

Sociopolitical Challenges to the Siting of Facilities with Perceived Environmental Risks

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Submitted to the Engineering Systems Division and Department of Civil and Environmental
Engineering in Partial Fulfillment of the Requirements for the Degrees of Master of Science in
Technology and Policy and Master of Science in Civil and Environmental Engineering

at the
Massachusetts Institute of Technology
June 2003

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Submitted to the Engineering Systems Division and Department of Civil and Environmental Engineering on August 18, 2003 in Partial Fulfillment of the Requirements for the Degrees of Master of Science in Technology and Policy and Master of Science in Civil and Environmental Engineering

Abstract

Difficulties are often experienced in the siting of facilities that serve a public need but also pose localized safety, health and/or environmental risks. This has historically been due to not-in-my-back-yard (NIMBY) opposition on the part of more affluent neighborhoods but, more recently, can also be attributed to minority and low-income communities' pursuit of environmental justice. An emerging technology for which siting is likely to present a particular challenge is geologic carbon sequestration. This thesis uses a case study approach to develop a set of recommendations for preventing and, if required, dealing with local opposition to geologic carbon sequestration projects – and necessary but controversial facilities, in general. These recommendations stress the wisdom of neither discounting the possibility nor effectiveness of opposition based on NIMBY syndrome or environmental justice concerns; the potential for careful site selection to reduce the likelihood of local opposition; the importance of meaningful public participation, trust building and compensation in securing community support; and, in the case of facilities with localized risks, the need to educate community members as to the risks involved.

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ACKNOWLEDGEMENTS

I am truly and deeply indebted to Howard Herzog for his support and guidance during my time at MIT. I also owe a debt of gratitude to David Reiner, who greatly assisted me in writing this thesis. And, of course, special thanks must go to Mary Gallagher and my fellow LFEE carbon management and sequestration research assistants for providing a friendly and stimulating environment in which to work.

Finally, I would like to take this opportunity to thank Gervaise, who inspired me with the idea of coming to MIT in the first place, and Brian, who made my life outside of MIT such a joy.

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ACRONYMS

CCS	Carbon Capture and Sequestration
CRCQL	Chester Residents Concerned for Quality Living
CRE	Mexico's Energy Regulatory Commission
CRJ	United Church of Christ's Commission for Racial Justice
DOER	Massachusetts Division of Energy Resources
EHIA	Environmental High-Impact Area
EJA	Environmental Justice Act of 1992
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EO	Executive Order
EOR	Enhanced Oil Recovery
EPA	United States Environmental Protection Agency
FERC	Federal Energy Regulatory Commission
GAO	United States General Accounting Office
GRP	Gross Regional Product
LDEQ	Louisiana Department of Environmental Quality
LNG	Liquefied Natural Gas
LULU	Locally Unwanted Land Use
MDEQ	Massachusetts Department of Environmental Quality
MEPA	Massachusetts Environmental Policy Act
NAACP	National Association for the Advancement of Colored People
NAFTA	North American Free Trade Agreement
NEJAC	National Environmental Justice Advisory Council
NEPA	National Environmental Policy Act
OCS	Outer Continental Shelf
PADEP	Pennsylvania Department of Environmental Protection
PCB	Polychlorinated Biphenyl
PVC	Polyvinyl Chloride
RPS	Renewable Portfolio Standard
SDM	Scientific Data Monitoring
SJCC	St. James Citizens Coalition
SJCJE	St. James Citizens for Jobs and the Environment
TELC	Tulane Environmental Law Clinic
TRI	Toxic Releases Inventory
VOC	Volatile Organic Compounds

1. INTRODUCTION

The objective of this thesis is to provide an increased familiarity and a set of remedies for successfully dealing with the sociopolitical challenges likely to face the siting of a geologic carbon sequestration project. Geologic carbon sequestration is an emerging technology that adopted as part of a portfolio of mitigation options promises a cost-effective response to the threat of climate change. However, it has become increasingly difficult to site facilities of this type that serve a public need but also pose localized risks. This has historically been due to not-in-my-back-yard (NIMBY) syndrome on the part of more affluent neighborhoods but, more recently, can also be attributed to minority and low-income communities' pursuit of environmental justice.

The problem of siting facilities with localized safety, health and/or environmental risks is examined using a case study approach. The Background chapter provides an overview of the NIMBY phenomenon and a more detailed look at the less widely-known environmental justice movement. In the Geologic Carbon Sequestration chapter, a "state-of-the-art" summary of the technology together with a discussion of the risks posed by projects of this type is given. Next, there are three case studies, each of which deals with the siting of a facility that has the potential to negatively impact its surroundings. In Case Study One, a company is forced to abandon the proposed site for its polyvinyl chloride (PVC) facility due to environmental justice complaints, only to successfully site the plant in an almost equally disadvantaged area. Case Study Two looks at a developer's ongoing struggle to site an offshore wind farm in the face of significant NIMBY opposition from the local community. In Case Study Three, California's chronic NIMBY syndrome forces a group of energy companies to try to site LNG terminals across the United States-Mexico border in Baja California, where opposition from local residents also threatens to put a stop to the projects. Finally, the Conclusion recommends an approach to siting geologic carbon sequestration projects - and necessary but controversial facilities, in general.

2. BACKGROUND

2.1 Challenge of Siting Facilities with Localized Risks

With increasing land use pressures and growing concern over environmental and health protection, it has become increasingly difficult to site facilities, such as power plants and landfills, that serve a public need but pose safety, health and/or environmental risks. Indeed, the siting of these necessary but controversial facilities has emerged as a policy problem of major significance. The problem received widespread attention following a 1981 article by Frank J. Popper on the difficulties associated with the siting of “locally unwanted land uses” (LULUs), where the term LULU was used to describe not only facilities with real/perceived environmental risks but also environmentally harmless but locally undesirable facilities such as prisons and low-income housing projects.¹ The opposition to these facilities has been identified over the years as having numerous causes including, but not limited to, risk uncertainty, public perception of risk, risk communication, institutional distrust and, most notably, the inequitable distribution of benefits and costs from a project.² It has also been recognized that this opposition will not simply disappear with the advent of “better”, i.e. less risky, technologies and/or the adoption of stricter environmental and safety regulations.³ Rather, it is clear that project developers need to better address the two main sociopolitical challenges to facility siting: not-in-my-back-yard (NIMBY) syndrome and environmental justice.

2.2 NIMBY Syndrome

NIMBY syndrome is used to characterize the phenomenon whereby citizens may recognize the need for a particular facility but are opposed to it being sited in their community. Over the last couple of decades, this phenomenon has been responsible for the delay or obstruction of numerous projects around the world. The underlying cause of NIMBY opposition is that those

¹ Popper, F.J., “Siting LULUs,” *Planning*, 47:4, 1981, p. 12-15.

² Kasperson, R.E., “Hazardous Waste Facility Siting: Community, Firm, and Government Perspectives,” in: National Academy of Engineering (eds), *Hazards: Technology and Fairness*, National Academy Press, Washington, D.C., 1986, p. 118-144.

³ Davy, B., “Fairness as Compassion: Towards a Less Unfair Facility Siting Policy,” *Risk*, 7, 1996, [cited Jun. 2003], Available: <http://www.piercelaw.edu/risk/vol7/spring/davy.htm>.

living near the proposed site perceive the benefits from the facility to be low in comparison to the localized economic costs and environmental risks. While those opposing a facility on NIMBY grounds were once characterized as being irrational and selfish, recent literature portrays NIMBY groups as often being justified in their opposition.⁴ Indeed, where there is failure to ensure a fair distribution of benefits and costs, there are often those who stand to lose more than they gain if the facility in question is built. It is to be noted that NIMBY opposition is usually observed in more affluent communities⁵, which have the organizational, financial and political resources to wage a successful campaign against a project. Any proposal to site an undesirable facility in these communities is met by a generally effective combination of grassroots techniques, such as demonstrations and neighborhood petitions, zoning prohibitions and lawsuits.

2.3 Environmental Justice

2.3.1 Environmental Justice Defined

Environmental justice calls for equal protection from environmental risks and equal opportunity to be involved in the decisions that affect one's health and environment. Although still largely confined to the United States, the environmental justice movement has resulted in numerous challenges to siting decisions during the last decade. The core claim of the movement is that minority and low-income communities bear a disproportionate share of environmental burdens. Initially expressed as "environmental racism", the environmental justice issue was cast as a matter of overt discrimination in an attempt to mobilize civil rights activists.⁶ The issue then came to be framed as one of "environmental equity" in how risks are distributed across populations.⁷ Today, the United States Environmental Protection Agency (EPA) defines the

⁴ McAvoy, G.E., *Controlling Technocracy: Citizen Rationality and the NIMBY Syndrome*, Georgetown University Press, Washington, D.C., 1999.

⁵ Dear, M., "Understanding and Overcoming the NIMBY Syndrome," *Journal of the American Planning Association*, 58:3, 1992, p. 288-300.

⁶ Bullard, R.D., B. Wright and B.F. Chavis, *Confronting Environmental Racism: Voices from the Grassroots*, South End Press, Boston, 1992.

⁷ United States Environmental Protection Agency (EPA), "EPA Press Release – July 22, 1992: Release of Environmental Equity Report," Jun. 2002, [cited Jun. 2003], Available: <http://www.epa.gov/history/topics/justice/01.htm>.

issue in terms of “fair treatment ... of all people regardless of race, color, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations, and policies”.⁸ It is to be noted that “fair treatment” is not the same as equality of outcomes.

Environmental justice has been described as a form of NIMBY opposition.⁹ The movement calls for all communities to be protected from bearing a disproportionate share of environmental burdens, thereby rejecting the displacement of hazards from one community to another. However, the hard reality is that mobilization occurs most readily as a result of a personal and collective interest in opposing specific threats, real or otherwise, in a particular locale. Neither the goal of preventing these threats from being borne by others, nor the more general desire for a more just society, is the primary force driving ordinary citizens to oppose a siting decision on environmental justice grounds.

2.3.2 Beginnings of the Environmental Justice Movement

The environmental justice movement traces its roots back to protests in North Carolina in 1982.¹⁰ A hazardous waste landfill for polychlorinated biphenyl (PCB)-contaminated soil had been proposed for Warren County. The county was the poorest in the state and had a population that was 65 percent African American. On hearing word of the proposed PCB landfill, residents of the county staged numerous demonstrations, during which more than 500 arrests were made. In addition to local residents, activists from various civil rights organizations took part in the protests. Given the county’s socioeconomic make-up, the proposed landfill was seen as much a violation of the residents’ civil rights as it was a hazard to their environment and health. By linking civil rights and environmental concerns, the protests gave birth to the environmental justice movement.¹¹

⁸ United States Environmental Protection Agency (EPA), “Environmental Justice,” Apr. 2003, [cited Jun. 2003], Available: <http://www.epa.gov/compliance/environmentaljustice/>.

⁹ Foreman, C.H., Jr., *The Promise and Peril of Environmental Justice*, Brookings Institution Press, Washington, D.C., 2000.

¹⁰ Geiser, K. and G. Waneck, “PCBs and Warren County,” in: R.D. Bullard (ed), *Unequal Protection: Environmental Justice and Communities of Color*, Sierra Club Books, San Francisco, 1994, p. 43-52.

¹¹ Bullard, R.D. and G.S. Johnson, “Environmental Justice: Grassroots Activism and Its Impact on Public Policy Decision Making,” *Journal of Social Issues*, 56:3, 2000, p. 555-578.

2.3.3 Evidence of Disparate Environmental Impacts

There are two widely cited studies that have looked at the degree to which facilities with environmental risks are located disproportionately in minority and low-income communities. The first of these was conducted in 1983 by the United States General Accounting Office (GAO).¹² The GAO study examined the racial and class characteristics of the communities surrounding the four commercial hazardous waste landfills in EPA's Region IV (the Southeast). The landfills were found to be located in communities where minorities made up 38 percent, 52 percent, 66 percent and 90 percent of the local populations, while the region had a minority population of only 20 percent. It was also determined that poverty rates in these communities were significantly higher than for the region as a whole.

The second of these studies was released in 1987 by the United Church of Christ's Commission for Racial Justice (CRJ).¹³ The CRJ study undertook the first nationwide survey of communities in which hazardous waste facilities were located. It concluded that as the percentage of minority and poor residents of a neighborhood increased so did the likelihood that the neighborhood had a hazardous waste facility. Moreover, a follow-up to the CRJ study found this still to be the case in the 1990s.¹⁴ While one group of researchers at the University of Massachusetts challenged the CRJ finding of a correlation between the presence of minorities and the presence of hazardous waste facilities¹⁵, their assertion has subsequently been refuted by a leading expert in the field¹⁶.

There is evidence that minority and low-income communities are not only burdened with a disproportionate share of facilities with environmental risks but are also exposed to higher levels of pollution. A good indication of a neighborhood's pollution levels is given by the Toxics Release Inventory (TRI). The TRI, established under the Emergency Planning and Community

¹² United States General Accounting Office (GAO), *Siting of Hazardous Waste Landfills and Their Correlation with Racial and Economic Status of Surrounding Communities*, Government Printing Office, Washington, D.C., 1983.

¹³ Commission for Racial Justice (CRJ), *Toxic Wastes and Race in the United States*, United Church of Christ and Public Data Access, New York, 1987.

¹⁴ Goldman, B. and L. Fitton, *Toxic Wastes and Race Revisited*, Center for Policy Alternatives, Washington, D.C., 1994.

¹⁵ Douglas, A., A. Anderson, J.M. Oates and M. Fraser, "Environmental Equity: The Demographics of Dumping," *Demography*, 31, 1994, p. 229-248.

¹⁶ Been, V., "Analyzing Evidence of Environmental Justice," *Journal of Land Use and Environmental Law*, 11, 1995, p. 1-36.

Right-to-Know Act of 1986 and expanded by the Pollution Prevention Act of 1990, contains information on releases of toxic chemicals from industries such as manufacturing, metal and coal mining, electric power generation and commercial hazardous waste treatment.¹⁷ Two nationwide studies have found inequities in the distribution of TRI pollutants, with releases of these pollutants being shown to increase with the percentage of minorities and poor in a neighborhood.^{18,19} However, a lack of epidemiological data means that is not possible to determine whether this increased exposure to pollutants is causing these individuals to suffer from adverse health effects.

2.3.4 Possible Explanations for Disparate Environmental Impacts

Several prominent members of the environmental justice movement support the notion that the concentration of facilities with environmental risks in minority and low-income communities is the result of intentional discrimination.²⁰ They claim that these communities are not only explicitly targeted by firms to receive facilities but are also intentionally discriminated against by government agencies in permitting decisions. Intentional discrimination, firmly rejected by private developers and government officials involved in facility siting, would seem an unlikely explanation for the distribution of facilities. More plausible explanations, discussed in greater detail below, are market rationality, political rationality and neighbourhood transition.²¹

The market rationality explanation is that economic considerations are responsible for the disparate siting of noxious facilities. Firms try to locate facilities where there is cheap land, abundant labor, and ready access to transportation infrastructure and raw materials. Neighborhoods characterized by low property values and large numbers of blue-collar workers

¹⁷ United States Environmental Protection Agency (EPA), "What is the Toxics Release Inventory (TRI) Program," Jun. 2002, [cited Jun. 2003], Available: <http://www.epa.gov/tri/whatis.htm>.

¹⁸ Ringquist, E., "Equity and the Distribution of Environmental Risk," *Social Science Quarterly*, 78, 1997, p. 811-829.

¹⁹ Perlin, S., R.W. Setzer, J. Creason and K. Sexton, "Distribution of Industrial Air Emissions by Income and Race in the United States," *Environmental Science and Technology*, 29, 1995, p. 69-80.

²⁰ Chavis, B.F., Jr., "Preface," in: R.D. Bullard (ed), *Unequal Protection: Environmental Justice and Communities of Color*, Sierra Club Books, San Francisco, 1994, p. xi-xii.

²¹ Ringquist, E.J., "Environmental Justice: Normative Concerns, Empirical Evidence, and Government Action," in: N.J. Fig and M.E. Kraft (eds), *Environmental Policy: New Directions for the Twenty-first Century*, Fifth Edition, CQ Press, 2002, p. 249-273.

are more likely to be home to minorities and economically disadvantaged individuals. Similarly, these same individuals are more likely to live in areas that are major thoroughfares and have an abundance of raw materials.

According to the political rationality explanation, the lack of political power on the part of minorities and economically disadvantaged individuals is the key to disparate siting outcomes. Firms site facilities where they expect the least amount of political resistance. Political power is a function of variables such as education, wealth, organizational skills and political contacts. The fact that minorities and the poor tend to have fewer of these resources, i.e. less political clout, leads to more facilities being sited in their communities. Opposition to these facilities by politically powerful communities, which are typically affluent and predominantly white, acts to further compound the problem.

The question of whether the facility or the people in the surrounding neighborhood came first is central to the neighborhood transition explanation. A picture is painted whereby the siting of a noxious facility in a relatively well-to-do neighborhood results in reduced property values and the moving out of those residents with the means to do so. This decrease in property values together with the flight of residents in turn has the effect of making the neighborhood's housing more affordable for the poor and more accessible to those whose housing choices are limited by racial discrimination in the residential housing market. Thus, over time, the neighborhood comes to be populated by a larger percentage of minorities and poor than it had been prior to the siting of the facility. If this explanation for environmental injustice is correct, then it follows that these same groups will always end up living near undesirable facilities.²²

2.3.5 Responses to the Environmental Justice Issue

Congress has been debating the environmental justice issue since the early 1990s but has yet to pass any environmental justice legislation. The first piece of proposed legislation dealing with

²² For more information on the neighborhood transition explanation, see: Been, V. and F. Gupta, "Coming to the Nuisance or Going to the Barrios? A Longitudinal Analysis of Environmental Justice Claims," *Ecology Law Quarterly*, 24,1 1997, p. 2-35.

the issue was the Environmental Justice Act of 1992 (EJA).²³ The EJA sought to require EPA to identify the 100 counties of the United States most polluted by toxic chemicals and to designate them “environmental high-impact areas” (EHIA). For each EHIA, if evidence of adverse health effects was found, the EJA would then have required EPA to impose a moratorium on the siting of new sources of toxic pollution. Another proposed piece of environmental justice legislation was the Environmental Equal Rights Act of 1993, which would have prohibited the siting of hazardous waste facilities in minority or low-income communities already hosting these facilities.²⁴ Also noteworthy, proposed amendments to the Resource Conservation and Recovery Act of 1976 would have required developers and governmental officials to prepare community information statements on the socioeconomic and demographic characteristics of the neighborhoods surrounding any proposed hazardous waste facility.²⁵ Several other pieces of environmental justice legislation have also been proposed but, once again, none has passed.

The biggest boost to the environmental justice movement was President William J. Clinton’s issuance of Executive Order (EO) 12898, entitled “Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations”.²⁶ EO 12898, released on February 11, 1994, requires all federal agencies to ensure that federally-funded programs and policies do not subject minority and low-income communities to “disproportionately high and adverse human health or environmental effects”.²⁷ The accompanying presidential memorandum specifically directs federal agencies to use Title VI of the Civil Rights Act of 1964 (Title VI), given in part in Figure 1, and the National Environmental Policy Act of 1969 (NEPA) to implement EO 12898.²⁸ Although environmental justice has primarily been championed by Democrats, it is noteworthy that President George W. Bush has allowed EO 12898 and the accompanying presidential memorandum to remain in force.²⁹

²³ H.R. 5326, 102d Cong. (1992) (introduced by Rep. John Lewis of Georgia); S. 2806, 102d Cong. (1992) (introduced by Sen. Albert Gore, Jr. of Tennessee).

²⁴ H.R. 1924, 103d Cong. (1993) (introduced by Rep. Candice Collins of Illinois).

²⁵ H.R. 4212, 102d Cong. (1992) (introduced by Rep. William Clinger of Pennsylvania).

²⁶ 3 C.F.R. 859 (Feb. 11, 1994).

²⁷ Ibid.

²⁸ “Memorandum on Environmental Justice,” *Weekly Compilation of Presidential Documents*, 30, Feb. 14, 1994, p. 278-279.

²⁹ See Ringquist, Note 18.

Figure 1 : Section 601 of Title VI of the Civil Rights Act of 1964³⁰

No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.

EPA has undertaken a variety of efforts aimed at encouraging environmental justice. In response to public concerns, EPA created the Office of Environmental Justice in 1992 and then, in 1993, established the National Environmental Justice Advisory Council (NEJAC).³¹ Pursuant to EO 12898, EPA formalized its policies for handling Title VI complaints with the release on February 13, 1998, of its “Interim Guidance for Investigating Title VI Administrative Complaints Challenging Permits” (Interim Guidance).³² The Interim Guidance is aimed at permits issued by state and local environmental agencies, and applies to permits for new facilities, permit modifications and permit renewals. While Section 601 of Title VI only prohibits intentional discrimination, the Supreme Court has authorized federal agencies to adopt implementing regulations under Section 602, given in part in Figure 2, that prohibit discriminatory effects.³³ EPA has adopted a discriminatory effect standard that prohibits a recipient of EPA funds from using “criteria or methods of administering its program, which have the *effect* of subjecting individuals to discrimination because of their race, color, national origin or sex...”³⁴ This allows EPA to support a finding of non-compliance with Title VI without having to prove an intent to discriminate.

³⁰ 42 U.S.C. § 2000d (2003).

³¹ For more information on the environmental justice work at EPA, see: United States Environmental Protection Agency (EPA), “Compliance and Enforcement: Office of Environmental Justice,” Apr. 2003, [cited Jun. 2003], Available: <http://www.epa.gov/compliance/about/offices/oej.htm>.

³² United States Environmental Protection Agency (EPA), “Interim Guidance for Investigating Title VI Administrative Complaints Challenging Permits,” Feb. 1998, [cited Jun. 2003], Available: <http://www.epa.gov/civilrights/docs/interim.pdf>.

³³ *Alexander v. Choate*, 469 U.S. 287, 293 (1985).

³⁴ 40 C.F.R. § 7.35(b) (2003).

Figure 2 : Section 602 of Title VI of the Civil Rights Act of 1964³⁵

Each Federal department and agency which is empowered to extend Federal financial assistance to any program or activity ... is authorized and directed to effectuate the provisions of [section 601] ... by issuing rules, regulations, or orders of general applicability which shall be consistent with achievement of the objectives of the statute authorizing the financial assistance in connection with which the action is taken.

On June 27, 2000, EPA published its “Draft Revised Guidance for Investigating Title VI Administrative Complaints Challenging Permits” (Draft Revised Investigation Guidance).³⁶ The Draft Revised Investigation Guidance was developed based on feedback received by EPA on the Interim Guidance, and differs from the Interim Guidance only in the detail and clarity of information provided on the process to be used for handling complaints filed under Title VI.³⁷ When the Draft Revised Investigation Guidance is finalized, it will replace the Interim Guidance.³⁸

2.3.6 Tools for Environmental Justice – Litigation Strategies

On several occasions, groups have sought to block a siting decision on environmental justice grounds using the Equal Protection Clause of the Fourteenth Amendment of the United States Constitution. The equal protection doctrine requires that the distribution of burdens or benefits of the law by state actors not be influenced by racial bias. To date, there have been four fully-litigated challenges to state or local government siting decisions and each of these has been unsuccessful.³⁹ This is primarily due to the Supreme Court’s ruling that it is necessary to show

³⁵ 42 U.S.C. § 2000d-1 (2003).

