The Role of Energy Efficiency in Promoting Energy Access

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December 4th, 2013
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Overall context on energy access in Mexico
In Mexico, 2.3% of the population have no access to electricity services, representing around 3 million people without access to energy.

Electricity grid coverage in Mexico:
- Urban areas - 98.95%
- Rural areas - 93.14%

45,000 isolated communities without access to electricity
- High cost of grid expansion
- Population dispersion and geographical situation
- Mostly indigenous communities
The access to natural gas is concentrated in large urban areas and its penetration has been limited.

LPG is the main fuel used in most of Mexico’s small and mid urban areas.

Residential sector in Mexico represents 20% of total final energy consumption… and its growing.

- 27.8% of the energy needs in this sector are covered by biomass (mainly wood).
Fuel consumption in the residential sector

Access to electricity from the grid

Source: ENE 2013-2027
The role of energy efficiency in promoting energy access as a priority for Mexico’s government
The regulatory and programmatic framework which deals in Mexico with energy efficiency and energy access is established in a number of policy instruments:

- The National Development Plan
  - Cross-cutting actions in several sectors
- The National Energy Strategy
- The Law on Sustainable Use of Energy
  - National Sustainable Energy Use Program
- The General Law on Climate Change
  - Special Program on Climate Change
Some guidelines set by Mexico’s Government on energy access

- Foster sustainable housing development

- Provide with quality services for the most vulnerable rural and urban communities, including energy

- Access to energy is an indispensable means to improve the quality of life of the population and to provide the necessary conditions to improve wellbeing

- Access to energy services brings considerable benefits in terms of quality of life, energy security, environmental protection and social inclusion
Program for Development of Priority Areas (PDZP)

- Approaches specifically the lack of basic infrastructure and services on both communities and households, located on municipalities with high poverty levels.
- Operates in all the 32 states
- Focuses on the 125 municipalities with the highest poverty index
- Includes projects related to building, improvement or rehabilitation of electricity networks (conventional and non-conventional).
Overall cross-cutting guidelines for energy policy related to energy access:

- Regulatory and institutional strengthening
- Close linkage between Federal, state and municipal authorities
- Comprehensive rural and urban planning strategies
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<th>Direct effect</th>
<th>Indirect effect</th>
<th>Co-benefits</th>
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<tr>
<td>Water infrastructure</td>
<td>Water pumping, drainage and treatment</td>
<td>• Water supply&lt;br&gt;• Improved productivity in the agricultural sector</td>
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<td>Efficient lighting</td>
<td>Residential and street lighting</td>
<td>• Improved security&lt;br&gt;• Number of hours devoted to other social and economic activities in the community</td>
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<td>Biomass substitution</td>
<td>Efficient cooking and water heating</td>
<td>• Reduced local pollution&lt;br&gt;• Reduced risk of respiratory diseases</td>
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<td>Refrigeration</td>
<td>Food and vaccines conservation</td>
<td>• Health risk prevention&lt;br&gt;• Improved medical services</td>
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<td>Information and telecommunication technologies</td>
<td>Digital information access</td>
<td>• Long-distance educational models&lt;br&gt;• Integration of isolated communities</td>
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Ongoing activities related to energy efficiency and energy access
Technical consultation body of the Ministry of Energy on energy efficiency.

It was created in 2008 by the Federal Law for the Sustainable Use of Energy (LASE).

It promotes energy efficiency in economic and social sectors and serves as technical body on sustainable use of energy.
Objectives:

- Mitigate climate change.
- Strengthen economic competition.
- Promote a reform in the energy sector.
- Gather the efforts coming from the different Sectors.
Guidelines:

- Energy efficiency standards
- Linking energy users with consultants, financial institutions, manufacturers and other institutions.
- Promotion of the energy saving culture among users.
• The National Sustainable Energy Use Program identifies and promotes the best energy-efficiency and sustainable energy use opportunities in all processes related so energy supply and demand in Mexico.

• The program must consider:
  • The mandate of LASE
  • The National Development Plan
  • The different sector programs of different agencies
  • Other laws and regulations (climate change)
Guidelines:

- Support to local governments.
- Sharing information regarding sustainable use of energy.
- Cooperation with universities and research institutions.
- Strengthening Mexico’s participation in the international context.
Conuee’s program to support states and municipalities

It is oriented to the development of institutional capacities for the identification, analysis and implementation of energy-efficiency programs, projects and actions.

Street lighting  Water pumping systems  Solar water heating
National project on energy efficiency for street lighting systems

It aims to provide technical assistance and to obtain financing to all municipalities to replace their inefficient lighting street lighting systems for efficient equipment
Energy efficiency in water pumping and distribution systems

Conuee provides technical information and best practices guides to support municipalities to increase the energy efficiency of their water pumping systems.

This program is carried out closely with the National Water Commission.
Solar water heating program

- Implement a program for the adoption of solar water heating technologies in the residential and agriculture sectors
- Facilitate the access to financing of residential users of solar water heating technologies
Conclusions
Energy efficiency and energy access play a key role of current and future energy policies in Mexico

- Is a cross-cutting issue which involves the implementation of a number of sector policies

- Energy efficiency must be a pre-condition to the access to renewable-energy sources in marginal communities

- The involvement of local authorities is key to implement energy-efficiency and energy access policies

- Energy access and energy efficiency must consider equity and cultural circumstances, particularly in indigenous communities