradication?

The debates surrounding the difficulties inherent in sustainable development have tracked its emergence. Herman Daly, former Senior Economist in the Environment Department of the World Bank, commented that the term sustainable development is too vague to confer any actual meaning.[25] He questions any attempt to give it meaning: "is there a difference between economic development and economic growth?"[26] Daly argues that the complexity and vagueness of the term

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22. *See* INTERNATIONAL LAW AND SUSTAINABLE DEVELOPMENT: PRINCIPLES AND PRACTICE, *supra* note 1, at 4; *see also* PATRICIA BURNIE & ALAN BOYLE, INTERNATIONAL LAW AND THE ENVIRONMENT 10 (1994).

23. *See* Rio Declaration, *supra* note 15. *See also* David Freestone, *The Road from Rio: International Environmental Law After the Earth Summit*, 6 J. ENVTL. L. 193 (1994); INTERNATIONAL LAW AND SUSTAINABLE DEVELOPMENT: PAST ACHIEVEMENTS AND FUTURE CHALLENGES, *supra* note 1.

24. Rio Declaration, *supra* note 15 (see Principle 5). *See also*, *Poverty and Climate Change: Reducing the Vulnerability of the Poor Through Adaptation*, *available at* http://www.unpei.org/PDF/Poverty-and-Climate-Change.pdf. This document was a collaboration between the United Nations Development Program, the United Nations Environment Program, the World Bank, the Asian Development Bank, the African Development Bank, the GTZ, the UK Department For International Development, the Organisation for Economic Co-operation and Development, and the European Commission on behalf of the Poverty-Environment Partnership.

25. HERMAN E. DALY, *in* VALUING THE EARTH: ECONOMICS, ECOLOGY, ETHICS 6 (Herman E. Daly & Kenneth N. Townsend eds.,1993). Daly comments:

> How then can people keep on talking about 'sustainable growth' when: (a) the present scale of the economy shows clear signs of unsustainability, (b) multiplying that scale by a factor of five to ten as recommended by the Brundtland Commission would move us from unsustainability to imminent collapse, and (c) the concept itself is logically self-contradictory in a finite, nongrowing ecosystem? Yet sustainable growth is the buzz word of our time. Occasionally it becomes truly ludicrous, as when writers gravely speak of 'sustainable growth in the rate of increase of economic activity.' Not only must we grow forever, we must accelerate forever! This is hollow political verbiage, totally disconnected from logical and physical first principles.

26. *See* HERMAN E. DALY, BEYOND GROWTH: THE ECONOMICS OF SUSTAINABLE DEVELOPMENT 24 (1996).

itself is "no longer a basis for consensus but a breeding ground for disagreement."[27] Like Daly, David Victor, Professor of Law at Stanford Law School and Director of the Stanford Program on Energy and Sustainable Development, indentified conceptual problems with trying to measure standards for sustainable development.[28] Victor notes that much of the debate surrounding sustainable development "reflect[s] a diplomatic process that has devoted too much effort to lengthening the international community's wish list and not enough to articulating and ranking the types of practical measures that are the hallmark of serious policymaking."[29]

However, Victor recognizes that the UNFCCC reflects the "environmental priorities of the industrialized world."[30] The mechanisms of the UNFCCC—such as the Kyoto Protocol and the Marrakesh Accords—clearly stand for these environmental priorities and do not attempt to impose a "top-down" approach to sustainable development. Instead, the UNFCCC has largely deferred to the decisions of host countries.

III. SUSTAINABLE DEVELOPMENT UNDER THE UNFCCC AND KYOTO PROTOCOL

It is against the normative and legal background of the contested notion of sustainable development (and the active debate surrounding sustainable development as a universal concept) that the UNFCCC sought to incorporate this principle into the climate change regime. The policy goal of creating sustainable CDM projects was recognized by the Conference of the Parties/Meeting of the Parties ("COP/MOP")[31] in the early stages of negotiations surrounding the Kyoto Protocol and was expressly addressed in the process for CDM project registration.[32] The structural mechanisms for implementation of the concept are explained below.

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27. *Id.* at 2.

28. David G. Victor, *Recovering Sustainable Development*, FOREIGN AFFAIRS, Jan. 1, 2006, *available at* http://pesd.stanford.edu/news/david_g_victors_recovering_sustainable_development_published_in_foreign_affairs_20060104/.

29. *Id.*

30. *Id.*

31. Since the UNFCCC entered into force, the parties have been meeting annually in Conferences of the Parties ("COP") to assess progress in dealing with climate change, and, beginning in the mid-1990s, to negotiate the Kyoto Protocol to establish legally binding obligations for developed countries to reduce their greenhouse gas emissions.

32. UNFCCC, *supra* note 2, at art. 3.4.

A. The UNFCCC

Article 3.4 of the UNFCCC provides that "the Parties have a right to, and should, promote sustainable development."[33] The UNFCCC further provides that

> [p]olicies and measures to protect the climate system against human-induced climate change should be appropriate *for the specific conditions of each Party* and should be integrated with national development program[s], taking into account that economic development is essential for adopting measures to address climate change.[34]

Part of the difficulty associated with forming an opinion on sustainable development arises from the sometimes conflicting twin objectives that run throughout the UNFCCC—namely reducing greenhouse gas emissions in a cost-efficient way but in a locally sustainable manner. This conflict arose from the objectives of the two original instruments which ultimately formed the CDM: the former Clean Development Fund ("CDF"), which focused on the sustainable development objective, and the Joint Implementation ("JI") concept, which focused on the objective of cost-efficient emission reductions.[35] This debate permeates the literature on sustainable development under the CDM.[36]

The UNFCCC makes plain that sustainable development in the context of climate change would primarily be the responsibility of host countries and would not emerge from a top-down system. Any doubt surrounding this deferential approach is dispelled by the text of Paragraph 10 of the Preamble, which indicates that States should enact effective environmental legislation that reflects the environmental and developmental context to which the legislation applies.[37] This approach

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33. The wording in Article 3 signifies a compromise which reflects opposition from the United States to the "right to development" advocated by many developing countries when the initial text was being negotiated. *See id.* at art. 3.

34. *Id.* at art. 3.4.

35. *See* ANNE OLHOFF ET AL., UNEP, CDM SUSTAINABLE DEVELOPMENT IMPACTS (2004), *available at* http://cd4cdm.publications.htm. Of particular interest is the chapter titled, "Sustainable Development in Relation to CDM."

36. *See* Massimiliano Montini, *Sustainable Development Within the Climate Change Regime*, *in* SUSTAINABLE DEVELOPMENT IN INTERNATIONAL AND NATIONAL LAW 523, 534-538 (Hans Christian Bugge & Christina Voigt, eds., 2008).

37. The full text of paragraph 10 of the preamble to the UNFCCC provides:

> Recognizing that States should enact effective environmental legislation, that environmental standards, management objectives and priorities should reflect the environmental and developmental context to which they apply, and that

signifies a respect for the sustainable development goals of the individual Parties, rather than a top-down proposal to which such Parties are held accountable.

B. The Kyoto Protocol and the Marrakesh Accords

The deferential approach adopted in the UNFCCC is further illustrated in the Kyoto Protocol and the Marrakesh Accords. Article 12 of the Kyoto Protocol provides the backbone of the CDM process,[38] which is fleshed out in the Marrakesh Accords.[39] To commence a CDM project, an Annex I Party, or a private party authorized by an Annex I Party, must obtain consent from the non-Annex I Party, or host country, and confirmation from the host country that the project activity assists it in achieving sustainable development.[40] The project sponsor must use the methodologies approved by the CDM Executive Board ("CDM EB") to establish that the project will contribute to sustainable development. Then "registration" occurs when the CDM EB approves a Designated Operational Entity ("DOE") validation that the project will result in verifiable emissions reductions.[41]

Pursuant to Decision 17/CP.7 of the Marrakesh Accords, when validating a project development document, the DOE must confirm, among other requirements, that the following requisites with respect to environmental integrity in certified emission reductions ("CERs") have been met: (1) Comments by stakeholders have been invited, a summary of those comments has been provided, and a report about how the comments were integrated in the project plans has been made to the DOE;[42] (2) Project participants have submitted to the DOE documentation on the analysis of the environmental impacts of the project activity, including transboundary impacts and, if those impacts

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> standards applied by some countries may be inappropriate and of unwarranted economic and social cost to other countries, in particular developing countries.

UNFCCC, *supra* note 2.

38. The major distinction between the Kyoto Protocol and the UNFCCC is that, while the UNFCCC encouraged industrialized countries to stabilize GHG emissions, the Kyoto Protocol required them to do so.

39. It was not until the Conference of the Parties/Meeting of the Parties COP 7 ("COP/MOP"), in Marrakesh, in 2001, that the CDM EB was established and the main part of the rules of the CDM were created.

40. Conference of the Parties on its Seventh Session, Marrakesh, Morocco, Oct. 29-Nov. 10, 2001, *United Nations Framework Convention on Climate Change*, 20, 35, U.N. Doc FCCC/CP/2001/13/ADD.2 (Jan. 21, 2002) [hereinafter *Marrakesh Accords*].

41. *Id.* at 30-32.

42. *Id.* at 34.

are considered *significant* by the project participants or the host country, the project participants have undertaken an environmental impact assessment *in accordance with procedures as required by the host country*;[43] and (3) The project activity conforms to all other requirements for CDM project activities set forth in Decision 17/CP.7, the present annex, and the relevant decisions by the COP/MOP and the CDM EB.[44]

However, neither the COP/MOP nor the CDM EB provides guidance about what constitutes a significant impact or to what extent public comments should affect an offset project.[45] As discussed above with respect to the UNFCCC's approach to sustainable development, this determination is left to the host country. The lack of guidance by the COP/MOP was likely deliberate. The resolution of such issues has been left to the Designated National Authority ("DNA") of the host country, the respective project participants, and the DOE on a case-by-case basis.[46] It remains the sovereign power of the host country acting through its DNA to confirm whether a CDM project assists in achieving sustainable development.[47] In effect, because sustainable development is defined on a project-by-project basis, the term takes on whatever definition the host country provides.

Another observation from the existing structure is the discretion left to the host country to determine whether an environmental impact assessment ("EIA") is necessary. Only if the host country determines that an EIA is necessary does the project have to undertake an EIA.[48]

C. Criticism of the Sustainability of CDM Projects

There is abundant literature on the perceived failings of the CDM.[49] The criticisms of the CDM's sustainable development benefits may be

43. *Id.*

44. *See id.* at 20-49.

45. The Kyoto Protocol has sanctioned offsets as a way for governments and private companies to earn carbon credits which can be traded on a marketplace. The protocol established the CDM, which validates and measures projects to ensure they produce authentic benefits and are genuinely "additional" activities that would not otherwise have been undertaken. *See* Kyoto Protocol, *supra* note 2.

46. *See* Kyoto Protocol, *supra* note 2, at art. 12; *Marrakesh Accords*, *supra* note 40, at 20, 35.

47. UNEP, LEGAL ISSUES GUIDEBOOK TO THE CLEAN DEVELOPMENT MECHANISM 32–34 (2004), *available at* http://cd4cdm.org/Publications/CDM%20Legal%20Issues%20Guidebook.pdf.

48. *Id.*

49. *See, e.g.*, SCHNEIDER, *supra* note 5, at 48; AARON COSBEY ET AL., INTERNATIONAL INSTITUTE FOR SUSTAINABLE DEVELOPMENT, REALIZING THE

summarized by the following four points. First and foremost, "left to market forces, the CDM does not significantly contribute to sustainable development."[50] In other words, the non-carbon benefits of CDM projects are not recognized in the carbon market, but rather only the direct carbon benefits are valued.[51] Second, "as power relations among stakeholders are unequal," the strong stakeholders usually "define the terms for the carbon trade."[52] Third, non-Annex I countries have an incentive to attract CDM investments and encourage low sustainability standards, which may lead to "race to the bottom" standard setting.[53] Finally, sustainable development is not clearly defined by DNAs, which raises the question of who should be responsible for sustainable development.[54] Overall, the weight of studies concludes "that trade-offs exist between the two objectives of the CDM in favor of cost-effective reductions in greenhouse gasses."[55] For instance, a project category which has attracted attention in this respect has been large HFC-23 projects.[56]

In furtherance of this conclusion, many commentators point to a number of silver bullet methodologies, which they argue should improve the existing standards for assessing the sustainable development criteria

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DEVELOPMENT DIVIDEND: MAKING THE CDM WORK FOR DEVELOPING COUNTRIES (2005); John Humphrey, *The Clean Development Mechanism: How to Increase Benefits for Developing Countries*, 35 IDS INSTITUTE FOR DEVELOPMENT STUDIES 84 (2004); KATRINA BROWN ET AL., TYNDALL CENTRE FOR CLIMATE CHANGE RESEARCH, HOW DO CDM PROJECTS CONTRIBUTE TO SUSTAINABLE DEVELOPMENT? (2004).

50. Olsen, *supra* note 5, at 59.

51. *See id.* Olsen presents a literature review of the various criticisms of the existing sustainable development criteria under the Kyoto Protocol.

52. *Id.* at 62.

53. *Id.*

54. *Id.*

55. *Id.* at 64.

56. *See* Michael Wara, *Measuring the Clean Development Mechanism's Performance and Potential*, 55 UCLA L. REV. 1759, 1785 (2008). Significant volumes of CERs come from CDM projects at refrigerant-producing factories in non-Annex-1 countries (particularly China) that generate the powerful greenhouse gas HFC-23 as a by-product. By destroying the HFCs, the factories can earn carbon credits. Wara notes that:

> The original intent of the CDM was to spur development of low-carbon energy infrastructure in the developing world both through achievement of sustainable development goals and substitution for early retirement of expensive, high-carbon energy infrastructure in the developed world. It comes as a surprise, then, to find then that the CDM pipeline bears only a partial relationship to this vision.

Id. at 1778.

of each project.[57] These methodologies range from using criteria and indicators, to using checklist and multi-criteria approaches.[58]

In response to the current criticisms of the sustainable development criteria of the CDM, this Article first argues that the criticisms advocate top-down approaches to regulation, which are inconsistent with the existing deferential approach adopted by the COP/MOP. Second, there is no evidence of a uniform race to the bottom between competing host countries. Third, sustainable development criteria of projects are increasingly reflected in the pricing of carbon offsets, and there is a notable movement toward private actors having a regulatory function. Finally, and most importantly, concepts of sustainable development could be removed from the climate regime if non-Annex I Parties increased their institutional capacity, thus improving review of existing approvals. Many of the criticisms of the CDM are actually criticisms of host country institutional failures. Improvement of these institutions would offset the need for improved sustainability criteria in the CDM process and top-down forms of criteria setting.

D. Kyoto Sustainable Development in Practice

In practice, the review undertaken by the CDM EB with respect to the sustainable development criteria is effectively a "box-ticking exercise." In other words, a paper review is performed with respect to whether the project contributes to sustainable development, rather than a rigorous determination of the sustainable development characteristics of the project itself. This approach is consistent with the UNFCCC policy, which delegates sustainable development decisions to the relevant host country and the DOE of the project participant.[59] The CDM EB has never rejected a project design document because it did not contribute to sustainable development.[60]

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57. *See* Sutter & Parreño, *supra* note 5. Sutter & Parreño propose the use of a sustainable development assessment tool called "the Multi-Attribute Utility Theory" for CDM Project Assessment. *Id.* at 77. For an overview of the remaining categories, namely, cost-effective, cost-benefit, ranking methodologies, guidelines, and negotiated targets, see Olsen, *supra* note 5, at 63-64.

58. Olsen, *supra* note 6, at 63-64.

59. *See* UNFCCC, *supra* note 2.

60. *See* UNFCCC, Issuance of CERs, http://cdm.unfccc.int/Issuance/index.html (follow "Issuance of CERs - Rejected" hyperlink) (last visited Feb. 9, 2009) [hereinafter Rejected Requests for Issuance].

E. Is There a Race to the Bottom Trend in Host Country Sustainable Development Regulations?

Non-Annex I Party DNAs are responsible for assessing the sustainable development benefits of each project.[61] Commentators have suggested that this policy may result in race to the bottom regulatory environments among non-Annex I Parties in order to attract CDM investment.[62] For instance, Chris Sutter, a CDM sustainable development commentator, notes:

> Competition among non-Annex I parties in attracting CDM investments may therefore create an incentive to set low sustainability standards in order to yield more projects with low abatement costs. This could lead to a "race to the bottom" in terms of sustainable development standards as non-Annex I parties try to undercut each other to attract CDM investments.[63]

The issue raised by Sutter is an empirical one. A brief survey of the main CDM jurisdictions is set out below to explore this question.

Figure 1[64] below provides data with respect to the number of CDM projects and the volume of CERs by host country location. Based on this figure, the country with the highest number of CDM projects and the highest number of CERs by volume is China. India is the second most popular destination, followed by Brazil and Mexico. According to the race to the bottom theory, sustainable development regulations in China should be the most lenient, followed by India and Brazil. Regulations in countries such as Cambodia, Morocco, and South Africa should be considerably more stringent.

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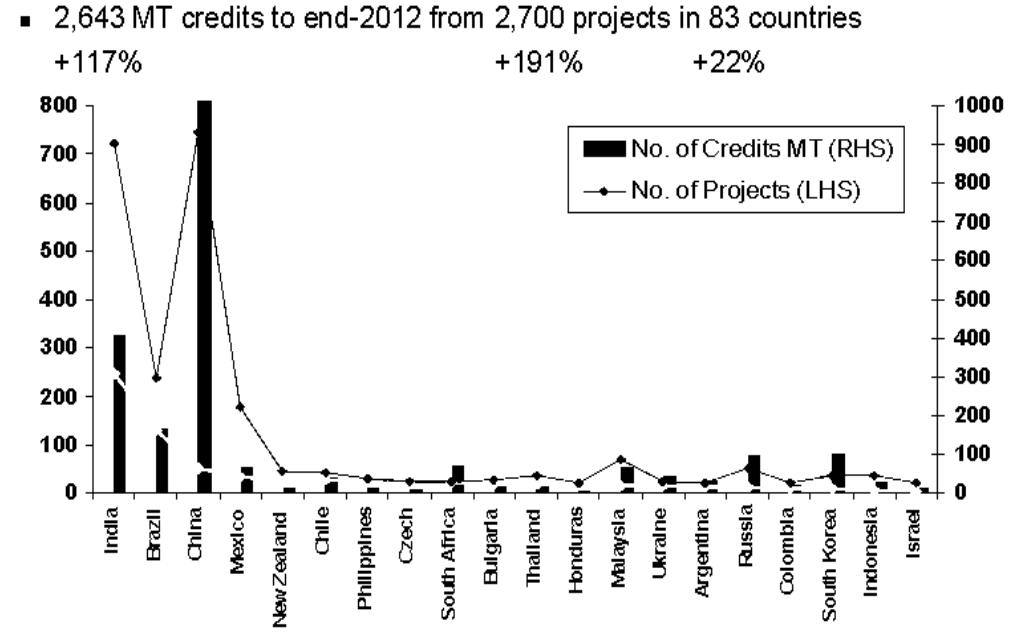
61. *Marrakesh Accords*, *supra* note 40.

62. *See* Christoph Sutter, *Sustainability Check-Up for CDM Projects: How to Assess the Sustainability of International Projects Under the Kyoto Protocol*, WISSENSCHAFTLICHER VERLAG (Berlin) (2003) *available at* http://www.up.ethz.ch/research/group_imboden/cdm_assessment/Sutter_2003_Sustainability_Check-Up_for_CDM_Projects__e-book_.pdf.

63. *Id.* at 68.

64. Figure 1 is based on figures provided by ABN AMRO Bank N.V. data with respect to Kyoto Credits (including both ERUS (JI Projects) and CERs (CDM Projects) by Volumes and Location to Aug. 2007). These figures are based upon the UNEP Risø database.

FIGURE 1: KYOTO CREDITS TO AUGUST 2007



However, China's regulations, and trends in CER project registration, cast some doubt over the operation of the race to the bottom theory in this market. This is because regulations are more stringent in China than in other CDM countries, where, in most cases, there are fewer registered projects.[65] The Chinese DNA is the National Coordination Committee on Climate Change and the National Development and Reform Commission ("NDRC").[66] The NDRC provides detailed requirements that a project must meet before it is approved.[67] China's approval procedures and requirements emphasize that CDM projects must make a contribution to sustainable development.[68] The NDRC has identified the following priority areas for CDM project development: (1) energy efficiency; (2) development and utilization of new and renewable energy sources; and (3) methane recovery and utilization.[69] To meet

65. *See Clean Development Mechanism in China*, http://cdm.ccchina.gov.cn/english/ (last visited Feb. 8, 2009) [hereinafter *Clean Development*]. For a list of projects, follow "More" hyperlink under "Project Information."

66. *Id.*

67. *Id.*

68. *Id.*

69. Measures for Operation and Management of Clean Development Mechanism Projects in China (Dec. 8, 2005), art. 4, *available at* http://cn25028.chinaw3.com/view.

these priority areas, the People's Republic of China ("PRC") requires the CDM project entity to pay a percentage of CER sale proceeds to the government for hydroflourocarbons ("HFC") (65% of revenues) and nitrous oxide ("N_2O") (30% of revenues).[70] The additional revenues from these projects are pooled in a fund used specifically for sustainable development, thereby providing indirect sustainable development benefits.[71] So far, no other host country has imposed a similar requirement.[72] Priority areas, such as wind farms, are taxed at a lower rate of two percent.[73] It is notable that the majority of CDM projects registered in China are wind farms.[74] On January 1, 2006, the PRC Renewable Energy Law[75] came into effect, which further promotes wind, solar, and hydro projects—all of which have greater perceived sustainable development benefits.[76]

However, the PRC's law does not specifically recognize transparent criteria for sustainable development.[77] Also, it could be argued that the variable tax rates applied to HFC-23 and N_2O projects reflect their profitability, based on the global warming potential multiplier of HFC and N_2O, rather than a genuine attempt to encourage more sustainable development. Furthermore, the fact that HFC-23 and N_2O projects are taxed more heavily is arguably an implicit acknowledgement that certain CDM project types confer sustainable development benefits directly, while other projects, such as those involving HFC-23, do not. However, it is clear that the flight of capital to projects in China has not been based exclusively on lenient standards for sustainable development.

Brazil has relatively stringent sustainable development criteria and processes, and has a comparatively high level of CDM projects, both by

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asp?id=66 (last visited Feb. 9, 2009) [hereinafter CDM Measures].

70. *Id.* art. 24.

71. *See id.* art. 24, which provides: "The revenue collected from CER transfer benefits of CDM projects will be used in supporting activities on climate change. The detailed regulations on collecting and using of the revenue will be formulated by Ministry of Finance jointly with NDRC and other relevant departments."

72. *See, e.g.*, UNFCCC, Rejected Projects, http://cdm.unfccc.int/Projects/rejected.html.

73. CDM Measures, *supra* note 69, art. 24.

74. *See Clean Development*, *supra* note 65 (enter "wind" into the search engine); *see also* Rejected Requests for Issuance, *supra* note 60.

75. The Renewable Energy Law of the People's Republic of China (promulgated by the Standing Comm. Nat'l People's Cong., Feb. 28, 2005, effective Jan. 1, 2006), art. 33, *available at* http://www.ccchina.gov.cn/en/NewsInfo.asp?NewsId=5371 [hereinafter PRC Renewable Energy Law].

76. Gu Yi, *Renewable Energy Law Will Boost a 100 Billion Yuan Market*, CHINA ENERGY NETWORK, Sept. 26, 2005.

77. *See* CDM Measures, *supra* note 69.

project number and by CER volume.[78] As a result, Brazil provides evidence contrary to the race to the bottom argument. The DNA in Brazil is the Interministerial Committee on Global Climate Change ("ICGCC"). Annex III of the ICGCC, Resolution No.1 of September 11, 2003, requires that project participants specify how a project contributes to sustainable development on the following grounds: (1) contribution to local environmental sustainability; (2) contribution to the development of working conditions and net job generation; (3) contribution to income distribution; (4) contribution to technological development and capacity building; and (5) contribution to regional integration with other sectors.[79]

In addition, project participants must invite municipal governments, environmental agencies, non-governmental organizations ("NGOs"), community associations, and the state attorney to make comments. Participants also must provide documentation establishing compliance with Brazilian environmental and labor legislation.[80] Despite these

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78. *See generally* U.N. Interministerial Commission on Global Climate Change, Res.1 (Sept. 11, 2003), *available at* http://www.camclimate.org.kh/2ccco/2-CDM_in_Cambodia.pdf [hereinafter ICGCC Resolution].

79. The full text of Annex III of the ICGCC Resolution provides:

> The project participants will state whether and how the project activity will contribute to sustainable development, in regards to the following aspects: (a) Contribution to local environmental sustainability: Assess the mitigation of local environmental impacts (solid wastes, liquid effluents, atmospheric pollutants, etc.) caused by the project in comparison with the estimated local environmental impacts for the reference scenario; (b) Contribution to development of working conditions and net job creation: Assess the commitment of the project to social and workplace responsibilities, health and education programs and defense of civil rights. Also assess the improvement in the qualitative and quantitative level of employment (direct and indirect) comparing the project scenario with the reference scenario; (c) Contribution to the distribution of income: Assess the direct and indirect effects of the quality of life of low-income populations, noting the socio-economic benefits provided by the project in relation to the reference scenario; (d) Contribution to training and technological development: Assess the degree of technological innovation of the project in relation to the reference scenario and the technologies used in activities comparable to those called for in the project. Also assess the possibility of reproduction of the technologies used, taking account of their demonstration effect, and evaluating the origin of the equipment, the existence of royalties and technology licenses and the need for international technical assistance; and (e) Contribution to regional integration and linkages with other sectors: The contribution to regional development can be measured in terms of the integration of the project with other socio-economic activities in the region where it is implanted.

Id. at 44.

80. *See* ICGCC Resolution, *supra* note 78. Under Brazilian law, the proponents of activities which may pollute must obtain an environmental license from the relevant

stringent sustainable development criteria, Brazil has a large number of CDM projects.[81] This suggests that a uniform race to the bottom regarding sustainable development regulation is not occurring.

Cambodia has adopted a sustainable development matrix of twenty-three social, environmental, and economic indicators.[82] Project developers are able to self-assess by rating the sustainable development benefits of their projects against the matrix.[83] Due to Cambodia's self-assessment model, its sustainable development requirements are arguably less stringent compared to those of Brazil. Nonetheless, Cambodia has a relatively small number of projects as compared to China and Brazil. If there were a race to the bottom, more projects would be expected in Cambodia.[84] Likewise, Chile has less stringent sustainable development criteria and fewer projects than Brazil.[85] Although Cambodia and Chile aim to attract CDM investment,[86] their relatively less stringent CDM sustainable development criteria have not led to investment of the magnitude seen in Brazil, which, from a CDM investor's perspective, has a more stringent and cumbersome process for project approval.

The case study of India, however, supports the race to the bottom theory.[87] The DNA in India is the National CDM Authority ("NCA"), which requires proponents to consider the following:

(1) Social well-being: The CDM project activity should lead to alleviation of poverty by generating additional employment, removal of

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municipal, state, or federal agency, depending on the scale and impact of the project. *Id.*

81. *See* UNFCCC, Project Activities, http://cdm.unfccc.int/Projects/index.html (follow "Project Search - Registered" hyperlink and follow "Project Search – Undergoing completeness check" hyperlink) (last visited Feb. 6, 2009).

82. *See* CAMBODIAN CLIMATE CHANGE OFF., CAMBODIAN DESIGNATED NAT'L AUTH, CLEAN DEV. MECHANISM ASSESSMENT PROC. 6–9, http://www.camclimate.org.kh/2ccco/4-CDM_Assessment_Procedures.pdf (last visited Feb. 7, 2009).

83. *Id.*

84. *See* UNFCCC, Project Activities, http://cdm.unfccc.int/Projects/index.html. According to the UNEP Risoe project pipeline, there were three CDM projects at validation stage or later in Cambodia. *See id.*; UNFCCC, Designated National Authorities – Cambodia, http://cdm.unfccc.int/DNA/view.html?CID=37 (last visited Mar. 3, 2009).

85. Under Chilean law, the DNA considers the project's compliance with the criteria of Acceptance of the Parties and Additionality. *See* UNFCCC, Designated National Authorities – Chile, http://cdm.unfccc.int/DNA/view.html?CID=45 (last visited Mar. 3, 2009).

86. *See* CAMBODIAN CLIMATE CHANGE OFF., *supra* note 82, at 1.

87. For a discussion of the development of CDM projects in India, see Joseph B. Gonsalves, U.N. CONF. ON TRADE AND DEV., AN ASSESSMENT OF PROJECTS ON THE CLEAN DEVELOPMENT MECHANISM (CDM) IN INDIA, http://www.unctad.org/en/docs/ditcted20065_en.pdf (last visited Feb. 6, 2009).

social disparities and contribution to provision of basic amenities to people leading to improvement in quality of life of people;

(2) Economic well-being: The CDM project activity should bring in additional investment consistent with the needs of the people;

(3) Environmental well-being: This should include a discussion of impact of the project activity on resource sustainability and degradation, if any, due to proposed activity; bio-diversity friendliness; impact on human health; reduction of levels of pollution in general;

(4) Technological well-being: The CDM project activity should lead to transfer of environmentally safe and sound technologies that are comparable to best practices in order to assist in upgradation of the technological base. The transfer of technology can be within the country as well as from other developing countries.[88]

Reportedly, potential investors have called into question some Indian projects. They have argued that the NCA has approved projects which clearly did not contribute to sustainable development.[89] Smita Sirohi, Professor of Economics at Jawaharlal Nehru University, notes that in India the "CDM is not contributing to rural poverty alleviation to any notable extent."[90] Proposals that address such issues are discussed in further detail below. Given the ambition implicit in the criteria established by the NCA, it is hardly surprising that potential investors have claimed that the NCA has not considered all criteria.

In a comparative case study of CDM project numbers in Morocco and South Africa, Nhamo, a CDM researcher in Africa, notes that there are more potential CDM projects in Morocco, which has a less stringent sustainable development standard.[91] However, because these jurisdictions have a relatively small number of projects and are in the early stages of CDM development (few projects have been registered), it is too early to apply a causation analysis regarding the sustainable

88. CDM India, Host Country Approval, http://cdmindia.nic.in/host_approval_criteria.htm (last visited Feb. 3, 2009).

89. Point Carbon, *Doubts Raised over Some Indian CDM Projects*, Jan. 10, 2006, *available at* http://www.pointcarbon.com/news/1.17742.

90. Smita Sirohi, *CDM: Is It a 'Win-Win' Strategy for Rural Poverty Alleviation in India?*, 84 CLIMATIC CHANGE 91 (2007).

91. G. Nhamo, *CDM Project Approval and Evaluation Criteria: Comparative Study of Morocco and South Africa*, 101 ECOLOGY AND ENVIRONMENT (2007). According to Nhamo, South Africa had 20 projects currently in the CDM pipeline, whereas Morocco had 60 projects.

development criteria in Morocco.[92] Indeed, South Africa currently has considerably more registered projects than Morocco.[93]

This brief survey of the sustainable development regulations suggests that countries use a variety of approaches to assess sustainable development and that there is no clear correlation between such criteria and the number of projects approved within the jurisdiction. The evidence supporting the race to the bottom theory is insufficient. If the theory were accurate, project development would consistently follow less stringent sustainable development criteria. Sutter and others raise an empirical question. By comparing project development by location with existing sustainable development criteria, we see examples of more stringent sustainable development regimes—such as India, Brazil, and to a lesser extent China—attracting projects. This conclusion refutes evidence of a race to the bottom argument for project approvals generally and suggests that differential levels of approval are caused by other factors. As discussed below, these factors may include GDP and emissions growth, opportunities for projects combined with DNA capacity, and business climate.

Further, claims such as that by CDM commentator Lambert Schneider that "a clear prioritisation [sic] of project types which would have larger benefits for sustainable development cannot be observed" are not entirely supported by the trends seen in China, which is the country with the most CDM projects.[94] China clearly prioritizes CDM projects by project type.[95] HFC and N_2O projects are subject to higher tax regimes, while other projects, with perceived benefits for sustainable development, are given preferential treatment under the new PRC Renewable Energy Law.[96]

F. Sustainable Development is Increasingly Reflected in Pricing

Several commentators agree that, "left to market forces, the CDM does not significantly contribute to sustainable development"[97] and that "only the carbon benefits are valued on the carbon market."[98] This

92. *See* UNFCCC, Project Activities, http://cdm.unfccc.int/Projects/index.html (follow "Project Search - Registered" hyperlink) (last visited Feb. 9, 2009).

93. *See id.*

94. SCHNEIDER, *supra* note 5, at 46.

95. CDM Measures, *supra* note 69.

96. *Id.*

97. Olsen, *supra* note 5, at 59.

98. *Id.* at 7.

position, if true, is weakened by developments in the CDM market and other markets not directly related to carbon, which are discussed in detail below.

G. The Coldplay Effect

When the rock band Coldplay released its second album, *A Rush of Blood to the Head*, it announced that it would offset the album-generated carbon emissions by planting 10,000 mango trees in Karnataka, South India.[99] A report in the *Sunday Telegraph* stated that, of the 10,000 trees that were supposedly distributed to small farmers in this very dry Indian state, only a few hundred were still alive.[100] The rest perished due to a lack of water and inadequate financial support and infrastructure from the Carbon Neutral Company and its partners.[101] The publicity related to the failure of the mango trees and the consequent financial damage raised awareness about dangers inherent in carbon credit projects.[102] This growing private sector awareness of the importance of environmental integrity in carbon market projects is referred to in this article as the "Coldplay Effect." Not only has the Coldplay Effect increased awareness, it has arguably also improved private entity sponsored regulation of carbon offsets.[103] There have been two particularly significant developments: (1) the establishment of so-called premium offsets—the CDM Gold Standard; and (2) the development of fragmentation in carbon credit pricing by project type.

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99. Amrit Dhillon & Toby Harnden, *How Coldplay's Green Hopes Died in the Arid Soil of India*, SUNDAY TELEGRAPH, Apr. 29, 2006, *available at* http://www.telegraph.co.uk/news/worldnews/asia/india/1517031/How-Coldplay's-green-hopes-died-in-the-arid-soil-of-India.html.

100. *Id.*

101. *Id.*

102. *See, e.g.*, the UK Parliament, Select Committee on Environmental Audit Sixth Report, *available at* http://www.publications.parliament.uk/pa/cm200607/cmselect/cmenvaud/331/33102.htm. The Report noted that: "[o]ne of the problems most commonly cited is project failure. A number of submissions highlighted the case of the mango plantation offset project sponsored by the music band Coldplay and their fans to offset the emissions from their concerts. Here 40% of the plantation died as there was not enough water made available to support the project. Some of this can be attributed to lack of expertise on the part of the project developer." *Id.* (follow "The Current State of the Voluntary Market: A Summary" hyperlink).

103. *See* James Murray, businessGreen blog, *Report Slams Offset Schemes*, (Mar. 1, 2007), http://blog.businessgreen.com/2007/03/report-slams-of.html (last visited Feb. 6, 2009).

H. The CDM Gold Standard

The most prominent premium offset in the carbon market is the CDM Gold Standard. The WWF, the global conservation organization, initiated this offset in conjunction and consultation with a wide range of environmental, business, and governmental organizations.[104]

The Gold Standard emerged as a code of best practice for many issues in the CDM Project Design Document ("PDD")[105] and was intended to deliver real contributions to sustainable development in host countries as well as additional long-term benefits to the climate.[106] Briefly, the Gold Standard aims to set the minimum level of contribution to sustainable development in projects worldwide.[107] In other words, it was developed to reduce reputational risks like the Coldplay Effect. It is argued that buyers are willing to pay more for risk-free credits, which increases their value.[108] Price signals are more economically efficient as available CDM development capital is channeled to the most environmentally beneficial projects. However, only twelve CDM projects are currently seeking Gold Standard accreditation, none of which is at the "Issuance" stage yet (i.e. eligible to generate and transfer such credits to CER buyers).[109] Based on this relatively small sample of

104. The Gold Standard, History, http://www.cdmgoldstandard.org/about_goldstandard.php?id=11 (last visited Feb. 3, 2009).

105. The PDD is the document submitted by the project participants to the CDM EB which details the project specifics based upon the project methodology.

106. THE GOLD STANDARD, THE GOLD STANDARD: MANUAL FOR CDM PROJECT DEVELOPERS, (3d version 2006), http://www.cdmgoldstandard.org/uploads/file/DeveloperManual_GS-CER.pdf (last visited Feb. 6, 2009).

107. *Id.*

108. *See* Gold Standard, Project Developers, http://cdmgoldstandard.org/benefits.php?id=6 (last visited Feb. 4, 2009).

109. Gold Standard, Search the Database, http://cdmgoldstandard.org/dataproject.php?action=query (follow "CDM" hyperlink under "Project Stream;" then follow "Search the database" hyperlink) (listing sixteen projects seeking Gold Standard approval as follows: (1) EECOPALSA biogas capture & utilization; (2) Fujian Zhangpu Liuao 45MW Wind Power Project; (3) Kuyasa low cost housing energy upgrade project; (4) Solar steam for cooking and other applications; (5) Cattle Waste Management, Landhi Cattle Colony, Karachi, Pakistan; (6) Chumporn applied biogas technology for advanced waste water; (7) GHG emissions reductions from improved industrial wastewater treatment in Embare – Lagoa de Prata, Minas Gerais, Brazil; (8) Makati South Sewage Treatment Plant Upgrade with On-Site Power; (9) Montalban Landfill Methane Recovery and Power Generation Project; (10) Ningxia Yinyi 49.5 MW Wind-farm project; (11) Shri Chamundi 16 MW low-density biomass residue cogeneration plant; (12) Sri Balaji 6 MW Non-Conventional Renewable Sources Biomass Power Project; (13) Sri Panchajanya Power Pvt. Ltd.; (14) TTY Cambodia Biogas Project; (15) Univanich Lamthap POME Biogas Project; and (16) waste to fuel.) (last visited Feb. 4, 2009).

CDM Gold Standard projects, the extent to which the CDM market is actively seeking premium CERs is uncertain.

The CDM Gold Standard is a bottom-up approach to sustainable development that requires a project to comply with existing CDM requirements—which are largely the requirements established by the host country—and with additional screening based on project eligibility, additionality [sic], and private sector sustainable development criteria.

I. Pricing in Project Type

The development of premium standards has also affected the CDM market where governments, NGOs, and companies, with an understanding of the importance of goodwill surrounding offsets, have voluntarily adopted internal standards for crediting projects, including provisions regarding sustainable development.[110] The most pertinent example—based on exposure in the market—is contained in the International Finance Corporation's 2006 Performance Standards ("IFC Performance Standards") generated by the International Finance Corporation—the private-sector arm of the World Bank Group.[111] The Dutch government provides another example: it aims to buy CERs representing approximately 80 million tons of carbon dioxide to meet its Kyoto target, and it acknowledges that sustainable development is a cornerstone of the CDM.[112] As such, it is prepared to pay more for high quality CERs.[113] Private entities have begun to value premium offsets that set a benchmark for sustainable development and ascribe a value to credits, which, it is claimed, are more authentic than credits potentially subject to the Coldplay Effect.[114]

Furthermore, there is evidence that certain CER buyers have devalued categories of credits based on their perceived sustainable development benefits.[115] Private buyers in the CDM market have devalued, or have proposed devaluing, credits of HFC-23 and palm oil projects based on the sustainable development impacts associated with

110. *See, e.g*, INTERNATIONAL FINANCE CORPORATION, POLICY ON SOCIAL & ENVIRONMENTAL SUSTAINABILITY, (2006), http://www.ifc.org/ifcext/sustainability.nsf/AttachmentsByTitle/pol_SocEnvSustainability2006/$FILE/SustainabilityPolicy.pdf (last visited Feb. 6, 2009).

111. *Id.*

112. Environmental Finance, *Watchful Eyes on Emissions Projects*, http://www.environmental-finance.com/2002/0206jun/projects.htm (last visited Mar. 24, 2009).

113. *Id.*

114. *Id.*

115. *See id.*

them.[116] With respect to palm oil projects in Indonesia, Lucy Mortimer, the global manager of the CDM and JI business at TFS Brokers in London, has noted that "[a] lot of companies in the European market are actively turning away from these projects. They see the reputational risk."[117]

In February 2007, London-based brokers saw utilities in the EU Emission Trading Scheme ("EU ETS") bid for CERs on the condition that such credits were not generated from the destruction of HFC-23, which is a refrigerant manufactured for use in air-conditioning systems.[118] These projects are often referred to as "low-hanging fruit" due to their low-capital outlay and high yield on CERs. HFC-23 projects have been criticized for lacking environmental and moral credentials and for being a loophole in the Kyoto Protocol, costing as much as $6 billion (€4.5 billion).[119] According to *Point Carbon*, "CERs from non-HFC-23 projects. . . fetched a premium of around €0.20-0.30 compared to CERs from HFC-23 projects."[120]

The pricing reactions of the carbon market are significant because they indicate that improved sustainable development criteria would not necessarily correct environmental distortions; HFC-23 projects were eligible and DNAs in all participating jurisdictions approved them, or were likely to.[121] Moreover, the carbon market's response to doubts raised about the environmental integrity of CERs on the basis of project type, illustrates a degree of responsiveness from the market to sustainable development criteria in the absence of top-down regulation.[122]

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116. *Id.*

117. Caitlin Randall, *Carbon Market Takes Sides in Palm Oil Battle*, CARBON FINANCE, Nov. 20, 2007, http://www.carbon-financeonline.com/index.cfm?section=features&action=view&id=10894 (last visited Feb. 3, 2009).

118. POINT CARBON, *Non-HFC 23 Carbon Credits Trade at Premium in Two-Tier Market*, Feb. 28, 2007, http://www.pointcarbon.com/article20802-906.html?articleID=20802&categoryID=906 (last visited Feb. 3, 2009).

119. *Id.*

120. *Id.*

121. For example, the International Emissions Trading Association ("IETA") claims that the intention of the CDM is to facilitate the most cost-effective measure of reducing emissions and that this is exactly what HFC-23 projects do. IETA also claims that HFC-23 projects are as robust as any other project due to the exhaustive procedure the projects go through.

122. *See* POINT CARBON, *supra* note 118.

