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THE TROPICS EXPLOITED: RISK PREPAREDNESS AND CORPORATE SOCIAL RESPONSIBILITY IN OFFSHORE ENERGY DEVELOPMENT

By: *Nadia B. Ahmad**

ABSTRACT

Soaring energy demands and increasing technological innovation have led to the rapid exploitation of offshore oil and gas exploration and development. This Article seeks to examine elements of risk preparedness and corporate social responsibility in the context of the underwater natural gas pipeline in the Eastern Caribbean and the exploration of Florida's potential offshore energy reserves. I discuss these two case studies to illustrate the prevalence of emerging regional energy corridors in previously unfathomable tropical and subtropical locales known for tourism-intensive commercial activity. While images of environmental degradation of the 2010 BP oil spill remain entrenched in the collective consciousness, oil and gas operators are continuing to forge ahead with developing natural resource plays. This Article outlines an agenda for managing the inevitable exploitation of natural resources through sustainable development principles.

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I. INTRODUCTION

Soaring energy demands and increasing technological innovation have led to the rapid exploitation of offshore oil and gas exploration and development. This Article seeks to examine elements of risk preparedness and corporate social responsibility in the context of the underwater natural gas pipeline in the Eastern Caribbean and the exploration of Florida's potential offshore energy reserves. I discuss these two case studies to illustrate the prevalence of emerging energy corridors in previously unfathomable tropical and subtropical locales known for tourism-intensive commercial activity. While images of environmental degradation of the 2010 BP oil spill remain entrenched in the collective consciousness, oil and gas operators are continuing to forge ahead with developing natural resource plays. This Article outlines an agenda for managing the inevitable exploitation of natural resources through sustainable development principles.

While public hesitation exists against offshore energy development, oil and gas exploration can be achieved in a more sustainable manner with effective regulatory schema. A realization of corporate social responsibility and planning geared toward risk preparedness instead of

risk management after disaster strikes provides a preliminary framework for conducting a cost-benefit analysis. I would like to explore techniques for sustainable exploration and development of offshore energy resources, as well as ways to engage the local, state, and regional groups. First, I will discuss the Eastern Caribbean Gas Pipeline Project and then turn toward offshore energy development in Florida.

II. ANALYSIS OF THE EASTERN CARIBBEAN GAS PIPELINE PROJECT

Developers plan to break ground on a 600-mile network of under-sea natural gas pipelines starting from Tobago northward to five other islands including Barbados, Martinique, St. Lucia, Guadeloupe and Dominica.¹ While the initial construction phase is expected to start in 2013, the proposal and planning stage of the project has generated little attention to date outside of the region. These tropical Caribbean paradises will benefit from the development of energy resources which will assist them in their electricity generation and serve as a means to alleviate regional poverty and promote sustainable growth. Given the magnitude of the Deepwater Horizon oil spill in the Gulf of Mexico in 2010, projects developers should proceed with caution on this underwater gas pipeline network. If environmentalists aim to thwart this project, they face an uphill battle.

This Article will be the first to explore the Eastern Caribbean gas pipeline from an academic and legal scholarship perspective. I would like to examine elements of risk preparedness in the context of corporate social responsibility. Researchers, scientists, policy makers, politicians, and businessman have to work within a legal framework, but at the same time they must keep an eye on the triple bottom line. The potential for great environmental harm and degradation is very high with the Eastern Caribbean gas pipeline. Ideally renewable energy should be pursued in the ocean, coastal, and in-stream areas. Yet alternative energy sources will not be viable energy sources to meet rising energy demands for at least thirty to fifty years. So while this project is beyond the stage of feasibility studies, the project presents an opportunity for engaging in corporate social responsibility practices during the construction phase and beyond, i.e. starting off on the right foot, not after disaster strikes.

A. *Background Project Information on Eastern Caribbean Gas Pipeline*

The Infrastructure Development Partnership (IDP) will assemble a program to deliver a commercial architect agreement, undertake risk

1. Linda Hutchinson-Jafar, *Trinidad Moving Ahead with Caribbean Gas Pipeline*, GUYANA CHRON., Feb. 20, 2003, available at <http://www.landofsixpeoples.com/news301/nc302205.htm>.

analysis to ensure a commercially viable and financeable project, assemble a team of financial advisors and legal and finance counsel, structure baseline project agreements, and help with funding initiatives.² Issues with financing and multilateral agreements between the involved parties may have prevented the project from moving forward initially because of the number of countries involved. R. Gregory Rich is the CEO of the Eastern Caribbean Gas Pipeline Company Ltd (ECGPC).³ The shareholders of ECGPC are Guardian Holdings Limited, Trinidad and Tobago Unit Trust Corporation, National Gas Company of Trinidad and Tobago Limited, and the Intra-Caribbean Gas Pipeline Company Limited.⁴ An economic feasibility study on the pipeline in 2004 demonstrated that the project was commercially viable.⁵

The project is “the most significant economic co-operation venture in the history of the Caribbean.”⁶ When Prime Minister of Trinidad and Tobago Patrick Manning went public at the Caricom Heads of Government meeting in August 2002, many skeptics described the project as a pipedream.⁷ Undaunted by negative comments and buoyed by the results of a prefeasibility study, the project initiators, local firm Intra Caribbean Gas Pipeline Company (ICGPC) proceeded to seek more private sector partners for the project, including Saipem, an Italian engineering firm engaged in offshore construction, onshore construction, liquid natural gas, and drilling.⁸

Some key technical considerations included the coral reef ecosystems, the volcanic and earthquake activity in the zone, and the possible impact of hurricane waves.⁹ From the standpoint of the consumers, the most important economic parameter is the delivery of natural gas under a pricing regime that is competitive, predictable, and non-volatile.¹⁰ On both technical and economic grounds the study indicates that the project is commercially viable. Geopolitical issues, including the historic penchant for insular haggling within Caricom, have plagued other regional economic co-operation projects and cast

2. *Eastern Caribbean Gas Pipeline*, INFRASTRUCTURE DEV. P'SHIP (IDP), <http://www.infradev.co.uk/Eastern-Caribbean-Gas-Pipeline.htm>.

3. *Id.*

4. *Id.*

5. *Eastern Caribbean Gas Pipeline Project Accomplishes Major Milestone*, ALEXANDER'S OIL & GAS CONNECTIONS (Sept. 12, 2004), <http://www.gasandoil.com/news/2004/10/ntl44030>.

6. *Id.*

7. *Id.* The projected pipeline does not go beyond 2,000 meters at its maximum depth.

