

Oil and Gas and the Environment in Trinidad and Tobago: Experience and Challenges.

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Introduction

Environmental impacts of the extraction of oil and gas reserves at different times and in various places have included air and water pollution, oil spills, socio-cultural impacts, ecological damage and accidents and fires. The achievement of a synergy between environmental protection and the economic benefits afforded by oil and gas exploitation has posed a challenge in the past and continues to do so now and into the future. These challenges must be addressed by the oil and gas exploration and production industry at a local, regional and global level to ensure that activities associated with this industry are carried out with a minimum of adverse impacts on the environment while maximizing benefits to the biophysical, economic and social aspects of environment in which it operates. This paper presents a case study of the Trinidad and Tobago's oil and gas industry, highlighting some of the experiences, benefits and shortcomings of the current process as well as suggesting improvements to make this process more effective.

Oil and Gas and the Environment in Trinidad and Tobago

Trinidad and Tobago has been producing oil commercially since 1908 and gas since 1953 with the reserves being located onshore as well as offshore. In this time, the sector was governed by the Ministry of Energy and Energy Affairs (MEEA) of the local government. Before the year 2000, environmental impacts within the energy sector and the oil and gas industry in particular were not addressed in a formal, holistic manner but instead companies were required to conduct such assessments at the MEEA's or the company's discretion. In the year 2001, the Certificate of Environmental Clearance (CEC) was started as subsidiary legislation under the Environmental Management (EM) Act, 2000 which is implemented by the Environmental Management Authority (EMA). This process was intended to ensure that environmental concerns were included in the country's development; the oil and gas sector being just one of the areas covered by this legislation. Environmental impact assessment (EIA) is one of the tools used within the CEC process to identify and assess the environmental impacts of the energy sector.

The CEC process allows for environmental concerns to be addressed without necessarily having to conduct an EIA; however major activities undertaken by the oil and gas industry are usually required to have an EIA done due to the potential for significant environmental impacts of their operations. In addition to which, Trinidad and Tobago as a small island developing state (SIDS) is particularly vulnerable to environmental impacts from any industrial activity thus requiring rigorous assessment of any potential negative effects. In the past, impacts from oil and gas operations in Trinidad and Tobago have included air and water pollution, ecological damage as

well as health and safety concerns. These impacts have arisen from spills and blowouts, improper disposal of waste oil, drill cuttings, grey water, solid waste and other associated waste.

The advent of EIA as a legal requirement has facilitated the assessment of these potential impacts since monitoring plans, emergency response plans and environmental management plans are required as part of the EIA report. Oil and gas entities are expected to be vigilant with respect to emissions, effluent and physical disturbance to the seabed (offshore) or land (onshore). As technology and environmental standards have improved, treatment of waste, less disruptive drill rigs and drilling methods have reduced many of the historical sources of impacts. Nevertheless, spills and blowouts continue to occur and the need for effective impact assessment has not diminished.

Environmental Impact Assessment in Oil and Gas Projects - Experience and Challenges

EIA practice in oil and gas in Trinidad and Tobago faces many challenges. These include the paucity of accessible data, lack of public participation, lack of post-approval enforcement and lack of quality control in EIA practice. Data is difficult to access since often it is owned by private entities which do not wish to make this data public or government agencies that do not have websites or do not want to share this data until they have conducted internal analyses. Information is also often outdated and cannot be used for baseline data. This often means that primary data must be collected for each EIA and cumulative impact assessment is often lacking since data is not attainable from other entities. Strategic environmental assessment is also not explicitly included in the CEC legislation and is not currently conducted for any sector.

Post-EIA approval often means that companies self-regulate, due to a lack of human and financial resources needed for enforcement, control and monitoring by the regulatory agencies, in addition to a deficiency in procedures and checks and balances. The results of any monitoring and enforcement are not widely disseminated and are usually only accessible at the EMA's library as a hard copy under the requirement for a National Register as prescribed by the EM Act, 2000. EIA practice in Trinidad and Tobago continues to experience variability in the quality of studies being undertaken and reports being produced by its EIA practitioners. There is no accreditation body or quality assurance system for EIA practitioners which translates into varying levels of EIA reports being produced. The EIA reviewers often request large amounts of additional information for a given EIA and many EIA reports constitute "desktop EIAs" that do not contribute current information to the local knowledge and impact assessment process.

