

# Design and Implementation of Smart Energy Management System

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**Abstract:** *It is crucial to create systems that lessen our reliance on non-renewable resources in a world with declining energy reserves and escalating economic crises. Smart Home Energy Management Systems, which employ smart switches to actively monitor energy use by each load, available power, and other parameters to transition between renewable resources and the primary power grid, are becoming more and more popular. The results of several methodologies were combined and analysed after a thorough literature review. The approach described is a synthesis of all the most well-liked approaches. The suggested methodology aims to implement demand response management simultaneously on grid electricity and solar power. The issue was divided into two scheduling scenarios: one assuming only solar power is available, the other assuming just grid power. In order to use the resources available as effectively as possible, the two halves are then combined.*

**Keywords:** Smart Energy

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