Status and future developments of Management System Standards in Brazil

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http://www.mme.gov.br
Introduction
Brazil – General indicators (2007)

Electricity consumption: 411 TWh
Generation capacity (installed): 100,7 GW
Electricity per capita: 2.235 kWh / inhab

Petroleum production: 1.833 mil bbl/day
Refine capacity: 2.017 mil bbl/day (2006)
IEO (internal energy offer) per capita: 1.3 pet / inhab

Demographic reference scenario

- 2005: 185 million inhab. PIB/capta: US$ 4,301
- 2030: 238 million inhab. PIB/capta: US$ 9,125

Increase of 53 millions (1,01% per year)

Comparável à população da

- ESPANHA (2003) 40 milhões
- REGIÃO NORDESTE (2005) 51 milhões
- FRANÇA (2003) 61 milhões
Internal energy offer – Brazil 2007 (%)

238,3 millions pet

- **Biomass**: 30.9%
  - Wood: 12%
  - Sugarcane products: 15.7%
  - Other: 3.2%
- **HIDRAULIC & ELECTRICITY**: 14.9%
- **MINERAL COAL**: 6.0%
- **MINERAL**: 1.4%
- **PETROLEUM & PRODUCTS**: 37.4%
- **NATURAL GAS**: 9.3%

Energy offer matrix – World comparison

- **BRAZIL 2007**
  - BIOMASS: 30.9%
  - HIDRAULIC & ELECTRICITY: 14.9%
  - URANIUM: 6.0%
  - MINERAL: 9.3%
  - COAL: 37.4%
  - NATURAL GAS: 6.0%
  - PETROLEUM & PRODUCTS: 37.4%
  - 238 millions pet

- **OECD 2005**
  - BIOMASS: 4.2%
  - HIDRAULIC & ELECTRICITY: 20.4%
  - URANIUM: 21.8%
  - MINERAL: 25.3%
  - COAL: 21.8%
  - NATURAL GAS: 35.0%
  - PETROLEUM & PRODUCTS: 20.7%
  - 5,548 millions pet

- **WORLD 2005**
  - BIOMASS: 2.2%
  - HIDRAULIC & ELECTRICITY: 6.3%
  - URANIUM: 20.7%
  - MINERAL: 20.7%
  - COAL: 35.0%
  - NATURAL GAS: 35.0%
  - PETROLEUM & PRODUCTS: 30.9%
  - 11,434 millions pet
Policy and legislative frameworks for MSS
Policy frameworks

Brazilian Government (Ministry of Mines and Energy) has been extremely active and producing policies (and legislation) based on

- Current necessity of adjustment of the Brazilian Energetic Matrix
  - Increase of 5.4% of national demands and 2% of world energetic demand (comparison with 2006)

- National energetic demands and with views of future necessities
  - Increase for energy based on the strengthening of Brazilian economy (renewable sources: raise of 7.2%; non-renewable sources: raise of 3.9%)
Legislative frameworks – actions (1)

- Draft of the National Policy for Conservation and Rational use of Energy
  - Defines the minimum levels of energetic efficiency to be adopted by electric bulbs, accordingly to its power

- Law 9991/2000
  - Maintain the percentage (minimum) of 1% to be applied in energetic efficiency (by distributors) until 2010

- Law 10.295/01 ("Energetic efficiency law")
  - Development of the requirements for the minimum obligatory performance for machines and appliances

- Study for the development of program to foster the use of solar heaters
Legislative frameworks – actions (2)

- Reduction of fees on manufactured products
  - Refrigerators to low income consumers (bought under the requirements of the energetic efficiency program to the energy distributors)

- Obligation of the Government to buy only efficient products

- CONPET – Establishment of the Business Plan

- Bilateral Cooperation
  - Brazil – Uruguay: promotion of energetic efficiency on the latter

- Insertion of the energetic efficiency in the National Energetic Plan (PNE 2030)
National & international quality and environment MSS – Constraints and lessons learned
Constraints

■ Fear of what is new

⇒ MSS was something new: what does it really stand for?

