VII EE 2016 Seminario Latinoamericano y del Caribe de Eficiencia Energética

VII Latin American and the Caribbean Energy Efficiency Seminar

Energy Efficiency Management and Standardization in LAC

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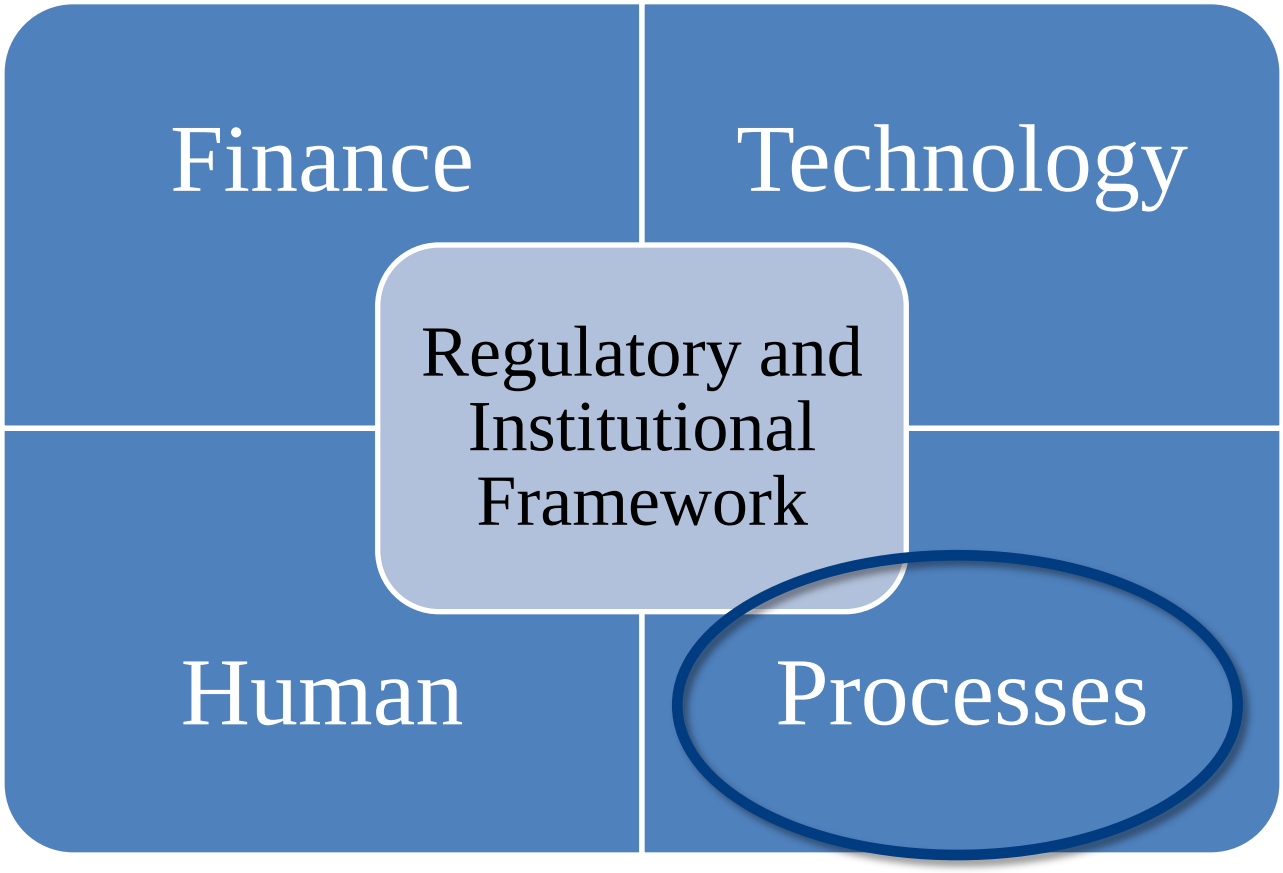
Pillars for Energy Efficiency

