

Design and Implementation of Building Energy Management System with Quality of Experience Power Scheduling Model to Prevent the Blackout in Smart Grid Network

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Abstract—Building energy management system (BEMS) has drawn public attention since it is not only help users to monitor and control their power consumption easily, but also reduce their electricity bill. Various scheduling models have been proposed to optimize power consumption. However, they are few solutions to prevent the blackout while optimizing the power consumption. We design and implement a BEMS which can autonomously control the power consumption below a given threshold while negotiating electricity consumption with the smart grid system. By keeping the power consumption below a given threshold autonomously, the power demand will not exceed the available supply, therefore can prevent the blackout. Since the threshold can be negotiated with the smart grid system, customers satisfaction can be increased.

Keyword—black out, building energy management system (BEMS), energy management system (EMS), quality of experience (QoE), smart home



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