

# MEXICO

## ENERGY EFFICIENCY GOALS

### 1. GOVERNMENT POLICY ON ENERGY EFFICIENCY

The Mexican government stated that energy efficiency is a key component of the national energy policy. The government acknowledges its importance on the preservation and rational use of energetic resources, increase on global economic productivity, climate change mitigation, enhancing energy security and, ultimately, promoting sustainable development.

The overarching Energy Efficiency Law in Mexico is the Energy Transition Law (LTE, Ley de Transición Energética) which came to effect on December 2015. The LTE is part of the landmark Energy Reform approved in 2013. The Energy Reform brought major changes to most to oil and gas as well as the power industry, but it also strengthen the countries policy towards an increase on clean energy and demand side management.

The Ministry of Energy (SENER, Secretaría de Energía) published the Transition Strategy to promote the use of Cleaner Technologies and Fuels (Estrategia de transición para promover el uso de tecnologías y combustibles más limpios) (the Transition strategy forthwith) in which it defined the country's goals for clean power generation and energy efficiency. Mexico's clean power generation goals is 25% of total generation by 2018, 35% by 2024 and 50% by 2050. Likewise, the country's energy efficiency goal consists of an annual average reduction rate on end-use energy consumption of 1.9% between 2017 and 2030. Moreover, this reduction rate should be of at least 3.7% 2031 and 2050.

### 2. ENERGY EFFICIENCY STRATEGY

The Energy Transition Law (LTE) mandates the drafting of four main documents on energy policy. The first one is the Transition Strategy, which is the guiding instrument of national policy in the medium and long term in clean energy and energy efficiency.

The Transition Strategy was as basis for two special programmes with concrete actions and targets that became obligatory policies:

- The Special Programme for Energy Transition (PETE, Programa Especial de la Transición Energética).
- The National Programme for the Sustainable Use of Energy (PRONASE, Programa Nacional para el Aprovechamiento Sustentable de Energía).

Finally, the National Commission for the Efficient Use of Energy (Conuee, Comisión Nacional para el Uso Eficiente de la Energía) was mandated to draft the Energy Efficiency Roadmap (Hoja de Ruta en materia de Eficiencia Energética) which establishes the responsible actors, timeframes and resources to achieve its objectives.

As the guiding instrument of energy efficiency policy, the Transition Strategy has three main objectives:

- Establish energy efficiency roadmap for its implementation.

- Encourage the electricity industry's pollutant emissions reduction.
- To reduce fossil fuel dependency as the main source of energy.

The strategy has a 30-year long-term plan for the proposed scenarios to meet the clean energy and energy efficiency goals. This component contains a set of analysis and studies on technical, scientific, technological, economic, financial, fiscal, environmental and social impacts of the infrastructure for exploitation, production, transformation, transmission, distribution and end-use of energy.

The Transition Strategy also includes medium-term (15 year) targets including:

- Upgrading the electricity industry, in general, and electricity generation through clean energy in particular.
- The final energy consumption level.
- Obstacles to the development of clean energy.
- The environmental pollution caused by the electricity industry, according to the information provided by the Ministry of Environment and Natural Resources (SEMARNAT).
- Dependence on fossil energy sources for electricity generation and progress in energy efficiency.
- Technological evolution in electricity generation and cost reduction, as well as other technology elements that can add value to the National Electricity System.

## FUNDING

The Energy Transition Law (LTE) has a chapter on the financing on energy efficiency. In it, the public funding to reach the strategy goals will come primarily from the annual Federal Government Budget in two ways:

- The Energy Transition and Sustainable Use of Energy Fund (FOTEASE),
- The annual budget of the main energy efficiency actors, namely, CONUEE and SENER.

The LTE also addresses the responsibility of the government on promoting private investments and cooperation on the energy efficiency sector. Finally, the law also establishes a yearly assessment of the Strategy, the Energy Transition Special Programme (PETE) and the National Programme for the Sustainable Use of Energy (PRONASE); the results of these yearly assessments will have an impact on the following year's budget.

## LINKS

Transition Law: <http://www.diputados.gob.mx/LeyesBiblio/pdf/LTE.pdf>

PRONASE: [http://www.dof.gob.mx/nota\\_detalle.php?codigo=5469371&fecha=19/01/2017](http://www.dof.gob.mx/nota_detalle.php?codigo=5469371&fecha=19/01/2017)

PETE: <https://www.gob.mx/cms/uploads/attachment/file/213322/PETE.pdf>

Transition Strategy:

[https://www.gob.mx/cms/uploads/attachment/file/182202/20161110\\_1300h\\_Estrategia\\_CCTE-1.pdf](https://www.gob.mx/cms/uploads/attachment/file/182202/20161110_1300h_Estrategia_CCTE-1.pdf)

### 3. ENERGY EFFICIENCY ACTION PLAN

The PRONASE or National Programme for the Sustainable Use of Energy is the action plan for achieving the countries' objectives and targets for energy efficiency. SENER released the current version of PRONASE on January 2017. It establishes Mexico's six general objectives for energy efficiency, each one with concrete strategies for its achievement.

