

“ENERGY SAVED – ENERGY GENERATED”



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The Indian Power sector scenario remains gloomy, surrounded by the dark clouds. Although Power reforms started about a decade back, the achievements are only dismal. Financial health of most of the State Electricity Boards (SEBs) remains critical, mainly due to the uncontrolled use of low efficiency, Power wasting Equipment and Appliances, back breaking heavy subsidies for agricultural and some other sectors, and huge power thefts and pilferage resulting in heavy loss of revenue for the State Electricity Boards (SEBs) and other Utilities.

The major problems faced by the Power sector are due to increasing gap in the Demand and Supply of Power, High Transmission and Distribution (T&D) losses as well as Power theft/Pilferage and wastage of expensive and limited Energy due to the use of Low Efficiency Equipment in various sectors. The prescription and implementation of Energy Conservation building codes has to be done in Consultation and co-operation by Central & State Governments which will have the majors powers.

Energy Conservation:

The Energy Conservation Bill-2001 was passed by the Parliament in August-2001 and was expected to clear the way for to check Wastage Energy. This Bill was suppose to control huge wastage of Power. The Energy Conservation Bill 2001 prepared by group of expert committees discussed and debated at various forums, was passed by the Indian Parliament in august-2001. This a Bureau called the Bureau of Energy Efficiency (BEE) was established and managed through Governing council.

However the implementation of Energy Conservation Bill-2001 has to be done through well qualified and experienced Energy Managers with the designated consumers and the Energy Auditors to check & certify that every such consumer complies with the provisions of this bill, thereby conserving the Energy, which of course will benefit the consumers themselves reducing their own Energy Bills and such savings increasing their profitability.

Bureau of Energy Efficiency (BEE) also play key role in creation of professionally qualified energy managers and auditors with expertise in energy management, project management , financing and implementation of energy efficiency projects as well as policy analysis. It is a Law to force firms to make more profit and not an Act to control and monitor Energy Consumption of Industry.

All the Assets, Liabilities and Employees of the existing Energy management center was suppose to be transferred to this bureau. The central government through its Ministry of Power, the Bureau of Energy Efficiency & the State Governments will have a major role to achieve the desire objectives. Bureau of Energy Efficiency (BEE) has estimated a potential of more then 25% savings through energy conservation.

With the move towards deregulation within the Power utility industry, customers are demanding superior Power quality and reliability of Supply. Many utilities have responded to the needs of their customers by establishing Power Quality Divisions within their marketing departments.

Some of the main Objective of Energy management programmers are as follows.



- Cultivating good communications on Energy matters.
- Improving energy efficiency and reducing energy use and to reducing cost from the same.
- Developing and maintaining effective monitoring, preparing reports and implementing steps for wise energy usage from the reports after analyzing.
- Finding new and better ways TO INCREASE RETURNS FROM Energy investment through research and development.
- Developing interest in and dedication to the Energy management programme from all employees.
- Reducing the impact of curtailments brownouts or any interruption in energy supplies.

Energy Audit & Accounting

The Energy accounting gives the overall picture of Energy availability & its use. The Energy Audit enables analyzing the data in meaningful manner to evolve measure to introduce checks & balances in the system to reduce leakages and losses and also to improve technical performances. Energy Audit is carried out with the following objectives.

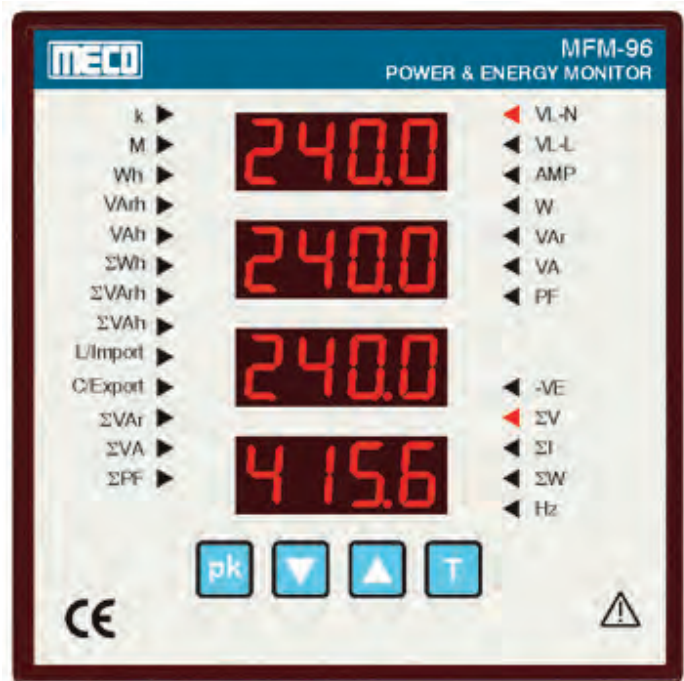
- Review of technical efficiency of system elements in ST& D System.
- Review of performance of Equipment, Meters, Control Panels, and distribution Transformers, etc.
- Analysis of the techniques for measuring energy received, energy billed and revenue collection.
- Review and up gradation of procedure for energy accounting.
- Establishment of norms for checking the consumption of various categories of consumers and overall energy balance in the circle.
- To clearly audit the segregation of technical and Non-technical losses.