³⁶ United States Environmental Protection Agency (EPA), “Civil Rights: Policies and Guidance,” May 2003, [cited Jul. 2003], Available: <http://www.epa.gov/civilrights/polguid.htm>.

³⁷ United States Environmental Protection Agency (EPA), “U.S. EPA Draft Title VI Guidance Documents – Fact Sheet,” May 2003, [cited Jul. 2003], Available:<http://www.epa.gov/civilrights/t6docpub.htm>.

³⁸ Ibid.

³⁹ Colopy, J.H., “The Road Less Traveled: Pursuing Environmental Justice through Title VI of the Civil Rights Act of 1964,” 13 Stan. Env’tl. L.J. 125 (1994); *Bean v. Southwestern Management Corp.*, 482 F. Supp. 673 (S.D. Tex. 1979), *aff’d without op.*, 782 F.2d 1038 (5th Cir. 1986); *East Bibb Twiggs Neighborhood Ass’n v. Macon-Bibb*

discriminatory intent to prevail on equal protection grounds.⁴⁰ Indeed, for an environmental justice plaintiff to succeed, they must show that a “discriminatory purpose was a motivating factor” in the siting decision.⁴¹ This burden of proving discriminatory intent presents a major hurdle for private plaintiffs seeking relief under the Equal Protection Clause.

An environmental justice plaintiff can also challenge a siting decision under Section 601 of Title VI of the Civil Rights Act. This is possible due to the Supreme Court’s holding that a private right of action exists under Section 601.⁴² Similar to equal protection lawsuits, environmental justice cases challenging state or local permitting decisions under Section 601 must demonstrate intentional discrimination. Given this, it is likely that challenges to permitting decisions under Section 601 will also fail.⁴³ Section 602 of Title VI, however, provides environmental justice advocates with a somewhat more promising tool for challenging permitting decisions: EPA’s discriminatory effect standard.

The only available means by which to try to enforce EPA’s discriminatory effect standard is through the filing of a Title VI complaint with the agency. EPA conducts its investigation and processing of Title VI complaints in accordance with the framework set out in its Interim Guidance.⁴⁴ First, EPA undertakes an analysis to determine whether the permit at issue will have a disparate impact on a minority community. If EPA makes a finding of a disparate impact, the state has the opportunity to rebut the finding or to submit a mitigation plan. In the case that the rebuttal or mitigation efforts fail, the state may seek to “justify” the disparate impact. Next, if the state is unable to justify the permit decision, a preliminary finding of non-compliance is made. Finally, if the state is unable to come into compliance voluntarily, EPA is required to deny, annul, suspend, or terminate funding and/or refer the matter to the Department of Justice

County Planning & Zoning Comm’n, 706 F. Supp. 880 (M.D. Ga. 1989), *aff’d*, 896 F.2d 1264 (11th Cir. 1989); *R.I.S.E., Inc. v. Kay*, 768 F. Supp. 1144 (E.D. Va. 1991), *aff’d without op.*, 977 F.2d 573 (4th Cir. 1992); *NAACP v. Gorsuch*, No. 82-768-CIV-5 (E.D.N.C. Aug. 10, 1982).

⁴⁰ Roberts, R.G., “Environmental Justice and Community Empowerment: Learning from the Civil Rights Movement,” 48 Am. U.L. Rev. 229 (Oct. 1998); *Washington v. Davis*, 426 U.S. 229, 238-48 (1976).

⁴¹ *Ibid*; *Arlington Heights v. Metropolitan Housing Dev. Corp.*, 429 U.S. 252, 266-68 (1977).

⁴² *Guardians Ass’n v. Civil Service Comm’n*, 463 U.S. 582 (1983).

⁴³ Latham Worsham, J.B., “Disparate Impact Lawsuits under Title VI, Section 602: Can a Legal Tool Build Environmental Justice?” 27 B.C. Env’tl. Aff. L. Rev. 631 (2000).

⁴⁴ See EPA, Note 32.

for litigation. As of June 2003, 136 Title VI complaints had been filed with EPA.⁴⁵ It is important to recognize that not all of these Title VI complaints were related to the issuance of a permit for the siting of a new facility.⁴⁶

Efforts to enforce EPA's discriminatory effect standard through the filing of a Title VI complaint have met with limited success. Only 49 of the 136 Title VI complaints filed with EPA as of June 2003 had been accepted for investigation.⁴⁷ The remaining 87 Title VI complaints had been rejected because they did not meet the regulatory requirements, where these include that the agency charged with acting in a discriminatory manner be a recipient of EPA funds and that the complaint be filed within 180 days of the alleged discriminatory act.⁴⁸ Moreover, for those 29 complaints that had been both accepted and processed, the EPA had not once concluded that there had been a violation of Title VI.⁴⁹ Indeed, the majority of the complaints had been dismissed on the grounds that no adverse impact was found.⁵⁰ The fact of the matter is however that, in many instances, the filing of the complaint in itself was sufficient to persuade the developer to relocate.⁵¹ An example of this, presented in Figure 3, is provided by the case of EPA's first and most widely-cited decision on a complaint under the Interim Guidance.⁵²

⁴⁵ United States Environmental Protection Agency (EPA), "Summary Information on Title VI Complaints Filed with EPA (06/20/03)," Jun. 2003, [cited Jul. 2003], Available: <http://www.epa.gov/civilrights/docs/t6stjune2003.pdf>.

⁴⁶ United States Environmental Protection Agency (EPA), "List of Title VI Complaints Filed with EPA (06/20/03)," Jun. 2003, [cited Jul. 2003], Available: <http://www.epa.gov/civilrights/docs/t6csjune2003.pdf>.

⁴⁷ See EPA, Note 45.

⁴⁸ Ibid.

⁴⁹ Ibid.

⁵⁰ Ibid.

⁵¹ Ibid.

⁵² United States Environmental Protection Agency (EPA), "Civil Rights: Recent Title VI Complaint Decisions by EPA," Jun. 2003, [cited Jun. 2003], Available: <http://www.epa.gov/civilrights/recdecsn.htm>.

*Figure 3 : Select Steel Case*⁵³

The Title VI complaint lodged in June 1998 concerned the Michigan Department of Environmental Quality's (MDEQ) issuance of a Prevention of Significant Deterioration (PSD) permit to the Select Steel Corporation of America (Select Steel) for a steel recycling mill to be built in Genesee County, Michigan. The complainants alleged that the emissions of volatile organic compounds (VOC), lead, air toxics and dioxin from the Select Steel's facility would result in a disparate impact on minority residents. Further, it was alleged that the public participation process was carried out in a discriminatory manner.

In October 1998, following its review of the allegations, EPA's Office of Civil Rights announced its decision to reject the Title VI complaint. EPA determined that the emissions from the Select Steel facility would cause no adverse health effects and that, for this reason, there could be no finding of a discriminatory effect. Moreover, EPA found that MDEQ had provided all members of the public with ample opportunity to participate.

In April 1999, Select Steel announced that it had decided to build its facility at another location in Michigan.

It had been hoped that EPA's discriminatory effect standard might also be enforced through the direct filing of a lawsuit. Filing a lawsuit as opposed to pursuing an administrative complaint would have advantages for environmental justice advocates in that it would allow them to conduct the investigation and choose which witnesses and what evidence to present, and would open the possibilities of equitable relief and the recovery of attorney's fees. Until recently, there was some uncertainty as to whether courts would recognize a private right of action under EPA's discriminatory effect regulation. While it had been established that Section 601 of Title VI

⁵³ United States Environmental Protection Agency (EPA), "Summary of Decision on Title VI Complaint Regarding Michigan Department of Environmental Quality's Permit for the Proposed Select Steel Facility," Complaint File No. 5R-98-R5, Nov. 2002, [cited Jun. 2003], Available: <http://www.epa.gov/civilrights/sssum1.htm>.

provides a private right of action, it had not been determined whether Section 602 was available to private plaintiffs. The question was however resolved in April 2001 when, in *Alexander v. Sandoval*, the Supreme Court held that there is no implied right of action under Section 602.⁵⁴

2.3.7 Tools for Environmental Justice – Grassroots Techniques

Grassroots activism and community empowerment have been recognized as key elements in achieving environmental justice.⁵⁵ These practices directly address the lack of political power of minority and low-income communities that leads them to bear a disproportionate share of environmental burdens. By exerting pressure on elected officials and thereby overcoming the lack of political representation, these practices would seem to also improve the chances of environmental justice legislation being passed by Congress. Moreover, the importance of these practices would seem to be highlighted somewhat by the limited success to date of legal strategies. Even the presidential memorandum accompanying EO 12898 stresses the need “to provide minority communities and low-income communities access to public information on, and an opportunity for public participation in, matters relating to human health or the environment”, where it identifies the NEPA process as means for community input.⁵⁶ It is to be noted that grassroots and community empowerment techniques, borrowed largely from the civil rights movement of the 1960s, have been successfully adopted by the environmental justice movement.

Today, minority and low-income communities have increased capacity, through grassroots activism and community empowerment, to successfully challenge unwanted facilities. This is evidenced by the significant number of projects over the last decade that these communities have either blocked outright or substantially transformed to address community concerns. Many disadvantaged communities have also managed to successfully negotiate significant compensation. This was the case for a group of residents from West Harlem that challenged a water pollution control plant to be sited in their neighborhood and managed to secure a \$1.1

⁵⁴ “After Sandoval: Judicial Challenges and Administrative Possibilities in Title VI Enforcement,” 116 Harv. L. Rev. 1774 (Apr. 2003); *Alexander v. Sandoval*, 532 U.S. 275 (2001).

⁵⁵ Cole, L.W., “Empowerment as the Key to Environmental Protection: The Need for Environmental Poverty Law,” *Ecology Law Quarterly*, 19:14, 1992, p. 619-683.

⁵⁶ See “Memorandum on Environmental Justice”, Note 28.

million payout to be used to address a range of community public health and environmental issues.^{57,58} It is also worth noting that even the landmark 1982 Warren County protests, while not managing to put a stop to the landfill, resulted in guarantees of immunity from further sitings and close facility monitoring.⁵⁹

2.3.8 Commentary

Environmental justice poses an ongoing challenge to the siting of necessary but controversial facilities. To date, there has been neither a single piece of environmental justice legislation passed by Congress nor a single lawsuit won on the merits of an environmental justice claim. The efforts by EPA to encourage environmental justice have however increased community awareness of the issue and provided affected communities with a somewhat powerful tool for challenging the construction of unwanted facilities. While there has not yet been one finding by EPA of non-compliance with Title VI, the mere filing of a Title VI complaint with the agency has in many cases prompted site relocation by companies keen to avoid negative publicity. Based on the past success of this tool and traditional grassroots activism, developers should discount neither the possibility, nor effectiveness, of opposition to their proposed facility on environmental justice grounds.

⁵⁷ See Foreman, Note 9.

⁵⁸ Miller, V.D., "Planning, Power and Politics: A Case Study of the Land Use and Siting History of the North River Water Pollution Control Plant," *Fordham Urban Law Journal*, 21, Spring 1994, p. 707-721.

⁵⁹ See Geiser et al., Note 10.

3. GEOLOGIC CARBON SEQUESTRATION

3.1 Overview of Technology

The evidence suggests that there is a need to stabilize atmospheric concentrations of greenhouse gases to prevent rapid, human-induced climate change.⁶⁰ One promising means by which to reduce emissions and the atmospheric buildup of carbon dioxide (CO₂), the greenhouse gas that has most contributed to the enhanced greenhouse effect, is geologic carbon sequestration. Geologic carbon sequestration involves the long-term, underground storage of captured CO₂ emissions in geologic formations.⁶¹ It has been proposed that this technology be pursued as part of a portfolio of climate change mitigation options, where this also includes improving energy efficiency and utilizing non-fossil energy forms such as renewable and nuclear energy.⁶² Indeed, a multi-option approach, where countries adopt those options best suited to their circumstances, is the key to ensuring the most cost-effective response to the threat of climate change.

Geologic carbon sequestration is a subset of the processes that comprise carbon capture and sequestration (CCS). CCS involves five separate processes: the capture of CO₂ from point sources such as fossil fuel-fired power plants and other industrial facilities; the compression of the captured CO₂ at the source; the transportation of this compressed gas via pipeline to the storage site; its injection underground via wells; and its long-term storage in the geologic reservoir.⁶³ Geologic carbon sequestration, the focus of this thesis in terms of learning lessons for the siting of these projects, includes only the transportation, injection and storage processes. It is also to be noted that, for the purpose of this thesis, the geologic reservoirs into which CO₂ is

⁶⁰ Intergovernmental Panel on Climate Change (IPCC), "Climate Change 2001: The Scientific Basis. Contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change," Houghton, J.T., Y. Ding, D.J. Griggs, M. Noguer, P.J. van der Linden, X. Dai, K. Maskell and C.A. Johnson (eds), 2001, [cited Jul. 2003], Available: <http://www.ipcc.ch/pub/reports.htm>.

⁶¹ For background information on carbon capture and sequestration, see: Herzog, H.J., "What Future for Carbon Capture and Sequestration?" *Environmental Science and Technology*, 35:7, Apr. 1, 2001, p. 148A – 153A and Herzog, H., B. Eliasson and O. Kaarstad, "Capturing Greenhouse Gases," *Scientific American*, 282:2, Feb. 2000, p. 72-79.

⁶² Union of Concerned Scientists (UCS), "Policy Context of Geologic Carbon Sequestration," [cited Jul. 2003], Available: <http://www.ucsusa.org/publications.cfm?publicationsID=5>.

⁶³ For detailed information on each of the carbon capture and sequestration processes, see: Herzog, H., E. Drake and E. Adams, "CO₂ Capture, Reuse and Storage Technologies for Mitigating Global Climate Change – A White Paper," DOE Report No. DE-AF22-96PC01257, Jan. 1997, [cited Jul. 2003], Available: <http://sequestration.mit.edu/pdf/WhitePaper.pdf>.

taken to be injected are land-based and include active and depleted oil and natural gas fields, and deep saline formations. Oil and natural gas fields, which are proven geologic traps, and those formations that have an impermeable caprock provide secure storage for injected CO₂.⁶⁴

Geologic carbon sequestration should play a significant role in the portfolio of options for mitigating climate change for several reasons. First, by reducing CO₂ emissions while still allowing for the continued use of fossil fuels, this mitigation option buys time for making the major transition to non-fossil energy sources. This is important given the relatively low cost and abundance of fossil fuels and, with around 85 percent of energy coming from fossil fuels in the United States for example, the huge capital investment in fossil fuel-based infrastructure. Second, this option through the large storage capacity of known geologic formations provides the opportunity for deep CO₂ emissions reductions. According to Sally Benson, oil and natural gas reservoirs have the capacity to store many decades, and saline formations centuries, of the world's CO₂ emissions.⁶⁵ Third, the technology is at a quite advanced stage of development. While there are only a few geologic carbon sequestration projects as described in Section 3.3, the practice of transporting and then injecting CO₂ underground has been occurring for many years in the United States as part of enhanced oil recovery (EOR) operations. Finally, at a cost of 2¢ per kilowatt-hour above busbar costs for the capture and sequestration of 90 percent of the CO₂ from a power plant, this option is economically competitive with renewable and nuclear energy.⁶⁶

Even though economically competitive with other climate-friendly technologies, significant research and development (R&D) continues to try to reduce the cost of this mitigation option. The cost of capturing and sequestering CO₂ is dependent on the source of CO₂, the distance that the CO₂ is transported, and the type and characteristics of the geologic reservoir in which the CO₂ is stored.⁶⁷ The capture and compression processes account for around 75 percent to 80

⁶⁴ For more information on geologic reservoirs and the mechanics of CO₂ storage, see: Holloway, S., J.P. Heederik, L.G.H. van der Meer, I. Czernichowski-Lauriol, R. Harrison, E. Lindeberg, I.R. Summerfield, C. Rochelle, T. Schwarzkopf, O. Kaarstad and B. Berger, "The Underground Disposal of Carbon Dioxide," Summary report for the Joule II Project CT92-0031, British Geological Survey, Nottingham, UK, 1996.

⁶⁵ Preuss, P., "Storing CO₂ Underground One Option for Mitigating Greenhouse Gases," Feb. 2001, [cited Jul. 2003], Available: <http://enews.lbl.gov/Science-Articles/Archive/terr-sequ.html>.

⁶⁶ See Herzog, Note 61.

⁶⁷ Ibid.

percent of the total cost⁶⁸ and, for this reason, finding ways to make these processes more energy efficient and less expensive has been the intense focus of R&D. There has also been an effort to cut transportation costs through identifying suitable geologic reservoirs located close to major power plants. Since the majority of power plants are situated in close proximity to the main population centers, this could result in CO₂ being stored underground near urban areas.

3.2 Nature of Potential Hazards

Geologic carbon sequestration projects are likely to raise public safety questions. The main concern is that those living near CO₂ pipelines and/or geologic storage sites might be at danger of being exposed to high concentrations of CO₂. Although generally regarded as a non-toxic, inert gas, CO₂ can cause asphyxiation if present at high enough levels.⁶⁹ The fact that CO₂ is denser than air means that a catastrophic release or persistent leaks of CO₂ from a pipeline or storage site could be lethal in areas that are “low-lying, confined or poorly ventilated”.⁷⁰ A related environmental hazard is the potential for CO₂ leaks to kill vegetation.

The risks posed by geologic carbon sequestration have been divided into two categories: operational and *in situ*.⁷¹ The operational risks are defined as those associated with the transport and injection of CO₂. These risks, which have been borne by the EOR industry in the United States since the 1970s, are already well understood and strategies for managing them well developed. The *in situ* risks, those associated with the storage of CO₂ in a geologic reservoir, are of greater concern. There is a remote possibility that CO₂ could escape from the geologic reservoir through a fracture or fault or due to the failure of an injection well.⁷² While such an escape would most likely take the form of diffuse emissions of CO₂, there is the potential for

⁶⁸ Ibid.

⁶⁹ For more information on the environmental and health issues related to exposure to elevated CO₂ levels, see: Benson, S.M., J. Apps, C. Fu Tsang and M. Lippmann, “Lessons Learned from Natural and Industrial Analogues for Storage of Carbon Dioxide in Deep Geological Formations,” 2002, [cited Jul. 2003], Available: <http://www.co2captureproject.org/reports/reports.htm>.

⁷⁰ Ibid.

⁷¹ For more information on the public safety and environmental risks associated with geologic carbon sequestration, see: Heinrich, J.J., H.J. Herzog and D.J. Reiner, “Environmental Assessment of Geologic Storage of CO₂,” to be published 2003.

⁷² Holloway, S., “Safety of the Underground Disposal of Carbon Dioxide,” *Energy Conversion Management*, 38, 1997, p. 241-245.

these CO₂ emissions to reaccumulate in a confined space.⁷³ This could pose a particular risk to public safety where the geologic reservoir is located in close proximity to housing.

3.3 Location of Current Projects

To date, geologic carbon sequestration projects have been located either offshore or in remote areas on land. The first project dedicated to geologic CO₂ storage is in operation at Statoil's Sleipner West field, which is located in the North Sea about 250 km off the coast of Norway.⁷⁴ At Sleipner, CO₂ is separated from the produced natural gas stream and injected into the Utsira Formation, a geologic reservoir located at a depth of 800 m below the seabed. A similar scheme is being developed at Statoil's Snøhvit gas field in the Barents Sea off northern Norway.⁷⁵ The only other commercial-scale project is BP's In Salah Gas Project situated in the central Saharan region of Algeria.⁷⁶

3.4 Key Issues for Siting Future Projects

- **Geologic carbon sequestration projects have the potential for negative consequences**
While the risks posed by a geologic carbon sequestration project may be very small, it is possible that a community may perceive the risks to be of larger magnitude than what is estimated by technical experts. This will most likely be the case where the community lacks information and/or is misinformed in regard to the safety of these projects. A common misconception, for example, is that an accidental release of CO₂ from a geologic CO₂ storage site would be analogous to the type of event that occurred at Lake Nyos,

⁷³ Ibid.

⁷⁴ For more information on the geologic carbon sequestration project at the Sleipner West field, see: IEA Greenhouse Gas R&D Programme, "Saline Aquifer CO₂ Storage (SACS)," [cited Jul. 2003], Available: <http://www.ieagreen.org.uk/sacshome.htm>

⁷⁵ For more information on the geologic carbon sequestration project at the Snøhvit Unit, see: Maldal, T. and I.M. Tappel, "CO₂ Underground Storage for Snøhvit Gas Field Development," presented at the *Sixth International Conference on Greenhouse Gas Control Technologies*, Kyoto, Japan, Oct. 1-4, 2002, [cited Jul. 2003], Available: <http://www.rite.or.jp/GHGT6/pdf/I1-5.pdf>.

⁷⁶ For more information on the In Salah Gas Project, see: Riddiford, F.A., A. Tourqui, C.D. Bishop, B. Taylor and M. Smith, "A Cleaner Development: The In Salah Gas Project, Algeria," presented at the *Sixth International Conference on Greenhouse Gas Control Technologies*, Kyoto, Japan, Oct. 1-4, 2002, [cited Jul. 2003], Available: <http://www.rite.or.jp/GHGT6/pdf/I1-4.pdf>.

Cameroon.⁷⁷ While it should be possible to prevent or mitigate negative risk perceptions through educating communities as to the risks involved, the potential for negative consequences is expected to make the siting of these projects near urban areas somewhat of a challenge.

- **The footprint of a geologic carbon sequestration project is small**

A geologic carbon sequestration project is located almost entirely underground, with only the CO₂ injection facilities being above the surface. The footprint of a facility can be described as the land area it occupies and/or its impact on aesthetics. A geologic carbon sequestration project can be considered as having a large underground but very small surface footprint. Indeed, it is quite possible that one could be standing above or in close proximity to one of these projects and yet be unaware of its existence. The small surface footprint of these projects is expected to positively influence the willingness of communities to accept them.

- **Geologic carbon sequestration projects provide environmental benefits**

Geologic carbon sequestration projects involve the capture of CO₂ at the source and its long-term storage underground. These projects as such act to reduce the atmospheric build-up of CO₂ and so help to mitigate climate change. Thus, while these projects present local environmental risks, they are beneficial to the global environment. The provision of environmental benefits is expected to muster support for these projects from members of the general public, excluding those who are anti-fossil. It is less certain however as to what the impact, if any, will be on a community's willingness to have one of these projects sited in their back yard.

