

# The Role of Energy Efficiency in Promoting Energy Access

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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%



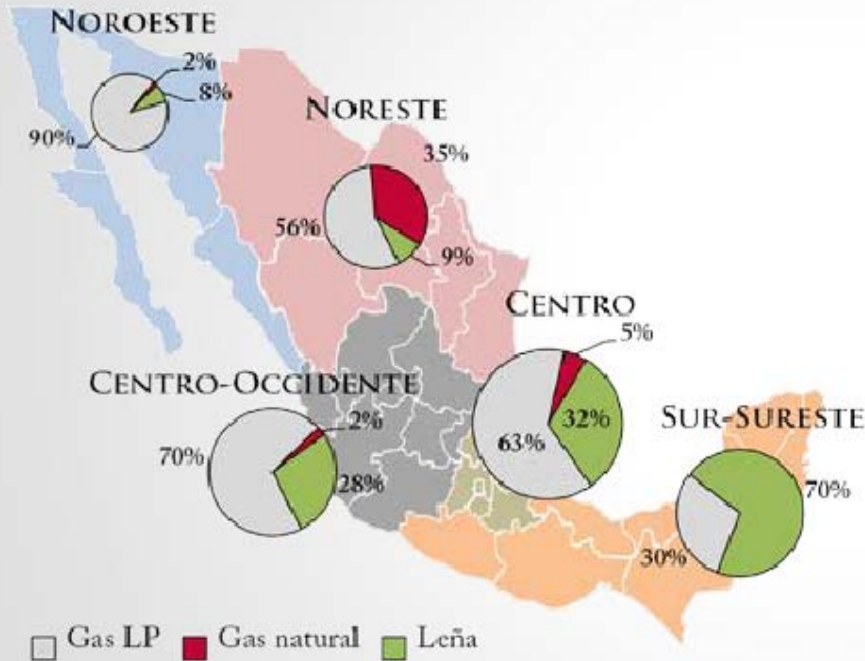
- ➔ 45,000 isolated communities without access to electricity
  - High cost of grid expansion
  - Population dispersion and geographical situation
  - Mostly indigenous communities

- ➔ 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**)

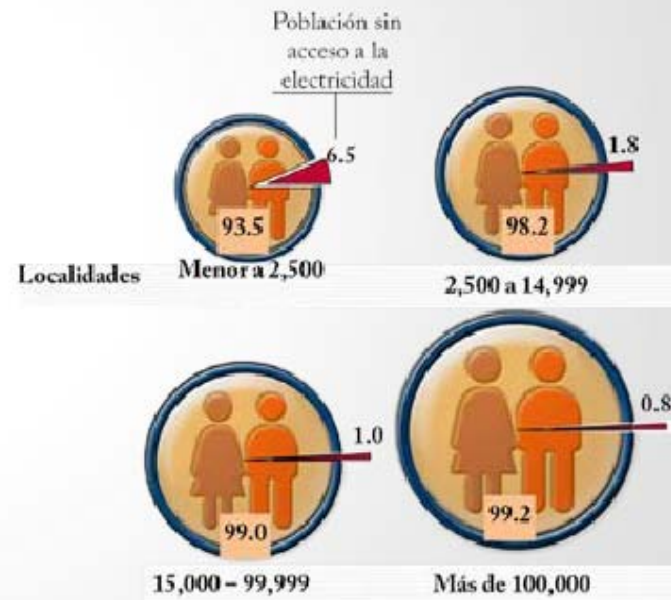
Fuel consumption in the residential sector



Fuente: Prospectiva de Gas L.P.