■ Absence of enough knowledge about the issue

⇒ Not enough experts with solid knowledge to teach and help disseminate the concept of MSS

■ Use of the MSS tool for the “wrong” means

⇒ Fear of the use of “certification” only for marketing purposes
Lessons learned

- Increase of the involvement (and demands) of the general consumer

- Increase of the scope of participation of the stakeholders

  ➔ horizontal subjects demand not only the usual parts

- Raise of the awareness for the need of commitment of the top management in the process

- Increase of participation in standardization process

  ➔ with direct reflex in the standardization process (more interference and more participation)
Management System Standard for Energy: opportunities and challenges
Opportunities (1)

- Existence of national actions to ensure the use of energy with efficiency

- **PBE**
  - INMETRO
  - 1984

- **PROCEL**
  - 1985

- **compan**
  - 1991

- **Lei de Eficiência Energética**
  - (nº 10.295, de 17 de outubro de 2001)
  - 2000

- **PEE – Programas de Eficiência das Concessionárias de Energia Elétrica**
  - 2001
Opportunities (2)

- Increase of participation of renewable sources on energy internal offer (using the Brazilian example)

- Renewable
- Non renewable

Opportunities (3)

- Economy and energy consumption growth rates (2005 – 2030) require common strategies

**Background**

- Brazil 1978/2005
- World 1978/2005

**Future scenarios**

- Brazil-reference scenario
- Brazil-high scenario
- World-reference scenario
- World-high scenario

- Increase of energy consumption
- Increase GNP

Opportunities (4)

- Increase the use of other energy sources (like biofuels) → replacement of petroleum and its products (decrease of 11.2% in OECD energetic matrix)

- Increase the Global recognition of the necessity of actions aiming the effective use of energy

- Favorable scenario for establishment of common use documents (good practices for rational use of energy)

- Increase the proactive use of knowledge to the development of competitive markets with no harm to further generations (sustainability)

- Recognition of ISO as the main forum for development of documents of global market relevance
Challenges (1)

- Modification of policies to align utility incentives with the delivery of low-cost (effective) energy efficiency and ratemaking practices
  - to promote energy efficiency investments and reduce the high price environment in some countries
- Government commitment (through public policies)
  - to foster the establishment of policies that use common world practices (good practices) aiming use of energy with efficiency
- Enable some sectors to deliver products with reduced influence of their investments on energy efficiency practices
  - example: allow builders to evaluate and strengthen building codes to enable net-zero constructions
Challenges (2)

- Increase investments on research and development in new energy efficient technologies for mid and long term
  - to foster the investment, mainly on developing countries

- Cultural changes
  - to foster the consumer to look for appliances and services that use energy with efficiency

- Reduce energy consumption in homes and businesses
  - to develop and foster the use of appliance standards, helping to accelerate market penetration of clean technology
Challenges (3)

- Change of the energy use parameters with the maintenance of the minimum levels of growth
  - main challenge, principally in the developing countries: to provide a better infrastructures with no harm to the environment

- Participation of the developing countries in the process
  - financial difficulties to gather resources to participate and contribute in the development of an International Standard
MSS for Energy – Way Forward
What should we foster (1)

- The best way forward to develop a common understanding of the needs for the use of energy with efficiency

- The use of a common forum in which all the interested parties are allowed to participate

- The increase of investments on research and development of techniques for the use of energy with efficiency

- The exchange (and enhancement) of technology through the use of the best practices
What should we foster (2)

- The use of energy efficiency to foster fair market competition

- The development of social responsibility through the promotion of projects of education and reduction of consumption habits

- The response not only to regulatory requirements, but also to its customers expectations by providing leading products with efficient operational performance
Standardization as a way forward

- International Standardization (ISO) is a tool to harmonize current needs and help develop future trends

- ISO efforts are recognized by WTO in the promotion of a safe environment for market communications (technical barriers to trade)

- Also recognized by most of the world governments as a tool to promote transference of basic industrial technology

- Principles based on consensus and transparency
Standardization aiming energy efficiency

Current actions on standardization environment:

- In cooperation with ANSI (USA), there are, currently, two ISO Committees under Brazilian responsibility:
  - ISO/TC 28/SC 7 - Petroleum products and lubricants/Liquid biofuels
  - ISO/PC on Energy MSS

- Standardization initiatives follow Brazilian cases of success
  - Energy efficiency stamp (PROCEL program)
  - Alternative fuels (PROALCOOL program)
  - Biofuels programs (PETROBRAS/CENPES)
Conclusion
- Energy efficiency management is a task not only of Governments, but also of industry stakeholders.

- There are, currently, lots of national initiatives being developed, which could be directed in one direction to avoid duplication of efforts.

- Huge potential to develop tools for use of energy with efficiency still unexplored.

  - new technologies, new techniques, new procedures

- Objective conditions and will to do never have been so favorable.

  - there is urgency for actions to mitigate current problems

- Establishment of legislations based on different standards could be seen as technical barriers to trade.
Thank you for your attention!