⁷⁷ For more information on the catastrophic event that occurred at Lake Nyos, Cameroon, see: Stager, J.C., "Silent Death from Cameroon's Killer Lake," *National Geographic*, 172, Sep. 1997, p. 404-420.

4. CASE STUDY ONE: SITING OF SHINTECH PVC PLANT

4.1 Introduction

This case looks at Shintech's failed attempt at one location and then its success at another in siting its proposed polyvinyl chloride (PVC) plant in the southern state of Louisiana of the United States during the mid to late-1990s. The Shintech siting case was selected firstly because it deals with the siting of a facility that, like a geologic carbon sequestration project, has the potential to harm the local population and surrounding environment. Second, the proposed siting of Shintech's polyvinyl chloride plant near the town of Convent provides an example of an environmental justice case. Lastly, it was chosen to learn why and how Shintech, after having its proposed plant essentially rejected by the Convent community, was able to site its plant in an almost equally disadvantaged area.

4.2 PVC Facilities

4.2.1 Nature of Risks from PVC Facilities

The production of substances known to be hazardous to human health is an unavoidable consequence of the manufacture of polyvinyl chloride (PVC). The first of these is the toxic air pollutant vinyl chloride. Prolonged, high-level exposure to vinyl chloride increases the risk of a rare form of liver cancer in humans, known as angiosarcoma of the liver.⁷⁸ PVC manufacture is also inherently a source of dioxins. At very low exposure levels, dioxin has been linked with immune system suppression, reproductive and developmental disorders, and, like vinyl chloride, is a known human carcinogen.⁷⁹

⁷⁸ For more information about the health effects of vinyl chloride exposure, see: United States Environmental Protection Agency (EPA), "Technology Transfer Network Air Toxics Website: Vinyl Chloride," Feb. 12, 2003, [cited Apr. 2003], Available: <http://www.epa.gov/ttn/atw/hlthef/vinylchl.html>.

⁷⁹ For more information about the health effects of dioxin, see: World Health Organization (WHO), "Dioxins and their Effects on Human Health," Fact Sheet No 225, Jun. 1999, [cited Apr. 2003], Available: <http://www.who.int/inf-fs/en/fact225.html>.

4.2.2 Health Hazards Posed by Modern-Day PVC Industry

Today, the PVC industry is closely regulated to minimize its impact on human health. It is to be noted that the health hazards posed by PVC manufacturing plants to workers and surrounding populations have been greatly reduced since the 1970s. In 1976, EPA promulgated the “vinyl chloride rule” to reduce vinyl chloride emissions through improved plant operations.⁸⁰ This rule resulted in vinyl chloride emissions being reduced by 63 percent, per one million pounds of PVC produced, from 1987 to 1996.^{81,82} Research studies have shown that there is likely to be one case of angiosarcoma of the liver, which is associated with vinyl chloride exposure, about every two years among the five million individuals who live within five miles of a vinyl chloride monomer/PVC manufacturing plant.⁸³ It is to be noted that these cases of angiosarcoma could be due to factors other than vinyl chloride monomer exposure. There is also evidence to suggest that PVC manufacture plants may not be a major contributor to dioxin levels in the environment.^{84,85}

4.3 Failed Siting of PVC Plant in Convent, Louisiana

4.3.1 Proposed PVC Facility

It was during the summer of 1996 that word first got out that Shintech, an American subsidiary of the Japanese Shin-Etsu Chemical Company, was to site a \$700-million chemical plant near Convent, Louisiana.⁸⁶ The proposed chemical complex would manufacture around 1.1 billion

⁸⁰ United States Environmental Protection Agency (EPA), “Fact Sheet: Final Rule to Reduce Toxic Air Emissions from Polyvinyl Chloride and Copolymers Production Facilities,” Jul. 3, 2002, [cited Apr. 2003], Available: http://www.epa.gov/ttn/oarpg/ts/fact_sheets/pccp_fs.pdf.

⁸¹ Ibid.

⁸² The Vinyl Institute, “Worker safety,” Apr. 2002, [cited Apr. 2003], Available: <http://www.aboutbluevinyl.org/safety.asp>.

⁸³ Ibid.

⁸⁴ Bivings Woodell, Inc., “Vinyl and health,” [cited Apr. 2003], Available: <http://www.vinylfacts.com/science/health.html>.

⁸⁵ For more information about the health and environmental aspects of PVC manufacture, see: Commonwealth Scientific & Industrial Research Organisation (CSIRO) Australia, “CSIRO Media Release: PVC building products environmentally sound,” Jul. 22, 1998, [cited Apr. 2003], Available: <http://www.csiro.au/news/mediarel/mr1998/mr98171.html>.

⁸⁶ Roberts, J.T. and M.M. Toffolon-Weiss, “EPA’s Environmental Justice Test Case,” *Chronicles from the Environmental Justice Frontline*, Cambridge University Press, 2001: 103-135.

pounds of PVC each year, which is about one-third of the 3 billion pounds of PVC produced at Shintech's existing PVC plant in Freeport, Texas.⁸⁷ The PVC plant would also produce the raw materials, chlorine, caustic soda and ethylene dichloride, and feedstock, vinyl chloride monomer.⁸⁸

The proposed site for the Shintech PVC plant was a 3,700-acre property near the town of Convent, Louisiana.⁸⁹ The town is situated on the banks of the Mississippi River about midway between New Orleans and Baton Rouge.

4.3.2 Why Convent?

The Convent site was chosen based on the results of a siting study commissioned by Shintech that looked at more than 30 sites and ranked them according to a number of criteria.⁹⁰ The criteria for the site included that: it be located in close proximity to major transportation corridors; it have access to raw materials and low-cost energy; it be situated in an area with a favorable tax climate; and it be a large plot with a sizable buffer zone.⁹¹ First, St. James Parish is located near the Mississippi River, Interstate 10 and other various highways, and rail lines.⁹² Second, St. James Parish provides access to raw materials such as salt brine and ethylene, and inexpensive energy.⁹³ Third, the state of Louisiana waives property taxes for new industrial facilities or extensions, and St. James Parish comes under the state's Enterprise Zone program, which means that companies that locate or expand in the parish are offered tax breaks in return for hiring a percentage of their work force from the surrounding population.⁹⁴ Finally, the site

⁸⁷ The Japan Economic Institute of America, "Japanese companies in the U.S.," *Japan-U.S. Business Report*, 317, Feb. 1996, [cited Apr. 2003], Available: http://www.jei.org/Archive/BR96/317x/317_JinUS_Chem.html.

⁸⁸ Tremblay, Jean-François, "Shin-Etsu's Maestro," *Chemical & Engineering News (CENEAR)*, 80:40, Oct. 7, 2002: 18-21.

⁸⁹ New York Times, "Poor residents in Louisiana fight plan for chemical site," *The New York Times*, May 12, 1997, p. B8.

⁹⁰ Gray, C., "Experts say Shintech may not deliver jobs," *Times-Picayune*, Jan. 25, 1998, p. B1.

⁹¹ Thomas, R.A., "Winning the war, but missing the target," *ENVIRODecisions*, 4:1, 2001, [cited Apr. 2003], Available: <http://www.loyno.edu/lucec/edv4n1.pdf>.

⁹² Ibid.

⁹³ See Gray, Note 90.

⁹⁴ See Roberts et al., Note 86.

was a large plot of land, a former sugarcane plantation, and was the most remote of those considered.⁹⁵

4.3.3 Demographics of Convent

Convent is located in Louisiana's St. James Parish, which had a population of 21,216 in 2000. This parish has a large minority population; in 2000, 49.4 percent of the population was black compared to 12.3 percent for the United States as a whole. It is also a relatively poor community; the per capita income in 2000 was \$14,381 compared to the national average of \$21,587, and the percentage of individuals living below the poverty line in the same year was 20.7 compared to 12.4 for the nation. As a final note, the level of education in the parish is below the national average; in 2000, only 73.9 percent, compared to the nation's 80.4 percent, of individuals over the age of 25 had received their high school diploma.^{96,97}

The population in the immediate vicinity of the Convent site was claimed by several groups opposing the proposed PVC plant to be particularly disadvantaged. Indeed, the 1990 census data was purported to show that, within five miles of the site, around 80 percent of residents were black and about 40 percent were living below the poverty line. Further, the site was reported to be located one and a half miles from an elementary school whose student population was 95 percent black. A lack of available data has made it difficult to either verify or refute these statistics.^{98,99}

⁹⁵ See New York Times, Note 89.

⁹⁶ United States Census Bureau, "State and County *QuickFacts*: St. James Parish, Louisiana," Apr. 2003, [cited Apr. 2003], Available: <http://quickfacts.census.gov/qfd/states/22/22093.html>.

⁹⁷ United States Census Bureau, "State and County *QuickFacts*: USA," Apr. 2003, [cited Apr. 2003], Available: <http://quickfacts.census.gov/qfd/states/00000.html>.

⁹⁸ Cray, C. and M. Harden, "Environmental justice in Louisiana," *Rachel's Environmental and Health Weekly*, Jun. 4, 1998, [cited Apr. 2003], Available: http://www.greenpeaceusa.com/media/publications/environmental_justicetext.htm.

⁹⁹ CorpWatch, "Shintech environmental racism," Sep. 1, 1999, [cited Apr. 2003], Available: <http://www.corpwatch.org/issues/PRT.jsp?articleid=989>.

4.3.4 Regulatory Requirements

The proposed PVC plant was required to obtain water and air quality permits from the Louisiana Department of Environmental Quality (LDEQ), which is the state agency in charge of issuing environmental permits to industrial facilities.¹⁰⁰ It was also required that the proposed plant be granted a coastal zone permit by the local government.^{101,102} If a facility is to be built in a designated coastal zone area of St. James Parish, the developer must submit a permit application to the local Coastal Zone Management Committee. This committee then makes a recommendation to the Parish President, who has the authority to either approve or deny the permit.

It is to be noted that St. James Parish is lacking in zoning ordinances or official development plans. For example, new development does not require a land-use permit.¹⁰³ Rather, it is claimed to be jointly overseen by the Office of Economic Development, the Planning Commission of the Office of Operations, and the Parish Council.

4.3.5 Support for Project

The proposed PVC plant was supported by both state and local government officials, including Louisiana Governor Mike Foster and St. James Parish President Dale Hymel Jr. It also won the support of the state chapter of the National Association for the Advancement of Colored People (NAACP). In addition, three local citizen groups strongly supported Shintech, the most prominent of which was St. James Citizens Coalition (SJCC).¹⁰⁴

State and local officials encouraged Shintech to site its proposed PVC plant in Convent. Indeed, as part of the Enterprise Zone program, Shintech was offered tax breaks in return for giving 35

¹⁰⁰ Louisiana Department of Environmental Quality (LDEQ), "Permits," 2003, [cited Apr. 2003], Available: <http://www.deq.state.la.us/permits/index.htm>.

¹⁰¹ See Roberts et al., Note 86.

¹⁰² St. James Parish, "Coastal Zone Management," [cited Apr. 2003], Available: <http://www.stjamesla.com/James/Ocz.htm>.

¹⁰³ See Roberts et al., Note 86.

¹⁰⁴ Giordano, M., "Groups intervene to back Shintech; Jobs are needed, Attorney says," *Times-Picayune*, Aug. 9, 1997, p. B1.

percent of its jobs to local residents.¹⁰⁵ The state and local governments argued that the proposed plant would greatly benefit the local economy.¹⁰⁶ According to Shintech's public relations firm, the plant would raise about \$12 million in local tax revenue and \$506 million in indirect spending during the construction phase alone.¹⁰⁷ It was also claimed that the jobs created by the plant would help to alleviate poverty in St. James Parish.¹⁰⁸ During the construction phase, the plant was estimated to require 2,000 construction workers, and during the operating phase, 165 permanent workers and 90 contractors.¹⁰⁹ Lastly, it was said that the economic benefits of the plant would greatly outweigh the environmental costs, which would be constantly decreased due to the advent of new technologies and stricter regulations.¹¹⁰

The state chapter of the NAACP came out in support of the proposed PVC plant after initially appearing to be behind the anti-Shintech group. The state chapter invited the anti-Shintech group to present their case at an environmental justice summit at Southern University, Baton Rouge, in June 1997.¹¹¹ However, the chapter later voiced its support for the plant and even publicly condemned the environmental racism claims of plant opponents.¹¹² Its decision to offer support to the plant was based largely on the results of a poll conducted by the chapter that found that 73 percent of people living in the black communities nearest the proposed site favored the project.¹¹³ Also, the St. James chapter of NAACP worked with Shintech on forming the St. James Environmental Economic Development Program that was to set aside \$500,000 for job training for local community members.¹¹⁴

St. James Citizen Coalition (SJCC) supported the proposed PVC plant, which it believed would improve the community's standard of living through providing jobs for local residents, raising

¹⁰⁵ Payne, H., "Environmental justice kills jobs for the poor," *Wall Street Journal*, Sep. 16, 1997, p. A22.

¹⁰⁶ Wilkie, C., "New fight roils a Louisiana river town; Debate pits plastics, jobs against nature," *The Boston Globe*, Sep. 1, 1997, p. A12.

¹⁰⁷ See Roberts et al., Note 86.

¹⁰⁸ See New York Times, Note 89.

¹⁰⁹ See Roberts et al., Note 86.

¹¹⁰ Ibid.

¹¹¹ Ibid.

¹¹² Ibid.

¹¹³ See Payne, Note 105.

¹¹⁴ Gray, C., "Shintech promises worker training; But plant won't guarantee jobs in deal with NAACP," *Times-Picayune*, Dec. 17, 1997, p. B1.

tax dollars for the local schools and supporting the growth of local businesses.¹¹⁵ The pro-Shintech group was formed by several local residents who, on hearing about the proposal, had initiated discussions with Shintech to ensure that the project would be beneficial to the community. These residents attended a presentation by the plant manager, David Wise, who described the plant and answered questions about the possible hazards.¹¹⁶ Members of the group also later visited Shintech's existing PVC plant in Freeport, Texas, where they reported seeing a standard of living that they would like for their community.¹¹⁷ The group recognized that there would be environmental trade-offs but believed the plant could offer the community a better future.¹¹⁸

It was claimed by SJCC that those opposing the PVC plant did not really speak for the local community. This claim was based firstly on the fact that a number of the leaders of the anti-Shintech citizen group lived in Convent but not in the Freetown area, which is closest to the proposed site.¹¹⁹ Second, SJCC believed that the anti-Shintech group was being led by outside forces, particularly Greenpeace. Indeed, SJCC accused Greenpeace, which provided significant political, organizational and financial support to the anti-Shintech group, of falsely claiming to represent local citizens while promoting its own agenda.¹²⁰ Lastly, SJCC claimed that the national black leadership came out in opposition to the proposed plant without consulting locally-elected black officials, all of whom were in favour of the plant.¹²¹

4.3.6 *Opposition to Project*

Local residents opposed to the proposed PVC plant formed a group called St. James Citizens for Jobs and the Environment (SJCJE). This anti-Shintech group received prominent support from a number of environmental groups, the most visible and controversial of which was Greenpeace, and civil rights activists, including the Rev. Jesse Jackson. In addition to this, the Tulane

¹¹⁵ See Payne, Note 105.

¹¹⁶ See Roberts et al., Note 86.

¹¹⁷ See Payne, Note 105.

¹¹⁸ Elie, L.E., "Standing up for Shintech," *Times-Picayune*, Jun. 24, 1998, p. B1.

¹¹⁹ See Roberts et al., Note 86.

¹²⁰ See Payne, Note 105.

¹²¹ *Ibid.*

Environmental Law Clinic (TELC) provided the group with significant support in the form of free legal assistance.¹²²

Greenpeace was opposed to Shintech's proposed PVC plant regardless of its location. As an international environmental organization, the fight against the proposed plant fell perfectly in line with its broader campaign to eliminate dioxin-producing material.^{123,124} In addition to organizational and financial resources, the organization provided SJCJE with significant political muscle by creating and maintaining political connections for the group. Indeed, it was Greenpeace that arranged for SJCJE members to meet with national and international civil rights groups, and that lobbied the Rev. Jesse Jackson and the Rev. Joseph Lowry to speak out against the project.^{125,126} Further, the organization mustered the support of a number of celebrities who helped to publicize the ensuing environmental justice investigation.¹²⁷

St. James Citizens for Jobs and the Environment (SCJCE) strongly opposed the PVC plant on the grounds that it would further add to the unfair pollution burden on the largely black and poor populations living in close proximity to the proposed site.¹²⁸ In 1996, St. James Parish was home to 18 industrial plants¹²⁹ and, according to the 1995 Toxic Release Inventory (TRI), ranked third in the state for toxic air releases.^{130,131} Further, the 1995 TRI data was purported to show that 10 facilities within 4.5 miles of Convent emitted over 16 million pounds of toxic air pollutants that year, which gave an average of 250,000 pounds of toxic releases per square mile for the town compared to the national average of 382 pounds per square mile.^{132,133} It was in this context that

¹²² LiSanti, R., "Kuehn speaks about Shintech at forum," *Hullabaloo News*, 88:19, Feb. 20, 1998, [cited Apr. 2003], Available: <http://www.tulane.edu/~tuhulla/19980220/news/kuehn.htm>.

¹²³ Greenpeace, "Campaign overview: Polyvinyl chloride," 2003, [cited Apr. 2003], Available: http://www.greenpeace.org/campaigns/intro?campaign_id=3988.

¹²⁴ Cray, C. and M. Harden, "PVC and dioxin: Enough is enough," *Rachel's Environment and Health Weekly*, Sep. 17, 1998, [cited Apr. 2003], Available: http://www.greenpeaceusa.com/media/publications/pvc_and_dioxintext.htm.

¹²⁵ See Roberts et al., Note 86.

¹²⁶ See Payne, Note 105.

¹²⁷ See Roberts et al., Note 86.

¹²⁸ See Wilkie, Note 106.

¹²⁹ See Roberts et al., Note 86.

¹³⁰ See New York Times, Note 89.

¹³¹ United States Environmental Protection Agency (EPA), "Toxics release inventory (TRI) program," Mar. 2003, [cited Apr. 2003], Available: <http://www.epa.gov/tri/tridata/index.htm>.

¹³² Ibid.

¹³³ See Cray et al., Note 98.

SCJCE argued it unfair for Convent to be saddled with the proposed plant, which would release an additional 611,700 pounds of toxic air contaminants into the town's environment each year.^{134,135}

Another key argument given by SJCJE in its opposition to the siting of the PVC plant in Convent was that the benefits in the form of jobs and local economic development would not outweigh the environmental costs. Moreover, the majority of SJCJE's members did not believe that the new jobs created by the plant's construction and operation would be filled by local residents.¹³⁶ This is understandable given what SJCJE's members saw as a history of jobs at new plants being given to outsiders.¹³⁷ It is worth noting that, in August 1997, the percentage of black employees in St. James Parish's manufacturing plants ranged from 4.2 percent to 19.4 percent, which is quite low considering that blacks make up approximately 50 percent of the parish's population.¹³⁸ According to a spokeswoman for the Louisiana Chemical Association, most companies want to hire local residents but, in many cases, are unable to do so because of the residents' lack of skills.¹³⁹

SJCJE accused the state and local governments of being biased in favor of Shintech.^{140,141} Indeed, the anti-Shintech citizens group claimed that the state and local government officials were working too hard to support economic development in the parish at the expense of their greater responsibility to protect the environment and public health of the parish residents.¹⁴² In essence, the plant opponents did not trust the officials, which they also believed would not do an adequate job of regulating the plant, to protect their welfare.¹⁴³ The accusations of bias on the part of the officials were based on several perceived/real concerns: supposed statements and actions that showed their overwhelming support for Shintech; their apparent downplaying of the

¹³⁴ Ibid.

¹³⁵ See CorpWatch, Note 99.

¹³⁶ See Gray, Note 90.

¹³⁷ Ibid.

¹³⁸ See Roberts et al., Note 86.

¹³⁹ See Gray, Note 90.

¹⁴⁰ Gray, C., "State favors Shintech plant, opponents say; Officials asked to bow out of case," *Times-Picayune*, Dec. 9, 1997, p. B3.

¹⁴¹ Sierra Club, "Shintech air permit proceedings: Bias, prejudice and unfairness," [cited Apr. 2003], Available: <http://www.sierraclub.org/toxics/resources/shintech.asp>.

¹⁴² See Roberts et al., Note 86.

¹⁴³ Ibid.

significance of the anti-Shintech group and its members' concerns; and their alleged efforts to organize and assist a citizens group to support the plant.^{144,145,146}

4.3.7 EPA Environmental Justice Test Case

Almost a year after Shintech announced its plans to site its proposed PVC plant in Convent, the siting case went from being a local to a national concern. On May 27, 1997, the Louisiana Department of Environmental Quality (LDEQ) issued air quality permits to Shintech for its proposed plant.¹⁴⁷ In response, the Tulane Environmental Law Clinic (TELC), on behalf of SJCJE et al., filed a petition with the United States Environmental Protection Agency (EPA) that EPA should veto the issuance of the air permits, granted under Title V of the federal Clean Air Act of 1970 as amended, on technical and environmental justice grounds.¹⁴⁸ Even though a state environmental agency has permission to run a Title V air permitting program, EPA is authorized to review the operating permits that are issued by the state. At the same time, a separate complaint was filed with EPA under Title VI of the 1964 Civil Rights Act, which charged that Convent residents' civil rights were violated by the LDEQ in its decision to issue the air permits.¹⁴⁹ Under Title VI, EPA is authorized to intervene in state permitting decisions where there is racial discrimination either as an intent or consequence of state environmental agency actions.

Less than four months later, on September 10, 1997, EPA blocked the air permits issued by LDEQ to Shintech.¹⁵⁰ EPA returned the permits to the LDEQ for more work on "minor issues" falling under technical provisions of the Clean Air Act, and "specifically rejected" an

¹⁴⁴ See Gray, Note 140.

¹⁴⁵ See Sierra Club, Note 141.

¹⁴⁶ Times-Picayune, "Justice and the environment," *Times-Picayune*, May 25, 2000, p. B6.

¹⁴⁷ Giordano, M., "DEQ clears way for PVC plant; Shintech plans Convent site," *Times-Picayune*, May 28, 1997, p. A1.

¹⁴⁸ See Roberts et al., Note 86.

¹⁴⁹ United States Environmental Protection Agency (EPA), "Summary of Title VI Complaint and Investigation Regarding Issuance of Permit for the Proposed Shintech St. James Parish Facility," Complaint File No. 4R-97-R6, May 7, 2001, [cited Apr. 2003], Available: <http://www.epa.gov/civilrights/docs/shinsum1.pdf>.

