IS THE CLEAN DEVELOPMENT MECHANISM AN OPTION IN NIGERIA'S QUEST TO ELIMINATE GAS FLARING?

The Clean Development Mechanism (CDM) is one of the flexibility mechanisms under the Kyoto Protocol, which allows governments or private entities in Industrialised countries to establish projects with low GreenHouse Gas emissions otherwise known as Emission Reduction (ER) projects in developing countries and receive Certified Emission Reductions (CERs) referred to as carbon credits from the project activity.

The Kyoto Protocol mandates industrialised countries referred to as annex 1 countries to reduce their GHG emissions by 5.2% of the levels in 1990 during the first phase of the Kyoto Protocol, from 2008 to 2012. The developing countries or non – annex 1 countries, Nigeria inclusive, technically have no GHG emission restrictions, but have financial incentives to develop GHG ER projects in exchange for carbon credits. There are six Green House Gases identified under the Kyoto Protocol. These are carbon dioxide (CO_2), methane (CH_4), nitrogen protoxide (N_20), the hydrofluorocarbons, perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6). To enable annex 1 countries meet their targets, the Kyoto Protocol provides three flexibility mechanisms namely: the CDM, the Joint Implementation (JI), which involves setting up ER projects in industrialised countries in exchange for Emission Reduction Units (ERUs) and Emissions Trading involving the trading of carbon. The CERs/ERUs generated under CDM/JI projects are used to offset the carbon emissions of annex 1 countries and consequently assist them to meet their targets under the Kyoto Protocol or sold freely in the carbon market. The CDM has two main goals namely: to assist industrialised countries to achieve their targets under the Kyoto Protocol and promote sustainable development objectives in developing countries.

The Kyoto Protocol came into force on February 16 2005 pursuant to the United Nations Framework Convention on Climate Change (UNFCCC) signed in June 1992 by 166 signatory countries, which commits member states to curb climate change caused by human activities. As at November 2008, 183 State parties have ratified the Kyoto Protocol consisting of 37 industrialised countries and the European Union and 137 developing countries. Under the Kyoto Protocol, projects, which reduce the amount of GHG released to the atmosphere or enhance the amount of GHG removed from the atmosphere, may, qualify for CDM, while projects, which release GHG to the atmosphere, do not.

There are about 15 different sectors from which CDM projects can emerge and these are energy industries (renewable and non – renewable resources), energy demand, manufacturing industries,

chemical industries, construction, transport, minning/mineral production, metal production, fugitive emissions from fuel, (solid, oil and gas), fugitive emissions from production and consumption of halocarbons and sulphur hexafluoride, solvent use, waste handling and disposal, afforestation and reforestation and agriculture. Examples of CDM projects include switching from gasoline to biofuel combustion, from coal and natural gas generated electricity to renewable electricity from the wind.

Gas flaring is one of the ways GHG is released to the atmosphere and occurs when associated gas produced during crude oil extraction is flared. Gas flaring contributes significantly to global emissions of carbon dioxide and methane two of the GHG, which contribute to climate change. Each m^3 of gas flared is estimated to generate roughly 2kg of CO_2 into the atmosphere. In addition to the harmful effects on the environment, gas flaring wastes resources resulting in huge loss of revenue. Statistics show that the volume of gas flared in Africa alone could be used to produce 50% of the current power demands on the continent.

Various oil and gas producing nations and international organisations continue to make efforts to facilitate reduction and ultimately eliminate gas flaring. In Nigeria, the journey to achieving this all - important objective appears to be a long way ahead. Section 3 of the Associated Gas Re – Injection Act (AGRA) Cap A25, Laws of the Federation of Nigeria (LFN) 2004 makes it illegal to flare gas without the consent of the Minister of Petroleum, who may issue a certificate if satisfied that it is not feasible to utilise or re-inject the associated gas. The Act further imposes a penalty of =N=10 (about 11.9cents) for every 1000 standard cubic feet of gas flared and the oil field where the gas is being flared, may be shut down. Despite legislation, Nigeria remains one of the top countries in the world where huge volume of gas is flared, with about 2.5 bcf, flared daily.

