



Energy Management Solutions

Building an Energy Efficient Future

Depletion of fossil fuel reserves, periodic spurts in energy prices and environmental concerns dictate adoption of unconventional, alternate and renewable energy as well as a stronger resolve to go Green. For businesses, housing complexes and city authorities, the key to this rests on managing and controlling energy consumption and production. Across the Energy Value Chain, an optimum balance between generation and energy demand should be maintained while complying with conservation and compliance standards. Sensors, Smart Appliance, Analytics and Internet of Things (IoT) devices are redefining ways of energy management– from energy storing devices to energy efficient Buildings and Smart Grids.

CMS brings its vast experience in energy management and technology to offer end to end optimization of energy use leveraging the power of IoT, Analytics & Mobility to deliver IT-enabled energy efficiency.

Energy management in a changing world

Energy can guzzle up to 40% of operating budgets for an organisation yet companies do very little about it. Imagining looking at managing energy as an investment, not a cost. Companies that are taking this route and investing in modern energy management solutions are outperforming their competitors and discovering tremendous economic opportunities.

- Reduced operating costs and improved profitability
- Ability to counteract rising utility rates
- Compliance with current and forthcoming energy efficiency regulations
- Demonstrate a heightened sense of social responsibility on climate change issues

CMS' Energy Management Solutions (EMS)

Many power plants, power distributors and manufacturing companies have experienced the simplicity and wide application of CMS energy management and enjoyed the efficiency and ease they bring to their power management processes.

From power generation to supply and energy consumption, CMS' Energy Management Solutions (EMS) maximize efficiency at every stage of the energy lifecycle

For over a decade, CMS Energy Management Systems have been providing turnkey solutions covering design, development and customized ABT (Availability Based Tariff), EMS (Energy Management Solutions), EEBS (Electronic Energy Billing System) systems with advanced energy data capabilities.

Our solutions are affordable, easy to install and use and offer significant returns on your investment.

Integrated eTools Platform: eTools, our flagship EMS software is a comprehensive, web-based platform that monitors usage across utilities (water, gas, electric, steam) along with key operating variables across plants and buildings.

eTools offers a great degree of control to manage heterogeneous meters, real time energy information, alerts and analytics dashboards

Whether you are managing energy in a single facility or across several factories or offices across your Enterprise, eTools platform provides flexibility allowing clients to acquire energy, building, and process data from meters, building automation systems, HVAC equipment and other databases. eTools Platform also integrates with any meter, master data management systems, or ERP allowing a single unified view across your meter infrastructure and ecosystems.



INDIA'S TOP 5
POWER COMPANIES
RUN ON OUR EMS SYSTEM

OVER **50,000** MW
of power is being monitored by
CMS ABT SYSTEM

50+ POWER PLANTS & CPP'S USE
CMS software and meters

- Smart Meters
- Smart Grids
- Advanced Metering Infrastructure
- Smart Lightning Management
- Waste & Water Management Solutions
- Meter Real Estate Management
- Asset Management
- Availability Based Tariff Solutions
- Building Management Systems
- System Integration

Smart Metering: Improve the efficiency of the energy network by balancing the energy supplies we have more accurately with the consumption patterns. Smart meters not only measure energy consumed but also tell the usage patterns and associated costs. With such information displayed remotely on their device, consumers can make more informed decisions about reducing energy consumption and carbon emissions.

Our meters enable advanced energy management, demand management, peak load management, energy account and billing, pre-paid energy billing system, voltage and PF optimization, multi-source energy measurements, TOD measurements etc.

Meter Estate Management: Experience the convenience of scalable, high performing, secure and extensible architecture with the tools needed to manage, operate and monitor a utility's smart meter estate – both CMS built as well as those of third party providers.

Smart Grids: With our vast experience in remote metering and EMS, AMI and PLM, SCADA and DMS applications, we present hybrid communication technology based Smart Grid Solution that is

- Adaptive in responding rapidly to changing conditions
- Predictive in terms of applying operational data to equipment maintenance practices
- Integrated in terms of real-time communications and control functions
- Optimized to maximize reliability, availability, efficiency and economic performance

You are assured of greater control over energy costs, more reliable energy supply, peak load management, integration with multiple renewable power sources and reduced emissions.