¹⁵⁰ Yardley, J., "EPA gives first round foes of plant in poor area," *The Atlanta Journal and Constitution*, Sep. 11, 1997, p. A4.

environmental justice claim under the same law.¹⁵¹ However, at the same time, EPA acknowledged that the Title VI environmental justice complaint was being taken seriously and was still under investigation.¹⁵² The decision by EPA to return the permits to the LDEQ for more work and the wording of its ruling did seem to suggest, though, that the plant would ultimately be permitted.¹⁵³

The Shintech siting case looked as though it would be one of national significance. It was the first time that EPA had been petitioned to overturn a state environmental permit on the basis of environmental justice or any other reason.¹⁵⁴ Moreover, EPA, which hadn't yet made a ruling on any Title VI case, selected the complaint against Shintech as its national test case for environmental justice.¹⁵⁵ The Shintech case was therefore closely watched by industry, state environmental regulators and environmental justice advocates as the first indicator of how the Clinton Administration would apply its environmental justice policy.

4.3.8 Outcome

There was no precedent setting decision by EPA with regards to environmental justice in the Shintech case. On September 17, 1998, Shintech announced that it was likely going to abandon the Convent site in favor of a nearby site in Plaquemine, Iberville Parish.¹⁵⁶ Then, in the fall of 1999, Shintech withdrew its permit applications for the Convent site on learning that its permits for the new site had been approved.^{157,158} The result of the decision by Shintech to shift its site was that EPA abandoned its examination of the plant-specific environmental justice claims as well as its investigation of whether the LDEQ's permitting program, in general, had a disparate impact on minority and poor residents in the state.^{159,160}

¹⁵¹ Dawson, B., "EPA blocks permits given to plant by Louisiana," *The Houston Chronicle*, Sep. 11, 1997, p. 25.

¹⁵² *Ibid.*

¹⁵³ *Ibid.*

¹⁵⁴ *Ibid.*

¹⁵⁵ See Roberts et al., Note 86.

¹⁵⁶ Kirschmann, N., "Shintech abandons Convent location," *Hullabaloo News*, 89:4, Sep. 25, 1998, [cited Apr. 2003], Available: <http://www.tulane.edu/~tuhulla/19980925/news/shintechzj.shtml>.

¹⁵⁷ *Ibid.*

¹⁵⁸ See Roberts et al., Note 86.

¹⁵⁹ See EPA, Note 149.

¹⁶⁰ Watson, T., "Louisiana town successful in stopping plastics plant," *USA Today*, Sep. 18, 1998, p. A7.

4.4 Successful Siting of PVC Plant in Plaquemine, Louisiana

4.4.1 Constructed PVC Facility

Shintech's PVC plant at the site in Plaquemine was up and running in December 2000, although it didn't reach its full capacity until November 2001.¹⁶¹ The Plaquemine plant is essentially a scaled-down version of the plant proposed for Convent; it's about one-third the size and cost, and has approximately one-third the workforce.¹⁶² The annual production of PVC however remains unchanged from that originally proposed at about 1.1 billion pounds.¹⁶³ This is possible because the Plaquemine site does not produce its own raw materials, as had been planned for the Convent plant, but rather uses vinyl chloride monomer supplied by the nearby Dow Chemical Company (Dow) plant.¹⁶⁴

4.4.2 Why Plaquemine?

Shintech's PVC plant in Plaquemine is located close to Baton Rouge, around 35 miles from the proposed Convent site.¹⁶⁵ The site was previously owned by Dow, whose chlorine and vinyl chloride monomer plant is still located next door.¹⁶⁶ This location offers all the same benefits as the Convent site with regards to close proximity to major transportation routes, low-cost energy and a favorable tax climate. It also had the attraction that, being close to a major supplier of vinyl chloride monomer, it offered Shintech the opportunity to downsize its facility.¹⁶⁷ In addition, company officials thought that the site would raise fewer environmental justice questions than the Convent site given that the surrounding population was slightly more affluent and racially balanced.^{168,169} Finally, the site was judged by company officials to be less burdened by air pollution.¹⁷⁰

¹⁶¹ Chemicals Technology, "Addis PVC plant, USA," [cited Apr. 2003], Available: <http://www.chemicals-technology.com/projects/romeville/>.

¹⁶² Sanders, C., "Shintech moves, scales down U.S. plant," *The Daily Yomiuri (Tokyo)*,

¹⁶³ Ibid.

¹⁶⁴ Ibid.

¹⁶⁵ Dawson, B., "Shintech chemical plant plans shifted to a new site," *The Houston Chronicle*, Sep. 19, 1998, p. A27.

¹⁶⁶ Ibid.

¹⁶⁷ See Chemicals Technology, Note 161.

¹⁶⁸ Bell, R., "Shintech seeking feedback on plant," *Times-Picayune*, Sep. 25, 1998, p. A1.

4.4.3 *Demographics of Plaquemine*

Plaquemine straddles the dividing line between Louisiana's Iberville and West Baton Rouge parishes, which had respective populations in 2000 of 33,261 and 21,726.^{171,172} The population surrounding this site is more affluent and racially balanced than the previous site, particularly when considering the statistics reported for the town of Convent.^{173,174} Iberville Parish's population is almost evenly divided between white and black as is St. James Parish's, while there are twice as many white as black residents in West Baton Rouge Parish; in 2000, the percentage of the population that was black was 49.7 and 35.5 for Iberville and West Baton Rouge, respectively.^{175,176} The percentage of individuals living below the poverty line is also less than for the Convent area; the respective percentage of individuals living below the poverty line in 2000 for Iberville and West Baton Rouge was 23.1 and 17.0.^{177,178}

4.4.4 *Key Elements of Siting Strategy*

Shintech completely overhauled its approach to public participation following its failed attempt to site its proposed PVC plant in Convent. Even before applying for permits, the company held six public meetings to present the siting proposal to the residents of the Iberville and West Baton Rouge parishes, and to identify their key concerns.¹⁷⁹ The public meetings were designed in accordance with EPA's National Environmental Justice Advisory Council (NEJAC) guidelines for public participation.¹⁸⁰ The company also hired facilitators, whose speciality was the

¹⁶⁹ See Kirschmann, Note 156.

¹⁷⁰ See Chemicals Technology, Note 161.

¹⁷¹ United States Census Bureau, "State and County *QuickFacts*: Iberville Parish, Louisiana," Apr. 2003, [cited Apr. 2003], Available: <http://quickfacts.census.gov/qfd/states/22/22047.html>.

¹⁷² United States Census Bureau, "State and County *QuickFacts*: West Baton Rouge Parish, Louisiana," Apr. 2003, [cited Apr. 2003], Available: <http://quickfacts.census.gov/qfd/states/22/22121.html>.

¹⁷³ See Cray et al., Note 98.

¹⁷⁴ See CorpWatch, Note 99.

¹⁷⁵ See Census Bureau, Note 171.

¹⁷⁶ See Census Bureau, Note 172.

¹⁷⁷ See Census Bureau, Note 171.

¹⁷⁸ See Census Bureau, Note 172.

¹⁷⁹ See Bell, Note 168.

¹⁸⁰ Sissel, K., "TV movie highlights landmark Shintech case; Environmental justice," *Chemical Week*, Jan. 23, 2002, p. 44.

arbitration of controversial environmental issues, to conduct the meetings.¹⁸¹ Lastly, following the six meetings, two response documents were released that addressed the over one thousand questions received from residents.¹⁸² This approach stood in stark contrast to the company's public outreach program in Convent, where many residents felt that they did not even get the opportunity to voice their concerns.¹⁸³ The three main issues raised by the residents centered around jobs for local residents, the plant's emissions and the potential for accidents.¹⁸⁴

Key to Shintech's success in siting its proposed PVC plant in Plaquemine was that the company managed to prove to residents that it was serious about addressing their concerns. First, it showed that it was committed to providing jobs for the local community; with the help of a professor from a local technical college, the company held an operating training program for residents to learn the necessary skills to work at a chemical facility.¹⁸⁵ Next, it addressed community concerns about pollutant emissions by getting Dow to pledge to reduce its emissions so that the proposed Shintech plant did not result in a net increase in emissions to the environment.¹⁸⁶ Finally, in response to community concerns about potential accidents, the company agreed to plan an evacuation route out of the area.¹⁸⁷

Another key element contributing to Shintech's success was that it aligned itself with Dow, the company from which it purchased the plot of land. Representatives from Dow, which has a long-standing reputation of being supportive of the local community, attended the public meetings held by Shintech, and helped the company present its proposal and address questions.¹⁸⁸ In addition to helping build trust in the company, the other great advantage of having Dow on its side was that Dow, being a large, well-established company, had the built-in expertise and resources for dealing with the public.¹⁸⁹

¹⁸¹ Schleifstein, M., "Shintech takes new tack with residents," *Times-Picayune*, Oct. 7, 1998, p. A2.

¹⁸² See Roberts et al., Note 86.

¹⁸³ Ibid.

¹⁸⁴ See Schleifstein, Note 181.

¹⁸⁵ See Sissel, Note 180.

¹⁸⁶ See Bell, Note 168.

¹⁸⁷ See *Times-Picayune*, Note 146.

¹⁸⁸ See Roberts et al., Note 86.

¹⁸⁹ Schleifstein, M., "Outcry alone didn't alter Shintech plan; market shifts motivating move to Plaquemine," *Times-Picayune*, Sep. 19, 1998, p. A1.

4.5 Summary of Key Lessons Learned

- **Environmental justice is an important siting consideration**

It is important in the siting process to investigate the socioeconomic characteristics and pollution burden of the local community. The fact that the community living near the Plaquemine site was slightly more affluent and racially balanced, and its environment less polluted, meant that there was no opposition on environmental justice grounds. It should be noted that it is also very important to focus on those community members living closest to the proposed site. While the St. James and Iberville/West Baton Rouge parishes were roughly comparable in their percentages of minorities and individuals living below the poverty line, the community in the immediate vicinity of the Convent site was particularly disadvantaged.

- **There exists a real trade-off between environmental quality and jobs/local economic growth for disadvantaged communities**

For many communities, particularly disadvantaged ones, jobs/local economic growth is a more important consideration than environmental quality. It is for this reason that sites in disadvantaged communities should not automatically be eliminated from consideration. The community living near the Plaquemine site, for example, believed that the local economic benefits from the Shintech PVC plant would outweigh the environmental costs. It should also be mentioned that this same trade-off can cause a community to become divided in its support/opposition to a project, as in the case of the residents of Convent.

- **Powerful outside actors can become involved in the siting dispute**

Powerful environmental groups, such as Greenpeace, are opposed to certain types of facilities regardless of their location. These groups will often offer significant support to citizens groups opposing the siting of one of these types of facilities in their neighborhood, as Greenpeace supported SJCJE in its opposition to Shintech's proposed PVC plant in Convent. Although these groups will claim to represent the local citizens, they are also clearly pursuing their own agenda. Additionally, the involvement of these

outside actors raises the question as to whether white, middle-class environmentalists can adequately represent the interests of black, poverty-stricken communities.

- **A community's relationship with industry and/or government can bear on its willingness to accept a new facility**

Some communities, particularly disadvantaged ones, have had negative experiences with industry. These negative experiences can take the form of industry failing to abide by environmental regulations or, in the case of the Convent community, failing to live up to promises of jobs for local residents. As a result of these experiences, these communities can be very much opposed to the siting of any new industrial facility in their neighborhood. For this reason, it can be best to avoid these communities in favor of those that have had more positive experiences with industry, as in the case of the Plaquemine residents with Dow. It is worth noting that these same communities can be very distrustful of local/state government, particularly where the residents believe the government officials are not acting in their best interests.

- **A meaningful public participation process is key to the successful siting of facilities**

It is particularly important in the siting of facilities to identify and address community concerns. Shintech's approach to the public participation process in siting its PVC plant in Plaquemine could serve as a model for other companies. The key elements of Shintech's public outreach program were: public meetings held in advance of entering permitting procedures; facilitators, specializing in the arbitration of controversial environmental issues, were hired to conduct meetings; meetings designed in accordance with NEJAC guidelines for public participation; and community input used in the final design of the plant.

- **Facilities with potential negative consequences can be successfully sited where community members are educated as to the risks involved**

Efforts to site facilities that pose potential public health/safety risks, such as PVC plants and geologic carbon sequestration projects, are typically met with significant local opposition. This opposition is generally fuelled by a lack of information and/or

misinformation in regard to the safety of the facility. It is therefore important that community members be educated as to the risks involved. The public outreach program adopted by Shintech for the Plaquemine site allowed the local residents to become better informed of both the risks and benefits, which ultimately resulted in their acceptance of the PVC plant.

5. CASE STUDY TWO: SITING OF THE CAPE WIND PROJECT

5.1 Introduction

This case looks at the opposition faced by Cape Wind Associates in its attempt to site an offshore wind farm in Nantucket Sound, an expanse of water located in the vicinity of Cape Cod and the islands of Martha's Vineyard and Nantucket in the northeastern United States. The Cape Wind case was chosen to illustrate that difficulties can be experienced in the siting of not only facilities with environmental risks, such as geologic carbon sequestration projects, but also relatively environmentally-benign development with a large footprint. In addition, the opposition to the Cape Wind project from residents of Cape Cod and the islands provides an example of NIMBY. It is to be noted that at the time this thesis was completed, in July 2003, the outcome of this siting case had not been reached.

5.2 Wind Facilities

5.2.1 *Nature of Risks from Wind Facilities*

While providing many environmental benefits, wind facilities pose few environmental costs. An operating wind farm neither generates polluting air/water emissions nor produces toxic substances. It does however pose a risk to wildlife, in particular birds, and, as a navigational hazard, to human safety, although these risks can be largely mitigated through careful site selection. The main threat to bird life comes from the potential for collisions with the wind turbines.¹⁹⁰ In the case of offshore wind farms, there is also the potential for adverse impacts on marine life through the disturbance of the seabed during construction and through the effects of underwater noise and vibration during the facility's operation.¹⁹¹ Wind farms can pose a

¹⁹⁰ For more information about the effects of wind farms on birds, see: American Wind Energy Association (AWEA), "Facts about wind energy and birds," 2002, [cited May 2003], Available: <http://www.awea.org/pubs/factsheets/WEandBirds.pdf> and National Wind Coordinating Committee (NWCC), "Avian/wind turbine interaction: A short summary of research results and remaining questions," Dec. 2002, [cited May 2003], Available: http://www.nationalwind.org/pubs/avian_factsheet.pdf.

¹⁹¹ Metoc, "An Assessment of the Environmental Effects of Offshore Wind Farms," ETSU report W/35/00543/REP, 2000, [cited May 2003], Available: <http://www.dti.gov.uk/energy/renewables/publications/pdfs/35-00543.pdf>.

navigational hazard to aircraft, particularly small aircraft operating under visual flight rules, and, in the case of offshore facilities, boats.

5.2.2 *Environment/Safety Record of Wind Industry*

Recent studies have shown that the risks posed by wind farms to wildlife and public safety are minimal. First, there is clear evidence that avian mortality from wind-power generation is low, approximately one to two bird kills per turbine per year or less.¹⁹² Structures such as smokestacks, power lines and communications towers are a far more serious threat to birds.¹⁹³ Second, it has been found that offshore wind farms, whose foundations act as artificial reefs, can have a positive effect on local fish populations.¹⁹⁴ While less information is available on the effects of underwater noise and vibration on marine life, it is believed that the noise and vibrations generated by the wind turbines merely contribute to the background levels of low-frequency noise already present in the sea from sources such as ships, wind and waves.¹⁹⁵ Finally, while there have been 19 deaths in the construction or maintenance of wind turbines worldwide since 1975, only one member of the general public has been killed; this death involved a parachutist flying into a turbine in Germany.¹⁹⁶

5.3 Wind Facility Siting Issues

5.3.1 *Need for Wind Facilities in Massachusetts*

The construction of wind facilities in Massachusetts is the key to the state meeting its renewable energy targets. The state passed electricity restructuring legislation in 1997 that mandated a Renewable Portfolio Standard (RPS) to be administered by the Massachusetts Division of Energy Resources (DOER).¹⁹⁷ The state's RPS requires that electricity suppliers provide customers with minimum levels, as set out in Figure 4, of electricity generated from "new"

¹⁹² See AWEA, Note 190.

¹⁹³ Ibid.

¹⁹⁴ See Metoc, Note 191.

¹⁹⁵ Ibid.

¹⁹⁶ Gipe, P., "Contemporary Wind Related Mortality Rates," *Windstats Newsletter*, 14:4, Autumn 2001.

¹⁹⁷ American Wind Energy Association (AWEA), "Inventory of State Incentives for Wind Energy in the U.S.: A State by State Survey," 2002, [cited May 2003], Available: <http://www.awea.org/policy/documents/inventory.pdf>.

renewable energy sources.¹⁹⁸ The renewables that are eligible include “low-emissions” biomass, fuel cells using renewable fuel, landfill gas, ocean thermal, wave and tidal, solar and wind.¹⁹⁹ Wind energy is the best option for Massachusetts, given the state’s large wind resources and the technology’s relatively low cost. It is to be noted that while the price of wind electricity is generally expected to range between 4 and 6 cents per kilowatt-hour, according to the American Wind Energy Association the price of electricity from a large wind farm situated in an area with high average wind speeds can be as low as 2.6 cents per kilowatt-hour.^{200,201} At these prices, electricity from wind is economically competitive with that from fossil fuels.

Figure 4 : Massachusetts Renewable Portfolio Standard²⁰²

Year	Minimum Required Percentage of Electricity Sales from New Renewables
2003	1.0%
2004	1.5%
2005	2.0%
2006	2.5%
2007	3.0%
2008	3.5%
2009	4.0%
2010+	+1% per year until ended by DOER

5.3.2 Previous Resistance to Siting Wind Facilities in Massachusetts

Massachusetts has just over one megawatt of wind power capacity, which is equivalent to only 0.02 percent of the United States’ total wind capacity of 4,660 megawatts.²⁰³ This one megawatt of generating capacity is supplied by three small-scale wind projects: a 660-kilowatt turbine on

¹⁹⁸ Massachusetts Technology Collaborative (MTC), “Massachusetts Renewable Energy Portfolio Standard Facts,” [cited May 2003], Available: http://www.mtpc.org/RenewableEnergy/green_power/rps_facts.htm.

¹⁹⁹ Ibid.

²⁰⁰ American Wind Energy Association (AWEA), “The Economics of Wind Energy,” Mar. 2002, [cited May 2003], Available: <http://www.awea.org/pubs/factsheets/EconomicsofWind-March2002.pdf>.

²⁰¹ American Wind Energy Association (AWEA), “Comparative Cost of Wind and Other Energy Sources,” 2001, [cited May 2003], Available: <http://www.awea.org/pubs/factsheets/Cost2001.pdf>.

²⁰² See MTC, Note 198.

²⁰³ Energy Efficiency and Renewable Energy, United States Department of Energy, “Installed U.S. Wind Capacity,” May 2003, [cited May 2003], Available: http://www.eere.energy.gov/windpoweringamerica/wind_installed_capacity.html.

Windmill Point, Hull²⁰⁴; a 250-kilowatt turbine on Mount Tom, Holyoke²⁰⁵; and eight 40-kilowatt turbines on a hilltop near Mount Wachusett, Princeton^{206, 207}. Two proposals to site larger wind farms, one on Windmill Point in Hull and the other on a landfill site on the island of Nantucket, were defeated by NIMBY opposition in or around 1993 and 1997, respectively.²⁰⁸

5.4 Proposed Siting of Offshore Wind Facilities near Cape Cod

5.4.1 Proposed Offshore Wind Facilities

Cape Wind Associates LLC (Cape Wind), a joint business venture of Energy Management Inc. and Wind Management LLC, proposed in November 2001 the construction of the first offshore wind farm in the United States.²⁰⁹ The wind farm, to be located in Nantucket Sound, would comprise 170 turbines.²¹⁰ The farm has been designed to have a peak capacity of 420 megawatts and an average output of 170 megawatts (equivalent to the amount of electricity needed to supply 200,000 homes or about half the total electricity demand of Cape Cod and the islands of Martha's Vineyard and Nantucket).²¹¹ The project was originally scheduled for completion in 2005.²¹² It is to be noted that, of the wind farm proposals for Cape Cod, the Cape Wind project has received the most attention and is therefore the focus of this case study.

²⁰⁴ Leaning, J., "The pride of Hull: Despite scattered complaints, a wind-driven turbine answers the town's electricity needs," May 13, 2002, [cited May 2003], Available:

<http://www.capecodonline.com/special/windfarm/thepride13.htm>.

²⁰⁵ Renewable Energy Research Laboratory, "Utility Scale Research Wind Turbine Installation, Operation, and Testing," [cited May 2003], Available: <http://www.ecs.umass.edu/mie/labs/rerl/research/utility.html>.

²⁰⁶ The Associated Press, "Princeton power towers generating plenty of hot air," *Cape Cod Times*, Jan. 6, 2003, [cited May 2003], Available: <http://www.capecodonline.com/special/windfarm/wawind6.htm>.

²⁰⁷ Massachusetts Division of Energy Resources (DOER), "Renewable Energy Programs," Apr. 2003, [cited May 2003], Available: <http://www.state.ma.us/DOER/programs/renew/renew.htm>.

²⁰⁸ Bolgen, N., "New England wind projects that did not get permitted or built," presented at the *New England Wind Power Siting Workshop*, Oct. 24, 2001, [cited May 2003], Available:

<http://www.nationalwind.org/events/newengland/presentations/bolgen.pdf>.

²⁰⁹ Cape Wind Associates, "An offshore renewable energy project," presented at the *New England Wind Power Siting Workshop*, Boston, MA, Oct. 24, 2001, [updated Nov. 2001], [cited May 2003], Available:

<http://www.nationalwind.org/events/regional/newengland/presentations/Olmsted.pdf>.

²¹⁰ Ibid.

²¹¹ Krasner, J., "Offshore wind farm blows into Cape view," *The Boston Globe*, Jul. 28, 2001, p. A1.

²¹² Ziner, K.L., "Offshore harvest of wind is proposed for Cape Cod," *The New York Times*, Apr. 16, 2002, p. F3.