Moreover, CONUEE published Mexico's first Energy Efficiency Roadmap on March 2017. The relevance of the roadmap is that it drafts, on an unprecedented way in Mexico, a detailed plan for energy efficiency policies implementation including responsible actors, execution times and resources needed. As a result, Mexico has a current and relevant action plan and an Energy Efficiency Roadmap. The Energy Efficiency Roadmap identifies five areas of focus of action:

- Regulation and public policy.
- Institutions.
- Capabilities.
- Markets and Financing.
- Research, development and innovation.

These areas of focus are explored in four main sectors of energy efficiency: buildings, industry, transport and municipal services (city governments' services). The Energy Efficiency Roadmap establishes 66 concrete actions to achieve its objectives. CONUEE coordinates the implementation of 22 of these actions while State and local governments share an important bulk of responsibility in these policies implementation.

These sectorial actions include measures such as reinforcement on building codes, improvements on fuel quality, electric vehicle deployment, and enhance ESCO's deployment. For instance, the first (development of technical standards for EV infrastructure) has an achievement date of 2019, while the longest term one (enhancement of research, adoption and assimilation of technology in the industrial sector) is scheduled for 2050.

#### FUNDING

The Transition Strategy includes several funding mechanisms including research and development grants, preferential rates for investing on the productive sector, financing through development banks, and other financial institutions for infrastructure projects aimed at particular sectors. The main sources of funding for energy efficiency projects in Mexico:

- The Energy Transition and Sustainable Use of Energy Fund (FOTEASE), which provides credit guarantees and financial support for projects which meet the objectives of the Energy Transition Law. Resources managed by FOTEASE during 2015 were around 1 billion pesos.
- The Electric Energy Savings Trust Fund (FIDE), a private trust fund created by CFE that offers funding and technical assistance for energy efficiency projects.
- The Shared Risk Trust Fund (FIRCO), led by the Ministry of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA).

- The Trust Funds for Agriculture (FIRA), comprised by four public trust funds to facilitate access to credit to productive projects in rural areas.
- The National Infrastructure Fund (FONADIN), the Federal Government's fund for infrastructure development on energy, communications, transport, water, environment and tourism.
- The National Bank of Foreign Trade (BANCOMEXT).
- Nacional Financiera S.N.C. (NAFIN).
- The National Works and Public Services Bank (BANOBRAS).

## LINKS

Transition

Strategy:

[https://www.gob.mx/cms/uploads/attachment/file/182202/20161110\\_1300h\\_Estrategia\\_CCTE-1.pdf](https://www.gob.mx/cms/uploads/attachment/file/182202/20161110_1300h_Estrategia_CCTE-1.pdf)

FOTEASE: <http://www.gob.mx/sener/articulos/el-fondo-para-la-transicion-energetica-y-el-aprovechamiento-sustentable-de-la-energia-es-un-instrumento-de-politica-publica-de-la-secretaria>

FIDE: [http://www.fide.org.mx/index.php?option=com\\_content&view=article&id=109&Itemid=181](http://www.fide.org.mx/index.php?option=com_content&view=article&id=109&Itemid=181)

FIRCO: <http://www.firco.gob.mx/Paginas/About-Us.aspx>

FIRA: <https://www.fira.gob.mx/Nd/Eficiencia.jsp>

FONANDIN: <http://www.fonadin.gob.mx/>

BANCOMEXT: <http://www.bancomext.com/>

NAFIN: <http://www.nafin.com/portalf/content/home/home.html>

BANOBRAS: <https://www.gob.mx/banobras>

## 4. ENERGY EFFICIENCY, INTENSITY OR EMISSIONS REDUCTION TARGETS

The Transition Strategy establishes two main goals towards 2050, one for power generation coming from clean sources and the other for energy efficiency:

- The first goal mandates a 35% share of power generation coming from clean energies by 2024, 37.7% by 2030 and 50% by 2050. In 2015, the share was around 22%.
- The energy efficiency goal is to reduce energy consumption intensity by a 1.9% in annual average for the 2016 – 2030 period. This increases to a 3.7% annual intensity reduction for the 2031 – 2050 period.

