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Smart Load Management and Tariff Control

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Abstract: *The growing demand for electricity has led to significant challenges in managing energy consumption, particularly during peak hours. This paper presents a smart load management and tariff control system aimed at optimizing energy usage and reducing costs for consumers. The proposed system utilizes a maximum demand controller to monitor real-time voltage and current, providing continuous power usage data on an LCD panel. By setting threshold values, the system can automatically control non-essential loads to prevent exceeding the maximum demand. Additionally, a GSM module is integrated to inform consumers about dynamic tariff rates, encouraging them to manage energy consumption during peak hours. The system not only helps balance the load curve but also enables substantial savings on electricity bills. This paper outlines the system architecture, operational principles, and key hardware components, demonstrating how smart energy management can benefit both consumers and utility providers*

Keywords: Smart Load Management, Tariff Control System, Demand Side Management (DSM), Maximum Demand Controller, Energy Optimization, Real-Time Monitoring, IoT and Automation in Power Systems, Dynamic Tariff Notification

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