

# THE EASTERN CARIBBEAN GAS PIPELINE PROJECT: RISK PREPAREDNESS AND CORPORATE SOCIAL RESPONSIBILITY

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## I. INTRODUCTION

Developers hope to break ground on a 600-mile network of undersea natural gas pipelines starting from Tobago northward to five other islands including Barbados, Martinique, St. Lucia, Guadeloupe and Dominica.<sup>1</sup> 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 are hoping to thwart this project, they face an uphill battle.

This paper 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 on an eye on the triple bottom line. The potential for great environmental harm and degradation is a 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 30 to 50 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.

## II. BACKGROUND PROJECT INFORMATION ON EASTERN

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<sup>1</sup>Linda Hutchinson-Jafar, 'Trinidad moving ahead with Caribbean gas pipeline' (2003), GUYANA CHRONICLE<<http://www.landofsixpeoples.com/news301/nc302205.htm>> accessed Feb. 2003.

## CARIBBEAN GAS PIPELINE

The Infrastructure Development Partnership (IDP) will assemble a program to deliver a commercial architect agreement, undertake risk analysis to ensure a commercially viable and financeable project, assemble a team of financial advisors including legal and finance counsels, structure baseline project agreements, and help with funding initiatives.<sup>2</sup> 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 (ECGP).<sup>3</sup> 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.<sup>4</sup> An economic feasibility study on the pipeline in 2004 demonstrated that the project was commercially viable.<sup>5</sup> The project is "the most significant economic co-operation venture in the history of the Caribbean."<sup>6</sup> When Prime Minister of Trinidad and Tobago Patrick Manning went public at the CARICOM Heads of Government meeting in August 2002, many sceptics described the project as a pipedream.<sup>7</sup> 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.<sup>8</sup> It was observed that the projected pipeline did not go beyond 2,000 meters at its maximum depth.<sup>9</sup>

Some key technical considerations included the coral reef ecosystems, the volcanic and earthquake activity in the zone, and the possible impact of hurricane waves.<sup>10</sup> From the stand point of the consumers, the most important economic parameter would be the delivery of natural gas under a pricing regime that is competitive, predictable and non-volatile.<sup>11</sup> On both technical and economic grounds the study indicated that the project is commercially viable.<sup>12</sup>

<sup>2</sup>Eastern Caribbean Gas Pipeline' Infrastructure Development Partnership (IDP), , <<http://www.infradev.co.uk/Eastern-Caribbean-Gas-Pipeline.htm>>

<sup>3</sup>*Id.*

<sup>4</sup>*Id.*

<sup>5</sup>'Eastern Caribbean gas pipeline project accomplishes major milestone' (2004), Alexander's Oil and Gas Connections, <<http://www.gasandoil.com/news/2004/10/ntl44030>> accessed Sept. 12, 2004

<sup>6</sup>*Id.*

<sup>7</sup>*Id.*

<sup>8</sup>*Id.* Within recent times, Saipem was the lead contractor on the famous Blue Stream project, the world 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.

<sup>9</sup>*Id.*

<sup>10</sup>*Id.*

<sup>11</sup>*Id.*

<sup>12</sup>*Id.*



Geopolitical issues, including the historic penchant for insular haggling within CARICOM, has plagued other regional economic co-operation projects and cast a dark shadow over this one as well.<sup>13</sup> 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.<sup>14</sup> The National Gas Company is expected to be involved in the project as the possible gas seller and equity holder.<sup>15</sup> 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.<sup>16</sup> 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.<sup>17</sup> The pipeline would open opportunities for local distribution in all the islands including Tobago which can be connected en-route.<sup>18</sup>

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.<sup>19</sup> Manning had 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.<sup>20</sup> Venezuelan President Hugo Chavez asked that his country join with Trinidad and Tobago in building a pipeline which would not only serve the Eastern Caribbean but also go North as far as Miami with offshoots to Jamaica and Cuba.<sup>21</sup> 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.<sup>22</sup> Manning stated that the pipeline would cost \$700 million to build and that it was likely the Trinidad and Tobago Government through one of its agencies would build and operate the pipeline.<sup>23</sup>

### III. INTERCONNECTION OF ENERGY RESOURCES IN THE CARIBBEAN REGION

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<sup>13</sup>*Id.*

<sup>14</sup>*Id.*

<sup>15</sup>*Id.*

<sup>16</sup>*Id.*

<sup>17</sup>*Id.*

<sup>18</sup>*Id.*

<sup>19</sup>Curtis Williams, 'Trinidad & Tobago Eastern Caribbean Gas Pipeline' (2007), TRINIDAD EXPRESS, <<http://www.latinpetroleum.com/cgi-bin/artman/exec/view.cgi?archive=17&num=3748&printer=1>> accessed Oct. 24, 2004