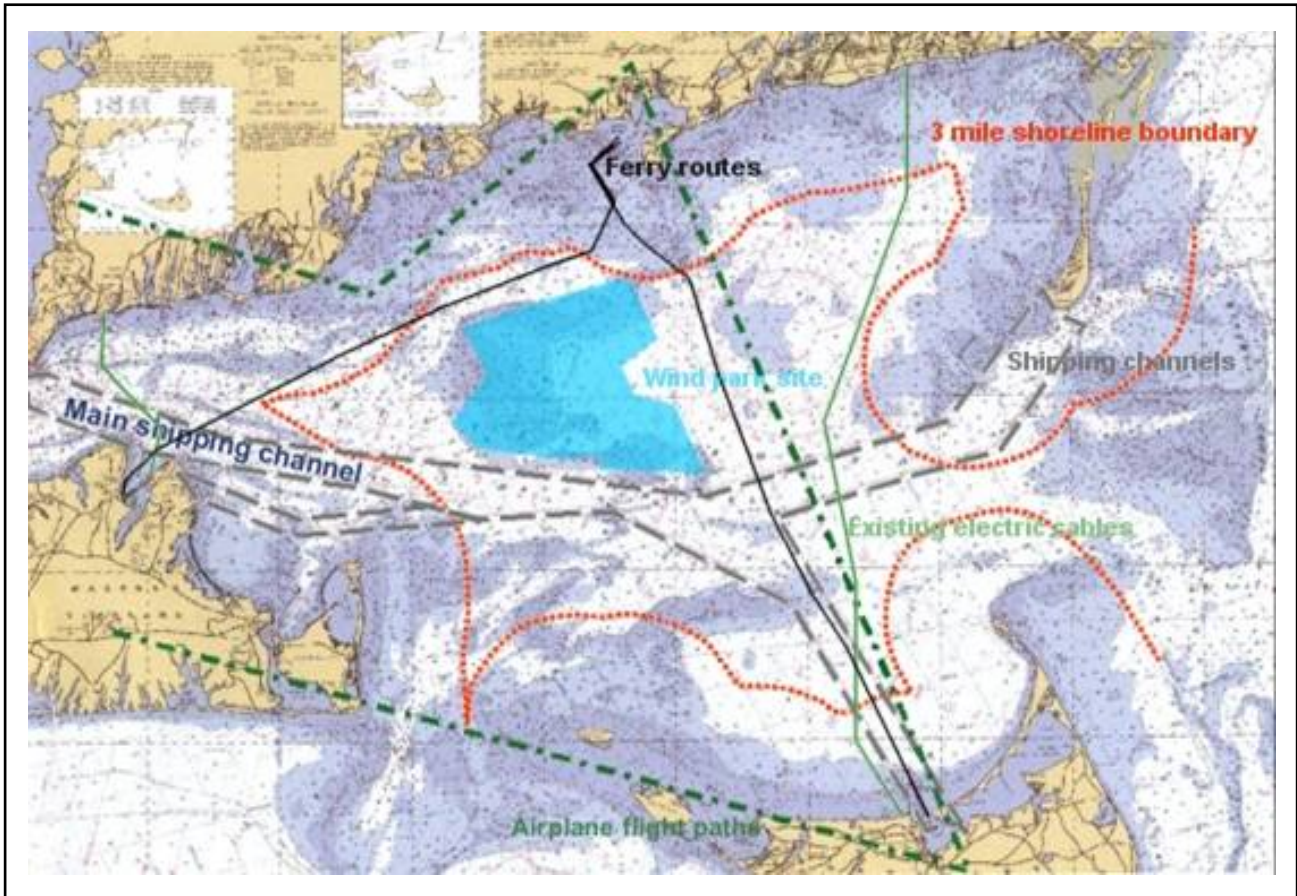
The proposed site for the Cape Wind project is in federal waters on Horseshoe Shoal, a shallow section of Nantucket Sound, roughly six miles from Hyannis and nine miles from Martha's Vineyard.²¹³ The turbines are to be arranged in a grid pattern, a third to a half-mile apart, and are to cover a total of 28 square miles of Nantucket Sound.^{214,215} The location and layout of the proposed wind farm is shown in Figure 5.

²¹³ Ferdinand, P., "Windmills on the water create storm on Cape Cod; Concerns about environment, tourism fuel mass. debate," *The Washington Post*, Aug. 20, 2002, p. A3.

²¹⁴ Ibid.

²¹⁵ Sukiennik, G., "Offshore wind farm proposed for Cape Cod would be nation's first," *The Associated Press*, Jul. 20, 2002.

Figure 5 : Location and layout of proposed Cape Wind project²¹⁶



A second company, Winergy LLC (Winergy), announced in July 2002 plans to develop an even larger offshore wind farm for the Cape Cod region.²¹⁷ This wind farm would be sited further offshore than the Cape Wind project in one of four locations seven to eleven miles east or south of the island of Nantucket in federal waters.²¹⁸ The largest of these proposals, whose location and layout is shown in Figure 6, would comprise 231 turbines and generate enough electricity to power 225,000 homes.²¹⁹ Winergy has also proposed the construction of two smaller offshore

²¹⁶ Cape Wind Associates, "Project siting and visual impact," 2002, [cited May 2003], Available: <http://www.capewind.org/benefiting/sitev02.htm>.

²¹⁷ Daley, B., "2nd firm proposes Nantucket wind farm," *The Boston Globe*, Jul. 25, 2002, [cited May 2003], Available: <http://www.saveoursound.org/news.html>.

²¹⁸ Ibid.

²¹⁹ Leaning, J., "Newest wind farm bid targets Nantucket; N.Y. developer would put 231 turbines south and east of island," *Cape Cod Times*, Jul. 26, 2002, [cited May 2003], Available: <http://www.saveoursound.org/news.html>.

wind projects for the region.²²⁰ These wind projects would both consist of 10 turbines, generating 18 megawatts of electricity, and be sited about one mile offshore in state waters.^{221,222}

Figure 6 : Location and layout of large wind farm proposed by Winergy²²³



5.4.2 Why Offshore of Cape Cod?

The recent shift in interest from onshore to offshore wind development in Massachusetts can be explained by a number of factors. First, it was expected that NIMBY opposition to offshore wind farms would be less than for those onshore. Second, offshore wind farms are not subject to the same land-use constraints and can therefore be larger in size. This, together with the fact that offshore sites are more conducive to larger turbine sizes, means that one can take full advantage of economies of scale. Third, given that most of the population of Massachusetts lives near the coastline, offshore wind farms enable generation capacity to be sited closer to regional load

²²⁰ Leaning, J., "Winergy pitches two more wind farms near Cape; New plans would put 10-turbine sites in marine sanctuaries off Provincetown and Falmouth," *Cape Cod Times*, Nov. 13, 2002, [cited May 2003], Available: <http://www.saveoursound.org/news.html>.

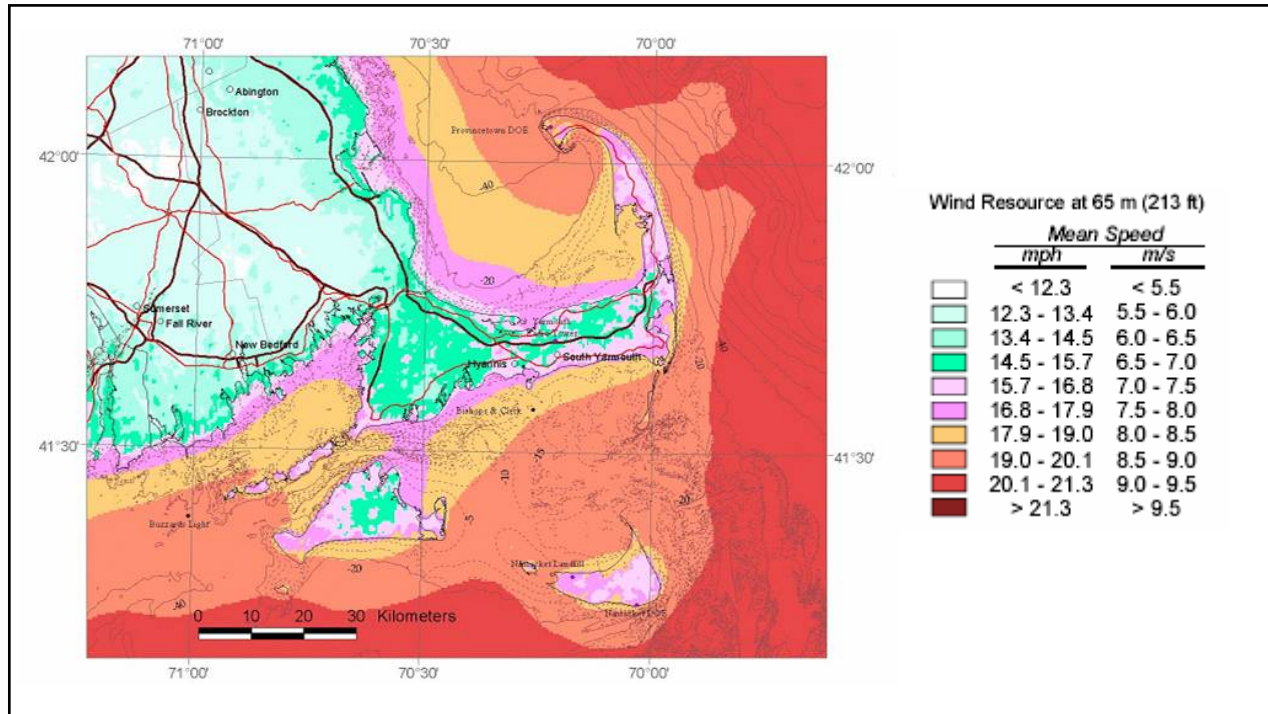
²²¹ Ibid.

²²² Goodison, D., "Three new wind farm locations pursued," *The Boston Herald*, Nov. 14, 2002, p. 44.

²²³ Winergy, "Nantucket 1 Site Map," [cited May 2003], Available: http://www.winergyllc.com/sites/nantucket_1_site.html.

centers thereby reducing electricity transmission costs. Lastly, as is generally the case, offshore wind resources for Massachusetts are considerably better than those onshore as can be seen from the wind resource map for the Cape Cod region given in Figure 7.

Figure 7 : Wind energy resource map for the Cape Cod region²²⁴



There are several reasons why Cape Wind chose Nantucket Sound as the site for its proposed offshore wind farm. Nantucket Sound has adequate wind to make the project economically feasible²²⁵; mean wind speeds of at least 18 miles per hour at a height of 164 feet, close to what is seen for Nantucket Sound in Figure 7, are needed for wind development to be competitive.²²⁶

²²⁴ Massachusetts Technology Collaborative (MTC), “Wind Resource Mapping: Wind Energy Resource Map of Southern New England,” [cited May 2003], Available: http://www.mtpc.org/RenewableEnergy/green_power/outreach/wind_resources_map_so_ne_1202.pdf.

²²⁵ See Cape Wind Associates, Note 209.

²²⁶ National Wind Coordinating Committee (NWCC), “Basic Overview of Offshore Wind Energy Development for the Production of Electricity: Draft Meeting Summary,” *Offshore Wind Meeting 2002*, Washington DC, Sep. 25, 2002, Jan. 2003, [cited May 2003], Available: <http://www.nationalwind.org/events/offshore/summary.pdf>.

The Horseshoe Shoal section of Nantucket Sound has water depths of less than 50 feet²²⁷; offshore wind farms in Europe have been installed in water ranging in depth from about 6 to 40 feet.²²⁸ The siting of offshore wind farms in shallow waters not only has the advantage of making construction simpler and less expensive but also means that major shipping lanes are avoided.²²⁹ The waters of Nantucket Sound are also well protected, with mean wave heights of below 15 feet.^{230,231} In addition, the proposed site is close to electricity transmission lines on the mainland.²³² It is interesting to note that, according to a number of wind experts, Nantucket Sound is regarded as one of the most ideal locations for offshore wind energy development in the United States.^{233,234}

5.4.3 Demographics of Cape Cod

Nantucket Sound is bounded by Cape Cod (Barnstable County) and the islands of Martha's Vineyard (Dukes County) and Nantucket (Nantucket County), with respective populations of 226,809, 15,402 and 9,938. Each of these three counties is predominantly white; in 2000, the percentage of the population that was white was 94.2, 90.7 and 87.8, respectively. Given that income does not accurately reflect the standard of living of the large retired population on Cape Cod and the Islands, level of education and home value are used here to assess socioeconomic status. Residents of Cape Cod and the Islands are better educated than the average American citizen; in 2000, 33.6 percent, 38.4 percent and 38.4 percent of individuals over the age of 25 living in the Barnstable, Dukes and Nantucket counties, respectively, had received a bachelor's degree or higher compared to 24.4 percent for the United States as a whole. The homes in the Cape Cod region are also considerably more expensive than elsewhere in the United States; in

²²⁷ See Cape Wind Associates, Note 209.

²²⁸ See NWCC, Note 226.

²²⁹ See Krasner, Note 211.

²³⁰ Leaning, J, "Wind farm alternative scrutinized," *Cape Cod Times*, May 9, 2003, [cited May 2003], Available: <http://www.capecodonline.com/cctimes/windfarm9.htm>.

²³¹ See Cape Wind Associates, Note 209.

²³² Ibid.

²³³ See Krasner, Note 211.

²³⁴ See Ferdinand, Note 213.

2000, the median housing value in the Barnstable, Dukes and Nantucket counties was respectively \$178,800, \$304,000 and \$577,500 compared to \$119,600 for the nation.^{235,236,237,238}

It is interesting to note here the considerable difference in socioeconomic status between the residents of Cape Cod and the Islands, and those living in the Louisiana parishes discussed in Case Study One, where Shintech proposed or ultimately succeeded in siting its polyvinyl chloride (PVC) plant. As a point for comparison, in 2000 in St. James Parish, the site originally proposed for Shintech's PVC plant, only 10.1 percent of individuals over the age of 25 had a bachelor's degree or higher and the median housing value was only \$81,500.²³⁹

5.4.4 Regulatory Requirements

Cape Wind needs to obtain a permit, under Section 10 of the Rivers and Harbors Act of 1899 (Section 10), from the United States Army Corps of Engineers (Army Corps). As part of the permitting process, the Army Corps is required to prepare a comprehensive Environmental Impact Statement (EIS) under the National Environmental Policy Act (NEPA). The project is also to be reviewed, in accordance with the Massachusetts Environmental Policy Act (MEPA), by the state's Executive Office of Environmental Affairs. Under MEPA, the primary vehicle for review is the Environmental Impact Report (EIR), which is to be combined with the EIS undertaken by the Army Corps. In addition, the Cape Wind project requires the approval of the Massachusetts Energy Siting Board, the Massachusetts Coastal Zone Management Office and the Federal Aviation Administration. Finally, the Army Corps has invited numerous other federal,

²³⁵ United States Census Bureau, "State and County *QuickFacts*: Barnstable County, Massachusetts," Apr. 2003, [cited May 2003], Available: <http://quickfacts.census.gov/qfd/states/25/25001.html>.

²³⁶ United States Census Bureau, "State and County *QuickFacts*: Dukes County, Massachusetts," Apr. 2003, [cited May 2003], Available: <http://quickfacts.census.gov/qfd/states/25/25007.html>.

²³⁷ United States Census Bureau, "State and County *QuickFacts*: Nantucket County, Massachusetts," Apr. 2003, [cited May 2003], Available: <http://quickfacts.census.gov/qfd/states/25/25019.html>.

²³⁸ United States Census Bureau, "State and County *QuickFacts*: USA," Apr. 2003, [cited May 2003], Available: <http://quickfacts.census.gov/qfd/states/00000.html>.

²³⁹ United States Census Bureau, "State and County *QuickFacts*: St. James Parish, Louisiana," Apr. 2003, [cited May 2003], Available: <http://quickfacts.census.gov/qfd/states/22/22093.html>.

state and local agencies, including the United States Coast Guard and the United States Department of the Interior's Fish and Wildlife Service, to contribute to the EIS/EIR review.²⁴⁰

There has been some debate as to whether the permitting process for the Cape Wind project, with the Army Corps as the lead federal permitting authority, is adequate. The Cape Wind project, to be sited in federal waters on the Outer Continental Shelf (OCS), would be the first offshore wind farm in the United States. Unlike for offshore oil and gas projects, there are no specific regulations governing the siting or the leasing arrangements for offshore wind farms. This has led some to suggest that there should be a moratorium on offshore wind development until new federal regulations for these facilities are put in place.²⁴¹ Section 10 and NEPA do however provide the Army Corps with clear authority to conduct the environmental review process and to issue the permit for the project.²⁴² Further, the scope of factors required to be considered²⁴³ and the myriad of agencies involved in the EIS/EIR review would seem to guarantee a rigorous and open permitting process.²⁴⁴

5.4.5 Support for Cape Wind Project

The Cape Wind project has received significant support from a number of prominent environmental and health organizations. In addition to these organizations, it has won the support of numerous academics, elected officials and concerned citizens.²⁴⁵

A large number of environmental organizations, including nationally and internationally recognized groups such as the Conservation Law Foundation and Greenpeace, support the Cape

²⁴⁰ United States Army Corps of Engineers, "Cape Cod Wind Farm Fact Sheets – Agencies," May 2003, [cited May 2003], Available: <http://www.nae.usace.army.mil/projects/ma/ccwf/agencies.pdf>.

²⁴¹ Ritt, G., "Delahunt: No windmills until Congress acts," *The Cape Codder*, Aug. 16, 2002, [cited May 2003], Available: http://www.townonline.com/brewster/news/local_regional/cc_delahunt08162002.htm.

²⁴² Burrington, Stephen H. et al., communication to the Honorable Barbara Cubin (Nov. 7, 2002), Conservation Law Foundation, Boston, MA, Available: http://www.clf.org/hot/ltr_20021107_offshore_windpower.pdf.

²⁴³ While up until 1968 the Section 10 permitting process was primarily focused on navigability issues, it has since been revised to consider a wide variety of issues including, but not limited to, fish and wildlife, pollution, aesthetics, economics, historic values, recreation and the general public interest.

²⁴⁴ See Burrington et al., Note 242.

²⁴⁵ For details of those who support the Cape Wind project, see: "Our Supporters – Project Supporters," Jun. 2003, [cited Jun. 2003], Available: <http://www.capewind.org/modules.php?op=modload&name=Sections&file=index&req=viewarticle&artid=47&page=1>.

Wind project on the grounds that it would help mitigate global warming.^{246,247} It has been calculated that the Cape Wind project would reduce carbon dioxide emissions by over one million tons per year through offsetting emissions from the region's fossil fuel-based power plants.²⁴⁸ Mitigating climate change should be of particular interest to those living in the Cape Cod region, given that Cape Cod's coastline and the shallow island aquifers found on Martha's Vineyard and Nantucket are at particular risk from sea-level rise.^{249,250}

Another reason that many of these same environmental groups support the Cape Wind project is that it would provide a source of renewable energy.^{251,252} Increased use of renewable energy has the benefit of increasing national energy security through reducing dependence on foreign supplies of oil and gas. The Cape Wind project also has the potential to establish Massachusetts as a world leader in offshore wind technology.²⁵³ The project would be the single largest wind farm in the nation, and would rival the world's largest 200-turbine wind farm to be built offshore of Ireland. This wind farm for Ireland, which was approved in January 2003, is to have a maximum output capacity of 520 megawatts and is expected to generate about 10 percent of the country's electricity needs.²⁵⁴

²⁴⁶ Conservation Law Foundation (CLF), "Cooling Global Warming with Offshore Windpower: The question isn't whether New England should have wind farms. The question is where?," 2003, [cited May 2003], Available: http://www.clf.org/advocacy/offshore_windpower.htm.

²⁴⁷ Sawin, J.L., "Toward a Clean Energy Future," [cited May 2003], Available: http://www.capewind.org/reporting/j_sawin_102202.htm.

²⁴⁸ Cape Wind Associates, "Press Release: Cape Wind will reduce over a million tons of greenhouse gas emissions per year," Aug. 27, 2002, [cited May 2003], Available: <http://www.capewind.org/reporting/prele02.shtml#082702>.

²⁴⁹ For more information about the effects of sea-level rise on the Cape Cod coastline, see: Neumann, J., Yohe, G., Nicholls, R. and M. Manion, "Sea-level Rise & Global Climate Change: A Review of Impacts to U.S. Coasts," Report prepared for *Pew Center on Global Climate Change*, Feb. 2000, [cited May 2003], Available: http://www.pewclimate.org/projects/env_sealevel.pdf.

²⁵⁰ For more information about the effects of sea-level rise on Martha's Vineyard and Nantucket's shallow island aquifers, see: Gleick, P.H. et al., "The Report of the Water Sector Assessment Team of the National Assessment of the Potential Consequences of Climate Variability and Change," Report prepared for *U.S. Global Change Research Program*, Sep. 2000, [cited May 2003], Available: <http://www.pacinst.org/ncawater.pdf>.

²⁵¹ Burrington, S., "Our energy future is in the wind," *The Boston Globe*, Jul. 13, 2002, p. A15.

²⁵² Northeast Sustainable Energy Association (NESEA), "The Cape Wind Project," 2001, [cited May 2003], Available: http://www.nesea.org/publications/NESun/cape_wind.html.

²⁵³ See Krasner, Note 211.

²⁵⁴ Trivedi, B.P., "Ireland to Build World's Largest Wind Farm," *National Geographic Today*, Jan. 15, 2002, [cited May 2003], Available: http://news.nationalgeographic.com/news/2002/01/0115_020115TVwindfarm.html.

As a pollution-free source of energy, the Cape Wind project has also received support from public health organizations including the American Lung Association, Cape Clean Air and Healthlink. The adverse health effects of fine particulate air emissions from fossil fuel-fired power plants are well documented.²⁵⁵ In Massachusetts, the fine particulate pollution from the state's oldest and dirtiest plants, the so-called "Filthy Five", is a particular public health concern.²⁵⁶ According to a recent Harvard study, two of these plants alone are causing some 159 premature deaths and 43,000 asthma attacks each year.²⁵⁷ The Cape Wind project could potentially replace up to 10 percent of the power generated by these coal and oil-fired plants, and thereby reduce these plant's polluting emissions by the same amount.²⁵⁸ Based on this emissions reduction and a linear extrapolation of the Harvard study data, it has been estimated by the local Cape Clean Air group that approximately 15 premature deaths and 5,000 asthma attacks could be eliminated each year if the wind farm is constructed.²⁵⁹

In addition to environmental and health benefits, proponents claim that the Cape Wind project could provide a boost to the region's economy through creating jobs for local residents, increasing local and state tax revenue, and reducing regional electricity prices.²⁶⁰ According to an economic impact study commissioned by Cape Wind, the Cape Wind project would create 75 jobs for local residents during the construction phase and 154 permanent jobs, including 50 higher-paying jobs with an average salary of over \$50,000 per year, during the operation phase.^{261,262} It was also estimated by the study that the project would raise between \$9 million

²⁵⁵ For more information about the adverse health effects of fine particulate air pollution, see: Pope, C.A. III, Burnett, R.T., Thun, M.J., Calle, E.E, Krewski, D., Ito, K. and G.D. Thurston, "Lung Cancer, Cardiopulmonary Mortality and Long-term Exposure to Fine Particulate Air Pollution," *Journal of the American Medical Association*, 287:9, Mar. 2002, p. 1132-1141.

²⁵⁶ The Massachusetts Public Interest Research Group (MASSPIRG), "Clean Air Enforcement: After 30 years, it's time to clean up the Filthy Five," [cited May 2003], Available: <http://masspirg.org/MA.asp?id2=9107&id3=MA&>.

²⁵⁷ Harvard School of Public Health (HSPH), "Press Release: HSPH Report Quantifies Health Impact of Air Pollution from Two Massachusetts Power Plants," May 4, 2000, [cited May 2003], Available: <http://www.hsph.harvard.edu/press/releases/press05042000.html>.