- Comprehensive, cost effective and scalable solution
- Indigenous meter design, manufacturing, integration and implementation
- Balance Energy generation with Demand
- Integrate with renewable power sources
- Enable differential pricing for increased revenues

Asset Management: You can factor energy consumption into your asset and facility management strategy. CMS offers a comprehensive business solution to maximize the value obtained from your energy assets, taking into account the condition and criticality of your assets.

Whether you own transmission, generation, distribution or industry and infrastructure electrical assets, CMS will provide you with the models and tools to meet your company objectives.

- Reliability: reduction of outages, assessment and mitigation of operational risks
- Cost efficiency: maximize asset life and optimize maintenance costs particularly for ageing infrastructure
- Strategy: establish your corporate asset investment plans and performance objectives with your regulator or shareholders
- Organization: align your departments toward standardized goals for increased efficiencies.

Automatic Metering Infrastructure: Offers energy management, demand response, load forecasting, billing and revenue management and outage management using e-Tools our proprietary software platform, a Central Data Center and communication ports (serial, modem, Ethernet).

Availability Based Tariff Solutions: Realise the convenience of load balancing, differential pricing, maximizing revenues, avoiding penalties and managing schedules with our

Availability Based Tariff (ABT) solutions.

Trusted by many top players in the power sector, ABT systems can be integrated with other systems like PLC equipment, SCADA, SAP/ERP etc. Data can be collected from power and energy meters, third party meters, equipment and data servers over the internet, Ethernet, modem.

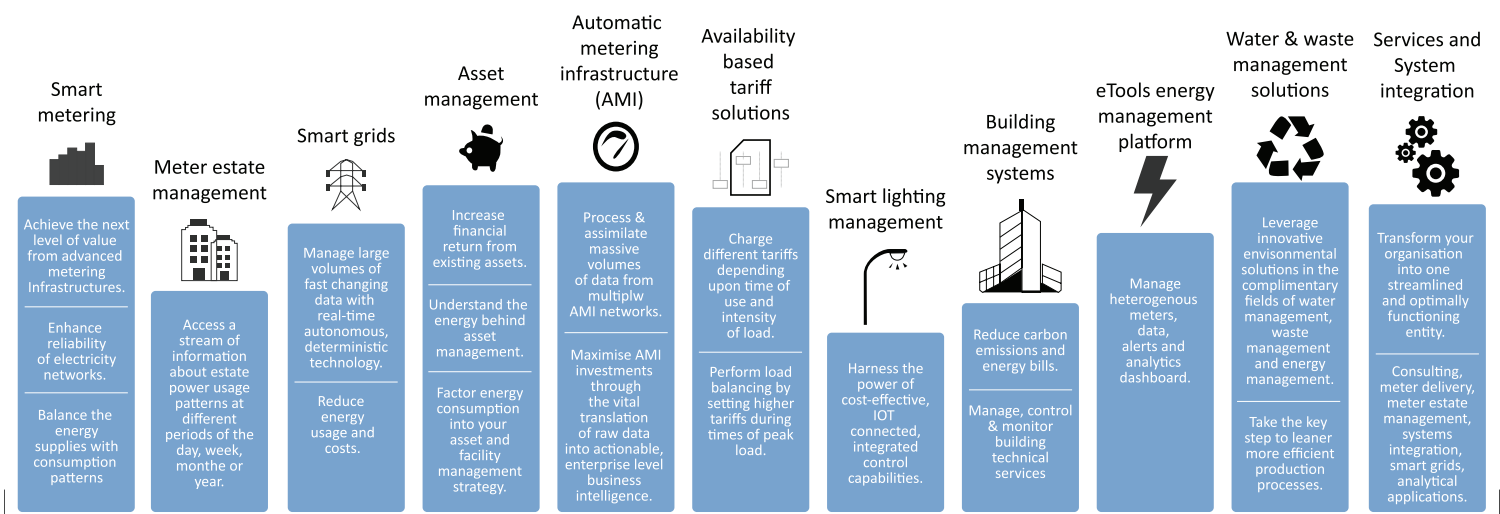
Smart Lighting Management: An internet address for every light bulb! By enabling new usage models, our solutions make the Internet-connected, energy-efficient lighting network a reality for consumers at home as well as for commercial applications. They bring together wireless IP connectivity, energy-efficient lighting and low power standby in compact, low-cost solutions that enable new ways to control lights and manage energy consumption.

