

Energy is an essential component in the development of any nation. In the last decades, the main sources of energy have been fossil fuels mainly petroleum, coal and natural gas, but they are major contributor of greenhouse gas emissions. Greenhouse gases contribute to climatic changes, thus a need for a shift to clean renewable energy sources such as biomass, solar, wind, geothermal and hydropower to reduce greenhouse gases. Many developing countries, Kenya included, are facing major challenges in energy provision and many rural populations are experiencing energy poverty exhibited by lack of access to electricity and reliance on traditional fuels for cooking. The main purpose of this research, therefore, is to examine the contribution of adoption of small hydropower and biogas plants to energy poverty alleviation in Kirinyaga County. The research design will be exploratory case study. The sampling procedure will be purposive sampling for those who have adopted biogas and those connected to the small hydro power projects. Sampling of non adoptees of biogas and small hydro power and those connected to the national grid will be through simple random sampling based on administrative divisions. Data collection will be through structured interviews for schools principals, managers of community based organizations, biogas contractors, small hydro power projects operators and government institutions that support them. Questionnaires will be administered to users and non-users of small hydro power and biogas plants. Visits will be made to the farms and small hydro power stations to make observations. Focus group discussions will be used to validate obtained information or capture new information. Primary data will be analyzed through descriptive and inferential statistics (chi-square) for questionnaires and in themes for interviews, focus group discussions and observation. Secondary data will be analyzed through content analysis and descriptive statistics. The study findings will give the status of energy in rural Kirinyaga County, contribution of small hydro power and biogas plants to rural energy poverty alleviation and recommendations for improving renewable energy policies and practices.