Public participation is also variable in the EIA process for the oil and gas industry in Trinidad and Tobago. Unless the citizenry have a direct concern such as loss/gain of jobs or impacts on fisheries, the public rarely attend consultations/meetings nor do they provide invited comments on EIA reports. The cost of participation for stakeholders is not considered in the local EIA process, which often leads to a decision to not participate by the stakeholder if their costs exceed their perceived benefits of participation. The general lack of a strong non-governmental

organization (NGO) presence in Trinidad and Tobago also leads to a low public inclusion in the EIA process. The consultation process itself as outlined in the CEC legislation is not a fully inclusionary one but rather stakeholders are involved in the process while the EIA is being conducted, information is disseminated and feedback is taken into account in the EIA report with the company indicating how they addressed public comments. However, the populace is usually not involved in project-related decisions and in many instances the stakeholders are not told how their concerns have been addressed, leading to a decrease in trust in the EIA process and the oil and gas industry in general.

The major advantage of the EIA process in the oil and gas sector is the very existence of such a process since the existence of a system that needs improvement is better than no system at all. The EIA process has enabled a systematic assessment of the oil and gas industry's effects on the local environment. This has been an enlightening and in some cases a problematic process whereby the "business as usual" strategy was seen to be deficient and significant changes had to be implemented. The EIA process and the attendant oversight by the EMA and MEEA have driven many of these changes. The generation of oceanographic data has contributed to the knowledge base of the country in offshore areas where little was known before. Despite the poor public response, the EIA process includes avenues for participation and transparency when none existed before.

Conclusion

Although EIA in the oil and gas sector has contributed to sustainable development in Trinidad and Tobago, further measures are needed to fulfil the intentions of this process. Quality assurance needs to be incorporated into the practice of EIA in the country so that EIA reports are of a consistently high quality instead of the current variability. This can take the form of accreditation by an independent body or membership in a recognized EIA practitioners association. Strategic environmental assessment (SEA) is a crucial part of the EIA process that needs to be implemented in Trinidad and Tobago. Each major sector and the oil and gas industry in particular should be subject to an SEA to improve the local EIA process, which is currently limited to project EIA's.

In a survey conducted by the World Bank (2010) of the environmental governance of the oil and gas industry in developing countries, including Trinidad and Tobago, several recommendations were made to improve the current situation; many of these recommendations should be implemented locally. The EIA process in Trinidad and Tobago needs to adopt a life-cycle approach rather than simply being an approval mechanism; this should be accompanied by an effective, systematic means of on the ground enforcement. Technical and institutional capacity of local regulatory agencies should be improved through training and technology/information transfer among countries, regions and organizations. There is also a need for consistent post

approval monitoring by the EMA, MEEA, qualified consultants or another independent body to ensure that approval conditions are met.

Public participation should be improved within the EIA process. Innovative ways for involving the public must be sought due to the consistently low attendance at public consultations. Clear avenues of communication need to be established among the regulators, industry and stakeholders to manage environmental impacts throughout the project life cycle and not just at the pre-approval stage of the EIA process. Communities must be recognized and it must be clearly shown to the communities themselves how their comments and concerns have been addressed. Trust must be engendered among stakeholders, regulators and industry to ensure that the consultation process for EIA's is improved. Mechanisms for the dissemination of information including social and environmental data with respect to the oil and gas industry and specific projects within this industry also need to be developed on both a local and regional level.

With proven oil and gas reserves at 600 million barrels of crude oil and 17 trillion cubic feet of natural gas which is declining rapidly, leading to the exploration of the deep offshore area, the EIA process is even more important. Government is currently revisiting its energy policy with particular attention being paid to renewable energy as an emerging sector in the economy. The consideration of alternative energy sources is changing the face of the energy sector in Trinidad and Tobago and will move EIA in a different direction for this country since these different energy sources have their own attendant environmental issues. Environmental issues need to be mainstreamed into the various government agencies in the country and EIA is one tool which can be used to achieve this aim. The strengthening of the administrative and technical capacities of the local regulatory agencies is especially important in order to regulate the energy sector, both renewable and non-renewable to achieve sustainable development. Further analyses should be undertaken on both a country and regional level to identify further requirements for effective environmental management of the oil and gas industry as well as mechanisms for achieving this goal.

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