8. *See id.* Within recent times, Saipem was the lead contractor on the famous Blue Stream project, the world's largest under-water pipeline. The Blue Stream runs 775 km from Southern Russia to Turkey across the Black Sea, reaching water depths of over 2,150 meters. *Id.*

9. *Id.*

10. *Id.*

a dark shadow over this one as well.¹¹ The main consumers are the electric utilities in the various islands, most of which are already strong commercially viable entities. The ultimate beneficiaries are the people of the islands, a point which the politicians should not ignore.¹² Manning, though, has assured that the decision to go ahead with the Eastern Caribbean Gas Pipeline project would not rule out the possibility of a larger pipeline, involving Venezuela, being built in the Caribbean Sea.¹³ Manning proposed the pipeline, which he said would significantly reduce energy costs in the Caribbean islands and allow them to develop their economies based on low-priced clean fuel.¹⁴ Venezuelan President Hugo Chavez asked that his country join with Trinidad and Tobago in building a pipeline that would not only serve the Eastern Caribbean but also extend north as far as Miami with off-shoots to Jamaica and Cuba.¹⁵ The Trinidad and Tobago government agreed to work with the Venezuelans on the project but have been wary that they did not want their own project to be bogged down in what is a far more challenging technical and commercial venture.¹⁶ Manning said that the pipeline would cost \$700 million to build and that it was likely the Trinidad and Tobago Government through one of its agencies that would build and operate the pipeline.¹⁷

B. *Interconnection of Energy Resources in the Caribbean Region*

In the Final Report on *Caribbean Regional Electricity Generation, Interconnection, and Fuels Supply Strategy* submitted to the World Bank, it is noted that “the goal of reducing dependence on high price imported oil products and the goal of reducing environmental impacts and increasing the integration of the region” are “complementary.”¹⁸ In the Eastern Caribbean, the benefit of interconnection is apparent when one country possesses “a source of low cost power and its neigh-

11. *Id.*

12. *Id.* The National Gas Company is expected to be involved in the project as the possible gas seller and equity holder. The major responsibility of the Governments seems to be the legal framework that would govern the passage of the pipeline from one territory to another. Barbados already has a gas distribution system serving over 12,000 residential, commercial, and industrial customers, but there are concerns for the dwindling reserve base. The pipeline would open opportunities for local distribution in all the islands including Tobago which can be connected en-route. *Id.*

13. Curtis Williams, *Trinidad & Tobago Eastern Caribbean Gas Pipeline by 2007*, TRINI. EXPRESS (Oct. 24, 2004), <http://www.latinpetroleum.com/cgi-bin/artman/exec/view.cgi?archive=17&num=3748&printer=1>.

14. *Id.*

15. *Id.*

16. *Id.*

17. *Id.*

18. Nexant, *Caribbean Regional Electricity Generation, Interconnection, and Fuels Supply Strategy: Final Report*, submitted to the World Bank, Mar. 2010, http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2011/02/08/000112742_20110208142646/Rendered/PDF/594850Final0Report.pdf

bor does not.”¹⁹ The primary renewable energy sources in the region are geothermal, wind, and small-scale hydroelectric.²⁰ However, inadequate technology and infrastructure exist for renewable energy sources to be short-term solutions to meet existing energy demands. Natural gas reserves will bridge the gap until the technology, infrastructure and policies are developed for alternative energy sources. For sustainable regional economic growth, the natural gas reserves are the most practicable energy option, especially when the infrastructure for interconnecting its supply exists.

III. PRIORITY ON CORPORATE SOCIAL RESPONSIBILITY (CSR)

A. *The Profit Motive*

A longstanding misconception that a corporation’s duty to maximize profits trumps other considerations including human development, social responsibility, and environmental stewardship has created a cyclical problem that is only festered by many academics.²¹ The issue of CSR remains because managers “do want to engage (or at least appear to engage) in CSR, arguing (in the face of the evidence) that this is in the ‘long run’ benefit of the shareholders.”²² Reuven S. Avi-Yonah explains the three approaches to CSR:

The first type of CSR involves activities that can clearly and demonstrably benefit shareholders in the long run. For example, actions that prevent environmental disasters or comply with legal and ethical rules can have a significant positive effect in preventing disastrous corporate calamities, even if they cost money in the short run. Thus, even proponents of the aggregate theory, the currently dominant theory of the corporation in academic circles, would support this type of CSR.

The second type of CSR involves activities that are designed to mitigate social harms the corporation was responsible for, even when there is no direct legal responsibility, and when no benefit to the shareholders can be shown. Under the aggregate theory, such activities should not be permitted because they do not benefit shareholders. But under the artificial entity theory, since it emphasizes the

19. *Id.*

20. *Id.*

21. Reuven S. Avi-Yonah, *The Cyclical Transformations of the Corporate Form: A Historical Perspective on Corporate Social Responsibility*, 30 DEL. J. CORP. L. 767, 814–15 (2005). “From Theodore Levitt’s classic 1958 article on ‘The Dangers of Social Responsibility’ to Milton Friedman’s influential New York Times magazine article in 1970, to current writings by Michael Jensen and others, the consensus is that ‘social responsibility of business . . . [is] to increase its profits.’ The reasons given are first, that since management are deploying the shareholders’ money, they should not be permitted to do so in ways that do not directly benefit the shareholders; and second, that permitting more than one measure of managerial success would enhance the agency cost problem and make it impossible to evaluate managers with any reasonable degree of objectivity.” *Id.*

22. *Id.* at 770.

benefits of corporate existence derived from the state, an implicit contract can be inferred that the corporation will help the state in mitigating harms that it causes even in the absence of legal responsibility. Otherwise, the state will have to bear this burden imposed by the corporation it created.

Finally, the third type of CSR involves activities like AIDS prevention, for which the corporation is not responsible and which in most cases do not benefit its shareholders, even in the long run. This type of CSR would not be permitted under the aggregate or artificial entity theories. But under the real entity theory, since the corporation is regarded as a person just like individuals, it is permitted to act philanthropically just like individuals are, and should, in fact, be praised to the extent it does so.²³

Modern economic theory addresses the old divide between stakeholderists and stockholderists showing that “corporate decision makers have both the duty and power to reconcile conflicting interests on a constant basis.”²⁴ However, “multiple considerations, ambiguity and uncertainty” resulting from market pressures and the corporate culture make managers untrustworthy.²⁵

Managers and business leaders should concede, though, that addressing a problem through risk prevention on the front-end is better than cleaning up in the wake of a spill’s aftermath. Adaptation in terms of research and implementation is not only more cost-effective than remediation, but many of the solutions are win-win opportunities that would benefit the Eastern Caribbean region with or without looking at climate change.²⁶ In most cases, addressing the existing problems to the region’s environment and biodiversity will not only improve the resilience of the ecosystems and well-being of communities today, but will also place them in a better position to “weather the storm” of climate change.²⁷

B. *Improving Communication between Stakeholders and Corporations*

Organizations like the Port of Spain, Trinidad-based non-profit Caribbean Natural Resources Institute (CANARI) are essential to improving dialogue between stakeholders and corporate entities.²⁸ Often times the indigenous communities believe that their local natural resources are being exploited and squandered by corporate elites, espe-

23. *Id.* at 814–15.

24. Amir N. Licht, *The Maximands of Corporate Governance: A Theory of Values and Cognitive Style*, 29 DEL. J. CORP. L. 649, 717–18 (2004).

25. *Id.*

26. Caribbean Natural Resources Institute, *Climate Change in the Caribbean: The Case for Greater Investment in Research and Adaptive Policies*, CANARI POLICY BRIEF NO.10 (2008), <http://www.canari.org/docs/CANARI%20PB%2010%20English.pdf>.