²⁵⁸ Kleekamp, Charles W., communication to Massachusetts Attorney General Thomas Reilly (Mar. 31, 2003), Cape Clean Air, Sandwich, MA.

²⁵⁹ Ibid.

²⁶⁰ Roy, C., "Unions, fishermen back wind farm for Nantucket Sound," *The Boston Globe*, Apr. 25, 2003, p. B3.

²⁶¹ Cape Wind Associates, "Press Release: Cape Wind will create hundreds of new jobs and significant tax revenue for Massachusetts and Cape Cod according to a new study by Global Insight," Apr. 3, 2001, [cited May 2003], Available: <http://www.capewind.org/reporting/prele02.shtml>.

²⁶² Leaning, J., "Wind farm will create hundreds of jobs," *Cape Cod Times*, Apr. 18, 2003, Available: <http://www.saveoursound.org/news.html>.

and \$14 million a year in local and state tax revenue during the construction phase alone.²⁶³ Lastly, Cape Wind's analysis of the project's impact on the New England electricity market found that the project would lower electricity prices. Specifically, by reducing the amount of electricity generation required from other power plants with higher costs, the project is projected to result in savings to the region's electricity consumers of around \$25 million annually.²⁶⁴

The supporters of the Cape Wind project characterize the resistance to the wind farm as NIMBY opposition. The head of the main opposition group, Douglas Yearley of the Alliance to Protect Nantucket Sound, as well as elected officials lending major support to this group, namely United States Senators Edward Kennedy and John Kerry, own expensive homes with views of Nantucket Sound.^{265,266} The opponents are typical NIMBYs in that they recognize the societal benefits of the project but do not want to bear the local costs; the Alliance to Protect Nantucket Sound's website clearly states that the group supports wind energy facilities but objects to the particular location and size of the Cape Wind project.²⁶⁷ Voters on Cape Cod and the Islands who favor the proposed wind farm outnumber those who oppose it by about 1.5 to 1, while, statewide, the ratio of supporters to opponents is nearly 3 to 1.²⁶⁸

5.4.6 Opposition to Cape Wind Project

Opposition to the Cape Wind project is being led by the Alliance to Protect Nantucket Sound. This is a coalition of local towns and chambers of commerce, wildlife organizations, aviation officials, fishermen and concerned citizens with serious concerns regarding the proposed project.²⁶⁹

²⁶³ Ibid.

²⁶⁴ Cape Wind Associates, "Press Release: New analysis of Cape Wind project shows \$25 million in energy savings annually," Mar. 25, 2002, [cited May 2003], Available: <http://www.capewind.org/reporting/prele02.shtml>.

²⁶⁵ Lochhead, C., "Kennedys take up alternative energy battle," *The San Francisco Chronicle*, Jan. 27, 2003, p. B7.

²⁶⁶ Coleman, J. and J. Leaning, "Nantucket Sound sanctuary proposal renewed," *Cape Cod Times*, Dec. 11, 2002, [cited May 2003], Available: <http://www.saveoursound.org/news.html>.

²⁶⁷ Alliance to Protect Nantucket Sound, "The worst location: A twenty-four square-mile power plant," 2003, [cited May 2003], Available: <http://www.saveoursound.org/bestworst.html>.

²⁶⁸ Cape Wind Associates, "Press Release: New poll finds strong public support for Cape Wind project," Oct. 3, 2002, [cited May 2003], Available: <http://www.capewind.org/reporting/prele02.shtml#100302>.

²⁶⁹ For details of those who oppose the Cape Wind project, see: Alliance to Protect Nantucket Sound, "Who's Concerned," 2003, [cited Jun. 2003], Available: <http://www.saveoursound.org/allies.html>.

The major concern of the opponents of the Cape Wind project is that the facility would have an adverse impact on the aesthetics of the Cape Cod region.²⁷⁰ The opponents assert that Nantucket Sound as a great wildlife, fishing and recreational area is a “national treasure”, and, for the local residents, akin to a “national park”.²⁷¹ Although the turbines would be taller than the Statue of Liberty, project developers and the opponents have disagreed as to how visible the proposed wind farm would be from land.^{272,273} The opponents maintain that the Cape Wind project would represent “a permanent industrial facility in a pristine natural environment”.²⁷⁴ Further, opponents claim that the proposed wind farm would forever change the character of the Cape Cod area.²⁷⁵

Several wildlife organizations, including the Massachusetts Audubon Society and the International Fund for Animal Welfare, have expressed concern about the potential for the Cape Wind project to have a detrimental effect on avian and marine life in Nantucket Sound.^{276,277} Nantucket Sound is the feeding ground for nearly half the population of the North American Roseate Tern, an endangered bird species, and is also integral to the Atlantic Flyway, a migratory route for some 500,000 birds.^{278,279} The wildlife organizations have called for studies to evaluate the risks to birds that would result from the wind turbines and the aviation warning lights, the latter of which are known to attract migratory birds at night and during inclement weather.²⁸⁰ The site for the proposed wind farm is also frequented by marine mammals, such as seals and porpoises, and endangered turtle species, including leatherbacks and loggerheads, as well as

²⁷⁰ Mehren, E., “Controversy over wind farm roils predictable Nantucket,” *Los Angeles Times*, Aug. 11, 2002, p. 20.

²⁷¹ See Ziner, Note 212.

²⁷² Cape Wind Associates, “View from the Cape and Islands,” 2002, [cited May 2003], Available: <http://www.capewind.org/benefiting/livev02.htm>.

²⁷³ Alliance to Protect Nantucket Sound, “Visualize 170 Turbines,” 2003, [cited May 2003], Available: <http://www.saveoursound.org/visual.html>.

²⁷⁴ See Ferdinand, Note 213.

²⁷⁵ See Mehren, Note 270.

²⁷⁶ Massachusetts Audubon Society (Mass Audubon), “Society News: Cape Wind Project, Nantucket Sound – Our Position,” 2003, [cited May 2003], Available: [http://www.massaudubon.org/News_& Action/news.html](http://www.massaudubon.org/News_&_Action/news.html).

²⁷⁷ International Fund for Animal Welfare (IFAW), “Press Release: Wildlife and environmental coalition ask Army Corps to establish working group to ensure public participation in evaluation of Cape Wind proposal,” Feb. 11, 2003, [cited May 2003], Available: <http://www.ifaw.org/page.asp?unitid=812>.

²⁷⁸ Alliance to Protect Nantucket Sound, “The worst location: Environmental consequences,” 2003, [cited May 2003], Available: <http://www.saveoursound.org/bestworst.html>.

²⁷⁹ See Mass Audubon, Note 276.

²⁸⁰ *Ibid.*

being an important fishing ground.²⁸¹ Additional studies are being requested to look into the impacts of acoustic noise and low-frequency vibration on the Sound's marine life.²⁸²

A significant number of local aviation officials and fishermen are opposed to the Cape Wind project on the grounds that it would pose a major safety hazard to aircraft and boats.^{283,284} The Cape Approach Control estimates that around 400,000 aircraft, about two-thirds of which operated under visual flight rules, entered its airspace last year.²⁸⁵ The major concern of aviation officials opposing the Cape Wind project is that there would only be a 74-foot clearance between the wind turbines and the 500-foot levels at which small aircraft are allowed to fly in Nantucket Sound.²⁸⁶ Local fishermen opposed to the proposed wind farm see it as presenting significant obstacles to navigation.²⁸⁷ Ferry operators have also expressed concerns about navigating the waters near the wind farm, which would be located no closer than one-half mile of a ferry route.²⁸⁸

The opponents, including several local chambers of commerce and town councils, also argue that the Cape Wind project would have an adverse impact on the local economy. They claim that many local fishermen make up to 60 percent of their income on Horseshoe Shoal and that the Cape Wind project would destroy their livelihoods by essentially blocking off access to this productive fishing ground.²⁸⁹ Additionally, the opponents assert that the proposed wind farm would harm the Cape's \$1.5 billion-a-year tourism industry by greatly reducing the region's

²⁸¹ Nealon, P., "Environmentalists clash over wind farm plan," *The Boston Globe*, Jul. 11, 2002, p. B1.

²⁸² Benson, R., "How wind farm noise could hurt fish stocks," *Cape Cod Times*, Jan. 28, 2002, Available: <http://www.saveoursound.org/pdfs/bensonedit.pdf>.

²⁸³ Suriano, M., communication to Colonel Brian Osterndorf at United States Army Corps of Engineers (2002), Cape Approach Control, Cape Chapter of National Air Traffic Controller's Association, Otis, MA.

²⁸⁴ Cape Cod Commercial Hook Fishermen's Association (CCCHFA), "Windfarm Statement," Apr. 21, 2003, [cited May 2003], Available: <http://www.saveoursound.org/faq.html>.

²⁸⁵ Goodison, D., "Foes say windmills endanger aviation; Romney asked to review Cape proposal," *The Boston Herald*, Nov. 26, 2002, p. 33.

²⁸⁶ Ibid.

²⁸⁷ Alliance to Protect Nantucket Sound, "Frequently asked questions: What are the impacts of Cape Wind on fish and fishing?" 2003, [cited May 2003], Available: <http://www.saveoursound.org/faq.html>.

²⁸⁸ Peters, P., "Ferry line wary of wind farm as navigation hazard," *Cape Cod Times*, Dec. 20, 2002, Available: <http://www.saveoursound.org/news.html>.

²⁸⁹ See Alliance to Protect Nantucket Sound, Note 287.

appeal.²⁹⁰ Lastly, it is believed that the wind farm would ruin ocean views and thereby diminish property values.

The opposition has been very critical of the developers of the Cape Wind project. First, the opponents have questioned whether Cape Wind should be allowed to occupy a public resource for the purpose of a profit-making enterprise.^{291,292} Indeed, the opponents assert that the rules regarding the payment of royalties or usage fees should be no different for wind developers than for companies drilling offshore for oil and gas.²⁹³ Further, the opponents maintain that the choice of site should not be made by Cape Wind but rather public policymakers.²⁹⁴ Finally, Cape Wind has been accused by the opponents of exploiting regulatory gaps that leave uncertain which government agencies have jurisdiction over the project.^{295,296}

5.4.7 Developments in the Cape Wind Case

The Alliance to Protect Nantucket Sound has taken its grassroots campaign to the next level by challenging the authority of the Army Corps to grant permits for the Cape Wind project in a lawsuit filed in the United States Federal Court on August 30, 2002.²⁹⁷ The pending action specifically challenges the validity of the permit issued by the Army Corps to Cape Wind on August 19, 2002, for the construction of its Scientific Data Monitoring (SDM) tower on Horseshoe Shoal.²⁹⁸ This 200-foot tall, SDM tower, which is to collect wind and ocean data to determine the feasibility of the proposed wind farm, has been erected and was fully operational as of May 21, 2003.²⁹⁹ The legal issues involved in the lawsuit include whether the Army Corps'

²⁹⁰ See Ferdinand, Note 213.

²⁹¹ McNamara, E., "The Color of Money," *The Boston Globe*, Apr. 20, 2003, p. B1.

²⁹² See Ferdinand, Note 213.

²⁹³ See Ritt, Note 241.

²⁹⁴ See McNamara, Note 291.

²⁹⁵ Ibid.

²⁹⁶ See Ferdinand, Note 213.

²⁹⁷ The Associated Press, "Group sues to halt test tower off Cape," *The Boston Globe*, Aug. 31, 2002, p. B2.

²⁹⁸ Hicks, T.P. and S.L. Kaplan, "BRIEF OF AMICUS CURIAE Conservation Law Foundation in Support of the Defendants and Urging the Court to Uphold the Validity of Permit No. 199902477 in Alliance to Protect Nantucket Sound, et al. v. United States Department of the Army, et al.," C.A. No. 02-11749 JLT, Jan. 15, 2003, [cited May 2003], Available: http://www.clf.org/advocacy/amicus_brief_20030115_cape_wind.pdf.

²⁹⁹ Cape Wind Associates, "Press Release: Cape Wind's Scientific Data Monitoring Tower on Horseshoe Shoal is fully operational," May 21, 2003, [cited Jun. 2003], Available:

authority extends to all structures on the OCS and whether the construction of this type of structure on the OCS requires that property rights be established.³⁰⁰ It is expected that arguments will be heard and an opinion filed by mid-2003.

Key political opponents have also taken steps to try to block the Cape Wind project. First, United States Representative William Delahunt introduced legislation in December 2002 to make Nantucket Sound a national marine sanctuary.³⁰¹ This proposal, based on the recommendations of a study commissioned by Delahunt³⁰², would ban commercial development in the Sound while allowing other uses such as commercial fishing and sailing to continue. Next, in early March 2003, Delahunt filed legislation calling for a new federal licensing scheme for offshore wind development.^{303,304} Delahunt's bill would require federal and state governments to set aside specific coastal areas for offshore wind farms. In addition, the bill would give the United States Secretary of Commerce authority to oversee the licensing of offshore wind projects and to collect royalty payments from developers. At the same time, Delahunt and Attorney General Reilly have criticized as "insufficient" a bill proposed by United States Representative Barbara Cubin, which would keep the Army Corps as the lead permitting agency but require royalties to be paid by developers to the United States Secretary of the Interior.³⁰⁵ Finally, United States Senator Edward Kennedy, in a show of resistance, has requested funds for a National Academy of Sciences (NAS) study into the "broad public policy implications" of the Cape Wind project.³⁰⁶

<http://www.capewind.org/modules.php?op=modload&name=News&file=article&sid=72&mode=thread&order=0&hold=0>.

³⁰⁰ See Hicks et al., Note 298.

³⁰¹ Coleman, J. and J. Leaning, "Nantucket Sound sanctuary proposal renewed; Delahunt move could block wind-farm effort," *Cape Cod Times*, Dec. 11, 2002, [cited Jun. 2003], Available: <http://www.saveoursound.org/news.html>.

³⁰² Leaning, J., "Nantucket Sound plan gets a boost; A study commissioned by Delahunt supports creating a marine sanctuary," *Cape Cod Times*, Feb. 11, 2003, [cited Jun. 2003], Available: <http://www.saveoursound.org/news.html>.

³⁰³ Coleman, J., "Delahunt aims to tighten rules; Bill would affect off-shore plans," *Cape Cod Times*, Mar. 7, 2003, [cited Jun. 2003], Available: <http://www.saveoursound.org/news.html>.

³⁰⁴ Megawatt Daily, "Mass. lawmaker proposes bill to limit offshore wind projects," *Megawatt Daily*, 8:45, Mar. 7, 2003, p. 7.

³⁰⁵ See Coleman, Note 303.

³⁰⁶ Coleman, J., "Kennedy calls for federal study; The senator seeks \$500,000 for a National Academy of Sciences analysis of the impact of the offshore project," *Cape Cod Times*, Mar. 13, 2003, [cited Jun. 2003], Available: <http://www.saveoursound.org/news.html>.

Cape Wind has gone to great lengths to win support for its proposed wind farm. Since plans for the wind farm were first announced in late 2001, the company has held numerous public meetings, forums and other events to educate the public, particularly local residents, about the project. Also noteworthy is the company's response to the concerns of local residents with regards to the massive scale of the proposed wind farm. It was announced in January 2003 that a switch in the choice of wind turbine would mean that the wind farm would be able to supply the same amount of electricity from fewer turbines.^{307,308} The number of turbines would drop from 170 to 130, which in turn would reduce the wind farm's footprint from 28 to 24 square miles. Further, the height of the turbines, a concern of some aviation officials, would be lowered from 426 to 417 feet.

The debate over the Cape Wind project has even taken to the airways. In early 2003, the Alliance to Protect Nantucket Sound came out with radio and television advertisements featuring former CBS news anchor Walter Cronkite.³⁰⁹ In these advertisements, Cronkite speaks out against the industrialization of Nantucket Sound by Cape Wind. Cronkite, who owns an expensive home with views of Nantucket Sound, did however recently admit that the underlying motivation for opposition to the proposed wind farm is NIMBY syndrome.³¹⁰ Cape Wind responded with a series of advertisements aired on local radio.³¹¹ The primary purpose of these advertisements, according to Cape Wind, is to correct misconceptions about the project spread by some opponents.³¹²

5.4.8 Outlook

It seems likely that the Cape Wind project will receive the necessary approvals and be constructed. First, it is very unlikely that the Alliance to Protect Nantucket Sound will be

³⁰⁷ Goodison, D., "Windmill project off cape shrinks; Opposition still blowing gale force against plans," *The Boston Herald*, Jan. 22, 2003, p.33.

³⁰⁸ Arnold, D., "Size of wind farm plan reduced," *The Boston Globe*, Jan. 22, 2003, p. B3.

³⁰⁹ Leaning, J., "Cronkite spins ad for foes of wind farm," *Cape Cod Times*, Jan. 30, 2003, [cited Jul. 2003], Available: <http://www.capecodonline.com/special/windfarm/cronkitespins130.htm>.

³¹⁰ Burkett, E., "A Mighty Wind," *New York Times Magazine*, Jun. 15, 2003, p. 48.

³¹¹ Cape Wind Associates, "Press Release: Cape Wind radio ads will give facts, correct misconceptions," May 22, 2003, [cited Jul. 2003], Available: <http://www.capewind.org/print.php?sid=74>.

³¹² *Ibid.*

successful in its lawsuit against the Army Corps. The Army Corps has clear authority to undertake the environmental review and to issue the permit for the project.³¹³ Second, Representative Delahunt faces an almost impossible task in getting the national marine sanctuary designation for the Sound and the new federal licensing scheme for offshore wind farms through a Republican-controlled Congress.³¹⁴ Further, the Bush administration has expressed its support for the Cubin bill, which, if passed, would simply impose the additional requirement that Cape Wind pay royalties.³¹⁵ Finally, the Army Corps in its evaluation of alternative sites for the wind farm, a key aspect of the environmental review and permitting process, announced in early May 2003 that Horseshoe Shoal is the only one that meets all of its screening criteria.^{316,317}

5.5 Summary of Key Lessons Learned

- **There is a very real likelihood of NIMBY opposition in the siting of a facility**

NIMBY opposition is a frequent impediment to facility siting in more affluent communities. NIMBY groups, such as the Alliance to Protect Nantucket Sound, have the organizational, financial and political resources to mount an impressive campaign against a project. These groups are characterized by their support for a project so long as it is not sited in their back yard. As remarked by William Shutkin, the opposition to the Cape Wind project is a special case of NIMBY in that the local benefits would seem to balance out, if not outweigh, the local costs.³¹⁸ It is to be noted that if there were environmental justice, whereby each community had its fair share of energy/waste facilities, then the proposed offshore wind farm would be among one of the best facilities for the Cape Cod region to be allocated.

³¹³ See Burrington et al. Note 242.

³¹⁴ Leaning, J., "Sanctuary designation takes time, persistence; The path to protect Nantucket Sound from development promises to be mired in a rigorous regulatory process," *Cape Cod Times*, Dec. 15, 2002, [cited Jun. 2003], Available: <http://www.saveoursound.org/news.html>.

³¹⁵ See Coleman, Note 303.

³¹⁶ Leaning, J., "Wind farm alternative scrutinized," *Cape Cod Times*, May 9, 2003, [cited Jun. 2003], Available: <http://www.capecodonline.com/special/windfarm/windfarm9.htm>.

³¹⁷ Maroney, E.F., "On first pass, Army Corps criteria favor Horseshoe Shoal for 130-turbine wind farm," *The Barnstable Patriot*, Mar. 14, 2003, [cited Jun. 2003], Available: <http://www.barnstablepatriot.com/03-14-03-news/wind.html>.

³¹⁸ Shutkin, W., "Howls over Cape Wind farm drown out merits," *Boston Business Journal*, Oct. 28, 2002, [cited Jun. 2003], Available: <http://boston.bizjournals.com/boston/stories/2002/10/28/editorial3.html>.

- **It can be difficult to site any type of development in a pristine area**

The primary concern of the Alliance to Protect Nantucket Sound is the impact the Cape Wind project would have on the aesthetics of the Cape Cod region. Indeed, the opponents are very concerned with protecting the pristine nature of Nantucket Sound. According to William Shutkin, the public is typically of the opinion that the environments most worth saving are pristine, which has the unfortunate result of producing, “on the one hand, pristine places, and on the other, dirty, industrialized areas”.³¹⁹ While there is a need for the public to accept that some pristine areas will have to undergo development in the future to accommodate facilities necessary to sustain a complex industrial society, it is unlikely that there is going to be a change in the public’s mindset in the near future. It is therefore to be expected that even green development, particularly where it has a large footprint as in the case of a wind farm, will be difficult to site in these areas.

- **A lack of specific regulations governing a facility can be used by the opposition in its campaign against the project**

While there are no specific regulations governing offshore wind farms, the Army Corps has clear authority to conduct the environmental review and issue the permit for these facilities. The Alliance to Protect Nantucket Sound has however used the lack of specificity of the regulations to protest against the Cape Wind project. The group has done this by accusing Cape Wind of exploiting regulatory gaps and calling for a moratorium on the siting of offshore wind facilities until a new federal licensing regime is introduced. Further, it has used the lack of specificity as the basis for a legal suit filed in the United States Federal Court that, although unlikely to be successful, challenges the Army Corps’ authority to issue permits for the project. It is important to note that, at the same time as being a rallying cry for the opposition, a lack of specific regulation can be advantageous for the project developer by limiting the legal grounds upon which the project can be opposed.

³¹⁹ Ibid.

- **NIMBY opposition is not insurmountable**

A well-designed and executed public outreach program can be successful in overcoming NIMBY opposition, where the facility offers concrete local benefits. The program must not only inform the public as to the benefits of the project but also discount the concerns raised by the opposition as “camouflage for self-interest”.³²⁰ Just as importantly, it must encourage meaningful public participation. While the Cape Wind project has not yet received the final permit from the Army Corps, it would seem more than likely that the project will eventually be given the go-ahead. Cape Wind has succeeded in educating and involving the public through its public meetings, forums and other events. These public outreach tools together with the local radio advertisements have also managed to correct misconceptions, such as to how visible the wind farm would be from shore, and play down fears, such as to what effect the project would have on the local tourism industry, spread by some opponents.

- **Development with environmental benefits is not necessarily easier to site**

The Cape Wind project has received considerable support from a number of environmental groups, including Greenpeace and the Conservation Law Foundation, because it would provide a clean, renewable source of electricity. It is important to recognize, however, that even those facilities with environmental benefits, such as wind farms and geologic carbon sequestration projects, can be difficult to site. All development, regardless of its environmental benefits, is going to have effects on the local environment. NIMBYs tend to focus on these local environmental effects, no matter how minor, and use them in their fight against the project. For example, the Alliance to Protect Nantucket Sound claimed that the Cape Wind project would negatively impact the Cape Cod region through, among other things, its effect on the local avian and marine life.

³²⁰ Reiner, D.M. and H.J. Herzog, “A Search for Regulatory Analogs to Carbon Sequestration,” presented at the *Sixth International Conference on Greenhouse Gas Control Technologies*, Kyoto, Japan, October 1-4, 2002, [cited Jun. 2003], Available: http://sequestration.mit.edu/pdfs/ghgt6_paper_135.pdf.

