ISO 50001 Energy Management System

the path, the birth story, the people involved, difficulties, challenges, relevant discussions...

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BIRTH OF PC242
Energy Management

- 2005 – started discussions about energy management in several countries
- 2006 - international community engaged in discussions
- Apr/2007 - stakeholders meeting (UNIDO) determine international standard needed
- Mar/2008 - ISO approved a proposal from the United States and Brazil to lead PC242

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PC242
People Involved

ISO PC242
Energy Management

Chairman

- USA (Edwin Pinero)

Secretariat

- Brazil (ABNT)
- USA (ANSI)

- PC created to develop ISO 50001
- One Working Group
- Schedule 2008-2011

- 4 plenary meetings
- 45 Participating countries
- 14 Observing countries
- 4 Organizations in Liaison
- +/- 100 participants from +/- 25 countries attending each international plenary

- participating countries have existing activities on energy management and strong interest in developing a harmonized international standard

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PC 242
Historical Events

- Abr/2008 China WG Meeting (UNIDO) – discussing about general structure of standard
- Sep/2008 1st Meeting PC242 Washington DC – starting ISO 50001 and making WD establish (work draft)
- Mar/2009 2nd Meeting PC242 Rio de Janeiro – analyzing WD suggestions approving CD level (committee draft)
- Nov/2009 3rd Meeting PC242 London – CD analyses and approval of DIS level (draft of international std)
- Out/2010 4th Meeting PC242 Beijing – construction of FDIS (final draft of international standard)
- Jun/2011 Publishing ISO 50001

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ISO 50001
Challenges Development

Connecting two different “worlds”

- **Experts in energy efficiency**
- **Management experts**

- Understanding the concepts of the different “worlds”
- Making comfortable field for agreements
- Looking for country needs and local aspects
- Establishing consensus under clear intentions

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Challenges Development

Applicable definitions worldwide for better understanding

- Respecting local meanings
- Making consensus for the "simple and easy"
- Creating new "expressions"
- Breaking with old concepts