27. *Id.*

28. CANARI, <http://www.canari.org/>.

cially when the local population cannot visualize tangible direct benefits either socially or economically. Stakeholder participation should not be a trend or afterthought but a process that occurs in the early phases of planning. The Eastern Caribbean Gas Pipeline project has primarily been engaged in economic and logistic planning to generate buzz in the industry and support at the national levels. However, for this pipeline project to succeed long term, local stakeholders need to be engaged in the dialogue. From the tour groups, local fishermen, hotel and resort workers and company executives, municipal governments, religious communities, environmental groups and others have to be drawn in so that the construction of the pipeline is a participatory process, not a future conflict.

Improved communication between policymakers and scientists will be essential for this process to work effectively for mutual benefits.²⁹ The need for more effective communication also exists between scientists, policy-makers, and communities.³⁰ Stakeholder identification and analysis are critical first steps in a participatory planning process and constitute an area where a rigorous approach can be applied.³¹ Stakeholder analysis is often undertaken late in a planning and management process, in response to a crisis.³² Yet early identification and analysis exercises can help deter such crises.³³ Within the context of the specific management issues to be addressed, stakeholder identification and analysis provide a basic understanding of the social and institutional context in which the planning process will take place.³⁴

C. *The Ruggie Principles*

The various nations involved in the pipeline project, including Trinidad and Tobago, Barbados, Martinique, St. Lucia, Guadeloupe, and Dominica, should explore options to enforce corporate social respon-

29. CANARI, *supra* note 26.

30. *Id.*

31. Yves Renard, *Guidelines for Stakeholder Identification and Analysis: A Manual for Caribbean Natural Resource Managers and Planners*, CARIBBEAN NATURAL RESOURCES INSTITUTE, (2004), <http://www.canari.org/documents/Guidelines5-Guidelinesforstakeholderidentificationandanalysis.pdf>. Jacques Chevalier, *Stakeholder Analysis and Natural Resources Management* (June 2001), <http://www1.worldbank.org/publicsector/politiceconomy/November3Seminar/Stakeholder%20Readings/SA-Chevalier.pdf>. “[Stakeholder Analyses (SA)] is usually committed to enhancing stakeholder involvement in [natural resources] management processes. Yet not all SA are carried out through participatory methods. As in much of the management literature devoted to this topic . . . SA is frequently done independently from the actors, prior to their actual involvement in decision-making activities. No stakeholder participation is sought when answering a critical question—i.e., ‘who decides on the purpose of the analysis and who counts most?’ . . . Since stakeholder identification is a consequential matter, analyses done without participation are likely to reflect the interests and agenda of the agency directing the exercise in social assessment.”

32. Renard, *supra* note 31, at 9.

33. *Id.*

34. *Id.*

sibility by fortressing liability limits and by incentivizing sustainable and environmentally-friendly construction and management practices. UN Special Representative of the Secretary-General on the issue of human rights and transnational corporations and other business enterprises, John Ruggie, summarizes his work from 2005 to 2011, in “Guiding Principles on Business and Human Rights: Implementing the United Nations ‘Protect, Respect and Remedy’ Framework” (“Ruggie Principles”).³⁵ The key to corporate social responsibility is having the corporations onboard as willing participants in Agenda Item 3 of the 17th Session of the UN Human Rights Council, which works for the promotion and protection of all human rights, civil, political, economic, social and cultural rights, including the right to development.

The Ruggie Principles are well drafted, but criticisms of these principles from environmentalists and social policy advocates are that these principles do not go far enough with respect to seeking corporate responsibility. While this argument is fair, the Ruggie Principles are a decent starting point to begin the discussion on CSR and serve as a launch pad for the hopes of achieving and maintaining a standard for CSR with respect to human rights, environmental conservation, and indigenous input. Appeasing the environmentalists and the non-governmental organizations (NGO), who are already willing to work towards better human rights, is not particularly productive. The Ruggie Principles target corporations, which are the number-one public hindrance in terms of pollution, corruption, bureaucracy, self-dealings, insider trading, and profiteering.

I would argue, though, that the Ruggie Principles are a handmaiden for corporate social responsibility. According to *The Collins English Dictionary*, a handmaiden is “a person or thing that serves a useful but subordinate purpose.”³⁶ The more negative connotation for a handmaiden suggests that the Ruggie Principles are submissive to corporate demands and serve an alternate purpose: feeding the desire to be socially responsible without actually being so. The Ruggie Principles were designed so that multinationals would have the fortitude to embrace CSR tenets. The Ruggie Principles do not go far enough because of the leniency embedded in the language. Staff Attorney at EarthRights International Jonathan Kaufman offers a more piercing critique of the Ruggie Principles: “I sympathize with the desire to remain neutral by opting out of the controversy, but in fact there is no way to predict how policymakers and arbiters will use and interpret

35. John Ruggie, *Guiding Principles on Business and Human Rights: Implementing the United Nations “Protect, Respect and Remedy” Framework*, A/HRC/17/31, 1 (March 21, 2011), <http://www.ohchr.org/documents/issues/business/A.HRC.17.31.pdf>.

36. COLLINS ENGLISH DICTIONARY—COMPLETE AND UNABRIDGED (6th ed. 2003).

the gaps in the ‘Protect, Respect and Remedy’ framework. In this situation, silence will *not* be construed as neutrality.”³⁷

Ruggie was commissioned by the United Nations not by multinational corporations, so it is surprising that he would be so indulgent in facilitating a discussion on CSR. For critical change, critical dialogue is crucial. By peddling to the corporate culture, CSR falls on the wayside with the Ruggie Principles so that the corporations can have the façade of CSR. The Ruggie Principles are a bureaucratic attempt at CSR even though Ruggie has an eye on motivating corporations on their own accord instead of based on regulations and strict government standards. While the remediation and grievance clauses appear vague and arbitrary, this is the result of deference to the corporate mindset, which tends to shy away from rigid standards, rather than the result of sloppiness. Corporations in the abstract sense do not want arm-twisting; they want to do something because that change would help their bottom line and improve their public image, which is precisely what the Ruggie Principles do while failing to hit hard at the more pressing issues of CSR. In the future, working groups to develop on the Ruggie Principles, such criticisms have to be further addressed.

D. Dutch Disease Phenomenon

The Eastern Caribbean nations cannot give away their natural resources and have less money to construct and maintain infrastructure, schools, and other facilities.³⁸ In negotiating contracts, the countries must also consider the possibility of disastrous environmental spills and leaks and develop emergency cleanup plans. Engaging all the stakeholders is key because of the complexity in governance structures.³⁹ The rate of growth for the oil and gas industry should be of concern as to how it impacts existing industries. In the 1970s and early 1980s a trend emerged where after the discovery of oil in the North Sea the Dutch noticed the rest of their economy had slowed.⁴⁰ This phenomenon, termed “Dutch disease,” refers to how resource-rich countries that sell their natural resources experience currency appreciation, causing other exports to be more difficult to trade.⁴¹ In *Making Globalization Work*, Joseph E. Stiglitz argues that the prevalence of

37. Jonathan Kaufman, *Ruggie’s Guiding Principles Fail to Address Major Questions of Obligations and Accountability*, EARTHRIGHTS INTERNATIONAL (April 5, 2001), <http://www.earthrights.org/blog/ruggies-guiding-principles-fail-address-major-questions-obligations-and-accountability>.