## LINKS

Energy Efficiency Action plan: <http://www.gob.mx/conuee/acciones-y-programas/estrategia-de-transicion-para-promover-el-uso-de-tecnologias-y-combustibles-mas-limpios-64062>

## 5. SECTORAL ENERGY EFFICIENCY TARGETS

Mexico does not have sector level target. However, forecasting carried out during the policymaking process generated consumption curves for the three key sectors (buildings, transport, and industry) that will serve as signposts for progress. The assessed potential reductions are 41% for the industry sector, 50% for transport, and 35% for buildings compared to a business-as-usual approach. In total, SENER's forecast includes a potential reduction of 42% between both scenarios by 2050.

## LINKS

Transition Strategy: <http://www.gob.mx/conuee/acciones-y-programas/estrategia-de-transicion-para-promover-el-uso-de-tecnologias-y-combustibles-mas-limpios-64062>

## 6. LEAD ENERGY EFFICIENCY INSTITUTIONS

The National Commission for the Efficient Use of Energy (CONUEE or Comisión Nacional para el Uso Eficiente de la Energía) is the lead federal agency for energy efficiency policy in Mexico.

### INSTITUTIONAL SETTINGS AND RESPONSIBILITIES

CONUEE (before 2008, known as the National Commission for Energy Saving (CONAE)) is Mexico's federal agency in charge of executing the energy efficiency policies and programmes. CONUEE is a decentralised agency within the Ministry of Energy (SENER), with administrative and operative autonomy.

CONUEE's main responsibilities are the following:

- Promote energy efficiency in Mexico and propose the national energy efficiency goals.
- Develop the energy efficiency strategy and the National Programme for the Sustainable Use of Energy (PRONASE).
- Develop mandatory energy efficiency standards (NOMs).
- Promote research and development on energy efficiency.
- Provide technical support to the federal, state and local governments.
- Disseminate information and data on energy efficiency with the public, private and social sectors.
- Promote the implementation of Energy Management Systems among large energy users (UPAC).
- Identify international best practices on energy efficiency.
- Implement the activities established in PRONASE.
- Promote the creation and strengthening of capacities of public and private institutions, local, state and regional governments to support energy efficiency in municipal services and small and medium enterprises.

### STAFF AND BUDGET

CONUEE has 145 employees. According to its last annual report, CONUEE has an annual budget of 110 million pesos.

#### BUDGET USE

CONUEE spends around two thirds of its budget on staff wages, one third in 'general services' and around 1% of the total budget in materials.

#### LINKS

CONUEE: <http://www.gob.mx/conuee>

## 7. OTHER ENERGY EFFICIENCY AGENCIES

### Ministry of Energy (SENER)

SENER is responsible for conducting the country's energy policy and guaranteeing the competitive, sufficient, high quality, economically accessible and environmentally sustainable supply of energy that requires the development of national life. This includes the design and assessment of energy efficiency policies and programmes.

### Energy Regulatory Commission (CRE)

The CRE is the energy sector's main regulatory institution. It is a coordinated regulatory body that directs the interests of users and regulated subjects to the development of a competitive and sustainable energy market. The CRE regulates the activities of the energy industry that are within its competence, in order to generate certainty that encourages productive investment, fosters healthy competition, provides adequate coverage and reliability, quality and safety in the supply, delivering services at competitive prices, for the benefit of society.

### Electric Energy Savings Trust Fund (FIDE)

It is a private, non-profit trust, constituted at the initiative of CFE, in support of the Electric Energy Savings Programme. It is an organisation that contributes to the country's energy security, mitigation of environmental impact and social equity; provides financing, certification and technical assistance; promotes and develops integral programmes and projects of saving, conservation and efficient use of energy, distributed generation, cogeneration and use of renewable sources for the energy transition. In addition, it develops applied research and technological innovation, and disseminates the culture of saving and the efficient use of energy.

### National Institute of Electricity and Clean Energy (INEEL)

The INEEL used to be the Institute of Electricity Research (IIE) but in December 2015 it was assigned new tasks and responsibilities as well as a new name (due to the Energy Transition Law) transforming it into the National Institute of Electricity and Clean Energy (INEEL). It is a decentralised public body of SENER, with legal personality, property and autonomy of management.

### National Energy Control Centre (CENACE)

CENACE is the electricity grid Independent System Operator; it performs its functions under the principles of efficiency, transparency and objectivity. CENACE is a decentralised public body whose objectives are to exercise the operational control of the National Electrical System, the operation of the Wholesale Electricity Market, and to guarantee impartiality in access to the National Transmission Network and to the General Distribution Networks.

