

# MEXICO

## 1. GOALS ON EFFICIENCY IMPROVEMENT

### 1.1. Overall energy efficiency improvement goals

Although there is no specific goal related to energy efficiency in Mexico, the National Program on Sustainable Energy Use (PRONASE) 2013-2018 aims at reducing overall energy intensity in order to protect the environment and achieve a low-carbon economy. These benefits are set in the Energy Sector Program 2013-2018 (PROSENER).

In addition, the objective of the PRONASE align with the goals set by the Climate Change Law, which aims at reducing greenhouse gas emissions in Mexico by conducting a set of mitigation actions that are defined (in the case of the public sector) in the Special Program on Climate Change (PECC).

The overall goals of the PRONASE and energy efficiency actions include the following:

- a) Achieve Mexico's energy security.
- b) The preservation and rational use of fossil non-renewable energy resources.
- c) Increase the productivity of the public and private sectors.
- d) Reduce the impact of climate change on the environment.
- e) Improve the living conditions of the Mexican population.

### 1.2. Sectoral energy efficiency improvement goals

#### a) Sector

The PRONASE is a program devoted to promoting and monitoring public policies, programs, projects, and actions that are conducted during its six-year period by different entities of Mexico's Government in order to achieve (directly or indirectly) optimal use of energy in the production sectors of the Mexican economy.

#### b) Goals

The PRONASE establishes six objectives, which address a number of strategies on energy efficiency in different sectors (see Table 1).

**Table 1.** The objectives and sectoral strategies of PRONASE

Objectives	Strategies
<p><b>Objective 1. Design and develop programs and activities that promote the optimal use of energy in processes and activities of the energy chain.</b></p>	<p>1.1. Implement energy efficiency actions in the processes of energy exploitation, processing, and distribution of state-owned energy companies.</p> <p>1.2. Increase energy efficiency in the residential, commercial, and services sectors as well as in agriculture and industrial processes by replacing technologies.</p> <p>1.3. Increase efficiency in energy consumption of the transport sector.</p> <p>1.4. Promote energy efficiency programs within the agencies and entities of the federal government's public administration.</p> <p>1.5. Continue and strengthen energy efficiency actions in the services provided by the states and municipalities.</p>
<p><b>Objective 2. Strengthen energy efficiency regulations for appliances and consumer energy systems manufactured and/or marketed in Mexico.</b></p>	<p>2.1. Support the activities toward the implementation of energy efficiency standards.</p> <p>2.2. Support and strengthen the system of conformity assessment for energy efficiency mandatory standards.</p>
<p><b>Objective 3. Strengthening governance systems and instances of energy efficiency at the federal, state, and municipal levels by integrating public, private, academic, and social institutions.</b></p>	<p>3.1. Promote and support the establishment of institutional arrangements for the design and execution of policies, programmes, and energy efficiency projects in the states and municipalities.</p> <p>3.2. Promote institutional arrangements for the implementation of programs and energy efficiency projects for large energy users.</p> <p>3.3. Promote the development of frameworks for financing energy efficiency projects and programs.</p> <p>3.4. Develop mechanisms for government coordination regarding the formulation and implementation of policies and programs to improve energy efficiency.</p>

Objectives	Strategies
<b>Objective 4. Foster the development of technical and technological capacities related to the sustainable use of energy.</b>	<p>4.1. Expand and improve the training of personnel dedicated to the design, implementation, and operation of energy efficiency projects and programs.</p> <p>4.2. Strengthen and expand the range of consulting firms and development projects.</p> <p>4.3 Disseminate information to support professionals and companies engaged in energy efficiency.</p>
<b>Objective 5. Contribute to the formation and dissemination of an energy-saving culture among the population.</b>	<p>5.1. Identify and assess the positive impacts of sustainable energy use in the context of households and businesses.</p> <p>5.2. Disseminate information on sustainable energy use.</p>
<b>Objective 6. Promote energy efficiency research and development.</b>	<p>6.1. Strengthen domestic capacities of research related to energy efficiency.</p> <p>6.2. Promote research that generates knowledge for the development of energy efficiency actions.</p>

Source: PRONASE 2013/2018, Ministry of Energy, Mexico, 2013.