Building Management Systems: CMS offers Intelligent Building Optimization Solutions (iBOS) that is a centralized platform for automation, control and management of different physical assets of a building. Sensors, Smart Metering, the Internet of Things (IoT), analytics and Cloud Solutions come together to deliver an integrated solution for a safe, secure and energy efficient way of life.

Water and Waste Management Solutions: Leverage our innovative environmental solutions in complementary fields of water, waste management and energy management. Taking a strategic approach we have products that consider all inputs, uses, and outputs, monitor the flow and address leakages through sensors for efficient management of water use and consumption.

- Obtain greater control over energy costs
- Get more reliable power supply
- Forecast, budget and track energy consumption
- Maximize the value obtained from energy assets

CMS portfolio across industries and enterprise functions



CMS integrated eTools platform

Achieve an unprecedented degree of control with CMS's Integrated eTools platform, which manages heterogeneous meters, information, alerts and analytics dashboards. It integrates with any meter, master data management system, and ERP allowing a single unified view across meter infrastructure and ecosystems.

Range of Portfolio Services

- Energy Consulting
- Meter Design, Manufacture and Delivery
- Meter Estate Management
- Software and System Integration
- Analytical Applications
- System Enhancements
- Change Support Services

Systems Integration: Transform your organization into one streamlined and optimally functioning entity with our long track record of indigenous design, manufacturing, integration and implementation. We have everything you need in our energy management portfolio

We also provide IT systems enhancements, software extensions and the change support necessary. With our business consulting, Enterprise Asset Management solution which relies on GIS for global management, the eTools platform and mobility extensions our clients benefit from heightened asset governance, cost reductions, optimised maintenance plans and centralised energy management.

Energy Analytics with eTools: Our analytics capability delivered through eTools customisation includes a number of advanced reports to help you better understand underlying efficiency drivers. Whether you need to forecast, budget, or track energy consumption or find energy problems quickly, Energy Analytics software powered by eTools makes it easy for you leveraging the power of Big Data and Predictive Analytics.

Assured ROI

Energy management is simple when you have a partner who provides comprehensive node based energy monitoring and management solutions.

We work closely with you, and use proven, measurable, verifiable processes to devise strategic energy management programs for achieving optimum energy throughout the lifecycle of a facility.

Our processes measure granular level metrics that determine leading indicators to deliver desired business outcomes.

Our experts identify specific issues, estimate the investments required, and project the return you can expect on your investment.

Energy efficiency at work

Our clientele includes India's top power plants, power distributors and manufacturing companies. We have implemented enterprise wide our energy management solutions across different industries and remain committed to make energy management simple and efficient for our clients.

CMS's expertise and experience of over a decade are unmatched in the industry. Our customized approach delivered through working collaboratively with our clients deliver unique results.



CMS –Ahead of the Technology Curve

As a pioneer of the IT movement in India since 1976, CMS Computers adds value to every industry through its products, services and solutions.

Even as the world is waking up to the benefits of big data, mobility and analytics, CMS has already innovated and implemented well over 200 Smart City elements leveraging big data and analytics for holistic city management. These have been in the areas of e-governance services, transportation and traffic solutions, energy management solutions, surveillance and workforce management, broadcasting solutions as well as software services aligning technology with client businesses across sectors.

With over 4000 employees and a pan India presence across 100+ locations, CMS has leveraged the collective power of IT and the Internet of Things (IoT) to improve and simplify the lives of citizens, corporations and the government



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