#### Federal Electricity Commission (CFE)

It is the state-owned electric utility, defined by the 2013 reform as a State Productive Company, which objectives are to provide the public electric energy service with criteria of sufficiency, competitiveness and sustainability to generate, transmit, distribute and commercialise electric energy throughout the country; and contribute through this to the transition to a low-carbon energy matrix.

#### Ministry of the Environment and Natural Resources (SEMARNAT)

SEMARNAT is responsible for designing and implementing, within its competence, the promotion and regulatory instruments to prevent, control and remediate pollution from the generation and transmission of electrical energy, including greenhouse gases and compounds. SEMARNAT is also responsible of the elaboration of Mexican Official Standards (NOMs) that establish limits of progressive emissions according to the type of technology of electricity generation, considering best practices. SEMARNAT is also responsible for determining negative externalities originated by the fossil energies.

#### Ministry of Economy (SE)

The Ministry of Economy offers direct support to small and medium-sized enterprises using existing mechanisms; prepares a study to determine the needs and potential of the electric power industry in clean energy; and promotes investment in technological development and innovation in clean energy.

In coordination with SENER, the Ministry of Economy is responsible for designing and implementing a roadmap to promote the development of clean energy value chains, under conditions of economic sustainability and in accordance with the approved budgetary conditions.

#### LINKS

SENER: <https://www.gob.mx/sener>

CRE: <http://www.gob.mx/cre>

FIDE: <http://www.fide.org.mx/>

INEEL: <https://www.ineel.mx/inicio.html>

CENACE: <https://www.gob.mx/cenace>

CFE: <http://www.cfe.gob.mx/paginas/Home.aspx>

SEMARNAT: <http://www.gob.mx/semarnat>

SE: <http://www.gob.mx/se/>

## 8. ENERGY EFFICIENCY INFORMATION DISSEMINATION

CONUEE hosts and maintains a series of internet portals, produces publications and radio campaigns aimed at the public to raise awareness and provide information on energy efficiency. In 2015, these included:

- Nine promotional video-clips with different energy efficiency topics such as water heating, street lighting, solar thermal heating, and clean public transport. This video-clip campaign was published on Twitter and Mexico City subway's screens.
- Five radio spots with more than 8,000 reproductions in 59 radio stations in the whole country.
- Three ads in five national circulation magazines.
- Recurrent posts in its social networks sites such as Twitter and YouTube.
- Additionally activities of awareness and information dissemination are carried out per sectoral programme: Federal Public Administration, States and municipalities, Energy Companies, Large Energy Consumers, Small and Medium Companies, Residential sector, as shown in the Annual Work Plan 2016 (PAT).

#### LINKS

CONUEE: <http://www.gob.mx/conuee/archivo/videox?idiom=en>

CONUEE's Youtube channel: <https://www.youtube.com/user/CanalConuee>

CONUEE's Twitter wall: [https://twitter.com/conuee\\_mx?lang=es](https://twitter.com/conuee_mx?lang=es)

CONUEE's Annual work plan: [https://www.gob.mx/cms/uploads/attachment/file/61078/PAT\\_2016\\_FINAL.pdf](https://www.gob.mx/cms/uploads/attachment/file/61078/PAT_2016_FINAL.pdf)

## 9. ENERGY EFFICIENCY AWARENESS RAISING

Aside from the mentioned programme from CONUEE, FIDE implements Educational Programme for Electrical Energy Saving and Rational Use (EDUCAREE, Educación para el Ahorro y Uso Racional de la Energía Eléctrica) now in its 18<sup>th</sup> year. The EDUCAREE programme includes courses, workshops, conferences and exhibitions presented generally in schools and museums. In 2016, almost 500,000 people attended at EDUCAREE activities in more than 1500 different schools along the country. Besides that, EDUCAREE gave lectures to more than 200,000 employees from government institutions and private companies. EDUCAREE has free didactic material available online in its webpage

#### LINKS

FIDE: [http://www.fide.org.mx/index.php?option=com\\_content&view=article&id=103&Itemid=191](http://www.fide.org.mx/index.php?option=com_content&view=article&id=103&Itemid=191)

## 10. GOVERNMENT SUPPORTED ENERGY EFFICIENCY TRAINING

The National Institute of Electricity and Clean Energy (INEEL) offers five types of education and capacity-building opportunities on energy efficiency:

- Technical certifications on photovoltaic systems installation or electricity technician expert.
- Short courses on different energy topics, including energy efficiency.



- Tailor-made training courses that can include energy efficiency and clean energy topics.
- A 2-years full-time Master's degree programme on Energy Sciences
- A PhD programme on energy in partnership with other universities in Mexico.