<sup>20</sup>*Id.*

<sup>21</sup>*Id.*

<sup>22</sup>*Id.*

<sup>23</sup>*Id.*

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.”<sup>24</sup> In the Eastern Caribbean, the benefit of interconnection is apparent when one country possesses “a source of low cost power and its neighbour does not.”<sup>25</sup> The primary renewable energy sources in the region are geothermal, wind, and small-scale hydroelectric.<sup>26</sup> However, inadequate technology and infrastructure exists 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 policy are developed for alternative energy sources. For sustainable regional economic growth, the natural gas reserves are the most practicable energy option especially when there exists the infrastructure for interconnecting its supply.

#### IV. THE RUGGIE PRINCIPLES: THE CORPORATIONS' HANDMAIDEN

The various nations involved in the pipeline project, including Trinidad, Tobago, Barbados, Martinique, St. Lucia, Guadeloupe and Dominica, should explore options to enforce corporate social responsibility 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”).<sup>27</sup> The key to corporate social responsibility is having the corporations onboard as willing participants in the Agenda Item 3 of the 17<sup>th</sup> Session of the UN Human Right 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

<sup>24</sup>*Caribbean Regional Electricity Generation, Interconnection, and Fuels Supply Strategy: Final Report*, Nexant, submitted to the World Bank, March 2010, [http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2011/02/08/000112742\\_20110208142646/Rendered/PDF/594850Final0Report.pdf](http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2011/02/08/000112742_20110208142646/Rendered/PDF/594850Final0Report.pdf)

<sup>25</sup>*Id.*

<sup>26</sup>*Id.*

<sup>27</sup>John Ruggie, ‘Guiding Principles on Business and Human Rights: Implementing the United Nations “Protect, Respect and Remedy” Framework’ 2011, A/HRC/17/31



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 NGO's, 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. By definition according to *The Collins English Dictionary*, a handmaiden is "a person or thing that serves a useful but subordinate purpose."<sup>28</sup> 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 the gaps in the "Protect, Respect and Remedy" framework. In this situation, silence will *not* be construed as neutrality."<sup>29</sup>

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 less of sloppiness than deference to the corporate mindset which tends to shy away from rigid standards. 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

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<sup>28</sup>Collins English Dictionary - Complete and Unabridged, 2003.

<sup>29</sup>Jonathan Kaufman, 'Ruggie's Guiding Principles Fail to Address Major Questions of Obligations and Accountability', EarthRights International, <<http://www.earthrights.org/blog/ruggies-guiding-principles-fail-address-major-questions-obligations-and-accountability>>

## V. PRIORITY ON CORPORATE SOCIAL RESPONSIBILITY (CSR)

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.<sup>30</sup> 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."<sup>31</sup> Irwin I. Cohn Professor of Law Reuven S. Avi-Yonah at the University of Michigan Law School 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 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 does 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.<sup>32</sup>*

<sup>30/</sup>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." 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).

<sup>31</sup>*Id.*

<sup>32</sup>*Id.*



Modern economic theory addresses the old divide between stakeholders and stockholders showing that “corporate decision makers have both the duty and power to reconcile conflicting interests on a constant basis.”<sup>33</sup> However, “multiple considerations, ambiguity and uncertainty” resulting from market pressures and the corporate culture make managers untrustworthy.<sup>34</sup>

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.<sup>35</sup> 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.<sup>36</sup>

## VI. IMPROVING COMMUNICATION BETWEEN STAKEHOLDERS AND CORPORATIONS

Organizations like the Port of Spain, Trinidad-based non-profit Caribbean Natural Resources Institute (CANARI) are essential in improving dialogue between stakeholders and corporate entities.<sup>37</sup> Often the indigenous communities believe that their local natural resources are being exploited and squandered by corporate elites, especially 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 fisherman, 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

<sup>33</sup>Amir N. Licht, *The ‘Maximands of Corporate Governance: A Theory of Values and Cognitive Style’* (2004), 29 DEL. J. CORP. L. 649

<sup>34</sup>*Id.*

<sup>35</sup>CANARI, ‘Climate change in the Caribbean: the case for greater investment in research and adaptive policies’ (2008), Policy Brief No.10, 2008, <<http://www.canari.org/docs/CANARI%20PB%2010%20English.pdf>>

<sup>36</sup>*Id.*

<sup>37</sup>Caribbean Natural Resources Institute website, <http://www.canari.org/>.