### 1.3. Action plans for promoting energy efficiency

#### a) Name

CONUEE's Annual Work Plan (PAT)

#### b) Objectives

The Law on Sustainable Energy Use (LASE) provides The National Commission for the Efficient Use of Energy (*Comisión Nacional para el Uso Eficiente de la Energía*) (CONUEE) with the mandate to elaborate annual work plans that serve to establish the programs and actions for achieving sustainable energy use in Mexico. This annual work plan (PAT) is approved by the Minister of Energy and the Advisory Council on Sustainable Energy Use, which is mandated by the LASE and integrated by a selected group of experts from Mexican academic institutions.

The programs in the PAT focusing on energy efficiency standards, the federal government's public administration, and states and municipalities, also contribute to the mitigation of greenhouse gas emissions as set in the Special Program on Climate Change.

The PAT is based on the following principles:

- a) Working with all stakeholders to develop energy efficiency actions.

- b) Serve as a support platform and point of reference for energy efficiency activities to provide direction, incorporate stakeholders, and be an access window to information on energy efficiency.
- c) Facilitate third-party initiatives on energy efficiency.
- d) To provide more comprehensive and structured support to states and municipalities on capacity building.

The structure of the PAT follows a set of guidelines, which refer to the PRONASE's objectives:

- a) Strengthen the application of energy efficiency standards.
- b) Propose, articulate, and where appropriate, operate modifications to regulations or policies.
- c) Linking energy users with consultants, financial institutions, manufacturers, and other institutions.
- d) Support the integration of energy management systems for large energy users.
- e) Support state and municipal authorities.
- f) Integrate information on the sustainable use of energy.
- g) Cooperate with universities and research institutions.
- h) Strengthen Mexico's participation in the international context.
- i) Promotion of an energy-saving culture among end-users.

**c) Applicable sectors**

Programs and actions of the PAT are directed to end-users and state-owned productive enterprises.

The plan's activities have been organized to assist sectors in particular (sectoral programs), conduct actions that cross sectors (cross-cutting programs) and support the activities of CONUEE (support programs and actions).

**Figure 1. Structure of CONUEE's action plan**

#### d) Outline

The objectives and guidelines of CONUEE's main programs are as follows:

#### Federal Government

**Objective:** Promote the efficient use of energy in buildings, industrial facilities, and the vehicle fleets of the agencies and entities of the federal public administration through the implementation of best practices and technological innovation as well as the use of tools for operating, controlling, and monitoring energy efficiency actions.

CONUEE attends 251 energy efficiency committees as participants in the program. These committees include 2,300 officials.

In addition, CONUEE established a monitoring program for 2,430 buildings, 11 industrial facilities, and 1,026 fleet vehicles, among the 268 units and entities of Mexico's Federal Government.

#### **Guidelines:**

- a) Promote the implementation of institutional programs of energy efficiency as well as energy management systems within the agencies and entities.
- b) Improve the centralized control and monitoring system for specific actions, thus ensuring compliance with established goals.

- c) Facilitate the participation of the private sector in conducting actions of energy efficiency in the program through performance contracts or other mechanisms according to existing applicable regulations.
- d) Permanently train officials and operators of buildings and energy-consuming systems.
- e) Provide technical assistance, binding opinions, and/or recommendations for buildings and vehicle fleets of Mexico's Federal Government.
- f) Encourage agencies and entities of Mexico's Federal Government to pursue energy efficiency through the implementation of best practices and innovative technology.
- g) Incorporate energy efficiency criteria in government procurement, related equipment, and consumers' energy systems.

### States and municipalities

**Objective:** Promote the efficient use of energy by supporting the development of projects and the institutional capacities of states and municipalities for the identification, quantification, and implementation of programs and actions in the field of sustainable energy use.

CONUEE provides technical advisories, binding opinions and/or recommendations to the 32 states and 2,456 municipalities in Mexico.

#### Guidelines:

- a) Operate the economy-wide project of energy efficiency in municipal street lighting.
- b) Implement energy efficiency in state and municipal water-pumping systems.
- c) Promote and support the efforts to obtain and apply funds from public or private sources for the implementation of energy efficiency actions in the states and municipalities.
- d) Identify, document, and disseminate information, electronic tools, and methodologies through a web-based platform that will facilitate the implementation of programs and actions.
- e) Promote the development of technical and technological capacities linked to the sustainable use of energy in the state and municipal context.
- f) Strengthen the implementation and dissemination of mandatory and voluntary minimum energy performance standards (MEPS) among state and municipal authorities.
- g) Facilitate cooperation with domestic and international institutions that contribute to the sustainable use of energy in the context of states and municipalities.
- h) Assist the implementation of a economy-wide program for energy management systems.