The institute also, provides technical and scientific support to agencies, organisations, PEMEX, CFE and the private sector. The INEEL also patents and licenses technology developments and the results of research.

CONUEE has a graduate diploma called "Sustainable Energy Use in Municipalities"  
<https://www.gob.mx/conuee/articulos/diplomado-aprovechamiento-sustentable-de-la-energia-en-municipios>

FIDE also offers certification degrees on professional competencies mainly related to photovoltaic systems installations. Finally, CONUEE offers workshops and conferences on energy efficiency topics to government institutions and companies.

#### LINKS

INEEL Postgrad studies: <https://www2.ineel.mx/posgrado/index.html>

FIDE training: [http://fide.org.mx/index.php?option=com\\_content&view=article&id=618&Itemid=242](http://fide.org.mx/index.php?option=com_content&view=article&id=618&Itemid=242)

CONUEE Capacity building: <http://www.gob.mx/conuee/acciones-y-programas/capacitacion-apf-2016>

## 11. PRIVATELY OPERATED TRAINING

Some universities, technological institutes, and research centres offer more than a 100 different programmes in Mexico related to energy efficiency. These courses rank from online courses of foreign universities to full-time undergraduate and masters programmes specialising in renewable energies and/or energy efficiency.

#### LINKS

Examples of universities and institutes offering energy management studies:

<http://www.itesm.mx/wps/wcm/connect/itesm/tecnologico+de+monterrey/maestrias+y+doctorados/escuelas/escuela+de+ingenieria+y+ciencias/maestria+en+ciencias+con+especialidad+en+ingenieria+energetica/monterrey+mie>

<https://www.educaedu.com.mx/energias-renovables-eficiencia-energetica>

[http://www.ulsanoroeste.edu.mx/licenciatura\\_ingenieria\\_energias\\_renovables](http://www.ulsanoroeste.edu.mx/licenciatura_ingenieria_energias_renovables)

<http://www.itsmotul.edu.mx/index.php/carreras/ingenieria-en-energias-renovables>

<http://www.proyectotierra.com.mx/cursos-presenciales.html>

<https://www.uacm.edu.mx/programaenergia>

<http://www.unade.mx/maestria-en-eficiencia-energetica-y-energias-renovables/>

<https://www.gob.mx/imjuve/articulos/conviertete-en-experto-universitario-en-energias-renovables-y-eficiencia-energetica?idiom=es>

<http://www.une.edu.mx/index.php/oferta-educativa/ed/meree>

<http://www.uao.edu.co/ingenieria/especializacion-en-eficiencia-energetica>

## 12. GOVERNMENT SUPPORTED RESEARCH & DEVELOPMENT

SENER has a joint trust fund for Research on Energy Sustainability in partnership with the National Council of Science and Technology (CONACYT). This trust fund is directed to research centres and universities that have research programmes focusing on renewable energy and energy efficiency. This trust-funds also provides scholarships for graduate programmes in Mexico or overseas on professional specialising in the energy sector

### LINKS

CONACYT Funds for sustainable energy:

<https://conacyt.gob.mx/index.php/fondos-sectoriales-constituidos2/item/conacyt-sener-sustentabilidad-energetica>

Government Energy Scholarships:

<http://www.gob.mx/sener/articulos/becas-de-posgrado-en-materia-energetica-7904>

## ENERGY EFFICIENCY MEASURES

### 13. COLLECTION AND MONITORING OF ENERGY EFFICIENCY OUTCOMES

CONUEE has the responsibility of data collection on energy efficiency. CONUEE has developed some energy indicators to follow-up the progress on the national targets established in the PRONASE. These indicators and others, related to energy savings can be found in the Report: "National Programme for the Sustainable Use of Energy: achievements 2016".

### LEGAL POWER

The Energy Transition Law (LTE) establishes in its article 18 CONUEE's responsibilities and duties including data collection for energy efficiency measures and related savings. Energy data collection not related to energy efficiency is responsibility of SENER.

### LINKS

CONUEE Annual Report: <http://www.gob.mx/CONUEE/documentos/informes-CONUEE?idiom=es>

PRONASE Report:

[http://transparencia.energia.gob.mx/rendicion\\_cuentas/archivos/Logros%202016PRONASE.pdf](http://transparencia.energia.gob.mx/rendicion_cuentas/archivos/Logros%202016PRONASE.pdf)

### 14. EVALUATION OF ENERGY EFFICIENCY PROGRESS OR POTENTIAL

CONUEE has the mandate to draft an Annual Activities Report in which progress and achievements of CONUEE's energy efficiency programmes are included. CONUEE's 2015 Activities Report is the latest available to the public in its official webpage. Likewise, energy efficiency achievements and progress carried out in Mexico are required every year by the President's Office to be analysed and, eventually, included in the Annual President's Report.