Theses losses depend on pattern and nature of demand, load density and the capability and configuration of system, equipment used and vary for various system elements. However system where total percentage loss

lie beyond aforementioned values, should become a matter of serious concern. Target for reduction of Technical/Non-Technical loss should accordingly be fixed measures identified and action taken to accomplish the same within given time period.

All the details pertaining to Energy Accounting may be fed to the computerized billing system and the MIS report of each feeder may be generated through software package. MIS Report in the desired format could be generated by the Billing computer. The system may be made available at various levels i. e. sub-station / Sub division / Divisions / Circle.

It can thus be concluded that energy accounting and audit is very essential for reducing the T&D loss within optimum permissible limits, for which target are to be fixed and concerned efforts are to be mad to plug the leakages in the ST & D system so that revenue collection of State Electricity Boards as well as Utilities increases which in turn will give a face-lift to them and improve their financial health.





8: Real Time Values

Meter Sr. No.: 8
Meter Address: 8
CT Ratio: 1.000
PT Ratio: 1.000

PARAMETERS	Phase 1	Phase 2	Phase 3	System
Voltage(V)	227.700	0.000	0.000	131.463
Current(I)	0.000	0.000	0.000	0.000
Active Power(P)	0.000	0.000	0.000	0.000
Apparent Power(S)	0.000	0.000	0.000	0.000
Reactive Power(Q)	0.000	0.000	0.000	0.000
Power Factor(PF)	0.000	0.000	0.000	0.000

Energy-Import	18.301 KWh	MD-P	646.000 W	Frequency	49.750 Hz
Energy-Export	0.000 Wh	MD-S	729.000 VA		

As can be seen from the above, this is a stupendous work and needs full co-operation from everybody. All manufacturers and the users of the Energy, as well as the Central and the State Governments.

MECO have introduced MFM-96U Multifunction Power and Energy Monitor indigenously designed, tooled and manufactured by the Research and Development Department of MECO.

This 96 x 96mm micro-controller based meter indicates TRMS values of more than 62 electrical parameters displayed on 20 display pages like 3Phase Voltage, 3Phase Current, Active / Reactive / Apparent Power, Frequency, Power Factor, Active/Reactive/Apparent Energy (8 digits resolution for energy measurements) with system values and Maximum demand.

Programmable CTR, PTR & Instrument Address is additional features of this meter. It has built in isolated RS 485 (MODBUS) port that can be interfaced to the PC through a twisted pair bi-polar screened cable. Upto 255 such MFM-96's can be connected in cascade on the same line at a time for upto 4000 feet distance. EEP Rom retains CTR, PTR, Instruments Address and Energy Values in case of Power failure.

The "MECO" MFM-96U is supplied with Power Master PC interface software, which is ideal for remote monitoring and storage of the measuring parameters on the PC. The parameters can be grouped into tables or graphs for analysis and management of any electrical system. The software has various features like real time display, tabular representation and graphical display of measured and stored values, history trends, alarms for Max./ Min. values etc. These values can be converted to Excel format for further data processing and import into other software platforms. "MECO" MFM-96 is Compliance with EN61010-1, EN61326-1

This is highly accurate, rugged, and compact instruments is competitively priced and ideal for use in application for Power Distribution sector, PLC's / SCADA, Power Management, QC Testing, Energy Audit, BMS and Genset etc.

The objectives of this Energy Conservation are very good but the road ahead is very long, rough and tardy but with the cooperation and strong will, nothing is impossible.

Indian Industry to get many incentives to save energy

The government is setting up a risk guarantee facility and a venture capital fund to improve energy efficiency in India as part of the National Mission on Enhanced Energy Efficiency approved by the Prime Minister's Council on Climate Change. A new "Perform, Achieve and Trade" (PAT) mechanism which will assign energy efficiency improvement targets to the country's most energy-intensive industrial units is being set up under the mission.

Prime Minister Dr Manmohan Singh said, "This mission will enable about Rs 75,000 Crore worth of transactions in energy efficiency. In doing so, it will, by 2015, help save about about five % our annual energy consumption, and nearly 100 MT of carbon dioxide every year."

The council also approved the selection of BEE as the mission implementing agency, and of a new corporate entity, Energy Efficiency Services Ltd., to carry out market-related actions of the mission BEE will be strengthened to support mission implementation.