



## BUILDING SECTOR BRIEF: MEXICO

Status: March 2019

As a pioneer in climate change policies, Mexico has ambitious targets for the building sector and developed an Energy Conservation Code for Buildings. Residential and non-residential buildings alike and new instruments for financing energy efficiency provide huge opportunities to further promote energy efficiency in buildings.

### CURRENT CLIMATE TARGETS

In 2012 Mexico adopted the **General Climate Change Law**, one of the world’s first climate laws—and the first in an emerging country. Under this law, Mexico aims to reduce its emissions by 50% by 2050, based on 2000 levels. In 2016, Mexico submitted its Mid-Century Strategy and first NDC document which are consistent with the climate change law. The NDC aims to unconditionally reduce GHG emissions in 2030 by 22% below its BAU baseline and by 36% with international support.

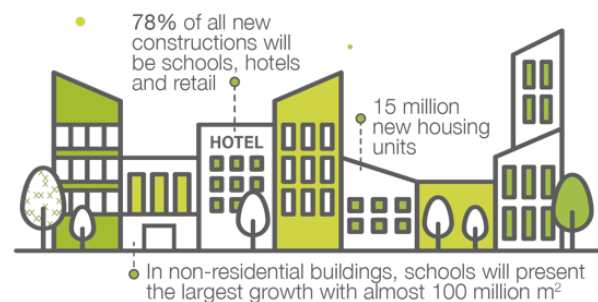
To achieve its mitigation targets, Mexico promotes the construction of buildings and the transformation of cities towards sustainability, energy efficiency and low carbon and the use of solar water heating and photovoltaic systems at domestic level and prioritizes

emission reductions in residential and commercial buildings.

### BUILDINGS SECTOR GROWTH

**The residential sector is the fastest growing subsector.** There are 33 million inhabited housing units (2017)<sup>1</sup>, with the majority having a construction area between 45 and 60m<sup>2</sup> (46%) or larger than 60m<sup>2</sup> (41%). The government expects that about 15 million new housing units will be built by 2030, adding more than 600 million m<sup>2</sup> of floor area.

#### Growth projections per subsector by 2030



**Non-residential buildings such as commercial buildings or schools, are also experiencing rapid growth.** These buildings comprised an area of around 155 million m<sup>2</sup> (2005)<sup>2</sup>.

<sup>1</sup> INEGI, (2018). “Encuesta Nacional sobre Consumo de Energéticos en Viviendas Particulares (ENCEVI)”. Presentación de resultados. Instituto Nacional de Estadística y Geografía. México.

<sup>2</sup> de Buen, O., et al., (2008). “Edificación Sustentable en América del Norte”. Documento uno: Escenarios energéticos de la

edificación sustentable para 2030. Comisión para la Cooperación Ambiental (CCA). (Available from: <http://www3.cec.org/islandora/es/item/2326-paper-1-green-building-energy-scenarios-2030>): p. 78.

By 2030, it is expected that 212 million m<sup>2</sup> will be added. Three sectors make up 78% of these new buildings: Schools and other educational buildings (100 million m<sup>2</sup>), hotels and lodging (40 million m<sup>2</sup>), and commercial space (30 million m<sup>2</sup>). About 10 million m<sup>2</sup> of new hospitals are also projected to be constructed.

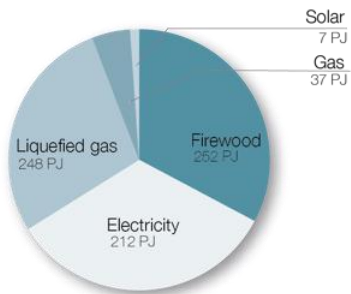
The **hot and the hot-humid climates** lead to high energy consumption: hospitals consume between 220 and 350 kWh/m<sup>2</sup>/year, commercial and retail buildings about 155-260, hotels around 120-200 while schools consume 40-60 kWh/m<sup>2</sup>/year.

**BUILDINGS SECTOR ENERGY DEMAND**

The energy consumption in residential buildings is dominated by electricity. Firewood and liquefied gas are the main energy sources for cooking. Cooling represents more than 30% of all electricity consumption in the residential sector<sup>3</sup> and this share is expected to rise.

	Additional floor area by 2030 (million m <sup>2</sup> )	Energy consumption (kWh/m <sup>2</sup> /year)
Residential	600	
Educational buildings	100	40-60
Hotels and lodging	40	120-200
Commercial	30	155-260
Hospitals	10	220-350

Energy consumption by fuel type



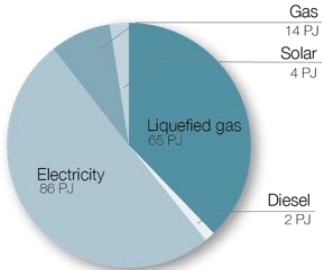
Residential sector

In non-residential buildings, electricity (50%) and liquefied gas are the major energy sources. Electricity use for cooling systems grows rapidly, by an annual average of 4.8%, consolidating its position as the main source of final energy in the buildings sector<sup>4</sup>.