J. Non-Carbon Related Voluntary Standards for Sustainable Development

The developments with respect to pricing and valuation of sustainable development benefits in the carbon market reflect a wider movement of private parties addressing environmental accountability in commercial activities.[123] As already mentioned, the IFC Performance Standards have been influential in setting requirements for the private sector. They condition the receipt and retention of IFC funding on the private sector's discharge of its responsibilities in managing projects and complying with environmental requirements.[124] They include an overall obligation of environmental accountability and management of systems, as well as direct environmental standards including pollution prevention, biodiversity conservation, and management of natural resources and cultural heritage.[125] Elisa Morgera argues that the IFC Performance Standards "reinforce the growing expectation in the international community that private companies should contribute to biodiversity conservation and sustainable development, and behave in a preventive and participatory manner in their use of natural resources."[126] The IFC has adopted standards to review proposed private-sector projects, which determine the environmental conditions for their financing and can be influential in ensuring sustainable practices by private companies.[127]

The measures adopted by the IFC are similar to the "Equator Principles," which were adopted by the world's largest banking institutions on June 4, 2003.[128] The Equator Principles are a code of conduct addressing environmental and social issues related to banks'

123. For an example of environmental policy made by private parties, see INTERNATIONAL FINANCE CORPORATION, *supra* note 110.

124. *Id.*

125. *Id.*

126. Elisa Morgera, *Significant Trends in Corporate Environmental Accountability: The New Performance Standards of the International Finance Corporation*, 18 COLO J. INT'L ENVTL. L. & POL'Y 151, 188 (2007). *See also* Ian Bowles, et al., *The Environmental Impacts of International Finance Corporation Lending and Proposals for Reform: A Case Study of Conservation and Oil Development in the Guatemalan Peten*, 29 ENVTL. L. 103 (1999).

127. *See* Morgera, *supra* note 126, at 152.

128. For the "Equator Principles," see Equator Principles, The "Equator Principles," http://www.equator-principles.com/documents/Equator_Principles.pdf (last visited Feb. 6, 2009). The banks bound by the Equator Principles include Citigroup and HSBC. For a discussion of the Equator Principles, see Julia Philpott, *Keeping it Private, Going Public: Assessing, Monitoring, and Disclosing the Global Warming Performance of Project Finance*, 5 SUSTAINABLE DEV. L. & POL'Y 45 (2005); Kathy Iverson, *Transforming the Role of Finance*, 62 IVEY BUS. Q. 3 (1998).

financial activities.[129] Participating investment banks may only finance infrastructure projects in emerging market and transition economies where developers can demonstrate compliance with local environmental and social procedures.[130] However, Julia Philpott argues that in the context of the UNFCCC, the Equator Principles and the private sector have effectively been "frozen out."[131] Philpott states that the Intergovernmental Panel on Climate Change's "near exclusive focus on the activities of states, however, precludes it from giving sufficient attention to the power of private sector financiers and institutions to shape environmental outcomes."[132]

The private sector's involvement in standard setting for sustainable development and in defining environmental purposes is not confined to the financial sector. Michael Vandenbergh notes the growth of private contracting in global governance as well as the impact of the "Wal-Mart Effect."[133] Vandenbergh discusses examples of private environmental standards, including: the International Organization for Standardization 14001 environmental management standard, the Forest Stewardship Council, the Sustainable Forestry Initiative, the Pan–European Forest Certification Council forestry standards, and the Marine Stewardship Council fisheries standards.[134] Vandenbergh also notes the ability of private firms to impose supply chain constraints based on customer and investor preferences, or based on the need to assure investors that raw materials will be available long-term.[135] These actions operate as a form of environmental governance that extends from the public in one country through an importing firm, to an exporting firm in another country.[136] This governance through private environmental contracting standards is referred to as the Wal-Mart Effect:[137] corporate organizations are able to create market leverage that may increase levels of regulatory compliance and reduce regulatory costs.[138]

It is suggested that the use of private standard setting in the context of sustainable development is an afterthought under the UNFCCC. However, such private standards are consistent with the deferential

129. *See* Equator Principles, *supra* note 128.

130. *Id.*

131. Philpott, *supra* note 128, at 47.

132. *Id.*

133. Michael Vandenbergh, *The New Wal-Mart Effect: The Role of Private Contracting in Global Governance*, 54 UCLA L. REV. 913 (2007).

134. *Id.* at 915-16.

135. *Id.* at 917.

136. *Id.*

137. *Id.* at 918.

138. *Id.* at 939.

approach, which characterizes sustainable development criteria under the Kyoto Protocol, and may supplement environmental standards in host countries for CDM projects.

K. Potential Problems with Market Based Solutions for Sustainability

The existence of non-standardized developments in CER markets through private sector standards, however, creates a problem of liquidity in trading.[139] If different markets emerge for distinct classifications of CERs, the efficiency and fungibility in the market may be adversely affected.[140] A small drop in volume can have a significant impact on pricing.[141] Moreover, what prevents investors from gaming the market by trading unsustainable CERs?[142] Yet similar issues have arisen in the oil and gas context without fundamentally harming the liquidity of these markets.[143] These commodities trade in several different grades without harming liquidity.[144] Oil refinery configurations, product demand mix, and product quality specifications—all of which relate to quality—can change the relative value of the raw product.[145] This variation in grade signals an evolving and developing market.[146] Unlike oil or gas, carbon has the advantage that it may be traded as a commodity with few transportation costs, which should theoretically assist liquidity. Importantly, CERs also have numerical code identifiers, which may be used to tie a particular credit to a project. As such, when purchasing credits through the tracking of numerical signifiers, *caveat emptor* due diligence could obviate many concerns surrounding purchasing unsustainable credits in the market.[147]

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139. *See* Bruce P. Chadwick, *Transaction Costs and the Clean Development Mechanism*, 30 NAT. RESOURCES FORUM 256, 262-65 (2006).

140. *Id.*

141. *Id.*

142. Randall, *supra* note 117. According to Koen Dejonghe, a carbon business developer with Statkraft Markets in the Netherlands, "[t]here's no doubt that palm oil planting is having severe environmental consequences but, as long as the CDM methodology committee approves projects linked to palm, there will be buyers." *Id.*

143. *See* Energy INFO. ADMIN., U.S. DEP'T. OF ENERGY, DERIVATIVES AND RISK MANAGEMENT IN THE PETROLEUM, NATURAL GAS, AND ELECTRICITY INDUSTRIES (2002) http://www.eia.doe.gov/oiaf/servicerpt/derivative/index.html (last visited Feb. 6, 2009).

144. *See id.* at 15-17.

145. *See id.*

146. *See id.*

147. Note, however, the problems associated with palm oil projects. It can be difficult to determine if a project is linked to palm oil production, but UNEP Risø

The CDM may, however, be subject to a more fundamental criticism that is pragmatic in nature: namely, whether the CDM market is capable of supporting fragmentation in its current stage of development. In other words, a fragmented market would reduce overall liquidity and deter the involvement of investors. While the CDM Gold Standard provides a premium benchmark, few investors have indicated a strong demand for such credits, suggesting that the market still seeks to capitalize upon the arbitrage associated with unsustainable CERs.[148] This position will likely change as investors begin to value the environmental integrity attached to the creation of premium credits and goodwill in the marketplace generated by association with such credits—as is clearly the case with the Wal-Mart Effect.[149]

L. The Real Problem: Institutional Capacity?

It has been argued that top-down prescriptive regulations, which create uniform sustainable development standards, are inconsistent with the UNFCCC framework and that there is no evidence suggesting that empowering non-Annex I Parties to determine sustainable development criteria has caused a race to the bottom in project development in those jurisdictions. However, it is also apparent that certain jurisdictions, such as India, have continued to attract CDM projects despite, or perhaps because of, such regulations; therefore, sustainable development benefits are not accruing from these projects.[150] Is a top-down solution appropriate or desirable? Advocates of improved sustainable development frameworks should focus on capacity development.

First, DNAs must provide clear guidelines specifying sustainable development criteria for project proponents in non-Annex I countries.

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estimates that roughly 50% of CERs from Malaysia and Indonesia collectively are generated by palm oil-linked projects. While most of these CERs are from Malaysia, where 90% of CDM projects are palm oil-related, the real concern is the number of new Indonesian projects in the pipeline. *See* UNFCCC, Project Activities, http://cdm.unfccc.int/Projects/index.html (last visited Mar. 24, 2009).

148. For an illustration of this trend, see Randall, *supra* note 117, which states:

> [S]ome carbon market players argue their willingness to accept palm-linked CERs can hardly be considered environmentally reckless. "Most [palm oil-related] CDM projects are not linked to the expansion of palm plantations," says Soeren Varming, managing director of Malaysia-based project developer SV Carbon. "The worries are unfounded and are even counter to more sustainable palm oil development. The CDM is not promoting the destruction of biodiversity."

149. *See* Vandenbergh, *supra* note 133, at 918.

150. *See* Sirohi, *supra* note 90.

Brown and Adger argue that the existing sustainable development criteria are not clearly defined by DNAs.[151] For example, a self-assessment similar to the one in Cambodia, which has twenty-three sustainable development indicators for project approval, will inevitably create conflicting policy outcomes, as discussed above. Is it possible for investors using scarce market capital to undertake the cumbersome process associated with such a vague cost-benefit analysis? Cambodia, like India, has vague sustainable development guidelines.[152] It is essential that DNAs clearly identify development priorities to provide certainty for CDM project investors and to ensure desirable development outcomes for the host country. Rather than bundling these requirements under the banner of sustainable development, investors should be required to comply with all existing environmental, social, and economic laws, which affect such project development. This approach would improve legitimacy in sustainable development decision making.

Second, capacity development must be improved for all non-Annex I Parties (particularly those in Africa) in order to provide the basis for robust enforcement of sustainable development guidelines. Patricia Nelson notes that "[c]orporations tend to perceive lower investment risk if the host country is a 'known quantity' due to ongoing investment relationships."[153] African countries, unlike China and India, are chronically underdeveloped and without increased capacity development—both in terms of investment and administrative infrastructure—and therefore are unable to benefit from the CDM.[154]

Thus, is it really the function of the UNFCCC to determine what sustainable development should be? Moreover, if the current structure of the Kyoto Protocol provides discretion for host countries to determine the sustainable development criteria for each project—which in effect means the default position is the national law of the host country—is there a need to include sustainable development in the Kyoto Protocol? If sustainable development is effectively a box-ticking exercise, removing it from the UNFCCC would eliminate doubt surrounding the concept.

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151. *See* BROWN, *supra* note 49.

152. For Cambodia's guidelines, see CAMBODIAN CLIMATE CHANGE OFF., *supra* note 82. For India's guidelines, see CDM India Designated National Authority, *Host Country Approval*, http://cdmindia.nic.in/host_approval_process.htm (last visited Feb. 6, 2009).

153. Patricia Nelson, *An African Dimension to the Clean Development Mechanism: Finding a Path to Sustainable Development in the Energy Sector*, 32 DENV. J. INT'L L. & POL'Y 615, 634 (2004).

154. *Id.* at 615-16.

IV. CONCLUSION

The debate surrounding the effectiveness of achieving sustainable development is obscured by the concept itself. There is no meaningful distinction under international environmental law or the terms of the Kyoto Protocol between sustainable and non-sustainable development. Fundamentally, the standard and meaning of the term vary depending on the context in which it is used; it is currently a contested concept in international environmental law. In the context of the CDM, is sustainable development being achieved, and for whom is it being achieved? The problem does not lie with the UNFCCC or the Kyoto Protocol and will not be solved by creating more regulations.

There is no evidence to suggest that more transnational regulation would improve the sustainable development credentials of CDM projects. Private actors are undertaking a regulatory function in the global environmental arena to implement their own standards of sustainable development where there is a perceived risk or opportunity attached to existing standards. A primary example is the recent development of the CDM Gold Standard. Improvement in the institutional capacity of Host Parties would be a more effective means of addressing sustainable development, as the necessary balancing of interests for CDM projects must be performed at a local level. Robust enforcement of existing domestic regulations based upon increased capacity development and evolving private sector standards, which address the sustainable development criteria of such projects, should be encouraged.

The World Heritage Convention, the Environment, and Compliance

Dr. Edward J. Goodwin*

ABSTRACT

This Article highlights a particular strength of the World Heritage Convention within the international environmental law project that enhances conservation of natural areas, flora, and fauna. This strength relates to the World Heritage Convention's ability to pull states towards meaningful compliance with obligations connected to protecting, conserving, presenting, and transferring to future generations the world's natural (and cultural) heritage.

After a general introduction to the World Heritage Convention, Parts III and IV explain how compliance pull is created through institutional arrangements. Those institutional arrangements focus upon devolving ultimate power over implementation from the contracting parties acting collectively to a smaller executive authority—the World Heritage Committee. Significantly, this committee ultimately has the capacity to withhold substantial benefits to contracting parties in the event of non-cooperation or breach of obligations, and to take other measures that impact the contracting parties' self-interest. Thus, even though the dominant and preferred strategy adopted by the committee is rightly one of non-confrontation, cooperation, and support, this sanctioning option remains significant. Ultimately, while it is not denied that compliance can be influenced by extra-convention factors, it is asserted that the system created under the treaty introduces significant factors into a state's logic of consequences, exerting a pull towards action in compliance with obligations.

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This results in an atypical, multi-lateral environmental agreement under which decisions as to the normative content, access to benefits, meaning and existence of compliance, and threat or imposition of sanctions are beyond the control of an individual state. The atypical nature of the situation is demonstrated in Part V by a comparative analysis with other multi-lateral environmental agreements. The main focus of that comparative analysis is upon those treaties whose non-compliance procedures have received the majority share of academic attention. As will be demonstrated, there is little justification for the current practice of omitting reference to the World Heritage Convention in that compliance discourse.

With extensive power over the normative content of the Convention, and the means to enforce its own interpretation of that normative content, the legitimacy of the World Heritage Committee and its activities is vital. This Article therefore finishes in Part VI by drawing attention to problems of indeterminacy and the composition of the Committee. These are areas requiring action in order to shore-up the legitimacy of the executive body, and thereby ensure continued compliance pull.

I. INTRODUCTION

On December 17, 1975, the World Heritage Convention ("WHC") entered into force.[1] The text, which had been adopted just over three years previously at the General Assembly of the United Nations Educational, Scientific and Cultural Organization ("UNESCO"), was the result of two international initiatives supported by UNESCO and the International Union for the Conservation of Nature ("IUCN").[2]

In 1960, the construction of the Aswan High Dam threatened a number of important Egyptian monuments including the temple of Ramses II at Abu Simbel.[3] International campaigns organized by UNESCO and others raised enough money to support the now famous relocation and conservation plans which the Egyptian government completed for the Abu Simbel monuments.[4] In light of this and other campaigns to save cultural properties, UNESCO recognized that the

1. *See* UNESCO World Heritage Centre, State Parties: Ratification Status, http://whc.unesco.org/en/statesparties/, note 1 (last visited Mar. 24, 2009). *See also* Convention Concerning the Protection of the World Cultural and Natural Heritage, November 16, 1972, 11 I.L.M. 1358 [hereinafter WHC].

2. Francesco Francioni, *The Preamble*, in THE 1972 WORLD HERITAGE CONVENTION A COMMENTARY 11, 13-15 (Francesco Francioni ed., 2008).

3. *Id.* at 12-13; SIMON LYSTER, INTERNATIONAL WILDLIFE LAW 208 (1985).

4. LYSTER, *supra* note 3, at 208.

future mobilization of international aid for cultural and historic preservation would benefit from a formalized, rather than ad hoc, procedure.[5]

Concurrently, the IUCN was developing the idea that there existed throughout the world natural and cultural areas of such value that they should be held in trust for all humankind.[6] These sites were identified as a part of the heritage of every human, not just the nationals of the endowed states.[7] While work had begun within UNESCO to formulate a convention on cultural heritage, parallel advocacy by IUCN for a natural heritage agreement began to have an impact.[8] Ultimately, this resulted in a compromise text with a dual focus on cultural and natural heritage: what would become the WHC.[9] It also led to a close working relationship between UNESCO and IUCN that continues today.[10]

The inclusion of natural heritage has significantly enhanced the portfolio of international environmental laws. In conjunction with the 1971 Convention on Wetlands of International Importance, Especially as Waterfowl Habitat ("Ramsar," after the Iranian town where the treaty was signed),[11] the 1973 Convention on International Trade in Endangered Species ("CITES"),[12] the 1979 Convention on the Conservation of Migratory Species of Wild Animals,[13] and the 1992

5. *Id.* at 209.

6. The development of this idea is attributed to Russell Train, although Train also gives credit to Dr. Joseph Fisher with whom Train was working in the mid-1960's. Speech of Russell Train, Chairman of the World Wildlife Fund, Remarks Before the International World Heritage Committee Meeting (Dec. 7, 1992), *available at* http://whc.unesco.org/archive/repcom92.htm#inf1 [hereinafter Speech of R. Train]; *See also* D. J. Haigh, *World Heritage – Principle and Practice: A Case for Change* 17(3) ENVTL & PLAN. L. J. 199, 199 (2000).

7. H. K. Eidsvik, *The World Heritage Convention, Yesterday – Today – and Tomorrow: An Overview* in CRITICAL ISSUES FOR PROTECTED AREAS PART 1: WORLD HERITAGE SESSION 15 (Workshop Papers from the 18th General Assembly of IUCN, 1991).

8. Speech of R. Train, *supra* note 6.

9. Francioni, *supra* note 2, at 14-15; WHC, *supra* note 1, at Preamble.

10. *See, e.g.*, Sarah M. Titchen, *Challenging the Spirit: A Brief History*, 2 WORLD CONSERVATION 6, 6 (2001).

11. Convention on Wetlands of International Importance, Especially as Waterfowl Habitat, Feb. 2, 1971, 11 I.L.M 963 [hereinafter Ramsar]. *See also* The Official Website of the Ramsar Convention on Wetlands, http://www.ramsar.org/ (last visited Mar. 2, 2009).

12. Convention on International Trade in Endangered Species of Wild Fauna and Flora, March 3, 1973, 993 U.N.T.S. 243 [hereinafter CITES]. *See also* The Official Website of CITES, http://www.cites.org/ (last visited Mar. 2, 2009).

13. Convention on the Conservation of Migratory Species of Wild Animals, June 23, 1979, 19 I.L.M. 15. *See also* The Official Website of the Convention on Migratory Species, http://www.cms.int/ (last visited Mar. 2, 2009).

Convention on Biological Diversity,[14] the WHC is widely regarded as one of the centerpiece multilateral environmental agreements ("MEAs") concerned with wildlife and habitat conservation.[15]

This Article will focus on the way in which the WHC generates "compliance pull,"[16] especially via the institutional mechanisms by which the WHC draws states towards meeting their obligations. The commitments that will be the primary focus of this Article are those that concern protecting, conserving, presenting, and transferring to future generations the cultural and natural heritage within each state's territory.[17] The way compliance pull is exerted distinguishes the WHC from all other MEAs. Indeed, there is little justification for the current practice of omitting reference to the Convention in compliance discourse. The WHC deserves to be considered alongside those non-compliance procedures that have received the majority share of academic attention,[18] such as CITES; the 1998 Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters ("Aarhus Convention");[19] and the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer ("Montreal Protocol").[20] This Article will illustrate the similarities between the WHC and other MEAs, while maintaining that the WHC remains distinct in the following key respect.

The enhanced compliance pull of the WHC is achieved by devolving ultimate power over implementation from the contracting parties to a smaller executive authority. Significantly, as will be explained, this body has the capacity to withhold substantial benefits from contracting parties in the event of non-cooperation or breach of obligations. Consequently, the WHC undermines the claim that strict

14. Convention on Biological Diversity, June 5, 1992, 31 I.L.M. 818. *See also* The Official Website of the Convention on Biological Diversity, http://www.cbd.int/ (last visited Mar. 2, 2009).

15. PATRICIA BIRNIE, ALAN BOYLE & CATHERINE REDGWELL, INTERNATIONAL LAW AND THE ENVIRONMENT 672 (3d ed. 2009); LYSTER, *supra* note 3, at 179-181.

16. To adopt Thomas Franck's apt terminology describing the extent to which a rule or set of rules exert a pulling force towards compliance upon those states to which it is addressed. *See* THOMAS M. FRANCK, THE POWER OF LEGITIMACY AMONG NATIONS 25 (1990).

17. WHC, *supra* note 1, at Art. 4.

18. *See, e.g.*, references *infra* note 138.

19. Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, June 25, 1998, 38 I.L.M. 517 [hereinafter the Aarhus Convention]. *See also* The Official Website of the Aarhus Convention, http://www.unece.org/env/pp/ (last visited Mar. 22, 2009).

20. Montreal Protocol on Substances that Deplete the Ozone Layer, Sept. 16, 1987, 26 I.L.M. 1550 [hereinafter Montreal Protocol]. *See also* The Official Website of the Montreal Protocol, http://ozone.unep.org/ (last visited Mar. 22, 2009).

enforcement and deterrence are not possible in an international legal system lacking a hierarchically superior enforcement body.[21]

Employing such an authoritative body to enforce compliance is not without drawbacks. Natasha Affolder notes occasions where the WHC's system has led to "[the] inaccurate but potent image of the U.N.'s 'black helicopters' flying over and policing" the land of states thought to be acting contrary to obligations.[22] Therefore, this Article will also explore some of the current problems with the WHC system that may undermine the legitimacy of its executive body and thus its compliance pull.

II. AN OVERVIEW OF THE PERTINENT ELEMENTS OF THE WHC

While the phrase "World Heritage Site" might be familiar to students, scholars, and the general public, it seems less likely that this familiarity will extend to the mechanisms which confer this status, or to the obligations relating to such designated areas. Consequently, and as a preliminary to themes to be developed, an account of some key elements of the WHC is required.

A. The WHC's Jurisdiction

The WHC regulates both cultural and natural heritage.[23] Given the environmental focus of this discussion, Article 2 is pertinent since it defines natural heritage as:

> (a) Natural features consisting of physical and biological formations of outstanding universal value scientifically or aesthetically;
>
> (b) The habitat (which may be geophysical or physiographical) of threatened species of plants and animals which are of outstanding universal value in terms of science and conservation; and

21. A view noted in D. G. Victor *et al*, *Systems for Implementation Review* in THE IMPLEMENTATION AND EFFECTIVENESS OF INTERNATIONAL ENVIRONMENTAL LAW: THEORY AND PRACTICE 47, 51 (David G. Victor *et al.* eds., 1998). For further support on the executive role of the World Heritage Committee see Diana Zacharias, *The UNESCO Regime for the Protection of World Heritage as Prototype of an Autonomy-Gaining International Institution*, 9 GERMAN L. J. 1833, 1840-47 (2008).

22. Natasha Affolder, *Mining and the World Heritage Convention: Democratic Legitimacy and Treaty Compliance*, 24 PACE ENVTL. L. REV. 35, 42 (2007).

23. WHC, *supra* note 1, at Arts. 1, 2.

> (c) Natural sites or areas of outstanding universal value from the point of view of science, conservation or natural beauty.[24]

The authority for identifying and delineating those sites which meet this definition is left to the contracting parties and is limited to areas situated within each state's territory.[25]

Helpfully, the *Operational Guidelines for the Implementation of the World Heritage Convention* ("Guidelines") provide extra guidance for interpreting definitions and key terms.[26] For example, the Guidelines define the phrase "outstanding universal value" as "natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity."[27]

This authoritative interpretation of Article 2 is broad enough to include a wide range of landscape and habitat types, but it also sets a high standard that generates one of the most significant, albeit intentional, limitations of the WHC. Limiting the sites to be protected to the "best of the best" by the outstanding universal value test excludes most areas.[28] The Guidelines confirm that "[t]he Convention is not intended to ensure the protection of all properties of great interest, importance or value, but only for a select list of the most outstanding of these from an international viewpoint."[29]

The narrow scope of the WHC distinguishes it from other MEAs, such as Ramsar or the Convention on Biological Diversity. However, as will be explained, the WHC's exclusivity goes a long way towards

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24. *Id*. at Art. 2.

25. *Id*. at Art. 3.

26. UN Educ. Scientific & Cultural Org. (UNESCO), OPERATIONAL GUIDELINES FOR THE IMPLEMENTATION OF THE WORLD HERITAGE CONVENTION, WHC 05/2 (Feb. 2, 2005) *available at* http://whc.unesco.org/archive/opguide05-en.pdf [hereinafter Guidelines]. The Guidelines are mainly intended to inform contracting parties about the principles which guide the way the World Heritage Committee and world heritage lists work (both of which are described in detail later). They were created, and have been continually updated, as part of the World Heritage Committee's program of work. They are not legally binding, although their practical importance for implementation, as explained in this Article, should not be underestimated. *See also* Catherine Redgwell, *Article 2 Definition of Natural Heritage* in THE 1972 WORLD HERITAGE CONVENTION: A COMMENTARY 63, 66-67 (Francesco Francioni ed., 2008).

27. Guidelines, *supra* note 26, ¶ 49.

28. *See e.g*. the decision of the World Heritage Committee in relation to the nominated site of Kopacki rit, Croatia which was felt to be of only European scale importance; Report of the 24th Ordinary Session of the World Heritage Committee, 38 WHC-2000/CONF.204/21 (Feb. 2001).

29. Guidelines, *supra* note 26, ¶ 52.

establishing a global brand that can generate benefits for states and parts of the environment.

B. The Obligations Imposed

Identifying a particular area as falling within the definition of "natural heritage" has two consequences. First, the state endowed with the site, and the other contracting parties to the WHC, assume certain obligations with respect to that area.[30] Second, the area can be nominated for recognition as a World Heritage Site. These effects will be discussed in turn.

Under Article 4, a state must protect, conserve, present, and transfer to future generations all sites of natural heritage within its territory.[31] This obligation is to be performed to the utmost of the state's own resources and with any assistance forthcoming from others.[32] This obligation is further elaborated in Article 5, which calls on states to maintain a responsible agency (with appropriate staff and means) to fulfill the duty articulated in Article 4.[33] Further, states shall endeavor to take the appropriate legal, scientific, technical, administrative, and financial measures to identify, protect, conserve, present, and rehabilitate natural heritage areas.[34]

Although this review principally focuses on the inherent propensity of the WHC to generate compliance with these obligations, the commitment under Article 6 of the instrument is also relevant to issues developed later. Article 6 relates to the obligations owed by all contracting parties to the World Heritage Sites situated outside their territories. Thus, Article 6(3) obliges state parties to refrain from measures that might directly or indirectly damage the natural heritage

30. A focus and distinction is deliberately being maintained in this Article between these site-specific obligations, and more general operational or administrative obligations, such as the obligations to file systematic reports or to make the annual contributions to the fund maintained under the WHC.

31. WHC, *supra* note 1, Art. 4:

> Each State Party to this Convention recognizes that the duty of ensuring the identification, protection, conservation, presentation and transmission to future generations of the cultural and natural heritage referred to in Articles 1 and 2 and situated on its territory, belongs primarily to the State. It will do all it can to this end, to the utmost of its own resources and, where appropriate, with any international assistance and co-operation, in particular, financial, artistic, scientific and technical, which it may be able to obtain.

32. *Id.*

33. *Id*. at Art. 5(b).

34. *Id*. at Art. 5(d).

situated in the territory of another participating state.[35] In addition, Article 6(2) obliges state parties to assist other state parties with sites inscribed in the World Heritage List and the List of World Heritage in Danger.[36]

C. The World Heritage Inventories

For the WHC to act as a formalized system for the mobilization of international responsibility and support for the earth's outstanding heritage, an identification system had to be put in place to determine which sites should benefit from such initiatives. The system employed centers around an official list of sites that have been independently verified as being of outstanding natural value—the World Heritage List. This list is maintained by the Intergovernmental Committee for the Protection of the Cultural and Natural Heritage of Outstanding Universal Value, commonly known as the World Heritage Committee ("the Committee").[37] There are twenty-one seats on the Committee that are filled by states elected by, and from within, the contracting parties.[38]

The listing mechanism can be viewed in three stages. First, state parties must identify sites they feel fall within the Article 1 and 2 definitions.[39] From these, "Tentative Lists" of sites that a state would like to see included in the World Heritage List are to be produced, "so far as possible," and submitted to the Committee.[40] The state can then elect to begin a nomination process for inscription on the World Heritage List by collecting and submitting all the requisite documentation for any site it wishes to be considered by the Committee in a given year.[41] Thus, the contracting parties control the early stages of the listing process. Sites must be situated in the nominating state's boundaries and it is not in the power of the Committee, nor another state, to require a contracting party to nominate a particular area. As Simon Lyster points out, "however

35. *Id*. at Art. 6(3) ("Each State Party to this Convention undertakes not to take any deliberate measures which might damage directly or indirectly the cultural and natural heritage referred to in Articles 1 and 2 situated on the territory of other States Parties to this Convention").

36. The last of these lists is described in more detail in Part II.C.2.

37. The Committee was established under WHC, *supra* note 1, Art. 8.

38. WHC, *supra* note 1, Art. 8(1).

39. *Id*. at Art. 3. This process should involve the production of inventories.

40. *Id*. at Art. 11(1); Guidelines *supra* note 26, ¶¶ 62, 65. The original terminology of inventories as used in the WHC has given way to that of tentative lists. This helps to distinguish this document from the desired preceding step of producing national inventories, which are for information purposes and use at the national level. Further, as to the problems of qualifiers to the effectiveness of duties, see *infra* Part V(B).

41. The details of the nomination process are provided in Part III of the Guidelines.

much the Committee might think a site worthy of inclusion in the List, it only becomes eligible for selection after the Party in whose territory it is situated has made an appropriate proposal."[42]

However, such state focused control stops there. After the nomination process, the treaty introduces a mechanism that emphasizes the executive authority of the Committee over the World Heritage List. This is important since the principal benefits to be derived under the treaty flow from inscription on this list, not from nomination. The Committee therefore has control over: (1) initial admittance to the inventory; (2) officially declaring that an area of world heritage is in danger; and (3) the deletion of a site from the World Heritage List. These steps will be considered in turn.

1. Inscription

The WHC stipulates that it is for the Committee to "establish, keep up to date and publish" the World Heritage List.[43] It is the Committee that must agree to inscribe a site, pursuant to an objective scientific procedure.[44] Nominated sites are first assessed by the international organizations that have been retained to assist in the operation of the WHC.[45] This function is performed by IUCN for natural heritage nominees.[46] Following this assessment, a report is prepared by IUCN for the Committee. The Committee then decides, by a two-thirds majority of the members present and voting, whether the property should be inscribed on the list.[47] Only then can a state call a site within its territory a World Heritage Site.[48] This approach is in contrast to other regimes that also seek to recognize important habitat areas. Ramsar, for example, allows states to unilaterally inscribe sites on its List of Wetlands of International Importance and therefore has no independent approval body.[49]

42. LYSTER, *supra* note 3, at 211.

43. WHC, *supra* note 1, at Art. 11(2).

44. Guidelines, *supra* note 26, ¶ 23.

45. *Id*. ¶¶ 143-151.

46. *Id*. ¶ 145.

47. WHC, *supra* note 1, at Art. 13(8).

48. At the time of writing, there were 878 world heritage sites located in the territory of 145 contracting parties, representing both natural and cultural heritage. UNESCO, World Heritage List, http://whc.unesco.org/en/list (last visited Mar. 2, 2009). Some sites contain a mixture of cultural and natural heritage. *Id*.

49. Ramsar, *supra* note 11, at Art. 2(1).

2. Sites in Danger

Article 11(4) states that the Committee:

> shall establish, keep up to date and publish, whenever circumstances shall so require, under the title of "List of World Heritage in Danger," a list of the property appearing in the World Heritage List for the conservation of which major operations are necessary and for which assistance has been requested. . . . The list may only include such property . . . as is threatened by serious and specific dangers. . . .

The dangers faced by natural properties may be either "ascertained," that is, "specific and proven imminent danger," or "potential," meaning there are "major threats which could have deleterious effects on its inherent characteristics."[50] Further, the danger must be one that can be corrected by human action.[51]

Inclusion of a property on the List of World Heritage in Danger ("Danger List") is a formal recognition of a state of affairs that calls for safeguarding measures, and also is a way to secure resources.[52] Listed sites therefore enjoy a degree of priority when it comes to allocating funds under the WHC.[53]

3. Deleting Sites

In the same way that the Committee independently controls which sites are inscribed on the list, it alone determines when a property should be removed.[54] This is permitted in two situations, namely:

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50. Guidelines, *supra* note 26, ¶ 180.

51. ,*Id.* ¶ 181.

52. 1992 *Strategic Orientations* adopted at the 16th Ordinary Session of the World Heritage Committee, ¶ 23 (the adoption and text of the Strategic Orientations are recorded in the Report of the 16th Ordinary Sessions of the World Heritage Committee, part VII and Annex II respectively).

53. Guidelines, *supra* note 26, ¶ 236. The funding stream set up by the WHC is discussed in more detail in Part III.A of this Article.

54. *Id.* ¶¶ 192-98. Tullio Scovazzi observes that even "if the Convention does not explicitly deal with the question, it seems implied in its competences that the WHC, which can inscribe properties on the World Heritage List, can also delete them from the same List." *Articles 8-11 World Heritage Committee and World Heritage List*, in THE 1972 WORLD HERITAGE CONVENTION: A COMMENTARY 147, 169 (Francesco Francioni ed., 2008). Gionata P. Buzzini and Luigi Condorelli derive the implication that sites may be deleted from the World Heritage List from Article 11(2), which calls for the list to be updated every two years. *Article 11 List of World Heritage in Danger and Deletion of a Property from the World Heritage List*, in THE 1972 WORLD HERITAGE CONVENTION: A COMMENTARY 175, 197 (Francesco Francioni ed., 2008).

> a) where the property has deteriorated to the extent that it has lost the characteristics which merited its inclusion in the first place; or
>
> b) where the intrinsic characteristics were already threatened by man at the time of listing and where corrective measures outlined by the proposing state at the time of listing have not been taken within the proposed time.[55]

Information on this state of affairs should come from the relevant contracting party. Where the relevant contracting party is not the originating source, that source and the information presented must be verified in consultation with the state concerned.[56] IUCN is also requested to comment on the information. Ultimately, the Committee can then order that the site be removed from the list. Crucially, the Guidelines do not require consent from the relevant contracting party prior to deletion, only prior consultation.[57] While deletion is a very rare event,[58] the procedure confirms the executive authority of the Committee, rather than the individual contracting parties, over the content of the World Heritage List.

III. THE BENEFITS OF PARTICIPATION AND COOPERATION

The WHC offers contracting parties a range of benefits in return for responsible management of World Heritage Sites in accordance with the obligations described. Some benefits are financial and developmental, while others are political. Although many benefits are similarly available under other MEAs, there are some distinguishing features of those available under the world heritage regime worth noting.

A. Economic Gain and Capacity Building

The inscription of a site onto the World Heritage List is generally perceived to bring with it a number of financial advantages. As Jim Thorsell noted in his experience as Senior Advisor on Natural Heritage

55. Guidelines, *supra* note 26, ¶ 192.

56. *Id.* ¶¶ 193, 194.

57. *Id.* ¶ 196.

58. To date, just one site has been deleted, namely the Arabian Oryx Sanctuary in Oman in 2007. World Heritage Committee Decision 31 COM 7B.11, State of Conservation of World Heritage Properties - Arabian Oryx Sanctuary, *available at* http://whc.unesco.org/en/decisions/1392/.

to IUCN, "inherently, World Heritage is a saleable popular commodity. . . . brisk sales of the National Geographic book, Our World's Heritage, and forecasts for a new Harper-McCrae venture, Masterworks of Man and Nature, reflect popular interest in World Heritage sites."[59]

The most obvious economic benefit to be derived from such popular interest is income from visitors.[60] By creating a world heritage "brand" for sites—highlighting them as "the best of the best" cultural and natural landscapes—states are given special opportunities for promoting tourism.[61] This benefits both local and national economies and goes beyond what is available under other MEAs.[62]

In addition, the WHC offers other avenues for building capacity. There are opportunities for cross-border cooperation between heritage managers and stakeholders, and means of obtaining financing for heritage projects from other contracting parties. Thus while the option to pursue bi-lateral funding streams through links fostered under the WHC is, naturally, ever present, the agreement also provides for multi-lateral funding distributed from the World Heritage Fund.[63]

Lyster has highlighted the existence of the World Heritage Fund as one of the WHC's key features.[64] This fund is constituted from money collected through compulsory and voluntary contributions from the state

59. Jim Thorsell, *The World Heritage Convention After 20 Years: Achievements and Challenges*, *in* TOWARDS GREATER UNDERSTANDING AND USE OF THE WORLD HERITAGE CONVENTION 25 (Heritage Resources Centre University of Waterloo Occasional Papers Series #22, 1992). The second book referenced in the quote, *Masterworks of Men and Nature*, was duly published in 1993.

60. REPORT OF THE INTERNATIONAL WORKSHOP, MANAGING TOURISM IN NATURAL HERITAGE SITES, 13 (1993). For an illustration of this phenomenon see Tracey L-D. Lu, *The Management of Two World Heritage Sites: Xidi and Hongcun in Anhui, China*, *in* WORLD HERITAGE: GLOBAL CHALLENGES, LOCAL SOLUTIONS 87 (Roger White & John Carmen eds., 2007). That recognition of a site can bring increased tourism revenues has been questioned in Clem Tisdell & Clevo Wilson, *World Heritage Listing of Australian Natural Sites: Tourism Stimulus and its Economic Value* 32(2) ECON. ANALYSIS & POL'Y 27 (2002).

61. For an illustration of branding in operation, see J. Rodger, *World Heritage Site Branding – The Blaenavon Experience*, in WORLD HERITAGE: GLOBAL CHALLENGES, LOCAL SOLUTIONS 13 (R. White & J. Carmen eds., 2007).

62. Other MEAs "brand" areas protected under their auspices, e.g. Ramsar Wetlands, but these are less exclusive and may be harder to market as they do not explicitly suggest an exceptional experience for visitors.

63. WHC, *supra* note 1, at Art. 15.

64. LYSTER, *supra* note 3, at 229. Although writing at a time when establishing a funding stream was rarely given due consideration under MEAs as they then operated, the WHC's arrangements remain important to the system.

parties, supplemented by gifts from other states,[65] private parties or UNEP bodies, and cash from fundraising activities.[66] The contributions of the contracting parties are compulsory under Article 16(1) except where a party declares at the time of ratification, accession, or acceptance, that it shall not be bound by that obligation.[67] However, where such a declaration has been made, the relevant state party is still expected to make voluntary contributions equivalent to those the state would have been obligated to make had no declaration been made.[68] In practice, equal pressure is brought to bear on states that are late making their payments, whether voluntary or obligatory.[69] The total income generated according to this method is around US$4 million per year.[70]

The purpose of the World Heritage Fund is to support applications made by state parties for assistance under Article 13(1). Applications are submitted to the Committee and may be made with respect to listed sites, or to those sites that will potentially be included in either the World Heritage List or the Danger List.[71] The assistance granted may support preparatory measures (such as preparing tentative lists), training, technical help, or emergency action.[72] For example, at the 2007 General Session of the Committee, US$59,600 was allocated to India for a regional training workshop on the conservation and management of Central-Asian and Mogul architecture.[73] During the same session, US$65,780 was awarded to Vietnam to help build management capacity within the Ha Long Bay World Heritage Site.[74]

Access to assistance through the fund is an incentive for developing states to seek inscription of properties in the World Heritage List. The

65. For example, Austria made a number of voluntary contributions before becoming a state party.

66. WHC, *supra* note 1, at Art. 15(3).

67. *Id*. at Arts. 16(1), 16(2).

68. *Id*. at Art. 16(4).

69. *See, e.g.*, Report of the 8th Ordinary Session of the World Heritage Committee, ¶¶ 28-31.

70. UNESCO, *Benefits of Ratification*, http://whc.unesco.org/en/164 (last visited Mar. 2, 2009). Ideally, the fund benefits most when there are a large number of developed nations involved as contracting parties who can be called upon to make contributions. These will be substantial when set at one percent of their compulsory UNESCO contribution. Conversely, they in turn are less likely to draw upon the fund themselves.

71. WHC, *supra* note 1, at Art. 13(1).

72. WHC, *supra* note 1, at Art. 15(4); Guidelines, *supra* note 26, ¶¶ 236-241.

73. Decisions Adopted at the 31st Session of the World Heritage Committee, Decision 31COM18A (Christchurch 2007), *available at* http://whc.unesco.org/en/sessions/31COM > page 197.

74. *Id*.

assistance they receive is likely to be greater in value than the contribution they are expected to make to the fund.[75] In turn, developed states, which bear the main burden of sustaining the fund, are assured that the distribution of support is conducted in an independent and transparent manner by the elected Committee.

Thus, WHC membership provides not only esteem and tourism opportunities, but also capacity building options via appeals to the World Heritage Fund. Further, like admittance to the World Heritage List, the allocation of those funds is controlled by the Committee.

B. Political Benefits

The heightened status of a site that has been inscribed on the World Heritage List not only helps in terms of national esteem and visitor perception, but can also be utilized at the governmental level. The position of environmental ministries in intra-governmental policy deliberations can be strengthened through listing, particularly when the Committee considers a property to be in danger. In 2000, the Ecuadorian Minister for the Environment noted the significance of such political benefits in consideration of the state of conservation for Sangay National Park:

> the inclusion of the Sangay National Park in the List of World Heritage in Danger had helped the Ministry of Environment in negotiations with the Ministry [of] Public Works and other Government bodies to obtain resources to evaluate environmental impacts of the Guamote Macas Road and plan mitigation measures.[76]

In development-versus-nature protection debates, international listing and recognition of a natural area may tip the balance in favor of protection. Conceivably, such recognition might also help environmental ministries annex a greater share of government spending. In both instances, the favoring of environmental policies seems more likely where the alternative might expose the government to critical comment from the international community. Indeed, the possibility of such exposure is heightened by listing.

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75. The amounts due have always been set at one percent of a state's regular contributions to the budget of UNESCO, which is in turn set according to a scale where the developed states pay more.

76. 24th Ordinary Session of the World Heritage Committee, ¶ VIII.7, *available at* http://whc.unesco.org/archive/2000/whc-00-conf204-21e.pdf. Also see LYSTER, *supra* note 3, at 216, for a discussion of the political benefits gained by Darien National Park in Panama when it was awarded World Heritage status.

IV. THE COMMITTEE, SELF-INTEREST, AND COMPLIANCE PULL

On their own, it is unlikely that these benefits would exert a strong pull towards compliance; in other words, these benefits would not limit states' freedom to choose between compliance and non-compliance. Admittedly, channeling increased tourist revenues back into the running of heritage sites, or availing financial resources offered via the World Heritage Fund, might improve or help to maintain the condition of an area through increased management capacity. In both cases, the benefits should increase compliance with the obligations contained in Article 4. However, in isolation there can be no suggestion that the election to apply for such assistance or to reinvest revenue is in any way involuntary.