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Main discussions

Energy Performance

- **Measurable results related to energy**

- **A basis of structured concept for energy management improvement**

- Energy Efficiency

  including the concept of technological aspects

- Energy Use

  concerning qualitative aspects, like human activities

- Energy Consumption

  talking about quantitative aspects

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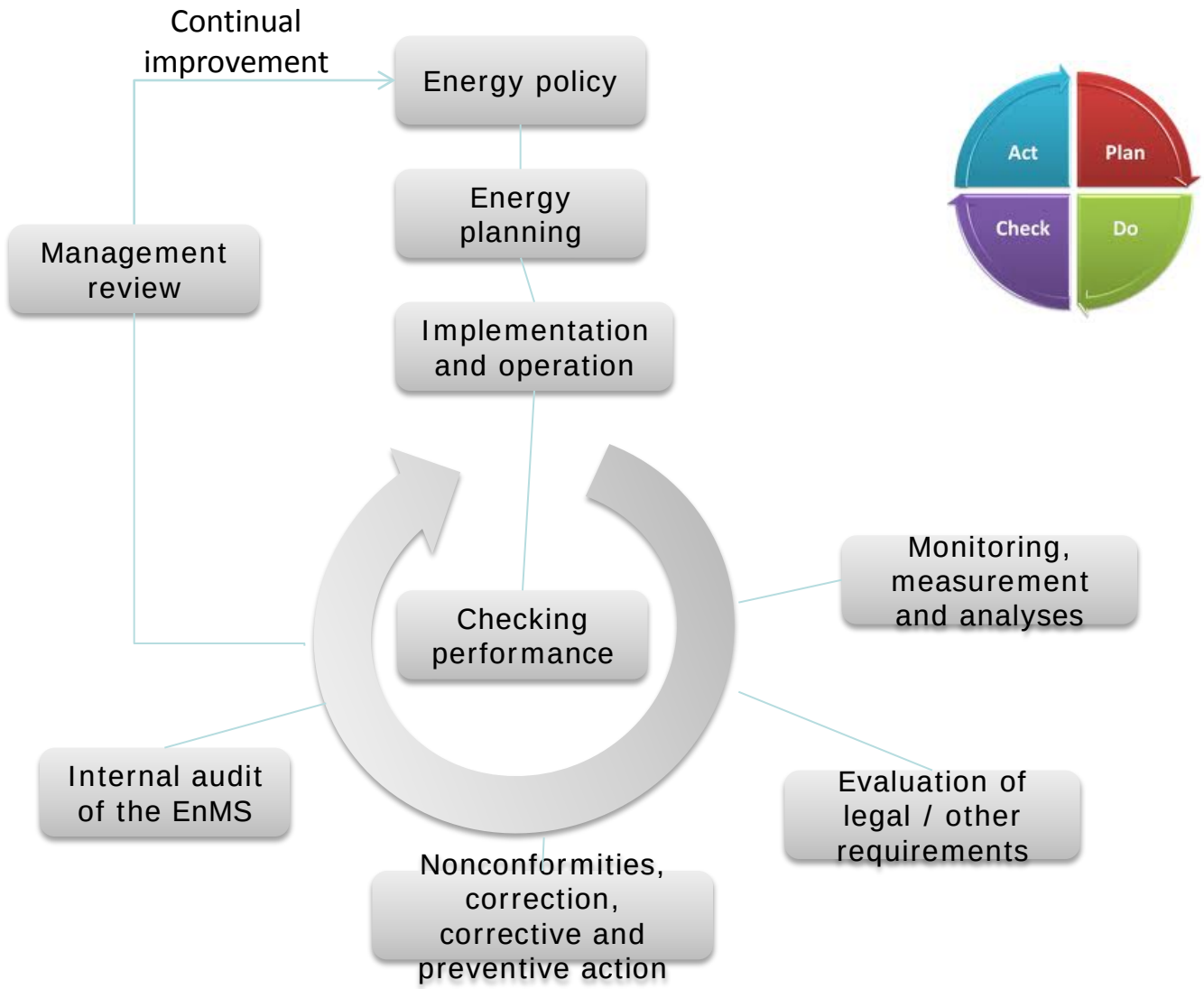
ISO 50001
Birth



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Energy Planning

Exemples of Inputs

- Energy bills
- Other metering data
- Other variables: production, weather, etc.
- Processes flow diagrams
- Organization charts
- Previous energy assessments results
- Equipment lists
- Energy sources
- Operations / financial information
-O&M
-Other

Legal & other requirerments

Energy Review

a) Analyse energy use & other information

b) Identify significant energy uses & related aspects

c) Identify opportunities for energy performance improvement

Energy Planning Output

- Baseline
- EnPI(s)
- Objectives, targets, action plans

-Graphs
-Charts
-Tables
-Spreadsheets
-Process Maps
-Sankey Diagrams
-Energy Models

-Energy assessments
-Preventive / preditive maintenance
-Pinch analyses
-Root Cause Analyses
-Benchmarks
-Pareto Analyses

-Review of BAT
-Energy requirement analyses
-LCC Analyses
-Assessing competence
-Other

Examples of Tools / Techniques

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ISO 50001 Energy Implementation and Operation

Energy Planning

- Legal and other requirements
- Energy review
- Baseline
- EnPI(s)
- Objectives
- ,Targests
- Action plans

Energy Implementation and Operation

- Competence, trainning and awareness
- Documentation
- Communication
- Operational control
- Design
- Procurement

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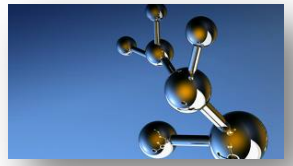
Relevant decisions

- Continual improvement of energy performance (efficiency, use and consumption)
  - "**Breaking**" with old management standards objectives and targets concepts

- Applicable to all variables affecting energy performance
  - Looking for the **future**, including vision for general aspects of energy, not only local application



- Applicable to all kind of organizations and aligned with other management systems
  - All **people can contribute** with rational energy use and it's need to be simple

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Main Questions

- What are the technological solutions to be adopted in improving energy performance?
- How to treat different productive processes and establish a basis for comparison between uses, consumption and energy efficiency?
- How to move forward in monitoring the energy use and consumption in different applications?
- What is the real boundary to be considered for organizations in adopting energy management system?

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THANK YOU

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