

Technological Analysis of Sustainable Biofuels Development in Nigeria

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Abstract

Nigeria's biofuel policy calls for 10% bioethanol and 20% biodiesel substitution in domestic petrol and diesel consumptions of 35 million and 12 million litres per day respectively. Although the policy was approved in 2005, after six years, a vibrant biofuels industry has not taken off in the country. In this paper, using strategic analysis approach, we determined the key technological impediments to biofuel industry development in Nigeria to be inadequate knowledge on feedstock and landmass requirements, the "food vs fuel" debate, fuel subsidy implications, indifference and low market confidence by investors, limited S&T human capability, poor funding, weak institutional framework and poor infrastructure provision. We have established that Nigeria's total biofuel production at highest demand by 2020 (11.64 Million Tons) would require 51.8 Million Tons of feedstock comprising 48.44 Million Tons of cassava for bioethanol and 3.36 Million Tons of *Jatropha curcas* for biodiesel. This production demand would require 57.5 Thousand Sq. Km of land. This is less than 8% and 20% of the arable land (726 Thousand Sq. Km) or cultivated land (340 Thousand Sq. Km) in Nigeria respectively. Hence the food vs fuel fears were deemed unnecessary. We argue that the N1.2 trillion (US\$8 billion) fuel subsidy claimed by the Federal Government of Nigeria in 2011 be converted as seed capital for the take-off of the biofuels industry in the country.

Keywords: Biofuels Development, Technological Impediments, Food Security

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