RECUADRO 9

Access to electricity from the grid



Fuente: INEGI

# **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**

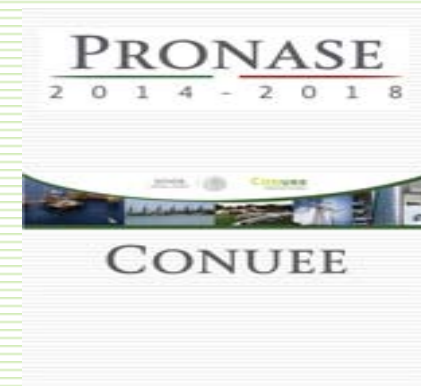
- ➡ Foster sustainable housing development
- ➡ Provide with quality services for the most vulnerable rural and urban communities, including energy
- ➡ Access to energy is an indispensable means to improve the quality of life of the population and to provide the necessary conditions to improve wellbeing
- ➡ 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

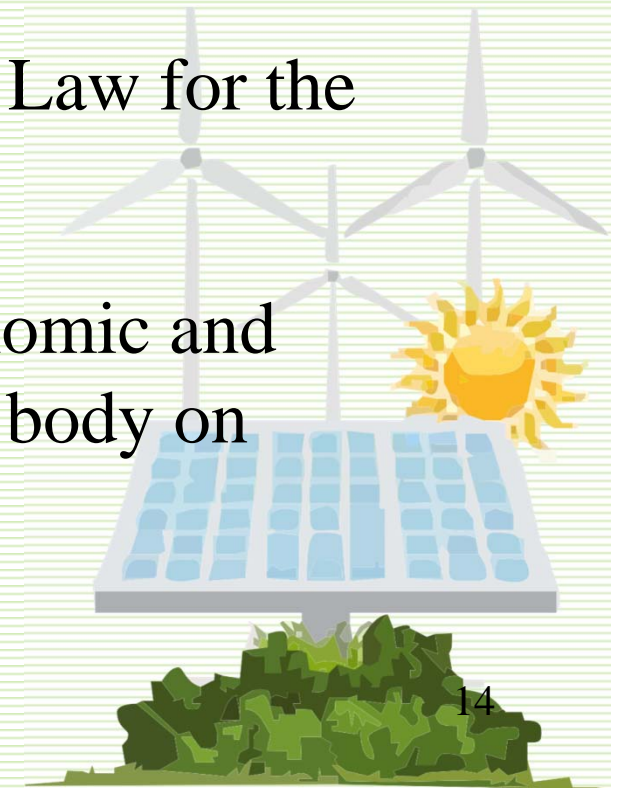


<b>Direct effect</b>	<b>Indirect effect</b>	<b>Co-benefits</b>
Water infrastructure	Water pumping, drainage and treatment	<ul style="list-style-type: none"> <li>• Water supply</li> <li>• Improved productivity in the agricultural sector</li> </ul>
Efficient lighting	Residential and street lighting	<ul style="list-style-type: none"> <li>• Improved security</li> <li>• Number of hours devoted to other social and economic activities in the community</li> </ul>
Biomass substitution	Efficient cooking and water heating	<ul style="list-style-type: none"> <li>• Reduced local pollution</li> <li>• Reduced risk of respiratory diseases</li> </ul>
Refrigeration	Food and vaccines conservation	<ul style="list-style-type: none"> <li>• Health risk prevention</li> <li>• Improved medical services</li> </ul>
Information and telecommunication technologies	Digital information access	<ul style="list-style-type: none"> <li>• Long-distance educational models</li> <li>• Integration of isolated communities</li> </ul>

# Ongoing activities related to energy efficiency and energy access

## National Commission for Energy Efficiency (CONUEE)

- ➔ 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.



Alumbrado público

**Street lighting**



Bombeo de agua

**Water pumping systems**



Calentamiento solar de agua

**Solar water heating**

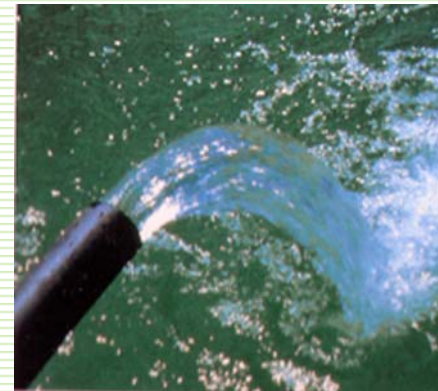
## National project on energy efficiency for street lighting systems

- ➔ 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





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