CDM presents an option to reduce gas flaring in Nigeria by ensuring that associated gas produced during crude oil, which would have been flared, is utilised in a CDM project in exchange for carbon credits. There is no gain saying the fact that the more gas flare outs that are converted to viable CDM projects, the lower the GHG emissions that would be released to the atmosphere and the higher the climate change mitigation that would occur. Developing a gas flare CDM project may not be attractive due to constraints faced in utilising natural gas in Nigeria, some of which include: lack of gas infrastructure, restricted access to electricity transmission and distribution network, risks of gas re-injection in oil reservoir, distance from significant gas markets, undeveloped domestic gas market and gas product pricing to mention a few. However, the carbon credits to be obtained from

such a project may make a project, which would not have been considered for development attractive for development. An example of an oil and gas CDM, which deals with recovery and utilisation of associated gas from oil wells that would have been flared is the Rang Dong project located offshore Vietnam. The project involves the recovery of and transportation of natural gas in pipelines to a process plant where dry natural gas (LPG) and condensate are produced. The gas produced is utilised instead of flared, with a reduction in the amount of GHG that would have been emitted in the absence of the project. In Nigeria, the ENI Kwale Gas to Power project located in Okpai is another example of an oil and gas CDM project. The project also deals with the recovery of associated gas that would have been flared from oil wells and utilisation of the same. Information available shows that the project is set to reduce emissions by 1.5 million tonnes of CO_2 annually. Gas flare reduction projects appear to be one of the most plausible CDM project in the oil and gas sector and more oil companies are encouraged to develop oil and gas CDM projects with a view to reducing the volume of gas flared.

Criteria for CDM Project

In order to qualify as a CDM, the project must be additional, result in the economic and sustainable development of the host developing country and provide real, measurable and long – term benefits related to climate change mitigation. A CDM project activity is additional if anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the registered CDM project activity. In other words, it must not be a business as usual scenario. The project developer must prove that the project would not have been implemented without the incentive of the CERs. In a gas flare reduction project for instance, the additionality element of the CDM is more likely to be satisfied if the oil company can show among other considerations that without the incentive of the CERs, the gas under the proposed project would have been flared.

Whether a proposed project will result in sustainable development is a question to be determined by the host country. In Nigeria, the criteria used to measure sustainable development, include the following: the project must lead to real and verifiable emission reduction, ensure investment, economic growth protection and increased income, enhance efficient energy development and utilisation, bring about environmental and financial benefits, facilitate speedy transfer of technology and result in real, measurable and long – term benefits related to climate change mitigation – *The Nigeria DNA: CDM PROJECT REGISTRATION PROCESS AND CRITERIA Pages 10 – 11 By Victor Fodeke. Head Special Climate Change Unit, Federal Ministry of Environment, Housing and Urban Development, Abuja.*

Parties, Process and Documentation in a CDM Project

The main participants in a CDM project are the CDM Executive Board (EB), Designated National Authority (DNA), Designated Operational Entities (DOEs), and the Project Developer (PD). The CDM EB is appointed by the member states to the Kyoto Protocol. The EB generally oversees the operations of the CDM, approves baselines methodologies, registers projects and issues CERs. Each metric ton of CO_2 approved and issued by the EB after verification and certification is referred to as CER. The DNA is the host country's national authority charged with the responsibility of evaluating proposed CDM projects, determining whether the proposed project will result in sustainable development, issuing Letters of Approvals (LoA) and managing the local regulatory aspect of the CDM. The approval of the host country is required to register a CDM project with the UNFCCC. In Nigeria, the regulatory authority is the Special Climate Change Unit of the Federal Ministry of Environment, Housing and Urban Development, Abuja. The Project Developer (PD) is the project sponsor, the company or institution developing the CDM project, while the DOEs are independent third parties, accredited by the EB for the purpose of validating proposed CDM projects, verifying and certifying emission reductions resulting from the project to the EB.

