SIMULATION AND COMPARISON OF AODV ROUTING PROTOCOL WITH DSDV ROUTING PROTOCOL OF SMART GRID USING NS-2 SIMULATOR "APPLICATION FOR RENEWABLE ENERGY PRODUCTION SYSTEMS"

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ABSTRACT

The demand for energy rises as the population increases, creating many issues with the network. Moreover, the use of traditional energy has become a threat to the ecosystem and to humans. In this scenario, by incorporating a smart grid to better control energy usage, the renewable energy would be very advantageous. This paper describes the foundations of the smart grid, its architecture, the simulation of the smart grid, and its various applications, in particular at the level of large businesses and from one country to another. The main objective of this paper is to simulate and compare the performance of two routing protocols (AODV and DSDV) in terms of power consumption, end-to-end delay, transmission rate of packets, and energy costs of the network. The results based on simulation and data analysis show that the AODV protocol is more efficient in terms of overall performance compared to the DSDV protocol for smart electricity grids.

Keywords Renewable energy, smart grid, AODV, DSDV, DSR, Routing, NS-2, Simulation, Performance Comparison.