In contrast, this Article argues that states electing to take measures that bring them into compliance are doing so partly because the Convention generates a force that pulls them towards that decision.[77] That force flows from the WHC's allocation of control over access to benefits. More particularly, the executive powers over initial access to benefits, the award of grants from the fund, and the power to remove access to benefits altogether lie with the Committee rather than with the state parties. This has led to the WHC being able to set up a system for drawing states into compliance by encouraging either a real or perceived association between cooperation, performance of obligations, and furthering one's own national interests. These treaty-generated forces undermine the notion of unfettered freedom in decision making and suggest a sense of coercion based upon self-interest.

77. Mitchell notes that disagreements exist between "realists" and "institutionalists" as to whether or not nations and their citizens adjust their behavior to comply with environmental obligations simply because of the convention concluded. Indeed, the realists suggest that only considerations of state power (rather than law) determine the degree of compliance by a contracting party. The institutionalists, while still accepting that outside factors can affect compliance, insist that a treaty can also influence behavior. They therefore seek to identify the features of a norm or process which generate such an effect. R. B. Mitchell, *Compliance Theory: An Overview*, in IMPROVING COMPLIANCE WITH INTERNATIONAL ENVIRONMENTAL LAW 3, 4, and 16 (J. Cameron *et al.* eds., 1996). Space dictates that this is a debate that should be noted, rather than explored in full; however, it is at least necessary to acknowledge that it is to the latter philosophy that this Article belongs. The stated aim from the outset has been to identify, highlight, and critique those features of the WHC which generate a pull towards compliance. This implicitly accepts that the existence of treaty induced compliance phenomena is at least possible.

A. Self-Interest and International Environmental Law

Appealing to states' desires to further their own interests plays an important part in a number of MEAs. This commonality takes a number of forms. One of the main techniques promotes openness as to the activities of contracting parties under the particular MEA. This can be achieved through monitoring or by maintaining a publicly available inventory of sites regulated under an MEA. Activity or inactivity, as exposed by monitoring or lists, can then be discussed in meetings of the parties or highlighted in local media. As Ronald Mitchell recognizes, states "may fear adverse public opinion, domestically or internationally."[78] These mechanisms can compel states to comply with their obligations as a defense to any possible condemnation. In other words, compliance can be brought about by actions motivated by the desire to maintain a positive public perception.

While the WHC ultimately goes further with the pull of self-interest than other MEAs, this instrument also incorporates mechanisms to increase transparency, such as the World Heritage List.[79] Monitoring is also conducted in two ways: institutional reporting and reactive monitoring. The latter is particularly interesting in the context of this Article.[80] Reactive monitoring has been encouraged since the seventh meeting of the Committee in 1983.[81] With respect to natural properties, reactive monitoring includes the creation of reports by IUCN (as the competent advisory body to the WHC on natural heritage) on specific

78. *Id*. at 8. *See generally* LYSTER, *supra* note 3, at 12-13; PHILLIPPE SANDS, PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW 181 (2d ed. 2003).

79. As entry to the World Heritage List is controlled by an independent screening process, this inventory is not a perfect gauge of the level of commitment from contracting parties. The tentative lists are far more useful in this regard, but there has been varied success in relation to their appropriate completion and submission.

80. As to the former, since 1982, the Committee sought to introduce systematic (institutionalized) forms of reporting and, after initial resistance, its wishes were finally satisfied in 1999. Summary Report of the 11th General Assembly of States Parties to the Convention, ¶¶ 22-25, Doc. WHC-97/CONF.205/7 (Dec. 18, 1997). Institutional reporting initially concerns national measures. These involve frequent and regular monitoring of individual sites by heritage managers, with the information on all sites in turn collected and processed by a centralized administrative body at the national level. Report of the 17th Ordinary Session of the World Heritage Committee, ¶ 2, Doc. WHC-93/CONF.002/14 (Dec. 1993). This data can then also feed into periodic reports submitted by states to the Committee. Guidelines, *supra* note 26, ¶ 203. These are gathered on a regional basis and have so far been collated for the Latin American, Arabic, Asian and African, and European and North American contracting parties. However, the institutional reporting program under the WHC is in its infancy and is somewhat over-shadowed by the way in which reactive monitoring is employed.

81. Report of the 7th Ordinary Session of the World Heritage Committee, ¶ 41, Doc. SC/83/CONF.009/8 (Jan. 1984).

dangers to World Heritage Sites.[82] These reports can be thought of as reactive since they are the response to alerts about developments within the contracting party states, conveyed to IUCN or convention bodies by individuals. For example, IUCN has volunteers across the globe who monitor national developments and pass on information to the organization's central staff. As the organization pointed out in 1985, its capacity to monitor is significant and stems from over 4,000 voluntary correspondents located in 126 states.[83]

B. The Committee and Self-Interest

The Committee stands in an atypical position when compared to institutional arrangements under other MEAs. Much of the coordination and significant administration of other MEAs is conducted through conferences of all the contracting parties ("COPs"). Such COPs may have authority to approve work programs, monitor implementation, and issue recommendations or resolutions. Executive power under these conventions therefore lies collectively with all of the contracting parties.

On the other hand, under the WHC, the Committee (comprised of only twenty-one members)[84] possesses executive power. Under the Convention, COPs do still occur (every two years during UNESCO General Conferences) but these are separate and principally concerned with setting the level of contributions to the fund, and electing new members to vacant seats on the Committee.[85] This leaves the Committee with the majority of the responsibility for operating the Convention, which includes reviewing implementation, allocating funds, updating the Guidelines, formulating strategic objectives, and maintaining the various lists.[86] The legal advisor to UNESCO recognized the distinctiveness of this delegation of power in 2000 when he advised that the World Heritage Convention is different from many other international conventions in that all the substantive powers are designated to the Committee and not to the General Assembly.[87]

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82. As envisaged in the Guidelines, *supra* note 26, ¶¶ 169-176.

83. Report of the 9th Ordinary Session of the World Heritage Committee, ¶ 16, Doc. SC-85/CONF.008/9 (Dec. 1985).

84. WHC, *supra* note 1, Art. 8(1).

85. *Id.*

86. For a more detailed list see Scovazzi, *supra* note 54, at 150.

87. Report of the 24th Session of the Bureau to the World Heritage Committee, VI.7(1.1) Doc. WHC-2000/CONF.202/17 (Aug. 2000). For a detailed account of the power politics between the COP and the Committee, see Zacharias, *supra* note 21, 1841-1842.

This independence generates interesting possibilities for the capacity of the WHC to pull states towards compliance with its obligations. The Committee has a significant impact upon the interests of states in a situation where the latter ultimately have no control over their own treatment. This set-up gives the Committee the capacity to apply pressure in order to enforce commitments.

To explain this phenomenon, it is first apt to reemphasize the extent to which the Committee controls access to the benefits under the WHC. This is either through initial approval of a contracting party's application for a site to be inscribed on the World Heritage List, or through the power to unilaterally delete a site from the list and therefore withdraw those benefits. Further, the Committee approves funding applications made by contracting parties.

Secondly, the Committee also has significant opportunities to take steps that might politically embarrass states. At the extreme, this would take the form of striking a site from the list. More commonly, this involves listing a site on the Danger List. While inclusion on the Danger List is supposed to be a step towards securing priority in receiving assistance rather than a sanction, in practice inclusion has had a mixed reception. Some states willingly seek listing in order to obtain such assistance and priority attention. Others are less receptive to the list largely because they perceive listing as humiliating and contrary to their best interest.[88]

Given the latter factor, the question of whether a site may be listed against the wishes of a state party has been debated.[89] Although the matter has not been conclusively determined, the UNESCO legal advisor to the 26th Ordinary Session of the World Heritage Committee provided advice on the matter in 2002. The advisor's opinion suggested that the interpretation that accords best with the WHC's text is that, in the ordinary course of affairs, inclusion should be initiated by the contracting party.[90] However, in the case of urgent need, a property can be included based on a decision of the World Heritage Committee alone.[91] This is because the concluding sentence of Article 11(4) states that the

88. T. Atherton & T. C. Atherton, *The Power and the Glory: National Sovereignty and the World Heritage Convention* 69 AUSTRALIAN L. J. 631, 640 (1995); Jane. R. Vernhes, *Implementation of the World Heritage Convention in South East Asia and the Pacific*, in CRITICAL ISSUES FOR PROTECTED AREAS PART 1: WORLD HERITAGE SESSION 26 (Workshop Papers from the 18th General Assembly of IUCN, 1991).

89. The debate is important since the preservation of honor may be at the expense of mobilizing international assistance to the detriment of the site concerned. It also, of course, has a large bearing on the degree of power invested in the Committee.

90. Summary Record of the 26th Ordinary Session of the World Heritage Committee, ¶ 12.1 Doc.WHC-02/CONF.202/INF.15 (June 2002).

91. *Id.*

"Committee may at any time, in case of urgent need, make a new entry in the List of World Heritage in Danger and publicize such entry immediately."[92] Indeed, non-consensual listings have been made in the past. For example, following unanswered calls for information to the Indian Government, the Manas Nature Reserve was included in the Danger List in 1992.[93]

The Committee therefore exists as an authoritative and independent body with the ability to make significant decisions affecting the interests of the state parties. Given these powers, states are understandably cautious about possible public withdrawal or withholding of future benefits should they act inconsistently with their obligations under the WHC.[94] Consequently, by exploiting such associations, the WHC and its Committee can exert a pull towards compliance. This may often take place without any noticeable intervention from the Committee. Nevertheless, where states appear to be erring in their management of heritage sites, the Committee's position allows it to be proactive in placing demands upon contracting parties. If these demands are duly complied with, the level of protection a site under threat enjoys should increase. This will then draw the state back into compliance. This combination of executive authority and state caution which promotes and supports the Committee's active intervention highlights one of the strongest aspects of the WHC, and is best illustrated by the following examples.

C. Intervention and Compliance Pull in Action

On April 8, 2007, a delegation from the Committee visited the Galapagos Islands, a World Heritage Site since 1978.[95] This visit was further evidence of a step-change in the nature of the over-seeing of the

92. The Guidelines seem to widen the interpretation of UNESCO's legal advisor. They confirm the view that the Committee may inscribe a property on the Danger List when four requirements are met, with one of the requirements being that assistance has been requested. However, that "assistance may be requested by any Committee member or the Secretariat." Guidelines, *supra* note 26, at ¶ 177(d). For full debate on the issue see Buzzini and Condorelli, *supra* note 54, at 195-96, who reach the same conclusion as UNESCO's legal advisor.

93. Report of the 16th Ordinary Session of the World Heritage Committee, ¶¶ VIII.13, X.1.E.A., Doc.WHC.92/CONF.002/12 (Dec. 1992).

94. In the context of fears about "free-riding" by states under a convention, Mitchell asserts that this can be overcome "if states view the benefits they derive in other existing and future international agreements as conditional upon a record of compliance." Mitchell, *supra* note 77, at 11.

95. The decision to inscribe is recorded in Report of the 2nd Ordinary Session of the World Heritage Committee, ¶ 38, Doc. CC-78/CONF.010/10 Rev. (Oct. 1978).

islands by the Committee; a change that had begun the previous year.[96] Although the islands had long been designated as a World Heritage Site under the WHC, threats to the conservation of the islands had been growing. Once an isolated realm rich in endemic species, the islands have increasingly shown worrying signs of ecosystem mutation caused by the introduction of alien species.[97] Further stress is being placed upon the islands by an expanding tourist industry and a boom in the size of the resident human population.[98]

Since the mid-1990's, the leadership of the WHC had been aware of these issues via reactive monitoring reports. The islands were regularly considered for inclusion in the Danger List, but the Ecuadorian Government tended to resist this step.[99] Such a move was initially delayed in 1998 with the enactment by the state of a special law on the preservation and sustainable use of the Galapagos.[100] However, the 2005 reactive monitoring reports indicated that the special law was proving hard to implement mainly due to difficulties in appointing a long-term park director.[101] In addition, immigration continued subject only to weak controls, and there were tensions undermining what should have been a

96. Report of the 19th Ordinary Session of the World Heritage Committee, ¶ VII.13, Doc. WHC-95/CONF.203/16 (Dec. 1995).

97. By way of illustration, scientists have observed the presence of non-indigenous parasitic fly larvae in nests of the various species of Darwin finches on the islands, which also have human habitation. *See* Birgit Fessl & Sabine Tebbich, Philornis Downsi – *a Recently Discovered Parasite on the Galápagos Archipelago – a Threat for Darwin's Finches?* 144 IBIS 445, 450 (2002). The threat from these larvae may, in combination with predation from another alien species (the black rat) and habitat destruction by the human population, result in one species of this iconic bird species becoming extinct, namely the Mangrove Finch. *See* Jonathan Amos, *Darwin Finches at Risk*, BBC NEWS ONLINE, November 8, 2002, http://news.bbc.co.uk/2/hi/science/nature/2415261.stm (quoting Nigel Collar of Birdlife International).

98. It has been estimated that the number of tourists has increased by 100,000 over the last 30 years to 120,000, while the local population has increased by 14,500 from a figure of 3,500 over the same time period. Tom Leonard, *Race to Protect the Galapagos Islands*, THE DAILY TELEGRAPH, Apr. 12, 2007, *available at* http://www.telegraph.co.uk/news/worldnews/1548411/Race-to-protect-the-Galapagos-islands.html.

99. See Report of 19th Ordinary Session, *supra* note 96, ¶ VII.13, for early appreciation of the problems and an initial call for recognition that the islands were in danger.

100. Special Regime Law for the Preservation and Sustainable Development of the Province of Galapagos, Law No. 278 (Official Registry of Ecuador) which entered into force on March 18, 1998.

101. The position of Park Director has caused serious conflict between fishermen and park wardens, with the government being accused by conservationists of removing one director in favor of a pro-fishermen office holder. *See Strike Forces Galapagos Boss Out*, BBC NEWS ONLINE, Sept. 28, 2004, http://news.bbc.co.uk/2/hi/americas/3696376.stm.

cooperative relationship between the fishing community, non-governmental organizations, and other local stakeholders.[102] This led to a request by the Committee for Ecuador to host a mission to the islands to assess the problem, which took place in March 2006.[103]

At the subsequent Committee meeting in Vilnius, the Ecuadorian Government was made the subject of onerous requests due to the concerns within the Committee about the islands. The Committee requested that, in cooperation with IUCN and the World Heritage Centre (the secretariat to the WHC), Ecuador organize a multi-stakeholder meeting to develop a program for the future of the islands.[104] The purpose of the meeting was to agree to targets and timeframes for addressing the problems against which progress could be measured.[105] Naturally, such targets could also be monitored by the international community, although no such monitoring was explicitly referenced. The decision went on to catalog in detail the failings in the current administration of the islands that would need to be addressed.[106] Finally, a request was made for Ecuador to invite a joint IUCN/World Heritage Committee mission to participate in the meeting, which would cover the issues listed.[107] No doubt involvement with this joint mission would give the two bodies the opportunity to check that such discussions actually occurred and to learn more about the situation on the ground.

The joint mission took place in April 2007 and the Ecuadorian Government duly organized the stakeholder meetings requested on the islands.[108] Simultaneously, the President of Ecuador declared that the island was at risk, a priority for national action, and that among a number of remedial measures, he was considering the suspension of some tourism permits.[109] This move may have been an attempt to portray the Ecuadorian Government as acting on its own initiative, rather than being

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102. *Id. See also* Decisions Adopted at the 30th Session of the World Heritage Committee, ¶ 29, Doc. WHC-06/30.COM/19 (July 2006).

103. *See* Summary Record of the 30th Session of the World Heritage Committee, at 95, Doc. WHC-06/30.COM/INF.19 (July 2006).

104. World Heritage Committee Decision, ¶ 8, 30COM7B.29, *State of Conservation (Galápagos Islands), available at* http://whc.unesco.org/en/decisions/1114/.

105. *Id.*

106. These failings include the increasing number of access points to the islands by air and sea, the ongoing presence of illegal immigrants, fishing in "a regulatory vacuum," uncontrolled tourist access, and inadequate control and inspection at island entry points. *Id*. ¶¶ 8(a), (d), (e), (f) and (k), respectively.

107. *Id.* ¶ 9.

108. Press Release, UNESCO World Heritage Centre, *UNESCO Mission Confirms Threat to the Galapagos Islands,* No. 2007-38 *(*Apr. 17, 2007).

109. Leonard, *supra* note 98.

forced into this position. After all, it was becoming increasingly clear that the Committee would make a decision confirming the perilous state of the islands following the visit.[110] Indeed, just over two months later, at the 31st Session of the World Heritage Committee in Christchurch, the islands were recorded as being officially in danger under the WHC.[111]

The Galapagos example illustrates the level of pro-active and intrusive intervention the Committee is comfortable making, and the willingness of countries like Ecuador to cooperate with this external body. It is contended that this is in part generated by the careful balance of power over access to, and potential public withdrawal of, the benefits mentioned above. However, this is not an isolated example.

In 1999, IUCN reported that Komodo National Park in Indonesia was subject to increases in illegal dynamite and cyanide fishing causing damage to the coral reefs in the World Heritage Site. The Committee requested the Indonesians permit a monitoring mission to the park in order to assess the damage and to review current management of the site.[112] Although the Indonesian government initially proposed sending their own mission to study the problem,[113] a joint IUCN/UNESCO mission was ultimately given access to the park to conduct its own assessment.[114]

Some of the Committee's requests might also amount to strict ultimatums. For example, the City of Dresden and Elbe Valley was recognized as a World Heritage Site in 2004 in light of its cultural value.[115] However, just two years later the Committee issued a warning to Germany that if the city municipality continued with plans to build a motorway bridge over the river and into the heart of the city, the site would become the first in the history of the WHC to be struck from the World Heritage List. Just ten days later, the city council voted to stop imminent construction and review the project.[116]

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110. *Id*. (quoting President Rafael Correa: "We do not need studies from some international organisation. We are declaring the Galapagos at risk").

111. World Heritage Committee Decision 31COM7B.35 – *Galapagos Islands (Ecuador)*, *available at* http://whc.unesco.org/en/decisions/1416/.

112. The Report of the Bureau to the World Heritage Committee, 23rd Sess., ¶ IV.34, Doc. WHC-99/CONF.204/15 (July 1999).

113. Report of the 23rd Extraordinary Session of the Bureau to the World Heritage Committee, Natural Heritage, pt.(iii), Doc. WHC-99/CONF.208/8 (Nov. 1999) (the Committee responded by requesting that their findings be forwarded to it).

114. As recorded in the Report of the 24th Ordinary Session of the World Heritage Committee, Annex X, Doc. WHC-2000/CONF.204/21 (Dec. 2000).

115. Decision 28COM14B.40, *Nominations of Properties to the World Heritage List*, adopted at the 28th Session of the World Heritage Committee, Doc. WHC-04/28.COM/26 (July 2004).

116. Press Release, UNESCO World Heritage Centre, *Dresden City Council Votes*

In addition, the Committee has been willing to make recommendations outside of its monitoring functions. For example, when the Great Barrier Reef was inscribed on the World Heritage List, the Committee noted that only a small portion of the area nominated for protection under the WHC was included within the Great Barrier Reef Region for purposes of Australia's Great Barrier Reef Marine Park Act.[117] Consequently, the Committee requested that Australia ensure that the whole area to be inscribed on the World Heritage List also be protected by the Great Barrier Reef Marine Park Act.[118] As Lyster notes:

> Undoubtedly stimulated by the new international status to be given to the [Great] Barrier Reef, the Prime Minister of Australia assured the 1981 meeting of the World Heritage Committee that the "Great Barrier Reef Marine Park will be progressively extended. The question is not whether but when."[119]

D. Summary

The fact that the Committee can make such onerous and intrusive demands without being roundly ignored by the contracting parties raises two points. First, such requests can stop activities that threaten heritage sites, thereby halting a state's descent into breach of obligations and non-compliance.

Against Bridge Construction at World Heritage Site (July 21, 2006). No alternative plans have yet been produced and the regional government has begun construction. This is in apparent discordance with the national government's wishes given that there is some evidence the national government would be happy to meet the costs of a tunnel option. Giovanni Boccardi & Jaroslav Kilian, Report: Reinforced Monitoring Mission to the Dresden Elbe Valley World Heritage Property, 11- 12 (Feb. 2008). The issue has therefore exposed problems with the implementation of the convention within the federal system. Nevertheless, the Committee issued a further ultimatum in July 2008 that unless construction is halted and remedial action taken, the site will be delisted in 2009. Decision 32COM7A.26 adopted at the 32nd Session of the World Heritage Committee, Doc. WHC-08/32.COM/24 (July 2008). On a recent visit to the site in November 2008, the author observed continuing construction, indicating that the most likely outcome will be delisting, and thus (in the author's opinion) placing the state in apparent breach of Article 4.

117. The Great Barrier Reef Marine Park Act, 1975, No. 85 (Austl.).

118. Report of the 5th Ordinary Session of the World Heritage Committee, ¶ VIII.15, Doc. CC-81/CONF/003/6 (Oct 1981).

119. LYSTER, *supra* note 3, at 217. New sections were added to the marine park in the 1980s, thus meeting the Committee's request. REVIEW OF THE GREAT BARRIER REEF MARINE PARK ACT 1975, 28-29 (2006), *available at* http://www.environment.gov.au/coasts/publications/pubs/gbr-marine-park-act.pdf.

Second, the phenomenon reflects the "gatekeeper" functions of the Committee,[120] which can be used to exert a force upon state parties, pulling them towards compliance. Part of the origin of this force is the fact that the Committee is an independent, limited membership, executive body with real powers of control. Its powers can affect the contracting states' abilities to advance their own self-interest in a myriad of ways, ranging from the Committee's authority over initial availability of the substantial benefits offered by the World Heritage brand to the threat of danger listing and de-listing with their attendant negative publicity.

Exploiting such self-interest can be a powerful tool. Mitchell notes that treaty influenced behavior is dominated by a logic of consequences.[121] This logic describes instrumental calculations by states as to how their possible actions will help or harm their interests.[122] The WHC has therefore inserted itself into the logic of consequences for conserving and protecting the world's heritage in a powerful way.

V. THE SIGNIFICANCE OF THESE OBSERVATIONS

So far this Article has focused upon the manner in which the WHC can pull states towards compliance. In summary, it has been argued that this is achieved via the Convention's devolution to the limited membership Committee of power over access to benefits, and over sanctions that bring real economic and political consequences. What is then surprising is that the WHC is rarely featured in academic writing on non-compliance systems employed under MEAs. Tullio Scovazzi, Gionata Buzzini, and Luigi Condorelli have recently provided excellent descriptions of the functioning of the Convention and the Committee;[123] however, they do not explore the effects of this upon state compliance. This might be assumed to be because such a structure is not unusual, but the following comparative analysis in Subpart A below demonstrates the opposite, namely that the devolution of power over compliance review and sanctions to the Committee is very unusual.

Nevertheless, once this comparative analysis has revealed that the WHC is atypical in the technique it employs to further compliance, the utility of this fact might still be questioned. This is because it has been

120. Metaphor adopted from Affolder, *supra* note 22, at 38.

121. Ronald B. Mitchell, *Compliance Theory: Compliance, Effectiveness, and Behaviour Change in International Environmental Law*, in THE OXFORD HANDBOOK OF INTERNATIONAL ENVIRONMENTAL LAW 893, 901 (Daniel Bodansky *et al.* eds., 2007).

122. *Id.*

123. Scovazzi, *supra* note 54; Buzzini & Condorelli, *supra* note 54.

suggested that full compliance does not necessarily equate to effective action.[124] Consequently, in Subpart B to this Part of the Article, it will be argued that the devolution of powers to the Committee, and the nature of those powers, goes some way to ensuring that compliant action is also effective in meeting the Convention's objectives.

A. Comparison to Other MEAs

Because recourse to international courts is often an unsatisfactory option for breach of international environmental laws in general, and MEAs in particular,[125] Lyster notes that administrative and non-judicial mechanisms can be more effective for ensuring compliance.[126] He goes on to observe that even a simple measure providing for regular COPs can prevent an MEA from being neglected by state parties and thus being reduced to a "sleeping treaty."[127] More sophisticated supervisory techniques have also been developed over the last half-century[128] and are commonly employed to ensure compliance. These include monitoring and reporting, data collection and verification, and inspection.[129] Indeed, many of these techniques can be found under the WHC as described in Part IV.A. above.

Less frequently encountered are mechanisms for resolving instances of non-compliance under regularized procedures—termed "non-compliance procedures" ("NCPs").[130] Ideally, NCPs comprise the latter stage of a compliance continuum, with supervisory techniques feeding into an institutional structure designed to control implementation and compliance.[131] As described earlier in the Article, through the marriage

124. *See* D. G. Victor *et al*, *Introduction and Overview* in THE IMPLEMENTATION AND EFFECTIVENESS OF INTERNATIONAL ENVIRONMENTAL COMMITMENTS: THEORY AND PRACTICE 1, 7 (DAVID G. VICTOR *et al.* eds., 1998).

125. BIRNIE *et al.*, *supra* note 15, at 237-239.

126. LYSTER, *supra* note 3, at 12.

127. *Id.*

128. Kal Raustiala & David G. Victor, *Conclusions*, in THE IMPLEMENTATION AND EFFECTIVENESS OF INTERNATIONAL ENVIRONMENTAL COMMITMENTS: THEORY AND PRACTICE 659, 679 (David G. Victor *et al.* eds., 1998).

129. BIRNIE *et al.*, *supra* note 15, 242-245.

130. Seven NCPs have been agreed upon since 1990, and another three are currently under negotiation. Jutta Brunnée, *Enforcement Mechanisms in International Law and International Environmental Law*, in ENSURING COMPLIANCE WITH MULTILATERAL ENVIRONMENTAL AGREEMENTS: A DIALOGUE BETWEEN PRACTITIONERS AND ACADEMIA 1, 18 (Ulrich Beyerlin *et al*. eds., 2006).

131. M. A. Fitzmaurice & C. Redgwell, *Environmental Non-Compliance Procedures and International Law*, XXXI NETHERLANDS YEARBOOK OF INTERNATIONAL LAW 35, 42 (2000).

of reactive monitoring and the allocation of powers and time to the Committee to adjudicate at their annual sessions upon conservation reports produced by the IUCN, the WHC has adopted a very proactive NCP. Nevertheless, the following comparison to other MEAs that have adopted NCPs of their own will serve to underline the atypical nature of the WHC arrangements. This comparative analysis will begin by describing three commonalities relating to devolution, favoring management over sanctions, and using economic sanctions if needed. The comparative analysis then concludes by highlighting one key distinction between the WHC and these MEAs.

1. Similarity: Devolved Responsibility to Limited Membership Body

As mentioned, NCPs have been incorporated into a number of MEA systems for reviewing implementation.[132] Nevertheless, only a handful of these share a significant feature with the WHC by having devolved responsibility for their operation to subsidiary bodies outside of the COP. The five instances are:

(1) the Implementation Committee to the Montreal Protocol[133]

(2) the Implementation Committee to the 1979 Convention on Long Range Transboundary Air Pollution ("LRTAP")[134]

(3) the Compliance Committee to the Protocol to the Framework Convention on Climate Change ("Kyoto Protocol")[135]

(4) the Standing Committee to CITES[136]

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132. Brunnée, *supra* note 130, at 17-18.

133. Montreal Protocol, *supra* note 20, Art. 8; the committee being established under the non-compliance procedure devised under Decision III/20 and amended under Decision X/10.

134. Convention on Long Range Transboundary Air Pollution, November 13, 1979, 18 I.L.M. 1442 (entered into force 16 Mar. 1983) [hereinafter LRTAP]. The committee was created pursuant to Decision 1997/2 of the Executive Body to the convention.

135. Protocol to the Framework Convention on Climate Change, December 11, 1997, 37 I.L.M. 22 (entered into force 16 Feb. 2005) [hereinafter Kyoto Protocol]. The committee was created under the Protocol pursuant to Decision 24/CP. 7.

136. The authority of the committee in relation to NCP functions is provided for in Eleventh Meeting of the Conference of the Parties, Resolution Conf. 11.1 (Apr. 2000) (amended at the 12th, 13th and 14th meetings of the Conference of the Parties), *available at* http://www.cites.org/eng/res/11/11-01R14.shtml (describing the authority of the committee in relation to NCP functions).

(5) the Compliance Committee to the Aarhus Convention[137]

Table 1

MEA	Name of the Body With Devolved NCP Role	No. of States Represented
Montreal Protocol	Implementation Committee	10 members elected from the 191 contracting parties on the basis of an equitable geographical distribution.
LRTAP	Implementation Committee	9 members elected from the 51 contracting parties.
Kyoto Protocol	Compliance Committee	20 members chosen from the 180 contracting parties split equally between two branches. Each branch to have one representative for each of the five official UN regions, one from the small island developing states, and two each from Annex I and non-Annex I Parties.
CITES	Standing Committee	Currently 18 members elected from the 172 contracting parties on the basis of equitable regional representation according to the proportion of contracting states from each region.
Aarhus Convention	Compliance Committee	8 members of a nationality of a contracting party but elected to act in their personal capacity.

These five MEAs have been the focus of much academic writing on NCPs, whether as exemplars or because of their relative novelty in terms of design.[138] Interestingly, as described below, these noted conventions share further similarities to the WHC, leading to puzzlement over the failure to consider the WHC in academic research into compliance mechanisms. It was noted that the Committee to the WHC is a limited membership body—twenty-one seats are filled by representatives of states elected from the 185 contracting parties, who hold office for a

137. Aarhus Convention, *supra* note 19, Art. 15 and Decision I/7.

138. *See, e.g.*, BIRNIE *et al.*, *supra* note 15, at 245-250; SANDS, *supra* note 78, 205-210; ENSURING COMPLIANCE WITH MULTILATERAL ENVIRONMENTAL AGREEMENTS: A DIALOGUE BETWEEN PRACTITIONERS AND ACADEMIA (ULRICH BEYERLIN *et al*. eds., 2006).

fixed number of years.[139] This form of limited membership is also found in the Montreal Protocol, LRTAP, the Kyoto Protocol, the Aarhus Convention,[140] and CITES. The details are given above in Table 1. The significance of this limited membership is that progress in evaluating potential cases of non-compliance is beyond the direct influence of the state placed under the "spotlight." Investigations and inquiries therefore remain practicable despite any opposition from that state.

2. Similarity: Non-Confrontational Solutions

Another similarity between the WHC and the NCPs under the five MEAs noted above occurs when the respective committees face a case of non-compliance: the NCPs of both the WHC and the other MEAs envisage non-confrontational managerial solutions, as well as confrontational punitive steps.[141] For example, the Kyoto Protocol splits its Compliance Committee into two branches: the Facilitative Branch and the Enforcement Branch.[142] Another example of an MEA with both confrontational and non-confrontational procedures is the Montreal Protocol under which the measures that can be recommended by its Implementation Committee are listed as: providing appropriate assistance, issuing cautions, and suspending rights and privileges under the agreement.[143]

Support for favoring management rather than sanction seems to be given particular emphasis in two of these regimes—the Montreal Protocol and LRTAP. The former Executive Secretary to the Ozone Secretariat, K. Madhava Sarma, has highlighted the favoring of assistance and cautioning under the Montreal Protocol.[144] Similarly, the

139. Guidelines, *supra* note 26, ¶ 21.

140. It is worth noting that it is in relation to the composition of the Aarhus Convention Compliance Committee that this treaty has received particular mention. As Svitlana Kravchenko (the current vice-chair of the committee) has pointed out, members act in their personal capacity (rather than being representatives of the States), which increases continuity in the body's composition from year to year because the States cannot easily remove or replace the members once elected. Additionally, NGOs can nominate up to two members for election. Svitlana Kravchenko, *The Aarhus Convention and Innovations in Compliance with Multilateral Environmental Agreements*, 18 COLO. J. INT'L ENVT'L L. & POL'Y 1, 12-16 (2007).

141. These approaches are described in Raustiala & Victor, *supra* note 128, at 681.

142. Established pursuant to Kyoto Protocol, *supra* note 135, at Article 18 and Decision 24/CP.7.

143. Adopted pursuant to Decision IV/5 of the 4th Meeting of the Parties to the Montreal Protocol.

144. K. Madhava Sarma, *Compliance with the Multilateral Environmental Agreements to Protect the Ozone Layer*, in ENSURING COMPLIANCE WITH MULTILATERAL ENVIRONMENTAL AGREEMENTS: A DIALOGUE BETWEEN PRACTITIONERS AND ACADEMIA

Implementation Committee under LRTAP is supposed to seek a "constructive solution" to the incidence of non-compliance.[145] Indeed, the only response explicitly mentioned under LRTAP is the provision of assistance.[146]

A similar preference is evident in the practice of the Committee under the WHC. Instances of possible non-compliance are investigated through dialogue and site visits. Even danger listing is primarily and outwardly about prioritizing the allocation of resources to tackle threats. Indeed, the ultimate sanction of de-listing has only been used once, and the characterization of danger listing as a negative factor in the logic of consequences comes down to the personal stance of the state concerned. The presence of sanctions is important, but management and allocation of assistance remains the policy of choice.

3. Similarity: Economic Sanctions

A further significant similarity is that the threatened or deployed sanction predominantly results in denial of access to economic benefits. CITES is the classic example, with its use of trade suspensions. The established system allows legitimate trade in species based upon the issuing of permits by importing and/or exporting states. A recommendation that the contracting parties no longer accept export permits from a particular state because of a finding of non-compliance against that state carries very real "economic clout."[147] As Peter Sand observes, "CITES secures access to a very lucrative export market (up to $50 billion annually). . . [A]n embargo practically excludes the country concerned from all legitimate trade."[148]

Similarly, under the Montreal Protocol, the ultimate suspension of rights and privileges will deny a contracting party access to the financial benefits of legitimate trade in controlled substances, the sale of production quotas to other contracting parties, and rights to technology transfer and financial support.[149]

Finally, the range of sanctions available to the Enforcement Branch of the Kyoto Protocol Compliance Committee includes a deduction of

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25, 38 (Ulrich Beyerlin *et al*. eds., 2006).

145. LRTAP Decision 1997/2, ¶ 3(b).

146. *Id.* ¶ 1. *See also,* BIRNIE *et al.*, *supra* note 15, at 247.

147. Peter H. Sand, *Sanctions in Case of Non-Compliance and State Responsibility: Pacta Sunt Servanda – or Else?* in ENSURING COMPLIANCE WITH MULTILATERAL ENVIRONMENTAL AGREEMENTS – A DIALOGUE BETWEEN PRACTITIONERS AND ACADEMIA 259, 263 (U. Beyerlin *et al.* eds., 2006).

148. *Id.*

149. Montreal Protocol Decision IV/18, *supra* note 143; Madhava Sarma, *supra* note 144, at 30-31.

thirty percent of a state's yearly greenhouse gas emissions allowance—which it could have traded to other states—or outright suspension from all emissions trading.[150]

The judicious injection of economic factors into the logic of consequences for states' decision making (which the WHC achieved through the availability of funds and the World Heritage "brand") is therefore also found in CITES, the Montreal Protocol, and the Kyoto Protocol. Linking sanctions to the denial of access to economic benefits generates force that pulls states towards action in compliance with the treaties' provisions. Given that this feature is found in the WHC, and given the other similarities noted to the Montreal Protocol, CITES, the Kyoto Protocol, the Aarhus Convention, and LRTAP, the NCP functions of the Committee deserve to be accorded the same recognition in compliance discourse.

4. Difference: Ultimate Authority to Deal with Non-Compliance

There is, however, one final feature of the WHC system that makes it stand apart from even the five atypical MEAs. Under the WHC, the ultimate authority to deal with non-compliance lies with the Committee alone. This feature renders the degree of compliance pull much stronger.

The clearest illustration of this can be seen with a comparative examination of the authority of the Implementation Committee to LRTAP. The Implementation Committee's primary function is to investigate and report to the Executive Committee; the Implementation Committee may only make recommendations to the Executive Committee.[151] The Executive Committee alone, comprised of all the contracting parties, is empowered to adopt the recommendations.[152] As has been recognized, the decisions of that body require consensus, and can therefore easily be blocked.[153]

The same situation exists with respect to the Montreal Protocol, where the Implementation Committee has an active role in investigation, but ultimately can only make a recommendation as to whether assistance, a caution, or suspension of privileges should be the course of action.[154] The authority to take such steps, or actually impose sanctions, lies with

150. Kyoto Protocol Decision 24/CP.7, Part XV.

151. LRTAP Decision 1997/2, ¶ 9.

152. *Id*, ¶ 11.

153. BIRNIE *et al.*, *supra* note 15, at 247.

154. Montreal Protocol, Non-Compliance Procedure adopted under Decision X/10, ¶ 9.

the contracting parties acting on a two-thirds majority.[155] Thus, the affected state will have a direct say in its treatment.

Finally, the Aarhus Convention's Compliance Committee has quite limited powers. It may approach states in order to provide advice and facilitate assistance, but needs the agreement of the state concerned to produce formal recommendations or request strategies for achieving compliance.[156] Any sanction—such as a declaration of non-compliance—needs to be taken by the COP.[157]

A level of authority somewhat analogous to that enjoyed by the WHC's Committee can be discerned under the Kyoto Protocol and CITES. Under the Kyoto Protocol, both the Facilitative and Enforcement Branches of the Compliance Committee have the authority to take action against a state.[158] However, the NCP under the Kyoto Protocol allows a right of appeal to the COP in order to challenge a decision of the enforcement branch.[159] Such a right of appeal indicates that ultimate authority over sanctions still lies with the contracting parties as a collective.

Under CITES there is uncertainty as to the authority of the Standing Committee. This committee was initially established to assist with the running of the regime between COPs.[160] Susan Biniaz asserts that the Standing Committee has therefore come to play an important role in receiving advice from the Secretariat and drafting recommendations on compliance issues, although "some are recommendations to the COP, some implement delegations from the COP, and some appear to be direct recommendations to the parties."[161] She goes on to note that with respect to recommendations for all contracting parties to embargo another state's export permits, "In some cases, the Standing Committee itself has made

155. Rules of Procedure of the Meeting of the Parties to the Montreal Protocol, Rule 40(1).

156. STRUCTURE AND FUNCTIONS OF THE COMPLIANCE COMMITTEE AND PROCEDURES FOR THE REVIEW OF COMPLIANCE, ¶ 36. (adopted pursuant to, and annexed to, Decision I/7, of the First Meeting of the Parties, Lucca, Italy, October 2002). "Recommendations" refer to the draft recommendations to be made to the COP. GUIDANCE DOCUMENT ON AARHUS CONVENTION COMPLIANCE MECHANISM, 18 (2006).

157. *Id.* ¶ 37. For a detailed account see Kravchenko, *supra* note 140, at 28-31.

158. Kyoto Protocol Decision 24/CP.7, Part XIV as regards the former, Part XV as regards the latter.

159. *Id.*, at Part IX. The COP can overturn the decision if there is a three-fourths majority.

160. CITES Resolution Conf. 11.1, preamble, Rev. CoP14, *available at* http://www.cites.org/eng/res/11/11-01R14.shtml.

161. Susan Biniaz, *Remarks about the CITES Compliance Regime*, in ENSURING COMPLIANCE WITH MULTILATERAL ENVIRONMENTAL AGREEMENTS: A DIALOGUE BETWEEN PRACTITIONERS AND ACADEMIA 89, 93 n.20 (Ulrich Beyerlin *et al.* eds., 2006).

direct recommendations for trade suspensions, apparently citing Resolution 11.3 as its legal basis; the Secretariat has called this authority 'questionable.' "[162]

Peter Sand, a former Secretary-General to CITES, argued that recommendations for suspending trade needed to be adopted by a two-thirds majority of the COP, or a majority of the Standing Committee if the authority had been delegated to them by the COP.[163] Sand made this argument when guidelines restating the entire system were in preparation.[164] Although the guidelines have since been adopted, the matter is still far from resolved. The new guidelines permit the Standing Committee to make trade suspension recommendations so far as they are "specifically and explicitly based on the Convention and on any applicable Resolutions and/or Decisions by the Conference of the Parties."[165] It is certainly arguable that any apparent allocation of ultimate sanctioning authority could still be limited by resolutions and decisions of the COP. Further, the new guidelines state that "[w]hen the Conference of the Parties decides to carry out itself the tasks delegated to the Standing Committee, it follows the same procedures as those described below for the Standing Committee."[166]

In earlier comments on the effect of this provision, the Chairman of the Working Group drafting the guidelines stated that this reflected the COP's ultimate authority to "seize itself of any matter it pleases."[167] If this is the new approach, then the COP could seize responsibility for handling a case of non-compliance. The affected state does not have such a powerful right of appeal as per Kyoto, but neither is the power of the Standing Committee unlimited. This places CITES somewhere between the Kyoto Protocol and the WHC with respect to the limits of authority.

Therefore, in one regard—namely, the ultimate power of the Committee—the WHC regime is exceptional, even when compared to those MEAs commonly discussed in research into compliance procedures.[168] Including the WHC in future discourse on compliance would therefore be welcome. Particularly so when the similarities

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162. *Id.* at 94. Such recommendations do not require universal support from contracting parties in order to be effective sanctions. Sand, *supra* note 147, at 264.

163. Sand, *supra* note 147, at 265-266.

164. *Id.*

165. *Guide to CITES Compliance Procedures*, Resolution Conf 14/3 (Annex) ¶ 30, *available at* http://www.cites.org/eng/res/all/14/E14-03.pdf.

166. *Id.* ¶ 11.

167. CITES, *Interpretation and Implementation of the Convention Compliance and Enforcement Issues*, Report of the Standing Committee Working Group on Compliance, COP14 Doc 23, 4 (June 3-15, 2007).

168. *See generally* sources cited *supra* note 138.

between the WHC and the Montreal Protocol, LRTAP, CITES, the Kyoto Protocol, and the Aarhus Convention are recalled. As was demonstrated, these similarities related to a comparable devolution of power over compliance to a limited membership body, which acted so as to prefer management over sanctions, but which still retained the option of pursuing economic sanctions if needed.

