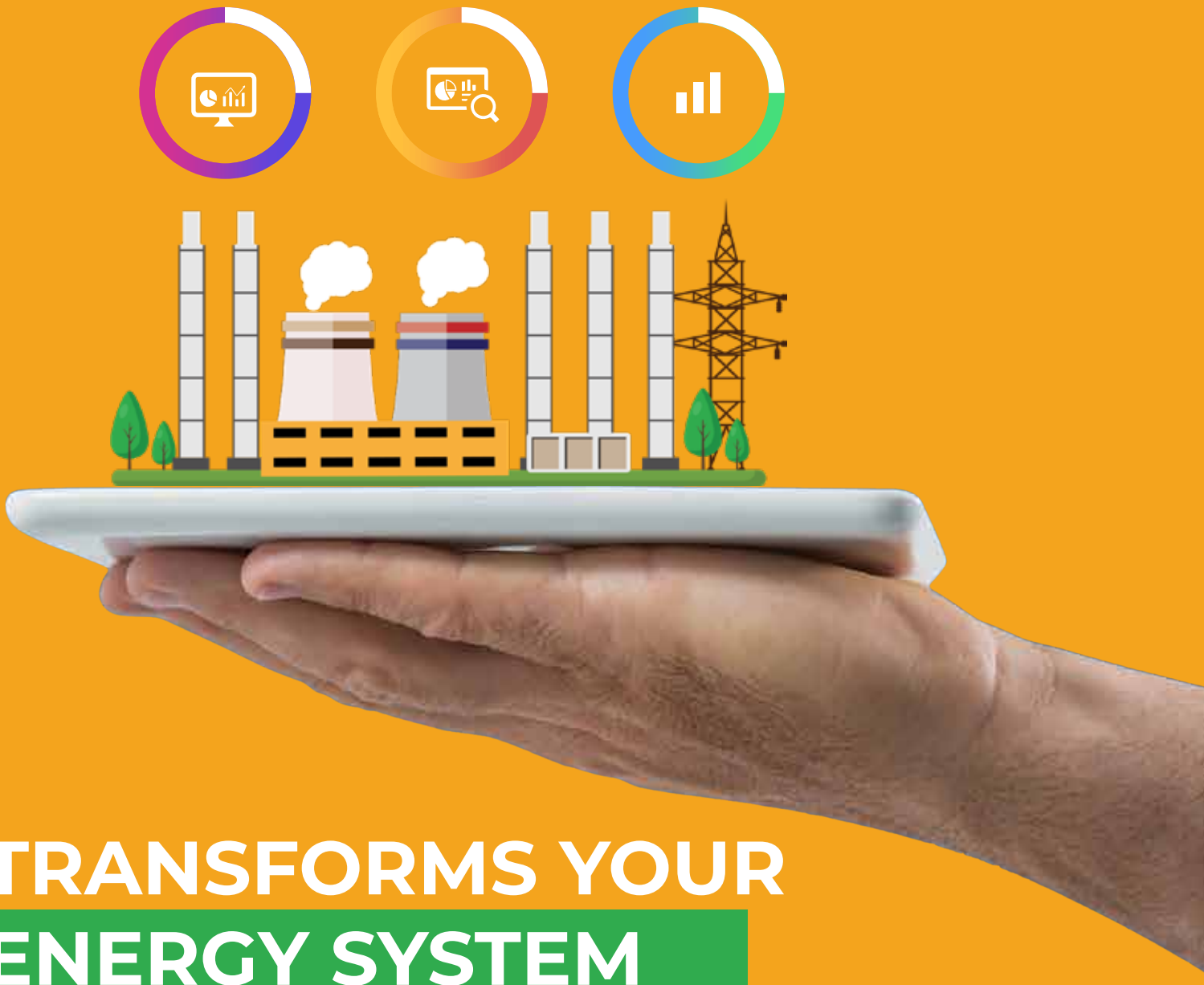
BSTheorm

ENTERPRISE ENERGY MANAGEMENT SOFTWARE



TRANSFORMS YOUR ENERGY SYSTEM WITH CONTINUOUS SUPERVISION & MASTERY

Estheorm Main Aspects

ESTheorm - EnergiSpeak's EnterpriseEnergy Management Systems (EEEMS)

EnergiSpeak's Enterprise Energy Management Systems (EEEMS) are software and hardware solutions designed to help organizations monitor, control, and optimize their energy consumption and efficiency. These systems help immensively large enterprises with complex energy needs, as they provide a centralized platform for managing and analyzing energy data.