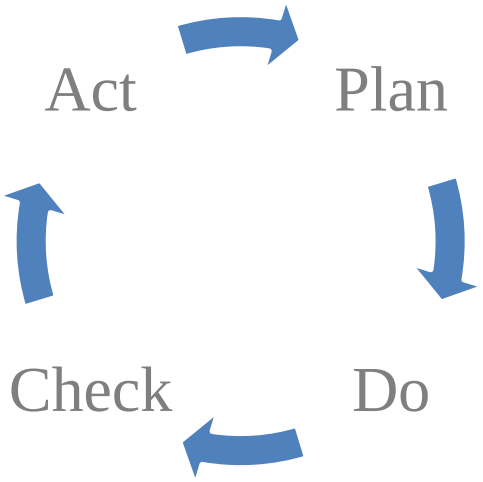


Energy Management

The **standard** specifies the requirements for establishing, implementing, maintaining and improving an energy management system, whose purpose is to enable an organization to follow a **systematic approach in achieving continual improvement of energy performance**.

It involves:

1. **Metering** energy consumption.
2. Finding opportunities to save energy by **analyzing** meter data.
3. **Taking action** to target the opportunities to save energy.
4. **Tracking** progress.



ISO 50001

Energy Management System Standards:
ISO 50001 (2011).
China, Denmark, Ireland, Japan, Republic of Korea, Netherlands, Sweden, Thailand, the USA and the European Union (EN 16001-2010).

Certification to ISO 50001 is possible but not obligatory.
Already adopted by:

- Argentina (IRAM-ISO 50001)
- Brazil (ABNT NBR ISO 50001:2011)
- Bolivia (NB/ISO 50001:2011)
- Chile
- Colombia (NTC-ISO 50001)
- Costa Rica (INTE/ISO 50001:2011)
- Cuba (NC ISO 50001)
- Dominican Republic (NORDOM ISO 50001:2011)
- Ecuador (NTE INEN ISO 50001)
- El Salvador (NTS ISO 50001:2011)
- Honduras (OHN-ISO 50001:2011)
- Jamaica
- Paraguay
- Peru (NTP-ISO 50001)
- Mexico (NMX-J-SAA-50001-ANCE-IMNC-2011)
- Uruguay (UNIT-ISO 50001)
- Venezuela

….

Supplementary standards to ISO 50001

ISO 50002 Energy Audits

basic principles and requirements for carrying out energy audits

ISO 50003 EnMS Conformity Assessments

specifies the elements in the auditing process and competence requirements of personnel involved in the audit

ISO 50004 EnMS Guidance

guidance for the implementation, maintenance and improvement of an energy management system