### State-owned energy companies

**Objective:** Promote the improvement of energy efficiency in the facilities and processes of energy companies by implementing programs and measures that increase their competitiveness

and production efficiency in the exploitation, processing, transport, and marketing of their products and services.

The program covers more than 600 installations in state productive enterprises (PEMEX and the Federal Electricity Commission (CFE)), thus giving timely follow-up to 380 facilities.

**Guidelines:**

- a) Promote and support the implementation of integrated energy management systems in state productive enterprises.
- b) To promote the incorporation of energy efficiency criteria in purchases of systems, transformers, and other equipment.
- c) Facilitate the participation of the private sector in conducting energy efficiency actions, through performance contracts or other financial mechanisms.
- d) Provide technical advice, binding opinions, and/or recommendations for facilities of state productive enterprises.
- e) Facilitate access to tools and information in order to identify and evaluate energy-saving potential.

### Large energy users

**Objective:** Support large energy users in timely and correct delivery of energy information and the development of their capabilities by providing energy management systems that allow them to increase their competitiveness through the sustainable use of energy.

The program covers 3,500 large energy users.

**Guidelines:**

- a) Promote the implementation of energy management systems.
- b) Support users of high consumption of energy (UPAC) with timely and correct delivery of information related to energy consumption and energy efficiency measures.
- c) Promote courses and materials to train specialized staff who design and operate programs and energy efficiency systems.
- d) Link to large corporate companies with energy service companies.
- e) Promote the use of clean energy and cutting-edge technologies.
- f) Promote the incorporation and operation of efficient co-generation.
- g) Facilitate access to tools and information in order to identify and evaluate energy savings.

### Energy management systems

**Objective:** To provide advice and tools that strengthen the implementation of energy management systems, increase competitiveness, and continuously improve the energy performance of end-users in their facilities.

**Guidelines:**

- a) Promote capacity-building courses on the design and implementation of energy management systems.
- b) Facilitate partnerships between large energy users and energy research and management institutions (universities, research centers, certification organizations) to develop energy management systems.
- c) Support the development of human capital in energy management.
- d) Facilitate access to tools and information to support the design of energy management systems.
- e) Facilitate access to international mechanisms that support energy management actions.

## Transport

**Objective:** Promote the efficient use of energy in the transport sector, the development of the best practices and the promotion of new technologies for motor vehicles, and the use of alternative fuels. In addition, promote the incorporation of modern public transport systems in cities to reverse the long-term trend of individual transport.

**Guidelines:**

- a) Assess and propose the implementation of administrative provisions and regulations related to energy efficiency for motor vehicles.
- b) Encourage the use of efficient vehicles and alternative fuels and, in general, the implementation of technologies that improve energy efficiency in transport.
- c) Provide technical assistance to managers of vehicle fleets (both public and private) as well as to chambers, associations, and trucking companies.
- d) Promote links between users and stakeholders of transport with different public and private institutions (domestic and international), and foster the development of energy-saving measures in this sector.
- e) Design and propose strategies to improve the energy efficiency of transport systems that contribute to urban mobility.
- f) Establish, in conjunction with other units, a program of support to improve energy efficiency in small businesses (e.g., the *oHombre-Camion* initiative).
- g) Continue with the development, integration, and dissemination of information gathered in guides, manuals or technical specifications as well as the development of tools that support methodologies aimed at the efficient use of energy in transport.

## Buildings

**Objective:** Promote the efficient use of energy in commercial buildings and services by implementing good practices, incorporating practices of design, applying appropriate materials and efficient technologies as well as using tools to operate, control, and monitor energy efficiency actions.

The program covers office and commercial private buildings (in construction and in operation).

**Guidelines:**

- a) Support in full compliance of the energy efficiency standards that apply to residential and commercial buildings.
- b) Support the integration and dissemination of information and tools that promote the efficient use of energy and the use of renewable energy in buildings.
- c) Promote and support the development of codes in buildings to promote the quality and energy efficiency in their construction and operation.
- d) Promote and support the development of courses and degree programs to promote the training of human resources in this area and in related specialties.
- e) Strengthen the information systems and energy indices related to commercial buildings.
- f) Strengthen actions that promote the use of efficient equipment and materials as well as the bioclimatic architecture, construction, and/or renovation of buildings.
- g) Encourage the linking of building owners with consultants, suppliers of products and services, and other actors related to the efficient use of energy in buildings.