this process to work effectively for mutual benefits.<sup>38</sup> The need for more effective communication also exists between scientists, policy-makers and communities.<sup>39</sup> Stakeholder identification and analysis are critical first steps in a participatory planning process and constitute an area where a rigorous approach can be applied.<sup>40</sup> Stakeholder analysis is often undertaken late in a planning and management process, in response to a crisis.<sup>41</sup> Yet early identification and analysis exercises can help deter such crises.<sup>42</sup> 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.<sup>43</sup>

## VII. 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.<sup>44</sup> In negotiating contracts the countries must also consider the possibility of disastrous environmental spills and leaks and develop emergency clean-up plans. Engaging all the stakeholders is key because of the complexity in governance structures.<sup>45</sup> 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.<sup>46</sup> This phenomenon, termed Dutch disease, refers to how resource rich

<sup>38</sup>CANARI, *supra* at note 35.

<sup>39</sup>*Id.*

<sup>40</sup>Yves Renard, 'Guidelines for Stakeholder Identification and Analysis: A Manual for Caribbean Natural Resource Managers and Planners' (2004), Caribbean Natural Resources Institute, <<http://www.canari.org/documents/Guidelines5-Guidelinesforstakeholderidentificationandanalysis.pdf>> "[Stakeholder Analyses (SA)] is usually committed to enhancing stakeholder involvement in [Natural Resources] management processes. Yet not all stakeholder analyses 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." Jacques Chevalier, *Stakeholder Analysis and Natural Resources Management*, June 2001,

<http://www1.worldbank.org/publicsector/politiceconomy/November3Seminar/Stakeholder%20Readings/SA-Chevalier.pdf>.

<sup>41</sup>Renard, *supra* at note 40.

<sup>42</sup>*Id.*

<sup>43</sup>*Id.*

<sup>44</sup>Joseph E. Stiglitz, *MAKING GLOBALIZATION WORK* 141 (2007).

<sup>45</sup>"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).

<sup>46</sup>Stiglitz, *supra* note 44, at 148.



countries which sell their natural resources experience currency appreciation causing other exports to be more difficult to trade.<sup>47</sup> In *Making Globalization Work*, Nobel Prize winning economist Joseph E. Stiglitz argues that the prevalence of Dutch disease favors the creation of stabilization funds so that countries can save money when prices are high and spend money when the country experiences a recession.<sup>48</sup> 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 prevent the development of its 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<sup>49</sup> as well as poor spending. The natural gas and oil reserves in the Eastern Caribbean region have remained untapped for centuries. 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.

## VIII. 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: a) "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;" b) "to contribute to sound economic expansion in Member as well as non-member countries in the process of economic development;" and c) "to contribute to the expansion of world trade on a multilateral, non-discriminatory basis in accordance with international obligations."<sup>50</sup>

In the International Energy Agency's report, *Taxing Energy : Why and How*, it is indicated 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<sup>51</sup>" The International Energy Agency's report

<sup>47</sup>*Id.*

<sup>48</sup>*Id.*

<sup>49</sup>*Id.* at 145.

<sup>50</sup>International Energy Agency' (1993), *TAXING ENERGY: WHY AND HOW*, Organisation for Economic Co-Operation and Development (OECD), 141.

<sup>51</sup>*Id.*

states:

*The externalities and inefficiencies that exist in energy pricing can be corrected or reduced by taxes. Such remedial taxes should be effective, equitable, and without unintended side effects. . . . Where externalities inefficient pricing occur, however, attacks can be used deliberately to alter investment, production and consumption in such a manner as to reduce the inefficiencies and external cost. In this case the tax is not neutral, but nonetheless desirable from society's point of view.*<sup>52</sup>

In a study by the World Bank of 30 hydrocarbon-producing countries – including Ecuador, Mexico, Trinidad and Tobago, and Bolivia during 1992–2005, it was found that countries that receive large revenues from hydrocarbons raise less revenue from other domestic taxes.<sup>53</sup> The countries involved in the Eastern Caribbean Gas Pipeline project will have to be careful and take steps to diversify their economy 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 CO<sup>2</sup> emissions, the cost of using fuels would increase.<sup>54</sup> This price increase would widen the economic window for technologies that produce lower or no CO<sup>2</sup> emissions.<sup>55</sup> For countries with low demand, the fuel prices are high even when coal fuels some of the least-cost generation.<sup>56</sup> For Antigua and Barbuda, Grenada, and St. Vincent and Grenadines, the preferred fuel was determined to be distillate versus coal.<sup>57</sup> 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.”<sup>58</sup> 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.<sup>59</sup> For the Dominican Republic, Jamaica, and Jamaica North, incorporating CO<sup>2</sup> costs in the analysis would probably eliminate coal’s advantage over liquid natural gas (LNG) or increase LNG’s advantage over coal.<sup>60</sup> With no CO<sup>2</sup> cost the renewable that were economic for the islands with small

<sup>52</sup>*Id.*

<sup>53</sup>Emily Sinnott, John Nash, and Augusto de la Torre, ‘Natural Resources in Latin America and the Caribbean: Beyond Booms and Busts?’, The World Bank, <<http://siteresources.worldbank.org/INTLAC/Resources/257803-1284336216058/FlagshipReport.pdf>>

<sup>54</sup>Nexant, *supra* at note 24.