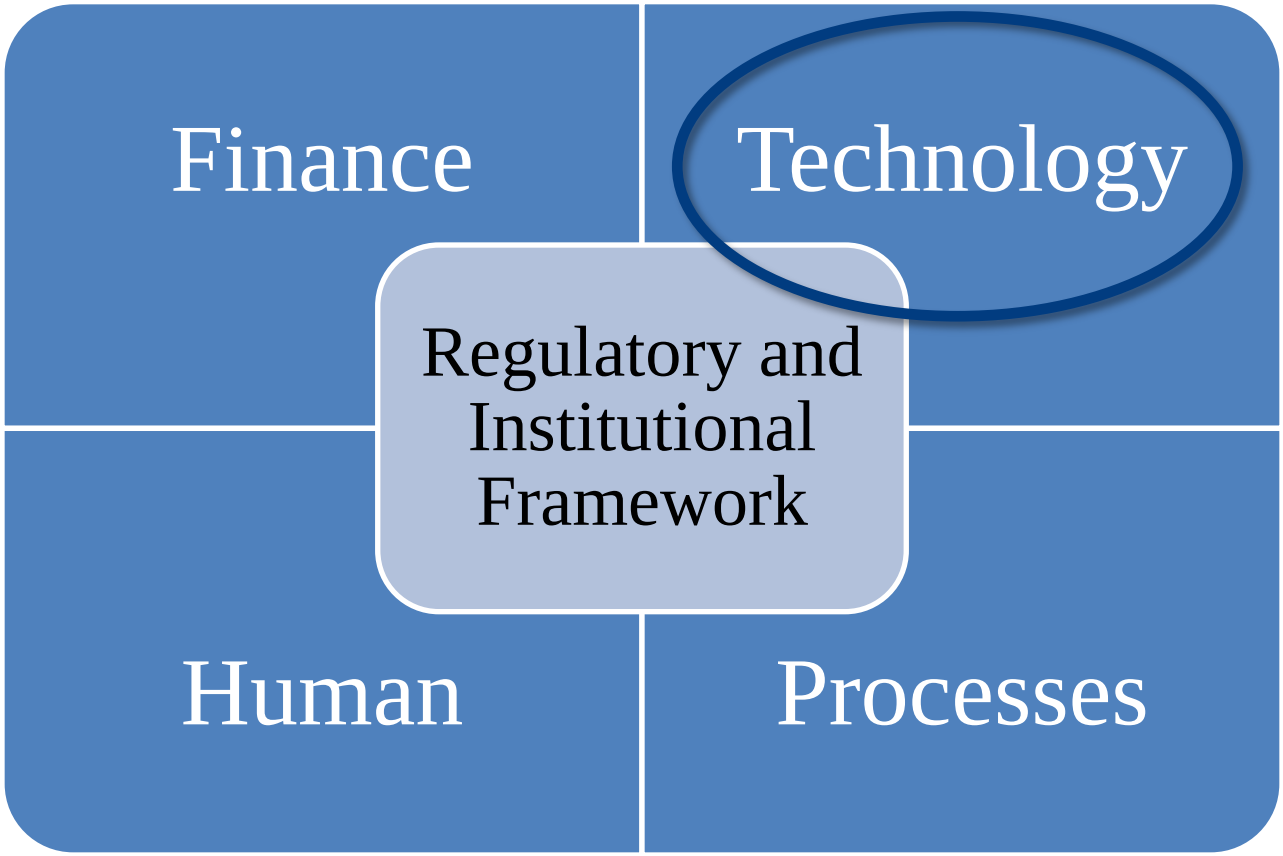
ISO 50006 Energy Baseline & Energy Performance Indicators

guidance on measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI). - See more at:

ISO 50015 M&V Guidance & Principals

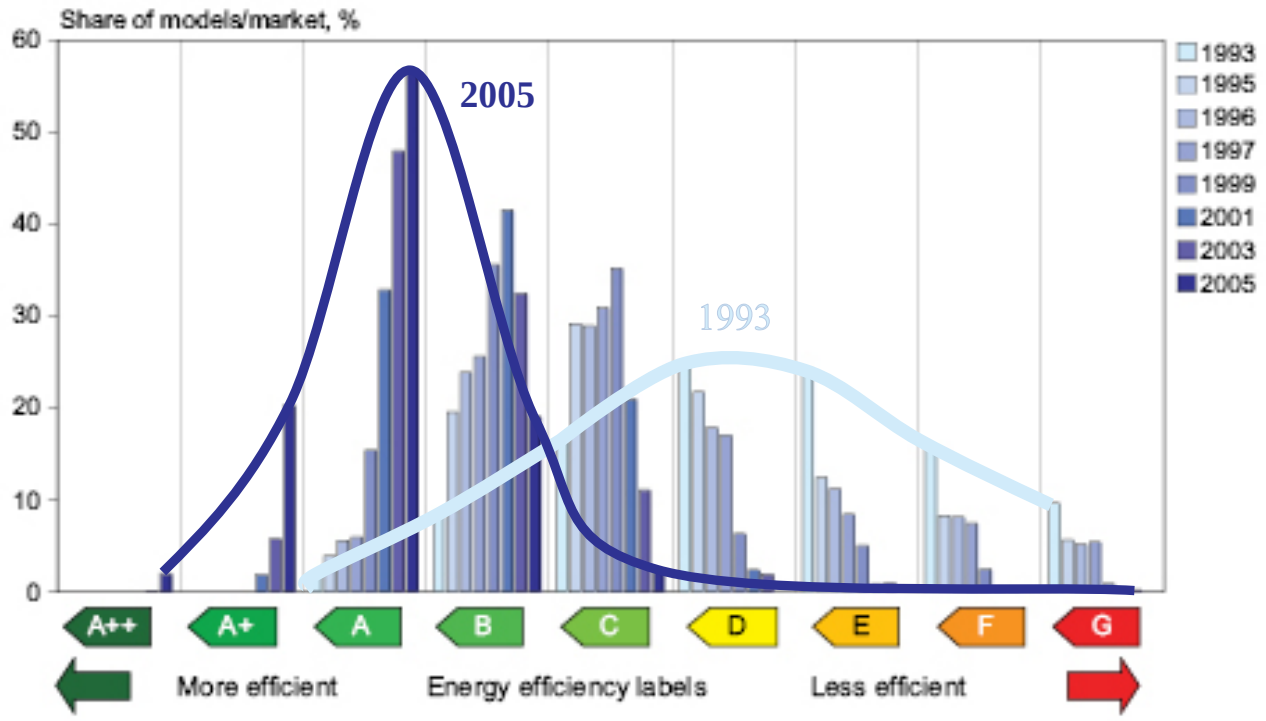
process of measurement and verification of energy performance of an organization or its components