B. Compliance and Effectiveness

Despite the atypical features of the WHC, praising its degree of compliance pull is immaterial if it has no relation to effectiveness. As David Victor *et al.* assert, the fact that a state is acting in compliance with agreed conservation obligations does not necessarily indicate that the treaty is effective, which they define as resulting in changes in behavior that furthers the goals of a treaty. Victor *et al.* explain: "International environmental law is filled with examples of agreements that have had high compliance but limited influence on behavior. . . . Standards can be too weak, too strong, inefficient, or completely ill conceived."[169]

Initial reflection upon the key articles defining the obligations of the parties to the WHC might cause concern in this regard. Article 4 (the obligation to identify, conserve, protect, present and transmit to future generations) is predicated upon the basis that a state party will do "all it can to this end, to the utmost of its own resources."[170] Article 5 sets out the minimal action that must be taken to meet the aforementioned obligation, but requires only that states "endeavor" to take these steps "in so far as possible, and as appropriate for each country."[171] Objections could therefore be leveled at the Convention's drafting, which would undermine the previously noted strengths. Such objections would assert that if the standard for compliance is so ambiguous and vague that charges of non-compliance are difficult to make, or if the standard for compliance is so low that it can be met simply by maintaining the status quo, then the WHC would fail to protect the world's heritage and become ineffective. Professed compliance could lead to maintenance of the very status quo which threatened the world's natural heritage in the first place. Nevertheless, for the following reasons, such objections should not generate undue concern.

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169. Victor *et al.*, *supra* note 124, at 7.

170. WHC, *supra* note 1, at Art. 4.

171. *Id.* at Art. 5: "To ensure that effective and active measures are taken for the protection, conservation and preservation of the cultural and natural heritage situated on its territory, each State Party to this Convention shall endeavor, in so far as possible, and as appropriate for each country: . . ."

The pit-falls of placing too much emphasis upon compliance at the expense of studying the effectiveness of a regime is made clear by Victor *et al.*,[172] and their observations deserve to be borne in mind. However, the powers of the World Heritage Committee go a long way towards averting this danger. The standards demanded of state parties under the World Heritage Convention are indeed indeterminate under Articles 4 and 5. This then leaves states free to advocate for the standards to be viewed at a level that is cleared by their actions; however, their submissions do not conclusively determine that level. This is because it is only the World Heritage Committee's view that is of any practical significance. After all, the Committee's implementation responsibilities give it the means to reinforce its judgments on the expected standards. Additionally, the World Heritage Committee initiates and approves amendments to the Guidelines, and this document plays a key role in defining the substantive content of the Convention.[173]

The Committee therefore has *de facto* authority to impose substantial and onerous obligations upon the state parties. Therefore, it has the means to ensure effective compliance. As has been seen in Part IV.C. above, the Committee's views of what does and does not accord with the obligations under the WHC certainly seem to affect the behavior of states. Therefore, it is the limited membership committee, with its executive powers over benefits offered, which has the power to articulate the standards demanded so as to render the Convention effective. Without such a system, the obligations would have been so indeterminate that state parties could have projected their own interpretations onto the treaty to maintain a veneer of compliance.

VI. AREAS FOR PRIORITY ACTION

With extensive power over the normative content of the Convention, and the means to enforce its own interpretation of that normative content, the legitimacy of the Committee and its activities is vital. Indeed, Affolder suggests that much of the "paranoid lather" and talk of UN helicopters in relation to World Heritage sites can be traced to "the power of the autonomous World Heritage Committee and the fact

172. *See* Victor *et al.*, *supra* note 124.

173. *See also* Zacharias, *supra* note 21, at 1846-51. In this respect, the WHC might share another common feature with the Aarhus Convention Compliance Committee whose work, it is claimed by Kravchenko, has acted to define and clarify terms of that treaty in a fashion similar to case law. Kravchenko, *supra* note 140, at 5. However, as Kravchenko acknowledges, while that committee's findings have so far been duly adopted by the COP to that treaty, this does mean the final arbiter is the contracting parties acting in plenary. *Id.* at 35.

that much of the normative content of the World Heritage regime is articulated in the [Guidelines] rather than in the Convention itself."[174] The Guidelines, in turn, are formulated by the Committee on a two-thirds majority without any reference to all of the contracting parties. Absent acceptance of the legitimacy of the Committee, there is a real danger of a greater decline in support amongst the public for conservation activities.

Many elements go into generating legitimacy; for example, public education initiatives can be used to help generate legitimacy in localities that tend to favor development and resist conservation. Nevertheless, two aspects of the regime may be having an undermining effect on legitimacy. The first relates to the continued indeterminacy of the normative content of Article 4, and the second to the constitution of the limited membership Committee itself.[175] These are areas currently exhibiting weaknesses that can, and should, be tackled. By highlighting their link to compliance, it is hoped that extra weight can be lent to prioritizing their resolution.

A. Indeterminacy

There are two aspects of the Article 4 obligation where indeterminacy is an avoidable problem. First, there is indeterminacy as to which sites are regulated by this article. Second, it is unclear what the article (and the Convention generally) means by protection and conservation. While the uncertainty over the latter has left the field open for the Committee to interpret this so as to achieve the objectives of the Convention, it is imperative that it be explicit and consistent about the standards it is setting so as to maintain the legitimacy of its actions.

1. Identifying the Relevant Properties

Article 4 applies to sites forming part of the world heritage (as defined in Article 2), irrespective of listing. Significantly, the sites referred to in Article 2 are a far larger group than those inscribed on the World Heritage List by the Committee. Once the sites falling within

174. Affolder, *supra* note 22, at 43, 53-54.

175. Franck argues that four factors—all of which contribute to the legitimacy of an obligation—can generate a pull towards compliance with a rule unenforced by a coercive power. These factors relate to determinacy, symbolic validation, coherence, and adherence. THOMAS M. FRANCK, FAIRNESS IN INTERNATIONAL LAW AND INSTITUTIONS, 30 (Clarendon Press, 1995). This Article differs from Franck's core thesis since the WHC has coercive power similar to the type he felt was often lacking. Nevertheless, two issues looked at in this Part do have parallels with the first and last of Franck's legitimacy factors.

Article 2 are identified, they will not instantly or necessarily move onto the List. Nor is the contracting party obliged to nominate all potential sites for listing. However, as stated, Article 4 obligations attach to all properties so identified.[176]

The central question then becomes, what evidence is sufficient to establish that a state has made such a decision and identified a natural property as falling within Article 2? The answer to this, which may vary from state to state, will be important for a range of stake-holders, such as non-governmental organizations, activists, the administrative bodies under the Convention, and other contracting parties keen to see that all states are meeting their obligations. Further, in federal systems, competence to deal with environmental matters may be divided between the central and regional governments according to whether a site falls under international law or only national law. There is then a need to identify Article 2 natural properties in order to determine the responsibilities of the two levels of government. Finally, other contracting state parties must be able to identify the properties that they are obliged to refrain from deliberately damaging in accordance with Article 6(3).[177]

Beyond the World Heritage List itself,[178] what are the likely sources of such evidence? The most obvious evidence would be tentative lists. These, after all, are the inventories of properties that, in the contracting parties' opinions, form the natural heritage as defined in the WHC, and which they hope will be included in the World Heritage List. However, there are two problems with tentative lists as evidence. First, not all state parties have submitted these lists.[179] While capacity to produce them

176. *See, e.g.*, Queensland v. The Commonwealth (1989) 167 C.L.R. 232 (High Court of Australia). In that case, Justice Dawson stated:

> The obligation of a State Party to protect, conserve, present and transmit to future generations the cultural and natural heritage situated on its territory does not flow from any listing upon the World Heritage List. It flows from the identification by the State Party of its cultural or natural heritage, an identification which the State Party is under a duty to make.

177. WHC, *supra* note 1, Art. 6(3) dictates that "Each State Party to this Convention undertakes not to take any deliberate measures which might damage directly or indirectly the cultural and natural heritage referred to in Articles 1 and 2 situated on the territory of other States Parties to this Convention." Recall that Article 6(3) was discussed above at the end of Part II.B.

178. Inscription of a property in the World Heritage List by the Committee will, given the level of expertise guiding the Committee, be practically conclusive evidence that a natural property falls within Article 2. Support for this position has been given by Australia's Justice Dawson (see note 176). This practical effect seems justifiable since Article 12 of the WHC indicates that the Committee's decisions are not legally definitive.

179. By April 2008, 162 of the 185 contracting parties had submitted tentative lists. Report of the 32nd Ordinary Session of the World Heritage Committee, Doc. WHC-

may be a large factor in this state of affairs, if tentative lists are also the evidentiary basis for attaching obligations to a property (and the benefits of World Heritage listing may not ultimately accrue), then this could discourage states from producing lists at all.

The second problem lies in resolving the position of a property that is on an existing list, but whose nomination to the World Heritage List has been unsuccessful. The WHC states:

> The fact that a property belonging to the cultural or natural heritage has not been included in either [the World Heritage List or the Danger List] shall in no way be construed to mean that it does not have an outstanding universal value for purposes other than those resulting from inclusion in these lists.[180]

Thus, a site could still be regarded by the unsuccessful nominating state as having outstanding universal value for one of those other purposes; most notably for the definition of natural heritage. In such circumstances the obligations under Articles 4, 5, and 6 would continue to apply. Yet despite this, there remains no clear procedure to determine if a state does indeed continue to regard the unlisted property as being part of the natural heritage. The lack of determinacy in relation to the fundamental issue of which sites are caught by Article 4 (and Article 6(3)) seems an unnecessary shortcoming. A form of official pronouncement from the state party involved seems a simple solution to this indeterminacy.

Beyond tentative lists, it is conceivable that documents or records produced for internal circulation at the national level might also be clear evidence. For example, state parties are supposed to produce national inventories of properties regarded as reflecting their cultural and natural heritage. Additionally, announcements regarding the status of important sites may be made by governments. Again, given the potential for these lists and announcements to identify the properties to which the obligations policed by the Committee under the WHC attach, clear procedures need to be in place for these to be made available to all relevant and concerned parties.

2. Protection and Conservation

Further, the WHC does not define "protection," "preservation," or "conservation." Nevertheless, these terms are used freely in WHC documents in practice. However, while these phrases may not have been used as terms of art by the regime, particularly during the first twenty

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08/32.COM/8A (Apr. 15, 2008) (providing the Tentative Lists submitted by States Parties as of April 15, 2008, in conformity with the Operational Guidelines).

180. WHC, *supra* note 1, at Art. 12.

years of the WHC, it has been claimed that "in the development of nature protection law, each of these concepts come [*sic*] to have its own meaning and that meaning can be significant for the legal scope of the provisions of the international documents in which these concepts are to be found."[181]

Generally, these terms have the following associations. "Protection" suggests a duty to prevent a specific threat that may cause damage, although it does not cover the future use of the subject once the threat is removed.[182] "Protection" has also been used to denote a concern for the welfare of animals, thus carrying more ethical connotations.[183]

"Preservation" and "conservation," conversely, are concerned with the future management of a subject. "Preservation" has been defined as setting a subject aside and guarding it so as to maintain its natural characteristics in a manner unaffected by human activity.[184] This may therefore imply that commercial utilization is not permitted under an obligation to preserve a natural area or object.[185] On the other hand, "conservation" has been linked to sustainable use of a resource so that it may be enjoyed by present generations while maintaining its potential to meet the needs of future generations.[186] Therefore, commercial utilization is, in theory, permitted so long as it is sustainable. Of course in order to maintain a resource's potential for future generations, short-term protective measures, or longer term preservationist management levels may be needed. Thus, conservation can include protection and preservation.[187]

The current imprecise use of these terms under the WHC without due consideration of the implications of such use is problematic. As noted by Christina Cameron with respect to the WHC, "If the international community is to monitor World Heritage Sites, it must have access to universally agreed-upon standards of conservation—or, more accurately, standards for the acceptable limits of change—against which to monitor."[188]

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181. P. VAN HEIJNSBERGEN, INTERNATIONAL LEGAL PROTECTION OF WILD FAUNA AND FLORA 43 (IOS Press, 1997).

182. *Id.*

183. *Id.*

184. *Id*. at 44 (quoting the 1991 Draft Covenant on Environmental Conservation and Sustainable Use of Natural Resources).

185. *Id.*

186. M. J. Bowman, *The Ramsar Convention Comes of Age*, 42 NETH. INT'L L. REV. 1, 15 (1995).

187. Van Heijsbergen, *supra* note 181, at 51-2.

188. Christina Cameron, *The Strengths and Weaknesses of the World Heritage Convention*, 28(3) NATURE & RESOURCES 18, 20 (1992).

Formulating and disseminating clearer guidelines on the acceptable limits of change would put the Committee in a more legitimate position to hold national governments accountable for their obligations. This would therefore enhance compliance pull by giving greater credibility to the reactive monitoring activities of the Committee. MEAs, such as Ramsar, have produced detailed guidance to assist enclave managers and state parties to meet their obligations. Unfortunately only recently has it even been suggested that such guidance should be produced under the WHC.[189] Until such guidance arrives, the inconsistent use of what appear to be terms of art undermines the determinacy of the WHC, the legitimacy of the Committee's responses, and the possibility for compliance pull.[190]

B. The Legitimacy of the Committee

In the past, concerns were raised about the constitution of the Committee and the consequences flowing from the range of states that have enjoyed terms of office. In 2000, figures prepared by Belgium indicated that ninety-five contracting parties had never been represented on the Committee, while ten parties had been elected more than three times.[191] Further, those states that had not been on the Committee had few, if any, sites on the World Heritage List, while the opposite was true

189. Report of the 25th Ordinary Session of the World Heritage Committee, ¶ III.14, Doc. WHC-01/CONF.208/24 (Dec. 2001).

190. It remains currently unclear whether the limit of permitted change set by Article 4 of the WHC is one of preservation, or only such change as is needed to facilitate presentation of a site to the public (on which, *see generally* Haigh, *supra* note 6), or a limit which still allows commercial sustainable utilization. Jim Thorsell support's the latter noting that, "listing does not preclude extractive use." Jim Thorsell, *Nature's Hall of Fame: IUCN and the World Heritage Convention* 7(2) PARKS 3, 3 (1997). This seems to be a fair observation. Such extraction is permitted within the Great Barrier Reef World Heritage Site in zones permitting sport fishing, for example. However, it may be that the standard of management is a bespoke form of sustainable development for the WHC in that the sites must be managed in a way that also maintains their heritage values. In 2005, such a stance received general support when the Guidelines stated at Paragraph 119:

> World Heritage Properties may support a variety of ongoing and proposed uses that are ecologically and culturally sustainable. The State Party and partners must ensure that such sustainable use does not adversely impact the outstanding universal value, integrity and/or authenticity of the property.

Guidelines, *supra* note 26, ¶ 119.

191. Report of the 24th Ordinary Session of the Bureau of The World Heritage Committee, para VI.7(5), Doc. WHC-2000/CONF.202/17 (Aug. 2000), *available at* http://whc.unesco.org/archive/2000/whc-00-conf202-17e.pdf > page 56, ¶ V.7(5).

for those who had enjoyed multiple terms of office.[192] Belgium seemed to suggest there was a correlation.[193]

Article 8(2) of the WHC states that the "election of members of the Committee shall ensure an equitable representation of the different regions and cultures of the world."[194] Nevertheless, as Belgium's data seems to suggest, this has been difficult to translate into practice. Increasing the permitted number of states on the Committee was felt to be an impractical solution since the limit of twenty-one is set by Article 8(1) and would consequently require formal amendment.[195] Fortunately, a number of alternative approaches have been adopted. Voluntarily abstaining from seeking re-election at the end of a six-year term has been frequently promoted, as encapsulated in the resolution of the General Assembly in 1989.[196] Since then, more significant changes have been introduced, whereby one seat is reserved on the Committee for a state with no property listed on the World Heritage List.[197] The system remains under regular review, which should be welcomed as part of the process for ensuring and enhancing legitimacy.

VII. CONCLUSION: THE SIGNIFICANCE OF THE WORLD HERITAGE REGIME AND THE BUILT-IN PROCESS OF COMPLIANCE PULL

The creation of the Committee brought into existence a centralized body with considerable executive powers. These powers are often retained under a treaty by contracting parties acting in plenary as a COP. Yet in the case of the WHC, power has been almost entirely devolved to the Committee, which is, significantly, a limited membership body. Some of these powers give substance to the obligations and detail to the procedures by which the Convention is to be implemented. This is achieved through the issuing and amending of the Guidelines, and the

192. *Id.*

193. *Id.*

194. WHC, *supra* note 1, at Art. 8(2).

195. Report of the Special Session of the Bureau of The World Heritage Committee, ¶ 6, DOC. WHC 2000/Conf.202/4 Rev.1 (SPE) (Oct. 2000).

196. Summary Record of the 7th General Assembly, ¶ 12, Doc. CC-89/CONF.013/6 (Nov. 1989). Such moves however have proved unsuccessful with a number of states ignoring the resolution; for example, the United States in 1991, and China, Egypt, Mexico, and Spain in 1997.

197. This was first put into practice at the 13th General Assembly in 2001. *See* Summary Record of the 13th General Assembly, ¶ 82, Doc. WHC-2001/CONF.206/8 Rev (Oct. 2001).

practice of the Committee. Ultimately, these enable the Committee to steer the content of the obligations towards standards that are themselves substantial and effective.

Powers over implementation must be added to these powers of defining content. At this key point, the Committee acts as a "gatekeeper" to the significant benefits (both economic and political) offered under the treaty. It is the Committee who controls the brand and ensures that only the best of the best sites are inscribed as the world's heritage. It is also the Committee that awards financial assistance from the World Heritage Fund.

Finally, the Committee plays the central role in reviewing implementation by contracting parties and, if necessary, investigating possible instances of non-compliance uncovered via reactive monitoring. While systems for implementation review and non-compliance procedures are increasingly common within international environmental law, only a few MEA regimes exist which delegate enforcement powers to centralized bodies. Currently the WHC is rarely mentioned in this context, but in the future it should be. The Committee not only serves the role of giving meaning to non-compliance with key obligations, but also has the authority, in practice, to recognize non-compliance. After recognizing non-compliance, the Committee has real sanctioning options, from making unilateral requests, which the contracting parties may well regard as punitive, to ultimately de-listing and eliminating benefits. Nevertheless, the Committee still rightly prefers to offer management options in the first instance. While the WHC shares important features with the Montreal Protocol, LRTAP, CITES, the Aarhus Convention, and the Kyoto Protocol, it goes beyond these treaties in a powerful way: the enforcement powers of the Committee are not limited by a need to obtain the support of all the parties acting as a plenary—instead, that power is exercised by the small group of states elected to the twenty-one seats.

The elaboration, implementation, and enforcement roles of the Committee combine to draw states into compliance with the provisions of the treaty. The treaty creates a real or perceived association between cooperation with the Committee, performance of obligations, and furthering one's own national interests. These treaty-generated forces undermine the notion of unfettered freedom in decision making and suggest a sense of coercion based upon self-interest. This positioning of the Committee has had a major impact upon the logic of consequences that states engage in, so as to favor conserving and protecting natural heritage in compliance with the treaty's objectives. Given that the set-up employed is unusual among MEAs, it is a real surprise that the World Heritage system is so often omitted from compliance discourse.

Nevertheless, determinacy and questions over the composition of the Committee have the potential to undermine the legitimacy of the body and reduce the treaty's capacity to pull states towards compliance. If there was ever a need to find justifications for committing resources to addressing these elements of the system, this Article provides one of some significance—the potential impact on compliance pull.

Extended Producer Responsibility Programs in the European Union: In Search of the Optimal Legal Basis

Aaron Ezroj*

ABSTRACT

In recent decades, the European Community has been one of the most progressive entities in tackling serious environmental problems and encouraging environmental sustainability. The European Community has for some time been trying to use market-based environmental policies to motivate environmental protection. Extended producer responsibility programs, which make manufacturers financially or physically responsible for their products throughout their life cycle—including after their useful lives—are becoming a particular favorite of policymakers. Extended producer responsibility programs, along with other market-based environmental policies, offer considerable promise, but European

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Community legislators are having difficulty determining the proper legal basis for these programs and applying these bases in a manner which best guarantees the success of the programs. Unfortunately, improperly implemented legislation has already led to differences in national standards which are seriously affecting the functioning of the European Community common market and creating trade barriers between Member States. This Article dissects different legal bases upon which environmental legislation implementing extended producer responsibility programs have been enacted. The Article then recommends the use of a dual legal basis of both Article 175 and 95 EC for this legislation and explain how certain provisions require an Article 175 EC legal basis while others require an Article 95 EC legal basis. This Article's recommendations will ensure that extended producer responsibility programs most effectively protect the environment without disrupting the European Community market.

I. INTRODUCTION

Market-based environmental policies are increasing in popularity and becoming integral components of environmental legislation worldwide. These policies—such as tradable pollution permits, deposit-and-refund schemes, and extended producer responsibility programs—offer considerable promise. Because they use incentive-based instruments and market forces to motivate environmental protection,[1] these policies have already been credited with lowering the cost of environmental protection, offering incentives for companies to invest in environmental improvements, and increasing environmental awareness.[2]

Extended producer responsibility ("EPR") programs are becoming a particular favorite of policymakers in Europe. EPR programs aim to make manufacturers financially or physically responsible for their products throughout their life cycle, including after their useful lives. This additional responsibility is believed to induce manufacturers to design and manufacture more environmentally friendly products—i.e., products that can be easily dismantled, recovered, reused, and recycled, and which are typically less expensive to manage after their useful lives.[3]

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1. SCOTT J. CALLAN & JANET M. THOMAS, ENVIRONMENTAL ECONOMICS AND MANAGEMENT 124 (2d ed. 2000).

2. HARRI KALIMO, E-CYCLING: LINKING TRADE AND ENVIRONMENTAL LAW IN THE EC AND THE U.S. 519 (2006) (citing Robert W. Hahn & Robert N. Stavins, *Incentive-Based Environmental Regulation: A New Era from an Old Idea?*, 18 ECOLOGY L.Q. 1, 12–14 (1991)).

3. MATTHEW SAVAGE, IMPLEMENTATION OF THE WASTE ELECTRIC AND ELECTRONIC EQUIPMENT DIRECTIVE IN THE EU ix (European Commission Directorate-General Joint

These programs offer considerable promise to Europe, a continent which lacks both adequate landfill space and virgin metals and whose citizens are deeply concerned about contaminating the environment.

In 1991, the German Packaging Ordinance introduced the first EPR program in Europe. At that time, Germany faced a severe landfill crisis and packaging waste constituted one of its major sources of municipal waste.[4] The German Packaging Ordinance required producers to either individually take back their packaging or join an industry wide take-back program. The program was extremely expensive and encountered significant start-up problems, but it was credited with significantly reducing packaging waste.[5] Following Germany's lead, in 1994 the European Community (the "Community"), now consisting of twenty-seven Member States and otherwise referred to as the European Union,[6] enacted the Packaging and Waste Packaging Directive. The Directive set product standards for packaging waste, set collection and recycling targets for packaging waste, and implemented an EPR program aimed at reducing packaging waste throughout Europe. One of the specific aims of the Directive was to counter the market-distorting impact caused by having too wide a divergence in national packaging regulations. Indeed, the Directive remains the only Community harmonization instrument to date that has imposed not only minimum targets upon Member States, but also maximum targets.

After passing the Packaging and Waste Packaging Directive, the Community has been introducing EPR programs as integral components of other environmental legislation. In 2002, the Community targeted electronics waste with the Waste Electrical and Electronic Equipment ("WEEE") Directive[7] and the Restriction of Hazardous Substances ("RoHS") Directive.[8] Electronics waste annually amounts to 17–20

Research Centre, 2006).

4. Carola Hanisch, *Is Extended Producer Responsibility Effective*, 34 ENVTL. SCI. & TECH. 170A, 170A–75A (2000) (explaining that packaging waste amounted to 30% by weight and 50% by volume of Germany's municipal waste).

5. *Id.* (explaining that in 1998 Duales System Deutschland (DSD), the industry packaging waste management organization spent US$2 billion for waste management; however, between 1991 and 1998, per capita consumption of packaging decreased by 13% in Germany).

6. The terms European Community ("EC") and European Union ("EU") are often used interchangeably. Technically, the EC and EU are not the same even though they consist of the same members and in the near future will likely converge under the Lisbon Treaty. At the moment the EC and the EU refer to membership in a different set of treaties. For the purposes of this paper, however, these distinctions are not relevant.

7. Directive 2002/96/EC of the European Parliament and of the Council, Waste Electrical and Electronic Equipment, 2003 O.J. (L 37/24) [hereinafter WEEE Directive].

8. Directive 2002/95/EC of the European Parliament and of the Council, Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment, 2003

kilograms of waste per person,[9] or 6–10 million tons total of waste in the Community alone,[10] and it is increasing at a rate three times that of the average source of waste.[11] Electronics waste also includes hazardous substances—such as lead and mercury—which, if improperly treated, can lead to the contamination of soil, water, and air, causing serious harm to the environment and human health.[12] Additionally, in 2006 the Community implemented the Waste Batteries and Accumulators Directive to target battery and accumulator waste,[13] another source of waste that strains landfill resources and includes hazardous substances.

Community legislators are having difficulty determining the proper legal basis for EPR programs and then applying those legal bases in a manner that best guarantees the programs' success. Determining the proper legal basis is of considerable importance within the Community. When the Community passes an environmental law, the law does not immediately go into effect in each Member State.[14] Instead, each State must redraft or "transpose" the Community law into national law.[15] After each Member State transposes a Community law, there will be harmonization of that law within the Community so that States have similar legislation rather than a single legal system.[16]

A law's legal basis determines how much flexibility each Member State will have when transposing a Community law into national law and thus exactly how similar national legislation will be throughout the Community.[17] When the Community promulgates laws on certain legal bases—such as Article 175 EC, which is specific to the environment—Member States have a lot of flexibility. These legal bases allow the Community to enact minimum targets only, requiring Member States to

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O.J. (L 37/19) [hereinafter RoHS Directive].

9. SAVAGE, *supra* note 3, at 1.

10. KALIMO, *supra* note 2, at 203; *see also Commission Proposal on the WEEE and RoHS Directives*, at 4, COM (2000) 347 final (June 13, 2000).

11. SAVAGE, *supra* note 3, at 1.

12. *Commission Proposal on the WEEE and RoHS Directives*, at 4–15, COM (2000) 347 final (June 13, 2000) (explaining dangers to human health and the environment).

13. Council Directive 2006/66/EC, Batteries and Accumulators and Waste Batteries and Accumulators, 2006 O.J. (L 266/1). Hereafter only batteries will be referred to when accumulators are also included.

14. KOEN LENAERTS & PIET VAN NUFFEL, CONSTITUTIONAL LAW OF THE EUROPEAN UNION 766 (Robert Bray, ed., Sweet & Maxwell Ltd. 2d ed. 2005).

15. Case C-102/79, Comm'n v. Belgium, 1980 E.C.R. I-1473, ¶ 12.

16. Piet Jan Slot, *Harmonisation of Law*, 5 EUR. L. REV. 378, 379 (1996).

17. It also determines the procedure and required majorities within the Council of the European Union. However, these impacts are of less relevance for environmental law because the alternative legal bases are now subject to identical procedural and voting requirements.

transpose certain measures at a minimum, but not prohibiting States from maintaining or introducing more stringent measures that go beyond the required minimums.[18] Additionally, if the environmental guarantee is invoked, a Member State can further deviate from the targets or language of a law as long as the State notifies the European Commission ("Commission").[19] In such cases, if the Commission feels that the State went too far, the onus is on the Commission to take the Member State to the European Court of Justice.[20]

Alternatively, when laws are based on other legal bases—such as Article 95 EC on governing the Community common market—Member States have less flexibility and will need to transpose the wording of a law's provisions in a more uniform manner. These legal bases allow the Community to set both minimum and maximum targets simultaneously and prohibit Member States from adopting either lower or higher standards.[21] If the environmental guarantee is invoked, Member States are not fully prevented from deviating from the targets or language of a law, but they need to receive approval from the Council of the EU in order to do so.[22]

Sometimes flexibility is advantageous. A Member State may be able to increase environmental protection internally without affecting other States. However, flexibility also creates problems. Differences in national standards can seriously affect the functioning of the Community market and create trade barriers between Member States. Under these latter circumstances, it is necessary to provide a law with a legal basis allowing for exhaustive harmonization or, at the least, one which will make more ambitious legislation in some States more difficult to obtain.

Legislators are unclear as to whether EPR programs would be better served by a legal basis allowing more flexibility, such as Article 175 EC, or less, such as Article 95 EC. It is also unclear which is more appropriate in light of Community legislative history. Complicating matters further, EPR programs are generally only components of comprehensive environmental legislation that include both product standards and collection and recycling targets, which typically have different legal bases.

This Article first briefly examines the emergence of Community environmental law and different legal bases, providing a general context

18. Slot, *supra* note 16, at 384–85.

19. Consolidated Versions of the Treaty on European Union and of the Treaty Establishing the European Community, art. 176, Dec. 29, 2006, 2006 O.J. (C 321) [hereinafter EC Treaty].

20. *Id*., art. 226.

21. Slot, *supra* note 16, at 382–83.

22. EC Treaty, *supra* note 19, art. 95.

for the rest of the discussion. Second, several legal bases that have been used for environmental legislation implementing EPR programs are discussed: an Article 95 EC legal basis, a split legal basis, and a dual legal basis. This Article concludes that this legislation should have a dual legal basis. Third, an explanation of how certain provisions require an Article 175 EC legal basis and others require an Article 95 EC legal basis in order to guarantee the success of this legislation is provided. The three elements of environmental legislation implementing EPR programs are identified: (1) product standards; (2) collection and recycling targets; and (3) EPR programs. It is then demonstrated that product standards and EPR programs require an Article 95 EC legal basis, while collection and recycling targets generally benefit the most from an Article 175 EC legal basis. Finally, this Article concludes with a recommendation section.

II. THE EMERGENCE OF ENVIRONMENTAL LAW AND DIFFERENT LEGAL BASES

The first treaties establishing the European Community in the early 1950s made no mention of the environment or other key principles, such as health and consumer protection. The treaties, such as the Treaty establishing the European Coal and Steel Community,[23] focused only on strengthening economic relationships. However, as economic relationships grew between Member States and a Community market developed, the need to control at least some of these matters on a Community-wide, pan-European basis became increasingly clear.[24]

In the 1970s, the Community decided to enact legislation on the environment, health, and consumer protection even though it was unclear whether the Community had the power to do so. According to the EC Treaty, "[t]he Community shall act within the limits of the powers conferred upon it by this Treaty and of the objectives assigned to it therein."[25] All Community action must be founded on a specific legal basis enshrined in the EC Treaty.[26] The Community rested its authority to enact legislation on the environment, health, and consumer protection on its competence to govern the Community market (now Article 95 EC). This remained the norm throughout the 1980s.

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23. *See* Treaty Establishing the European Coal and Steel Community, Apr. 18, 1951, 261 U.N.T.S. 140.

24. *See* JAN H. JANS & HANS H.B. VEDDER, EUROPEAN ENVIRONMENTAL LAW 3–9 (Europa Law Publishing 3d ed. 2008) (providing an excellent in-depth discussion on the origins of Community environmental law).

25. EC Treaty, *supra* note 19, art. 5.

26. LENAERTS & VAN NUFFEL, *supra* note 14, at 86–87.

Finally, with the Maastricht Treaty of 1992,[27] the Community gained specific competences accompanied by specific EC Treaty articles for legislation on the environment (now Article 175 EC), health (now Article 152 EC), and consumer protection (now Article 153 EC). On the one hand, this signaled an acceptance by Member States that the Community should have expanded competence in these areas. However, it also signaled that the Community should treat these areas, traditionally under the competence of Member States rather than the Community, differently from the Community market. In these new areas, the Community should have less power and Member States should have more flexibility in transposing a Community law into national law.

Now, with specific competences accompanied by specific EC Treaty articles for legislation on the environment, health, and consumer policy, one might have assumed that the Maastricht Treaty would have resolved confusion surrounding the proper legal bases for Community legislation in those areas. However, this has actually compounded some of the confusion. Some, if not most, environmental, health, and consumer protection programs inevitably have an impact on the Community market. In these cases, it is unclear whether legislation would be better served by a legal basis allowing more or less flexibility to Member States. It is also unclear which legal basis is more appropriate in light of Community legislative history. This dilemma has been most debated in the area of consumer protection.[28] Although Article 153 EC specifically provides for the enactment of legislation for consumer protection, almost all consumer protection laws have been enacted on the Article 95 EC basis of the Community's competence to govern the Community market.[29]

Opinions are mixed as to whether the Community has been justified in its near universal use of Article 95 EC as a legal basis for consumer protection laws. There are strong arguments for using such a legal basis, which will allow for exhaustive harmonization, or at least make more ambitious legislation in some states more difficult to obtain. There are concerns that differences in national standards will seriously affect the functioning of the Community market and that Member State legislators have limited expertise in evaluating and correctly determining risks of

27. Treaty on European Union, Feb. 7, 1992, 1992 O.J. (C 224) 1 [hereinafter Maastricht Treaty].

28. *See, e.g.*, Stefan Grundmann, *The Structure of European Contract Law*, 4 EUR. REV. PRIVATE L. 505 (2001); Geraint Howells & Thomas Wilhelmsson, *EC Consumer Law: Has it Come of Age?*, 28 EUR. L. REV. 370 (2003); Jules Stuyck, *European Consumer Law After the Treaty of Amsterdam: Consumer Policy in or Beyond the Internal Market?*, 37 COMMON MKT. L. REV. 367 (2000); Stephen Weatherill, *Harmonisation: How Much, How Little?*, 16 EUR. BUS. L. REV. 533 (2005).

29. Stuyck, *supra* note 28, at 380.

market failures that may result from their actions.[30] Arguments also focus on whether it is just for Member States to subject their citizens to obligations that go beyond those envisioned by the Community.[31]

Conversely, there are strong arguments supporting the use of an Article 153 EC legal basis and allowing Member States more flexibility in transposing laws. It has been argued that use of an Article 95 EC legal basis has prevented Member States' experimentation and thus has stunted the development of novel programs.[32] It has also been reasoned that the likelihood that State actions will lead to market disruptions has been overstated and that increasing access to information will greatly alleviate such a risk by effectively informing every citizen of their obligations vis-à-vis each Member State.[33] Further arguments supporting an Article 153 EC legal basis assert that the Community's near universal use of Article 95 EC is illegitimate in light of treaty agreements penned by Member States. If the Community wants to push aside the harmonization approach as agreed to in Article 153 EC and give way to the Article 95 EC harmonization approach, there needs to be a fundamental reassessment of what role Community consumer law should play and upon what principles it should be based.[34]

An analogous dilemma exists with legislation on the environment. Different arguments support an Article 175 EC legal basis and others support an Article 95 EC basis. It is of the utmost importance for the Community to choose the proper legal basis.

III. CHOOSING THE MOST APPROPRIATE LEGAL BASES

EPR programs are a single component of larger legislative schemes. Legislation implementing EPR programs combine several elements which, were they dealt with in separate directives, would have different legal bases. The legislation combines product standards, collection and recycling targets, and EPR programs. Traditionally, product standards have been based on Article 95 EC.[35] Environmental targets akin to collection and recycling targets have been based on Article 175 EC. EPR programs, however, are new instruments and it has been unclear to the Community whether they should have an Article 175 or 95 EC legal basis. By way of illustration, the Packaging and Waste Packaging

30. Grundmann, *supra* note 28, at 522–24.
31. Weatherill, *supra* note 28, at 538–42.
32. Howells & Wilhelmsson, *supra* note 28, at 379.
33. *Id.* at 378.
34. *Id.* at 371.
35. JANS & VEDDER, *supra* note 24, at 67.

Directive, the WEEE and RoHS Directives, and the Waste Batteries and Accumulators Directive have each been enacted on different legal bases.

A. The Packaging and Waste Packaging Directive Only Has an Article 95 EC Legal Basis

The Community's first environmental legislation implementing EPR programs, the Packaging and Waste Packaging Directive, was enacted using only an Article 95 EC legal basis.[36] Objective factors that are amenable to judicial review—namely the aim and content of the legislation—justified the choice for only Article 95 in the view of the Commission, as the aim and content were seen to be Community market considerations.[37] For instance, legislation cannot be based on Article 95 EC simply because the legislation's stated objective is to harmonize market conditions within the Community if, once implemented, harmonizing market conditions is likely only to be an incidental effect of the legislation.[38]

Whereas Article 175 EC only allows the Community to set minimum targets,[39] Article 95 EC allows the Community to set both minimum and maximum targets simultaneously. Article 95 EC also makes it easier for the Community to preempt national laws, ensuring more uniform laws across Member States. In contrast, under Article 175 EC, the environmental guarantee allows Member States to deviate from the targets or language of a law as long as the State notifies the Commission.[40] In such cases, if the Commission feels that the State went too far, the onus is on the Commission to take the Member State to the European Court of Justice.[41] With Article 95 EC, the environmental guarantee makes it so that Member States are not fully prevented from deviating from the targets or language of a law, but they must receive approval from the Council of the EU in order to do so.[42]

Recently, however, it has become somewhat unclear whether a directive based on Article 95 EC can set only minimum targets or must

36. *Id.* at 432 (arguing that both the environment and the Community Market articles should have been used).

37. *Compare* Case C-300/89, Commission v. Council (Titanium Dioxide), 1991 E.C.R. I-2867, ¶ 10.

38. Case C-155/91, Commission v. Council (Waste Framework Directive), 1993 E.C.R. I-939, ¶ 19.

39. EC Treaty, *supra* note 19, art. 176.

40. *Id.*

41. *Id.*

42. *Id.* art. 95.

set both minimum and maximum targets simultaneously.[43] The normal posture of Article 95 EC is to set both minimum and maximum targets. This has been deemed necessary to eliminate obstacles to trade within the Community market.[44] Further, according to European Court of Justice Advocate General Geelhoed's opinions relating to the Product Liability Directive, when a directive based on Article 95 EC only provides for minimum targets, this is in disaccord with Article 95 EC's objectives of promoting unity and ensuring the proper functioning of the Community market.[45] Thus, if the Community feels that it must invoke only minimum targets for a proposed law, basing a directive entirely on Article 95 EC may prove inadequate.

B. The WEEE and RoHS Directives Have a Split Legal Basis

The WEEE and RoHS Directives were enacted using a split legal basis. The Community enacted both by splitting an initial single proposal into two separate directives: Article 175 EC for WEEE and Article 95 EC for RoHS. However, a single proposal cannot always be neatly divided into two directives, and a particular provision deserving an Article 95 EC legal basis and requiring more uniform laws across Member States might end up in the directive based on Article 175 EC. This is a problem with the WEEE and RoHS Directives. Certain product standards have ended up in the WEEE Directive. For instance, Article 4 of the WEEE Directive allows Member States to create a relatively open list of product design features that will encourage dismantling, recovery, and reuse.[46]

Additionally, splitting a single proposal into two directives can create confusion if, for instance, the scopes of the directives or definitions from the directives vary. This is another problem with the WEEE and RoHS Directives. The scope for the WEEE Directive includes ten product categories of consumer electronics[47] and the RoHS Directive includes eight product categories of consumer electronics.[48]

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43. JANS & VEDDER, *supra* note 24, at 101–02.

44. EC Treaty, *supra* note 19, art. 95.

45. JANS & VEDDER, *supra* note 24, at 101 (citing the Opinion of Advocate General Geelhoed regarding the Product Liability Directive in Case C-52/00, Commission v. France, 2002 E.C.R. I-3827 and Case C-183/00, Gonzalez Sanchez v. Medicina Asturiana SA, 2002 E.C.R. I-3901).

46. WEEE Directive, *supra* note 7, art. 4.

47. *Id.* Annex 1A.

48. RoHS Directive, *supra* note 8, art. 2(1).

Companies trying to comply with both Directives may forget that the WEEE Directive includes two additional categories.

Finally, splitting a single proposal into two directives can create additional legislative work as the Community will need to enact and Member States will need to transpose two directives rather than one.

C. The Waste Batteries and Accumulators Directive Has a Dual Legal Basis

The Waste Batteries and Accumulators Directive was enacted using a dual legal basis. This approach allows the Community to tailor environmental legislation so that certain provisions are based on Article 175 EC and other provisions are based on Article 95 EC,[49] and in turn allows the Community to create more uniform laws for certain provisions and give Member States more flexibility with others.

A directive can have a dual legal basis in the exceptional case where it can be established to simultaneously pursue a number of objectives or have several components that are inextricably linked without one being secondary and indirect in relation to the other.[50] This, however, can only be done when the decision-making procedures for each legal basis are compatible and use of the two legal bases does not undermine the rights of the European Parliament.[51] Where different decision-making procedures are combined, the more demanding procedures must be followed along with any additional requirements of the less demanding procedure.[52]

Prior to the Treaty of Amsterdam,[53] Article 175 and 95 EC had very different decision-making procedures that were likely incompatible—Article 175 EC gives fewer rights to the European Parliament than does Article 95 EC. Indeed, the European Parliament would seek an Article 95 EC legal basis to give itself more rights, and the Council of the EU would seek an Article 175 EC legal basis because the European Parliament having fewer rights means the Council would have more rights.[54] However, after the Treaty of Amsterdam, Articles 175 and 95

49. JANS & VEDDER, *supra* note 24, at 70, 102.

50. Case C-178/03, Commission v. EP and Council, 2006 E.C.R. I-107, ¶ 59. *But see* Case C-300/89, Commission v. Council (Titanium Dioxide), 1991 E.C.R. I-2867.

51. Case C-178/03, Commission v. EP and Council, 2006 E.C.R. I-107, ¶ 59. *But see* Case C-300/89, Commission v. Council (Titanium Dioxide), 1991 E.C.R. I-2867.

52. JANS & VEDDER, *supra* note 24, at 69.

53. The Treaty of Amsterdam Amending the Treaty on European Union, the Treaties Establishing the European Communities and Certain Related Acts, Oct. 2, 1997, 1997 O.J. (C 340) 1.

54. *See* Case C-300/89, Commission v. Council (Titanium Dioxide), 1991 E.C.R. I-

EC both use the co-decision procedure, giving the same rights to the European Parliament. Thus, Articles 175 and 95 EC are likely compatible, even though the European Court of Justice has not directly ruled on this matter. Because Article 175 EC requires consulting the Committee of Regions and Article 95 EC does not, using the two Articles as a dual legal basis simply requires the use of the co-decision procedure and consulting the Committee of Regions.[55]

D. Using a Dual Legal Basis is the Best Approach

For environmental legislation implementing an EPR program, the best approach is to use a dual legal basis of both Articles 175 and 95 EC, basing certain provisions of the directive on Article 175 EC and other provisions on Article 95 EC. Nevertheless, simply choosing a proper legal basis will not ensure that legislation implementing EPR programs is successful. The Community legislature also needs to apply Articles 175 and 95 EC to the appropriate provisions.

