



Smart Energy

For the energy industry, a confluence of factors will drive the shift to Digital. The availability of cheaper sensors and connectivity, as well as the emergence of industrial strength platforms to digest and run analytics on high speed and large scale streams of data, will enable intelligent digital solutions across the energy industry.

Whether it is the uneconomic utilization of existing infrastructure, inefficient end-use devices and generation, or simply better ways to predict maintenance on assets using analytics, there's a lot of value available to be harvested.

Energy Management / Audits

There is No extra cabling is required across the building from Energy meter to Centralized computer. The technology use the existing Power Line to communicate the energy consumption details to centralized computer. The user will get Email Daily / Monthly Reports also the maintenance team will be able to monitor any intrusions through SMS Alerts .

Features

- ✓ Integrated with a web-based application which can be used in internet or intranet
- ✓ Hardware can be retrofitted to existing static energy meter (Require Protocol details)
- ✓ EB KWH and DG KWH measured separately
- ✓ PF EB and PF DG measured separately
- ✓ EB Running Hours and DG running hours per day
- ✓ (Real Time Clock) RTC based system
- ✓ Monitor instant voltage / current values in real - time.
- ✓ Can Monitor THD (Total Harmonic Distortion) values
- ✓ Energy consumption history

Advantages

- ✓ Maintenance cost is reduced
- ✓ No data collection cost & Minimal implementation time
- ✓ Energy Audit done automatically as historical data available. No separate energy auditing required
- ✓ Location of energy losses can be determined through analysis of data
- ✓ Tampering of meters can be identified
- ✓ User friendly web-based system provided, no client software required. Just view the reports in web-browser. As simple as checking emails.
- ✓ Trend analysis and graphical representations of energy and fuel consumption (can provide even re-fill time / status)
- ✓ Alerts and alarms provided in the application as required by the client.
- ✓ Energy loss report between Incomer and load provided
- ✓ Reports can be customized as per the clients requirement.
- ✓ Application easily integrated to Tenant Billing

Smart meters

General Specification

An energy management solution, through Power Line Communication. It enables monitoring of energy consumption of a building floor-wise or tenant-wise based on the topography of building. The user can monitor both EB & DG separately

Applicable for

- ❖ Residential towers
- ❖ Electricity Boards
- ❖ Big Corporates
- ❖ Public Sector units - Residence

Smart Grid

The two-way communication technologies, control systems, and computer processing has made Smart grid technologies possible . These advanced technologies include advanced sensors known as Phasor Measurement Units (PMUs) that allow operators to assess grid stability, advanced digital meters that give consumers better information and automatically report outages, relays that sense and recover from faults in the substation automatically, automated feeder switches that re-route power around problems, and batteries that store excess energy and make it available later to the grid to meet customer demand.

A smart grid applies technologies, tools and techniques to bring knowledge to power – knowledge capable of making the grid work far more efficiently...

- Ensuring its reliability to degrees never before possible.

- Maintaining its affordability.
- Reinforcing our global competitiveness.
- Fully accommodating renewable and traditional energy sources.
- Potentially reducing our carbon footprint.
- Introducing advancements and efficiencies yet to be envisioned.

Advantages:

Intelligent – capable of sensing system overloads and rerouting power to prevent or minimize a potential outage

Efficient – capable of meeting increased consumer demand without adding infrastructure

Motivating – enabling real-time communication between the consumer and utility so consumers can tailor their energy consumption based on individual preferences, like price and/or environmental concerns

Quality-focused – capable of delivering the power quality necessary – free of sags, spikes, disturbances and interruptions

Resilient – increasingly resistant to attack and natural disasters as it becomes more decentralized and reinforced with Smart Grid security protocols

Smart Street Lights

The Smart street lights empowers the consumer to operate & maintain each and every street lamp pole remotely. It uses wireless smart meter technology with Energy cost

Single Phase Meter

- Meter measures Active, Reactive, Apparent energy on 1 phase 2 wire system
- Output LED are placed on side panel to indicate Power ON and Load ON/OFF status,
- Electronics are placed inside IP65 based enclosure,
- Wireless Xbee Communication can be done between coordinator (Master) and Meter
- User can connect or disconnect according to the site conditions using load relays. This is done via GPRS communication.
- Specifically meant for lighting systems

Three Phase Meter

- Meter measures Active, Reactive and Apparent energies in all four quadrants in forward and reverse directions
- All the electronics are enclosed in IP65 based enclosure and so no external EARTHING TERMINAL is required
- RTC with battery backup is used for time keeping and has a calendar of 100 years,
- Meter data will be collected via RS485 communication and in turn it is transmitted to web page via GPRS communication
- Instantaneous parameters – phase wise voltages and currents, Power, Frequency, Rising Demand, Maximum Demand, Phase sequence, Power Factor, Date and Time.
- Three separate load relays are connected which can be used to connect or disconnect the load. This can done individual phase and all the three phase.

Smart cities

With the technology revolution & integration of information and communication technology (ICT) and Internet of things (IoT) technology in a secure fashion enabled the management of a city's assets much more smarter & easier.

A Smart City shares its digital infrastructure and data to enhance workability, livability and sustainability. enabling cities to access real-time, critical data to make better,

AMR/AMI

Automatic Meter Reading called monitors the remote utility meter using protocols such as MODBUS, IEC 1107. The energy usage is reduced as Pulse or the RS 485 outputs from the meter are monitored externally as part of wider monitoring solution. It usage over time, identifies peaks, compares sites and correlates use with offending devices and people.

it also enables collecting data from individual consumer meter for monitoring and billing purpose. The entire consumer meters are loop together with the help of hard wire to Smart Metering unit where it's collecting data from all connected consumer meters.