Pillars for Energy Efficiency



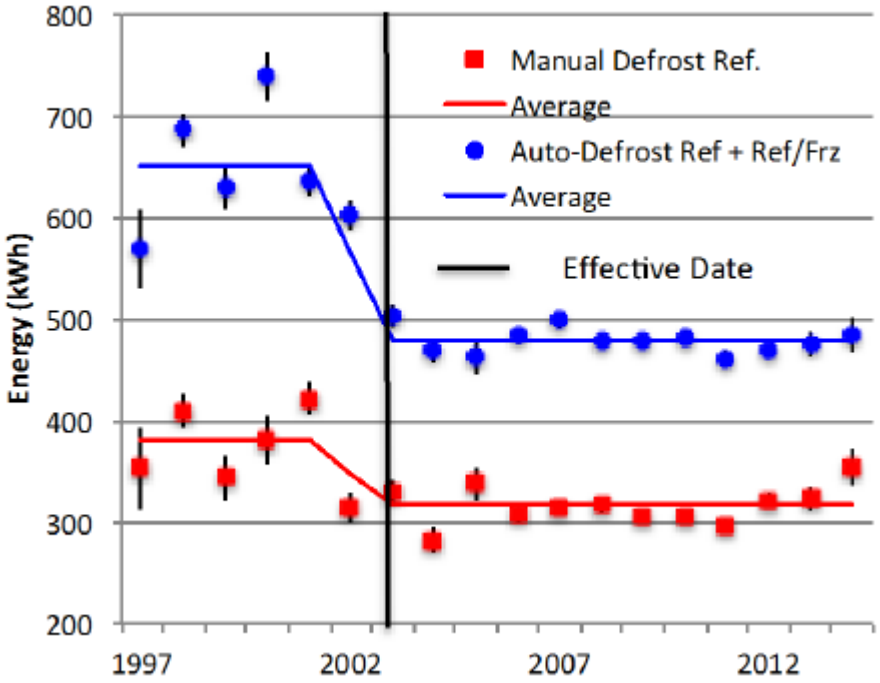
Energy Efficiency Standards and Labelling