**e) Financial resources and budget allocation**

CONUEE's budget is allocated by the Ministry of the Treasury (SHCP).

**f) Method for monitoring and measuring the effects of action plans**

Monitoring is carried out every six months (or annually) and the results are reported in the following documents: Activities Report of the Ministry of Energy; Government Report; Sector Outlook; and National Energy Balance. In addition, CONUEE provides a detailed report to the Ministry of Energy and the Ministry of Finance on the accomplishment of its objectives, strategies, action lines, goals, and indicators for each fiscal year.

## 1.4. Institutional structure

### 1.4.1 Central Institutional Structure

**a) Name of organization**

CONUEE (formerly known as National Commission for Energy Saving (CONAE)) is Mexico's public organization in charge of gathering and implementing the efforts from the federal government on energy efficiency. It aims to promote energy efficiency and establish itself as a technical body, especially in terms of the sustainable use of energy. CONUEE is an agency within the Secretariat of Energy (SENER), with technical and operative autonomy.

The main attributions of CONUEE include the following:

1. Implement a economy-wide registry of end-users certified as energy responsible.
2. Issue mandatory opinions to public agencies and federal government bodies on the best practices for sustainable energy use.
3. Issue recommendations on the best practices for sustainable energy use for state and municipal authorities as well as the private sector.
4. Develop a program directed toward private sector end-users in order to support and provide follow-ups on the implementation of energy efficiency improvements.
5. Conduct and order visits to those end-users who carry out sustainable energy-use measures in order to verify compliance of existing laws and regulations.
6. Elaborate and issue greenhouse gas emissions quantifying methodologies in energy production, transformation, distribution, and end-use as well as those to quantify the implementation of sustainable energy-use measures.
7. Elaborate and issue methodologies and procedures to quantify energy use, and determine the economic value of end-use and the avoided processes resulting from sustainable energy use.
8. Provide technical assistance on sustainable energy use to the entities and agencies of the federal government as well as state and municipal authorities.
9. Implement an economy-wide information system of sustainable energy use.
10. Implement and update information on resources and trust funds directed toward financing sustainable energy use, either partially or completely by the federal government.

**b) Status of organization**

The technical branch of the Ministry of Energy, with technical and operative autonomy. The body in charge of articulating policies and programs regarding the sustainable use of energy in the economy.

**c) Roles and responsibilities**

- Promote the sustainable use of energy through the adoption of measures and the best practices regarding the efficient use of energy in the different sectors of the economy and the population.
- Position itself as the representative technical body of public policies on sustainable use of energy in order to achieve technological and behavioral changes of energy end-users, with the participation of public, social, and private sectors.

**d) Covered sectors**

In order to achieve broader participation from different sectors as well as to make efficient use of available resources. This Work Program has organized its activities according to the sectors to which they are directed:

Programs by Sector

- Federal government.
- Local governments.
- Government corporations.
- Large corporations.

- Small- and medium-sized enterprises (SMEs).
- Residential sector.

#### Cross-cutting Programs

- Standardization.
- Capacity building.
- Transport.
- Buildings.
- Distributed generation.
- Energy management systems.

#### Support Programs

- National Sustainable Energy Use Program (PRONASE).
- Information from the energy sector.
- International cooperation.
- Promotion and dissemination.

#### **e) Established date**

CONUEE arises from the institutional structure of the National Commission for Energy Saving (CONAE), which was created on September 28, 1989, as a consultative technical body of the departments and agencies of Mexico's Federal Government, the governments of the states and municipalities as well as the private sector.

On September 20, 2009, a decree was published in the Official Gazette, thus establishing the CONUEE as an administrative body within the Secretariat of Energy, and replacing CONAE.

#### **f) Number of staff**

130 employees.

#### **1.4.2 Activities on energy efficiency improvement.**

Detailed activities on this subject are described in the outline of CONUEE's work plan.

#### **1.5. Research and development in energy efficiency and conservation**

PRONASE, in order to identify the potential of the sustainable use of energy, requires collaborative actions between multiple organizations. These actions must be translated into public policy, enforceable in the short and medium term.

