

## Environmental Effects on Energy Consumption of Smart Grid Consumers

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**Abstract :** Environment and surrounding plays a pivotal rule in structuring life-style of the consumers. Living standards intern effect the energy consumption of the consumers. In smart grid paradigm, climate drifts, weather parameter and green environmental directly relates to the energy profiles of the various consumers, such as residential, commercial and industrial. Considering above factors helps policy in shaping utility load curves and optimal management of demand and supply. Thus, there is a pressing need to develop correlation models of load and weather parameters and critical analysis of the factors effecting energy profiles of smart grid consumers. In this paper, we elaborated various environment and weather parameter factors effecting demand of consumers. Moreover, we developed correlation models, such as Pearson, Spearman, and Kendall, an inter-relation between dependent (load) parameter and independent (weather) parameters. Furthermore, we validated our discussion with real-time data of Texas State. The numerical simulations proved the effective relation of climatic drifts with energy consumption of smart grid consumers.

**Keywords :** climatic drifts, correlation analysis, energy consumption, smart grid, weather parameter

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