ESTheorm – comprehensively

Monitoring and Data Collection

- It collect data from various sources, such as utility meters, IEDs, IOT sensors, PLC, RTU, DCU , SCADA, DCS, BMS systems to track energy consumption in real-time.
- ESTheorm advanced metering infrastructure (AMI) and smart meters to capture detailed information about energy usage at different levels of an organization.

Data Analysis and Reporting

- ESTheorm EEEMS analyze the collected data to identify patterns, trends, and anomalies in energy consumption.
- Its customizable reports and dashboards provide insights into energy usage; help organizations make informed decisions about energy efficiency measures.

Energy Efficiency and Optimization

- It helps organizations identify opportunities for improving energy efficiency and reducing consumption.
- It has features such as demand response, load forecasting, and predictive analytics to optimize energy usage and reduce costs.

Integration with Building Management Systems (BMS) and IoT

- Integration with BMS and Internet of Things (IoT) devices allows ESTheorm EEEMS to

control and monitor various energy-consuming assets within a facility, such as HVAC systems, lighting, and equipment.

Carbon Emission Tracking and Sustainability Reporting

- It includes tools for tracking and reporting on carbon emissions, helping organizations monitor their environmental impact and comply with regulatory requirements.

Compliance and Regulatory Reporting

- ESTheorm EEEMS assist organizations in adhering to energy-related regulations and standards by providing the necessary data and reports.

Cost Management

- By monitoring energy consumption and identifying areas of inefficiency, ESTheorm EEEMS contribute to cost reduction strategies for organizations.

User Engagement

- ESTheorm EEEMS include features that promote awareness and engagement among employees, encouraging them to adopt energy-efficient behaviors.

Scalability and Customization

- ESTheorm EEEMS are designed to be scalable to accommodate the diverse needs of large enterprises. They often offer customization options to adapt to specific industry requirements.

Security and Data Privacy

- Due to the sensitive nature of energy data, ESTheorm EEEMS prioritize security measures to protect against unauthorized access and ensure data privacy.

Implementing ESTheorm System can lead to significant cost savings, improved sustainability, and enhanced overall operational efficiency for large organizations.

ESTheorm Operational Features

ESTheorm was developed to align with the goals of enhanced energy efficiency programs.

Operational features

Detailed Energy Analytics

ESTheorm solution includes detailed energy analytics, allowing organizations to analyze energy consumption patterns comprehensively. This is crucial for identifying opportunities for improvement and optimizing energy usage.

Operational Maintenance

ESTheorm EEEMS addresses the need for timely operational maintenance by providing insights into energy data on a day-to-day basis. This proactive approach helps prev ent issues and ensures the smooth operation of energy-related assets.

Performance Against PAT Scheme

ESTheorm EEMS solution is designed to meet the requirements of the Perform, Achieve, and Trade (PAT) scheme, indicating a focus on regulatory compliance and adherence to energy efficiency standards set by authorities.

Timely Information Delivery

ESTheorm system ensures that the right information is delivered to the right person at the right time. This is achieved through various means such as reports, alerts, and data signatures, enhancing decision-making capabilities within the organization.

Real-Time Data Presentation

ESTheorm EEMS solution targets near real-time presentation of meter data, refreshing at a rate of 2-5 seconds per meter. This real-time capability is valuable for organizations seeking immediate insights into their energy consumption, allowing for quick responses and interventions.

Data Granularity

ESTheorm EEEMS aimed at Gathering meter data at a 1-5-second refresh time which indicates a high level of data granularity.This fine-grained data can provide a more accurate and detailed picture of energy usage patterns, enabling organizations to pinpoint areas for improvement with precision.

User-Friendly Information Presentation

ESTheorm EEEMS offer information in the form of reports, alerts, and data signatures, the system aims to present data in a user-friendly manner, making it accessible and actionable for stakeholders.

Comprehensive Monitoring

ESTheorm EEMS solution's capability to present information in near real-time suggests that it provides continuous and comprehensive monitoring of energy-related metrics, supporting organizations in maintaining optimal performance.