The Energy Transition Law (LTE) establishes in its article 18 CONUEE's responsibilities and duties including data collection for energy efficiency measures and related savings. Energy data collection not related to energy efficiency is responsibility of SENER. Any revision or modification to the strategy will have to be approved by the President of the Republic and publish in the Mexico's Official Gazette.

## LINKS

Not applicable.

## 15. SELF-EVALUATION OF ENERGY EFFICIENCY PROGRAMMES

Energy efficiency programmes are not required to carry other evaluation or report, aside from the above mentioned CONUEE's annual report and the report named "National Programme for the Sustainable Use of Energy: Achievements 2016".

## 16. CROSS-SECTOR ENERGY EFFICIENCY INITIATIVES

### **Mexico Municipality Energy Efficiency and Sustainability Project (PRESEM)**

#### OBJECTIVE

The PRESEM is a joint pilot project between SENER and the World Bank started in 2014. The project objective is to reduce energy consumption in municipalities (local governments) by enhancing planning, financing and implementation capabilities for carrying out energy efficiency projects. The project focuses on three municipal services: street lighting, water supply and wastewater treatment and municipal buildings.

The PRESEM will last five years and the estimated energy savings are of around 1,775 GWh of electricity and emissions reductions of 463,405 tons of CO<sub>2</sub>. Additionally, estimated investments on energy efficiency projects in municipalities will affect directly and indirectly 20 million people. This could trigger economic benefits of more than USD \$490 million over the 5 years of PRESEM's operation. Finally, PRESEM is expected to enhance the public's energy efficiency knowledge and change energy use patterns.

#### OUTLINE

The World Bank provided a USD 100 million fund for policy development, institutional strengthening, and municipal energy efficiency investments that SENER will implement over five years. The first component includes capacity building on municipal or local government's energy efficiency, sector-wide policy support and project monitoring and management activities. SENER and CONUEE are the responsible parties on leading these activities with local governments.

The second component is the actual investment on cost-effective project in street lighting, water supply and wastewater treatment and municipal buildings in 32 municipalities, each one located in a different state. The Electric Energy Savings Trust Fund (FIDE) is responsible for the implementation and administration of the funds for each of the municipalities' projects with the cooperation of SENER and the state-owned power utility CFE

## LINKS

Municipal energy efficiency: <http://www.gob.mx/sener/prensa/mexico-invertira-aproximadamente-3-mmdp-para-la-eficiencia-energetica-en-municipios-59752>

World Bank Paper: <http://documentos.bancomundial.org/curated/es/222971467992503902/pdf/PAD1193-PAD-P149872-R2016-0023-1-OUO-9.pdf>

Municipal energy efficiency: <http://www.gob.mx/sener/documentos/marco-de-gestion-ambiental-y-social-gas-del-proyecto-eficiencia-y-sustentabilidad-energetica-en-municipios?idiom=es>

## National Energy Efficiency in Street Lighting Project

### OBJECTIVE

The project aims to boost energy efficiency through the replacement of inefficient street lighting systems with newer technology, reducing electricity consumption. This project is implemented by CONUEE, the state-owned public utility CFE and the National Works and Public Services Bank (BANOBRAS). The National Energy Efficiency in Street Lighting Project seeks to diminish street lighting costs by an average of 35%, improve street lighting quality and reduce emissions by consuming less electricity.

### OUTLINE

The National Energy Efficiency in Street Lighting Project has provided technical assistance to more than 700 municipalities in the 32 states, from which 24 municipal projects have been completed. To date, this has allowed the installation of 173,489 public lighting systems with efficient technologies, which amount to an investment of \$ 741 million pesos, directly benefiting 4.56 million inhabitants.

## LINKS

Municipal street lighting:

<https://www.gob.mx/conuee/acciones-y-programas/estados-y-municipios-proyecto-nacional-de-eficiencia-energetica-en-alumbrado-publico-municipal>

## 17. INDUSTRY ENERGY EFFICIENCY INITIATIVES

### National Programme for Energy Management Systems (PRONASGEn, Programa Nacional para Sistemas de Gestión de la Energía)

#### OBJECTIVE

On 2015, CONUEE launched this Programme to overcome and minimise the main barriers and poor practices that prevent energy users from the systematic adoption of energy efficiency measures. The programme also encourages the adoption of energy management systems (EMS).

