

SmartTariff™

Electronic controller for household energy control based on timing and tariff

“Use Power Wisely.”

Technology

The invention relates to a smart electronic controller designed to optimise household energy efficiency. It employs a microprocessor and sensor-based control system that permits selective management of electricity consumption across different household load lines. The system allows both manual and automated switching of individual appliances or circuits based on time schedules or electricity tariff data. By intelligently distributing energy demand throughout the day, the controller reduces peak load on the national grid and lowers electricity costs for users. On a broader scale, it helps balance energy demand, enhancing grid stability and sustainability.

Market need

The global rise in electricity costs, frequent grid overloads, and the shift toward smart energy management have created a strong demand for household-level energy optimisation solutions. Many homes waste energy through uncontrolled appliance use, especially during high-tariff peak periods. Utilities struggle to balance supply and demand, resulting in higher operational costs and increased outages. A smart controller that can automatically manage when and how household electricity is used based on real-time tariff data and consumption patterns directly addresses this gap. It helps consumers lower their bills while enabling energy suppliers to stabilise the grid and reduce peak demand pressure.



Features

- Smart Microprocessor Control
- Sensor-Based Load Monitoring
- Time and Tariff Scheduling.
- Manual and Automatic Mode customisation
- User Interface/Display
- Easily integrated into existing household wiring or new installations.



Benefits

- Automatically shifts appliance use to low-tariff periods, cutting electricity bills.
- Reduces simultaneous peak-time consumption, easing load on the national grid.
- Optimises when and how electricity is used, minimising waste.
- Gives homeowners real-time control and visibility over their energy use.
- Promotes sustainable energy consumption by reducing unnecessary power demand.



Industry

Energy

Potential applications

- Smart home energy management to automate appliance control based on tariff schedules and time-of-use pricing.
- Load shifting and demand response for households to reduce electricity bills and ease pressure on the national grid.
- Integration with renewable energy systems for optimized energy use and self-consumption.
- Utility and smart grid programs enabling real-time demand-side management and dynamic pricing models.
- Commercial or community energy systems for shared load optimization and improved power distribution efficiency.

Creators

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Stage of development

Prototype

Intellectual property

Patent Protection

Desired relationship

Co-development, Investors