IV. LEGAL BASES MUST BE PROPERLY ASSIGNED TO DIFFERENT PROVISIONS

Choosing a dual legal basis by itself will not ensure the success of legislation implementing EPR programs. Success also depends on how that legal basis, once chosen, is applied to different provisions of the environmental legislation. As noted, Community legislation implementing EPR programs generally combines three elements: (1) product standards; (2) collection and recycling targets; and (3) EPR programs. Provisions on product standards and EPR programs require an Article 95 EC legal basis, which allows more uniform laws across Member States, while collection and recycling targets benefit the most from an Article 175 EC basis, which affords Member States more flexibility. Unfortunately, legal bases have been applied improperly in the past.

2867; Case C-155/91, Commission v. Council (Waste Framework Directive), 1993 E.C.R. I-939.

55. JANS & VEDDER, *supra* note 24, at 69.

A. Product Standards Require an Article 95 EC Legal Basis

Product standards require an Article 95 EC legal basis to allow the Community to create more uniform laws through exhaustive harmonization, or at least by making more ambitious legislation in some States more difficult to obtain. With product standards, differences in national standards seriously affect the functioning of the Community market and are likely to lead to de facto trade barriers between Member States.[56] Throughout the Community's legislative history, Article 95 EC has been used for product standards[57] because the primary objective of these directives is to harmonize market conditions within the Community. Moreover, these directives have a specific effect on the competitive position of companies.[58]

Surprisingly, while Article 95 EC has been used as a legal basis for product standards throughout the Community's legislative history, not all Community environmental legislation implementing EPR programs have used Article 95 EC as a legal basis for product standards. For example, the Community's efforts to combat electronics waste has resulted in the split of a single proposal into two directives with two separate legal bases—some product standards have fallen under the RoHS Directive, which is based entirely on Article 95 EC, while others have fallen under the WEEE Directive, which is based entirely on Article 175 EC.

The RoHS Directive bans six hazardous substances from consumer electronics.[59] In transposing RoHS, Member States must ban exactly these six hazardous substances, no more and no less, unless these States receive approval from the Council of the EU to do otherwise. This Directive has been widely applauded for encouraging environmentally friendly design. Prior to the formulation of the RoHS Directive, the six banned hazardous substances were widely used by manufacturers of consumer electronics.[60] These substances are now no longer widely used within the EU or throughout the rest of the world.[61] Moreover, while

56. JANS & VEDDER, *supra* note 24, at 95.

57. Slot, *supra* note 16, at 383; JANS & VEDDER, *supra* note 24, at 67.

58. *See* JANS & VEDDER, *supra* note 24, at 67–68.

59. RoHS Directive, *supra* note 8, art. 4(1), (3) (banning four heavy metals—lead, mercury, cadmium, and chromium VI—and two groups of brominated flame retardants—PBB and PBDE—from being used in consumer electronics and establishing a framework for the Commission to ban additional hazardous substances if necessary).

60. *EU Plans Revision of Intricate E-Waste Laws*, EURACTIV, July 17, 2006, http://www.euractiv.com/en/environment/eu-plans-revision-intricate-waste-laws/article-156784.

61. Following the enactment of the RoHS Directive, governments outside of Europe have been copying the Directive either in whole or in part. Manufacturers now need to

replacing these substances undoubtedly imposed extra costs on manufacturers, doing so did not seriously affect the functioning of the Community market and did not lead to de facto trade barriers between States because the same hazardous substance bans existed uniformly in all the Member States of the Community.

Conversely, the WEEE Directive allows Member States to create a relatively open list of product design features that encourage dismantling, recovery, and reuse.[62] At the moment, it appears that Member States have not taken much action in this area, perhaps because States feel that they lack the necessary expertise to make an informed decision as to what product design features would encourage dismantling, recovery, and reuse. Nonetheless, the wide reign given to Member States to control product design features is problematic because if States decide to take action in this area, different national product standards are likely to significantly affect the functioning of the Community market and lead to de facto trade barriers between Member States.[63] Allowing such wide reign to Member States is especially dangerous because States may have perverse incentives for banning product design features even when doing so will not encourage dismantling, recovery, or reuse. For example, Member States might try to use product standards to disguise protectionism for consumer electronics produced domestically.[64]

B. Collection and Recycling Targets Benefit the Most from an Article 175 EC Legal Basis

Collection and recycling targets generally benefit the most from an Article 175 EC legal basis where the Community sets only minimum

exclude lead, mercury, cadmium, and chromium VI from products they sell in the EU, China, and California. *See* CHRIS VAN ROSSEM, NAOKO TOJO & THOMAS LINDHQVIST, EXTENDED PRODUCER RESPONSIBILITY: AN EXAMINATION OF ITS IMPACT ON INNOVATION AND GREENING PRODUCTS 18–19 (International Institute for Industrial Environmental Economics 2006), *available at* http://www.foeeurope.org/publications/2006/Extended_Producer_Responsibility.pdf (explaining that because manufacturers still want to do business in these major markets and it is extremely costly for manufacturers of consumer electronics to have multiple production lines, manufacturers have decided to retain a single production line by phasing out lead, mercury, cadmium, and chromium VI worldwide and demonstrating this by revealing that a global phase out strategy has been confirmed by some of the world's largest electronics manufacturers, including HP, Sony, Dell, Toshiba, and Samsung).

62. WEEE Directive, *supra* note 7, art. 4.

63. JANS & VEDDER, *supra* note 24, at 95.

64. *See* Case C-261/81, Rau v. De Smedt, 1982 E.C.R. I-3961 (in which Belgian authorities tried to protect domestic margarine producers by requiring all margarine to be sold in the form of a cube, a method only used by Belgian margarine producers).

targets. Allowing Member States to maintain or introduce more stringent standards usually only affects the Community positively, increasing environmental protection in certain States without harming citizens in other States. Unlike differences in product standards, differences in national collection and recycling targets generally will not seriously affect the functioning of the Community market or lead to de facto trade barriers between Member States. An Article 175 EC legal basis and minimum targets by themselves are typically used for general environmental measures. This is because the primary objective of these directives is not to harmonize market conditions within the Community. Moreover, these directives only have a diffuse effect on the competitive position of companies.[65]

For these reasons, the WEEE Directive and the Waste Batteries and Accumulators Directive use an Article 175 EC legal basis to set minimum collection and recycling targets for electronics waste and battery waste, respectively. Article 5(5) of the WEEE Directive says that each Member State shall ensure the collection of at least an average of four kilograms per inhabitant per year of waste electrical and electronic equipment from private households.[66] Article 7(2) of the WEEE Directive sets up reuse and recycling rates specific for different categories of waste electrical and electronic equipment—e.g., for categories one and ten of Annex IA, "component, material and substance reuse and recycling shall be increased to a minimum of seventy-five percent by an average weight per appliance."[67] To achieve these targets Member States might invest in increasing infrastructure for the collection of waste or engage in publicity efforts to improve consumer awareness. It seems unlikely that such efforts would harm citizens in other Member States or would have more than a diffuse effect on the competitive position of companies within the consumer electronics market.

However, in rare cases, allowing Member States to maintain or introduce higher collection and recycling targets may prevent collection and recycling in other States and hurt businesses involved in these fields. This was the case with packaging waste. When the Packaging and Waste Packaging Directive was being formulated, Germany had a highly developed collection and recycling industry that threatened the creation of necessary infrastructure in neighboring States. A ceiling had to be set on the rate of collection and recycling; otherwise, Germany's Duales System Deutschland ("DSD"), which spends billions of dollars, would collect and recycle too much packaging waste and flood neighboring markets with recycled products. This would stunt the development of

65. *See* JANS & VEDDER, *supra* note 24, at 67–68.

66. WEEE Directive, *supra* note 7, art. 5(5).

67. *Id.* art. 7(2)(a).

collection and recycling agencies in States neighboring Germany. As a result, it would have been extremely difficult for upstart collection and recycling agencies in Slovakia, for example, to survive as DSD operated at a lower average cost than their Slovakian counterparts and sold recycled packaging waste in Slovakia at a lower price.[68]

For these reasons, the Packaging and Waste Packaging Directive uses Article 95 EC to set recovery and recycling targets for packaging waste. Article 6(1)(a) of the Waste Packaging Directive says that each Member State shall ensure that between fifty percent and sixty-five percent by weight of the packaging waste should be recovered.[69] Article 6(1)(b) of the Waste Packaging Directive says that between twenty-five percent and forty-five percent by weight of the packaging waste should be recycled.[70] A State can introduce higher standards, but only if it convinces the Commission that these higher standards will not endanger collection and recycling efforts in other Member States.[71]

All collection and recycling targets should use an Article 175 EC legal basis to set minimum collection and recycling targets and allow Member States to maintain or introduce higher targets, except in the rare case where having high targets in one State will greatly discourage collection and recycling in other States.

C. EPR Programs Require an Article 95 EC Legal Basis

Like product standards, EPR programs require an Article 95 EC legal basis to allow more uniform laws because differences in national standards seriously affect the functioning of the Community market and are likely to lead to trade barriers between Member States. Moreover, EPR programs have a specific effect on the competitive position of companies. Surprisingly, provisions of environmental legislation that implement EPR programs use an Article 175 EC legal basis rather than an Article 95 EC legal basis. This has given too much freedom to Member States, leading to differences in national standards that are seriously affecting the functioning of the Community market and leading

68. *See* JANS & VEDDER, *supra* note 24, at 432–34 (explaining concerns over distortions in the Community market and indicating that Member States that maintain or introduce programs that go beyond the set collection and recycling targets threaten compliance by other Member States); *see also* Hanisch, *supra* note 4, at 170A–75A (describing the significant resources devoted to DSD).

69. Council Directive 94/62/EC, Packaging and Packaging Waste, art. 6(1)(a), 1994 O.J. (L 365) (EC).

70. *Id.* art. 6(1)(b).

71. *Id.* art. 6(6).

to trade barriers between States. Moreover, allowing Member States significant freedom in transposing EPR programs has not helped to protect the environment and, in some cases, has even discouraged environmentally friendly design by making the link between a product's production and waste phases more remote. These problems are perhaps most evident with the provisions of the WEEE Directive that implement its EPR program, including producer definition, scope, reporting requirements, and financing.

1. The Producer Definition Requires an Article 95 EC Legal Basis

There needs to be a more uniform definition of "producer" across Member States. To accomplish this aim, provisions that define the producer require an Article 95 EC legal basis, allowing the Community to create more uniform laws across Member States. Article 3(i) of the WEEE Directive defines a "producer" as anyone that:

> (i) manufacturers and sells electrical and electronic equipment under his own brand, (ii) resells under his own brand equipment produced by other suppliers, a reseller not being regarded as the 'producer' if the brand of the producer appears on the equipment, as provided for in subpoint (i), or (iii) imports or exports electrical and electronic equipment on a professional basis into a Member State.[72]

The Commission has said that the definition of producer should only apply to imports from countries outside of the Community and not to the movement of goods between Member States.[73] Unfortunately, it is difficult for the Commission to limit the definition in such a manner because Article 3(i) and all other provisions of the WEEE Directive are based on Article 175 EC, and thus Member States can easily expand upon Article 3(i) and all other provisions of the WEEE Directive. In fact, only a few Member States have transposed the definition of producer in accordance with the Commission's view.[74] Instead, the majority of Member States have transposed the definition of producer to include the movement of goods between States. Thus, the legal definition of producer is placed on the first importer into a Member State rather than

72. WEEE Directive, *supra* note 7, art. 3(i).

73. CHRIS VAN ROSSEM, NAOKO TOJO & THOMAS LINDHQVIST, LOST IN TRANSPOSITION? A STUDY OF THE IMPLEMENTATION OF INDIVIDUAL PRODUCER RESPONSIBILITY IN THE WEEE DIRECTIVE 21 n.32 (International Institute for Industrial Environmental Economics 2006), *available at* http://www.greenpeace.org/raw/content/eu-unit/press-centre/reports/lost-in-transposition.pdf.

74. KNUT SANDER ET AL., THE PRODUCER RESPONSIBILITY PRINCIPLE OF THE WEEE DIRECTIVE II (Okopol, International Instutitue for Industrial Environmental Economis, and Risk & Policy Analysts 2007).

the first importer into the Community. Because production distribution in the Community usually involves the movement of goods between several Member States, a single product may have more than one obligated producer in multiple States,[75] such as the manufacturer in the State where the product originated and a distributor in the State where the product was sold.

This is problematic because each producer is required to provide a guarantee that it will finance the treatment of its own products at the end of their useful life.[76] These guarantees—which often consist of producers' participation in an appropriate collection scheme, securing recycling insurance, and placing funds in a blocked bank account[77]—can be expensive. A product produced domestically will likely have one producer, the manufacturer, and one financial guarantee. Conversely, a product that has moved between several Member States may require multiple guarantees adding to the relative cost of foreign products and thus protecting products produced domestically. This is a barrier to the free movement of goods and possibly an illegal quantitative restriction on imports under Article 28 EC. Moreover, the current definition of "producer" in most Member States likely discourages environmentally friendly design because it regularly makes wholesalers and distributors liable for producer responsibilities under the WEEE Directive,[78] and unlike manufacturers, wholesalers and distributors are typically unable to influence product design to make products more environmentally friendly.

If the Community instead used Article 95 EC as a legal basis for provisions on the definition of producer, the Community could preempt Member State laws more effectively and it would be harder for States to enact varying producer definitions. This would better ensure that the

75. VAN ROSSEM ET AL., *supra* note 73, at 21.

76. WEEE Directive, *supra* note 7, art. 8 (requiring Member States to ensure that producers of consumer electronics provide a guarantee that they will finance the treatment of their own products at the end of their useful life); *see also* VAN ROSSEM ET AL., *supra* note 73, at 11 (explaining that financial guarantees are important because it is uncertain whether all producers will still be active in the market and able to pay appropriate costs when their products reach the end of their useful lives).

77. WEEE Directive, *supra* note 7, art. 8(2) (listing three examples of appropriate guarantees, including participation by producers in an appropriate collection scheme, securing recycling insurance and placing funds in a blocked bank account). *See also* KALIMO, *supra* note 2, at 506 (suggesting that Member States might also be able to require another type of guarantee other than the three listed examples); Joint Industry Position Paper on the Review of Directive 2002/96/EC (WEEE Directive) 13 (May 28, 2007) (on file with author), *available at* http://www.eicta.org/index.php?id=33&id_article=155 (expressing concern that Member States might require multiple types of guarantees on the same product).

78. SANDER ET AL., *supra* note 74, at II.

definition of producer only applies to imports from countries outside of the Community and not to the movement of goods between States.

2. The Scope Requires an Article 95 EC Legal Basis

Provisions on scope require an Article 95 EC legal basis to allow the Community to create more uniform laws across Member States. According to Article 2(1) of the WEEE Directive, the Directive applies to electrical and electronic equipment falling under the categories set out in Annex 1A, provided that the equipment is not part of another type of equipment which falls outside the scope of the Directive.[79] Annex 1A includes a wide range of consumer electronics, covering ten broad product categories: (1) large household appliances; (2) small household appliances; (3) IT and telecommunications equipment; (4) consumer equipment; (5) lighting equipment; (6) electrical and electronic tools; (7) toys, leisure and sports equipment; (8) medical devices; (9) monitoring and control instruments; and (10) automatic dispensers.[80] For these categories, Annex 1B lists products that are specifically covered.[81] However, because Article 2(1) and Annexes 1A-B of the WEEE Directive have an Article 175 EC legal basis, it has been easy for Member States to include additional products not specifically mentioned within these categories and even include additional product categories altogether when transposing the article and annexes into national law.[82]

A producer's products may be entirely excluded from the coverage of the WEEE Directive in certain Member States, while the same products may be covered in other States. Some Member States have aggressively expanded the scope of the WEEE Directive and even the smallest electronic components place a product within the scope of the Directive.[83] For instance, Austria has an extensive and growing list of 680 types of equipment covered by its national transposition of the WEEE Directive.[84] It is extremely difficult for producers to determine whether their products are covered vis-à-vis each of the twenty-seven Member States. Making matters worse, different national transpositions of the WEEE Directive are in different languages, are updated at different times, and are not always easily accessible through widely available channels such as the internet. Indeed, it has been a major, longstanding project of international non-profit organizations to collect,

79. WEEE Directive, *supra* note 7, art. 2(1).

80. *Id.* Annex 1A.

81. *Id.* Annex 1B.

82. SAVAGE, *supra* note 3, at 26–27.

83. *Id.* at 26.

84. *Id.* at 54.

translate, and dissect the differences between national transpositions of the WEEE Directive.[85]

Moreover, allowing Member States to expand the scope of the WEEE Directive does not necessarily help to protect the environment and may even be counterproductive to the Directive's EPR objective. With electronics waste, the Community has been concerned with preserving landfill space, promoting recycling, and ensuring that hazardous chemicals do not enter the municipal waste stream. It does not serve these purposes when Member States expand the scope of the WEEE Directive to target small products that take up very little landfill space, consist largely of plastic with little or no recyclable metals, and are unlikely to contain hazardous substances. Adding such items increases collection costs, decreases the profitability of recycling programs that make money from gleaning metals and not plastics, and distracts from the collection and recycling of products that are large and contain significant amounts of precious metals or hazardous materials. Additionally, when collecting and recycling fewer types of products, recyclers may be able to develop recycling strategies for specific products or identify design flaws and relay this information to producers; it is much more difficult for recyclers to do so when numerous types of products are being collected and recycled.

If the Community instead used Article 95 EC as a legal basis for provisions on the scope of the Directive, the Community could preempt Member State laws more effectively and it would be harder for States to enact varying scopes for the Directive. This would better ensure that the same scope exists for the WEEE Directive across Member States. The Directive could say that it applies only to the categories and examples listed in Annexes 1A-B, no more and no less. Then the Community could adapt Annex 1A-B as necessary.

3. The Reporting Requirements Require an Article 95 EC Legal Basis

To create more uniform laws across Member States, provisions on reporting requirements require an Article 95 EC legal basis. Article 12 of the WEEE Directive requires Member States to gather information on the quantities of electronics put on the market in the State, as well as reused, recycled, recovered, and exported electronics. Quantities should be measured by weight.[86] When transposing Article 12 into national law, Member States are free to have different reporting requirements than other Member States, as long as they are able to gather the information

85. For example, United Nations University has one such project.

86. WEEE Directive, *supra* note 7, art. 12.

necessary to satisfy Article 12. Indeed, each Member State has different reporting requirements. Some Member States require annual reports from producers on quantities of products they put on the market, while other States require biannual reports, quarterly reports, or even monthly reports.[87] Additionally, Member States require producers to subdivide quantities within these reports into product categories that vary among States.[88] States also require producers to provide information by weight, but Member States have differing methods of calculating weight.[89]

It takes a significant amount of labor and money for a producer to satisfy the reporting requirements of each of the twenty-seven Member States. One producer that researched its time investments found that it spent two to seven days annually per Member State on reporting (depending on the frequency of reporting, which ranged from annually to monthly).[90] Producers operating at an EU level can find themselves devoting multiple full-time resources at a central European level or within Member States just to satisfy these reporting requirements and other aspects of the Directive.[91] Multiply this commitment by the twenty-seven Member States and add similar obligations for the packaging and batteries directives, and the result is an enormous drain of labor.[92] Moreover, varying reporting requirements between Member States does not protect the environment. At best it makes the collection of data a little easier for States who already have established mechanisms for collecting data.

If the Community instead used Article 95 EC as the legal basis for provisions on reporting requirements, the Community could preempt Member State laws more effectively and it would be harder for States to enact varying reporting requirements for the Directive. The Community could create its own list of reporting requirements, specifying exactly what information producers should provide to Member States, and then compel Member States to require only this information to be reported at an interval of the Community's determination. Standardized reporting requirements would not harm the environment and would greatly improve the functioning of the Community market by making it easier for companies to conduct business.

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87. SANDER ET AL., *supra* note 74, at X.

88. *Id.*

89. *Id.*

90. SAVAGE, *supra* note 3, at 46.

91. *Id*.

92. *Id.* (explaining that producers also have to invest time and money into the packaging and battery directives which also have different recycling compliance schemes and reporting requirements; in total, a producer operating at a Community level will have to work with 81 recycling compliance schemes).

4. The Financing Requires an Article 95 EC Legal Basis

Provisions on financing require an Article 95 EC legal basis to allow the Community to create more uniform laws across Member States. EPR programs are supposed to provide financial incentives to encourage environmentally friendly design; however, Member States have not transposed provisions of the WEEE Directive to this end. Article 8 of the WEEE Directive requires producers to assume financial responsibility for the treatment of electronics waste.[93] When transposing the article into national law, Member States are given incredible freedom in assessing financial responsibility as long as producers are made financially responsible in some manner. This freedom has resulted in Member States assessing financial responsibility in a manner that does not take into account improvements manufacturers have made to make their products more environmentally friendly. In turn, this has discouraged environmentally friendly design by making the link between a product's production and waste phases more remote and has harmed manufacturers who have invested in making their products more environmentally friendly.

To begin with, the WEEE Directive is supposed to allow producers to satisfy their financial responsibilities independently by allowing producers to physically collect and treat their waste or independently finance the collection and treatment of their waste.[94] By managing collection and treatment for their own products, some producers feel that it will be easier for them to gather life cycle information, tailor efforts specifically to their products, work collectively with States, and ultimately save costs. However, in transposing the WEEE Directive, most Member States have placed burdensome additional requirements on producers who wish to satisfy their responsibilities independently, making doing so impracticable.[95]

To meet their financial responsibilities, producers generally have to join a collective scheme. However, where there is a single national collection scheme or even where a producer can choose from multiple collection schemes that are likely to be more efficient,[96] the manner in which fees are calculated does not reflect how environmentally friendly the products are. First, fees are generally calculated per unit of product

93. WEEE Directive, *supra* note 7, art. 8.

94. VAN ROSSEM ET AL., *supra* note 73, at 29.

95. *Id.* at 29–30.

96. *See* SAVAGE, *supra* note 3, at 35–36 (explaining that several Member States, such as the UK, France, Hungary, and the Czech Republic, have five or six competing collective recycling schemes).

according to product type regardless of brand or product specifications.[97] In such a system, whether a product is environmentally friendly typically will not affect a producer's fee. The only circumstance where a product's environment-friendliness could possibly affect a producer's fee is where the producer's products make up a very large percentage of the waste; in such a case, the savings would be shared by other producers who have not made any environmental improvements to their products.

Second, fees are generally calculated in a "pay-as-you-go" system where a producer pays for the costs of products being collected that year, rather than the future end-of-life costs for products being put on the market.[98] Under such a system, producers are often also responsible for electronics waste made by manufacturers who have left the market. Producers cannot possibly change the design for products they have already manufactured or products that someone else has already manufactured.

If instead the Community used Article 95 EC as the legal basis for provisions on financing, the Community could preempt Member State laws more effectively, and it would be harder for States to transpose financing schemes that do not encourage environmentally friendly design. The Community could prohibit Member States from placing burdensome additional requirements on producers who wish to satisfy their responsibilities independently. The Community could also create uniform Community-wide standards ensuring that collective schemes assess fees in a manner that reflects the environmental friendliness of products.

V. CONCLUSION AND RECOMMENDATIONS

The current situation is unacceptable. Legal bases are not being applied appropriately to environmental legislation implementing EPR programs. Product standards and EPR programs require an Article 95 EC legal basis, but in certain cases have been enacted using an Article 175 EC legal basis. This has led to differences in national standards that seriously affect the functioning of the Community market and lead to trade barriers between Member States. Moreover, allowing Member States significant freedom in transposing EPR programs has not helped to protect the environment and, in some cases, has even discouraged

97. Annika Gottberg, Joe Morris, Simon Pollard, Cecilia Mark-Herbert & Matthew Cook, *Producer Responsibility, Waste Minimization and the WEEE Directive: Case Studies in Eco-Design from the European Lighting Sector*, 359 SCI. OF THE TOTAL ENV'T 38, 42 (2005).

98. VAN ROSSEM ET AL., *supra* note 73, at 11.

environmentally friendly design by making the link between a product's production and waste phases more remote. Action is necessary.

For legislation implementing EPR programs, the Community should: (1) use a dual legal basis of both Articles 175 and 95 EC; (2) base product standards on Article 95 EC to create more uniform laws across Member States; (3) base collection and recycling targets on Article 175 EC to allow Member States to maintain or introduce higher targets, unless doing so will harm collection and recycling efforts in other States; and (4) base EPR programs on Article 95 EC to create more uniform laws across Member States. This will most effectively protect the environment without disrupting the Community market.

Notes & Comments

Grapes of Wrath? How the United States Can Reduce the Negative Effects of Winery Wastewater

Kristen Cunningham*

ABSTRACT

As anyone who has perused the shelves of a local wine shop knows, wine production has spread across the globe. Where traditional Italian and French wines formerly dominated, it is now common to see South African, Australian, and even American varieties. This burgeoning industry is only increasing in popularity, both in the United States and abroad. The negative effects of winery wastewater will increase as the United States' wine industry continues to develop. This Note describes the environmental problems posed by winery effluent and outlines the principal existing water pollution control law: the Clean Water Act. It then details how California, Australia, the European Union, and South Africa regulate their wine producers' waste. Finally, the Note concludes by recommending ways in which the U.S. federal government, as well as state and local governing bodies, can effectively combat winery wastewater's harmful consequences.

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I. INTRODUCTION

People around the world have enjoyed wine since the times of Bacchanalian festivals in ancient Greece and Rome.[1] This beverage can be used to celebrate the good times, or to lament the bad. It can even serve as a religious symbol.[2] Though people have been drinking wine for millennia, it was not until rather recently that the full economic benefits of this grape product were realized. Old World nations such as France, Italy, and Spain have long been reaping the profits of this multi-billion dollar industry, but in the last century the United States, South Africa, and Australia have also joined the international wine market. For example, in 2007, California exported a total of 554 million gallons of wine.[3] Other states have also begun to realize that wine production equals big business in rural economies.

With the United States' wine industry beginning to take flight, harmful environmental effects have begun to surface. Already overloaded local sewer systems often do not have the capacity to receive and treat winery wastewater. In addition, winery wastewater has the potential to destroy neighboring ecosystems because of reactions between sugars created during the winemaking process and naturally-occurring microbes present in native bodies of water.[4] Winery wastewater has an acidity and nutrient content that is both unique and potentially devastating to fish and other wildlife.[5] It can also combine with the chlorine in municipal water supplies to create carcinogens in drinking water.[6] Though the wine industry provides the potential for enormous economic gains, the effects of its effluent create the potential for extreme harm to wildlife, plants, and people.

Part II of this Note examines the United States' wine industry from an economic perspective. Part III details the harmful effects of winery wastewater on the environment. Part IV explains how winemakers currently treat their water to avoid this type of pollution and explores technological advances in the treatment of winery wastewater. Part V identifies current laws in the United States that regulate winery

1. *See, e.g., Bacchus*, THE WORLD BOOK ENCYCLOPEDIA, Vol. 2 (1989); *and* Vinapedia.net, *Wine in Ancient Times*, http://www.vinapedia.net/Ancient.html (last visited Jan. 18, 2009).

2. *See, e.g.*, Matthew 26:27.

3. Wine Institute, *2007 California Wine Sales Continue Increase, As Wine Expands Its Popularity Among Americans* http://www.wineinstitute.org/resources/statistics/article122 [hereinafter Wine Institute 1] (last visited Nov. 6, 2008).

4. *See* Part III, *infra*.

5. *Id*.

6. *Id*.

wastewater including the Clean Water Act and Northern California's local regulatory system. Part VI examines the South African, European, and Australian approaches to the wine industry in light of each government's policies aimed at environmental protection and sustainability. Finally, in Part VII, the Note concludes with recommendations on how the United States can work through its federal, state, and local governments to implement a comprehensive, environmentally friendly winery wastewater policy that not only ameliorates the harmful effects of winery production effluent, but also has the potential to stimulate what could be a fruitful economic industry across the country.

II. U.S. WINE INDUSTRY ECONOMICS

The United States Congress reported in January 2007 that the wine industry contributes "more than $162 billion annually to the American economy."[7] After this report was issued, California Congressman Mike Thompson declared, "grapes, wine, and other grape products are truly an economic catalyst with tremendous growth potential in all 50 states."[8] California—which produces ninety-five percent of all U.S. wine, and sixty-one percent of the total wine consumed in the United States[9]—had over 527,000 acres of grape crops that yielded nearly 566 million gallons of wine in 2007.[10] In addition, the wine industry provided over 875,000 U.S. jobs that generated over $25 billion in income during that same year.[11] California wine country also increasingly attracts visitors from around the world to the tune of over $2 billion in tourism revenues in 2008.[12] As Congressman Thompson noted, winemaking also has the potential to become a strong local industry in the rest of the United States. For example, New York, North Carolina, Michigan, and Colorado already have local wineries, and the potential exists for the industry to flourish in other regions of the country as well.[13]

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7. Tony Favro, *Water Quality Issues in the US Wine Industry Affect Small Communities*, Feb. 21, 2007, http://www.citymayors.com/environment/usa_winegrowing.htm (last visited Nov. 6, 2008).

8. *Id*.

9. Wine Institute 1, *supra* note 3.

10. Wine Institute, *California Wine: A Signature Industry*, http://www.wineinstitute.org/files/EIR%20Flyer%202008.pdf [hereinafter Wine Institute 2] (last visited Nov. 10, 2008); Wine Institute, *US / California Wine Production*, http://www.wineinstitute.org/resources/statistics/article83 (last visited Nov. 22, 2008).

11. Wine Institute 2, *supra* note 10.

12. *Id*.

13. *See, e.g.*, Uncork New York!, http://www.newyorkwines.org/ (last visited Nov.

III. ENVIRONMENTAL CONCERNS SURROUNDING WINERY WASTEWATER

Given the current condition of the United States' wine industry and its growth potential, regulators must begin to take into account the effects of winery wastewater on natural water resources. Winery wastewater contains organic nutrients in the form of dissolved sugars.[14] High concentrations of these compounds wreak havoc on the surrounding environment when wastewaters are directly discharged into streams or the groundwater supply.[15] The most distinctive characteristics of winery wastewater are its high levels of dissolved sugar and its acidity—usually about pH 3 or 4.[16] The sugars are measured in the wastewater as Biochemical Oxygen Demand ("BOD") and can reach levels as high as 5,000 to 20,000 parts per million.[17] At these high BOD levels, microbes that naturally occur in the water and consume dissolved sugars are provided with an enormous food source.[18] The resulting food consumption gives rise to chemical reactions that consume the oxygen naturally dissolved in the water.[19] This creates an oxygen-deprived environment that suffocates the aquatic plant and animal life that depend on dissolved oxygen for respiration.[20]

The dissolved sugars can also react with chlorine, a chemical typically found in municipal drinking water sources, to form carcinogenic trihalomethanes ("THMs").[21] Studies have linked THMs—including chloroform, bromodicholoromethane, dibromochloromethane and bromoform—to an increased risk of bladder and colorectal cancers in humans.[22] In addition, the acidity of winery wastewater has the potential to create a toxic living environment for fish and other aquatic

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10, 2008); North Carolina Wineries, http://www.weekendwinery.com/Wineries/Wineries_NC.htm (last visited Nov. 10, 2008); Michigan Wines: The Official Website of Michigan's Wine Industry, http://www.michiganwines.com/ (last visited Nov. 10, 2008); Colorado Wine Association, http://www.coloradowineassociation.com/Wineries/tabid/54/Default.aspx (last visited Nov. 10, 2008).

14. *See* Favro, *supra* note 7.

15. *See* Paul Franson, *Wineries Turn to Advanced Technology to Meet Wastewater Requirements*, WINE BUSINESS MONTHLY, Mar. 2004, *available at* http://winebusiness.com/html/PrinterVersion.cfm?dataID=31660.

16. *Id.*

17. Favro, *supra* note 7; Franson, *supra* note 15.

18. Franson, *supra* note 15.

19. *Id.*; Favro, *supra* note 7.

20. *Id.*

21. Franson, *supra* note 15; Favro, *supra* note 7.

22. OKLA. DEPT. OF ENVIR. QUALITY, WATER: TRICHOLOROMETHANE FACT SHEET (Feb. 17, 2005), http://www.deq.state.ok.us/factsheets/water/THMfactsheet.pdf.

species as most of these organisms cannot live in water with a pH below 5 or 6.[23] As noted earlier, winery wastewater can bring water pH levels down to the dangerous 3 to 4 range.[24]

Another negative consequence of winery wastewater comes from the failure of most current treatment facilities to adequately filter, aerate, and dilute their wine production waste.[25] Most wineries can no longer connect to municipal sewer systems due to system overload.[26] Many small wineries use anaerobic septic tanks and leach fields to filter their effluent, but these systems can become clogged by the solids contained in the wastewater.[27] Additionally, the Environmental Protection Agency ("EPA") and some states have prohibited many of these septic tank practices because of their propensity for failure.[28] Accordingly, some wineries have turned to wastewater facultative ponds where the effluent "collects to hopefully be aerated enough to reduce" BOD.[29] However, these ponds often prove unable to sufficiently lower BOD.[30] Moreover, they create other negative environmental consequences such as foul-smelling stagnant water and inadequately treated discharge.[31] These shortcomings can not only lead to nuisance claims against winery owners, but can also lead to threats of shutdown by local regulatory authorities.[32]

IV. TECHNOLOGICAL INNOVATIONS

Technological advances in winery wastewater treatment could alleviate some of the negative environmental effects caused by the dissolved sugars in winery effluent. This Part focuses on AnAerobics, Inc.'s Mobilized Film Technology ("MFT") and Glenn C. Wensloff's bioreactors as two new technologies that have the potential not only to

23. *See generally* Water on the Web, *pH*, http://wateronthewеb.org/under/waterquality/pH.html (last visited Oct. 22, 2008).

24. Franson, *supra* note 15.

25. *See generally* Franson, *supra* note 15.

26. Franson, *supra* note 15.

27. *Id*. *See also* Glenn C. Wensloff, *Bio Reactors: A Practical Waste Water Disposal Solution for Wineries*, WINES & VINES, Dec. 1, 1999, *available at* http://findarticles.com/p/articles/mi_m3488/is_12_80/ai_58352885 [hereinafter Wensloff 1].

28. Favro, *supra* note 7; Wensloff 1, *supra* note 27.

29. Franson, *supra* note 15.

30. Wensloff 1, *supra* note 27.

31. Franson, *supra* note 15; Wensloff 1, *supra* note 27.

32. Franson, *supra* note 15.

reduce winery wastewater's direct environmental impacts, but also to facilitate sustainable wine industry practices.

A. AnAerobics, Inc.'s Mobilized Film Technology

The AnAerobics system, used by New York's Canandaigua Wine Company, employs a compact MFT unit to treat winery wastewater.[33] This unit contains both a biological and a mechanical process.[34] The biological process supplies methanogenic bacteria to "attach to inert media and form a deep bed within enclosed reactors."[35] These reactors are "driven by the MFT process control system" that mechanically moves wastewater through the bacterial bed thus "ensuring a constant high-rate flow over an enormous surface area of living organisms."[36] These organisms in the bed feed off the dissolved sugars in the wastewater and subsequently multiply to form a solid body that settles on the bed surface for removal.[37] The bacteria in the MFT unit essentially react with the excess sugars in the wastewater so that microbes in natural water sources do not react with these sugars, and therefore do not reduce the oxygen content of the water.[38] As an added benefit, the gases given off by the reactions with the bacteria can be collected and used as a fuel source to power the reactor itself.[39] This treatment method may lower the pre-treatment costs associated with making winery wastewater suitable for sewer discharge because it avoids the necessity of chemically and energy intensive treatment at a large facility.[40] It also promotes sustainable winemaking practices by using the reactions' gaseous byproducts to provide a renewable energy source for the treatment facility.[41]

B. Glenn C. Wensloff's Bioreactor

Another technological advancement in winery wastewater treatment comes in the form of a different type of bioreactor. This system, designed

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33. Daniel J. Hagen, *Innovative Technology Generates Energy from Wine Production*, WATER & WASTEWATER INT'L, Dec. 2003, at 1.

34. *Id.*

35. *Id.*

36. *Id.*

37. *Id.*

38. *Id.*

39. *Id.* at 2.

40. *Id.* at 1.

41. *Id.*

and promoted by scientist Glenn C. Wensloff, works much like a facultative pond, but in a faster and more efficient manner.[42] Facultative ponds use both anaerobic and aerobic bacteria to "digest" a winery's effluent.[43] In addition to the shortcomings and nuisances previously mentioned,[44] these ponds are usually quite large (with sizes often measured in acres) and can displace land that would otherwise be used for vines.[45]

Unlike the primitive facultative pond, Wensloff's bioreactor, also known as a Return Activated Sludge System,[46] contains a screening filtration mechanism that first removes larger particles from the winery effluent.[47] The wastewater then moves into an aeration system with a blower that delivers large volumes of air to the water at low pressure, and diffusers that maximize oxygen transfer into the water.[48] Ideally, the diffusion process yields tiny bubbles that provide "the largest proportion of surface area and the most contact with the effluent resulting in the largest rate of [oxygen] absorption."[49] This oxygen transfer also facilitates the consumption of the wastewater's sugars by microbes living in the bioreactor.[50] It subsequently puts the winery wastewater through a "clarifier" where the microbes settle and concentrate, and then finally pumps the microbes back into the "aeration basin" to begin the process anew.[51] Just as in the MFT reactor described above, the goal of this bioreactor is to pre-react the organic matter that creates BOD in the winery wastewater in order to prevent the reactions from occurring in natural water sources after the wastewater leaves the treatment facility.

Wensloff calls his system "the most effective and controlled means of reducing the winery effluent" and emphasizes that the bioreactor has the ability to reduce BOD levels by eighty percent, even during the high-volume "crush" season when grapes are harvested and turned into wine.[52] He also promotes the system's efficiency,[53] indicating that, like

42. Wensloff 1, *supra* note 27.

43. *Id.*

44. *See* Part III.

45. *Id.*

46. Glenn C. Wensloff, *Winery Waste Water Update*, WINES & VINES, 2000, *available at* http://findarticles.com/p/articles/mi_m3488/is_9_81/ai_65578651/pg_2 [hereinafter Wensloff 2].

47. *Id.*

48. *Id.*

49. *Id.* at 3.

50. Wensloff 2, *supra* note 45.

51. *Id.*

52. Wensloff 1, *supra* note 27, at 1.

53. *See id.*

the AnAerobic system, this bioreactor could reduce the overall environmental footprint of wine production.

V. CURRENT DOMESTIC LAWS

In the United States, federal, state, and local laws team up to regulate domestic winery wastewater. In California, for instance, eight different agencies play some role in regulating the state's water quality and entitlements.[54] The Army Corps of Engineers, the Fish and Wildlife Service, and the EPA regulate from the federal level.[55] State agencies involved include the Department of Health Services, the State Water Resources Control Board, the Regional Water Quality Control Boards, and the Department of Fish and Game.[56] Finally, County Planning Departments, County Building Departments, and County Health Departments make up the local level of this complex regulatory scheme.[57]

Despite the web of agencies involved in domestic wastewater regulation, this Part focuses on the two agencies most responsible for the oversight of winery wastewater: (1) the EPA; and (2) the state agencies that administer the EPA's permitting regime under the Clean Water Act ("CWA"). Beginning with a high-level overview of the CWA, this Part discusses how the federal and state administrative agencies currently regulate winery wastewater. California, the largest domestic wine producing state, has the most developed winery wastewater regulatory scheme. Therefore, it provides the most complete domestic model of the United States' current winery wastewater regulation.

A. Federal Water Pollution Control Act (Clean Water Act)

As one of the keystone environmental protection statutes, the CWA has reinvented how the United States regulates water pollution. This Subpart first examines how the CWA operates, and then applies the statute to wineries.

54. Glenn Dombeck, *Taking a Hard Look at Wastewater Regulations*, WINE BUS. MONTHLY, Mar. 15, 2006, *available at* http://www.winebusiness.com/html/MonthlyArticle.cfm?dataid=43111.

55. *Id.*

56. *Id.*

57. *Id.*

1. Clean Water Act Overview

The CWA was originally written in 1948, but in 1972 it was substantially amended to its modern form.[58] It contains two major parts: (1) provisions authorizing federal financial assistance for municipal sewage treatment plant construction; and (2) regulatory requirements that apply to industrial and municipal dischargers.[59] Only the second part is relevant to this Note. The CWA has been termed a "technology-forcing statute" because of its rigorous demands on those "who are regulated by it to achieve higher and higher levels of pollution abatement under deadlines specified in the law."[60] It confers broad federal jurisdiction—especially in establishing national standards for effluent limitations—based on the principle that "all discharges into the nation's water are unlawful, unless specifically authorized by a permit."[61]

The CWA espouses the overall objective of "the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters" and employs various policies and regulations to achieve this goal.[62] The CWA "embodies a philosophy of federal-state partnership in which the federal government sets the agenda and standards for pollution abatement," and then delegates many significant regulatory functions to state governments.[63] The states "carry out day-to-day activities of implementation and enforcement."[64] In this way, the state and federal governments work hand-in-hand to ensure that water pollution is adequately addressed.

The CWA divides water pollutants into three categories: conventional, nonconventional, and toxic.[65] The Code of Federal Regulations defines the primary conventional water pollutants as "biochemical oxygen-demanding waste" (the same as the sugars measured by BOD discussed in Part III), total suspended solids ("TSS"), bacteria, fecal coliform, and several other substances.[66] The CWA also

58. Federal Water Pollution Control Act, 33 U.S.C. §§ 1251- 1387 (2006) [hereinafter CWA].

59. Claudia Copeland, *Clean Water Act: A Summary of the Law*, Congressional Research Service Report for Congress, updated Jan. 24, 2002, at 1 [hereinafter CRS Report].

60. *Id.*

61. *Id.*

62. *Id.* at 3.

63. *Id.* at 1.

64. *Id.*

65. U.S. ENVIRONMENTAL PROTECTION AGENCY, A BENEFITS ASSESSMENT OF WATER POLLUTION CONTROL PROGRAMS SINCE 1972 (Jan. 2000), at 1-4, *available at* http://www.epa.gov/waterscience/economics/assessment.pdf.