ESTheorm is a robust and proactive solution that aligns with industry best practices for energy efficiency & management. It addresses key aspects-such as analytics, maintenance, compliance, and real- time monitoring, which are essential for organizations looking to optimize their energy usage effectively.

ESTheorm design aspects

EnergiSpeak has adopted a nuanced and adaptive approach to energy performance management, recognizing the limitations of a one-size-fits-all strategy.

Some of key design aspects are

Multi-Faceted Nature of Energy Performance

EnergiSpeak acknowledges that energy performance is multi-faceted and cannot be accurately represented by a single Energy Performance Indicator (EnPI). This aligns with the understanding that different organizations may have diverse energy needs and complexities.

"Fit for Purpose" Approach

EnergiSpeak employs a "Fit for Purpose" approach, indicating a tailored strategy that evaluates various EnPIs. This approach considers the complexity spectrum, ensuring that the chosen indicators are relevant and effective in addressing the specific energy management needs of each organization.

Comprehensive Evaluation of EnPIs

The software suite developed by EnergiSpeak evaluates various EnPIs, encompassing different angles of complexity. This comprehensive evaluation is crucial for providing a holistic view of energy performance and identifying meaningful measures for improvement.

Meaningful and Simple EnPIs

EnergiSpeak emphasizes the imp ortance of expressing energy per formance in meaningful, simple -to-understand EnPIs. This appro ach is aimed at ensuring that ener gy-related information is accessible and actionable for various levels of management and staff within an organization.

Organization-Specific EnPIs

The ESTheorm EEEMS solution's approach aligns with the idea that different organizational levels have specific responsibilities and sphe res of control. By using a set of En PIs tailored to each level, the syst em provides relevant information for effective management and imp rovement of energy performance.

Separation of Equip-ment Performance and Operational Effectiveness

EnergiSpeak's system enables the separation of equipment & system performance from the operational effectiveness of the staff. This distinction allows organizations to pinpoint areas for improvement and allocate resources effectively.

Quantitative Relation-ship with Relevant Variables

ESTheorm EnPIs are based on a quantitative relationship between energy consumption and relevant variables ensuring that the indica-tors chosen are directly linked to factors influencing energy perfor-mance, such as production volum es or weather conditions.

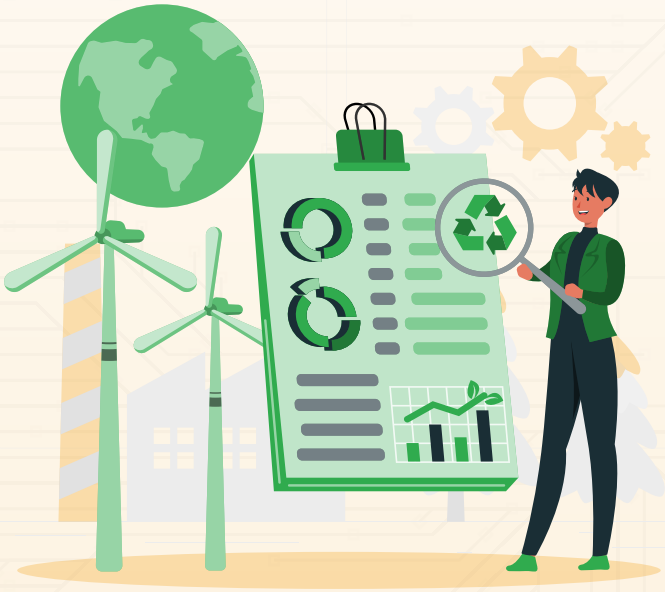
Recognition of Varied Reliance on EnPIs

The acknowledgment that even large and complex industrial plants may rely on relatively simple EnPIs highlights the practical understand-ing that organizations, regardless of size or complexity, may find value in ESTheorm EEEMS straight-forward formulations for energy performance measurement.

ESTheorm EEE MS design aspe cts prioritize fle xibili-ty, relevanc e, and simplicity in energy performan ce management, acknowledging the dive rse needs and complexities that organizatio ns face in managing their ener gy con-sumption effec-tively.

ESTheorm Salient Features

ESTheorm offers a range of features and capabilities designed to make energy management more effective and user-friendly.



Comprehensive, Simple, and User-Friendly

ESTheorm EEMS system is described as comprehensive, suggesting that it covers various aspects of energy management. Simplicity and user-friendliness are emphasized, making it accessible for users with different levels of technical expertise.