PRONASGEn's main objective is to promote the improvement of energy performance among energy users, through the implementation of an energy management system, establishing technical and managerial measures to raise competitiveness.

PRONASGEEn is expected to have a significant impact on the energy consumption of the participants. The programme plan is that participants achieve savings of 25% on electricity and 37% on natural gas consumption and a commensurate reduction of carbon emissions.

## OUTLINE

PRONASGEEn's activities focus on the most energy intensive industrial sectors, but it also includes small and medium-sized enterprises, refineries and public buildings. PRONASGEEn is part of the ISO 50001 Global Impacts Research Network, where the IET 50001 software is key to calculate the uptake and impacts of all this activities.

PRONASGEEn promotes the establishment of "learning networks" composed of consulting firms, education and research institutions, and the programme's participants. The goal is to promote training and implementation of energy management system (EMS) by using these "learning networks" where participants are able to support each other through sharing experiences. Currently, there are 50 companies implementing EMS through five learning networks in Mexico.

Finally, as a positive externality of PRONASGEEn, Mexico has exchanged the programme experiences and learning with Central American countries like El Salvador, Nicaragua and Costa Rica. The project has already included 30 companies from these countries.

## LINKS

Learning networks: <https://www.gob.mx/conuee/articulos/redes-de-aprendizaje-sobre-sistemas-de-gestion-de-la-energia>

PRONASGEEn on Twitter: <https://twitter.com/pronasgen?lang=es>

## **Business Eco-Credit Programme**

### OBJECTIVE

The programme's objective is to increase the competitiveness of micro, small and medium enterprises by reducing their operating costs through the replacement of obsolete equipment by those of high efficiency approved by the Electric Energy Savings Trust Fund (FIDE).

### OUTLINE

The programme works by granting financing to "commercial" electricity rate clients for the replacement or acquisition of inefficient electrical equipment such as commercial refrigeration, electric motors, air conditioning, efficient lighting and electrical substations.

## LINKS

Micro, Small, and Medium Enterprise support programme:

<https://www.inadem.gob.mx/wp-content/uploads/2016/09/wwcd7nf127624l33784u4ehnv177x1q06iwkhv33.pdf>

PRONASE: [http://transparencia.energia.gob.mx/rendicion\\_cuentas/archivos/Logros%202016PRONASE.pdf](http://transparencia.energia.gob.mx/rendicion_cuentas/archivos/Logros%202016PRONASE.pdf)

FIDE: [www.fide.org.mx/index.php?option=com\\_content&view=article&id=645&Itemid=224](http://www.fide.org.mx/index.php?option=com_content&view=article&id=645&Itemid=224)

## 18. TRANSPORT ENERGY EFFICIENCY INITIATIVES

No current programmes.

## 19. BUILDING ENERGY EFFICIENCY INITIATIVES

### **Energy Efficiency Standards Programme**

#### OBJECTIVE

The Energy Efficiency Standards Programme key objective is the issuance of mandatory technical specifications (NOM) or standards to limit the consumption of energy in equipment, appliances and systems.

#### OUTLINE

CONUEE is responsible for issuing the mandatory technical specifications in a long process that involves testing laboratories, certification and verification bodies. Energy efficiency standards issued by CONUEE integrate innovative technology to ensure a more efficient energy use and are the result of joint work and consensus of manufacturers, research institutes, professional associations, industrial and commercial chambers and the Federal Government.

The Mexican Official Standards for Energy Efficiency (NOMENER) formulation is based on the Federal Law on Metrology and Standardization, which came into force in 1993 with the first standards issued in 1995. As of 2017, CONUEE has 30 energy efficiency NOM in place; of which 24 NOM regulate energy consumption in appliances and equipment, and six NOM for systems.

This programme has been the most successful energy efficiency public policy in Mexico in cost-benefit terms. Studies carried out by CONUEE have identified the Energy Efficiency Standards Programme as the main factor of decoupling rising electric energy consumption in the residential sector with electricity consumers' growth rate as well as the reduction of LPG and natural.

#### LINKS

Standards and labelling scheme:

<http://www.gob.mx/conuee/acciones-y-programas/normas-oficiales-mexicanas-en-eficiencia-energetica-vigentes>

### **Ahórrate una luz (Save a light) Programme**

#### OBJECTIVE

SENER launched the Ahórrate una luz programme which consists on exchanging incandescent lamps with 40 million compact fluorescent lamps (CFLs) in communities of less than 100 thousand inhabitants. The programme main goals are to decrease energy consumption, lower the beneficiaries' electricity bills and, ultimately, emitting less pollutants from power generation plants.