The group of actions to be undertaken include the following:

1. Institutional strengthening.
2. Inter-agency coordination.
3. Education, training, information, and communication.
4. Linking with outside sources.

These groups focus on research and development in energy efficiency through actions such as the following:

1. Establishing formal education and researcher's development program.
2. Creating new institutional programs for all education levels.
3. Creating a standardization program for energy efficiency.
4. Obtaining accurate information regarding the public's energy consumption.
5. Preparing and publishing books, catalogs, manuals, articles, and technical manuals about energy efficiency works.
6. Promote technology application and the use of energy-efficient equipment, appliances, and vehicles.

## 2. MEASURES FOR ENERGY EFFICIENCY IMPROVEMENTS

### 2.1. Government Laws, Decrees, and Acts

#### a) Name

LASE - Law on Sustainable Use of Energy.

LFMN ó Federal Law on Metrology and Standardization.

LGCC ó General Law on Climate Change.

RLASE ó Regulatory Framework of the Law on Sustainable Use of Energy.

#### b) Purpose

These legal and regulatory instances provide the general framework that set the overall energy efficiency objectives that must be reached as well as the technical means to achieve them.

#### c) Applicable sectors

Regarding energy efficiency, they apply to federal and local governments, government corporations, large corporations, SMEs, the residential sector, transport, buildings, standardization, and capacity-building-related activities as well as other sectors that CONUEE may identify as priority sectors.

#### d) Outline

Published on July 1, 1992 (LFMN).

Published on November 28, 2008 (LASE).

Published on September 11, 2009 (RLASE).

Published on June 6, 2012 (LGCC).

#### e) Financial resources and budget allocation

These legal and regulatory frameworks do not have specific financial resources or allocated budgets. They depend on the availability of resources in each fiscal year.

#### f) Expected results

The Mexican Government expects the fulfillment of the energy efficiency legal and regulatory framework through compliance with the PRONASE.

## 2.2. Regulatory measures

### 2.2.1. Minimum Energy Performance Standards (MEPS) and Labeling

#### a) Name

Energy Efficiency Standards

#### b) Purpose

Promote the efficient use of energy through the energy efficiency standards of products and systems manufactured and marketed in Mexico. Ensure compliance with official Mexican energy efficiency standards, and maintain and strengthen the infrastructure for conformity assessment.

#### c) Applicable sectors

Industrial, residential, commercial and services, and government.

#### d) Outline

Mexico's mandate for Energy Efficiency Standards comes from a generic law, the Federal Metric and Standardization Law (*Ley Federal sobre Metrología y Normalización*) of July 16, 1992, which defines the Official Mexican Standards (NOMs) (*Normas Oficiales Mexicanas*). The NOMs are enacted by the Federal Secretariats, according to their areas of expertise. In the case of energy efficiency, it is the Ministry of Energy, through CONUEE, which enacts the mandatory standards.

**Figure 3.** Official Mexican Standards (NOMs) logo



Mexico adopted energy standards in 1995, and since then, it has established standards for 25 products or systems. Many of their standards are modeled on those of the United States, but they have been adapted to local situations and experiences from their own programs.

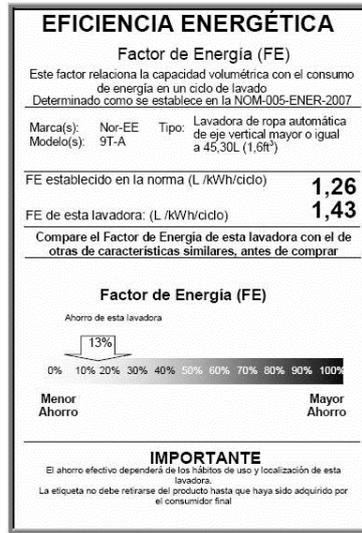
The following table presents the NOMs on energy efficiency in force for 2012:

**Table 2. Mandatory energy efficiency standards in Mexico**

<b>Standard Code</b>	<b>Product</b>
<b>NOM-001-ENER-2000</b>	Pumps (vertical)
<b>NOM-002-SEDE/ENER 2014</b>	Security and energy efficiency for distribution transformers
<b>NOM-003-ENER-2011</b>	Water Heaters (gas)
<b>NOM-004-ENER-2014</b>	Pumps (centrifugal)
<b>NOM-005-ENER-2012</b>	Clothes Washers
<b>NOM-006-ENER-1995</b>	Pumps (deep well)
<b>NOM-006-ENER-2015</b>	Existing Pumps (deep well)
<b>NOM-007-ENER-2014</b>	Non residential Lighting System (indoor)
<b>NOM-008-ENER-2001</b>	Envelope (commercial buildings)
<b>NOM-009-ENER-2014</b>	Thermal Insulation (industrial)
<b>NOM-010-ENER-2004</b>	Pumps (submersible)
<b>NOM-011-ENER-2006</b>	Central Air Conditioner (packaged terminal, split-type)
<b>NOM-013-ENER-2013</b>	Lighting System (outdoor)
<b>NOM-014-ENER-2004</b>	Motors (1-phase induction)
<b>NOM-015-ENER-2012</b>	Domestic Refrigeration
<b>NOM-016-ENER-2010</b>	Motors (3-phase induction)
<b>NOM-017-ENER/SCFI-2012</b>	CFLs
<b>NOM-018-ENER-2011</b>	Thermal insulation materials for buildings
<b>NOM-019-ENER-2009</b>	Tortilla mechanical machines
<b>NOM-020-ENER-2011</b>	Envelope (domestic buildings)
<b>NOM-021-ENER/SCFI-2008</b>	Room Air Conditioners (packaged terminal, window-type)
<b>NOM-022-ENER/SCFI 2014</b>	Commercial Refrigeration
<b>NOM-023-ENER-2010</b>	Air Conditioners (ductless)
<b>NOM-024-ENER-2012</b>	Glazing systems (buildings)
<b>NOM-025-ENER-2013</b>	Stoves (gas)
<b>NOM-028-ENER-2010</b>	Lamps
<b>NOM-030-ENER-2012</b>	LEDs (indoor)
<b>NOM-031-ENER-2012</b>	LEDs (outdoor)
<b>NOM-032-ENER-2014</b>	Standby devices
<b>NOM-163-SEMARNAT/ENER/SCFI 2013</b>	CO <sub>2</sub> emissions and energy performance for vehicles

Sources: CONUEE, 2015, [http://www.conuee.gob.mx/wb/Conuee/normas\\_de\\_eficiencia\\_energetica\\_vigentes](http://www.conuee.gob.mx/wb/Conuee/normas_de_eficiencia_energetica_vigentes).

Under Mexican law, and as an element of the standards, CONUEE also implements a mandatory (as shown in Figure 3) comparative labeling program for room and central air conditioners, refrigerators and/or refrigerator-freezers, clothes washers, centrifugal residential pumps, gas water heaters, commercial refrigeration, and non-residential building envelopes.

**Figure 3. Example of an energy efficiency label for a washing machine**

Labeling is mandatory for the following electrical products offered for sale in Mexico:

- Central air conditioners (packaged terminal)
- Central air conditioners (split type)
- Clothes washers
- Freezers
- Pumps (centrifugal)
- Room air conditioners (packaged terminal)
- Room air conditioners (window)
- Refrigerators
- Refrigerator-freezers
- Refrigerators (commercial)
- Water heaters (gas)
- Glazing systems

#### e) Financial resources and budget allocation

For 2012, the budget considered for the National Commission for the Efficient Use of Energy was MXN 92.08 million (equivalent to USD 7.08 million USD).<sup>1</sup>

### 2.3. Voluntary measures

#### 2.3.1 Voluntary Certification Program for Products, Processes, and Services

<sup>1</sup> At an average currency rate of 13 MXN per 1 USD (as of 2012).

LASE establishes that CONUEE will develop a program to promote the voluntary certification of processes, products, and services. Therefore, CONUEE will perform the following:

- Develop a methodology for the certification of processes, products, and services.
- Establish an accreditation system of auditors, and determine the procedures and requirements that will have to be met by those interested in being part of the process.
- Develop training programs in audits and other areas of the energy sector.
- Create a system that identifies the enterprises that have certified their processes, products, and services.
- Promote the creation of regional centers that provide support to SMEs, with the purpose of facilitating the certification of processes, products, and services.

### 2.3.2 Mexican Standards (NMX)

The Federal Law on Metrology and Standardization (LFMN) defines the framework of the voluntary standards or Mexican Standards (NMX) (*Normas Mexicanas*). In Mexico, the Standardization and Certification Association (ANCE) (*Asociación de Normalización y Certificación*) is in charge of developing the NMX related to the electrical industry. It can also certify other sectors, while it has its own laboratory for conducting various standardized tests.

