

## **SYNERGISTIC OPTIMIZATION OF ENERGY UTILIZATION VIA IOT- ENABLED SMART METERING IN ADVANCED MICRO GRID INFRASTRUCTURES**

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Green clouds optimally use energy a resources in large-scale distributed computing environ- ments. Large scale industries such as smart grids are adopting green cloud paradigm to optimize energy needs and to maximize lifespan of smart devices such as smart meters. Both, energy consumption and lifespan of smart meters are critical factors in smart grid applications where performance of these factors decreases with each cycle of grid operation such as record reading and dispatching to the edge nodes. Also, considering large-scale infrastructure of smart grid, replacing out-of-energy and faulty meters is not an economical solution. Therefore, to optimize the energy consumption and lifespan of smart meters, we present a knowledge-based usage strategy for smart meters in this paper. Our proposed scheme is novel and generates custom graph of smart meter tuple datasets and fetches the frequency of lifespan and energy consumption factors. Due to very large-scale dataset graphs, the said factors are fine-grained through R3F filter over modified Hungarian algorithm for smart grid repository. After receiving the exact status of usage, the grid places smart meters in logical partitions according to their utilization frequency. The experimental evaluation shows that the proposed approach enhances lifespan frequency of 100 smart meters y 72% and optimizes energy consumption at an overall percentile of 21% in the green cloud-based smart grid.