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Smart Grid Simulator

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Abstract : The Smart Grid Simulator is a computer software based on advanced algorithms which has as the main purpose to lower the energy bill in the most optimized price efficient way as possible for private households, companies or energy providers. It combines the energy provided by a number of solar modules and wind turbines with the consumption of one household or a cluster of nearby households and information regarding weather conditions and energy prices in order to predict the amount of energy that can be produced by renewable energy sources and the amount of energy that will be bought from the distributor for the following day. The user of the system will not only be able to minimize his expenditures on energy fractures, but also he will be informed about his hourly consumption, electricity prices fluctuation and money spent for energy bought as well as how much money he saved each day and since he installed the system. The paper outlines the algorithm that supports the Smart Grid Simulator idea and presents preliminary test results that support the discussion and implementation of the system.

Keywords : smart grid, sustainable energy, applied science, renewable energy sources
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