Role of Metrology in Energy Conservation

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Metrology

• Metrology is the science of Measurement
• Metrology includes all aspects both theoretical and practical with reference to measurements.
• Metrology is the reliable activity for unified values and traceability
• Metrology is the important technical base for social, economic, and science and technology advancement
Characteristics of Metrology

- Accuracy
- Consistency
- Traceability
- Legal binding (in trade, health, environment aspects)

Energy Conservation

- Energy and resources are the substantive basis for sustainable economic and social development;
- Improvement in living conditions generates growing demand for energy and resources;
- Energy conservation is an important issue for all economies
Energy Measurement in Relation to Energy Conservation

- Energy measurement refers to the testing, measuring, calculating and statistical analysis of all parameters (quantity, quality, performance, etc) occurring during the process of energy utilization.
- Energy measurement is the basis of assessing energy users for their performance of minimizing energy consumption.

Significance of Energy Measurement

- Reduction of energy consumption
- Environment protection
- Cost reduction
- Profit benefits
Importance of Strengthening Energy Measurement within Industrial Enterprises

- As major energy consumers, industrial enterprises play an important part in pursuit of energy conservation by optimizing energy utilization through energy measurement.
- The establishment of the monitoring and management system over energy measurement in industrial enterprises helps to reduce energy consumption and protect the environment, as well as reduce production cost and thus improve product quality.

Approaches for Industrial Enterprises to Strengthen Energy Measurement for Energy Conservation

- Upgrade and adapt measuring instruments and facilities for energy measurement, so as to measurement accuracy and deliver reliable measurement data for industrial enterprises to optimize energy utilization
- Raise the awareness and capability of measurement staff to save energy by introducing evaluation system and conducting relevant training
Approaches for Industrial Enterprises to Strengthen Energy Measurement for Energy Conservation (cont)

• Advance energy measurement technology in order to improve accuracy and provide technical assurance for energy conservation
• Strengthen re-utilization of energy on the basis of analyzing measurement statistics, in order to decrease demand for energy.

Approaches for Industrial Enterprises to Strengthen Energy Measurement for Energy Conservation (cont)

• Establish complete and scientific measurement system
• Use measurement technology to analyze energy consumption, therefore to ascertain the direction of technical improvement in pursuit of energy conservation.
Cost benefit analysis

- Benefits: underpin R&D; increase productivity; improve product quality; reduce loss; reduce production cost; save energy and material; protect environment.
- Cost: infrastructure building; facility cost; human resources; energy and material.
Thanks

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