ENERGY: PROBLEMS AND SOLUTION IN NIGERIA

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Energy was born around 17 billion years ago when our universe was created in a gigantic explosion called the Big Bang. At first, the universe was almost all energy at tremendously high temperatures. As the universe expanded and cooled, some of the energy formed matter. While the universe has continued to evolve, it is still made up of these two components, matter and energy. This energy produced in the big bang is the same energy that we use today to run our radios, in the gasoline that powers our cars, and in the food we eat that gives us the energy to live. This energy is what this website is all about.

Nigeria has a population of over 110 million people and an abundance of natural resources, especially hydrocarbons. It is the 10th largest oil producer in the world, the third largest in Africa and the most prolific oil producer in Sub-Saharan Africa. The Nigerian economy is largely dependent on its oil sector which supplies 95% of its foreign exchange earnings.

The upstream oil industry is the single most important sector in the economy. According to the 2008 BP Statistical Energy Survey, Nigeria had proved oil reserves of 36.22 billion barrels at the end of 2007 or 2.92 % of the world's reserves. The Nigerian government plans to expand its proven reserves to 40 billion barrels by 2010. Most of this is produced from the prolific Niger River Delta. Despite problems associated with ethnic unrest, border disputes and government funding, Nigeria's wealth of oil makes it most attractive to the major oil-multinationals, most of whom are represented in Nigeria, with the major foreign stakeholder being Shell. Nigeria produced an average of 2355.8 thousand barrels of crude oil per day in 2007, 2.92% of the world total and a change of -4.8 % compared to 2006.

According to the 2008 BP Statistical Energy Survey, Nigeria had 2007 proved natural gas reserves of 5.29 trillion cubic metres, 2.98% of the world total. Due, mainly, to the lack of a gas infrastructure, 75% of associated gas is flared and 12% re-injected. Nigeria has set a target of zero flare by 2010 and is providing incentives for the production and use of gas. The government also plans to raise earnings from natural gas exports to 50 percent of oil revenues by 2010. It has been reported in the 2008 BP Statistical Energy Survey that Nigeria had 2007 natural gas production of 34.97 billion cubic metres, 1.18% of the world total.

Nigeria's downstream oil industry is also a key sector including four refineries with a nameplate capacity of 438,750 bbl/d. Problems such as fire, sabotage, poor management, lack of turn around maintenance and corruption have meant that the refineries often operate at 40% of full capacity, if at all. This has resulted in shortages of refined product and the need to increase imports to meet domestic demand. Nigeria has a robust petrochemicals industry based on its substantial refining capacity and natural gas resources. The petrochemical industry is focussed around the three centres of Kaduna, Warri and Eleme.

Until 1960, government participation in the oil industry was limited to the regulation and administration of fiscal policies. In 1971, Nigeria joined OPEC and in line with OPEC resolutions, the Nigerian National Oil Corporation (NNOC) was established, later becoming NNPC in 1977. This giant parastatal, with all its subsidiary companies, controls and dominates all sectors of the oil industry, both upstream and downstream.

Because of the limited amount of nonrenewable energy sources on Earth, it is important to conserve our current supply or to use renewable sources so that our natural resources will be available for future generations.

Energy conservation is also important because consumption of nonrenewable sources impacts the environment. Specifically, our use of fossil fuels contributes to air and water pollution. For example, carbon dioxide is produced when oil, coal, and gas combust in power stations, heating systems, and car engines. Carbon dioxide in the atmosphere acts as a transparent blanket, which contributes to the global warming of the earth, or "greenhouse effect." It is possible that this warming trend could significantly alter our weather. Possible impacts include a threat to human health, environmental impacts such as rising sea levels that can damage coastal areas, and major changes in vegetation growth patterns that could cause some plant and animal species to become extinct.

Sulfur dioxide is also emitted into the air when coal is burned. The sulfur dioxide reacts with water and oxygen in the clouds to form precipitation known as "acid rain." Acid rain can kill fish and trees and damage limestone buildings and statues.

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