Although the NMX are voluntary, if the NOM makes reference to one NMX, then it becomes mandatory to comply with the standard.

### 2.3.3 Sello FIDE (FIDE Stamp/seal)

Sello FIDE or FIDE Stamp/seal is a voluntary energy efficiency endorsement that has been granted by the Trust Fund for Energy Saving (FIDE) since 1995. Manufacturers have to submit certified test results on their products in order to confirm that these comply with Sello FIDE's requirements. If so, then manufacturers sign an agreement with FIDE stipulating the time frame of the Sello FIDE endorsement, how it can be displayed, renovated, and/or cancelled. Manufacturers can then display the Sello FIDE (as shown in Figure 4) on their products. FIDE advertises the Sello FIDE in order for consumers to see them when purchasing electrical equipment.

**Figure 3.** FIDE's brand logo



## 2.4. Financial measures taken by the government

### 2.4.1. Tax scheme

There is tax scheme related to energy efficiency in Mexico.

### 2.4.2. Low-interest loans

The Eco-credit Business Program (PAEEEM) is designed to support the business sector by providing low-interest loans for the replacement of obsolete equipment for high-efficiency technologies approved by FIDE. This program targets all economic sectors.

### 2.4.3. Trusts and Funds

#### a) Level of Government (central/regional):

Central.

#### b) Name of Policy:

The following are the most representative trusts and funds targeting the promotion of energy efficiency in Mexico:

- Energy Sustainability Sectorial Fund (FSE): It allocates resources to finance projects of which their main objectives include scientific research and development of applied technology on renewable energy sources; energy efficiency; use of clean technologies; diversification of primary sources of energy; and the adoption, innovation, assimilation, and technological development in the these areas. This fund receives financial resources from the annual payment made by PEMEX (the government owned oil company), which is equivalent to a percentage of the annual crude oil and natural gas sales.
- Fund for Energy Transition and Sustainable Use of Energy (FOTEASE): It aims to promote the use, development, and investment in renewable energies and energy efficiency by allocating resources for projects and programs in these areas.
- Trust Fund for Energy Saving (FIDE): It is a public-private body created to finance projects and programs in the field of energy efficiency, certify efficient products, provide technical assistance, and disseminate the culture of energy saving.
- Trust Funds for Rural Development (FIRA): They support access to credit for projects related to agriculture, livestock, poultry farming, agribusiness, fishing, and other similar activities carried out in rural areas.

#### c) Responsible Department/Agency:

FSE - Ministry of Energy (SENER), National Council on Science and Technology (CONACYT).

FOTEASE - Ministry of Energy (SENER).

FIDE - Federal Energy Utility (CFE).

FIRA - Ministry of Finance (SHCP) and the Central Bank (BANXICO).

#### d) Applicable Sectors:

FSE - Research and higher education institutions engaged in scientific research and applied technology in clean energy.

FOTEASE - Public and private sectors as well as households have been supported thus far.

FIDE - Households, industrial, commercial, and agricultural sectors as well as services, local governments, and SMEs.

FIRA - Agriculture, livestock, poultry farming, agribusiness, fishing, and other similar activities carried out in rural areas.

## **1.2. Energy pricing**

Prices and tariffs of electricity, natural gas, and liquefied natural gas are regulated by the Ministry of Finance (SHCP) and the Energy Regulatory Commission (CRE).

## **1.3. Other efforts for energy efficiency improvements**

### **a) Cooperation with non-government organizations**

The Mexican Government cooperates with non-government organizations (NGOs) to stimulate energy efficiency. Some of these organizations are listed below:

- Asociación de Empresas para el Ahorro de Energía en la Edificación
- Asociación de Técnicos y Profesionistas en Aplicación Energética, A.C.
- Asociación Nacional de Energía Solar
- Centro Mexicano de Derecho Ambiental
- Centro Mexicano para la Producción más Limpia
- Foro para el Desarrollo Sustentable, A.C.
- Mexico ó United States Foundation for Science (FUMEC)
- Fundación para el Desarrollo Sustentable, A.C.
- Greenpeace ó Mexico
- Grupo de Estudios Ambientales
- Centro Mario Molina
- International Center on Clean Transport, among others.

### **b) Cooperation through bilateral, regional, and multi-lateral schemes**

Throughout the more than 25-year history in energy efficiency, Mexico has participated in all major international forums on this subject.