Market transformation EEL

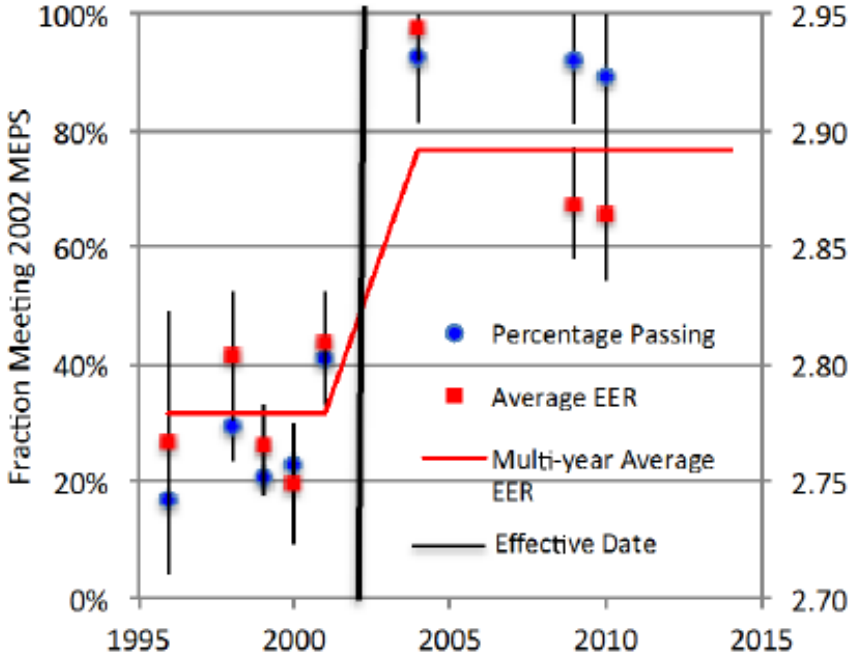


Impact of the EU Appliance Label (A++ to G, with G being the least efficient) on the Market of Cold Appliances in EU-25. Source: CECED, 2005.

MEPS (Mexico)



Impact on the Mexican market of the NOM-015-ENER-2002 establishing MEPS for refrigerators.



Impact on the Mexican market of the NOM-021-ENER/SCFI/ECOL-2000 establishing MEPS for window air conditioners.

Source: SEAD, 2015.

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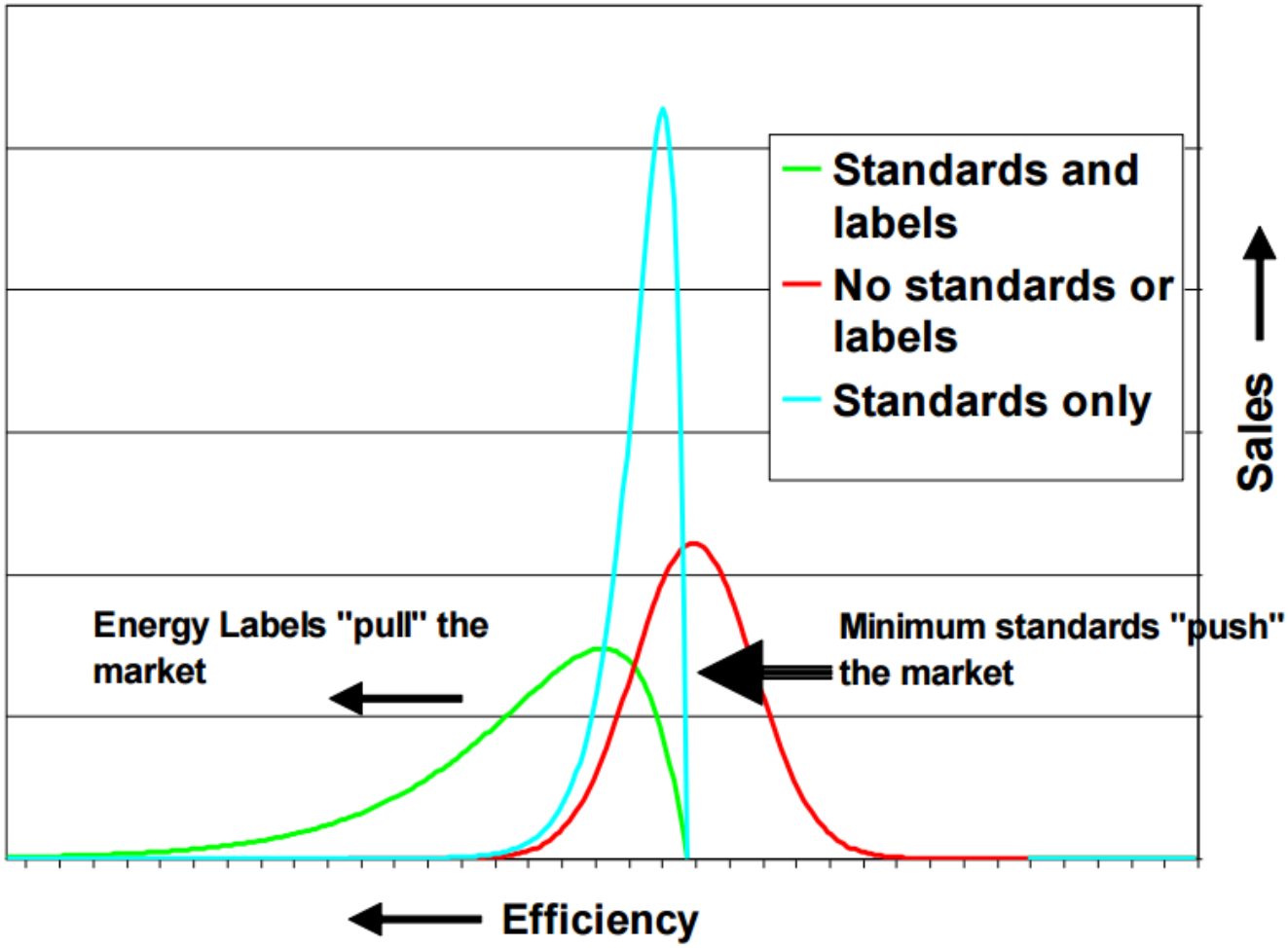
Energy Efficiency Standards and Labelling

