The development of an Android Applications Model for the Smart Micro-Grid Power Pool System Monitoring and Control

Abstract

This paper presents the conceptual Android Applications Model for the Smart Micro-Grid Power Pool Monitoring and Control Scheme. The Rational for Energy Sustainability is the focus of this work. Several hybrid formations are utilized on either standalone or off grid basis without formidable measures to monitor and control the system against energy wastage remotely. This research work proposed smart micro-grid integrated scheme with android enable operated soft-touch human machine interface for the remote monitoring and control of the hybrid power pool system with its load shedding capability for Energy *Sustainability*. *The optimize hybridized renewable energy resources harvested from the abundant wind, sun, water and bio-resources with the grid and Generator sources from Afikpo Local Government Area of Ebonyi State was considered as a research focal point. Proteus was used in designing system circuitries for the control and monitoring of the power pool system to ascertain its functionability. Arduino IDE was used in developing, monitoring and control algorithm for the system operation. The sublime text enables HTML, JAVA and CSS program for the android application implementation. The design provides a remote operated touch screen Human Machine interface for the pool resources to be centrally manage or control thus, eliminating energy wastage. Five communities where selected for this demonstration. The results reveal that the android enable remote soft touch human machine interface facilitates optimal energy operation. Further research work should be tailored towards developing a similar scheme using same approach for up to 10 communities in the similar local government areas to face out energy sabotage.*