38. Joseph E. Stiglitz, *MAKING GLOBALIZATION WORK* 141 (2007).

39. See Hari M. Osofsky, *Multidimensional Governance and the BP Deepwater Horizon Oil Spill*, 63 FLA. L. REV. 1077, 1137 (2011). “Approaching multidimensional governance better requires: (1) creating an openness to designing hybrid structures that integrate the complex dynamics, (2) examining inclusive and often multiscalar governance strategies for doing so, and (3) building in a capacity to adapt to change.”

40. Stiglitz, *supra* note 38, at 148.

41. *Id.*

Dutch disease favors the creation of stabilization funds so that countries can save money when prices are high and spend money when the countries experience a recession.⁴² Stiglitz offers the example of Azerbaijan, which created such a stabilization fund in 2001 and by the end of 2003 had more than \$800 million invested into the stabilization fund from its oil revenues.

Concerns against corruption, bribery, and unethical lobbyists run high in the Eastern Caribbean communities. The communities should not allow emotional hang-ups with respect to corporate greed to prevent development of their natural resources in a sustainable manner. Each nation should require a stabilization fund be set up so that resource wealth is not squandered, because easy money leads to easy spending,⁴³ as well as poor spending. The natural gas and, potentially, oil in the Eastern Caribbean region has been there for centuries untapped. A rush to extract these resources is unnecessary, but the people of these coastal and island regions should not allow these resources to sit idle in reserve for future needs.

E. *Factoring Environmental Externalities*

Security of energy supply presents a number of issues. The Organisation for Economic Co-Operation and Development (OECD) was created pursuant to Article I of the Convention signed in Paris in 1960 and enacted in 1961 to effectuate economic progress among member nations on a global platform. OECD's three primary policies are designed to: (1) "to achieve the highest sustainable economic growth and employment and a rising standard of living in Member countries, while maintaining financial stability, and thus to contribute to the development of the world economy;" (2) "to contribute to sound economic expansion in Member as well as non-member countries in the process of economic development;" and (3) "to contribute to the expansion of world trade on a multilateral, non-discriminatory basis in accordance with international obligations."⁴⁴

The International Energy Agency's report indicates that OECD countries have "a continuing concern about security of energy supply, which . . . include energy security defined as self-sufficiency, wartime capability, minimization of adjustment lags, reduced import dependency (especially oil dependency), and price stability."⁴⁵ A study by The World Bank of thirty hydrocarbon-producing countries—including Ecuador, Mexico, Trinidad and Tobago, and Bolivia during 1992–2005—found that countries that receive large revenues from hy-

42. *Id.*

43. *Id.* at 145.

44. International Energy Agency, *TAXING ENERGY: WHY AND HOW*, Organisation for Economic Co-Operation and Development (OECD), 1993, 141 (vol. 19 1993).

45. *Id.*

drocarbons raise less revenue from other domestic taxes.⁴⁶ The countries involved in the Eastern Caribbean Gas Pipeline project will have to be careful and take steps to diversify their economies so that the fossil fuel industry does not dominate. These Caribbean nations should address tax considerations.

If a tax or similar levy were attributed to each tonne of CO² emissions, the cost of using fuels would increase.⁴⁷ This price increase would widen the economic window for technologies that produce lower or no CO² emissions.⁴⁸ For countries with low demand, the fuel prices are high even when coal fuels some of the least-cost generation.⁴⁹ For Antigua and Barbuda, Grenada, and St. Vincent and Grenadines, the preferred fuel was determined to be distillate as opposed to coal.⁵⁰ The renewable energy resources that were cost prohibitive previously are now “somewhat more economic,” and those that were not have also become “closer to being competitive.”⁵¹ Meanwhile, for countries with medium or high demand, the fossil fuels are much less expensive than distillate, so the displaced generation is lower in cost, which narrows the economic window for alternatives.⁵² For the Dominican Republic, Jamaica, and Jamaica North, incorporating CO² costs in the analysis would probably eliminate coal’s advantage over liquid natural gas (LNG) or increase LNG’s advantage over coal.⁵³ With no CO² cost the renewables that were economic for the islands with small demand remain economic, but “only marginally so” in some cases.⁵⁴ Incorporating CO² costs as an environmental externality makes renewable energy options more competitive.

Electricity prices in the Caribbean may be as much as six or seven times higher than in the United States.⁵⁵ These high energy costs from imports hinder competitiveness and increase macroeconomic vulnerability.⁵⁶ Impending economies of scale in sea transport (240,000 m³)

46. Emily Sinnott, John Nash, & Augusto de la Torre, *Natural Resources in Latin America and the Caribbean: Beyond Booms and Busts?*, THE WORLD BANK, 41, <http://siteresources.worldbank.org/INTLAC/Resources/257803-1284336216058/FlagshipReport.pdf>.

47. Nexant, *supra* note 18, at 15-5.

48. *Id.* Nexant investigated the impact if a cost of US\$50/tonne were attributed to CO₂ emissions. “At US\$50/tonne, the effective price of fuels would increase in a range from US\$2.52 for distillate to US\$4.41 for coal, representing increases ranging from 15% for distillate to 91% for the lowest cost coal for the [islands that were examined].” *Id.*

49. *Id.*

50. *Id.*

51. *Id.*

52. *Id.*

53. *Id.*

54. *Id.*

55. Juan Benavides, *Conference on the Caribbean: A 20/20 vision* (June 19, 2007), <http://siteresources.worldbank.org/INTOECS/Resources/Energy-JBenavides.pdf> (PowerPoint presentation).

56. *Id.*

will cut costs, enlarge global gas markets, and increase competition.⁵⁷ Trinidad and Tobago was the seventh-largest exporter of LNG in 2003.⁵⁸ To have a sustained presence abroad implies “switching to a new array of marketing, innovative contracting and hedging strategies [to] engage community stakeholders and draw upon principles of corporate social responsibility.”⁵⁹

F. *Market Disorder in Natural Gas Transport*

Market disorder describes the “distortions that have developed in the natural gas market.”⁶⁰ The price of natural gas has increased steadily over the past three decades despite oversupply.⁶¹ Pipeline suppliers in the United States appear to have overlooked lower-cost natural gas while acquiring more expensive supplies, including imported LNG.⁶² The failure to seek lower-cost natural gas previously led to “markets permanently lost to alternate fuels and conservation.”⁶³ However, in the Eastern Caribbean nations where natural gas is not as readily available as it is in the United States, the shift to using LNG is more understandable. Meanwhile, the region must seek out renewable energy as it develops the Eastern Caribbean Gas Pipeline. Mogel and Gregg argue that “when the price of natural gas surpasses that of fuel oil, large industrial and commercial users of natural gas have the ability and incentive to switch to the cheaper fuel, thus exacerbating the current natural gas glut.”⁶⁴

Natural gas pipelines are both transporters and resellers of natural gas.⁶⁵ As transporters, natural gas pipelines operate as contract carriers serving natural gas owners, typically industrial users.⁶⁶ As resellers of the natural gas that they purchase and transport, pipelines are the link between producers and end-users.⁶⁷ In this role, pipelines essentially function as brokers because they effectively match demand with available supplies.⁶⁸ The ability to manage and control the flow of natural gas resources gives the pipeline industry a huge responsibility.