Market transformation MSEP&EEL



Energy Efficiency Standards and Labelling Harmonization

LAC programmes

- Standards for processes; labels, MEPS.

Alignment is still the rule strongly influenced by US (EES) and EU (EEL)

- Mexico continues to align its standards with new US rulemaking.
- EE standards of South American countries are similar, but (full) harmonization is yet to be achieved.

Regional harmonization efforts had only limited success

- COPANT is proceeding in defining voluntary standards. Technical Committee 152 Energy Efficiency and Renewable Energies.

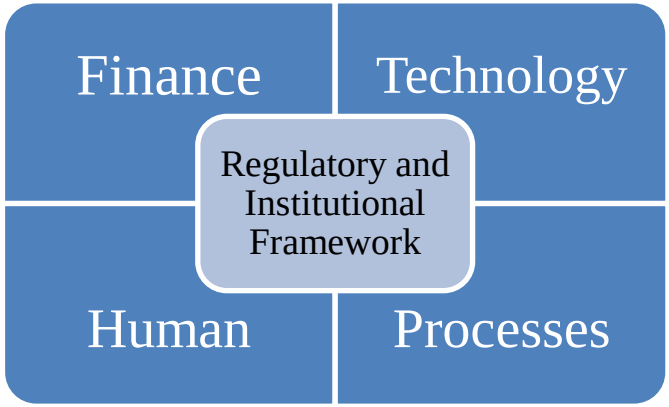
Energy Efficiency Standards and Labelling Programmes

Most LAC countries have some kind of EE standard or labelling programme.
Two approaches:

- Focus on Labelling (Brazil/EU model)
  Initial labelling program (mandatory or voluntary).
  MEPS are implemented as second step, based on operational labelling.
  Model followed by the majority of South American countries.

- Focus on Minimum Energy Performance Standards (MEPS) (US model)
  Labelling considered as a complementary instrument.
  EE S&L Program of Mexico.
  Followed by Central America Countries.

Brazil



Energy Conservation Programme (1981)

National Electrical Energy Conservation Programme (PROCEL) (1985)

Rational Use of Oil Products and Natural Gas Programme (CONPET) (1991)

National Policy on Energy Efficiency (2007)

Programme of Energy Efficiency (PEE) (1998). Pursuant to Law 9.991 in 2000, electricity distributors are obliged to invest at least 0.50% of their annual net revenue in energy efficiency activities.

PROCEL Public Lighting (Reluz). Electrobras funding covers up to 75% of the total value of the project, with the remaining 25% coming from municipalities or utilities.

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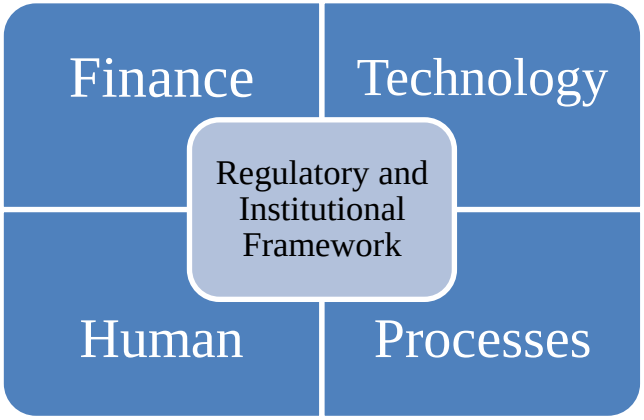
Brazil