66. *Id.* at 2-1.

identifies two types of pollution sources: point sources and nonpoint sources.[67] Point sources include drains, ditches, pipes, conduits, and sewer outfalls, while nonpoint sources encompass less-direct modes of water delivery such as acid rain and agricultural and urban runoff.[68]

The EPA promulgates effluent limitations, guidelines, and standards under the CWA's National Pollutant Discharge Elimination System ("NPDES") to regulate point sources that discharge pollutants directly into the waters of the United States.[69] The EPA requires the use of the Best Practicable Control Technology Currently Available ("BPT") for the treatment of non-conventional and toxic water pollutants.[70] BPT effluent limitations provide a ceiling for specific water pollutants determined by several technology-based factors.[71] These factors include the total cost of applying the technology in relation to the effluent reduction benefits, the age of the facilities and equipment already in place, non-water quality environmental impacts, and engineering aspects of the technology.[72] Effluent limitations typically are based on "the average of the best performance of facilities within the industry of various ages, sizes, processes, or other common characteristics."[73] BPT limitations must be met for a facility to qualify for an NPDES permit.[74]

Furthermore, the CWA requires that the EPA conduct annual reviews of its existing effluent guidelines and revise such regulations "if appropriate."[75] The EPA must also publish a plan every two years that announces a schedule for performing its annual effluent guideline reviews, as well as a schedule for rulemaking regarding any effluent guidelines selected for possible revision.[76]

For the EPA to identify new industries subject to effluent limitation guidelines, it must first ensure that the selected industry is not already regulated as a pollutant category or subcategory.[77] To do this, the EPA will look up the proposed industry using the industry's Standard Industrial Classification ("SIC") code.[78] This number enables the agency

67. *Id*. at 1-4.

68. *Id*.

69. Notice of Availability of Preliminary 2008 Effluent Guidelines Program Plan, 72 Fed. Reg. 61335, 61337 (Oct. 30, 2007) *available at* http://www.epa.gov/EPA-WATER/2007/October/Day-30/w21310.htm [hereinafter Notice].

70. *Id*. at 61337.

71. *Id*.

72. *Id*.

73. *Id*.

74. *Id.*

75. CWA, *supra* note 57, at § 304(b); Notice, *supra* note 68, at 61337.

76. Notice, *supra* note 68, at 61337.

77. *Id.* at 61351.

78. *Id*. at 61350.

to see if the industry or practice is subject to any of its environmental regulations or is already included under the CWA's jurisdiction.[79]

If no SIC code is present for the industry or practice, the EPA will then determine how to approach potential regulation. The U.S. Supreme Court has recognized that categories are "necessarily rough-hewn" and that the EPA must establish subcategories to adequately reflect the "differences among segments of the industry."[80] The EPA interprets "categories" to refer to an industry as a whole "based on similarity of product produced or service provided."[81] Categories do not refer to specific industrial activities or processes involved in generating particular products or services.[82] The EPA must first determine whether the previously unregulated industry or practice falls into the category or subcategory classification. If the EPA determines that the proposed industry or practice is a "stand-alone category in its own right," then it will address it pursuant to CWA §§ 304(m)(1)(B) and (C), the sections dealing specifically with category creation.[83] On the other hand, if the process is determined to be a potential subcategory, then the EPA will consider it in its CWA § 304(b) annual review of existing categories and determine whether or not "it would be appropriate to revise the effluent guidelines for that category to include limits for the new subcategory."[84]

BPT effluent limitations formerly applied to all three categories of CWA pollutants. Now, however, the EPA must identify special effluent reduction levels for conventional pollutants, called Best Conventional Pollutant Control Technology ("BCT").[85] The BCT was established as a response to conventional polluters' concerns that the EPA was "requiring treatment for treatment's sake" for conventional pollutants under the BPT regime.[86] BCT advocates believed that conventional pollutants should not have been regulated as stringently as their non-conventional and toxic counterparts. According to these polluters, the costs of the overtreatment outweighed the benefits obtained from any achieved effluent reductions.[87] To establish BCT limitations, the EPA considers

79. *Id.*

80. *See* Chem. Mfr. Ass'n. v. Natural Res. Def. Council, 470 U.S. 116, 164 (1985); *Id.* at 61350.

81. Notice, *supra* note 68, at 61351.

82. *Id.*

83. *Id.*

84. *Id.*

85. *Id.* at 61337.

86. Am. Paper Inst. v. EPA, 660 F.2d 954, 957 (1981) (internal quotation marks omitted).

87. *See id.*

the same factors used to determine BPT standards, as well a two-part cost/benefit analysis:

> Factors relating to the assessment of [BCT] shall include [1] consideration of the reasonableness of the relationship between the *costs* of attaining a reduction in effluents and the effluent reduction *benefits* derived, and [2] the comparison of the cost and level of reduction of such pollutants from the discharge of publicly owned treatment works to the cost and level of the reduction of such pollutants from a class or category of industrial sources. . .[88]

In other words, the EPA must consider: (1) the cost of implementing the standard as compared to the benefits of effluent reduction; and (2) it must assess this cost/benefit analysis as it applies to both public water treatment facilities and private industrial sources. Whether the cost/benefit analysis yields more or less burdensome results for each type of facility plays a role in the BCT determination. As with BPT effluent limitations, all conventional polluters must meet the determined BCT standards in order to qualify for an NPDES permit.[89] Additionally, the BCT effluent limitations are subject to the same revision and review provisions as their BPT counterparts.[90] The EPA currently regulates and periodically reviews fifty-six categories and over 450 subcategories of industrial water pollutants under this combined BPT/BCT effluent limitation regime.[91]

Though primarily known for its § 402 NPDES permit program, the CWA also promotes research and development concerning water pollution issues.[92] The Administrator of the EPA is authorized to "establish and maintain research fellowships at public or nonprofit private education institutions or research organizations."[93] The EPA Administrator may also make grants to states or interstate agencies to "demonstrate. . .advanced treatment and environmental enhancement techniques to control pollution from all sources."[94] In addition, the CWA itself establishes a National Study Commission whose purpose is to "make a full and complete investigation and study of all the technological aspects of achieving . . . the effluent limitations and goals set forth" in the Act.[95] This Commission receives Congressional

88. Notice, *supra* note 68 at 61337; CWA, *supra* note 57 at § 1314(b)(4)(B) (emphasis added).

89. CWA, *supra* note 57at § 1342(a)(1)(A).

90. Notice, *supra* note 68 at 61338.

91. *Id*.

92. *See* CWA, *supra* note 57 at §§ 1254-55, 1325.

93. *Id*. at § 1254(b)(5).

94. *Id.* at § 1255(b).

95. *Id*. at § 1325(a).

appropriations[96] and seems to have wide latitude in deciding how and what to research in order to obtain the CWA's effluent standards.

2. CWA Application to Wineries

The CWA and its NPDES permitting regime apply to wineries in the same way as they apply to many other general water polluters. Wineries fall into the point source pollutant category because they discharge wastewater directly into rivers, streams, and sometimes even municipal sewer systems. Since the majority of winery wastewater contains BOD and TSS, and can alter the pH of its receiving streams, this waste is classified as a conventional water pollutant. As a result, wineries must theoretically meet BCT effluent standards in order to receive and maintain their NPDES permits. However, wineries are not currently listed as either a category or subcategory under the CWA regime.[97] The Code of Federal Regulations lists apple juices, citrus juices, potato products, and canned fruits and vegetables as subcategories under its Canned and Preserved Fruits and Vegetables category, but it does not include grape juice or wine.[98] Further, the Code lists beet and cane sugars as subcategories under its Sugar Processing category, but does not include sugar derived from grapes.[99] Therefore, winery wastewater is exempt from any industry-specific regulation. Even though wineries are subject to NPDES permitting based on their SIC as food processors,[100] it appears that wineries are not currently subject to the more specific—and therefore more effective—wastewater regulations under the CWA.

As mentioned earlier, the CWA delegates much of the EPA's permitting authority to state and local regulators.[101] Once the EPA Administrator has set general federal effluent limitations for conventional pollutants, states have the authority to enforce the standards through their own permitting and licensing procedures.[102] This Congressional delegation to the states allows the flexibility necessary to effectively implement the NPDES permit system for several reasons. First, it allows states to adjust water pollution permit requirements to meet the specific demands of their populations and regions. Permitting

96. *Id*. at § 1325(h).

97. *See generally* Canned and Preserved Fruits and Vegetables Processing Point Source Category, 40 C.F.R. §§ 407, 409 (2006).

98. *Id*. at 407.10-87.

99. *Id*. at 409.10-77.

100. Memorandum from the Office of Chief Counsel of the State Water Resources Control Board of California to the Board, 5 (Jan. 23, 2006) *available at* http://www.swrcb.ca.gov/agwaivers/docs/food_processing.pdf.

101. CRS Report, *supra* note 58.

102. *Id*.

procedures and policies that work beautifully in an urban eastern state such as Massachusetts would likely lead to administrative nightmares if applied in a rural western state like Idaho. Second, the flexibility allows states to develop their own creative methods for regulation. It encourages the states to learn and borrow from one another as individual local conditions and demands change over time. For example, should the wine industry explode on its Western Slope, Colorado might one day look to the California water quality regulatory scheme when designing its own regulations.

The cooperative federalism set out in the CWA aims to further the statute's general objectives and obligations in the most efficient and practical manner. However, the CWA has the potential to encourage even better winery practices and wastewater regulation than it does now. Such applications of the CWA are described in the "Proposals" section at the end of this Note.[103]

B. California Wine Regulation

As one of the most prolific wine-producing regions in the United States, California's North Coast Region recently implemented a comprehensive winery wastewater regulatory scheme through its Regional Water Quality Control Board.[104] The Board's Order ("the Order") sets out the general requirements for discharges of winery waste and contains a monitoring and reporting section to ensure continued adherence with the regulations.[105] The following describes the Order's: (i) general policies and initial requirements; (ii) relevant permitting procedures; (iii) relevant enforcement procedures; and (iv) interaction with other laws.

1. Policy and Definitions

The Order intends to regulate discharges of winery waste that may adversely affect "waters of the state."[106] Whether or not winery effluent will adversely affect waters of the state depends on several factors including, but not limited to, waste quality, soil characteristics, and

103. *See* Part VII.

104. *See generally* California Environmental Protection Agency: North Coast Regional Water Quality Control Board, http://www.swrcb.ca.gov/northcoast/ (last visited Oct. 23, 2008).

105. California Regional Water Quality Control Board, North Coast Region. Order No. R1-2002-0012, *General Waste Discharge Requirements for Dischargers of Winery Waste to Land*, (2002) [hereinafter Order].

106. *Id*. at 1.

groundwater elevation.[107] The volume of waste and the commercial or private character of the wine-producing operation may also help determine whether the state will regulate a particular winery.[108] The Order generally applies only to commercial wine operations that produce over 200 gallons of wine per year, because the winery wastewater produced by these wineries has the greatest potential to affect the waters of the state in the prohibited manner.[109] The Order defines "winery waste" to include "pomace (e.g., grape skins, stems, and seeds). . .bottle and barrel rinse water, and equipment/floor wash water."[110] This type of water harms aquatic environments where it is discharged with its high BOD and acidic pH.[111]

The Order does *not* address the wastewater produced by agricultural growing operations associated with cultivating wine grapes.[112]

2. Permitting Procedure

All dischargers of winery waste that will affect a state's waters must file an application with the Regional Water Board for a permit under the General Waste Discharge Requirements ("General WDR permit").[113] General WDR permits are issued when a class of facilities has certain common characteristics (i.e., similar constituents, similar disposal techniques, similar flow range, and similar treatment standards).[114] The benefits of such general permits are to "allow a unified approach to similar facilities" and to "simplify the permitting process."[115] The Regional Water Board staff determines whether to grant the permit.[116] If the permit is approved, the discharger must publish a description of the project, provide proof of such publication to the Regional Water Board, and distribute written notice to local residences and businesses.[117]

Once adequate notice has been provided to local residences and businesses and the permit has been issued, the winemaker must follow

107. *Id.*

108. *Id*. at 1-2.

109. *Id*. at 2.

110. *Id.* at 1.

111. Franson, *supra* note 15, at 1.

112. Order, *supra* note 104, at 1.

113. *Id*. at 4.

114. California Regional Water Quality Control Board, *Fact Sheet: General Waste Discharge Requirements for Discharges of Winery Waste to Land*, (2003) at 1, *available at* http://www.waterboards.ca.gov/northcoast/publications_and_forms/available_documents/general_winery_wdr/.

115. *Id.*

116. Order, *supra* note 104, at 4.

117. *Id*.

the general discharge prohibitions and effluent limitations delineated in the Order.[118] These requirements reflect the federal limitations set out by the EPA Administrator under the CWA. The "Discharge Prohibitions" section of the Order sets out fourteen limits on winery wastewater discharge.[119] For example, the Order prohibits discharge of wastewater to surface waters.[120] It also declares unlawful any discharge of untreated or partially treated winery wastewater from "anywhere within the collection, treatment or disposal facility."[121] As a final example, the Order contains the provision that "[t]reated winery wastewater shall not be applied to the irrigation areas within two days of a forecasted rain event, during rainfall, forty-eight hours after a rainfall event or when soils are saturated."[122]

The "Effluent Limitations" set specific ceiling concentrations of BOD, TSS, and settleable solids for different types of discharges.[123] Discharges of treated winery wastewater to the land by way of spray irrigation or frost protection must not contain a BOD concentration of over 80 milligrams per liter per day.[124] This concentration limit loosens to 160 milligrams per liter per day if drip irrigation is used to apply the treated wastewater.[125] The Order also places limits on the mean daily flow of winery wastewater by capping the amount of effluent a winery may discharge at the level stated in the General WDR permit.[126]

The Order provides additional procedures and requirements for aerated or oxidation pond systems under General WDR permits.[127] It also sets out groundwater limitations.[128] The dissolved oxygen concentration in ponds shall never sink below 1.0 milligrams per liter at any time and a minimum freeboard must be maintained at all times in any pond containing winery wastewater.[129] The EPA defines "freeboard" as the "vertical distance from the normal water surface to the top of a confining wall."[130]

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118. *Id.* at 5-7.

119. *Id*. at 5-6.

120. *Id*. at 6.

121. *Id*. at 5.

122. *Id*. at 6. This provision seeks to prevent agricultural waste, such as winery wastewater, from polluting surface water sources in the event of a large storm or flood.

123. *Id*. at 6-7.

124. *Id*. at 6.

125. *Id.*

126. *Id*. at 7.

127. *Id.*

128. *Id.*

129. *Id.*

130. U.S. Environmental Protection Agency, *Terms of Environment: Glossary, Abbreviations and Acronyms: F*, http://www.epa.gov/OCEPAterms/fterms.html (last

The first groundwater limitation vaguely states that "storage and disposal of treated winery wastewater shall not cause or contribute to a statistically significant degradation of groundwater quality."[131] The second limitation prohibits any storage or disposal of winery wastewater that causes groundwater alteration to the point of "taste or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses."[132] The Order fails to specify any objective concentration limitations on how much winery waste may be legally discharged into local groundwater. Additionally, the Order contains provisions addressing solids disposal, water reclamation requirements, and further aerated or oxidation pond requirements; however, these restrictions will not be detailed here, as they do not directly relate to winery wastewater.[133]

3. Monitoring and Enforcement

Monitoring and enforcement procedures ensure that wineries follow the requirements of the Order. The Regional Water Board mandates that permitted wineries maintain their treatment facilities and immediately notify the Regional Water Board should any failures occur.[134] Wineries must also allow the Board, or its authorized representative, to perform several actions: enter winery premises; access and copy required records; inspect facilities, equipment, practice, or operations; and sample, photograph, video, or monitor anything at the location to ensure compliance with the permit.[135] Dischargers are required to keep detailed records and to promptly report any changes in discharge or in winery ownership.[136] All permit holders must also comply with the Contingency Planning and Notification Requirements Order No. 74-151 and the Monitoring and Reporting Program No. R1-2002-0012 (other Regional Water Board monitoring orders).[137]

If a discharger violates the terms of the General WDR permit, or otherwise fails to comply with the Order, that entity's coverage under the Order may be terminated or modified after notice and opportunity for hearing.[138] The Order lists eight potential causes for terminating or

visited Oct. 23, 2008).

131. Order, *supra* note 104, at 7.

132. *Id.*

133. *See id*. at 7-10.

134. *Id.* at 11.

135. *Id*. at 12.

136. *Id*.

137. *Id*. at 14.

138. *Id*. at 13.

modifying a permit based on general winery compliance.[139] In addition, any violation of the Order also serves as a violation of the California Water Code and may be the basis of an enforcement action under that statutory regime.[140]

4. Interaction with Other Laws

The Order does not preempt or supersede municipal laws, flood control agency regulations, or other local agency rules.[141] The Order is consistent with the California State Water Board's Resolution No. 68-16, which states that California has a policy of maintaining a "high quality of waters."[142] Additionally, wineries covered by General WDR permits must still obtain federal, state, and local construction permits to build treatment facilities that comply with the Order.[143] Dischargers are also still subject to the imposition of additional standards, requirements, or conditions by other authorized regulatory agencies.[144]

If the land disturbance projected to occur as a result of a winery project is five acres or more, the permit applicant will also have to apply for a Construction Activities Storm Water Permit prior to beginning the project.[145] Furthermore, should the storm water runoff from a wine processing area be discharged into any surface water, the winery must also apply for an NPDES general permit from the federal EPA.[146]

VI. INTERNATIONAL MODELS

As evidenced by the wide variety of international wines on U.S. shelves, neither wineries nor their associated wastewater issues are limited to the United States. For example, South Africa, the European Union, and Australia have each dealt with the problems posed by winery wastewater in different ways. The following subparts outline each of these nations' approaches. Later, this Note discusses how some of these strategies could be integrated into the United States' winery wastewater management scheme.

139. *Id.*
140. *Id.* at 16.
141. *Id.* at 3.
142. *Id.*
143. *Id.* at 11.
144. *Id.*
145. *Id.*
146. *Id.*

A. South Africa

South Africa's National Water Act ("NWA") provides specific requirements for winery wastewater. Section 39 of the NWA suggests that untreated winery wastewater fails to qualify for discharge into natural water resources.[147] Therefore, wineries must either treat their wastewater prior to discharging it into natural water sources, or adopt one of several alternative methods for wastewater disposal subject to the requirements of the NWA, and authorized by the Department of Water Affairs and Forestry ("DWAF").[148]

The most common form of alternative disposal is land irrigation.[149] In order to exercise this option, the winery must register its intended water use with the DWAF and show that its irrigation use will meet various standards such as maintaining a pH between 6 and 9 and a chemical oxygen demand (sixty-six percent of which is BOD) less than 400 milligrams per liter per day.[150] These showings will allow the winery to use up to 500 cubic meters of water per day for irrigation.[151] However, if the winery wishes to use more wastewater for irrigation purposes (up to 2000 cubic meters per day), then it must adhere to stricter standards including a chemical oxygen demand of less than seventy-five milligrams per liter per day, and a pH of no less than 5.5 or more than 9.5.[152] These stricter standards also include peak levels for ammonia, nitrates, chlorine, and suspended solids.[153] Even if the winery meets all of these standards, it still may only use the treated wastewater to irrigate above the one-hundred-year flood line, or at a distance "greater than 100 meters from the edge of a water resource or borehole [well] which is used for drinking water or stock watering, whichever is the greatest."[154] The winery must also eliminate any ground or surface water contamination, and must measure and record its quantity of wastewater irrigated on a monthly basis.[155] These records must be kept

147. L.H. van Schoor, G*uidelines for the Management of Wastewater and Solid Waste at Existing Wineries*, Enviroscientific and Winetech, Mar. 2005, 13, *available at* http://www.ipw.co.za/Winetech%20Wastewater%20guidelines%20document%20April%2005%20English.pdf.

148. *Id.*

149. *Id.*

150. *Id.* at 5, 13-14.

151. *Id.* at 14.

152. *Id.*

153. *Id.*

154. *Id.*

155. *Id.* at 14-15.

so the DWAF, or other responsible authority, is able to inspect them and ensure compliance with the regulations.[156]

In addition to providing the legal requirements for winery wastewater in South Africa, the Winetech Guidelines also categorize types of winery wastewater[157] and offer suggestions as to how to monitor wastewater volumes,[158] construct wastewater holding dams,[159] and sample wastewater to determine its quality.[160] The Guidelines provide strategies for cleaner wine production and for "higher technology treatment options" that employ innovative technological solutions in treating winery wastewater.[161]

The extensive regulation and specific quantitative standards used by the South African government to monitor winery wastewater provide a clear framework for wine producers. The Backsburg Wine Estate, the first carbon neutral winery in South Africa,[162] recognizes the economic importance of maintaining sustainable and environmentally friendly wine production practices. Michael Back, the owner of the winery, notes that when it comes to eco-friendly winemaking, "More and more the retailers are going to be pressurised [sic] by their customers, and as this pressure mounts, the pressure is going to be sent back down the line to suppliers."[163] Water pollution reduction, along with decreasing the winery's carbon footprint, contributes to the overall sustainability goal that consumers are likely to increasingly value.

B. European Union

In the European Union ("EU"), wine crops covered 3.6 million hectares and made up five percent of the EU's annual agricultural output in 2006.[164] In April 2007, the EU adopted a Commission Proposal for the reform of Europe's wine sector.[165] This Proposal was adopted as

156. *Id*. at 15.

157. *Id*. at 19-20.

158. *Id*. at 21.

159. *Id*. at 22.

160. *Id*. at 22-23.

161. *Id*. at 25-26, 28-29.

162. Tim Mansel, *SA Wine Farm Tackles Climate Change*, BBC NEWS, July 17, 2007, *available at* http://news.bbc.co.uk/2/hi/africa/6273322.stm.

163. *Id*.

164. EU Reform of the Wine Market, http://www.eubusiness.com/Agri/wine-reform-guide/ (last visited Nov. 22, 2008); *see also* European Commission Reform of the Wine Market: Commission Proposal, http://ec.europa.eu/agriculture/capreform/wine/index3_en.htm (last visited Nov. 22, 2008) [hereinafter Reforms].

165. Reforms *supra* note 163.

Regulation 479 in April 2008[166] and does not specifically address winery wastewater. However, it includes policies in favor of reinforcing the "social fabric of rural areas," respecting the environment, and balancing supply and demand in light of a recent major wine surplus.[167]

Regulation 479 phases out the "crisis distillation" practices that European countries, such as France, Italy, and Spain, have used since the 1980s to profit from surplus wine.[168] Crisis distillation involves converting surplus wine alcohol into a raw form that "can only be used for industrial purposes or as biofuel."[169] Though the distillation process provided an alternative use of surplus wine, the EU believed that the necessity of its use only offered "temporary assistance to producers" and did not "deal with the core of the problem—that Europe is producing too much wine for which there is no market."[170] Regulation 479 phases out this procedure and implements policies that provide incentives for better wine production practices.

The first incentive provided by Regulation 479 is its application of the Cross Compliance section of the Common Agricultural Policy ("CAP") to the wine industry.[171] Cross Compliance—when farmers comply with environmental protection requirements as a condition for receiving benefits of market support—formerly did not apply to wine producers.[172] Now, Cross Compliance will tighten environmental standards for wine growers.[173]

Additionally, Regulation 479 provides tax incentives for growers who wish to leave the sector (as a way to reduce the surplus problem) and allocates funding for "agri-environmental schemes in Rural Development programs" that encourage both rural economic growth and sustainable agriculture.[174]

Although they do not directly apply to the wine industry, these reforms reflect the greater policy of the EU to promote environmental protection and sustainability. For example, the CAP sets out minimum

166. Council Regulation 479/2008, 2008 J.O. (L 148) 1 (EC), *available at* http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:148:0001:0061:EN:PDF (last visited Nov. 22, 2008) [hereinafter Regulation 479].

167. *Id*. at 3.

168. *Id*. at 13.

169. Environment News Service, *Europe Poised to Turn Quality Wine into Automotive Fuel*, June 8, 2006, at 1, *available at* http://www.ens-newswire.com/ens/jun2006/2006-06-08-05.asp.

170. *Id*.

171. *See* Regulation 479, *supra* note 165, at 14.

172. *Id*.

173. *Id*.

174. *Id*. at 4.

environmental standards for rural development that base eligibility for benefits upon "good farming practice" or "agri-environmental measures."[175] "Good farming practice" is defined as the "type of farming that a reasonable farmer would follow in the region concerned."[176] Demonstration of such practices will make a farmer eligible for certain EU monetary incentives. "Agri-environmental measures" go beyond the good farming practice baseline to "help to protect the environment and maintain the countryside."[177] Farmers that commit to these environmentally friendly farming techniques that go beyond the usual practice will "receive return payments that compensate for additional costs and loss of income" in implementing such practices.[178] This incentive structure, though not specifically applied to the European wine industry as of this writing, indicates Europe's desire to improve sustainable agricultural practices. In fact, the EU asserts in the CAP that its policies are "increasingly aimed at heading off the risks of environmental degradation, while encouraging farmers to continue to play a positive role in the maintenance of the countryside and the environment."[179] The goal is to achieve a "balance between competitive agricultural production and the respect of nature and the environment."[180] With regard to water, the CAP "provides support to investments for improving the state of irrigation" and also "protects water quality in respect of pesticides and nitrates" from fertilizers.[181]

Overall, the EU has a generally environmentally friendly agricultural policy that aims at achieving sustainability through the use of economic incentives and rural development. Though recent reforms in the wine sector reflect this policy, they seem to focus more on dealing with the problems posed by the Continent's major wine surplus than on water pollution problems. The EU does not address winery wastewater directly.

175. European Commission, *Agriculture and Rural Development – Agriculture and the Environment*, http://ec.europa.eu/agriculture/envir/ (last visited Nov. 6, 2008.) at 3, 5 (setting out EU policies on Agricultural and the Environment).

176. *Id*. at 3.

177. *Id*. at 5.

178. *Id*. at 6.

179. *Id*. at 1.

180. *Id*. at 2.

181. *Id*. at 13.

C. Australia

Like the EU and South Africa, Australia has a vibrant wine industry. Additionally, Australia has called for a "genuine commitment to ecological sustainability."[182]

The first National Wine Industry Environment Conference was held in Adelaide, Australia in 2000.[183] In his opening address to the Conference, the Federal Minister for the Environment and Heritage, Senator Robert Hill, stated that the "ecological tools such as wise management of water and land resources . . . provide the guarantee that you will be able to sustain the production levels at the required quality to meet the demand" for Australian wine.[184] He emphasized that good environmental practices equal good economic outcomes and mapped out national goals for the sustainable use of winery water resources.[185] Specifically, Hill mentioned the need to maintain water supply quality for both ground and surface waters and the need to control winery storm and wastewater runoff in order to minimize their negative impacts on surrounding ecosystems.[186] Hill advocated for "eco-efficiency" in winemaking, where producers use aggregately fewer resources, such as water, by employing conservation and reuse methods.[187] By citing the efforts of the Great Western Region of Victoria to deal with its wineries' wastewaters, Hill effectively encouraged local governments to take pro-environmental action in this agricultural sphere.[188]

In addition to its generally pro-environment stance on winery wastewater, in 1991 Australia established the Grape and Wine Research and Development Corporation ("GWRDC") under the Primary Industries and Energy Research and Development Act of 1989.[189] The GWRDC espouses the goal of "achieving the sustainable use and sustainable management of natural resources" used in the wine industry by placing a

182. Senator the Honorable Robert Hill, Green Grapes: Ecological Sustainability and the Australian Wine Industry, Opening Address to the First National Wine Industry Environment Conference (Oct. 31, 2000), *at* http://web.archive.org/web/20071125150233/http://www.environment.gov.au/minister/env/2000/sp31oct00.html (last visited Nov. 22, 2008).

183. *Id.*

184. *Id.*

185. *Id.*

186. *Id.*

187. *Id.*

188. *Id.*

189. Grape and Wine Development Corporation, *About GWRDC*, http://www.gwrdc.com.au/role.asp at 1 (last visited Nov. 6, 2008) (explaining the role of the GWRDC in Australian wine technology development).

priority on "rural research and development."[190] The GWRDC exists as an Australian government statutory authority and includes five major research programs.[191] The most relevant of these programs to winery wastewater are those dealing with innovation and technology adoption and with sustainable production.[192] The GWRDC plans and funds these collective programs and then facilitates the "dissemination, adoption and commercialization of the results through out [sic] the industry."[193] Essentially, the GWRDC provides the tools that the Australian government needs to implement its policies for the sustainable use of the water resources necessary for wine production.

VII. PROPOSALS FOR THE UNITED STATES: HOW TO REGULATE WINERY WASTEWATER

As more and more states realize the potential economic benefits associated with wine production, the United States will be forced to confront a greater volume of winery wastewater issues. As mentioned above, sugars measured as BOD have the potential to injure local aquatic ecosystems and to mix with the chlorine in municipal drinking water supplies to form carcinogenic THMs.[194] In addition to these contamination issues, more wineries create the potential for increased local sewer system overload and further unsafe disposal of untreated wastewater. The United States should take steps at the federal, state, and local levels to promote sustainable and environmentally friendly winery wastewater management.

At the federal level, the EPA should add the wine industry as at least a subcategory, and perhaps even a category, of industry as defined under the CWA. In addition, the EPA should endorse a national policy, similar to those of Australia and South Africa, to promote sustainable winery practices and technological development, using as authority the CWA's research and development provisions.

The states, especially those in which the wine industry has the potential to be the most widespread, should use the California system as a model when structuring their winery wastewater laws and policies. They should use the delegation of power afforded by the CWA to implement winery environmental regulations to ensure that state citizens

190. *Id*. at 1, 3.
191. *Id*. at 1, 2.
192. *Id*. at 2.
193. *Id*. at 1.
194. *See* Franson, *supra* note 15.

reap the maximum benefits of wine production without having to endure extensive environmental costs.

Local governments should mimic the North Coast Region of California. This region's practices are a good example of how to monitor and enforce winery wastewater regulation compliance. Local governments are in the best position to advance state and federal policies and regulations because of their proximity to the wineries themselves. In addition, local authorities have a greater ability to monitor the few wineries within their jurisdictions than a state or federal body, which would have to monitor a plethora of wineries scattered over a wide area.

A. Federal

The EPA reviewed the fifty-six different point source categories during its 2007 Annual Review of Effluent Guidelines and Pretreatment Standards conducted under §§ 301(d), 304(b), 304(g), and 307(b) of the CWA.[195] The categories reviewed included cement manufacturers, coal mining operations, meat and poultry producers, vegetable processors, organic chemical manufacturers, and many more.[196] The review screened each category based on the "hazard associated with discharges from each category" as well as on "other factors identified by EPA as appropriate for prioritizing effluent guidelines and pretreatment standards for possible revision."[197] The EPA also continued its in-depth studies of the Steam Electric Power Generating, Coal Mining, Oil and Gas Extraction, and Hospital categories.[198] Wine producers, like these categorized industries, have the potential to adversely affect the surrounding environments if their byproducts reach the water supply; therefore, wine industries should be categorized as well.

Apple and citrus juice processors' conventional water pollutants are specifically regulated as subcategories. Adding the wine industry as an additional subcategory in this section would have the protective effect of ensuring that winery effluents meet the strictest BCT standards. Wineries would be more closely scrutinized and would need to meet effluent reduction guidelines for more than just storm water permits under the NPDES system. Such an addition would also offer wineries absolute quantifiable standards for particular water contaminants, similar to the way in which South Africa has national ceiling levels for chemical oxygen demand and other winery wastewater pollutants. The wine

195. Notice, *supra* note 68, at 61335, 61338.

196. *Id*. at 61345.

197. *Id*. at 61338

198. *Id*.

industry differs from those industries already subcategorized only because it has generally played a smaller role in water pollution. The types of pollution and the resulting environmental impacts are identical. With the rising popularity of the wine industry and the great economic potential for wineries to flourish across the United States, this lone differentiating factor likely will soon disappear.

In addition to adding wine producers as a category or subcategory of polluters under the CWA, the United States (presumably through the EPA) should follow Australia, South Africa, and the EU in promulgating a national policy favoring sustainable wine production and the efficient and wise use of the water resources needed for such sustainability. One way to promote this policy would be to follow the EU's lead and provide subsidies for wine producers who follow the United States' equivalent of "agri-environmental measures." (Recall from above that these measures reward farmers who go above and beyond baseline good farming practices to commit to environmentally friendly farming techniques.) The United States could use some of the funds it already allocates for farm subsidies to promote good grape farming practices that would lead to less winery wastewater, even before the winemaking process begins.

Further, the United States government could offer additional subsidies to wine producers that implement technologically advanced winery wastewater treatment systems such as the MFT unit or other bioreactors. Just as some state governments, such as that of Colorado, have given car buyers incentives for purchasing environmentally friendly hybrid automobiles,[199] the federal government could subsidize the extra costs of implementing new technologies to reduce the impact of winery wastewater. Following Australia's example with the GWRDA, the EPA could use the CWA's National Study Commission to facilitate research and development of new winery wastewater technologies.[200] Doing so would promote the achievement of CWA effluent limitation goals while also acknowledging the legitimacy and potential of the U.S. wine industry. The EPA Administrator could use his or her delegated authority to establish research fellowships at universities in wine-producing regions for the purpose of further enhancing winery wastewater technology.[201] All of these solutions would serve the dual function of promoting the wine industry itself and ameliorating the negative effects of winemaking on the country's water supply and aquatic ecosystems.

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199. C.R.S. § 39-22-516 (2008). *See also* Colorado Hybrid Vehicle Purchase Tax Incentives, http://www.whybuyhybrid.com/Colorado-Hybrid-vehicle-purchase-Tax-Incentives.htm (last visited Nov. 6, 2008).

200. *See* CWA, *supra* note 57, at § 1325.

201. *See id*. at § 1254(b)(5).

B. State

California, the largest domestic wine producer, has taken the lead on state winery wastewater regulation. As outlined above, California has a detailed and comprehensive wastewater management scheme already in place that is regularly updated to reflect industry changes. Specifically, California's permitting procedures for winery wastewater evince a scheme that should be adopted and adjusted to fit each particular state's water law regime. The cooperative federalism of the CWA encourages such state involvement.

California mandates that all dischargers of winery waste that will affect the waters of the state must file an application for a permit under the General Waste Discharge Requirements.[202] These permitting procedures allow the state to lump all wineries together, thereby facilitating easy monitoring for compliance. Other states should implement similar permitting schemes within their particular state water law systems. Since water allocation and management are largely functions of state law, each state's ability to issue permits for certain types of waste makes reducing the harmful pollutants in winery wastewater easier to manage. This state power would ensure that wineries sustain environmentally friendly practices, since the permits must be renewed periodically.

In addition to following the California model, states should offer subsidies like those described above in the federal law section. State legislatures could allocate appropriations for such subsidies in hopes of stimulating the wine industry itself, as well as to reward wineries for using technologically savvy, environmentally friendly, wastewater treatment methods.

C. Local

Local authorities in winemaking areas should be responsible for guaranteeing that the wineries in their jurisdictions comply with wastewater pollution standards. As evidenced by the North Coast Region of California, local governments take a concerted interest in the health of their local waters and are willing to help regulate wineries in their immediate vicinities. Problems could arise, however, should local governments become overzealous with their regulations. Although the CWA authorizes state and local authorities to implement federal standards using their own licensing or permitting schemes, excessive tightening or over-complication of permitting procedures could hurt the

202. Order, *supra* note 104, at 1.

wine industry more than it helps reduce winery wastewater pollution. This is especially true in "new" wine markets where fledgling wine producers would have to jump through a myriad of hoops simply to get their businesses off the ground. If local regulations were too strict or too complicated, these young companies might either choose to establish themselves somewhere with different standards, or fail under the pressure of an oppressive regulatory regime. As with any regulatory endeavor, local governments must be careful not to abuse their CWA permitting powers in order to allow young wineries an opportunity to develop.

Local governments are best suited to take on the monitoring and enforcement duties associated with state and federal permits. Having local personnel near wineries eases the burden on state and federal agencies when it comes to enforcing their mandates. It also allows local governments to be involved with the regulatory process without adding more layers to the regulatory onion. Since local governments also have the greatest personal stake in compliance (for example, they do not want their constituents to drink carcinogenic water), they have the most natural incentive to closely monitor wineries for effluent limitation compliance.

VIII. CONCLUSION

Wine production stands to substantially contribute to the overall U.S. economy just as it has substantially contributed to the state economy in California. With this increased contribution, however, comes the increased problem of dealing with wine industry wastewater. The examples and proposals in this Note have outlined ways in which the United States might effectively address these issues, both in the law and through policy. The federal government should create a new subcategory for wine producers under the CWA, thus acknowledging the significance of the wine industry and enabling the specific effluent limitations to apply across the board to winery wastewaters. In using the National Study Commission to research new technologies for winery wastewater treatment and disposal, the government will buttress those actions already undertaken by private entities such as AnAerobics, Inc. Granting state and federal subsidies to incentivize wise-use practices will stimulate the wine industry to reduce its wastewater. Finally, regulating wastewater discharges under a state-created and locally-enforced permitting program will provide the standards and procedures necessary to ensure industry compliance and to maintain a safe water supply for both humans and other species. Though the future of the wine industry in the United States looks bright, preemptive action in both law and policy

will be necessary for the United States to avoid having the fruits of a budding wine industry turn into the grapes of wrath for its water supply and aquatic ecosystems.

The Modern Oil Shale Boom: An Opportunity for Thoughtful Mineral Development

Carrie Covington Doyle*

ABSTRACT

An oil shale boom has come again to the Piceance Basin of Colorado, Wyoming, and Utah, and the intersection of demand for domestic oil and technological advancement seems likely to engender development. This Note suggests that this latest oil shale boom offers a unique opportunity in mineral development because the technological challenge of profitable extraction has made it the first valuable mineral to stave off a blind rush to extract and develop. By surveying the history of oil shale in the western United States, the implications of modern retort technologies, and the statutory and regulatory schemes in Colorado, Utah, and Wyoming, this Note is intended to be a tool for state policymakers. By describing the current landscape and highlighting relevant lessons from previous mineral development, this Note points to the importance of a broad policy perspective. Most importantly, this Note attempts to show local communities and state legislatures significantly impacted by oil shale development that the legal landscape of this development is not yet settled and that there is an extensive toolkit of mineral law and policy precedent that merits their attention.

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I. INTRODUCTION

An oil shale boom is likely to occur within the next five to ten years, and its effects are likely to be far greater than those of previous booms, given the supply and demand realities of oil in the twenty-first century. This Note encapsulates the big picture of oil shale's history in the western United States, the implications of modern retort technologies, and the statutory and regulatory schemes in the states of Colorado, Utah, and Wyoming. The oil shale boom offers a unique opportunity in mineral development because the technological challenge of profitable extraction has made it the first valuable mineral for which a blind rush to develop has been significantly delayed. The choice to take a comprehensive view of oil shale in this Note was a conscious one; hopefully, all of the involved decision makers will take an expansive view of the variety of mineral laws and lessons already on the books.

The technological challenge of extraction has given lawmakers a rare advantage. Decision makers can benefit from the calm before the storm and learn from 150 years of mineral precedent. They have the opportunity to construct a statutory and regulatory scheme that balances resource development with environmental and community protection commensurate with twenty-first century conservation values. This Note is intended to be a tool for state and federal lawmakers by describing the current landscape, highlighting relevant lessons from previous mineral development, and suggesting the importance of a broad policy perspective. Most importantly, this Note attempts to show local communities and state legislatures likely to be significantly impacted by oil shale development that the legal landscape of this development is unsettled but that there is an extensive toolkit of mineral law and policy precedent that merits their attention.

II. A BRIEF HISTORY OF OIL SHALE

A. The Fantastic Beginnings of a Classic Western Mineral

The country between the Green River and Upper Colorado River is generally dun-colored and covered in scrappy sagebrush. The landscape is often overlooked by the speeding motorists of I-70 or I-80 who doze at the wheel between the greenery of the Rocky and Wasatch Mountains and the vibrancy of Moab and Yellowstone. The rolls and roils of the Uinta, Green River, Washakie, and Piceance Basins have scars from rivers and weather that leave sandy boulders halfway down plateau escarpments and occasional deserted creek beds entrenched in brittle soil.

It resembles a child's sandbox on an enormous scale, abandoned to the seasonal accumulation of loosely-hardened piles and washed-out rivulets. Perhaps it is this very aspect of the region that has captured imaginations and driven people to plow the resources into cartoonishly large trucks made just for this giant sandbox. Of course, this sandbox is also underlain by a wealth of mineral resources in varying geologies of accessibility. In addition to the recently-tapped fortunes of oil and gas, coal, and coalbed methane, one of the largest deposits of oil in the world—with a net reserve greater than that of Saudi Arabia's crude—is encased in shale, deep in the earth, below the sandbox. A child, faced with such a wonderful and rich sandbox might well wonder, "Why not dig it up?"

Although oil shale is 40-60 million years old,[1] its western American story begins in the 1880s. By the late 1800s, mining had taken root in Utah, Wyoming, and Colorado, but oil shale was one of the few minerals too complicated, or unprofitable, to pursue. The historical backgrounds of each of these states are important because they provide background about the failure to develop oil shale in the late nineteenth century and identify the distinct state cultures that continue to influence mining policy.

The first Mormon pioneers entered the Salt Lake Valley in 1847 and by the 1880s, their efficient agricultural communities had expanded methodically along the watersheds to the fertile valleys of the Utah Territory.[2] The rural farming communities of western Utah prospered even though statehood was delayed, primarily for ideological reasons, until 1896.[3] Additionally, the communities were sporadically caught up in warring with their Ute and neighbors and federal troops.[4]

Wyoming was far less populated than Colorado and Utah in the 1880s and already exhibited distinct cultural regions. The northwest was

1. The oil shale in Utah, Wyoming, and Colorado, known to geologists as the Eocene Green River Formation, was formed from blue-green algae that flourished in the region's warm, alkaline lakes 40-60 million years ago. JOHN R. DYNI, U.S. DEP'T OF INTERIOR, GEOLOGY AND RESOURCES OF SOME WORLD OIL-SHALE DEPOSITS: SCIENTIFIC INVESTIGATIONS REPORT 2005-5294 25-27 (2006), *available at* http://pubs.usgs.gov/sir/2005/5294/pdf/sir5294_508.pdf; *see also* United States Geologic Service, What is Geologic Time?, http://wrgis.wr.usgs.gov/parks/gtime/index.html (last visited Nov. 4, 2008).

