

# Load Scheduling Algorithm for Smart Home Energy Management System

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**Abstract:** Consumers' daily increased use of power appliances is causing an imbalance between supply and demand in the energy market, which is a developing worry. To prevent substantial supply-side shortages and boost energy efficiency, demand-side energy management is a crucial strategy. The focus of energy management is on bringing down the price of electricity as a whole rather than limiting consumption by opting to use less energy during peak usage times. A localised, total loss of power is expected to be replaced by regulated partial load shedding in accordance with consumer preferences via the construction of a Smart Energy Management System. Under the suppositions of a demand response event, the upper limit on demand limitation with various scenarios, and modifying the priority assigned to each appliance, experimental work is executed. SEMS incorporates cost-optimization algorithms based on user comfort levels with sensory information elements and usage time. An IoT environment for data analytics and archiving has been constructed, together with a home area network with dependable ZigBee connectivity.

**Keywords:** Smart Home Energy Management System

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