**FINANCING AND INVESTMENTS**

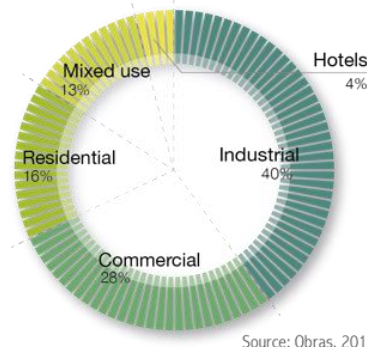
Private investors focus primarily on industrial and commercial buildings, followed by the residential subsector. Interest rates for EEB projects are not different from other projects. There are about 5,000 private housing developers active in new social housing construction.

Energy consumption by fuel type



Commercial sector

Private investment distribution per subsector in 2017



Source: Obras, 2018

<sup>3</sup> de Buen, O. (2019). "Viviendas en climas cálidos, el gran reto de la CONUEE". Constructor Eléctrico. Available from: <https://constructorelectrico.com/viviendas-en-climas-calidos-el-gran-reto-de-la-conuee-2/>: Accessed 18<sup>th</sup> Jan 2019.

<sup>4</sup> OECD and IEA, (2016). "Mexico Energy Outlook. World Energy Outlook Special Report.". International Energy Agency. p. 129.

There are few tailored national financial instruments for energy efficiency investments in buildings. One example is the EcoCasa Programme of the National Housing Development Bank SHF which provides concessional interest rates to housing projects that demonstrate energy and CO<sub>2</sub> emissions reductions, among other technical criteria.

## REGULATION

**The Energy Conservation Code for Buildings in Mexico (IECC-Mexico)** is a voluntary model code that regulates the minimum requirements for energy conservation in new residential and non-residential buildings. It includes every building-related energy efficiency standard issued by the government (envelope, Heating, Ventilation and Air Conditioning (HVAC), artificial lighting, water heating and other building services). The first edition of the IECC-Mexico was published in 2016 and it foresees a revision at least every three years.

## OPPORTUNITIES FOR ACTION

The following areas present opportunities for climate change mitigation:

- **Extend the scope to non-residential buildings:** These buildings have the largest potential to extend the NDC scope and ambition, with high growth and high energy consumption, especially for hospitals and commercial buildings. The residential sector already receives strong support from the Mexican Government and international cooperation through the implementation of the Housing NAMA.
- **Develop financial products for the non-residential sector:** There are only few public and private financial products for energy efficiency in the residential sector. Targeted financial support could guide investments towards more energy-efficiency.
- **Engage the private sector with information about technologies and financing:** Many large and medium-sized private developers and builders dominate the construction business. Though there are pioneers in sustainability, a huge share of them still lacks information about technology and economic solutions. Information and competences are needed to fully explore the largely untapped potential of private sector activities.
- **Extend coordination mechanisms to include relevant public sector entities from the building sector and private sector representatives:** Extending the scope and ambition of the current NDC for buildings requires a strong sector coordination. The existing coordination between the energy and climate sectors at government level should be extended to key stakeholders from the building sector.





On behalf of:



Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety

of the Federal Republic of Germany



FONDS FRANÇAIS POUR L'ENVIRONNEMENT MONDIAL



The Programme for Energy Efficiency in Buildings (PEEB) is currently funded by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), the French Ministère de la Transition écologique et solidaire (MTES), Agence Française de Développement (AFD) and the Fonds français pour l'environnement mondial (FFEM).

This project is part of the International Climate Initiative (IKI). The German Federal Ministry for the Environment, Nature Conversation and Nuclear Safety (BMU) supports this initiative on the basis of a decision adopted by the German Bundestag.

## CONTACT

### Publisher

Programme for Energy Efficiency in Buildings (PEEB) Secretariat

c/o Agence Française de Développement (AFD)  
5 Rue Roland-Barthes  
75012 Paris, France  
E [info@peeb.build](mailto:info@peeb.build)  
T +33 (0) 1 53 44 35 28

### PEEB is implemented by

Agence de l'Environnement et de la Maîtrise de l'Énergie (ADEME)

Agence Française de Développement (AFD)

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

### Contact

Christiana Hageneder  
[christiana.hageneder@giz.de](mailto:christiana.hageneder@giz.de)

### Author/Editor

Programme for Energy Efficiency in Buildings (PEEB) Secretariat  
+ Additional Names, town

### Design

© creativerepublic, Germany

### Image Credits

© p. 1: Shutterstock  
p. 2: GIZ + Shutterstock

### Published

August 2018

