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(57) Abstract :
[029] This invention presents Forecasting the Power Generated by Solar Photovoltaic Systems Using Data Analytics for Smart Grid Applications. The present invention comprising of a data collection module configured to gather real-time data from solar PV systems, weather monitoring devices, energy consumption meters, and grid sensors, a data analytics module configured to process the collected data to generate insights into solar power generation potential, energy demand, and grid conditions and a control module linked to the data analytics modules and configured to adjust the operation of solar PV systems based on the insights derived from the data analytics. Further, the system comprises communication interfaces facilitating bidirectional communication between utility companies, solar PV system operators, and consumers to optimize solar power generation and energy consumption patterns. Accompanied Drawing [FIG. 1-2]

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