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(71)**Name of Applicant :**
1)NOIDA INSTITUTE OF ENGINEERING & TECHNOLOGY
Address of Applicant :19, Knowledge Park-II, Institutional Area, Greater Noida – 201306, Uttar Pradesh, India. Uttar Pradesh India
(72)**Name of Inventor :**
1)MANISH CHAUDHARY
2)SACHIN SINGH

(57) Abstract :
The present invention discloses an AI-enabled system (101) for smart power consumption forecasting (102) integrating IoT sensors (103), data preprocessing (104), AI forecasting engine (105), weather integration module (106), decision-support interface (107), and output visualization system (108). The system predicts energy consumption patterns with high accuracy, dynamically adapts to environmental changes, and supports both utilities and consumers in optimizing resource allocation, enhancing renewable energy integration, and reducing costs. The invention ensures scalable, transparent, and sustainable forecasting across residential, industrial, and smart grid applications.

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