<sup>55</sup>*Id.* Nexant investigated the impact if a cost of US\$50/tonne were attributed to CO<sub>2</sub> 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.*

<sup>56</sup>*Id.*

<sup>57</sup>*Id.*

<sup>58</sup>*Id.*

<sup>59</sup>*Id.*

<sup>60</sup>*Id.*



demand remain economic, but “only marginally so” in some cases.<sup>61</sup> Incorporating CO<sub>2</sub> 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.<sup>62</sup> These high energy costs from imports hinder competitiveness and increase macroeconomic vulnerability.<sup>63</sup> Impending economies of scale in sea transport (240,000 m<sup>3</sup>) will cut costs, enlarge global gas markets and increase competition.<sup>64</sup> Trinidad and Tobago was the seventh largest exporter of LNG in 2003.<sup>65</sup> 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.”<sup>66</sup>

## IX. MARKET DISORDER IN NATURAL GAS TRANSPORT

In *Appropriateness of Imposing Common Carrier Status on Interstate Natural Gas Pipelines*, William A. Mogel and John P. Gregg delineate the term “market disorder” to describe “distortions that have developed in the natural gas market.”<sup>67</sup> The price of natural gas has increased steadily over the past three decades despite oversupply.<sup>68</sup> Pipeline suppliers in the United States appear to have overlooked lower cost natural gas while acquiring more expensive supplies, including imported LNG.<sup>69</sup> The failure to seek lower cost natural gas previously led to “markets permanently lost to alternate fuels and conservation.”<sup>70</sup> 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 the “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.”<sup>71</sup>

<sup>61</sup>*Id.*

<sup>62</sup>Juan Benavides, ‘Conference on the Caribbean: a 20/20 vision’ (2007), <<http://siteresources.worldbank.org/INTOECs/Resources/Energy-JBenavides.pdf>>

<sup>63</sup>*Id.*

<sup>64</sup>*Id.*

<sup>65</sup>*Id.*

<sup>66</sup>*Id.*

<sup>67</sup>William A. Mogel & John P. Gregg, ‘Appropriateness of Imposing Common Carrier Status on Interstate Natural Gas Pipelines’ (2004), 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.

<sup>68</sup>*Id.*

<sup>69</sup>*Id.*

<sup>70</sup>*Id.*

<sup>71</sup>*Id.*

Natural gas pipelines are both transporters and buyer-sellers of natural gas.<sup>72</sup> As transporters, natural gas pipelines operate as contract carriers serving natural gas owners, typically industrial users.<sup>73</sup> As resellers of the natural gas that they purchase and transport, pipelines are the link between producers and end-users.<sup>74</sup> In this role, pipelines essentially function as brokers because they effectively match demand with available supplies.<sup>75</sup> The ability to manage and control the flow of natural gas resources gives the pipeline industry a huge responsibility.

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 livelihoods of local and indigenous stakeholders should be paramount to fretting over the engineering and geophysics of the pipeline.

## X. 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.<sup>76</sup> 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."<sup>77</sup> 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.<sup>78</sup> 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.<sup>79</sup>

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<sup>72</sup> *Id.*

<sup>73</sup> *Id.*

<sup>74</sup> *Id.*

<sup>75</sup> *Id.*

<sup>76</sup> Paul Biancardi and Lisa M. Bogardus, 'From "Command and Control" to Risk Management: The Evolution of the Federal Natural Gas Pipeline Safety Program' (1995), 16 ENERGY L.J. 461, 472-73 (1995)

<sup>77</sup> *Id.*

<sup>78</sup> *Id.*

<sup>79</sup> *Id.*



## XI. CONCERNS FOR LAND USE AND URBAN PLANNING

While safety concerns of pipelines traversing lands is critical, the 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) issues 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 pipelines; (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."<sup>80</sup> 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.<sup>81</sup>

## XII. CONCLUSION

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.

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<sup>80</sup>*Id.* at 477-478.

<sup>81</sup>*Id.*