2. DONALD WORSTER, RIVERS OF EMPIRE: WATER, ARIDITY, AND THE GROWTH OF THE AMERICAN WEST 74-77 (1985).

3. *Id.*

4. *See generally* HISTORY OF INDIAN DEPREDATIONS IN UTAH (Peter Gottfredson ed., 1919) (compiled first-hand accounts of the Black Hawk War between the Utes and Mormons). For information on the Mormon War, *see generally* NORMAN F. FURNISS, THE MORMON CONFLICT: 1850-1859 (3rd ed. 2005).

marked for tourism by 1872, with the establishment of Yellowstone National Park.[5] The east, with its proximity to the Black Hills, was still firmly Indian country, even if that area had become a landscape of military posts, war, and tragedy.[6] The southern intercontinental railroad corridor was both beneficiary and victim of wild western industrial commerce.[7]

By the 1880s, Colorado was blooming in regions beyond the burning buds of the earliest mining camps and their attendant foothill booster-and-supply camps.[8] Although Hayden's Survey in the 1870s strongly suggested that bounty was not to be had in the "desert covered with a sparse growth of stunted sagebrush, which grows in a stiff alkaline soil,"[9] it was not the aridity that the settlers saw. Rather, they saw the opportunity to acquire free land through the Homestead Act of 1862, free water thanks to prior appropriation, and—most of all, in a region that only an irrigator's mother could love—free minerals as a result of the General Mining Law of 1872.[10] Hayden spoke of "croppings of Cretaceous shales" in the land around the Grand River (now known as the Colorado River), and Colorado's soils proved to be most valuable for the minerals they contained.[11] The regional rushes for gold, silver, and coal began in 1858, 1878, and the 1880s, respectively.[12] By the end of the century, the federal government had cleared the way for white settlement by removing some of the Ute Tribes to a reservation in eastern Utah and foisting allotment upon most of the others.[13]

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5. Nat'l Park Serv., Yellowstone National Park: History and Culture, http://www.nps.gov/yell/historyculture/index.htm (last visited Nov. 4, 2008).

6. *See generally* DEE BROWN, BURY MY HEART AT WOUNDED KNEE (Henry Holt and Co. 1991) (1970).

7. *See generally* STEPHEN E. AMBROSE, NOTHING LIKE IT IN THE WORLD: THE MEN WHO BUILT THE TRANSCONTINENTAL RAILROAD 1863-1869 (Simon & Schuster, Inc. 2001) (2000).

8. *See generally* ELLIOTT WEST, THE CONTESTED PLAINS: INDIANS, GOLDSEEKERS, AND THE RUSH TO COLORADO, 207-235 (1st prtg. 1998).

9. ANDREW GULLIFORD, BOOMTOWN BLUES 20 (1989) (*quoting* F.V. HAYDEN, TENTH ANNUAL REPORT OF THE UNITED STATES GEOLOGICAL AND GEOGRAPHICAL SURVEY OF THE TERRITORIES EMBRACING COLORADO AND PART OF ADJACENT TERRITORIES BEING A REPORT OF PROGRESS OF THE EXPLORATION FOR THE YEAR 1876, 170, 173 (U.S. Gov't Printing Office 1878)).

10. Homestead Act of 1862, 43 U.S.C. §§ 161-284 (repealed 1976); Coffin v. Left Hand Ditch Co., 6 Colo. 433 (Colo. 1882) (holding that the right of water by priority of appropriation is protected); General Mining Law of 1872, 30 U.S.C. §§ 21-42 (2006).

11. GULLIFORD, *supra* note 9, at 20 (quoting HAYDEN, *supra* note 9, at xvi).

12. CARL UBBELOHDE, DUANE SMITH & MAXINE BENSON, A COLORADO HISTORY 57, 154-55, 196 (Pruett Publ'g Co. 1995) (1965).

13. D Callaway, J. Janetski, and O. C. Stewart, *Ute*, *in* 11 HANDBOOK OF NORTH AMERICAN INDIANS 336-67 (W. L. D'Azevedo, ed., Smithosonian Institution:

The first settlers of western Colorado were a western hodge-podge. Men who had accumulated just enough knowledge and capital in Leadville were joined by those who had struck out or arrived too late. Immigrants found their way to newborn towns like Carbonate, Silt, Rifle, and Parachute through chance and kinship. No doubt a weary outlaw gave up the chase on his way to Monument Valley, or a lonely cowboy saw how the railroad would end the need to drive cattle, allowing the possibility of a permanent home. Into this mix fell a man named Mike Callahan. He was one of the first settlers in Parachute, Colorado and would become one of the town's earliest legends.[14] After arriving in Parachute, he built a log cabin, complete with a carefully crafted fireplace of beautifully dark, oddly glossy, local stone.[15] Upon building a fire, however, the whole fireplace—and thus, the entire cabin—went up in flames.[16] And so Mike Callahan was the first, but certainly not the last, Western Slope local to get burned by oil shale.

The story of oil shale has all the makings of a great western epic. It begins with the myth of Mike Callahan.[17] It is about a wild mineral that will not be tamed and bucks definition. It contains all of the hope and heartbreak of communities that must wrench their living from the land. And it has followed the ebbs and flows of western American history to arrive, unexpectedly, at one of the natural resource crossroads of the twenty-first century. Oil shale pits the high-noon hawk's cries of landscape conservation and community preservation against the dust-settled gunslingers' air of the heightened demand for oil.

B. Defining a Rock that Turns to Oil (Boom to Boom: 1916-1980s)

Oil shale is a dark-brown rock.[18] To the touch, a piece of oil shale would feel heavier and smoother than sandstone, lighter and less coarse

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Washington, D.C., 1986); *see also*, 1 INDIAN AFFAIRS: LAWS AND TREATIES, COMPILED TO DECEMBER 1, 1902, 834-35 (Charles J. Kappler, ed., U.S. Gov't Printing Office 1904).

14. Donald Callaway, Joel Janetski, & Omer C. Stewart, Ute, in 11 HANDBOOK OF NORTH AMERICAN INDIANS 336, 355-56 (Warren L. D'Azevedo ed., 1986).

15. GULLIFORD, *supra* note 9, at 7.

16. *Id.*

17. No one has been able to verify this tale, but most folks begin their oil shale story with Mike Callahan. Perhaps because, even if it is not true, it makes for a good campfire yarn and jovially offers a lesson for the wary. And every good western tale needs to include a warning that will not be heeded.

18. This Note deals only with oil shale and not its cousin, tar sands. These two types of rock are often lumped together for policy purposes because both contain oil that must be forced out, and there is some crossover in technology. Canada is the world leader in tar sands development. For a good overview of Canadian tar sands, *see generally*

than granite, and, somehow, juicier than both. Yes, as it turns out, rocks can be juicy—or at least have a liquid content that can be extracted at extremely high temperatures[19]—and it is this quality that makes oil shale's history and current vogue especially juicy. This juiciness can be attributed to kerogen, which is the organic matter that becomes oil and gas after being subjected to millions of years of geological time, temperatures, and pressures.[20] Developing oil shale involves simulating these complicated geological processes in order to speed up the conversion of kerogen.[21] This process of turning rock into oil is called "pyrolysis."[22] There are different pyrolysis techniques, but they all require heating the oil shale to temperatures of about 700 degrees Fahrenheit for extended periods of time, resulting in the creation of oil and byproducts, like spent shale.[23]

Many Garfield County, Colorado settlers toyed with the idea of burning oil out of rock, as evidenced by the establishment of the Parachute Mining District in 1890.[24] The technological developments necessary for their success, however, would have required both national support and significant capital, neither of which they had.[25] It was not until 1897 that Congress clarified that the General Mining Law governed oil and gas and, in so doing, declared that public lands containing petroleum resources were "free and open to occupation, exploration, and purchase by citizens."[26]

By the early twentieth century, however, World War I and the increased use of automobiles led to exponential growth in demand for oil, and the federal government recognized a need to reserve and control this crucial resource.[27] Thus, President Taft included 3,041,000 acres in California and Wyoming in Temporary Petroleum Withdrawal No. 5 on September 27, 1909, after the Secretary of the Interior alerted him that "the government [would] be obliged to repurchase the very oil that it has

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Elizabeth Kolbert, *Unconventional Crude: Canada's Synthetic-Fuels Boom*, NEW YORKER, Nov. 12, 2007, at 46-51.

19. Western Resource Advocates, Scoping Comments: Oil Shale and Tar Sands Resources Leasing Programmatic EIS, at 5 (2006) [hereinafter WRA Scoping Comments].

20. *Id.*

21. *Id.* at 6.

22. *Id.*

23. *Id.*

24. GULLIFORD, *supra* note 9, at 47-48.

25. *Id.*

26. United States v. Midwest Oil Co., 236 U.S. 459, 466 (1915) (internal citation omitted).

27. DANIEL YERGIN, THE PRIZE: THE EPIC QUEST FOR OIL, MONEY, AND POWER, 167-68, 208-09, 211 (Simon & Schuster, Inc. 2003) (1991).

practically given away."[28] In the landmark judicial decision of *Midwest Oil* in 1915, the Supreme Court demonstrated the importance petroleum had taken on in just over a decade.[29] The Supreme Court pointed to 252 prior executive orders withdrawing land to which Congress had implicitly acquiesced and held that even though there was a lack of similar precedent for mineral withdrawals, the "government is a practical affair, intended for practical men."[30] In practical terms, the mineral land withdrawals and the *Midwest Oil* decision held the rampant mineral grab at bay until Congress could act.[31]

Congress would act comprehensively with regard to all petroleum resources in the Mineral Leasing Act of 1920, but oil shale became a top priority earlier—just one year after *Midwest Oil*.[32] The imminence of war and the vast projections of oil shale availability in western Colorado and eastern Utah contained in two United States Geological Survey ("USGS") reports led President Wilson to create the Naval Oil Shale Reserves ("NOSRs") on December 16, 1916.[33] The 45-acre Anvil Points site near Rifle, Colorado functioned as the primary oil shale research and development facility from 1920 to 1982, while the 87-acre site in eastern Utah remained in reserve.[34] The size of these sites, however, seems insignificant in comparison to the large acreages mentioned in the current discussions of oil shale development.[35] Although the NOSRs effectively kept the oil shale research process alive during the middle decades of the twentieth century, the federal effort was minor, and private industry was prohibited from participating in the reserve's experimental extraction.[36]

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28. *Midwest Oil Co.*, 236 U.S. at 466-67 (internal citation omitted).

29. *See id*. at 472.

30. *Id*.

31. CHARLES F. WILKINSON, CROSSING THE NEXT MERIDIAN: LAND, WATER AND THE FUTURE OF THE WEST, 52-53 (1992).

32. *See* GULLIFORD, *supra* note 9, at 49.

33. *Id*.

34. U.S. Dept. of Energy, The Naval Petroleum and Oil Shale Reserves – 90 Years of Ensuring the National Security, http://www.fossil.energy.gov/programs/reserves/npr/npr-90years.html (last visited Oct. 2, 2008).

35. The key word here is "almost" because the Anvil Points cleanup continues to be a major effort within Colorado. The site contains a 300,000 cubic-yard spent shale pile containing arsenic and other processing waste, which the Bureau of Land Management ("BLM") is considering taking to a nearby landfill site. Dennis Webb, *BLM: Funds Likely Adequate for Anvil Points Cleanup*, GLENWOOD SPRINGS POST INDEPENDENT, Oct. 30, 2007.

36. On March 13, 1958, the Attorney General issued an opinion stating "[t]he Secretary of the Navy is not authorized to lease the shale deposits, demonstration facilities and improvements on public lands in the naval oil shale reserves to private industry for the conduct of an experimental program in the extraction of synthetic liquid fuels from oil shale." 41 Op.Atty.Gen. (1958) (cited in annotations for 30 U.S.C.A. § 241

The NOSRs were transferred to the Department of Energy in 1977 and Anvil Points was decommissioned in 1987.[37]

Congress's recognition of the importance of minerals to the nation's interests was further demonstrated in the Stock-Raising Homestead Act of 1916, which provided for the granting of surface land patents that reserved all subsurface minerals to the United States.[38] Congress also exerted federal control over non-hard rock mineral development on federal lands when it set out specific terms for the leasing of oil, gas, coal, and oil shale in the Mineral Leasing Act of 1920.[39] The terms set out for oil shale gave the Secretary of the Interior broad discretionary authority. For example, leases could be "for indeterminate periods," royalties were not set and could be waived "during the first five years of the lease," and, although no person or entity could have more than one lease, the maximum lease size was 5,120 acres.[40]

Throughout the rest of the twentieth century, the oil shale industry in Colorado would suffer the boom-bust fate of mineral-dependent communities. The first oil shale boom in western Colorado proceeded throughout World War I against a federal background that both promoted and corralled petroleum development.[41] Individual prospectors, joint-stock companies, and established oil companies tried valiantly to extract significant oil from shale, but all found themselves unprepared to meet its technological demands, producing only 500 barrels of oil by 1920.[42] Although the technological aspirations of oil shale developers may have been endless, the discovery of crude oil in east Texas in 1930 quickly ended any hope of obtaining the financial resources needed to support efforts in Colorado.[43] Garfield County consequently settled into a "bust period" until the price of oil would rise again to a level where there was sufficient financial support to meet technological needs.[44] The second boom arrived in the wake of the 1973 Arab oil embargo, but primarily

(West 2005)).

37. U.S. Dept. of Energy, *supra* note 34.

38. GEORGE COGGINS ET AL., FEDERAL PUBLIC LAND AND RESOURCE LAW, 106 (6th ed. 2007).

39. Mineral Leasing Act of 1920, ch. 85, 41 Stat. 437 (codified as amended in scattered sections of 30 U.S.C.).

40. *Id.* at 30 U.S.C. § 241(2), (4) (2006). The 2005 amendments increased the maximum lease size from 5,120 to 5,760. 30 U.S.C.A. § 241 (historical and statutory notes, 2005 amendments).

41. *See Midwest Oil Co.*, 236 U.S. at 466-67; *see also* Mineral Leasing Act of 1920, *supra* note 39.

42. GULLIFORD, *supra* note 9, at 57.

43. YERGIN, *supra* note 27, at 246-50.

44. GULLIFORD, *supra* note 9, at 57.

focused on the untapped reserves of oil in Alaska, Mexico, and the North Sea rather than addressing the technological hurdles of oil shale.[45]

The third boom began when President Carter signed the Energy Security Act on June 30, 1980, demonstrating his support for Congress' mandate to develop previously untapped domestic sources of oil.[46] Companies had slowly begun to buy up oil shale leases in the 1970s, establishing the infrastructure for the third boom by 1980.[47] The boom began in earnest with Exxon's 1980 white paper on "The Role of Synthetic Fuels in the United States Energy Future."[48] The white paper announced Exxon's projections for oil shale development in the region. The scale of the proposed development was truly incredible. It included 150 plants, six strip mines, tens of thousands of workers, and suggested meeting the need for 3.6 barrels of water for every barrel of oil produced by siphoning water from South Dakota's Oahe Reservoir.[49] The boom was centered around Exxon's faith in the project, and thus when Exxon shut down its Colony project on "Black Sunday," May 2, 1982, the second bust set in.[50] Even the Reagan administration's efforts to privatize hundreds of thousands of acres of public lands containing oil shale could not revive the industry.[51]

III. THE MODERN BOOM AND THE CURRENT LEGISLATIVE SCHEME

Oil shale is a geologic phenomenon not limited to the American West.[52] Most agree, however, that the Green River Formation, located at

45. YERGIN, *supra* note 27, at 613-617, 665.

46. The Energy Security Act of 1980 was a collection of six separate bills meant to encourage alternative fuel resource development. One of those bills was passed as the United States Synthetic Fuels Corporation Act of 1980. Pub. L. No. 96-294, 94 Stat. 633 (1980).

47. GULLIFORD, *supra* note 9, at 8.

48. *Id.* at 121.

49. *Id.* at 121-22, 127.

50. *Id.* at 12.

51. Philip Shabecoff, *Interior Department Acts to Speed Sales of Public Lands for Development*, N. Y. TIMES, Jan. 8, 1989.

52. Estonia is currently the only country that depends on oil shale as its primary source of energy. Estonia Energy, http://www.estoniaenergy.com (last visited Oct. 6, 2008). A state-owned Estonian company, EESTI Energia is the "only predominantly oil-shale-based energy production system in the world." EESTI Energia, Introduction, http://www.energia.ee/index.php?id=2&L=1 (last visited Oct. 6, 2008). Russia, Brazil, and China have small-scale development projects and Jordan, Mongolia, and Turkey have initiated research and development on oil shale or tar sands. *See* WRA Scoping Comments, *supra* note 19; *see also* JAMES T. BARTIS ET AL., RAND CORP., OIL SHALE

the intersection of Utah, Wyoming, and Colorado, is one of the world's largest deposits and may contain anywhere from 800 billion to 1.8 trillion barrels of oil resources.[53] Although there is some private ownership of oil shale lands, at least 70% of the Green River deposit is located beneath federal land.[54] The 8.7 million acres of predominately public land that may contain oil shale deposits fall under the regulatory authority of the Bureau of Land Management ("BLM"), which is responsible for ensuring compliance with the National Environmental Policy Act ("NEPA") through the development of a Programmatic Environmental Impact Statement ("PEIS").[55]

The Green River Formation, known to the BLM as the Oil Shale and Tar Sands ("OSTS") development area, is extensive. Its four main geologic basins—the Piceance, Washakie, Green River, and Uinta—constitute over 8.5 million acres of the Upper Colorado Plateau.[56] Although the region is sparsely populated, it is home to 200,000 residents[57] and counting, thanks to the recent oil and gas boom.[58] Furthermore, Colorado, Wyoming, and Utah face difficult decisions

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DEVELOPMENT IN THE UNITED STATES PROSPECTS AND POLICY ISSUES 13-14 (2005), *available at* http://rand.org/pubs/reports/R2293 [hereinafter RAND Report].

53. BLM, Oil Shale and Tar Sands Programmatic EIS Information Center, *About Oil Shale*, http://ostseis.anl.gov/guide/oilshale/index.cfm (last visited Dec. 23, 2008) [hereinafter BLM OSTS Website]. It is important to note not only the enormous variation in the federal government's estimates, but also that the website notes that "not all resources in place are recoverable." *Id.*

54. *Id.*

55. *See* BLM OSTS Website, *supra* note 53 (stating that BLM administered the EIS in accordance with the Energy Policy Act of 2005, Pub. L. 109-58, § 369(d)(1) (2005)). Although they fall under the purview of the PEIS, the two original Naval Oil Shale Reserves (which comprise of a relatively small amount of the 8.7 million acres) have different designations: Anvil Points is a Superfund site the second Naval Oil Shale Reserve was deeded to the Ute Indian Tribe on December 4, 2000. U.S. Dept. of Energy, *supra* note 34.

56. E-mail from Sherri Thompson, Project Manager, Bureau of Land Management OSTS PEIS, to Carrie Covington (Nov. 28, 2007) (on file with Colo. J. Int'l Envtl. L. & Pol'y). The acreage breakdown is: Piceance Basin, Colorado 1,185,700 acres; Uintah Basin, Utah 2,977,900 acres; Green River and Washakie Basins, Wyoming 4,506,200 acres; Total 8,669,800 acres. *Id.*

57. U.S. Census Bureau, American FactFinder, Colorado County Population Estimates (2000-2007), http://factfinder.census.gov/home/saff/main.html?_lang=en (follow "Population Finder" hyperlink; then search "State" for "Colorado;" then follow "Population for all counties in Colorado, 2000-2007 alphabetic" hyperlink) (Mesa County is the most populous in the region with an estimated population of 139,082 for 2007; Garfield County is a distant second with 53,631; Moffatt and Rio Blanco are much less populous)

58. Jason Blevins, *Garfield County Sees Explosive Growth*, DENVER POST, Nov. 13, 2007.

considering the interests involved. The significant royalty payments and economic development need to be weighed against transforming the landscape into a sacrificial mining zone.

The Energy Policy Act of 2005 called for completion of the NEPA process within a markedly ambitious eighteen-month period.[59] The BLM finally released the final PEIS ("FPEIS") thirty-seven months later, in September of 2008.[60] The disconnect between the Energy Policy Act of 2005's blind optimism and the delayed reality of the PEIS process represents the hope, confusion, and challenge involved in the United States' efforts to develop oil shale. An analysis of modern oil shale retort technologies, the BLM's regulatory approach, and the statutory scheme that will undergird regulation of the resource is necessary to understand today's oil shale boom.

A. Oil Shale Technologies Today[61]

There are two primary methods being developed to extract oil from shale: surface retort and in-situ underground retort.[62] The first method, surface retort, is the older process of mining the shale out of the earth and then extracting the oil from the shale.[63] The mined rock is taken to a separate location and heated in a surface retort facility to distill the oil.[64] The two main components of a surface retort operation are the mining operation, which can be either an underground or a surface mine, and a retort facility that can heat the shale to approximately 1,000 degrees

59. Energy Policy Act of 2005, § 369(d)(1) Pub. L. No. 109-58, 119 Stat. 728 (2005), 42 U.S.C. § 15927(d)(1) (Supp. V 2005) (The Energy Policy Act of 2005 will be cited using the 42 U.S.C. § 15927 provisions for the remainder of this Note).

60. BUREAU OF LAND MANAGEMENT, *Proposed Oil Shale and Tar Sands Resource Management Plan Amendments to Address Land Use Allocations in Colorado, Utah, and Wyoming and Final Programmatic Environmental Impact Statement*, 1-2 (2008), *available at* http://ostseis.anl.gov/eis/guide/index.cfm [hereinafter OSTS FPEIS].

61. The RAND Report provides an extensive evaluation of the processes involved in extracting oil from shale, the comparative probabilities of success with each process, and the potential efficiencies of the processes. RAND Report, *supra* note 52. This Note is most interested with the United States' regulatory posture toward this resource.

62. The term "retort" does not suggest that the oil responds to caustic yet witty remarks by extracting itself from the shale. In science, retort refers to a closed system with an outlet tube that causes distillation through heat. THE AMERICAN HERITAGE® DICTIONARY OF THE ENGLISH LANGUAGE 1489 (4th ed. 2000). Although there are variations within surface retort and in-situ underground retort methods, this Note will deal only with differences between the two—not least because companies are carefully protecting any proprietary technological developments.

63. RAND Report, *supra* note 52, at 11.

64. *Id.*

Fahrenheit.[65] It is also important to note that oil extracted through the surface retort process is not stable and must be further upgraded before it can be sent to a refinery.[66] Today, the surface retort method is less favored than the in-situ method,[67] perhaps because the two-step process, of mining then retorting, is cumbersome.[68]

The second method, in-situ retort, is the process of using heat to extract oil from the shale while leaving the rock in place.[69] Most companies prefer this method because it allows them to avoid the additional costs of extracting the shale from the ground, transporting it to a retorting facility, and dealing with massive quantities of overburden and spent shale.[70] During the in-situ process, the oil shale is heated in place for at least two years at approximately 700 degrees Fahrenheit using underground heating mechanisms. The entire system is contained by freeze walls—wells placed around the perimeter of the in-situ area that are thought to prevent the escape of oil and gas and intrusion of groundwater by circulating refrigerated fluid.[71] The retort process releases about two-thirds of the encased kerogen as oil and the other third as gas, which has implications for extraction and the underground movement of the resource.[72]

The greatest problem in determining the potential environmental impact of oil shale development is the unpredictability of technologies that are theoretical and have not been tested on a large scale.[73] For example, Shell withdrew its Plan of Operations in the summer of 2007 because its freeze wall technology was still too far from practical application.[74] Given that the in-situ process proposes heating large swathes of the earth to 700º Fahrenheit for a period of years, if not

65. RAND Report, *supra* note 52, at 12-13.

66. *Id.* at 13.

67. To the author's knowledge, the Oil Shale Exploration Company of Utah is the only company actively pursuing the surface retort method in the Green River Basin. It has begun efforts to use the surface retort process on a previously-dug shale mine in Utah. Oil Shale Exploration Co., Technology Extracting Synthetic Oil from Oil Shale, http://www.oilshaleexplorationcompany.com/tech.asp (last visited Oct. 6, 2008).

68. WRA Scoping Comments, *supra* note 19, at 9-10.

69. *Id.* at 17.

70. *See*, *id.* at 19. Shell, Exxon, and E.G.L. Oil Shale LLC are all working to make in-situ retorting commercially viable. *See* Presentations at the 27th Oil Shale Symposium (Oct. 16, 2007) (CD-ROM containing PowerPoint presentation is on file with author).

71. RAND Report, *supra* note 52, at 17-18.

72. *Id.* at 17.

73. *See*, *eg*., WRA Scoping Comments, *supra* note 19, at 10-11 (giving the example of Shell's research operations and the uncertainty of larger-scale application).

74. Nancy Lofholm, *Shell Shelves Oil Shale Application to Refine its Research*, DENVER POST, June 16, 2007.

decades, it is impossible to know what the impact may be on arid soil, fragile plant life, and delicate wildlife communities. Some scientists admit that the process of extracting oil from shale may have significant environmental impacts, including greenhouse gas emissions, reduced water quality and availability, and other surface impacts.[75] What will happen on the surface as a result of the in-situ process, and what impacts steam and other gaseous chemicals could have on surface and sub-surface ecosystems is unknown.

An additional concern is that research has demonstrated that oil shale's physical structure changes when it is heated within a confined or compressed location.[76] During the extraction process, oil shale's porosity and permeability are altered.[77] These alterations have been recorded at the microscopic level on core samples, but it is uncertain what these properties will mean when large deposits of oil shale are heated.[78] Once the core samples expand, they cannot be reduced to their original size.[79] Increased porosity has necessary implications for how gases, liquid chemicals, and water will travel through the deposits.[80] Further, the heating and extraction process may cause unpredictable fracturing.[81]

B. The Energy Policy Act of 2005

The Energy Policy Act was enacted on August 8, 2005, in response to domestic pressures for improved energy availability and transmission to reduce the United States' growing dependence on foreign oil.[82] Though there had been prior discussions and peripheral research, the

75. *See, eg*., Chemical Engineering Department of University of Utah, Environmental Impact of In-Situ Processing Presentation at the 27th Oil Shale Symposium (Oct. 16, 2007); Wendy Harrison, Colorado School of Mines, Addressing Water Quality Impacts of Oil Shale Development—Modern Approaches for an Old Problem, Presentation at the 27th Oil Shale Symposium (Oct. 16, 2007); David Alleman, National Energy Technology Laboratory, Environmental Challenges and RD&D Needs: Perspectives on Oil Shale Development, Presentation at the 27th Oil Shale Symposium (Oct. 16, 2007) (CD-ROM containing the PowerPoint presentations of these speakers is on file with author). OSTS FPEIS, *supra* note 60.

76. Shell Exploration and Production Company, Geomechanics of Oil Shale In-Situ Conversion Process Presentation at the 27th Oil Shale Symposium (Oct. 16, 2007) (CD-ROM containing PowerPoint presentation is on file with author).

77. *Id.*

78. *Id.*

79. *Id.*

80. *Id.*

81. *Id.*

82. Press Release, The White House and President George W. Bush, Fact Sheet: President Bush Signs Into Law a National Energy Plan (Aug. 8, 2005), *available at* http://www.whitehousegov/news/releases/2005/08/print/20050808-4.html.

passage of the Act likely spawned the onset of the third oil shale boom.[83] The RAND Report on Oil Shale, requested by Congress in 2004 and sponsored by the National Energy Technology Laboratory,[84] was unveiled just before the Energy Policy Act in 2005.

1. Section 369: Oil Shale, Tar Sands and Other Strategic Unconventional Fuels Act

The Energy Policy Act of 2005 removed any uncertainty regarding the federal government's interest in developing extensive oil shale deposits. Section 369, which is also known as the Oil Shale, Tar Sands and Other Strategic Unconventional Fuels Act,[85] resulted from oversight hearings in both houses of Congress that took place in 2005.[86] Interestingly, although most of the witnesses at these hearings were from the oil industry, and only a few voices championed restraint and sustainable practices,[87] the language of the statute carves out important protections for state, local, and environmental interests.[88] The purpose of Section 369 is to develop oil shale resources, and it is clear that the federal government is interested in working with and supporting the industry in order to accelerate development.[89] Many of the provisions delegate broad discretionary power to the Secretary of the Interior acting through the BLM.[90] However, the Energy Policy Act of 2005 could not escape the markings of a modern environmental statute as demonstrated by its reflection of the commonly-held twenty-first century value of sustainable development.[91]

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83. Donna Gray, *Senators Hear Committee's Suggestion on Easing into Oil Shale Development*, GLENWOOD SPRINGS POST INDEPENDENT, June 2, 2006.

84. RAND Report, *supra* note 52, at 2. In 2003, RAND identified the BLM's establishment of the Oil Shale Task Force. Early the following year, the Office of Deputy Assistant Secretary for Petroleum Reserves authored a report that concluded that oil shale development was coming back into the range of economic possibility and represented a way to boost domestic oil supplies. *Id.* at 1.

85. 42 U.S.C. § 15927(a).

86. *See The Vast North American Resource Potential of Oil Shale, Oil Sands, and Heavy Oils, Parts 1 and 2*, Oversight Hearings Before the H. Subcomm. on Energy and Mineral Resources of the H. Comm. On Resources, 109th Cong. (2005).

87. *Id.* at 4, 51 (Raul Grijalva, Representative of Arizona, and Russell George, Executive Director of the Colorado Department of Natural Resources, were two strong voices for state and local partnership in the development of oil shale).

88. *See, e.g.*, 42 U.S.C. §§ 15927(b), (e), (g), (k).

89. *See, e.g.*, *id.* §§ 15927(l), (o).

90. *See, e.g.*, *id.* §§ 15927(c), (f), (g), (k), (n).

91. The language of multiple-use and sustainable-yield is certainly not a recent development, as Gifford Pinchot's influence on Forest Service practices demonstrates. *See* WILKINSON, CROSSING, *supra* note 31, at 127-131. But it was not until groundbreaking environmental legislation like the Wilderness Act that the language of

Section 369(b) of the Energy Policy Act of 2005 states the three primary goals of OSTS development: (1) reduction of U.S. dependence on foreign oil; (2) environmental soundness and minimization of impacts; and (3) sustainability with regard to affected states and communities.[92] Thus, two of the three goals of oil shale resource management pertain to sustainability. Congress also clarified its intention to work closely with local and state interests. This may have been in response to the growing awareness of how mining booms have historically strained local communities.

Section 369(e) mandates that not later than 180 days after publication of the final regulation:

> the [Interior] 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.[93]

Section 369(h) further enhances public, local, and state participation by including governors, local governments, and tribal representatives on the Oil Shale Task Force.[94] Congress's interest in including all relevant stakeholders is underscored by Section 369(k)(1)'s authorization of a comprehensive NEPA analysis that designates the BLM as the coordinating agency.[95] This provision is also important because it authorizes the Secretary to "coordinate this Federal authorization and review process with any Indian tribes and State and local agencies responsible for conducting any separate permitting and environmental reviews."[96] This provision could allow the federal government to usurp state, local, and tribal interests. On the other hand, if these stakeholders engage in the process from the beginning and ensure that they have their own regulatory schemes, it could lead to the enforcement of local and state permitting regulations. States and local communities should recognize that Congress carved out a crucial role for them in the management of their oil shale resources.

Of course, the oil shale provision of the Energy Policy Act of 2005 gives the Secretary of the Interior a significant amount of discretionary

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sustainability—of valuing aesthetics as much as economics—became practice. The Wilderness Act of 1964, Pub. L. No. 88-577, 16 U.S.C. §§ 1131-1136 (2006).

92. 42 U.S.C. § 15927(b).

93. *Id.* § 15927(e).

94. *Id.* § 15927(h)(2).

95. *Id.* § 15927(k)(1).

96. *Id.*

authority. The Secretary is directed to promote resource development through aid and encouragement to companies.[97] As the sole agency governing the United States' oil shale development efforts, the BLM has discretionary power unsusceptible to a check by another agency or force.[98] Additionally, the land set aside for the research, development, and design ("RD&D") leases falls under the Secretary's authority, as do Environmental Assessments ("EAs") and Findings of No Significant Impact ("FONSIs").[99] Section 369 also assigns the Secretary the duty to "establish royalties, fees, rentals, bonus, or other payments for leases."[100]

In addition to the Secretary's authority to assist private companies' efforts to develop commercial oil shale operations, the statute mandates that the Office of Petroleum Reserves of the Department of Energy shall "coordinate and facilitate appropriate relationships between private industry and the Federal Government to promote sufficient and timely private investment to commercialize strategic fuels for domestic and military use."[101] Section 369 also provides that the Secretary of Energy may "provide technical assistance; assistance in meeting environmental and regulatory requirements; and cost-sharing assistance"[102] to

97. *Id.* § 15927(h)(1).

98. *Id.* § 15927(k).

99. *Id.* § 15927(c) makes available "[p]rospective public lands within each of the States of Colorado, Utah, and Wyoming." In his testimony at the Oversight Hearings of the House Subcommittee on Energy and Mineral Resources, June 30, 2005, BLM representative Chad Calvert explained the Oil Shale Research, Development and Demonstration lease program:

> The RD&D lease program design allows tracts of land up to 160 acres to be used to demonstrate the economic feasibility of today's technologies over a lease term of ten years, with the option for an extension of up to five years. The payment of royalties will be waived during the RD&D lease, payment of rental will be waived for the first five years of the RD&D lease, and an applicant may identify up to an additional contiguous 4,960 acres that it requests be reserved for a preference right commercial lease should RD&D efforts prove successful in demonstrating the economic feasibility of oil shale production. Consequently, given the small scale of the RD&D leases, BLM has determined that for environmental review under NEPA, site-specific environmental assessments (EAs) would be more appropriate than a programmatic environmental impact statement (PEIS) document. The complexity of the analysis required for the RD&D lease will depend on the location, the type of project proposed, and the type of technology to be used.

Vast North American Resource Potential of Oil Shale, Tar Sands, and Heavy Oil, Parts 1 and 2: Hearing on Serial 109-22 Before the H. Subcomm. on Energy and Mineral Resources, 109th Cong. 83-120 (2005) (statement of Chad Calvert, Deputy Assistant Secretary, Land and Minerals Management, BLM, Department of the Interior).

100. 42 U.S.C. § 15927(o).

101. *Id.* § 15927(i)(1)(E).

102. *Id.* § 15927(l)(2).

companies that have produced identifiable oil shale technologies that "are ready for demonstration at a commercially-representative scale; and have a high probability of leading to commercial production."[103]

Although the Energy Policy Act of 2005 carved out important protections for local communities, tribes, affected states, and the environment, it will be interesting to see if those stakeholders remain engaged throughout the process in the face of certain provisions that clearly favor and subsidize the industry.

2. Section 365: Pilot Project Field Offices

Section 365 of the Energy Policy Act of 2005 establishes that certain BLM field offices will be designated for a pilot program to coordinate all oil and gas permitting.[104] Section 365 also authorizes increased personnel to assist with "inspection and enforcement relating to energy development on Federal land, in accordance with the multiple use mandate of the Federal Land Policy and Management Act of 1976" ("FLPMA").[105] Three of the eight BLM offices that will benefit from this increased funding are the Rawlins, Wyoming; Grand Junction/Glenwood Springs, Colorado; and Vernal, Utah field offices.[106] These field offices will have an important role in administering the BLM's oil shale leasing program. Hopefully, they will gain valuable experience, knowledge, and efficiency from their increased manpower and the streamlining of their oil and gas permitting processes. When this section is read together with Section 369(k), which calls for interagency coordination,[107] the Energy Policy Act of 2005 may enable a more progressive, organized, and cooperative approach to mineral management.

C. The BLM's Oil Shale and Tar Sands Programmatic Environmental Impact Statement

In September of 2008, the BLM released the FPEIS for 2.3 million acres of public lands in the Green River Formation.[108] The FPEIS proposes to make 1,991,222 acres available for commercial oil shale

103. *Id.* § 15927(l)(1).

104. 42 U.S.C. § 15924 (Supp. V 2005) (permitting consists of fielding applications and enforcing environmental compliance).

105. *Id.* § 15924(f)(2).

106. *Id.* § 15924(d).

107. 42 U.S.C. § 15927(k).

108. OSTS FPEIS, *supra* note 60, at 1-2.

leasing and 431,224 acres available for commercial tar sands leasing.[109] The FPEIS also calls for the amendment of twelve existing Resource Management Plans ("RMPs").[110] Once the RMPs are amended, they would "open the areas in question for leasing."[111] Importantly, the FPEIS states:

> The phrase "available for application for leasing" is used . . . throughout the PEIS, rather than simply "available for leasing" to highlight that, unlike the BLM's practice with respect to oil and gas leasing, additional NEPA analysis would be required prior to the issuance of any lease of oil shale or tar sands resources.[112]

The BLM explains that a second NEPA analysis will be necessary at the RMP level because "sufficient information on the nature of the effects . . . was known, but not the extent of the effect."[113] In other words, the BLM had to build in a second NEPA step in order to meet the "hard look" threshold because, although comparable data and BLM's "experience with surface-disturbing activities" might suggest certain kinds of environmental impacts, the extent of the impacts specific to oil shale development remain unknown.[114]

The Energy Policy Act of 2005 called for a rapid NEPA analysis in order to expedite commercial development of oil shale.[115] Although the PEIS was supposed to be completed by February of 2006,[116] the Draft EIS was not released until December of 2007.[117] The BLM received 105,000 public comments on the Draft EIS and released the FPEIS nine months later.[118] The FPEIS evaluated three proposed alternatives: the no alternative "A," the alternative with the most proposed development "B," and the alternative allowing development but with more protections for

109. *Id*. at ES-7-ES-8 (the acreage is broken down among the three affected states as follows: 356,798 acres in Colorado; 630,971 acres in Utah; 1,000,453 acres in Wyoming).

110. *Id*. at 1-1.

111. *Id*. at 1-2.

112. *Id*. at 1-2-1-3.

113. *Id*. at 1-3.

114. *Id*. On NEPA's "hard look" requirement, *see, e.g.*, Marsh v. Or. Natural Res. Council, 490 U.S. 360, 374 (1989).

115. 42 U.S.C. § 15927(d)(1).

116. *Id*. (Congress mandated a deadline of 18 months after the EPA was signed).

117. OSTS FPEIS, *supra* note 60, at ES-2.

118. *See* Press Release, BLM, BLM Identifies Lands for Potential Development of Significant Oil Shale Resources (Sept. 4, 2008), *available at* http://ostseis.anl.gov/documents/index.cfm.

special lands "C." Ultimately, it adopted "B" as the preferred alternative—the alternative with little change from the Draft PEIS.[119]

The Energy Policy Act of 2005 also authorized the Secretary of the Interior to publish final regulations governing commercial oil shale leasing within six months of the FPEIS release.[120] The BLM published the proposed regulations in the Federal Register on July 22, 2008, laying the groundwork for commercial oil shale.[121] By October of 2008, the BLM had received 70,000 public comments on the draft regulations.[122] However, the BLM's rush to release the final regulations may have been caused by more than the six month deadline in the Energy Policy Act of 2005. An appropriations block that prevented the federal government from spending any money on a commercial leasing infrastructure for one year expired on September 30, 2008.[123]

The thrust of the FPEIS is that leasing decisions will be left to local BLM field offices.[124] The scope of the FPEIS comports with recent public land law precedent that sets the crucial decision point at the drilling stage, rather than at the leasing or programmatic plan stage.[125] Unfortunately, the result is that the BLM's concerted efforts to catalogue the resources and identify the possible environmental impacts of developing oil shale resulted in a very long but imprecise list.[126] The

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119. *Id*. at ES-5-6.

120. 42 U.S.C. § 15927(d).

121. Press Release, BLM, Western Oil Shale Potential: 800 Billion Barrels of Recoverable Oil (July 22, 2008), *available at* http://www.Blm.Gov/wo/st/en/info/newsroom/2008/July/NR_07_22_2008.html.

122. Gargi Chakrabarty & Todd Hartman, *Oil Shale Comments Pour Into BLM*, ROCKY MOUNTAIN NEWS, Sept. 25, 2008, *available at* http://www.rockymountainnews.com/news/2008/sep/25/oil-shale-comments-pour-in-to-blm/.

123. *Id*. *See also* Associated Press, *Oil Shale Ban Expires*, BOULDER DAILY CAMERA, Oct. 2, 2008, *available at* http://www.dailycamera.com/news/2008/oct/02/oil-shale-ban-expires/.

124. OSTS FPEIS, *supra* note 60, at 1-18.

125. N. Alaska Envt'l Ctr. v. Kempthorne, 457 F.3d 969, 976-77 (9th Cir. 2006).

126. *See generally*, Chapter 4, "Effects of Oil Shale Technologies" in OSTS FPEIS, *supra* note 60, at 4-1-4-186, (including a185-page list of potential environmental impacts); 4-17 (explaining, with unsurprising vagueness due to the enormous scope of the OSTS PEIS, "Like hunting, grazing, oil and gas development, and recreation, commercial oil shale are statutorily authorized uses of BLM lands. The BLM is aware that not all authorized uses can occur on the same lands at the same time . . . . Future decisions regarding oil shale leasing and approval of operating permits will be informed by NEPA analysis of the conflicting or alternative land uses of individual areas."); 4-31 (on impacts to water resources, the document says, "[T]he locations where oil shale development may occur may not match the locations where water supplies are available. This last issue might require development of new infrastructure for water transport or water storage, which would cause additional adverse environmental impacts on water resources.")

length of the OSTS FPEIS, together with its litany of potential impacts,[127] raises questions about how successful it will be in guiding the local field offices to make decisions about leasing and development. Consequently, states and local communities should stay vigilant in encouraging their local BLM office to be thorough in evaluating the environmental impacts of individual oil shale leases.

D. The Mineral Leasing Act

The Energy Policy Act of 2005's oil shale provision was meant to restart the technological development of retort methods in earnest and formally express the federal government's interest in exploring the potential of this resource. The nuts and bolts of oil shale leasing, permitting, and development, however, are contained within the Mineral Leasing Act ("MLA").[128]

The broad discretionary power of the Secretary of the Interior in the realm of oil shale development has its origins in the MLA. The Secretary can lease to any qualified person or corporation "any deposits of oil shale . . . and the surface of so much of the public lands containing such deposits, or land adjacent thereto, as may be required for the extraction and reduction of the leased minerals . . . as he may prescribe."[129] Additionally, "[l]eases may be for indeterminate periods, upon such conditions as may be imposed by the Secretary, including covenants relative to methods of mining, prevention of waste, and productive development."[130] Royalties for oil shale have not yet been set; however, the annual rental rate is $2 per acre. After the royalties are set, they will be subject to readjustment only after twenty years.[131] The Secretary maintains the discretion to waive royalty payment and rental fees for up to the first five years of a lease.[132]

The only concrete limits to oil shale leases contained in the MLA relate to size restrictions. A lease cannot exceed 5,760 acres, and the lease holdings of any one person, association, or corporation are capped at 50,000 acres in each state.[133] Although in-situ technology may demand massive quantities of land, these generous limits are hardly restrictive.

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127. The OSTS FPEIS is 1,828 pages long not counting the appendix containing the public comments and responses. *See* OSTS FPEIS, *supra* note 60.

