Monitoring and measurement system

1. What is a monitoring and measurement system?

- A monitoring and measurement system is a part of the energy management system which can help enterprises manage their energy consumption andcosts, track energy efficiency, achieve regulatory compliance as well as efficiency in equipment operations.
- A monitoring and measurement system is a management tool that uses a combination of hardware and software to collect data and turn these data into useful input for effective energy management actions for the facility or for the equipment and system operation.



Overview of monitoring and measuring systems

2. Where should a monitoring and measurement system be installed?

The installation depends on the size of the enterprise's investment; however, it is advisable to apply to energy-intensive areas, equipment and systems as identified by the enterprise.

- The main energy consumption system depends on the characteristics of each enterprise, typically includes:
- + Production process system
- + HVAC system
- + Pumping, fan, and pneumatic system
- + Lighting system

3. How to promote the energy-saving efficiency of a monitoring and measuring system

The measuring system must have the function of automatically recording the energy consumption data and sending it to the central controller Variables related to the energy consumption such as production output or weather, capacity in use (for buildings/hotels) should be collected. It is essential to build a BMS (Building Management System) to optimize the control and operation management

4. What are the basic benefits of the monitoring and measuring system?

The monitoring and measuring system can save energy, cost, time and can help operating the systems more efficiently by:

- + Identifying the wastes and generating timely alerts
- + Assisting the setting up energy consumption goals, targets, and action plans
- + Tracking and reporting on energy improvement efficiency

5. Percentage in energy saving thanks to the implementation of the monitoring and measuring system

Action	Typical saving	Saving mechanism
Install measuring meters only	0% – 2%	Conduct training on employee perception so that they understand that energy is being monitored and managed
Get feedback on energy consumption measurement data	2% - 5%	Increase employee awareness of energy efficiency, determine improved maintenance opportunities and make operation simpler
Continuously monitor the data (real time data), and inform the relevant operating divisions	5% - 10%	Continuously monitor topromptly identify losses and take appropriate corrective actions

Case study:

An enterprise specialized in manufacturing automobile parts has installed a monitoring and measurement system for key energy consuming areas, which enable it to manage the energy consumption more efficiently, as detailed below:



