



# EE through the EnMS lens

## Energy Management Systems and its increasing role in addressing Industrial Energy Efficiency

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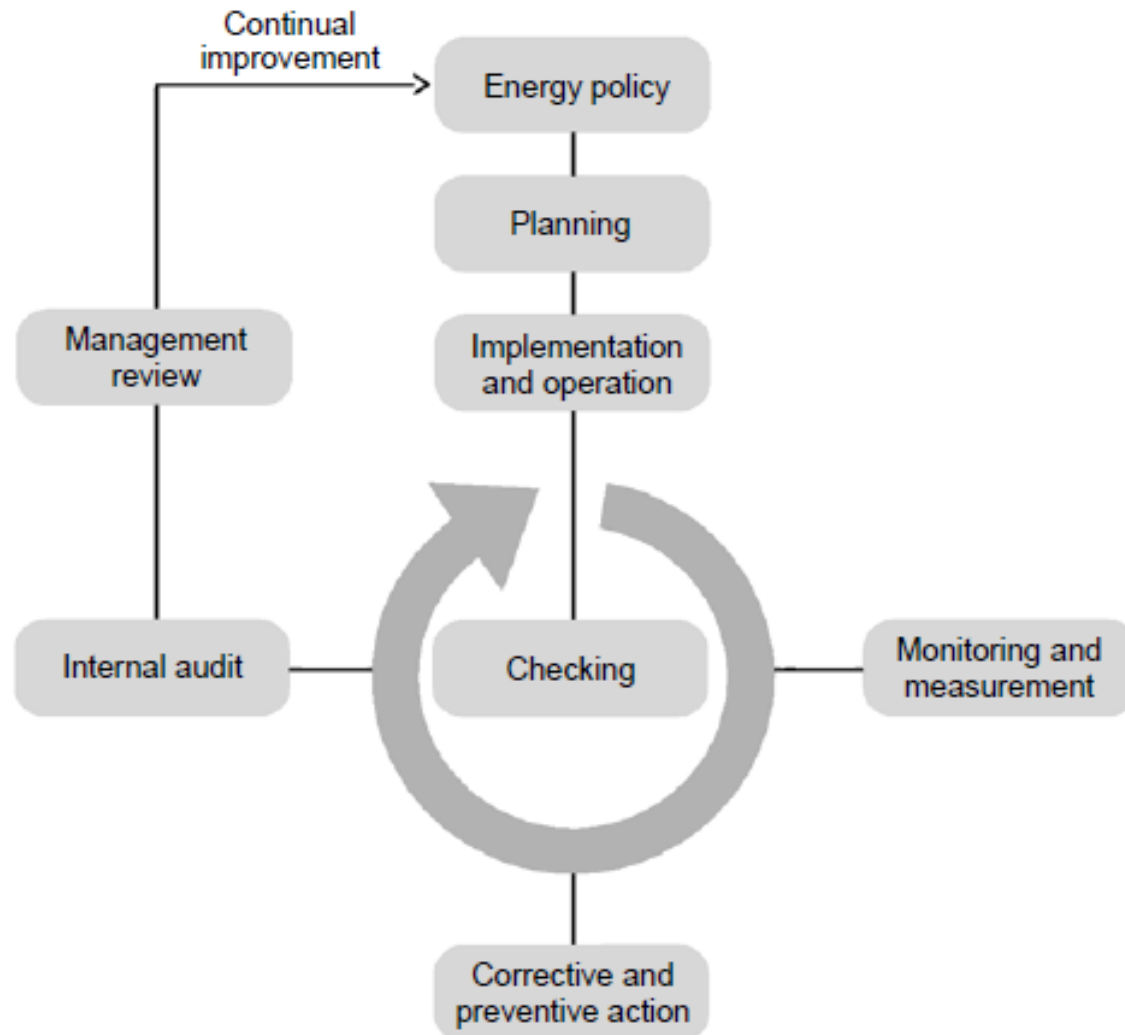
**Sept 2016**

# Agenda

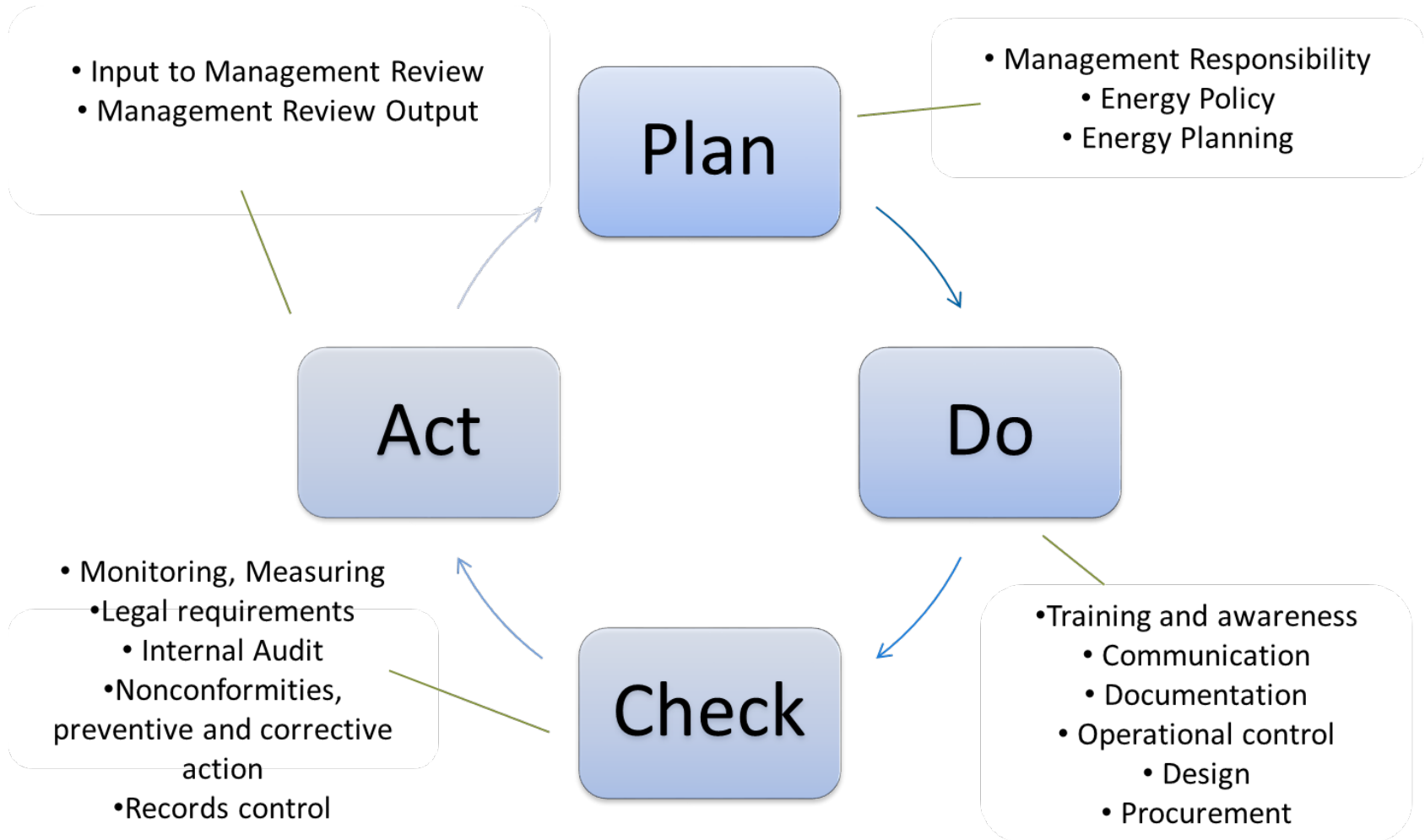
- 1. The move towards the ISO High Level Structure for ISO 50001;**
- 2. Key complexities in setting up and operating a truly effective EnMS;**
- 3. The increasing role of supporting guides**
- 4. The subtlety between energy consumption, energy intensity and energy performance;**
- 5. The sophistication of baselining and Energy Performance Indicators (EnPIs);**

# PDCA and ISO 50001

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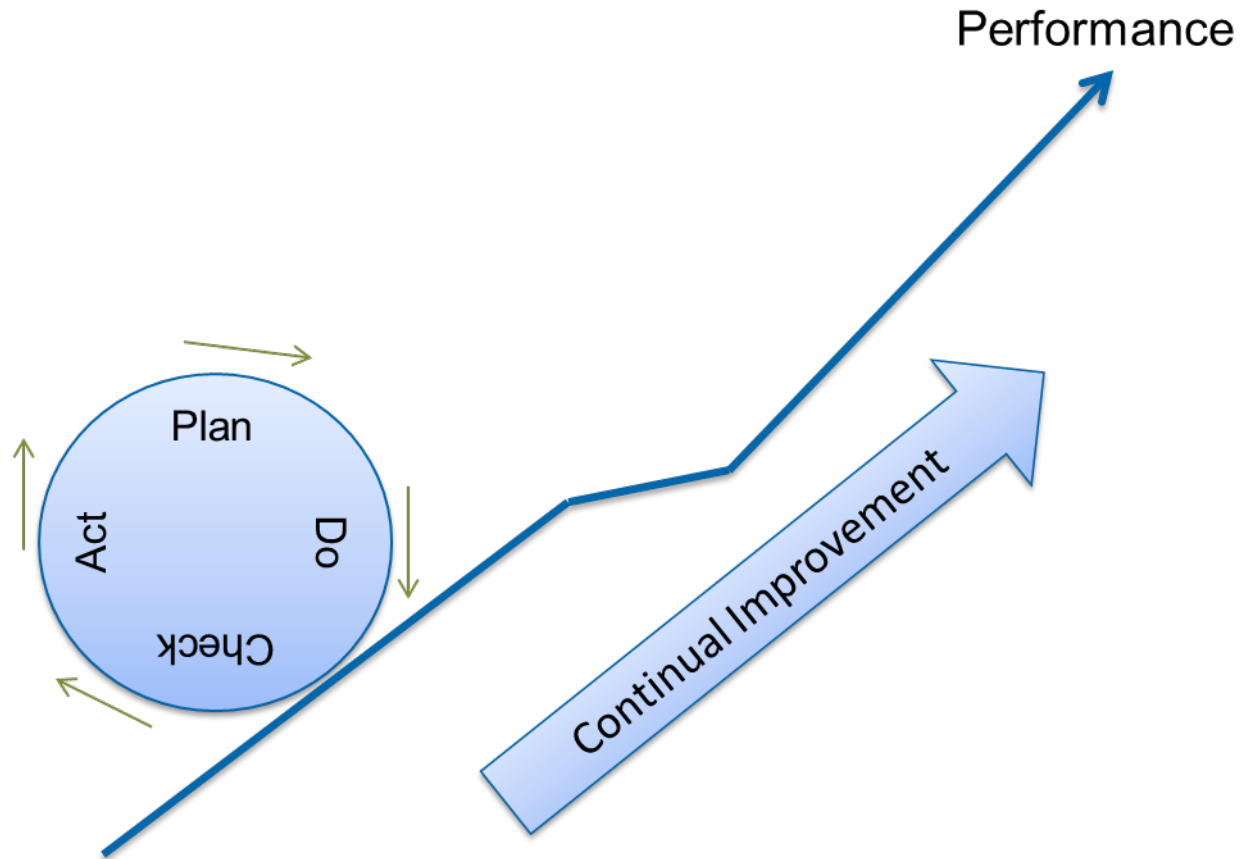


# PDCA and ISO 50001

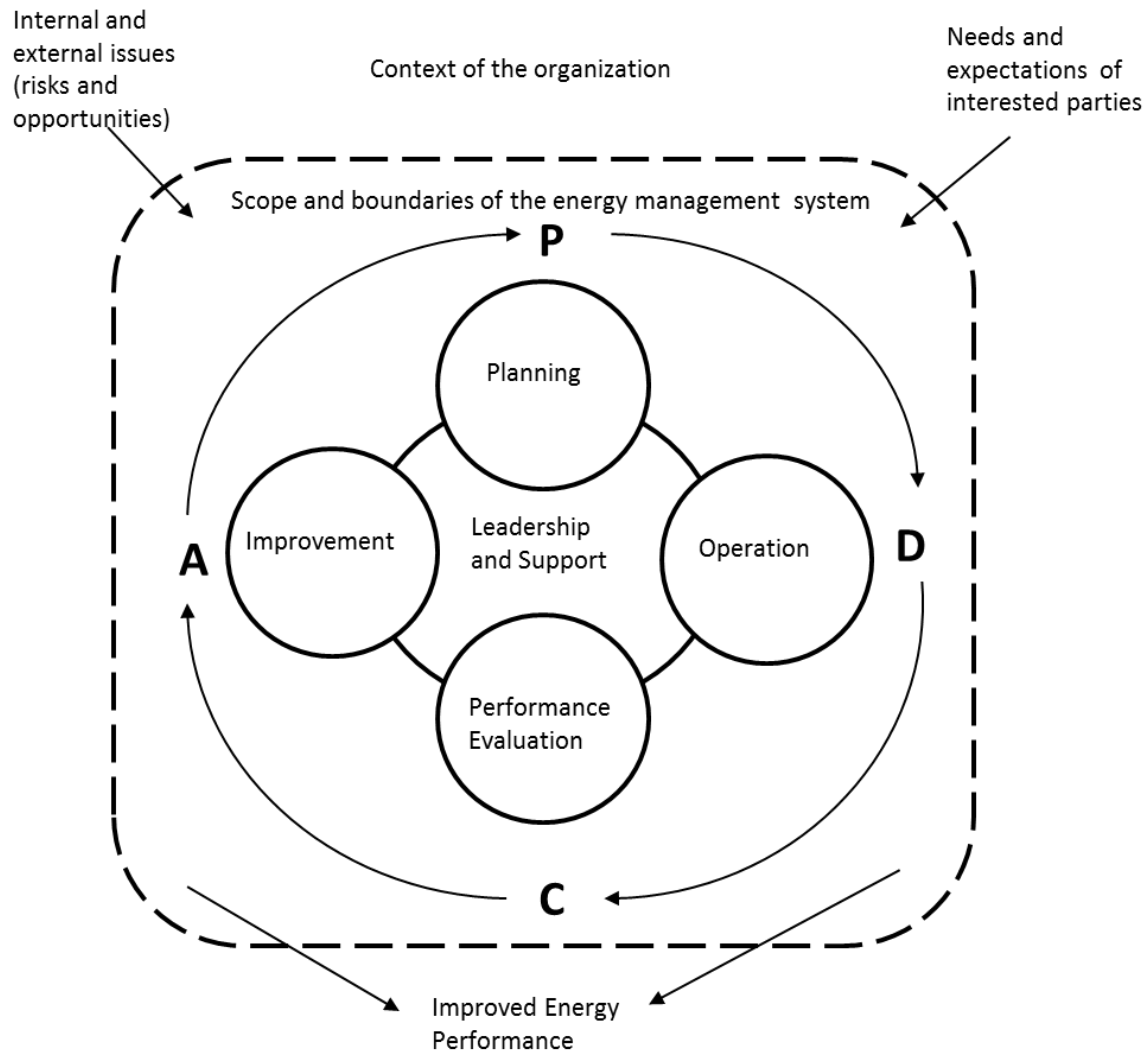


# PDCA and ISO 50001

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# PDCA and ISO 50001 (New ISO 50001 working material to TC 301 Canada)



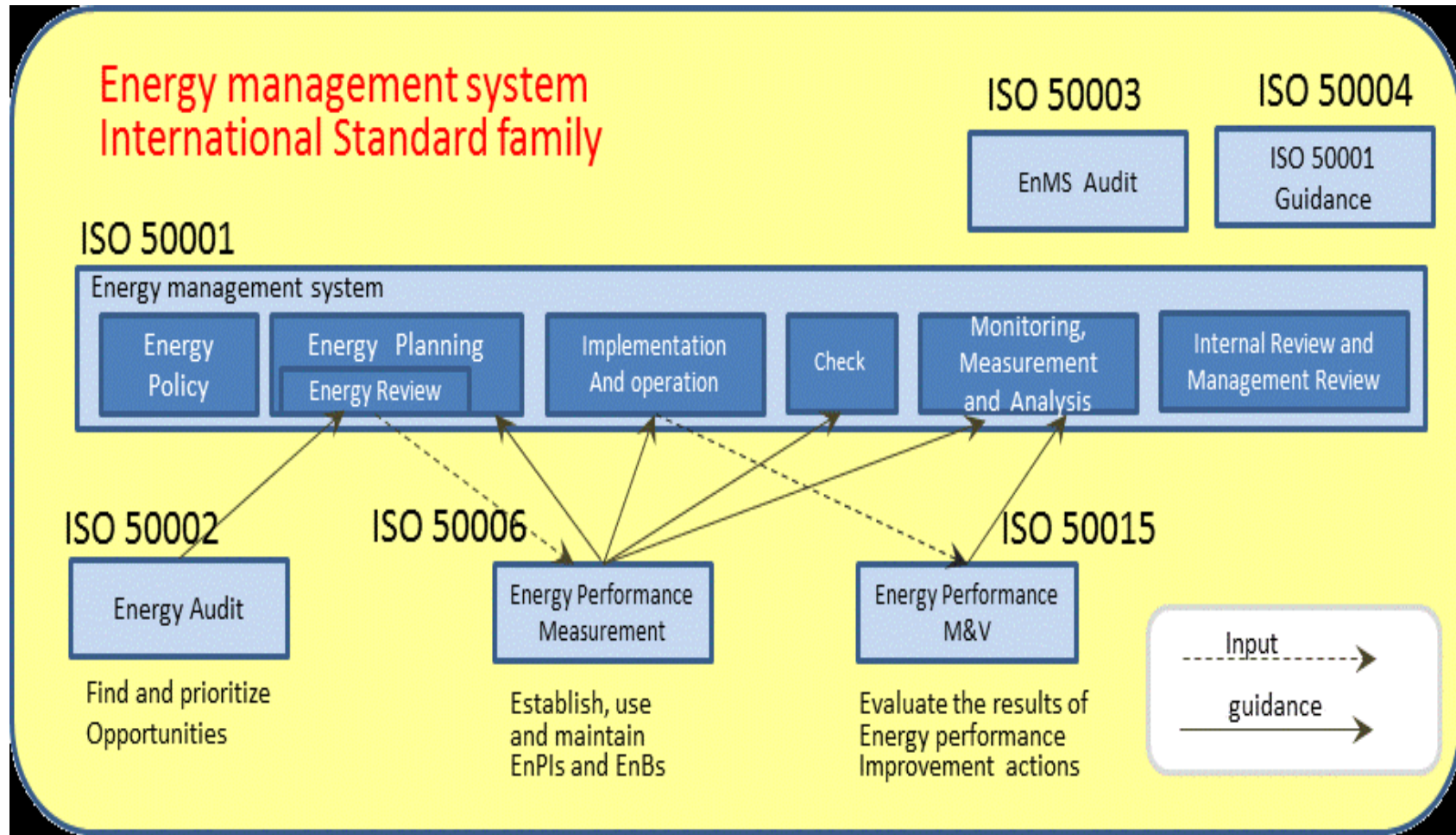
\* Figure courtesy of Canadian Delegation to TC242 WG1

# Improving Energy Performance - (New ISO 50001 working material)

- **continual improvement** - recurring activity to enhance *energy performance* and the *EnMS*
- **energy performance indicator / EnPI** - quantitative value(s) or measure(s) of energy performance
- **energy performance** - measurable result related to *energy use* (manner or kind of application of *energy* ), *energy consumption* (quantity of *energy*), and **energy efficiency** (ratio or other quantitative relationship between an output of performance, service, goods, or *energy* and an input of energy)

The organization shall establish, implement, maintain and continually improve the EnMS **and its energy performance**, including the processes needed and their interactions...

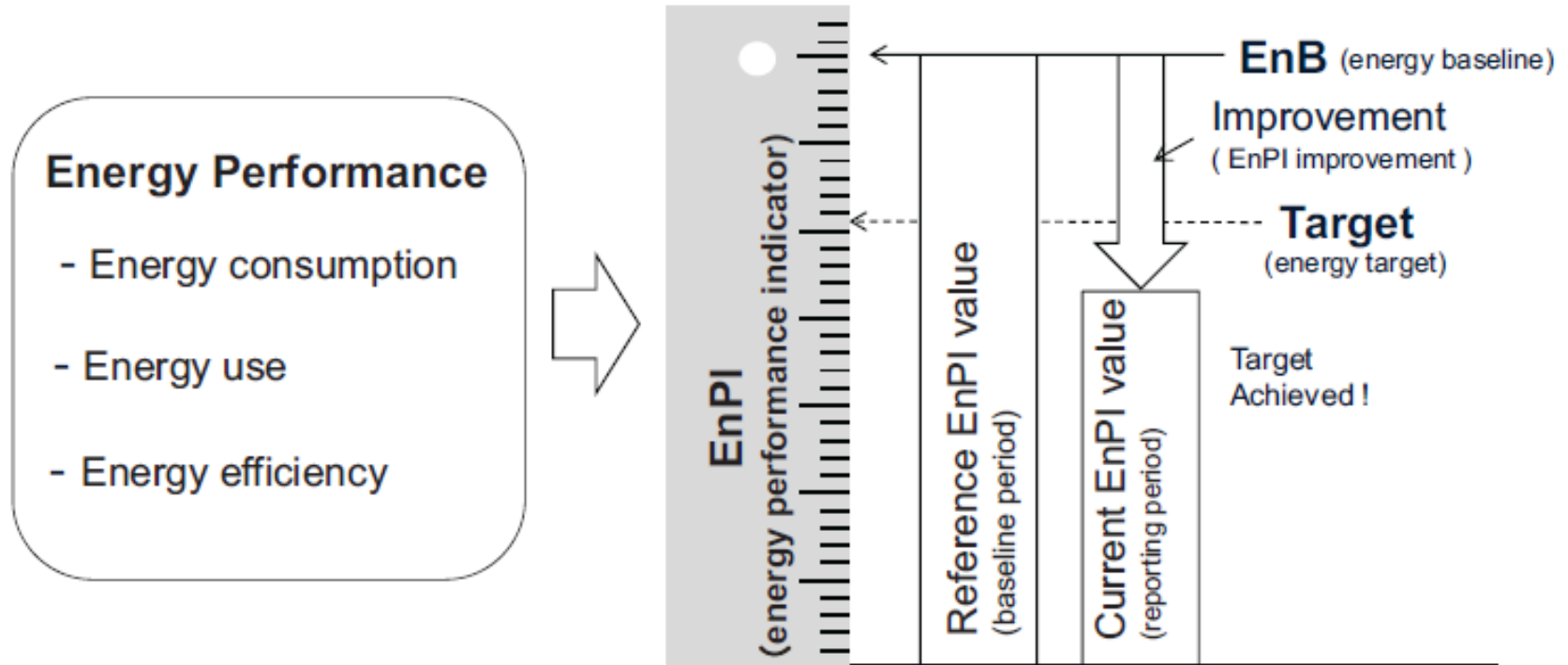
# The family of ISO 50001 standards to help foster improvement in energy performance



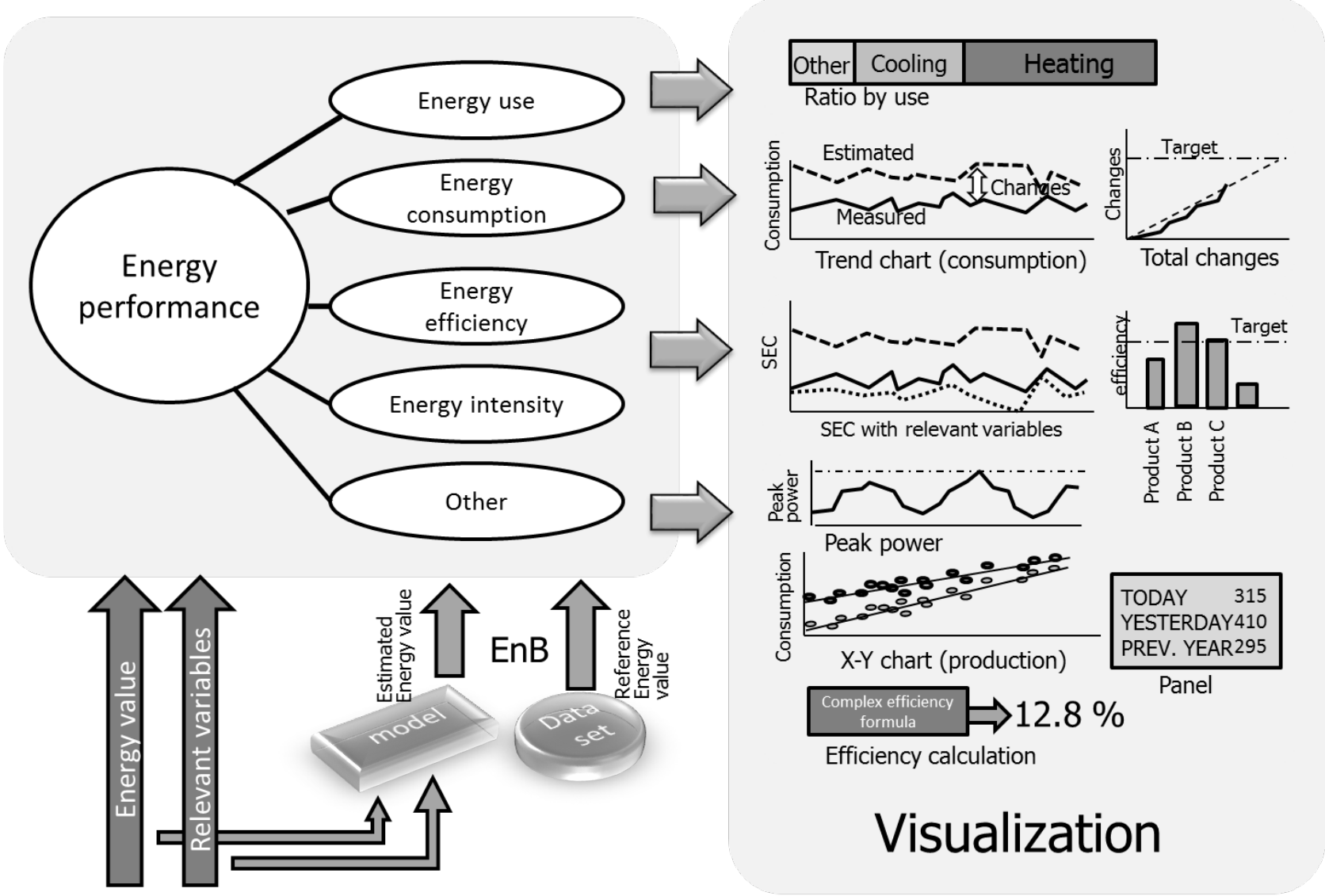
\* Courtesy of Japanese Delegation to TC 301 on new ISO 50001



# Energy Performance, performance indicators (EnPIs), baselines (EnBs) and energy targets (ISO 50006)



# Overview of monitoring and reporting energy performance (ISO 50006)



## Normalizing – keeping data relevant (ISO 17747)

*Table 2: Summary of Normalization Methods*

	Method		
	Forecast	Retrospective	Reference Conditions
Reporting period energy consumption	Actual reporting period energy consumption	Reporting period model applied at baseline period conditions	Reporting period model applied at Reference Conditions
Baseline Period Energy Consumption	Baseline period model applied to reporting period conditions	Actual baseline period energy consumption	Baseline period model applied to Reference Conditions
Operating Equipment and Practices	Baseline period Operating equipment and practices in place	Reporting period operating equipment and practices in place	Baseline period and reporting period operating equipment practices in place

# Fundamental Steps in the Measurement and & Verification process (ISO 50015)