Built-in Energy Management Data Queries

It includes built-in energy management data queries indicates that the system is equipped with pre-configured tools to extract relevant data for energy analysis. This feature can streamline the process of data retrieval and analysis.

Expandable in Network Size

The system has the ability to expand in network size suggesting scalability, accommodating the growth and evolving needs of organizations. This is particularly important for enterprises with changing infrastructures.

Expandable in Functions for Energy Calculations

The system is expandable in functions for energy calculations implies flexibility in adapting to different energy management requirements. This adaptability allows organizations to tailor the system to their specific needs.

Integration with Other Systems

It can integrate with other systems such as PI Server, SCADA, and SAP/ERP enhances the interoperability of the Enterprise Energy Management System. Integration with existing systems can streamline processes and provide a more holistic view of operations.

Real-time Analytics

ESTheorm EEEMS provides real-time analytics, allowing users to analyze and aggregate both real-time and historical data and events. This real-time capability is crucial for making prompt decisions and responding to dynamic changes in energy consumption.

User-Defined Actionable Information

The system empowers users to define actionable information based on analytics. This customization allows organizations to focus on the specific insights that are most relevant to their energy management goals.

Key Energy Performance Indicators (KPIs)

It enables the derivation of Key Energy Performance Indicators (KPIs). These KPIs are likely to be essential metrics that provide a quick and effective way to assess and communicate energy performance.

Distribution of Information Across the Enterprise

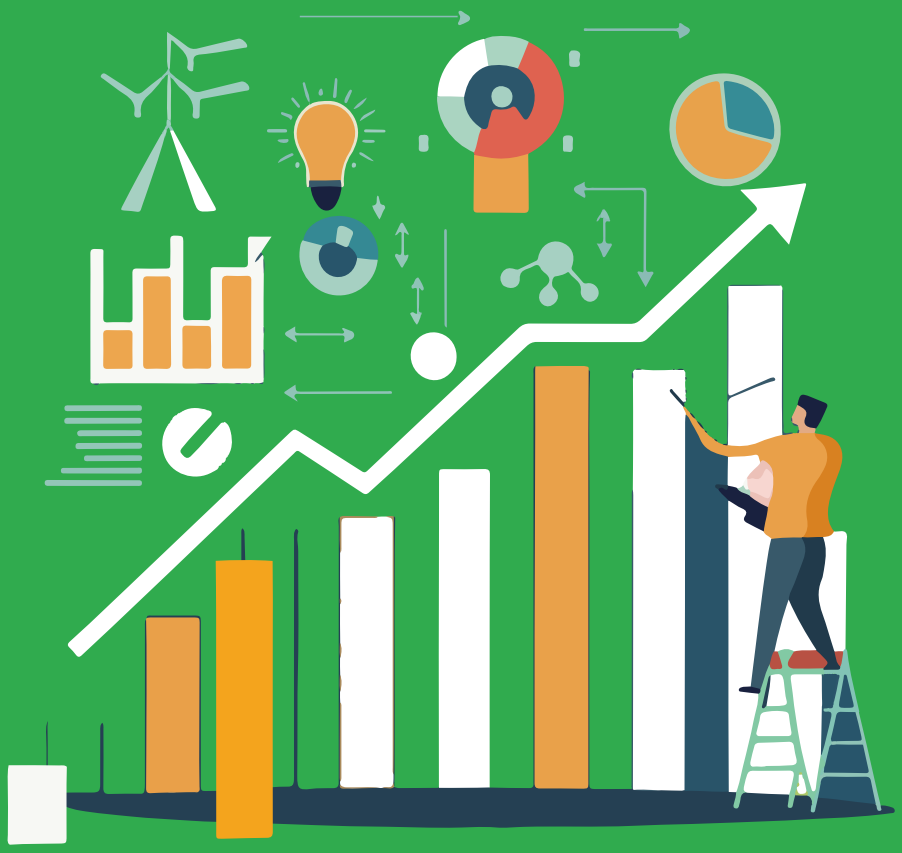
The ESTheorm EEEMS software distributes useful information across the enterprise in various forms. This feature ensures that relevant energy data and insights are accessible to different departments and stakeholders within the organization.

Configuration and Deployment by Non-Developers

The system is designed for user-friendly, allowing individuals with little or no development experience to configure and deploy analytics. This ease of use broadens accessibility and reduces the barrier for users to leverage the system effectively.

ESTheorm is a robust and proactive solution that aligns with industry best practices for energy efficiency and management. It addresses key aspects such as analytics, maintenance, compliance, and real-time monitoring, which are essential for organizations looking to optimize their energy usage effectively.

ESTheorm EEMS Network Scheme



The diagram describes different ways that the components in ESTheorm EEEMS are connected.

A standard ESTheorm EEEMS setup consists of:

EMS Meters

These are physical devices that measure and record energy consumption data. They could be smart meters, Multi function meters, IEDs or other monitoring devices. These meters are typically installed at various points within a facility or across multiple facilities to capture energy usage data.

Software

The ESTheorm EEEMS software is the central hub that processes, analyzes, and displays the energy data collected by the meters. It includes features for real-time monitoring, historical data analysis, reporting, and visualization of key performance indicators.

Communication Links

Communication links facilitate the transfer of data between the EMS meters and the software. These links can take various forms, including wired or wireless connections. They enable the continuous flow of data from the meters to the software for real-time monitoring and analysis.

The ways these components can be connected may vary based on the system's design and the specific needs of the organization. Common connection configurations include:

Direct Wired Connection

Meters are physically connected to the software via wired networks. This is a traditional and reliable method.

Wireless Connection

Meters communicate with the software using wire less technologies like Wi-Fi, Zigbee, or GPRS cellular networks. This is useful in situa tions where wired conne ctions are impractical.

Gateway Integration

Meters may connect to a gateway device, which acts as an intermediary between the meters and the software. The gateway then communi- cates with the software.

Cloud-Based Communication

In some cases, data from the meters is sent to a cloud-based plat form, and the software accesses this data from the cloud. This allows for remote monitoring and management.

The choice of connection method depends on factors such as the scale of the system, the nature of the facilities being monitored, and considerations related to data security and privacy.

If you have specific questions or details about the connection configurations illustrated in the diagram, please provide more information, and we will do our best to assist.

ESTheorm IOT Gateways – Advantages

The advantages of EnergiSpeak's Cloud-Connected Intelligent Metering IoT (Internet of Things) devices in the context of power monitoring systems are outlined as below:

Multi-Functional IoT Devices

These IoT devices serve as more than traditional meters. They are designed to not only measure energy consumption but also to store data and respond dynamically to new information. This multi functionality enhances their versatility and usefulness in various applications.

Continuous Data Gathering

These IoT gateways act as the front line in a power monitoring system, continuously gathering data. This real-time data collection is crucial for monitoring and managing energy usage efficiently.

Task Consolidation and Cost Efficiency

EnergiSpeak's IoT gateways can perform monitoring tasks traditionally handled by multiple devices, such as relays, Programmable Logic Controllers (PLCs), and Remote Terminal Units (RTUs). This consolidation reduces the cost of materials, equipment, and commissioning time required to build a power monitoring system. It streamlines the infrastructure needed for effective energy management.

Data Storage and Processing

The ability of these IoT gateways to store data locally is valuable for ensuring data availability and reliability. Additionally, their capability to respond to new information suggests some level of onboard processing, enabling them to carry out tasks based on real-time analysis.

Integration with Existing Metering Equipment

The MDAS Module of ESTheorm EEEMS software associated with these IoT gateways is designed to integrate seamlessly with existing metering equipment that follows standard protocols such as MOD BUS, DLMS (Device Language Message Specification), or IEC 104. This ensures compatibility and allows organizations to lev erage their current infrastructure.

Cloud Connectivity

These IoT Gateways can transmit data to cloud-based platforms. Cloud connectivity facilitates remo-te monitoring, data storage, & access to analytics, providing scalability and accessibility advantages.

Reduced Commissioning Time

The consolidation of functions and the ability to integrate with existing protocols can significantly reduce the commissioning time required to set up a power monitoring system. This contributes to quicker deployment and operational efficiency.

Cloud-Connected Intelligent Metering IoT Gateways play a crucial role in modern power monitoring systems by offering multi functionality, continuous data gathering, cost efficiency, and seamless integration with existing equipment. Their ability to connect to the cloud further enhances their utility in remote monitoring and management scenarios.

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12345 6789 0


info@estheorm.com


www.estheorm.com