6. CASE STUDY THREE: SITING OF LNG TERMINALS IN BAJA CALIFORNIA

6.1 Introduction

This case looks at the efforts of a number of large energy companies, responding to the shortage and difficulties experienced in the siting of LNG terminals in the United States, to site a LNG terminal on the Pacific coast of Baja California, Mexico. The Baja California LNG siting case was chosen firstly because it deals with the siting of a facility that, like a geologic carbon sequestration project, poses a public safety risk. Next, the lack of new terminals and the opposition to existing projects in the United States are manifestations of NIMBY syndrome. Finally, it was selected because it shows that even disadvantaged communities outside the United States, for whom filing a Title VI complaint with EPA is not an option, can effectively challenge unwanted facilities through grassroots activism. It is to be noted that at the time this thesis was completed, in July 2003, the outcome of this siting case had not been reached.

6.2 LNG Terminals

6.2.1 Nature of Risks from LNG Terminals

There are significant public safety risks associated with the handling and storage of liquefied natural gas (LNG). LNG is natural gas condensed to a liquid by a refrigeration process that lowers its temperature to minus 260 degrees Fahrenheit and thereby reduces its volume by a factor of 600.³²¹ A fire can result where LNG is mixed with the right amounts of air and there is an ignition source present. LNG vapors are flammable where the fuel/air mixture has an air concentration by volume of between 5 percent and 15 percent. There is also the potential for combustible fuel/air mixtures in a confined space to burn explosively. Finally, a LNG leak that results in the build-up of vapors in an enclosed area can present an asphyxiation hazard. It is to

³²¹ For more information on liquefied natural gas (LNG), see: Williams, "Liquefied Natural Gas (LNG) 101," 2003, [cited Jul. 2003], Available: <http://www.williams.com/productservices/gaspipelines/lng101.asp>.

be noted though that, in the absence of ignition sources and confining structures, the vapors from a LNG spill will rise and dissipate due to vaporized LNG being less dense than air.³²²

6.2.2 Safety Record of LNG Industry

The modern-day LNG industry in the United States has quite an impressive safety record. While there was a major accident that affected the general public in 1944, there have been only two occupational accidents involving LNG during the last half century.³²³ This can be attributed to the fact that the safety hazards are well understood and measures to preclude such hazards have been universally adopted. LNG terminals, which consist of docks for ships to bring LNG onshore, LNG storage tanks and LNG regasification facilities, are protected by numerous safeguards. These safeguards include methane detectors, fire detectors, closed circuit television, offsite monitoring, training requirements for personnel and restricted access to terminal property.³²⁴

The 1944 LNG accident that affected the general public occurred at the East Ohio Gas Company in Cleveland, Ohio. A full LNG storage tank ruptured suddenly and poured LNG into a nearby storm sewer system, where it collected, vaporized and ignited. The ensuing fire caused a second LNG storage tank to rupture and also release its contents which ignited. Fire engulfed nearby residences and businesses, killing 128 and injuring 225. The first tank failure was caused by cracking of the tank's inner shell. Once the inner shell ruptured, the outer carbon steel wall was easily fractured by contact with LNG. The second failure was the result of the legs of the tank

³²² For more information on the safety issues associated with LNG handling and storage, see: BP LNG, "Re-Gas Terminals – Safety Issues," 2002, [cited Jul. 2003], Available: <http://www.bplng.com/environment/terminals.asp> and Quillen, D., "LNG safety: Myths and legends," presented at the NETL conference *National Gas Technology – Investment in a Healthy U.S. Energy Future*, Houston TX, May 14-15, 2002, [cited Feb. 2003], Available: <http://www.netl.doe.gov/publications/proceedings/02/ngt/Quillen.pdf>.

³²³ CH-IV International, "Safety History of International LNG Operations," Report No. TD-02109, Jun. 2002.

³²⁴ For more information on safety measures adopted at LNG facilities, see: Dominion, "LNG – Frequently Asked Questions," 2003, [cited Jul. 2003], Available: <http://www.dom.com/about/gas-transmission/covepoint/faq.jsp> and El Paso, "LNG – Frequently Asked Questions," 2003, [cited Jul. 2003], Available: http://www.elpaso.com/business/LNG_FAQ.shtm.

not being insulated against fire and buckling after being exposed to a direct flame. The materials and multiple containment systems utilized today make a repeat incident virtually impossible.³²⁵

The first occupational accident involving LNG took place in 1973 on Staten Island, Texas, during construction work on an out-of-service LNG storage tank. Repairs were being carried out on the tank's lining, which had been leaking and had apparently caused LNG to accumulate in the surrounding soil. During the repair work, the mistake was made of using irons and vacuum cleaners inside the tank. A spark from one of these electrical devices ignited flammable gas re-entering the tank from the soil, which in turn ignited the tank's lining. The fire generated a sufficient buildup of gas and increase in temperature within the tank to dislodge the tank's roof, which subsequently dropped onto and killed 37 workers. It is held by industry experts that this would be better classified as a construction as opposed to a LNG accident.³²⁶

The second occupational accident occurred in 1979 at the Cove Point LNG terminal, Maryland. The failure of an electrical seal on a LNG pump permitted LNG to seep into an enclosed building, where it vaporized and accumulated in an electrical box. When the circuit breaker inside the electrical box was switched in order to stop the pump, the spark ignited the gas and resulted in an explosion. The explosion killed one employee and seriously injured another. The section of the electrical code relating to the design of electrical seals used with flammable fluids under pressure has since been revised.³²⁷

6.3 LNG Terminal Siting Issues

6.3.1 Need for LNG Terminals

LNG is expected to play an increasingly large role in the energy supply mix of the United States. Demand for natural gas is projected to increase from 22.7 trillion cubic feet in 2001 to 34.9

³²⁵ For more information on the Cleveland LNG accident, see: United States Bureau of Mines, "Report on the Investigation of the Fire at the Liquefaction, Storage, and Regasification Plant of the East Ohio Gas Co., Cleveland, Ohio, October 20, 1944," Feb. 1946.

³²⁶ For more information on the Staten Island LNG accident, see: Fire Department of the City of New York, "Report of Texas Eastern LNG Tank Fatal Fire and Roof Collapse, February 10, 1973," Jul. 1973.

³²⁷ For more information on the Cove Point LNG accident, see: National Transportation Safety Board, "Columbia LNG Corporation Explosion and Fire, Cove Point, MD, October 6, 1979," Report No. NTSB-PAR-80-2, Apr. 1980.

trillion cubic feet in 2025.³²⁸ At the same time, the percentage of natural gas which is imported is set to increase from 16 percent of total demand in 2001 to 22 percent of total demand in 2025.³²⁹ This projected increase in imported natural gas, particularly in the form of LNG, can be attributed to an increase in the cost of domestic exploration and production, and a steep production decline in many domestic basins. Federal Reserve Chairman Alan Greenspan recently stressed the need for more LNG terminals in the United States to protect against natural gas shortfalls and price volatility.³³⁰

The United States currently has four operating LNG terminals. These LNG terminals are located at: Everett, Massachusetts; Lake Charles, Louisiana; Elba Island, Georgia; and Cove Point, Maryland. The Everett and Lake Charles terminals have been operating for decades, while the other two have recently been reopened after being inactive for many years. At present, these facilities have a total capacity of just over one trillion cubic feet per year.³³¹ Expansion of these facilities could result in an increased total capacity of 1.6 trillion cubic feet per year or 75 percent of the 2.1 trillion cubic feet per year of projected net LNG imports in 2025.^{332,333,334} Numerous additional facilities have been proposed to make up for the shortfall but siting a LNG terminal in the United States has proven to be a formidable task.

6.3.2 Barriers to Siting LNG Terminals in the United States - Public Risk Perception

A significant barrier to the construction and operation of LNG terminals is the public's perception of the risks associated with these facilities. Local opposition to these facilities is generally fuelled by a lack of information and/or misinformation in regard to the safety of

³²⁸ Energy Information Administration (EIA), "Annual Energy Outlook 2003: With Projections to 2025," Jan. 2003, [cited Jul. 2003], Available: [http://www.eia.doe.gov/oiaf/aeo/pdf/0383\(2003\).pdf](http://www.eia.doe.gov/oiaf/aeo/pdf/0383(2003).pdf).

³²⁹ Ibid.

³³⁰ Lindquist, D., "A liquid diet; Liquefied natural-gas projects, which are building support in Baja California, could prevent future U.S. shortfalls," *The San Diego Union-Tribune*, Jun. 15, 2003, p. H1.

³³¹ Cheniere, "Industry profile: LNG," 2002, [cited Jul. 2003], Available: <http://www.cheniere.com/LNGIndustryProfile.htm>.

³³² Ibid.

³³³ Energy Information Administration (EIA), United States Department of Energy, "Press release: New EIA forecast through 2025 expects growing natural gas demand to depend on new sources of natural gas supply," Nov. 20, 2002, [cited Feb. 2003], Available: <http://www.eia.doe.gov/neic/press/press201.html>.

³³⁴ Energy Information Administration (EIA), United States Department of Energy, "U.S. natural gas markets: Mid-term prospects for natural gas supply – Analysis of LNG imports," Dec. 2001, [cited Feb. 2003], Available: <http://www.eia.doe.gov/oiaf/servicerpt/natgas/chapter3.html>.

LNG.³³⁵ For example, members of the public generally don't understand that LNG will explode only when ignited in a closed environment and mixed with the right amount of air. While LNG safety has always been controversial, the September 11, 2001 terrorist attacks led to heightened fears. This resulted in the Cove Point and Everett terminals, in particular, coming under intense public scrutiny.

In the case of the Cove Point terminal, local residents and officials envisaged catastrophic risk scenarios involving the LNG storage tanks and/or tankers, and the nearby Calvert Cliffs nuclear power plant. After having just approved the reactivation and expansion of the Cove Point terminal on October 12, 2001, the Federal Energy Regulatory Commission (FERC) issued an order on November 9, 2001 stating that it would reconsider that decision due to national security concerns.³³⁶ This was prompted in part by objections raised by Senator Barbara Mikulski, who demanded that, in the interest of national security, the FERC review its earlier decision.³³⁷ The FERC organized a closed-door meeting with the terminal's owner at the time, Williams Companies, and over 60 other interested parties, the result of which was that the safety measures at the terminal were found to be adequate.³³⁸ Even though the facility has now reopened³³⁹, it is important to note that the safety questions were not resolved without significant effort and expense on the part of Williams Companies and other players in the United States LNG industry.³⁴⁰

Local opposition to the Everett terminal arose, and still continues, as a result of a perceived threat to the safety of Boston Harbor residents from LNG shipments. The United States Coast Guard imposed a ban on LNG tankers entering Boston Harbor on September 26, 2001 as a precaution in the wake of the September 11 attacks. After having determined that sufficient

³³⁵ Weems, P.R. and K.D. Keenen, "Greenfield LNG import terminal approvals," May 2002, [cited Feb. 2003], Available: <http://www.kslaw.com/library/pdf/GreenfieldLNGTerminals.pdf>.

³³⁶ "FERC rethinking Cove Point approval after MD Senator questions security," *Platt's Inside F.E.R.C.'s Gas Market Report*, Nov. 23, 2001, p. 6.

³³⁷ "Maryland nuclear plant and LNG terminal spell trouble, says Mikulski," *Platt's Inside F.E.R.C.'s Gas Market Report*, Nov. 12, 2001, p. 13.

³³⁸ "Satisfied with Cove Point security, FERC allows LNG terminal to reopen," *Platt's Inside F.E.R.C.'s Gas Market Report*, Dec. 21, 2001, p. 2.

³³⁹ Dominion, "Dominion Cove Point LNG, LP," 2003, [Jul. 2003], Available: <http://www.dominion.com/about/gas-transmission/covepoint.jsp>.

³⁴⁰ Cove Point LNG Limited Partnership, 97 F.E.R.C. 61, 276 (Dec. 19, 2001), Available: <http://cips.ferc.gov/Q/CIPS/GAS/CP/CP01-76.00N.TXT>.

measures were in place to address the perceived threat, the Coast Guard lifted this ban on October 16, 2001.³⁴¹ Shortly afterwards, on October 29, 2001, the City of Boston sought a federal injunction barring LNG tankers from entering Boston Harbor but the city's request was rejected.^{342,343} The city now has pending before a federal court a lawsuit to permanently prohibit LNG tankers entering Boston Harbor, the effect of which would be to effectively close the Everett terminal.³⁴⁴ Boston Mayor Thomas Menino has stated that the city's long-term goal is to have the LNG terminal relocated offshore. This opposition to the terminal persists in spite of a report by Lloyd's Register of Shipping and other risk analyses that have concluded that there is little danger from the LNG tankers and storage tanks.^{345,346,347}

6.3.3 Barriers to Siting LNG Terminals in the United States - Regulatory Hurdles

The regulatory process has also made for a significant barrier to the development of new LNG terminals. Dealing with regulatory requirements has become an increasingly daunting task as permitting procedures "continue to increase in complexity, requiring more documentation and more time to surmount an ever increasing number of hurdles".³⁴⁸ The construction and operation of a LNG terminal in the United States requires that developers secure permission from the following key federal agencies: Federal Energy Regulatory Commission (FERC); Environmental Protection Agency; Army Corps of Engineers; Coast Guard; Fish and Wildlife Service; Federal Aviation Administration; and the President's Advisory Council on Historic Preservation. In addition to this, approval from the relevant state and local agencies must be obtained.

³⁴¹ "Tankers can enter Boston Harbor; Terror concerns muzzle LNG industry," *Platt's Inside F.E.R.C.'s Gas Market Report*, Oct. 26, 2001, p. 9.

³⁴² Arnold, D. and S. Murphy, "Judge to rule on docking of tanker," *The Boston Globe*, Oct. 27, 2001, p. A11.

³⁴³ Platts, "LNG shipments to Boston resume, but debate over security continues," *Platt's Inside F.E.R.C.'s Gas Market Report*, Nov. 5, 2001, p. 9.

³⁴⁴ Weems, P.R. and K.D. Keenen, "Greenfield LNG import terminal approvals," May 2002, [cited Feb. 2003], Available: <http://www.kslaw.com/library/pdf/GreenfieldLNGTerminals.pdf>.

³⁴⁵ Lloyd's Register, "Press release: Study by Lloyd's Register helps Tractebel LNG North America LLC resume deliveries through Boston harbour," Nov. 2001, [cited Mar. 2003], Available: http://www.lr.org/news/press_releases/2001/pr1127_tractebel.htm.

³⁴⁶ "DOT proposes fine for LNG facility," *Gas Daily*, 19:117, Jun. 19, 2002, p. 6.

³⁴⁷ Ware, A., "Northeast swing supply in limbo over sensitive politics of LNG," *Natural Gas Week*, Feb. 2, 2002.

³⁴⁸ See Weems et al., Note 344.

The time taken to obtain approval for a new LNG terminal is typically between 2 to 4 years.³⁴⁹ The recent applications for the reactivation and expansion of the existing terminals at Cove Point and Elba Island provide an insight into the length of time required for permitting under FERC alone. The application to reopen the Cove Point terminal took more than 21 months to be approved and then, as discussed previously, was revisited due to heightened security concerns in the wake of September 11.³⁵⁰ In the case of the Elba Island terminal, the developers had to wait 17 months for FERC approval.³⁵¹

6.4 Proposed Siting of LNG Terminals in Baja California, Mexico

6.4.1 Proposed LNG Terminals

The California energy crisis of 2001, caused in part by a natural gas shortage, led a number of major energy firms to propose developing a LNG terminal and associated facilities in Baja California.³⁵² While energy analysts believe that only one or two terminals are needed, at least five individual or groups of energy companies have pursued plans for a terminal.³⁵³ These include Sempra Energy (Sempra), Phillips Petroleum Company and El Paso Corporation (Phillips and El Paso), Marathon Oil Company (Marathon), Royal Dutch/Shell and ChevronTexaco.³⁵⁴ This case study only looks at the progress of Phillips and El Paso, Sempra and Marathon in their efforts to site terminals in Baja California. The details of the projects proposed by these three companies are given in Figure 8.

³⁴⁹ Quinn, A.C. (Group Vice President – BP Gas, Power & Renewables), “The global regulatory climate – Fuelling the growth of a more flexible LNG industry,” presented at the 2nd Annual World LNG Summit, Rome, Dec. 2001.

³⁵⁰ See Weems et al., Note 344.

³⁵¹ Ibid.

³⁵² Gray, T., “US majors rush to LNG as energy headaches mount in California,” *Lloyd’s List*, Apr. 4, 2001, p. 3.

³⁵³ Treat, J., “Baja energy and environment update: Power companies confront power of the people,” May 2002, [cited Feb. 2003], Available: <http://www.americaspolicy.org/articles/2002/0205power.body.html>.

³⁵⁴ Ibid.

Figure 8 : Details of Three LNG Projects Proposed for Baja California

Companies	Phillips Petroleum Company/El Paso Corporation^{355,356}	Sempra Energy^{357,358}	Marathon Oil Company³⁵⁹
Project Launch Date	March 2001	October 2001	February 2002
Location in Baja California	Rosarito Beach	North of Ensenada	South of Tijuana
Project Infrastructure	terminal	terminal, 40-mile pipeline	terminal, pipeline, 400-MW gas-fired power plant
Natural Gas Delivery Capacity*	680 million scf/day	1,000 million scf/day	750 million scf/day
Estimated Project Cost	\$400 million	\$500 million	\$900 million
Scheduled Start-Up Date	2005	late 2005	2005

*scf = standard cubic feet

The LNG terminals proposed by Phillips and El Paso, Sempra and Marathon are all located in close proximity to the United States-Mexico border. Phillips and El Paso are attempting to site their proposed LNG terminal in the relatively densely populated region of Rosarito Beach, located about 15 miles south of the border. The LNG terminal proposed by Sempra is to be built on the Costa Azul plateau, situated just north of Ensenada and about 60 miles south of the border. The proposed site for the Marathon LNG terminal and associated facilities is just south of Tijuana, less than 15 miles south of the border. This site is located in the midst of a highly populated residential area.

³⁵⁵ Phillips Petroleum Company, “Phillips and El Paso plan to deliver Australian LNG to California and Mexico in 2005,” Mar. 2001, [cited Mar. 2003], Available: <http://www.phillips66.com/newsroom/NewsReleases/rel319.html>.

³⁵⁶ El Paso Corporation, “El Paso signs letter of intent to buy Australian LNG from Phillips Petroleum,” Mar. 2001, [Mar. 2003], Available: <http://www.elpaso.com/press/newsquery.asp?sId=2096>.

³⁵⁷ Sempra Energy, “Sempra Energy and CMS Energy Corporation sign agreement to develop LNG receiving terminal in Mexico,” Oct. 2001, [cited Mar. 2003], Available: <http://public.sempra.com/newsreleases/viewpr.cfm?id=1015>.

³⁵⁸ Sempra Energy, “Sempra Energy and Pacific LNG to develop Bolivian liquefied natural gas for Northwest Mexico and Southern California,” Dec. 2001, [cited Mar. 2003], Available: <http://public.sempra.com/newsreleases/viewpr.cfm?id=1055>.

³⁵⁹ Marathon Oil Corporation, “Marathon Oil Company announces proposed LNG and power generation project in Baja California, Mexico,” Feb. 2002, [cited Mar. 2003], Available: http://www.marathon.com/News_Center/Marathon_News/2002_News_Releases/?releaseid=263882.

6.4.2 *Why Baja California?*

There are several reasons why energy companies would consider northern Baja California the ideal location for their proposed LNG terminals. First, the border location offers the companies the opportunity to supply natural gas to the emerging market in Baja California and, more importantly, the larger Californian market. Second, in siting the terminals south of the border, it is possible to avoid the regulatory nightmare that is characteristic of California. Third, there was the expectation that local opposition to a proposed terminal would be less fierce in a developing as opposed to a developed nation.

The stretch of coastline from Ensenada to Tijuana, Baja California, is a prime location for LNG terminals for several other reasons. LNG terminals need to be located on the coast, preferably where there is deep water close to shore; the deep water off much of this coastline would allow tankers to unload directly into the storage tanks. It is also preferable that the terminals be sited where there is minimal risk of seismic activity; this stretch of coastline is geologically stable. Finally, the terminals require reasonably large amounts of space to accommodate docking facilities, several large storage tanks, regasification facilities and other associated infrastructure; this region is not as highly developed as the Californian coastline.

6.4.3 *Demographics of Baja California*

Baja California's population of around 2.5 million is heavily concentrated in two cities, Tijuana and Mexicali. The population of each of the Baja California cities, including Tijuana, Ensenada and Rosarito Beach, is given in Figure 9.

Figure 9 : Populations of Baja California's Cities³⁶⁰

City	Population in 2000
Tijuana	1,212,232
Mexicali	764,902
Ensenada	369,573
Tecate	77,444
Rosarito Beach	63,549

Baja California is Mexico's wealthiest state; the state's gross regional product (GRP) per capita in 1999 was \$6,235 as compared to \$4,841 for the country as a whole and its poverty rate in 1995 at 21 percent was the country's lowest.^{361,362} One factor contributing to Baja California's relative wealth is that hundreds of firms from around the world have located "maquiladoras", or assembly-line factories, in the state to take advantage of its cheap labor, its proximity to the United States and more recently the preferential access to the United States markets afforded by the North American Free Trade Agreement (NAFTA). In December 2000, the number of "maquiladoras" in Baja California was 1,279 with a workforce of 283,000.³⁶³ Second, there are some 40,000 people passing through the Tijuana/San Diego border station from Mexico to the United States each day to access better paid jobs.³⁶⁴ Both of these factors act to boost household incomes and improve the standard of living in Baja California relative to the Mexican mainland.

Baja California residents are however still very poor by the standards of the United States. This is readily evident when one compares the GRP per capita for Baja California of \$6,235 with the GRP per capita of \$37,670 for San Diego County.³⁶⁵ Even Imperial County, which is situated east of San Diego County and is considerably less well off with an unemployment rate of 23.2 percent, has a significantly higher GRP per capita of \$21,838.³⁶⁶ Contributing to the great

³⁶⁰ Instituto Nacional de Estadísticas, Geografía, e Informática (INEGI), Census 2000.

³⁶¹ Feinberg, R. and G. Schuck, "San Diego, Baja California and globalization: Coming from behind," Oct. 2001, [cited Apr. 2003], Available: <http://www.pacificcouncil.org/pdfs/Baja.Q.final.pdf>.

³⁶² Economic Research Service, United States Department of Agriculture (USDA), "Agricultural outlook – December 2000," Dec. 2000, [cited Apr. 2003], Available: <http://www.ers.usda.gov/publications/agoutlook/dec2000/ao277e.pdf>.

³⁶³ See Feinberg et al., Note 361.

³⁶⁴ Ibid.

³⁶⁵ Ibid.