Brazilian Labelling Programme (PBE) (1984)

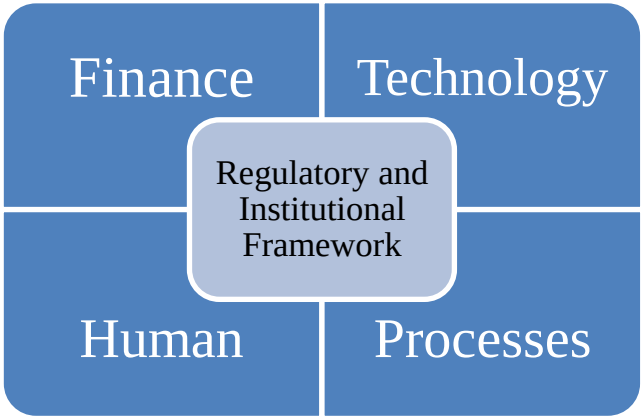
National Energy Conservation Label (ENCE) for wide range of equipment, from appliances to industrial equipment. Coordinated by the National Institute of Metrology, Standards and Industrial Quality (INMETRO)

Energy efficiency labelling for buildings (PBE Edifica) (2014)

Energy Efficiency Act. MEPS (2001).

Establishes maximum levels of energy consumption for energy-consuming machines and devices produced and sold in Brazil.

Mexico (I)



National Commission on Energy Savings (CONAE) (1989)

Law on Sustainable Use of Energy (CONUEE) replaces CONAE. (2008)

Energy Transition Law (LTE) (2015)
Sets clean energy and energy efficiency goals; two special programmes to implement such strategy; and a programme focused on smart grids.

Trust for Saving Electricity (FIDE) (1990)
For overcoming barriers to innovative technologies integration and market transformation.

Energy Sustainability Fund (2008)
R&D in EE with funds from oil income.

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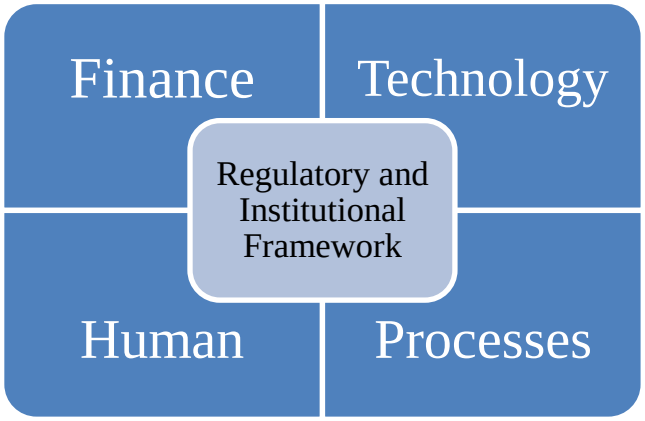
Mexico (II)



Programme for Financing of Electric Energy Saving (PFAEE) (2002-2006)
Finances, through a credit paid on electricity bills, which is largely recovered due to reduced electricity costs the substitution of old, inefficient refrigerators and air-conditioners.

Green Mortgage Programme (Hipoteca Verde) (2007). Infonavit provides financing to families purchasing a green home. Addresses administrative barriers. Dissemination among real estate sector.

MEPS (1994) and labelling
For household appliances (refrigerators and A/C) and three-phase electric motors.

Conclusions

- Existence of energy efficiency legislation doesn't guarantee positive effects on energy consumption. There is the need to implement a comprehensive approach: Finance, Technology, Processes, Institutions and People. Successful cases can be fund in Brazil and Mexico.

- Tools on efficient management exits (ISO) but there is a need to promote their implementation.

- Main tools for deployment of efficient technologies are MEPS and labelling. MEPS push the market with a quick and large deployment of the standard technology and labelling pulls the market providing in the long term deployment of more efficient equipment.

- Labeling reflects better cost efficient measures or standards are far from optimal.

- There is a tendency to underestimate the human factor (behavior and skills).

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