57. *Id.*

58. *Id.*

59. *Id.*

60. William A. Mogel & John P. Gregg, *Appropriateness of Imposing Common Carrier Status on Interstate Natural Gas Pipelines*, 25 ENERGY L.J. 21, 27 (2004). “After a decade of soaring oil prices and a lesser period of natural gas shortages, a natural gas surplus and declining oil prices are manifest in the early 1980’s. Like past natural gas shortages which partly resulted from U.S. government regulation that kept interstate prices at an artificially low level, the present natural surplus also results from federal regulation or ‘deregulation’ under the NGPA.” *See id.*

61. *Id.*

62. *Id.*

63. *Id.*

64. *Id.*

65. *Id.* at 49.

66. *Id.*

67. *Id.*

68. *Id.*

The pipeline industry must also be corporate stewards of the environment and take it upon itself to contribute toward human development projects instead of only filling the corporate profit coffers. Generally oil and gas industry executives tend to be highly educated and socially conscientious, but goals for poverty alleviation and environmental conservation carelessly fall at the wayside when analyzing the diameters of the pipeline and increasing pressure flows. Concern over the livelihood of local and indigenous stakeholders should be paramount to fretting over the engineering and geophysics of the pipeline.

G. *Pipeline Safety: Drug and Alcohol Rules*

While the natural gas industry has no basis to believe a drug-abuse problem exists among pipeline personnel, drug-use statistics in the general population are cause for concern.⁶⁹ The United States considered rules that “require mandatory drug testing of employees before employment, after accidents, whenever there is reasonable cause to believe an employee is using a prohibited drug, after rehabilitation, and randomly.”⁷⁰ The Eastern Caribbean nations should also consider implementing stringent rules on the use of drugs and alcohols by pipeline personnel.

The American regulations prohibit covered employees from using alcohol while on duty, four hours before duty, and eight hours after an accident, and employees are prohibited from working on “covered functions” whenever the employee’s blood alcohol concentration is greater than 0.04.⁷¹ The rule also requires operators to maintain a written alcohol misuse plan and to conduct alcohol tests on “covered employees” after accidents and whenever the operator reasonably suspects that an employee has violated the prohibitions in the rule.⁷²

H. *Concerns for Land Use and Urban Planning*

While safety concerns of pipelines traversing lands is critical, proper planning in concert with community engagement can alleviate or at least reduce these issues. In 1984, in response to an investigation of a liquid pipeline accident near a residential area, the National Transportation and Safety Board (NTSB) issued the following guidelines to improve public safety as it relates to people near pipelines, including:

- (1) instituting restrictions on the use of land adjacent to pipelines;
- (2) imposing requirements on pipeline operators to inform prospective users about the existence and potential hazards of nearby pipe-

69. Paul Biancardi & Lisa M. Bogardus, *From “Command and Control” to Risk Management: The Evolution of the Federal Natural Gas Pipeline Safety Program*, 16 ENERGY L.J. 461, 472–73 (1995).

70. *Id.*

71. *Id.* at 473.

72. *Id.*

lines; (3) studying the role of federal, state, and local governments concerning land use planning for land adjacent to pipelines; and (4) determining the types of information that should be communicated to prospective users about adjacent pipelines.⁷³

The NTSB recommended that the Transportation Research Board (TRB) of the National Academy of Sciences assess the adequacy of existing public policy for surface and subsurface use of land adjacent to pipelines that transport hazardous commodities and develop a policy to improve the public policy where found deficient in protecting the public safety.⁷⁴

The Eastern Caribbean Gas Pipeline project is already more than the pipedream because the financing and government agreements have been put in motion, but for this project to succeed and be an example to the world of natural resources development and transport, the multinational companies involved in the project and their subsidiary companies must incorporate CSR principles not for the sake of appearing a good corporate citizens but the purpose of actually being that ideal corporate steward. Limited natural resources and the impetus to slow rates of climate change cannot demand otherwise. The Eastern Caribbean Gas Pipeline Project serves as example for Florida what the right political will and economic motivation can accomplish if there is an eye toward sustainability. The next section discusses prospects for Florida's offshore energy development.

IV. LEGAL ANALYSIS OF FLORIDA'S OFFSHORE ENERGY PROSPECTS

To recover the deep natural gas stores off Florida's panhandle will take billions of dollars of investment and five to seven years before any of this gas ever reaches shore.⁷⁵ And even then, it will only provide five percent of Florida's daily natural gas consumption over a ten-year period.⁷⁶ Critics argue that by these numbers, any hopes that offshore reserves will be able to supply a substantial amount of Florida's energy needs are misplaced. With the opening up of energy exploration offshore California, Florida policymakers are seeking to reevaluate their ban on offshore activities in state waters.

73. *Id.* at 477.

74. *Id.*

75. Jennifer Schwartz, *Energy Expert Balletine: Promise of Florida's Offshore Oil is Exaggerated* (Oct. 30, 2009), <http://www.heatingoil.com/blog/energy-expert-ballentine-promise-of-florida%E2%80%99s-offshore-oil-is-exaggerated-1030/>. "Thomas Ballentine finds that the promise of offshore oil and natural gas drilling is 'vastly overblown.'" *Id.*

76. *Id.*

A. *Brief History of Oil and Gas Exploration in Florida*

The Outer Continental Shelf (OCS) Lands Act (OSCLA) of 1953 along with the enactment of the Submerged Lands Act⁷⁷ resulted from the Supreme Court decisions in *United States v. California*, 332 U.S. 19 (1947); *United States v. Texas*, 339 U.S. 707 (1950); and *United States v. Louisiana*, 339 U.S. 699 (1950).⁷⁸ The Legislative purpose behind the Submerged Lands Act was to return the title to submerged lands to the coastal states that were within the three nautical miles seaward of their respective coastlines.⁷⁹

Later the state's change in its public policy stance against offshore energy development echoed a seismic shift on the federal level with the passage of the 1978 amendments to OSCLA, which established the framework for the modern leasing and regulating structure in the industry.⁸⁰ Title II of these amendments provides for "the cancellation of leases or permits if continued activity is likely to cause serious harm to life, including fish and other aquatic life."⁸¹ The 1978 amendments specify that "economic, social, and environmental values of the renewable and nonrenewable resources are to be considered in management of the OCS."⁸² The OCSLA governs "drilling or easements necessary for exploration, development, and production," and mandates "the prompt and efficient exploration and development of a lease area."⁸³ The OCSLA requires the U.S. Department of Interior (DOI) Secretary to develop leasing programs that specify, as precisely as possible, the size, timing, and location of areas to be evaluated for oil and gas leasing for the five-year period following the approval of each geographical area five-year program.⁸⁴

The 1978 amendments also establish in pertinent part that "[p]rior to development and pursuant to an oil and gas lease . . . in any area of the outer Continental Shelf, other than the Gulf of Mexico . . ." the lessee should provide a development and production plan along with a statement, which *inter alia* includes "all environmental and safety safeguards to be implemented."⁸⁵ Federal law regarding oil and gas development and production also incorporates "procedures and standards

77. 43 U.S.C. § 1301 (2007).

78. Michael J. McHale, *An Introduction to Offshore Energy Exploration—A Florida Perspective*, 39 J. MAR. L. & COM. 571, 574 (2008).

