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IISB
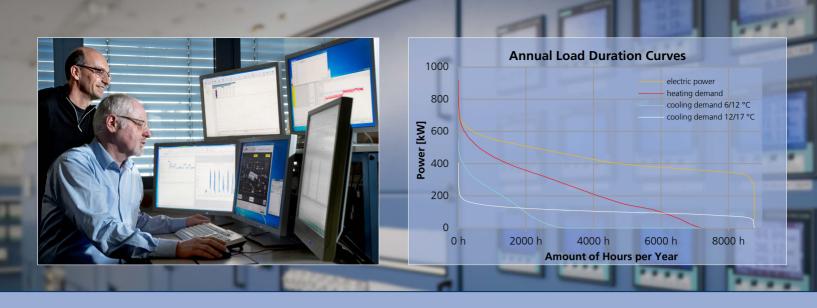
FRAUNHOFER INSTITUTE FOR INTEGRATED SYSTEMS AND DEVICE TECHNOLOGY

Energy: Efficiency and Monitoring

Measurement, Analysis, Improvement, Validation

Annual Load Duration Curves

Legend:
- electric power
- heating demand
- cooling demand 6/12 °C
- cooling demand 12/17 °C

Power [kW] vs. Amount of Hours per Year

Description

Fraunhofer IISB has demonstrated on a mid-sized plant a comprehensive energy monitoring system. This comprises mobile energy measurement, power distribution and efficiency analysis. The system utilizes the SIEMENS powermanager and additional mobile data acquisition has been performed. Fraunhofer IISB gathered data on energy distribution and consumption – covering thermal and electrical energy – and the resulting data has been analyzed in detail; various areas for optimization have been identified and improvements implemented. Improvements will be continuously evaluated.

For cooperation we offer detailed expertise in analyzing energy distribution load profiles and consumption in existing buildings to improve the total energy and infrastructure efficiency. Monitoring and analysis can go down to the machinery level.

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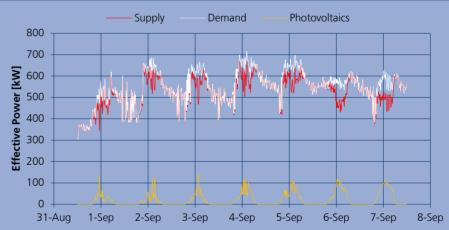www.energy-seeds.org
www.iisb.fraunhofer.de

Services and Solutions

- Monitoring of thermal power / energy and electrical power / energy consumption
- Analysis of energy supply load profiles and consumption on building or plant level
- Consultation for the implementation of energy monitoring systems inclusive measurement tools
- Support to improve energy efficiency and to reduce costs
- Optimizing system operation and resource efficiency based on monitoring

Load profiles generated by energy monitoring system

Legend: Supply — Demand — Photovoltaics

Effective Power [kW] vs. dates 31-Aug to 8-Sep

Energy monitoring: photovoltaic power generation influences the total load profile

Mobile energy / power loggers (thermal and electrical) are used to acquire additional information about energy consumption or to verify measurements and improvements.