Energy Management in Mexico: experiences, lessons and outlook

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Some contextual aspects
Primary energy supply is based on fossil fuels
More than 75% of Mexico’s electricity comes from fossil fuels
Mexico faces monumental challenges in the near future

- **Oil exports fell 16.8% in 2008**
  - Pemex informed that oil production fell 9.2% in relation to 2007
  - Cantarell produces 461 thousand less barrels per day

- **La Jornada, January 21st, 2009 referring to the oil field that represents 60% of México’s oil production.**
Mexico’s energy system is its main contributor of greenhouse gases

- México emitted more than 400,000 Tons of CO2 equivalent in 2002
- 72% from the energy sector
The process of energy efficiency efforts in Mexico
Main aspects

- Mexico started relatively late
  - In the middle of the 80s
- The government has been the main driver
  - Through institutions and financial support
- Energy prices for large users have been a factor in the private sector
  - Mainly those who use natural gas
PRONUREE

- Initiated in 1982 within the national power utility
- Dedicated to regional seminars and focused on electricity
- Lasts until 1989
- Facilitates the creation of a consultants network
  - ATPAE
CONAE/CONUEE

- Starts in 1989
- Six stages
  - Emphasis on awareness
  - Development of MEPS
  - Promotion of individual audits
  - Organizing large energy management programs within the public sector
  - Facilitating energy management in the private sector
CONAE/Public buildings program

- An important effort to go beyond projects and audits
- With a centralized supporting organization
  - With guidelines and training of managers
- Mandates the establishment of institutional arrangements and capacities
  - Officials responsible for sets of buildings
FIDE

☐ Is the continuation of PRONUREE
☐ A private fund under the wing of the national utility

■ Three stages
  ☐ Free audits
  ☐ Individual energy efficiency projects
  ☐ Programs aimed at specific technologies
    ■ Rebates

■ A general emphasis on projects implemented by external consultants
The energy companies

☐ CFE
  ■ Has an internal program (PAESE)
  ■ With emphasis in individual projects

☐ PEMEX
  ■ Has had several internal programs
  ■ The largest effort had CONAE´s assistance
    ☐ Within an environmental protection/industrial safety program
The private sector

- Has been reactive
- Large energy intensive industries have been affected by high energy prices
  - Natural gas
  - Electricity
- Their focus has been on technology, not in organization
Factors and what and how it is being done
Factors (1)

- The support of the government via information and technical assistance

- Real energy prices for energy intensive activities
  - Natural gas
  - Electricity

- Best practices by international companies
Factors (2)

- Business interest of energy consultants and technology providers

- The development of energy performance arrangements
  - Heat recovery
  - Energy management systems

- Climate change mitigation
Types of companies with significant actions

- Hotel chains
- Department stores
- Retail
- Cement
- Steel
- National phone company (TELMEX)
- Large bread producer (BIMBO)
Most common actions

- Lighting retrofits
- Air conditioning replacement
- High-efficiency electric motors
- Correcting power factor
- Energy management through automated monitoring
- Solar water heating
- Cogeneration
  - As a peak shaver
The sustainable energy law

- It is the law that created CONUEE
  - The continuation of CONAE
- Establishes obligations for energy intensity reporting
  - With CONUEE’s oversight
The GEI initiative

- Carbon disclosure
- A private sector initiative with the support of WRI
- Companies that represent a significant portion of the industrial CO2 emissions are part of it
Energy management practices
Measuring and monitoring has become generalized

- There is a significant number of companies dedicated to supplying M&M products and services

- Some offer performance based contracts
  - Outsourcing of energy management

- Carbon disclosure initiatives have been one of the drivers
Energy managers are not part of the picture, though (1)

- Only one institution offers training in energy management
  - It is the local chapter of the Association of Energy Managers
  - The rest offer courses on audits and/or specific technologies

- There are no trade organizations directly related to either consultants and/or energy managers
  - ATPAE dissapeared
Energy managers are not part of the picture, though (2)

- Most of what is presented in national/regional seminars involves technologies, not practices

- The national EE awards are based on technology implementation, not energy management practices
  - The recognitions are to companies, not to individuals (as energy managers)
Lessons learned
Lessons learned (1)

- Lack of knowledge and/or trust in specific technologies is not a factor
  - With the help of the government, the market actors have learned how to sell their products/services

- Real energy prices have been a good driver
  - Has made decision makers to look at EE as a resource with positive payback
Lessons learned (2)

- Information by the government has been useful
  - And a renewed effort could help advance even more

- CDM has not been a factor

- Investing in energy management capabilities is a good investment
  - As CONAE has shown at a national scale
  - And as some private sector initiatives has shown
The future
Factors for the future (1)

- The need of companies to confront and internalize the growing complexity of the energy options
  - Supply
    - New sources
    - New contractual arrangements
  - Demand
    - Materials
    - Equipment
    - Systems

- The quickly evolving energy situation of Mexico
  - Declining oil production/Growing imports
  - Growing international prices
Factors for the future (2)

- Fighting climate change
  - Mexico as part of G8 plus 5
  - Mexico as host of COP 16

- The sustainable energy law
  - A legal obligation to measure and monitor energy use

- The evolution of energy efficiency technology and practices
What is needed in terms of energy management
What is needed (1)

- To go beyond projects

- To strengthen the internal capacities of large energy users to identify, design and operate energy efficiency programs

- To recognize the importance of well trained individuals
What is needed (2)

- To support training and certification initiatives and efforts
- To follow international best practices
Thank you!

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