79. *Id.*

80. IDP, *supra* note 4.

81. U.S. Fish and Wildlife Service, *Outer Continental Shelf Lands Act*, DIGEST OF FEDERAL RESOURCE LAWS OF INTEREST TO THE U.S. FISH AND WILDLIFE SERVICE, <http://www.fws.gov/laws/lawsdigest/OUTCONT.html>; Outer Continental Shelf Lands Act of 1953 (43 U.S.C. 1331–1356, P.L. 212, Ch. 345, August 7, 1953, 67 Stat. 462) as amended by P.L. 93-627, January 3, 1975, 88 Stat. 2130; P.L. 95-372, September 18, 1978, 92 Stat. 629; and P.L. 98-498, October 19, 1984, 98 Stat. 2296.

82. *Id.*

83. 43 U.S.C.A. § 1334 (2007).

84. IDP, *supra* note 4.

85. U.S. Fish and Wildlife Service, *supra* note 80.

for removing a worst case discharge of oil, and for mitigating or preventing a substantial threat of such a discharge.”⁸⁶

B. *Prospects for Offshore Oil and Gas Reserves:
Managing Uncertainty*

The precise amount of offshore oil and gas reserves in the waters is an unknown variable. Without conducting new geological surveys of the region with the latest technologies including satellite images, magnetometers, gravity meters, and seismic surveys, pinpointing the amount of reserves available is a guessing game.⁸⁷ Geologists can now use seismology methods by sending shockwaves through rock and sediment layers to evaluate the possibility of resources.⁸⁸ A more controversial technique involves the detonation of underwater explosives to detect migration patterns of shockwaves beneath the water surface.⁸⁹ Advantageous positions are marked using GPS systems, traditional longitude and latitude markings, and even buoys.⁹⁰

A 2009 report from the U.S. Geological Survey (USGS) confirms that the U.S. Gulf of Mexico contains “very thick and concentrated gas-hydrate-bearing reservoir rocks which have the potential to produce gas using current technology.”⁹¹ Recent drilling by a government and industry consortium indicate that the Gulf of Mexico is “the first offshore area in the United States with enough information to identify gas hydrate energy resource targets with potential for gas production.”⁹² What is so telling about this USGS report is that “the discovery of thick gas-hydrate-bearing sands validates the pre-drilling integrated geological and geophysical approach used to identify the targets and provides increased confidence in assessing the energy resource potential of marine gas hydrates.”⁹³ While the precise amount of oil and gas reserves is unknown, the USGS reports in combination with other government and oil and gas industry reports suggest that a viable potential exists.

Energy development is a complex process, which requires multi-faceted regulation at the state and federal levels. Offshore drilling and exploration activities do not always occur in neat packages involving a

86. 43 U.S.C.A. § 1351.

87. McHale, *supra* note 77, at 579.

88. *Id.*

89. *Id.*

90. *Id.*

91. *Significant Gas Resource Discovered in U.S. Gulf of Mexico*, U.S. GEOLOGICAL SURVEY (May 29, 2009), <http://www.usgs.gov/newsroom/article.asp?ID=2227>.

92. *Id.* The U.S. Department of Energy (DOE), the U.S. Geological Survey (USGS), the U.S. Minerals Management Service (MMS), and a group of U.S. and international energy industry companies under the management of Chevron were responsible for conducting this first ever drilling project with the goal to collect geologic data on gas-hydrate-bearing sand reservoirs in the Gulf of Mexico. *Id.*

93. *Id.*

single vessel or platform, but often involve a diverse group of structures and vessels.⁹⁴ The technology advances ahead of the regulation; therefore, new laws should account for changing technologies as much as possible.

C. Stakeholder Concerns: Weighing the Risks to the Community

The oil and gas companies should develop partnerships with the government and local communities to “enhance core business processes, including improving production skills, integrating local expertise and knowledge into production activities, and complying with requirements for environmental and social impact assessment and monitoring.”⁹⁵ Collaboration should be more than a buzz word.

1. Economic Considerations

The national government vied with the coastal states for marine jurisdiction to control and derive offshore oil and gas revenues.⁹⁶ The hesitation for offshore energy exploration of the last twenty years is slowly eroding. Offshore energy development will lead to more jobs, but the concern should be also for the skill sets required for jobs created. The state government must negotiate its position when allowing oil and gas companies to explore and drill in state waters. In negotiating contracts the state must also consider the possibility of disastrous environmental spills and develop emergency cleanup plans. Engaging all the stakeholders is key because of the complexity in governance structures.⁹⁷ Concerns against corruption, bribery, and unethical lobbyists run high among the community. The community should not allow emotional hang-ups with respect to corporate greed prevent development of its natural resources in a sustainable manner.

The environmental organization, Save Our Shores, warns of the threats posed by energy development to the tourism and fishing industries, citing \$3.4 billion in state tax revenues from the \$60 billion tourism industry and \$5 billion in revenue generation annual from sports fishing, as well as \$6 billion from offshore commercial fishing.⁹⁸ Save

94. Kenneth G. Engerrand, *Primer of Remedies on the Outer Continental Shelf*, 4 LOY. MAR. L.J. 19, 40 (2005).

95. Alyson Warhurst, *Corporate Citizenship and Corporate Social Investment: Drivers of Tri-Sector Partnership*, BUSINESS PARTNERS FOR DEVELOPMENT (May 2000), available at <http://www.greenleaf-publishing.com/content/pdfs/jcc01warh.pdf> (working paper).

96. Milner S. Ball, *Good Old American Permits: Madisonian Federalism on the Territorial Sea and Continental Shelf*, 12 ENVTL. L. 623, 627. (1982).

97. “Approaching multidimensional governance better requires: (1) creating an openness to designing hybrid structures that integrate the complex dynamics, (2) examining inclusive and often multiscalar governance strategies for doing so, and (3) building in a capacity to adapt to change.” Hari M. Osofsky, *Multidimensional Governance and the BP Deepwater Horizon Oil Spill*, 63 FLA. L. REV. 1077, 1137 (2011).

98. Risks Outweigh Benefits of Drilling, SAVE OUR SHORES (Sept. 25, 2011), <http://www.sosfla.org/2011/02/economic-risks-outweigh-benefits-of.html>.

Our Shores argues that the threat to existing industries and the potential environmental hazards are not worth the risk.⁹⁹ The statistics and data cited by Save Our Shores is misleading because it assumes that the tourism and fishing industries will vanish as a result of offshore energy development, which is simply not the case. Further, Save Our Shores uses data from the Collins Center for Public Policy, which indicates that there are an estimated 236 million barrels of oil and oil equivalents in state waters.¹⁰⁰ This figure is unreliable because only with nascent technology employed by the energy sector during the actual exploration phase can more realistic data of the potential fossil fuel reserves be determined.

