

Sustainable Electricity Generation Mix for Kenya from 2015 to 2035

Authors : Alex Maina, Mwenda Makathimo, Adwek George, Charles Opiyo

Abstract : This research entails the simulation of three possible power scenarios for Kenya from 2015 to 2035 using the Low Emissions Analysis Platform (LEAP). These scenarios represent the unfolding future electricity generation that will fully satisfy the demand while considering the following: energy security, power generation cost and impacts on the environment. These scenarios are Reference Scenario (RS), Nuclear Scenario (NS) and More Renewable Scenario (MRS). The findings obtained reveals that the most sustainable scenario while comparing the costs was found to be the coal scenario with a Net Present Value (NPV) of \$30,052.67 million though it has the highest Green House Gases (GHGs) emissions. However, the More Renewable Scenario (MRS) had the least GHGs emissions but was found to be a most expensive scenario to implement with an NPV of \$30,733.07 million.

Keywords : energy security, Kenya, low emissions analysis platform, net-present value, greenhouse gases

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