128. 30 U.S.C. § 241.

129. *Id.* § 241(a)(1).

130. *Id.* § 241(a)(3).

131. *Id.* § 241(a)(4).

132. *Id.*

133. *Id.* § 241(a)(2), (4).

If hard rock mining's controversial history of mill sites is any indication, the MLA's provisions for offsite oil shale leases[134] could expand and complicate oil shale's impacts. Offsite leases, which the Secretary has the authority to grant, are defined as "additional lands necessary for the disposal of oil shale wastes and the materials removed from mined lands, and for the building of plants, reduction works, and other facilities connected with oil shale operations."[135] The provision allows oil shale developers on private lands to apply for an offsite lease of up to 320 acres.[136] The Secretary's discretion is also evident under the offsite leasing system.

> An offsite lease shall be for such periods of time and shall include such lands, subject to the acreage limitations contained in this subsection, as the Secretary determines to be necessary . . . and shall contain such provisions as he determines are needed for protection of environmental and other resource values.[137]

Moreover, the Secretary is directed to set the annual rental at a price which "reflect[s] the fair market value."[138] Nevertheless, the Secretary is required to consider "the need for such lands, impacts on the environment and other resource values, and upon a determination that the public interest will be served thereby."[139]

The MLA provides that the Secretary "shall" consult with affected state, local, and tribal officials, but that he "may" still issue the offsite lease if he has considered the extent to which it is needed, environmental impacts, socioeconomic impacts, and information provided in the consultation process.[140] Despite this non-binding consultation with local leaders, the statutory language provides governors with significant authority in recommending "whether or not to lease such lands, what alternative actions are available, and what special conditions could be added to the proposed lease to mitigate impacts."[141] Perhaps in including this provision, Congress was thinking of state officials who had to deal with the adverse ramifications of earlier oil shale booms. The language, however, does not answer whether states will indeed be heard, instead providing that "The Secretary shall accept the recommendations of the

134. *Id.* § 241(c).
135. *Id.* § 241(c)(1).
136. *Id.* § 241(c)(2).
137. *Id.* § 241(c)(6).
138. *Id.* § 241(c)(7).
139. *Id.* § 241(c)(4).
140. *Id.* § 241(d)(1), (2).
141. *Id.* § 241(d)(3).

Governor if he determines that they provide for a reasonable balance between the national interest and the State's interests."[142]

E. State and Tribal Statutory Schemes and Water Law Implications

State legislative efforts, the potential for tribal jurisdiction, and water law complete the description of the statutory regime that could affect oil shale development and demonstrate regulatory channels already available to local communities. The active participation by local communities is particularly important, given the attention that is paid to state and local governments in the Energy Policy Act of 2005's oil shale provisions and because the most significant effects of this new kind of mineral development will be felt by neighboring towns.

This Part first examines states' efforts to legislate oil shale development. It then explains why water law will provide insufficient protections against unchecked oil shale development, despite the massive quantities of water that large-scale oil shale mining operations will require. Finally, it briefly explores the unique legal situation that tribes occupy. In particular, the Ute tribe, which owns a significant portion of the land over Utah's oil shale deposit, is discussed. State and tribal legislation may be the best option for states and local communities to gain control over oil shale development.

1. Wyoming: A Blank Slate

Wyoming's statutes say very little about oil shale. The state Constitution mentions it only once—by allocating the distribution of bonus payments for oil shale.[143] Wyoming's statutes authorize a severance tax for oil shale,[144] but the percentage has not been set. The general provisions for Wyoming's environmental quality are defined under Wyoming Revised Statutes § 35-11-103, and although oil shale is mentioned, no special provisions about the process have been enacted. The Wyoming Oil and Gas Conservation Commission regulates the state's booming oil and gas industry.[145] If the Commission's website is any indication, it seeks to encourage the state's continued development

142. *Id.*

143. WY. CONST. art. XV, §19. The distribution percentages are found under WYO. STAT. ANN. § 9-4-601 (2008).

144. WYO. STAT. ANN. § 39-14-703 (2008).

145. Anschutz Corp. v. Wyo. Oil and Gas Conservation Comm'n, 923 P.2d 751, 755 (Wyo. 1996).

of mineral resources.[146] It is worth noting that Wyoming made its first move to protect surface owners affected by oil and gas development by passing a bill that gives them leverage in protecting their land and collecting damages from mineral lessee companies.[147] Although it is an important first step, the bill offers limited protection for split estate owners and is unlikely to protect neighboring owners impacted by mineral development or other property owners who border federal lands leased to oil shale developers.

2. Utah: State Promotion of Oil Shale Development

Where Wyoming's slate is blank, Utah is the rare state that has enacted specific legislation to promote oil shale development. It has issued one RD&D lease at the White River Mine.[148] Governor Huntsman has created a "stakeholder-based advisory panel" that meets every other month and is charged with "mak[ing] recommendations for moving forward with the utilization of this unique and abundant resource."[149] Additionally, his office's Energy Advisor now co-chairs the Unconventional Fuels Task Force.[150] The National Energy Technology Laboratory selected the University of Utah as the site for the Utah Heavy Oil Program, which has three goals of updating the 1987 heavy oils report, making the report available in an online database, and conducting research.[151]

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146. *See* Wyoming Oil and Gas Conservation Commission, http://wogcc.state.wy.us (last visited Oct. 10, 2008) (two examples can be found at: (1) follow "APD's" hyperlink; then follow "All" hyperlink; then enter a time frame to see the list of applications and approvals, most of which happen within three days to two weeks of the application; and (2) follow "production" hyperlink; then follow "State (displays production)" hyperlink; then follow "Graph Gas Production" hyperlink).

147. WYO. STAT. ANN. § 30-5-402 (2008).

148. In 2005, the BLM leased the White River Mine to the Oil Shale Exploration Company. Oil Shale Exploration Company, http://www.oilshaleexplorationcompany.com/resource.asp (last visited Oct. 20, 2008). BLM issued leases to pursue a surface retort operation at the abandoned White River mine near Vernal, despite BLM having to delay the FONSI and ultimately requiring that OSEC "keep piles of spent shale in lined pits until officials can figure out how to dispose of the waste." Paul Foy, *Interior Department Approves Reopening of Utah Oil-Shale Mine*, DESERET NEWS, May 1, 2007, *available at* http://find articles.com/p/articles/mi_qn4188/is_/ai_n19048960.

149. State of Utah, Oil Shale/Tar Sands, http://www.utah.gov/energy/governors_priorities/oil_shale_tar_sands.html (last visited Oct. 13, 2008).

150. *Id.*

151. Dep't of Energy, Utah Heavy Oil Program, http://www.netl.doe.gov/technologies/oil-gas/Petroleum/projects/EP/Explor_Tech/15569UtahCtr.html (last visited Oct. 13, 2008).

In 2006, Utah's legislature added a provision to the Mineral Severance Tax exempting oil shale until 2016.[152] The 2006 legislature also granted tax-exempt status to property purchased in relation to oil shale research and development.[153] In February of the same year, the legislature passed natural resource legislation with a provision conferring tax-exempt status on Millennium Synfuels Corporation, in order to aid the corporation in its oil shale development.[154] Furthermore, Utah clearly intends to rigorously develop its minerals as evidenced by its 2006 state energy policy.[155]

3. Colorado: "Go Slow?"

Perhaps as a result of being home to the previous oil shale booms, Colorado is the state with the most legislation in place to protect against unchecked mineral development. As early as 1974, Colorado passed legislation creating a special fund for the distribution of earnings from oil shale sales, bonuses, royalties, leases, and rentals "to state agencies, school districts, and political subdivisions of the state affected by the development."[156] Colorado's oil shale severance tax is currently fixed at 4%.[157] Governor Bill Ritter has advocated for a "thoughtful, responsible and measured" approach to oil shale development, recognizing the need to protect the neighboring Roan Plateau, as well as the already booming mineral economies of the towns of Rifle and Parachute.[158] Mr. Ritter also substantively restructured the Colorado Oil and Gas Conservation Commission ("COGCC") in 2007.[159] Another relevant statute is the recently adopted Colorado Habitat Stewardship Act, which provides:

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152. UTAH CODE ANN. § 59-5-120(2) (2008).

153. *Id.* § 59-12-104(65)(a) (2008).

154. *See* H.R. 241, Gen. Sess. (Utah 2006).

155. *See generally*, UTAH CODE ANN. § 63M-4-301 (2008).

156. COLO. REV. STAT. § 34-63-104(1) (2008).

157. *Id.* § 39-29-107 (2008).

158. Press Release, Office of Gov. Bill Ritter, Jr., Gov. Ritter Testifies Before U.S. Senate Committee About Oil Shale Development (May 15, 2008), *available at* http://www.colorado.gov/cs/Satellite/GovRitter /GOVR/1210842794693; *see also* Todd Hartman, *Ritter Wants No Oil-Shale Rush*, ROCKY MOUNTAIN NEWS, Mar. 21, 2008.

159. Chris Barge, *Ritter, Energy Industry Part on Regulatory Path*, ROCKY MOUNTAIN NEWS, Apr. 7, 2008, *available at* http://www.rockymountainnews.com/news/2008/apr/07/ritter-energy-industry-part-on-regulatory-path/.

> Effective July 1, 2007, the commission shall consist of nine members, seven of whom shall be appointed by the governor with the consent of the senate and two of whom, the executive director of the department of natural resources and the executive director of the department of public health and environment, shall be ex officio voting members. At least two members shall be appointed from west of the continental divide, and, to the extent possible, consistent with this

> It is declared to be in the public interest to: Plan and manage oil and gas operations in a manner that balances development with wildlife conservation in recognition of the state's obligation to protect wildlife resources and the hunting, fishing, and recreation traditions they support, which are an important part of Colorado's economy and culture.[160]

On December 11, 2008,[161] the COGCC completed an intensive rulemaking process in an effort to afford greater protections for wildlife, human health, and human welfare.[162] The comprehensive nature of the rulemaking process and the interest with which the stakeholders participated—over 2,000 public comments were received, and 250 people attended statewide hearings on the proposed rules—demonstrate that Colorado is poised as a leader in the regulation of mineral resources.[163]

> paragraph (a), the other members shall be appointed taking into account the need for geographical representation of other areas of the state with high levels of oil and gas activity or employment. Three members shall be individuals with substantial experience in the oil and gas industry, and at least two of said three members shall have a college degree in petroleum geology or petroleum engineering; one member shall be a local government official; one member shall have formal training or substantial experience in environmental or wildlife protection; one member shall have formal training or substantial experience in soil conservation or reclamation; and one member shall be actively engaged in agricultural production and also be a royalty owner. Excluding the executive directors from consideration, no more than four members of the commission shall be members of the same political party.

COLO. REV. STAT. § 34-60-104(2)(a)(I) (2008) (quoted at length to demonstrate Governor Ritter's progressive approach to oil and gas management for Colorado).

160. H.R. 1298 (1)(A)(IV), Gen. Assem., (Colo. 2007).

161. Statement of Basis, Specific Statutory Authority, and Purpose: New Rules and Amendments to Current Rules, Colorado Oil and Gas Conservation Commission, 2CCR 404-1, *available at* http://www.oil-gas.state.co.us/RuleMaking/FinalDraftRules/Final%20Draft%20Rules.htm (click on Final Statement of Basis, Specific Statutory Authority and Purpose 12/11/08) (last visited Dec. 19, 2008).

162. H.R. 1341, 66th Gen. Assem., 1st Reg. Sess. (Colo. 2007); *see also* Colorado Oil and Gas Conservation Commission ("COGCC"), Rulemaking, http://cogcc.state.co.us/RuleMaking/2007RuleMaking.cfm (last visited Nov. 7, 2008) (the Colorado Oil and Gas Conservation Commission's Rulemaking Activity Page, which contains timelines, updates, rulings, and documents related to their rulemaking proceedings); Press Release, COGCC, COGCC Initially Approves Rules for Protecting Wildlife from Impacts of Oil and Gas Development (Sept. 24, 2008).

163. Letter from Dave Neslin, Acting Director, COGCC, to Oil and Gas Commissioners (Mar. 31, 2008), *available at* http://www.oil-gas.state.co.us/RuleMaking/RulesLegislation/NeslinLtrDraftRules033108.pdf.

4. The Insufficiency of State Water Law

A brief survey of the three affected states' water law regimes further demonstrates that their substantive participation in regulation of oil shale development will likely come from legislative enactments. Water law has proven to be an ineffective tool in defending against unchecked oil shale development even though in-situ oil shale operations require enormous quantities of water in arid states with little water to spare.[164] The Colorado Constitution proclaims that unappropriated waters shall be appropriated to anyone wanting to put them to beneficial use.[165] The Constitution does not contain a provision expressly protecting the public trust, and thus any water law-based challenges to oil shale development must allege that the use of the water for oil shale is not beneficial.[166] Other possible legal hooks have proven equally unsuccessful. Forfeiture and abandonment are rendered fairly obsolete because there is a presumption against these legal findings in prior-appropriation states.[167] Colorado has carved out a diligence exception for oil shale operations.[168] The waters of the Colorado River are notoriously contested and their allocation is governed by a complex body of law.[169] Oil shale will only add to these allocation and scarcity problems.[170]

In this way, Colorado has nearly foreclosed any substantive protection of the public interest, and a legislative solution may be necessary.[171] Unlike Colorado, the state of California has taken a more progressive judicial direction by applying the public trust doctrine to its water resources.[172] Public trust aside, these state legislatures cannot deny their responsibility in protecting the public interest in water. Despite the problems of water quantity and quality posed by massive oil shale

164. WRA Scoping Comments, *supra* note 19, at 20-21.

165. Colo. CONST. art. XVI, § 6.

166. JOSEPH L. SAX, ET AL., LEGAL CONTROL OF WATER RESOURCES, at 154-56 (4th ed. 2006). The beneficial use argument would go to wastefulness and since findings of wastefulness based on quantity generally have to do with egregious inefficiencies and are thus unlikely in the case of new technology, and those based on type look to historical obsolescence, these claims would likely fail. *See, e.g.*, N. Colo. Water Conservancy Dist. v. Chevron Shale Oil Co., 986 P.2d 918 (Colo. 1999) (extended water rights of oil shale operation that was lying dormant for more than twenty years).

167. SAX, *supra* note 166, at 247.

168. COLO. REV. STAT. § 37-92-301(4)(a)(I) (2008).

169. SAX, *supra* note 166, at 800-01.

170. OSTS FPEIS, *supra* note 60, at 4-33 (estimating that "surface retort plants with capacities of 18 million bbl per year (or 50,000 bbl per day) could consume 6,100 to 9,400 ac-ft of water per year").

171. SAX, *supra* note 166, at 226-27.

172. *See generally* Nat'l Audubon Soc'y v. Super. Ct., 658 P.2d 709, 727 (Cal. 1983) (en banc) (commonly referred to as "The Mono Lake Case").

operations, the statutory landscape seems vague and barren in a stereotypically western way. The final section of the Energy Policy Act of 2005 states that "[n]othing in this section preempts or affects any State water law or interstate compact relating to water."[173]

5. Tribes

In 2000, the Northern Ute Tribe received the deed to the 80,000 acre Naval Oil Shale Reserve, located on its reservation. The Tribe has not announced any plans to develop the oil shale deposits, but in 2005, it formed Ute Energy to begin actively developing its oil and gas resources.[174] The Ute mineral development would fall under the Indian Mineral Development Act of 1982.[175] This Act allows tribes to be more active participants in development of their mineral resources.[176] Subject to the approval of the Secretary of the Interior, the tribes can enter into joint ventures rather than merely leasing minerals and collecting royalties.[177] Tribal efforts to regain control over their mineral resources have been one of the pillars of tribal economic development in modern times.[178]

The Southern Ute Tribe has demonstrated that taking control of reservation mineral development can significantly affect the strength of the tribe and its members.[179] Importantly for the Northern Ute Tribe, the Southern Ute Tribe has also been a leader in working to develop partnerships with neighboring tribes in mineral development.[180] With this background, the Ute Tribe has an arguably unique opportunity to exert significantly more local control over oil shale development than the states can put forth.

Although the Ute Tribe is the only tribe with direct jurisdiction over oil shale, tribes in the region will certainly want to participate in the

173. 42 U.S.C. § 15927(r).

174. Ute Energy Home Page, http://uteenergy.com. As stipulation to the transfer of the 80,000 acres, a percentage of the revenue will go to the Department of Energy in order to pay for the Atlas uranium mine cleanup near Moab, Utah. CNN, *U.S. Land Transfer to Utah Tribe Would be Largest in 100 Years*, http://archives.cnn.com/2000/US/01/14/indian.lands/ (last visited Oct. 13, 2008).

175. 25 U.S.C. §§ 2101-2108 (2006).

176. Tracey A. LeBeau, *Reclaiming Reservation Infrastructure: Regulatory and Economic Opportunities for Tribal Development*, 12 STAN. L. & POL'Y REV. 237, 242 (2001).

177. *Id.*

178. DAVID GETCHES, CHARLES F. WILKINSON & ROBERT A. WILLIAMS, JR., FEDERAL INDIAN LAW 679, 689-90 (5th ed. 2007).

179. Ianthe Jeanne Dugan, *Business Empire Transforms Life for Colorado Ute Tribe*, WALL ST. J., June 13, 2003, at A1.

180. Brian Newsome, *Ute Tribes Strike Oil Deal*, DURANGO HERALD, June 9, 2002.

process because of the impacts that development will likely have on the health of their members and preservation of their land and sacred resources. Additionally, the Winters Doctrine—which states that the federal government reserved significant water rights to the tribes in order to assure their continued viability on reservations[181]—has important implications for all western water adjudications, including those that the water demands of oil shale development may cause.

IV. TOWARD COMPREHENSIVE MANAGEMENT OF THE OIL SHALE RESOURCE

Oil shale development cannot move forward at this time due to technological constraints. It is the first mineral in the history of the United States that has eluded technology so much as to delay the onset of wholesale mining. These circumstances present a great opportunity to borrow the best parts of mineral, natural resources, and environmental law to ensure responsible development. There are important lessons from this country's century-and-a-half of experience with mining and mineral development that can help federal and state governments create an environmentally-progressive statutory and regulatory scheme before any oil companies begin commercial oil shale development in earnest.

A. Individual Local Mineral Development Lessons

The citizens of the three states that will be impacted by oil shale development are not in the habit of sitting idly by when their most cherished land resources are threatened. Although there are numerous individual cases of citizen and state responses to heavy-handed federal promotion of mineral development, three stand out as timely cautionary tales: (1) the national significance of Southern Utah Wilderness Alliance's ("SUWA") Redrock Wilderness campaign; (2) the Wyoming residents' use of tort law to protect their property rights from coalbed methane development; and (3) the groundswell of support from a diverse coalition of Coloradoans for measured development of oil and gas around the Roan Plateau. Each of these examples demonstrates not only different ways citizens become involved if they feel excluded from decisions about mineral development but also how passionate ties to land can lead to meaningful citizen engagement with state and federal policies toward mineral development.

181. Winters v. United States, 207 U.S. 564, 576 (1908).

1. SUWA's National Campaign to Save Utah's Redrock Wilderness

The SUWA was founded in 1983[182] in response to the BLM wilderness study inventory, which was a watershed event that led to one of the most enduring wilderness debates in the country.[183] FLPMA required an inventory of all BLM lands in the country that contained 5,000 acres or more of uninterrupted wilderness—defined, in this context, primarily as being without roads.[184] Southern Utah turned out to be a crucial meeting place of wild land, locals with a long tradition of perceived ownership by use—including grazing, hunting, and, increasingly, motorized recreation—of their neighboring public lands, and a passionate contingent of wilderness advocates.[185] The wilderness battles of southern Utah may seem unrelated to the modern oil shale boom, but the organization's ability to turn a local debate into a national campaign[186] can provide important lessons for state participation in mineral development.

SUWA's campaign for wilderness went national in 1990, as the organization was instrumental in producing *Wilderness at the Edge*—a citizen-led wilderness inventory report that eclipsed the scientific rigor of the BLM's wilderness study area inventory.[187] The Utah Wilderness Coalition, of which SUWA was a leader,[188] originally proposed designating 5.7 million acres as wilderness.[189] Its vigilance has steadily increased the proposed land size to 9 million acres of wilderness.[190] The Redrock Wilderness Act, which is the proposal that follows the Utah Wilderness Coalition's inventory numbers, was first brought to Washington, D.C. in 1989 and has been introduced in Congress every

182. Southern Utah Wilderness Alliance: Who We Are, http://www.suwa.org/site/PageServer?pagename=about_WhoWeAre (last visited Oct. 5, 2008).

183. *See* CHARLES WILKINSON, FIRE ON THE PLATEAU: CONFLICT AND ENDURANCE IN THE AMERICAN SOUTHWEST 323-24 (1999).

184. COGGINS ET AL., *supra* note 38, at 1056.

185. *See* WILKINSON, FIRE, *supra* note 183, at 323.

186. *Id.*; *see* Southern Utah Wilderness Alliance: Who We Are, http://www.suwa.org/site/PageServer?pagename=about_WhoWeAre (last visited Oct. 5, 2008).

187. WILKINSON, FIRE, *supra* note 183, at 323-24; *see generally* UTAH WILDERNESS COALITION, WILDERNESS AT THE EDGE: A CITIZEN PROPOSAL TO PROTECT UTAH'S CANYONS AND DESERTS (1990).

188. Utah Wilderness Coalition (UWC), About the UWC, http://www.uwcoalition.org/about/index.html.

189. *See* WILKINSON, FIRE, *supra* note 183, at 324.

190. Utah Wilderness Coalition, Frequently Asked Questions: The Citizens' Proposal for Wilderness in Utah, http://www.uwcoalition.org/faq/proposal.html (last visited Oct. 14, 2008).

year since.[191] Although the Utah delegation has consistently pledged to block its passage, the steady annual drumbeat is a reminder of the ability of a local organization to make its cause of national concern.[192]

2. Split Estates, Surface Owner Protections, and Tort Law Recovery in Wyoming

Faced with a harsh climate and limited economic possibilities beyond ranching and oil and gas drilling, much of modern Wyoming has given itself over to the mineral industry.[193] Wyoming enacted legislation in 2005 to give surface owners more traction to protect against oil and gas disturbances and recover damages from the companies that leased or purchased the subsurface mineral rights.[194] Although split estate owners are beginning to assert these rights against oil and gas companies through the assistance of grassroots organizations like the Land Owners Association of Wyoming,[195] the BLM may be unwilling to submit federal reserved mineral rights to state law.[196]

The legislative protection for split estate owners only applies in the oil and gas context,[197] and therefore those affected by coalbed methane are sometimes left out. Despite the potential negative impacts of coalbed methane development on a landowner's surface, vegetation, and water supply, there has not been a comprehensive state or federal legislative response.[198] Because of this, Wyoming property owners adversely affected by coalbed methane have turned to tort law.[199] Suing under theories of trespass and nuisance, they have demonstrated that the state may need to expand its definition of surface owner protection.[200] By successfully lobbying for greater legislative protections or, in the

191. Jerry Spangler, *Red Rock Wilderness Act is Again Under Scrutiny in Congress*, DESERET MORNING NEWS, Apr. 23, 2005, *available at* http://deseretnews.com/article/1,5143,600128599,00.html.

192. *Id.*; WILKINSON, FIRE, *supra* note 183, at 324.

193. Alexandra Fuller, *Boomtown Blues*, NEW YORKER, Feb. 5, 2007.

194. COGGINS ET AL., *supra* note 38, at 674; *see* WYO. STAT. ANN. § 30-5-402.

195. Landowners Association of Wyoming, Oil and Gas Drilling on Split Estate Lands, http://www.wyominglandowners.org/splitestates/index.php (last visited Oct. 14, 2008).

196. COGGINS ET AL., *supra* note 38, at 674.

197. *See* WYO. STAT. ANN. § 30-5-402.

198. ALEXANDRA KLASS, THE GROWING INFLUENCE OF TORT AND PROPERTY LAW ON NATURAL RESOURCES LAW: CASE STUDIES OF COAL BED METHANE DEVELOPMENT AND GEOLOGIC CARBON SEQUESTRATION, 8-11 (2007), *available at* http://www.colorado.edu/law/centers/nrlc/summerconference/papers/Klass.Session1.pdf; *see, eg.*, Paxton Res. v. Brannaman, 95 P.3d 796 (Wyo. 2004).

199. *See* KLASS, *supra* note 198, at 8-11.

200. *See id.*

alternative, suing to protect their property interests, split estate owners in Wyoming remind states facing oil shale development that affected residents will seek redress.

3. Colorado's Roan Plateau

The Roan Plateau, a high mesa previously unknown to most Coloradoans, stands as one of the more prescient examples of the way environmental and hunting and fishing communities can rally around areas heavily impacted by mineral development. The mesa, which stands thousands of feet above the surrounding arid, drill-rig laden landscape, is a place of natural beauty, home to forests, large game, waterfalls, and threatened species of fish. It is perhaps this beauty that brought the fight to save the Roan to the state capitol in Denver, where Colorado Governor Ritter asked the BLM to delay lease sales on the plateau, and to Washington, D.C., where a measure to ban drilling atop the plateau passed in the House of Representatives in 2007.[201] Unfortunately, efforts to protect the Roan Plateau have generally failed at the national level.[202]

The inability to rally a majority in Congress serves as further evidence of the importance of state and local politics in making mineral policy decisions. It also highlights the challenges that states face in trying to take a stance on what has traditionally been an issue of federal policy. In response to the BLM's decision to lease the top of the Roan Plateau, Governor Bill Ritter, former Senator Ken Salazar,[203] Congressman John Salazar, and Congressman Mark Udall expressed their disappointment with the Department of the Interior's failure to heed Colorado's wishes.[204] Governor Ritter emphasized the tension between federal and state interests when he released a statement saying, "I strongly disagree and am disappointed in the department's decision" to ignore the "uniquely Colorado solution that struck a good balance and would benefit our economy, communities and energy industry while minimizing the impact to our environment."[205] Although Colorado leaders submitted a plan to protect the top of the Roan Plateau in early

201. Todd Hartman, *House OKs Roan Plateau Drilling Ban*, ROCKY MOUNTAIN NEWS, Aug. 6, 2007.

202. Todd Hartman, *House Bill Sheds Roan Drilling Limits*, ROCKY MOUNTAIN NEWS, Dec. 6, 2007.

203. Mr. Salazar was since appointed United States Secretary of the Interior by President Obama.

204. Steve Lipsher, *BLM Rejects Roan Plateau Safeguards*, DENVER POST, Mar. 14, 2008, *available at http://www.denverpost.com/newsheadlines/ci_8567583*.

205. Press Release, Office of Gov. Bill Ritter, Jr., Gov. Ritter Statement on Department of Interior Roan Decision (Mar. 13, 2008), *available at* http://www.colorado.gov/cs/Satellite/GovRitter/GOVR/1205189518590.

2008, the BLM opened oil and gas leasing on August 14, 2008.[206] In response, ten environmental groups have filed suit against the BLM on NEPA grounds.[207]

B. Relevant Mineral Law and Legal Precedent

1. Oil and Gas

The Federal Onshore Oil and Gas Leasing Reform Act of 1987 ("FOOGLRA") and cases construing it, establish that no property right in minerals accrues until a lease is issued, and companies must abide by all stipulations contained in the lease.[208] Even though the mineral leasing procedures are well-established under FOOGLRA,[209] oil shale is unique, and its leasing procedure has yet to be completely worked out. The OSTS FPEIS did little more than identify the list of oil shale development's possible environmental impacts and shifted the burden to levy more specific lease stipulations to the local BLM offices which will issue the leases.[210] Because the property right in oil shale accrues at the time of the lease, this may be the last chance for federal regulation through lease stipulations. Additionally, petroleum mineral leases last for ten years, with the possibility of a two-year extension if the lessee can prove "diligence."[211] It may be too early to tell what split estate surface owners and patented oil shale claimants may contribute to the development conversation, but the potential impacts from whole-scale development will likely have surface owners employing tools like that of some states' surface owners accommodation acts.[212]

206. Press Release, Office of Gov. Bill Ritter, Jr., Gov. Ritter Statement on BLM Decision to Issue Roan Leases in August (June 9, 2008), *available at* http://www.colorado.gov/cs/Satellite/GovRitter/GOVR/1213025230663.

207. Associated Press, *Feds Defend Drilling Plan for Roan Plateau*, DENVER POST, Sept. 19, 2008.

208. 30 U.S.C. § 226(g) (2006); *see, e.g.*, Wyo. Outdoor Council v. Bosworth, 284 F.Supp.2d 81, 83 (D.D.C. 2003).

209. *See* 30 U.S.C. § 226.

210. *See* FPEIS discussion, *supra* Part II.C, at 19-20.

211. 30 U.S.C. § 226(e).

212. Two examples of surface owners accommodation acts are Colorado Landowner Protection Act, H.B. 07-1252, 65th Leg., (Colo. 2007) and Wyoming Surface Owner Accommodation Act of 2005, WYO. STAT. ANN. § 30-5-401 (2008). *See also supra* Part III.A.2, at 33-34.

2. The General Mining Law: Current National and International Reform Efforts

On May 24, 2007, Senator Wayne Allard proposed S. 1517, which drew on the lessons from the Roan Plateau in protecting Colorado's share of the special fund oil shale money by ensuring that it is managed by the Colorado Treasury.[213] Advocates for slowing the rush to develop oil shale also passed a House Interior Funding Bill for the 2008 fiscal year, which allowed the Interior Department to work on the PEIS process for the oil shale lands, but prohibited them from spending money preparing, publishing, or conducting a commercial lease sale in 2008.[214] Furthermore, West Virginia Representative Nick Rahall, introduced H.R. 2337,[215] which includes a provision amending the Energy Policy Act of 2005 in order to slow the oil shale development process.[216]

Colorado followed the federal model of using appropriations riders to prevent action on oil shale development when the state legislature included a provision in the $50 million appropriations bill for the 2008 Democratic National Convention, barring the BLM from acting on any oil shale leases in Colorado in 2008.[217]

Momentum is building to reform the General Mining Law, which lumbers on in nearly the same form as when it was enacted in 1872.[218] Representative Rahall's mining reform bill, H.R. 2262, passed the House on November 1, 2007, by a vote of 244–166.[219] The bill would enact an 8% royalty on new claims.[220] Additionally, it contains provisions that would allow states, tribes, and local governments the opportunity to petition for withdrawal from mining in special places.[221] The Supreme

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213. Oil Shale Reserve Fund Revenue Disposition Act, S. Res. 1517, 110th Cong. (2007).

214. H.R. 2643, 110th Cong. § 606 (as passed by House, June 27, 2007).

215. Energy Policy Reform and Revitalization Act of 2007. H.R. 2337, 110th Cong. § 104 (2007).

216. *Id. See* Press Release, Office of Gov. Bill Ritter, Jr., Gov. Ritter to Feds: Act Responsibly on Oil Shale (June 12, 2007), *available at* http://www.colorado.gov/cs/Satellite?c=Page&cid=1187808688144&pagename=GovRitter%2FGOVRLayout.

217. Mark Harden & Cathy Proctor, *Senate Approves DNC Funds, Oil-shale Delay*, DENVER BUS. JOURNAL, Dec, 19, 2007, *available at* http://www.bizjournals.com/denver/stories/2007/12/17/daily29.html.

218. Jane Danowitz & Richard Wiles, *Mining Our Treasures*, WASH. POST, Aug. 27, 2007 AT A13.

219. Hardrock Mining and Reclamation Act of 2007, H.R. 2262, 110th Cong. (2007), http://www.opencongress.org/bill/110-h2262/show (last visited Nov. 19, 2008).

220. Hardrock Mining and Reclamation Act of 2007 at § 102(a)(1), *available at* http://www.govtrack.us/congress/billtext.xpd?bill=h110-2262&page.

221. *Id.* § 202, *available at* http://www.govtrack.us/congress/billtext.xpd?bill=h110-2262&page.

Court has held that a present marketability standard should not apply to oil shale claims.[222] It would behoove legislators and affected communities to require that the prudent-person-marketability standard for oil shale be factored independent of government subsidies and the costs of environmental protection and remediation be taken into account.[223]

3. The SMCRA Model

Some have suggested that the coal regulation reform enacted by the Surface Mining Control and Reclamation Act of 1977 ("SMCRA") is one of the rare models of successful mineral management in the history of the United States.[224] The system of cooperative federalism holds states to federal standards, while leaving the permitting, enforcement, and regulation to the states.[225] This system has resulted in little litigation.[226] Benefiting from the congressional push for environmental litigation in the 1960s and 1970s, SMCRA held coal-mining companies to stringent standards of reclamation, using permitting requirements and regulations to ensure environmental protection.[227] Oil shale development would benefit from learning two important lessons from SMCRA: the cooperative federalism model can work well for mineral regulation, and a detailed organizational statute can minimize litigation while still enforcing environmental standards.

C. Local, State, and Federal Permitting and Preemption

Other than uranium, mineral development has traditionally had a very state-specific or local flavor. Oil and gas permitting and enforcement have fallen almost entirely under the purview of state commissions because, even though much of the development is on federal lands, federal leasing is less robust than a simple checklist. The federal government promulgates coal regulations, and the federal-level buttress is important, but enforcement has successfully fallen to individual states. Even more illustrative of the importance of local regulation in the face of little federal regulation are the successful efforts

222. Andrus v. Shell Oil Co., 446 U.S. 657, 672-73 (1980).

223. *See* United States v. Coleman, 390 U.S. 599 (1968); South Dakota v. Andrus, 614 F.2d 1190 (1980).

224. Katherine L. Henry, *Coal Mining in the United States: SMCRA's Successful Blueprint*, 11-WIN Nat. Resources & Env't 7 (1997).

225. Surface Mining Control and Reclamation Act of 1977, 30 U.S.C. § 1271 (2006).

226. COGGINS ET AL., *supra* note 38, at 643-44.

227. Henry, *supra* note 224, at 8.

made by local communities to bring hard rock mining within environmental standards. Otherwise, hard rock mining has faced little regulation, because mines have traditionally been physically remote and mining companies politically powerful.

Even though the Energy Policy Act of 2005 and the OSTS PEIS process demonstrate the federal government's interest in oil shale development, the interest, leverage, and historical involvement in mineral development of states suggest that the center of power has yet to be determined. The sweeping PEIS process and the Secretary of the Interior's authority to lease oil shale lands will likely serve as a foundation for national oil shale policy.[228] But the Western Slope community has proven to be highly vocal regarding the Roan Plateau issue, and the political scales seem to be tipping away from extractive resources and toward environmental resources throughout Colorado. Utah and Wyoming seem interested in vigorously promoting mineral development, but even these states have been willing to protect special places through congressional designation.[229] Congressional withdrawal of lands from mineral entry—usually initiated by the affected state—is the surest way to preclude the possibility of mineral development.[230]

At the local level, communities brought back to life by the tourist-fueled outdoor-recreation industry have begun to challenge mineral development, through county zoning regulations and local land-use permitting.[231] The thirty-years-and-counting legal battle of the residents of Crested Butte, Colorado against the Red Lady mine is an important reminder of the power conferred on mining companies by U.S. policy favoring mineral extraction as the best use of land.[232] These communities have been able to prevent mining operations by denying permits and utilizing ballot initiatives that tread lightly around possible preemption arguments.[233]

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228. *See* discussions about Secretary of Interior's discretion, *supra* Part II.B.1, II.C, at 17, 20.

229. Utah, Colorado, and Wyoming have all recently proposed withdrawing state lands through national congressional designation. *See* Western Resource Advocates, WRA: Lands, http://www.westernresourceadvocates.org/land/index.php (last visited Oct. 7, 2008).

230. United States v. Gettysburg Elec. Ry. Co., 160 U.S. 668, 683 (1896).

231. *See* Mark Jaffe, *High Court to Hear Cyanide Mining Case*, DENVER POST, Sept. 7, 2008.

232. *See* High Country Citizens' Alliance, Save Red Lady (Mt. Emmons), http://www.hccaonline.org/ page.cfm?pageid=2035 (last visited Oct. 7, 2008).

233. *See* S.D. Mining Ass'n v. Lawrence County, 977 F. Supp. 1396 (D.S.D. 1997) (holding that local regulation is permissible under the Mining Act insofar as it does not conflict with the federal law). *See also* Oil Dri Corp. v. Washoe County, Civ. No. 02-0186 (D. Nev. Feb. 22, 2003).

D. A Case Study of State Responsibility for Federal Messes: Leaving Colorado to Fund the Anvil Points Cleanup

The Anvil Points site, which is also located within the oil shale region of Colorado, offers a warning about the need to plan for remediation efforts. It is also relevant to this discussion because of the implications its cleanup has on mineral development revenues in the region. The 1997 Transfer Act, which brought all of the federal lands in the Green River Formation area under the authority of the BLM, contained a provision that funneled all Western Slope oil and gas revenues to pay for the costs of cleanup and remediation of the Anvil Points site.[234] Due to the spent shale and other waste from mineral research conducted at the site during the 1970s, Anvil Points is now a Superfund site[235] under the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA").[236] The fact that final remediation is likely years away on this small area of oil shale experimentation should serve as a warning to firm up remediation plans and procedures before starting commercial production.

Additionally, industry-driven predictions of windfall revenues paid to the state should be mitigated by the fact that the Anvil Points cleanup will siphon a considerable amount of these revenues. In other words, Colorado's hope for oil shale royalty bounty should be tempered by the federal government's revenue-sharing plan for Anvil Points. Superfund sites consume revenue, and there is good reason to use state mining funds to pay for cleanup. However, the Anvil Points example demonstrates that the federal government may hold states accountable for cleaning up mining impacts. States should recognize that they have

234. 10 U.S.C. §7439 (2006) (Congressional history of Transfer Act can be found at 147 CongRec H10179-08; H.R. 2187; 107th Cong, 1st Session, Dec. 18, 2001). Naval Oil Shale Reserves 1 and 3 include the area known as the Anvil Points site, which was recently contracted to be cleaned up for $15.4 million. Press Release, BLM, BLM Awards Anvil Points Clean-Up Contract (July 29, 2008), *available at* http://www.blm.gov/co/st/en/BLM_Information/newsroom/2008/blm_news_release_.html. Press Release, Offices of Sen. Salazar and Sen. Allard, Colo. Senators Request Update on Cleanup of Anvil Points & Info Related to the Roan Plateau Planning Area (Oct. 29, 2007) (quoting full text of letter sent to Secretaries of Energy and Interior), *available at* http://salazar.senate.gov/news/releases/071029anvilpointsjnt.htm.

235. Press Release, Office of Gov. Bill Ritter, Jr., Gov. Ritter Statement on Anvil Points (Aug. 8, 2008), *available at* http://www.colorado.gov/cs/Satellite/GovRitter/GOVR/1218190495321.

236. Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. § 9601 (Supp. V 2005).

far more interest than the federal government in getting the most out of their royalty payments and in cleaning up the lands within their borders.

E. Toward a Measured Policy Approach

Are we comfortable with national sacrifice zones in the twenty-first century? If the region looks like a sandbox, is it worth preserving? As our public land law evolves alongside our conservation ethic, must we accept mineral sacrifice zones as we accept cordoned-off wilderness areas and Areas of Critical Environmental Concern? Would in-situ oil shale mining prevent the Green River Basin from becoming a sacrifice zone because the majority of the mining would be happening underground? As the modern environmental movement continues to progress toward a workable ethic, the role of local communities and their governments—municipal, county, and state—has become undeniable. The value of an area should be determined by the people who live there.[237] The Green River Formation is home to more than 100,000 people, a number that continues to mushroom thanks to the twin (though arguably conflicting) attractions of tourism and mineral development.[238] Even if we accept a national sacrifice zone on the ground, the world's citizens are increasingly demonstrating that they will not accept them in the face of climate change.[239]

Wallace Stegner and Mary Austin have endured as two of the most astute observers of the West's visceral lure and its hard-learned reality. Stegner's writings masterfully capture the cycle of hope and heartbreak of human development in the West. *Angle of Repose* follows Oliver Ward on his earnest engineer's quest to harness the resources of the West. Stegner's description of Ward was a description of western resource development more generally: "His clock was set on pioneer time. . . . Like many another Western pioneer, he had heard the clock of history strike, and counted the strokes wrong. Hope was always out ahead of fact, possibility obscured the outlines of reality."[240] Austin turned the melodrama of the popular western story on its head with her essay "Jimville," which was about the simple, measured humanity, and

237. *See* Sarah Krakoff, Prof. of Law, University of Colorado Law School 33rd Annual Austin W. Scott Lecture, Parenting the Planet: Environmental and Other Ethics in the Face of Potential Tragedy, Nov. 14, 2007.

238. Populations: Green River, Wyoming (12,000), Vernal Utah (8,000), Grand Junction (42,000), and Rifle (7,000) and Parachute (1,000). U.S. Census Bureau, Your Gateway to Census 2000, http://www.census.gov/main/www/cen2000.html (last visited Oct. 14, 2008).

239. *See e.g.*, Massachusetts v. EPA, 549 U.S. 497 (2007).

240. WALLACE STEGNER, ANGLE OF REPOSE 382 (Penguin Books 1992) (1971).

was actually more the norm than the exception in western mining towns. Instead of fleeting outlaws and heroic cowboys, she wrote about people drawn to and then tied to a place—the marriage of man to mineral development:

> Yearly the spring fret floats the loose population of Jimville out into the desolate waste hot lands, guiding by the peaks and a few rarely touched water-holes, always, always with the golden hope. They develop prospects and grow rich, develop others and grow poor but never embittered. Say the hills, It is all one, there is gold enough, time enough, and men enough to come after you.[241]

Mineral development, even with all of its boom and bust, is as western as cowboy mythology and dramatic vistas. The promise of oil shale falls comfortably in line with the West's previous mineral dreams and development. Nevertheless, oil shale differs in one important manner: nature has trapped the resource in a way that requires an entirely new level of technological and financial backing of the mining process. It is a fitting twenty-first century evolution of what started with gold prospectors scratching away in streambeds in the nineteenth century. In the pregnant pause imposed by the technological, financial, and environmental challenges of mining oil shale, states and local communities should know their rights and make their voices heard. There is a high mesa of mineral law and policy precedent that can give them the benefit of heightened perspective. Under the leadership of local communities and affected states, oil shale development could represent a nod to the long history of western mineral extraction and recognition of the growing importance of the preservation ethic.

241. MARY AUSTIN, *The Land of Little Rain*, *in* STORIES FROM THE COUNTRY OF LOST BORDERS 1, 71 (Marjorie Pryse ed. 1987) (1903).