The Collins Center for Public Policy prepared a report to the Century Commission for a Sustainable Florida which indicated that there were no plans or procedures for resolving potential conflicts among oil and gas exploration and development interests and competing uses of the marine environment besides sand resources and military exercises.¹⁰¹ These competing uses include protection of essential fisheries habitat, renewable energy development, offshore aquaculture, and siting of additional liquid natural gas facilities.¹⁰² However, marine spatial planning processes are a potential mechanism for resolving these disputes.¹⁰³

2. Environmental Concerns

With the ongoing threat of Atlantic hurricanes, disruption of development activities is not only a possibility, but a matter of time. Previous natural disasters caused by Hurricanes Katrina and Rita help the learning curve in considering energy development in Florida. The threat of hurricanes is only one risk to be factored, out of many others. For example, on September 4, 2005, in St. Bernard Parish, Louisiana, Murphy Oil Company USA, informed the Environmental Protection Agency (EPA) approximately 1.05 million gallons of mixed crude were released as a result of damage from Katrina, affecting homes, land, and the environment.¹⁰⁴

In 2007, the Norwegian Risk Management Company, Det Norske Veritas, pursuant to contract with the U.S. Department of the Interior, Mineral Management Service, issued its “Technical Report on Pipeline Damage Assessment from Hurricanes Katrina and Rita in the Gulf of Mexico,” noting that the “Hurricanes caused major disruption

99. *Id.*

100. *Id.*

101. Collins Ctr. for Pub. Policy, *Potential Impacts of Oil and Gas Exploration in the Gulf* (2010), available at http://www.collinscenter.org/resource/resmgr/century_com_oil_drilling/final_oil_draft_-_formatted.pdf.

102. *Id.*

103. *Id.*

104. McHale, *supra* note 77, at 583.

and structural damage to the oil and gas facilities in the Gulf of Mexico and essentially shut down 8% of the nation's production capability."¹⁰⁵ Det Norske Veritas's report said that from a safety perspective the discharges were mitigated by "the use of effective shut off valves, prior planning, evacuation and implementation of Oil Spill Response Plans."¹⁰⁶ These same safety techniques with improved technology and other precautions would have to be used by the industry if Florida were to open its shores to energy development.

Environment Florida, a statewide, citizen-based environmental advocacy organization, states on its website that "drilling for oil off our coasts is a destructive policy that will put our beaches and wild places at risk while doing nothing to reduce our dependence on foreign oil or the cost to consumers at the pump."¹⁰⁷

The Center for Health and Global Environment at Harvard Medical School published a study that outlines many of the health and environmental concerns in the industry.¹⁰⁸ Energy exploration involves moving heavy equipment into pristine environmental areas, disrupting—sometimes deforesting—the habitat and allowing human encroachment.¹⁰⁹ The Harvard study reports that "mercury contamination of fish has become an increasing route of human exposure to this neurotoxin, believed to cause birth defects, and heart problems – and more severe neurological disorders ("Minamata disease") and death with very high levels." Citing a study of oil rigs in the Gulf of Mexico, it was found that mercury levels were up to twelve times higher than acceptable EPA levels in muds and sediments underneath the platforms.¹¹⁰

Offshore drilling workers still face multiple hazards and report high levels of stress and anxiety because of long shifts and stressful schedules, combined with wet, slippery conditions, rough seas, and heavy machinery moving at high velocities.¹¹¹ The Harvard study also reported that occupationally related fatalities among workers in the oil and gas extraction process are higher than deaths for workers from all other U.S. industries combined.¹¹² These grim reports should not dissuade energy exploration offshore, but should serve as a teachable moment to implement sustainable development strategies.

105. *Id.*

106. *Id.*

107. 2010 Annual Report, ENV'T FLA., http://www.environmentflorida.org/sites/environment/files/2010-Annual-Report_Environment-Florida_1.pdf (last visited May 27, 2013).

108. Center for Health and the Global Environment, *Oil: A Life Cycle Analysis of its Health and Environmental Impacts*, HARV. SCH. PUB. HEALTH, available at <http://chge.med.harvard.edu/sites/default/files/oilfullreport.pdf>.

109. *Id.* at 9.

110. *Id.* at 12.

111. *Id.* at 13.

112. *Id.*

D. Sustainable Development and Offshore Energy Development

Sustainable development, as defined in *Our Common Future*, also known as the *Brundtland Report*, “is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”¹¹³ Sustainable development encompasses two principles: (1) “the concept of needs, in particular the essential needs of the world’s poor, to which overriding priority should be given;” and (2) “the idea of limitations imposed by the state of technology and social organization on the environments ability to meet present and future needs.”¹¹⁴ The United Nations Environment Programme expanded this definition of sustainable development so that the concept also requires “the maintenance, rational use, and enhancement of the natural resource base that underpins ecological resilience and economic growth, and that it implies progress towards international equity.”¹¹⁵

1. Lifting of the Liability Cap

Sustainable development is what creates successful companies that have serious longevity and financial viability. The public must be confident in the oil and gas industry’s plan for energy development. One way to achieve that confidence or restore it is through environmental laws. Aside from protecting the environment, environmental laws act to reassure the public “that needed industrial activities can proceed in a safe and environmentally responsible manner.”¹¹⁶ H.R. 3534, the Consolidated Land, Energy, and Aquatic Resources (CLEAR) Act, which passed by the U.S. House of Representatives, covered an array of energy issues, including Section 702(a), which “would eliminate the \$75 million cap on liability for spills from offshore facilities and would permit the President to increase other liability caps based on specific findings.”¹¹⁷ Lifting the liability cap of \$75 million is crucial. CLEAR did not pass in the Senate in 2010 and will likely not be revisited in the

113. WORLD COMM’N ON ENV’T & DEV., *OUR COMMON FUTURE* 43, (1987), available at <http://www.un-documents.net/our-common-future.pdf>.

114. *What is Sustainable Development? Environmental, Economic and Social Well-Being for Today and Tomorrow*, INTERNATIONAL INSTITUTE FOR SUSTAINABLE DEVELOPMENT, available at <http://www.iisd.org/sd/#one>.

115. F. W. Wellmer & J. D. Becker-Platen, *Sustainable Development and the Exploitation of Mineral and Energy Resources: A Review*, 91 INT. J. EARTH SCI. (GEOL RUNDSCH) 723–45, (Apr. 18, 2002), available at http://bscw-app1.ethz.ch/pub/bscw.cgi/d163259/Wellmer_BeckerPlaten_2002.pdf. “The next step was the Rio Declaration at the UN Conference on Environment and Development in Rio de Janeiro in 1992 and Agenda 21, which stresses the three elements of sustainable development – ecology, economy, and social justice: To conserve the basic needs of life, to enable all people to achieve economic prosperity, and to strive towards social justice.” *Id.*

116. John Wyeth Griggs, *BP Gulf of Mexico Oil Spill*, 32 ENERGY L.J. 57, 74 (2011).

117. *Id.* at 76.

future. A more robust liability provision would have a deterring impact on the industry.¹¹⁸

2. Preparedness for Worst Case Scenario

Since the Exxon Valdez spill in 1989, technology decreasing the likelihood of spills has not evolved. This lack of progress is directly the result of inadequate investments in research and development.¹¹⁹ The industry, government, environmentalists, community, and other stakeholders must work together to achieve the changes needed to make energy development safer. The loud voices for environmental concerns and occupation safety have quietly decreased as the Deepwater Horizon spill becomes more distant in time. In the *Tulane Environmental Law Journal*, Oliver A. Houck in “Worst Case and the Deepwater Horizon: There Ought to Be a Law,” points out that

It is the power of environmental groups with technical staffs, independents, academia, self-taught experts, retirees from agencies and industry, international colleagues, and the whole panoply of the “loyal opposition” that keeps majority decisions at least relatively honest, improves even marginal projects, and makes all of us and our surroundings a little more secure.¹²⁰

Both the industry and the government must learn from the Deepwater Horizon oil spill and not let its lessons be forgotten.¹²¹

However, the current efforts to “assess technology through bureaucratic analysis of complexity, risk assessment and evaluation, cost-benefit analysis, and the worst case analysis of catastrophes are not promising when measured against the headlong rush of technological change.”¹²² Most Americans are “captured in the thrall of technological optimism, with its faith in science, the corresponding belief in progress, and the resulting affluence.”¹²³ Richard Oliver Brooks suggests that “we may wish to reconsider our faith in such technological progress and our capacity to control technology.”¹²⁴

118. Kenneth M. Murchison, *Beyond Compensation for Offshore Drilling Accidents: Lowering Risks, Improving Response*, 30 MISS. C. L. REV. 277, 289–90 (2011).