³⁶⁶ Ibid.

disparity in wealth between the Californians and Baja Californians is the fact the average wage-plus-benefit package in the “maquiladora” sector is \$1.50 to \$2.00 per hour; this compares to about \$18 per hour in the United States.³⁶⁷ It should also be noted that Baja California is severely lacking in urban, educational and health infrastructure.³⁶⁸ This is primarily due to the fact that the high level of population growth in the cities, sparked by the “maquiladora” industry, has surpassed the ability of the cities to meet the needs of their inhabitants.

6.4.4 Regulatory Requirements

The proposed LNG terminals cannot be built without the approval of the Mexican federal government and the relevant municipal authority.³⁶⁹ The companies must obtain an environmental permit from Mexico’s federal environmental agency, Semarnat, as well as a building permit from Mexico’s energy regulatory commission, CRE. Since there are no LNG terminals in Mexico, Mexico’s Energy Ministry needed to create rules for these facilities. The Ministry issued temporary rules in August 2002, with the final regulations not expected to be issued until late 2003.^{370,371} A land-use permit must also be obtained from the local jurisdiction. It is to be noted that the municipal governments have the final say on whether or not the proposed projects get the go-ahead.³⁷²

³⁶⁷ Ibid.

³⁶⁸ Insituto Tecnológico y de Estudios Superiores de Monterrey (ITESM) and Instituto de Información Fronteriza México-Estados Unidos (InfoMexus), “Chapter 3: Demographic, social and economic characteristics of the northern border region,” In *Reporte del Estado Ambiental y de los Recursos Naturales en la Frontera Norte de México*, 2002, [cited Apr. 2003], Available: http://www.americaspolicy.org/rep-envt/ch-3_body.html.

³⁶⁹ Lindquist, D., “Key permit granted for LNG plant in Mexico; Sempra still needs two more OKs for Baja facility,” *The San Diego Union-Tribune*, p. C1.

³⁷⁰ “Mexico releases regulations for building LNG facilities,” *Alexander’s Gas & Oil Connections*, 7:16, Aug. 2002, [cited Mar. 2003], Available: <http://www.gasandoil.com/goc/company/cnl23449.htm>.

³⁷¹ Wetuski, J., “LNG activity heats up in Mexico,” Nov. 2002, [cited Feb. 2003], Available: <http://www.energy-markets.com/previous/1102/power.html>.

³⁷² Lindquist, D., “Proposed plants fuel passions – Political, environmental concerns clash over gas terminals on Baja’s coast,” *The San Diego Union – Tribune*, Mar. 4, 2002, p. A1.

6.4.5 *Support for Projects*

There is a great deal of support for the proposed LNG terminal projects from high-level government officials on both sides of the border. These supporters include Mexican President Vicente Fox, Baja California Governor Eugenio Elorduy and California Governor Gray Davis.

The administration of President Fox has greatly encouraged the LNG terminal projects.³⁷³ It recognizes that the LNG terminals would serve not only as a means by which to meet the country's rapidly growing energy needs but also as an important source of foreign direct investment.³⁷⁴ Baja California Governor Elorduy supports the construction of the terminals on the grounds that it is necessary for the state to diversify its economy beyond tourism and manufacturing.³⁷⁵ This is especially true given that the number of Americans visiting this popular tourist destination has slumped in the wake of September 11 and the state's 'maquiladoras' have laid off over 60,000 workers since early 2001.³⁷⁶ Finally, California Governor Davis has been pushing for the projects in the interest of increasing natural gas supplies in the region.³⁷⁷

In an effort to make the LNG terminals more appealing to local communities, the supporters of the projects have touted the benefits of an abundant and relatively clean energy supply, increased local growth and development, and additional jobs.³⁷⁸ There have also been assurances from the projects' supporters that the terminals would not pose a safety hazard. It is to be noted that the temporary safety rules released by Mexico's Energy Ministry in August are more stringent in many regards than the American and European LNG standards upon which they are based.³⁷⁹ The obvious concern, however, is that these standards won't necessarily be implemented, enforced or monitored.

³⁷³ See Treat, Note 353.

³⁷⁴ Ibid.

³⁷⁵ Millman, J., "Oil groups see Baja as door to California," Mar. 2002, [cited Feb. 2003], Available: <http://www.ceert.org/news/02baja.html>.

³⁷⁶ Smith, G., "The decline of the Maquiladora: The government isn't moving to rescue a troubled industry," *Business Week*, Apr. 29, 2002, [cited Mar. 2003], Available: http://www.businessweek.com/magazine/content/02_17/b3780078.htm.

³⁷⁷ See Treat, Note 353.

³⁷⁸ Ibid.

³⁷⁹ Lindquist, D., "Firms line up for LNG projects in Mexico," *The San Diego Union – Tribune*, Nov. 7, 2002, p. C1.

6.4.6 Response to Phillips/El Paso Proposed LNG Terminal

The LNG terminal proposed by Phillips and El Paso has attracted strong criticism from both the residents of Rosarito Beach and local government officials. There are twelve different citizens groups fighting plans for the terminal, with hundreds of residents having signed petitions and taken part in boisterous street demonstrations.^{380,381} The leader of the coalition of citizens groups fighting the project, Eduardo Orozco, has made it clear that the residents are not against the project itself but rather the site.³⁸² Rosarito Beach Mayor Luis Enrique Diaz has also spoken out against the proposed site for the LNG terminal.³⁸³ Given the significant opposition to the LNG terminal from local residents, Mayor Diaz has talked of either blocking the land-use permit required to develop the terminal or having a vote to let the residents decide the terminal's fate.³⁸⁴ The two major concerns of the residents and local government officials are that the LNG terminal would pose a major safety hazard and that it would ruin the town's tourism industry.^{385,386}

The local residents and government officials are fearful that there could be a major fire or explosion if the LNG terminal was located at the proposed site. It is important to note that they're not so worried about the LNG terminal itself but rather its location between an old government-owned power plant and an equally old, fuel oil-storage facility operated by the state-run oil company Pemex.³⁸⁷ The fear is that the adjacent facilities, both of which have a well-documented history of environmental and/or safety violations, could set off a chain of events that would result in a catastrophic event involving the terminal.^{388,389} In addition to the terminal's close proximity to the old power plant and fuel oil storage tanks, the site is crisscrossed by a network of powerlines and is situated above a natural gas pipeline.³⁹⁰

³⁸⁰ See Treat, Note 353.

³⁸¹ Fox, B., "Natural gas proposal sparks worry in Baja California state," May 2002, [cited Feb. 2003], Available: <http://www.sltrib.com/2002/may/05212002/tuesday/738639.htm>.

³⁸² See Lindquist, Note 379.

³⁸³ Ibid.

³⁸⁴ Ibid.

³⁸⁵ Ibid.

³⁸⁶ See Fox, Note 381.

³⁸⁷ Ibid.

³⁸⁸ Ibid.

³⁸⁹ See Lindquist, Note 379.

³⁹⁰ Ibid.

The other major concern of the opposition is that the proposed LNG terminal would greatly reduce the town's appeal to tourists. The beach town is a popular holiday destination, particularly with American college students on Spring Break.³⁹¹ It is feared that a LNG terminal located at the entrance to the beach would keep tourists away. This is no small matter given that the tourism industry in Rosarito Beach not only contributes significantly to Baja California's \$700-million-per-year income in tourism but also employs thousands of local residents.³⁹² The companies have offered to paint the LNG storage tanks like "works of art" to make them more aesthetically pleasing but this has, not surprisingly, done little to reduce opposition to the project.³⁹³

6.4.7 Response to Sempra Proposed LNG Terminal

The opposition to the LNG terminal proposed by Sempra differs from the opposition to the Phillips and El Paso proposal in that it comes from national and regional environmental groups more than local residents.³⁹⁴ The main environmental groups involved in opposing the terminal are Pronatura, Mexico's largest environmental organization, and Terra Peninsular, a group working to establish conservation areas on the Baja California peninsula. It is to be noted that the primary goal of these groups is not to stop the construction of the terminal but rather to pressure the companies into buying additional land, up to 1,000 acres, around the site so that some of the coastline might be kept in its pristine state.³⁹⁵ The local government has shown some support for the project in that it has changed the site's zoning from "rustica", a protected status in Mexico, to industrial.³⁹⁶ There is however the potential for local officials to be influenced by the concerns raised by the environmentalists. Indeed, a proposal to build a power plant, Rosarito IV, in the same area was recently rejected by officials after Greenpeace Mexico drew attention to the area's ecological importance.³⁹⁷

³⁹¹ See Fox, Note 381.

³⁹² Niller, E., "LNG terminal plans proliferate in Baja California," *EcoAmericas*, Apr. 2002, [cited Jul. 2003], Available: <http://www-irps.ucsd.edu/irps/innews/ecoams040002>.

³⁹³ See Lindquist, Note 379.

³⁹⁴ Ibid.

³⁹⁵ Ibid.

³⁹⁶ See Alexander's Oil & Gas Connections, Note 370.

³⁹⁷ Ross, J.P., "Sempra: Exporting Pollution," *CorpWatch*, May 2002, [cited Jul. 2003], Available: <http://www.corpwatch.org/issues/PRT.jsp?articleid=2588>.

The major concern centering around the proposed LNG terminal is the damage it might cause to one of the few remaining untouched sections of a unique and fragile ecosystem. The region extending from Santa Barbara, California, to El Rosario, Baja California, is one of five mediterranean-type climate zones in the world and the only climate zone of its type in North America. This region is home to a unique ecosystem referred to as the Southcoast Ecoregion. It is also one of the world's only twenty "hot-spots" of biodiversity. In addition to this, the terminal is to be sited on the Costa Azul plateau, a small section of the Southcoast Ecoregion, which is the only place in the world that one can find the cactus species "ferocactus viridescens".^{398,399,400}

The local government's decision to change the site's zoning classification might well have been influenced by the fact that Sempra already has connections with government officials. While Sempra is small compared with the other contenders, few companies can match Sempra's track record in Mexico.⁴⁰¹ Sempra built Mexico's first private natural gas distribution system, located in Mexicali, and operates three others. It has also laid a number of other natural gas pipelines, including a pipeline from San Diego to the government-owned power plant in Rosarito Beach. In addition to this, it is the first company to develop a power plant in Mexico, near Mexicali, that is to supply electricity to the United States.

6.4.8 Response to Marathon Proposed LNG Terminal

While the proposed site for the Marathon LNG terminal is strongly opposed by many local residents, it has the support of local government officials.⁴⁰² The local government supports the proposed LNG complex because it believes that the project will contribute to a higher standard of living for the citizens of Tijuana and surrounding areas. Specifically, Tijuana Mayor Jesus Gonzalez Reyes sees the project as providing benefits to the community in the form of

³⁹⁸ Terra Peninsular, "South Coast Ecoregion plan," *Salvia – The Newsletter of Terra Peninsular*, 1:1, Jul. 2002, [cited Apr. 2003], Available: <http://www.terrapeninsular.org/newsletters/newsletter-v1n1/sce-en.html>.

³⁹⁹ Ross, J.P., "Sempra: Exporting pollution – U.S. Mexico border region to pay the price for California's power," May 2002, [cited Feb. 2003], Available: <http://www.corpwatch.org/issues/PRT.jsp?articleid=2588>.

⁴⁰⁰ Lindquist, D., "Planned Baja LNG projects debated at public hearings," *The San Diego Union - Tribune*, Feb. 1, 2003, p. C1.

⁴⁰¹ See Lindquist, Note 379.

⁴⁰² See Niller, Note 392.

employment, reliable and clean energy, and improvements to the quality of the local environment. It is also to be noted that Mayor Reyes does not anticipate that the proposed complex will pose a threat to public safety.⁴⁰³

Marathon has won the support of the local government through offering compensation in the form of needed infrastructure.⁴⁰⁴ Specifically, in addition to providing the community with a supply of natural gas and electric power, it plans to build a wastewater treatment facility and a water desalination plant.⁴⁰⁵ The wastewater treatment facility is to be used to treat a portion of the local municipal wastewater for use by the complex as process water. This would result in significant environmental benefits by reducing the amount of municipal waste discharged to offshore waters. The water desalination plant is to be used to produce potable water for the local market. This would be beneficial given the water shortages experienced in the region due to the reduced flow of the Colorado River.

6.4.9 Outlook

The Phillips and El Paso proposal to build a LNG terminal near Rosarito Beach more than likely won't go ahead.⁴⁰⁶ In October 2002, the proposed LNG terminal was denied an environmental permit by Mexico's federal environmental agency Semarnat.⁴⁰⁷ Despite this setback, the two energy companies vowed to still pursue the project stating that the problems that had been identified could be fixed.⁴⁰⁸ Shortly after, in December 2002, El Paso announced that it was having second thoughts about its plans to build an LNG terminal with partner Phillips in Rosarito Beach and was going to shift its LNG development priorities from Baja California to Altamira on Mexico's Gulf Coast.⁴⁰⁹ Managing director of El Paso Global LNG, Robert Bryngelson, noted that even if the company did decide to proceed with a Baja California project, it would most likely abandon the proposed site in Rosarito Beach given the town's "very politically

⁴⁰³ Ibid.

⁴⁰⁴ See Treat, Note 353.

⁴⁰⁵ See Marathon Oil Corporation, Note 359.

⁴⁰⁶ Lindquist, D., "5 still compete for LNG projects – Amid much shuffling, firms hope to build in Baja California," *The San Diego Union – Tribune*, Dec. 11, 2002, p. C1.

⁴⁰⁷ Gall, P., "El Paso, Conoco hit turbulence in morass of Mexican LNG rules," *Natural Gas Week*, Oct. 11, 2002.

⁴⁰⁸ See Lindquist, Note 406.

⁴⁰⁹ Ibid.

charged climate”⁴¹⁰. It is to be noted that, as of July 2003, Semarnat had not granted an environmental permit to the project and the CRE had not received an application for a building permit.

It is not clear whether Sempra will be successful in siting its proposed LNG terminal on the Costa Azul plateau. In April 2003, the company received the required environmental permit from Semarnat.⁴¹¹ This was the first environmental permit issued by Semarnat for a LNG project in Baja California.⁴¹² Local residents have, however, asked Mexico’s federal court to void the environmental permit on the grounds that Semarnat didn’t follow proper procedures in granting the permit.⁴¹³ In addition to the environmental permit, the proposed LNG terminal requires a development permit from the CRE and a land-use permit from the City of Ensenada. While it is expected that the proposed terminal will receive its CRE permit in the near future, there is still some question as to whether the Ensenada municipal government will grant its approval.⁴¹⁴ In the case that the terminal does get the go-ahead, it is scheduled to be online by the end of 2006.⁴¹⁵

Marathon is in a similar situation to Sempra with regards to its proposed LNG terminal for Tijuana. In May 2003, the CRE granted the company the necessary development permit, which like Sempra’s environmental permit was the first of its kind to be issued in Baja California.⁴¹⁶ The proposed LNG terminal does however still need to be awarded an environmental permit by Semarnat and a land-use permit by the Tijuana municipal government. Semarnat is expected to issue the environmental permit shortly but, as for the Sempra case, there are no assurances that the terminal will be granted the local land-use permit.⁴¹⁷

⁴¹⁰ Ibid.

⁴¹¹ “Sempra gets environmental permit for Mexican LNG terminal,” *Alexander’s Gas & Oil Connections*, 8:10, May 15, 2003, [cited Jul. 2003], Available: <http://www.gasandoil.com/goc/company/cn132085.htm>.

⁴¹² “Sempra gains bigger foothold in LNG market,” *Gas Daily*, 20:77, Apr. 24, 2003, p. 1.

⁴¹³ Lindquist, D., “Action filed in Baja to void Sempra, Shell LNG permits,” *The San Diego Union-Tribune*, Jul. 16, 2003, p. C1.

⁴¹⁴ Buchanan, R., “Marathon wins permit for Mexico LNG terminal,” *Platt’s Oilgram News*, 81:89, May 9, 2003, p. 3.

⁴¹⁵ “Proposed LNG projects advance in Mexico, Canada,” *Gas Daily*, 20:116, Jun. 19, 2003, p. 3.

⁴¹⁶ “Marathon gets nod for Mexican LNG terminal,” *Gas Daily*, 20:89, May 12, 2003, p. 3.

⁴¹⁷ Ibid.

6.5 Summary of Key Lessons Learned

- **It is not necessarily easier to site a facility in a less developed nation**

The energy companies considered Baja California the ideal location for the siting of a LNG terminal because it would allow them to avoid the NIMBY syndrome and complex permitting procedures characteristic of the United States, in particular California. However, the proposed Baja California LNG terminals have, at least in the case of the terminal proposed by Phillips and El Paso for Rosarito Beach, met with quite significant local opposition. Indeed, through grassroots activism alone, the Rosarito Beach residents would seem to have defeated Phillips and El Paso's proposal. Further, it is not certain whether the terminals proposed by Semptra and Marathon will be able to overcome the major regulatory hurdle of acquiring a land-use permit from the relevant municipal government.

- **Compensation is important in building a community's support for a facility**

The likelihood of a facility being successfully sited is far greater where the affected community is adequately compensated. This can be simply explained by the fact that compensating the community results in a fairer distribution of costs and benefits. The importance of compensation to successful facility siting is well illustrated by the Baja California LNG siting case. In the case of the LNG terminal proposed by Phillips and El Paso, the companies responded to the Rosarito Beach residents' legitimate concern that the proposed terminal would negatively impact its tourism industry with an offer to paint the LNG storage tanks like "works of art". On the other hand, Marathon offered as part of its terminal proposal to provide significant compensation in the form of much needed local infrastructure. Similarly, in buying up land surrounding its proposed site in an effort to preserve some of the coastline in its pristine state, Semptra would be making a valuable contribution to the region. It is not surprising, given this, that while there is a reasonable chance that the Semptra and Marathon proposals will still be issued the necessary land-use permit, the project proposed by Phillips and El Paso is as good as dead.

- **Facilities with potential negative consequences may be particularly difficult to site in certain circumstances**

The siting of facilities that pose a public safety hazard is quite often met with significant local opposition. This opposition can typically be overcome where community members are educated as to the risks involved and their concerns are addressed. However, there are some situations for which it can be imagined that a public outreach program might not be able to calm fears. This would have likely been the case in addressing the opposition to existing LNG terminals that occurred in the wake of the September 11, 2001 terrorist attacks. A similar situation would have likely arisen in dealing with the Rosarito Beach community, which had been burdened for some time with facilities that had been poorly maintained. It is also possible to imagine that, in the case of a relatively new technology such as geologic carbon sequestration, communities might initially be very wary of the risks associated with a project. Given this, it might be best to avoid population regions in favor of more remote areas until such time as the public is sufficiently familiar with the technology.

7. CONCLUSION

7.1 Don't Underestimate the Opposition

Necessary but controversial facilities have become increasingly difficult to site. The most frequent impediment to the siting of these facilities is NIMBY syndrome. This phenomenon, whereby a community is opposed not so much to the project itself but rather its proposed location, is most prevalent in affluent communities. While not insurmountable, these communities have the resources to mount an impressive campaign against a project. Disadvantaged communities, for which there exists a real trade-off between jobs/local economic growth and environmental quality, are typically more welcoming of facilities of this type. Society has however become increasingly aware of the need to ensure that minority and low-income communities do not bear a disproportionate share of risks. This has resulted in a significant number of challenges to facility siting in these communities on environmental justice grounds. Despite the fact that, to date, no environmental justice legislation has been passed and no environmental justice lawsuit won, the mere filing of a Title VI complaint with EPA has persuaded many companies to relocate. Further, grassroots activism continues to play an important role in helping disadvantaged communities, particularly those located outside the United States, fend off unwanted facilities. It is therefore stressed that, aside from NIMBY opposition, developers should neither discount the possibility nor effectiveness of siting challenges based on environmental justice concerns.

7.2 Survey the Field

Careful site selection can greatly reduce the chances that a new facility will meet with local opposition. A number of technically feasible and economically competitive sites should initially be selected for consideration, and then the final choice of site be based on which community would seem most likely to welcome the facility. In ranking the sites, there are a few key considerations. First, particular attention should be paid to the issue of environmental justice. While disadvantaged communities should not automatically be eliminated from consideration, those with any number of polluting facilities are best ruled out. Second, communities that have

had negative experiences with industry are more likely to oppose a new facility. It is therefore recommended that these communities be avoided in favor of those with more positive experiences. Finally, given that it can be difficult to site any type of development in pristine areas, particularly where the region is highly dependent on tourism, preference should be given to sites that have been previously occupied by industry and/or are zoned for industrial use.

7.3 Think Team and Play Fair

Local community support for a facility can be achieved through meaningful public participation, trust building and compensation. Public meetings should be held in advance of initiating permitting procedures and, ideally, carried out in accordance with NEJAC guidelines for public participation.⁴¹⁸ Most importantly, for the public participation process to be meaningful, the input received from the community should be incorporated into the final design of the facility. In addition to encouraging the involvement of the affected community, it is important to earn its trust. One means by which to do this might be to garner the support of trusted local industry and, if possible, involve company representatives in the public outreach program. Finally, given that opposition typically arises where there is a failure to ensure a fair distribution of benefits and costs, a compensation package acceptable to the affected community should be prepared.

7.4 Read the Game Plan

Similar tactics are employed by different groups in their opposition to facilities. First, NIMBY opponents tend to concentrate on the negative impacts, no matter how minor, and use them in their fight against the project. The key in this situation is to not only inform the community as to the benefits of the project but also discount the concerns raised by the opponents as “camouflage for self-interest”.⁴¹⁹ Second, opponents will focus on gaps and/or a lack of specificity in the regulations governing the facility. However, the fact of the matter is that, where the project abides by the existing regulatory requirements, it is very difficult for the opponents to defeat it

⁴¹⁸ National Environmental Justice Advisory Council (NEJAC), “The Model Plan for Public Participation,” Report No. EPA-300-K-00-001, Feb. 2000, [cited Jul. 2003], Available: http://www.epa.gov/compliance/resources/publications/ej/model_public_part_plan.pdf.

⁴¹⁹ See Reiner, Note 320.

on legal grounds. Finally, particularly where a facility is to be sited in a disadvantaged area, powerful outside actors can become involved in the siting dispute. While these groups claim to represent the interests of the local citizens, it can sometimes be the case that they are pursuing their own agenda.

7.5 Prepare for the Ultimate Challenge

Siting facilities that pose safety, health and/or environmental risks can be particularly challenging. Given that opposition to a facility of this type is generally fuelled by a lack of information and/or misinformation in regard to the risks involved, educating community members and addressing their concerns is vital to the project being accepted. It would also seem helpful to hire facilitators, specializing in the arbitration of controversial environmental issues, to conduct the public meetings. Further, in the case of a relatively new type of project, it might be wise to avoid populated regions in favor of more remote areas until such time as the public is sufficiently familiar with the technology. As a final note, over the last couple of decades, a period during which even relatively environmentally-benign development has often met with significant local opposition, there have been numerous instances of facilities with localized risks being successfully sited.