#### OUTLINE

The Ahórrate una luz programme is operated by FIDE in collaboration with DICONSA, an agency of the Ministry of Social Development with a network of 27 thousand stores located in rural communities across Mexico. Qualified beneficiaries must be residents of communities of less than 100 thousand people and pay the "household low-consumption" rate in their electricity bills. Beneficiaries have to go to a DICONSA rural store with an electricity bill and incandescent lamps. In exchange, they will receive 5 compact fluorescent lamps with no extra charge. Beneficiaries of the programme will be reflected the impact of energy savings in their next electricity bill.

#### LINKS

Ahorrate una luz: <http://www.ahorrateunaluz.org.mx/MicroSitio/Default.aspx>

### **Hipoteca Verde Programme**

#### OBJECTIVE

The Hipoteca Verde programme is a housing finance scheme developed by the National Workers' Housing Fund Institute (INFONAVIT) for promoting the use of energy efficient systems and technologies in low-income households. The programme's goals are to encourage the inclusion of green and efficient technologies in new buildings, which in turn would decrease energy consumption and household expenses on bills.

#### OUTLINE

Hipoteca Verde translates as 'green mortgage', the programme is targeted to INFONAVIT's recipient families and provides an additional mortgage credit of up to US \$ 1,250 to cover the cost of installing energy efficient technologies in their houses such as solar water heaters and lightbulbs.

#### LINKS

Hipoteca Verde:

[http://portal.infonavit.org.mx/wps/wcm/connect/infonavit/trabajadores/cuido\\_mi\\_casa/hipoteca+verde](http://portal.infonavit.org.mx/wps/wcm/connect/infonavit/trabajadores/cuido_mi_casa/hipoteca+verde)

### **Federal Public Administration Energy Saving Programme**

#### OBJECTIVE

The programme's objective is to establish a continuous improvement process to increase energy efficiency in buildings, vehicle fleets and industrial facilities of the Federal Government's Ministries and Agencies. These savings will decrease administrative costs, which in turn will result in a better allocation of taxpayer's resources and reduced carbon emissions.

#### OUTLINE

This programme establishes administrative guidelines for all Ministries and Federal Agencies to adopt energy efficiency best practices. The programme consists of 2,000 public servants grouped in 240 committees in charge of overseeing and monitoring 2,430 buildings, 1,952 transport fleets and 11 industrial facilities.

Since 2012, the Federal Public Administration Energy Saving Programme has resulted on energy savings of around 9,550 GWh, and a 2.4 million tons reduction of carbon emissions.

#### LINKS

Energy Efficiency in Government: <http://www.gob.mx/conuee/acciones-y-programas/programa-de-eficiencia-energetica-en-la-administracion-publica-federal-2016>

### **Sustainable Improvement in Existing Housing Programme**

#### OBJECTIVE

This pilot programme is managed by the Electric Energy Savings Trust Fund (FIDE) and aims to support the residential sector in the acquisition of sustainable and efficient technology in order to reduce family spending by electricity consumption.

#### OUTLINE

The programme gives access to credits of up to 50,000 pesos for families with incomes of less than five times the minimum wage (around 80 pesos per day) to purchase solar or gas-fired heaters, air conditioners, efficient lighting equipment, thermal windows, thermal envelopes, solar control films and the installation of photovoltaic panels. Payment can be made through power utility bills.

#### LINKS

Sustainable Improvements Programme: <http://www.gob.mx/sedatu/articulos/el-programa-de-mejoramiento-integral-sustentable-en-vivienda-permitira-ahorros-hasta-por-5-mil-pesos-anuales-en-consumo-de-energia>

## 20.ENERGY EFFICIENCY COOPERATION

### COOPERATION AGREEMENTS WITH OTHER ECONOMIES OR ORGANISATIONS

Mexico coordinates an agenda of international cooperation in energy matters whose main objectives are:

- Strengthen the consolidation of the national energy sector and Mexico's position in the international energy community.
- Use the exchange of experiences and knowledge to be made of the best practices at international level.

Currently, Mexico has signed 70 international energy cooperation agreements with 23 countries, 3 energy agencies / organisations, the International Energy Agency, 3 international initiatives, and 3 energy institutes, among others. Energy cooperation issues include:

- Renewable energy and other clean technologies.
- Nuclear energy.
- Rational and efficient use of energy.
- Carbon capture and storage.



- Oil and natural gas.
- Reform and transformation of the electricity sector.

#### BILATERAL, REGIONAL OR MULTILATERAL COOPERATION AGREEMENTS

As described above.

#### 21.OTHER ENERGY EFFICIENCY EFFORTS

Not applicable.