The development of policies aimed at the public sector, energy efficiency standards, and other activities that cater to the productive sectors have allowed Mexico to position itself as a point of reference in the field of energy efficiency, especially in Latin America and the Caribbean.

In addition, international cooperation has supported the consolidation of partnerships with domestic and international bodies:

- a) It supports the activities set in the Annual Work Plan.
- b) It contributes to the achievement of the energy efficiency priorities of Mexico:
  - a. Technical certainty
  - b. Capacity building

## c. Decision-making information on energy efficiency

- c) It facilitates the access to financial resources and technical exchanges with the more developed countries.

The following table summarizes the different international cooperation actions of Mexico on energy efficiency issues, with the international agencies involved and the specific projects:

**Table 3. Mexico's international collaboration activities on energy efficiency**

Collaboration area	Agency/Body
States and municipalities: <ul style="list-style-type: none"> <li>✓ Street lighting</li> <li>✓ Water pumping</li> <li>✓ Capacity building</li> </ul>	Super Efficient Appliance Deployment Initiative (SEAD), Clean Energy Ministerial (CEM), Carbon Trust, GIZ, ICLEI, U.S. Agency for International Development (USAID)
Standardization: <ul style="list-style-type: none"> <li>✓ Technical support in the development of standards</li> <li>✓ Impact analysis of mandatory standards (NOMs)</li> </ul>	SEAD (IPEEC), CEM, Collaborative Labeling and Appliance Standards Program (CLASP), Lawrence Berkeley National Laboratory (LBNL), USAID
Industry: <ul style="list-style-type: none"> <li>✓ EnMS (guidelines, capacity building, and pilot projects)</li> <li>✓ Cool roofs</li> </ul>	Global Superior Energy Performance Initiative (GSEP), CEM, Denmark, GIZ, USAID
Buildings: <ul style="list-style-type: none"> <li>✓ EnMS (guidelines, capacity building and pilot projects)</li> <li>✓ Benchmarking</li> <li>✓ Cool roofs</li> <li>✓ Standards for buildings</li> <li>✓ Building codes strengthening</li> <li>✓ Measurement systems strengthening</li> <li>✓ Implementation guideline for NOM-020-ENER-2011</li> </ul>	IPEEC (GSEP and Building Energy Efficiency Task Group - BEET), CEM, United Nations Development Program (UNDP), GIZ, Denmark
Solar water heating: <ul style="list-style-type: none"> <li>✓ Legal framework and financial schemes</li> <li>✓ Capacity building</li> <li>✓ Promotion</li> <li>✓ Development of tools</li> </ul>	UNDP, GIZ
Cogeneration: <ul style="list-style-type: none"> <li>✓ Development of a NAMA</li> <li>✓ Promotion</li> </ul>	UNDP, GIZ
ESCO scheme and Energy Performance Contracting (EPC): <ul style="list-style-type: none"> <li>✓ Development of the general contract</li> <li>✓ Pilot projects</li> </ul>	GIZ

<p>SMEs:</p> <ul style="list-style-type: none"> <li>✓ Development of financial scheme</li> <li>✓ Handbook of energy efficiency technologies</li> </ul>	Carbon Trust
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Collaboration area	Agency/Body
<p>Energy information and indicators:</p> <ul style="list-style-type: none"> <li>✓ Energy Efficiency Indicators Database (BIEE)</li> <li>✓ Energy statistics</li> </ul>	Economic Commission for Latin America and the Caribbean (ECLAC), GIZ, International Partnership for Energy Efficiency Cooperation (IPEEC)
<p>Capacity building and triangular cooperation:</p> <ul style="list-style-type: none"> <li>✓ Workshops, seminars and exchange missions in Latin America and the Caribbean</li> <li>✓ Training abroad</li> <li>✓ Capacity building through webinars</li> </ul>	Energy and Climate Partnership of the Americas (ECPA), Clean Energy Solutions Center, Japan (JICA), GIZ, Mexican International Cooperation Agency (AMEXCID)
<p>Digital communities of practice:</p> <ul style="list-style-type: none"> <li>✓ Development of platform</li> <li>✓ Knowledge management process</li> </ul>	GIZ, UNDP
<p>Television Digital Transition:</p> <ul style="list-style-type: none"> <li>✓ Technical specifications</li> </ul>	SEAD, CEM, LBNL

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