Developing a CDM project involves preparing a Project Idea Note (PIN), a feasibility study on the proposed project, obtaining an LoA from the DNA of the Host country for the proposed project and a written authorisation from the Party to the Kyoto Protocol of the voluntary participation of the proposed Project Participants, drafting a Project Design Document (PDD), which contains a description of the project activity, the proposed monitoring methodology and baseline, project duration, monitoring plan, environmental impact assessment and stakeholders' comments, submission of the PDD to a DOE for validation, registration of the project as a CDM with the EB, operating the project in a way which reduces GHG, monitoring the ER based on the monitoring plan, review and verification of the ER by a second DOE, certification by that DOE of the ER resulting from the project to the EB and issuance of CERs by the EB.

Relevant documentation includes the PIN, PDD and LoA from the DNA of the host country and the Emissions Reduction Purchase Agreement (ERPA) amongst others. The ERPA is a purchase and sale agreement between a seller (usually the Project Developer) and buyer for the sale of the CERs resulting from a CDM project activity. The ERPA identifies the parties, their rights and responsibilities, nature of the contract, risks borne by the parties and risk mitigation strategies. Some of the risks include failure to obtain a licence from the DNA, project failing to

qualify for CERs and price risks amongst others. The ERPA must ensure that these risks are allocated and managed in such a way that will allow the value of the project to be fully maximised between the parties. It is advisable that parties involved in a CDM project involve their lawyers right from the start of negotiations for the project to ensure that their rights are adequately secured.

Carbon Credit Ownership

Ownership of the CERs to be generated by the oil and gas CDM project activity must be clarified from the onset. In order to be entitled to the CERs, the PD must be able to establish title to the rights and benefits from the CERs. In the absence of any law to the contrary, the PD owns the CERs and is entitled to deal with them exclusively. However, In oil and gas CDM projects, ownership issues have to be considered in light of relevant host country laws regulating the lease/licence for the development of oil fields, ownership of natural resources and the nature of petroleum development contracts. In Nigeria, issues relating to the grant of Oil Prospecting Licence (OPL) or Oil Mining Lease (OML) and the specific terms and conditions of petroleum development contracts such as the Joint Venture (JV) and the Production Sharing Contract (PSC) have to be taken into consideration in determining the ownership of carbon credits. In an oil and gas CDM, the ownership of the CERs may differ depending on the petroleum development contract.

Carbon credit development for flare reduction projects

The World Bank has been very active in facilitating the reduction of gas flaring through its Global Gas Flaring Reduction (GGFR) program. The GGFR is a World Bank initiative set up to support efforts of national governments and the petroleum Industry to eliminate flaring and venting of gas associated with the extraction of crude oil. It is a public private partnership between the World Bank, national governments, institutions and private companies. The GGFR partners are the World Bank, OPEC Secretariat, Algeria, Angola, Cameroon, Chad, Ecuador, Equatorial Guinea, Indonesia, Kazakhstan, Russia, Nigeria, Qatar, Canada, Norway, USA, France, the European Union, ENI, ExxonMobil, BP, ChevronTexaco, Norsk Hydro, Shell, Statoil and Total. The main objective of the GGFR is to encourage oil companies to utilise the gas being flared on viable CDM projects.

CONCLUSION

To conclusively resolve the issue of gas flaring, the government needs to address conclusively the factors militating against gas utilisation in Nigeria. However, in the interim, full advantage should be taken of the

opportunities created through oil and gas CDM projects to reduce the volume of gas being flared in Nigeria. While, it may not be realistic to expect all the gas being flared to be absorbed in CDM projects, because some projects will continue to be marginal even with the incentive of carbon credits. It is however, hoped that such projects would be few and far between. In the final analysis, government, oil companies and all interested stakeholders would work towards eliminating gas flaring through the CDM or indeed in any other way feasible.