119. *Id.*

120. Oliver A. Houck, *Worst Case and the Deepwater Horizon Blowout: There Ought to Be a Law*, 24 TUL. ENVTL. L.J. 1, 18 (2010).

121. In the 381-page report to President Barack Obama released by the National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling in January 2011, the Commission proposed that Congress fund more research and development on oil spill response to improve governmental expertise, that the National Response Team build governmental ability to estimate flow rates accurately, and that DOI require oil companies to demonstrate the safety of wells and their component parts and to have detailed plans for source control in the event of a spill. Osofsky, *supra* note 95, at 1123.

122. Richard Oliver Brooks, *The Gulf Oil Spill: The Road Not Taken*, 74 ALB. L. REV. 489, 513 (2011).

123. *Id.*

124. *Id.*

3. Better Use of Environmental Impact Statements (EIS)

Extraction should include the use of targeted environmental impact statements (EIS) at the various stages of exploration, development, and production in the Gulf of Mexico region.¹²⁵ An EIS should be prepared in situations where it has not been prepared previously and where drilling has never occurred.¹²⁶ An EIS does not have to be an all-encompassing document, but it should specify unknown variables.¹²⁷ Based on the EIS, the decision-maker can act on the basis of known and unknown environmental consequences.¹²⁸

The EIS should calculate and assess a worst-case or doomsday scenario instead of an ordinary analysis of routine activities. In *Sierra Club v. Sigler*, the Army Corps of Engineers issued five permits for the construction of a multi-purpose deepwater port and crude oil distribution system in Galveston Bay, Texas, which would permit super-tankers to through pass through Galveston Bay's wildlife estuary.¹²⁹ The Corps' Final EIS (FEIS) contained an oil spill analysis which discussed (1) the probability of an oil spill, (2) the dispersion of an 18,717 gallon oil spill, and (3) the environmental impacts of such a spill. The FEIS concluded that the project would not increase the probability of an oil spill, and, if a spill did in fact occur, it "might have a severe local impact, the impact within Galveston Bay or along the Texas Gulf Coast would be minor."¹³⁰ The Army Corps of Engineers' FEIS did not contain a worst-case analysis.¹³¹ The court concluded that a worst-case analysis did not have to be included in the EIS because such an analysis would not have "meaningfully illuminated the dangers or materially added to the decision-makers' awareness of the spectrum of consequences involved."¹³² The court's reasoning is flawed because without a complete understanding of complex environmental and natural disasters, the state and federal government cannot properly assess an exploration and/or development plan. Requiring the EIS to include a worst case scenario will also help the oil and gas industry in its risk management and liability planning.

125. Robert B. Wiygul, *The Structure of Environmental Regulation on the Outer Continental Shelf: Sources, Problems, and the Opportunity for Change*, 12 J. ENERGY NAT. RESOURCES & ENVTL. L. 75, 179-80 (1992).

126. *Id.* at 180.

127. William M. Cohen, *Environmental Considerations in Outer-Continental Shelf Oil and Gas Leasing in the United States*, 3 TUL. ENVTL. L.J. 1, 4-5 (1990).

128. *Id.*

129. *Sierra Club v. Sigler*, 695 F.2d 957 (5th Cir. 1983); Dr. Edward A. Fitzgerald, *The Rise and Fall of Worst Case Analysis*, 18 U. DAYTON L. REV. 1, 12-13 (1992).

130. *Id.*

131. *Id.*

132. *Id.*

4. Stricter Language for Rejection of Exploration Plan

Robert Wiygul proposes a change in “the language of the test to permit rejection of an exploration plan if the proposed exploratory activities would be reasonably likely to result in significant environmental harm.”¹³³ He says that this wording is stricter than the current standard of activity that “probably cause serious harm or damage to life.”¹³⁴ Wiygul understands that the oil and gas industry will not appreciate this change in the standard for permitting exploration plans, but he argues that if “the necessary homework is done early in the process, there should very seldom, and possibly never, be instances in which exploratory activity will be barred as a result of imminent danger to the environment.”¹³⁵ If the oil and gas quantities are sufficient to merit exploration and development, the oil and gas companies will be willing to abide by more stringent environmental regulations. Best practices in the industry dictate that a premium is placed on abiding by and exceeding existing environmental standards. The industry does not have a vested interest in tarnishing its reputation by being lax with respect to environmental standards.

5. Restoration Projects for Recycling Retired and Abandoned Oil and Gas Platforms

Recycling retired natural gas and oil platforms as artificial reefs has proven to be an effective tool for fishery management.¹³⁶ The Bureau of Ocean Energy Management, and Regulation says in its report on the “History of Rigs-to-Reefs (RTR) Offshore Florida” that fish, fishermen, divers, fishing support industries, coastal communities, and the petroleum industry have benefited “when retired and obsolete production platforms, already popular with offshore fishermen, are reevaluated and converted for continued use as fishery enhancement resources in the marine environment.”¹³⁷ The report cites that approximately 195 petroleum structures have been donated and converted to permanent reefs in the Gulf of Mexico (GOM) region.¹³⁸ The International Maritime Organization (IMO), adopted guidelines for the removal of offshore structures on the continental shelf and in the 200 mile area bordering a coastal nation known as the exclusive economic zone (EEZ).¹³⁹ The IMO guidelines promote a case-by-case approach

133. Wiygul, *supra* note 125.

134. *Id.* at 177–78.

135. *Id.* at 178.

136. *History of Rigs-to-Reefs (RTR) Offshore Florida*, BUREAU OF OCEAN ENERGY MGMT., REGULATION, & ENFORCEMENT, available at <http://www.gomr.boemre.gov/homepg/offshore/egom/rigsreef.html>.

137. *Id.*

138. *Id.*

139. Rachael E. Salcido, *Enduring Optimism: Examining the Rig-to-Reef Bargain*, 32 *ECOLOGY L.Q.* 863, 877–78 (2005).

to the question, considering navigation and impact on the environment, as well as cost and potential new uses.¹⁴⁰

V. CONCLUSION

The sustainable development techniques mentioned in this Article add to the long conversation on the global energy future, but they are by no means all-encompassing. Floridians will begrudgingly come to terms with their beaches' horizons being invaded by oil rigs whether in five years or fifty years, but the impetus is on state lawmakers and energy companies to explain that they will develop Florida's energy resources in a sustainable manner, and then do so.

140. *Id.*