

Mexico

Energy efficiency report



Objective: energy savings target of 2% for 2012 and 18% for 2030

Overview	2010		2000-2010 (%/year)	
Primary intensity (EU=100) ¹	101	-	0.2%	--
CO ₂ intensity (EU=100)	111	-	-0.2%	--
CO ₂ emissions per capita (in tCO ₂ /cap)	4	++	0.6%	-
Power generation	2010		2000-2010 (%/year)	
Efficiency of thermal power plants (in %)	45	++	2.0%	++
Rate of electricity T&D losses (in %)	16	--	0.9%	--
CO ₂ emissions per kWh generated (in gCO ₂ /kWh)	433	-	-2.4%	+
Industry	2010		2000-2010 (%/year)	
Energy intensity (EU=100)	75	++	-0.9%	-
Unit consumption of steel (in toe/t)	0	-	-1.4%	+

++ Among best countries + Better than the EU average¹ - Below the EU average¹ --Among countries with the lowest performances

Latest update: March 2012

¹ The European Union, as the best performing region, is used as the benchmark.

1. Overview

1.1. Policies: 2% energy savings for 2012

In November 2009 the Government adopted an energy savings program (PRONASE) for the period 2009-2012. It estimates the energy savings potential at 18 percent in 2030, compared with a reference scenario. The plan identifies seven priorities: road transport vehicles, lighting, household appliances, cogeneration, electric motors, energy efficiency standards for new buildings and water distribution.

The Electric Power Savings Trust Fund (FIDE) launched the Program for Financing of Electric Energy Saving (PFAEE). The Program finances the substitution of old, inefficient refrigerators and air-conditioners by modern and more efficient equipment. It also provides financial support for the thermal insulation of homes. In addition, the cost of more efficient lighting is financed through a credit paid on electricity bills, which is largely recovered due to reduced electricity costs.

The FIDE label is a voluntary label that identifies energy-efficient products on the Mexican market; it certifies that the product has met specified standards.

1.2. Energy consumption trends: rapid increase up to 2008

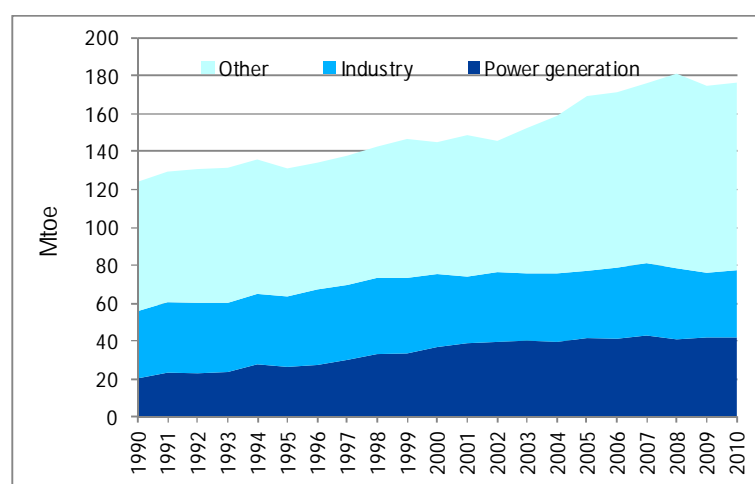
Mexico's primary energy consumption per capita is 1.6 toe, ie 13 percent lower than the world average.

Total energy consumption grew at the steady pace of 1.4 percent per year between 1990 and 2002, and by 3.7 percent per year during 2002-2008. However, it fell by 3.6 percent in 2009 as a result of the global recession.

The share of oil in the country's total consumption is 56 percent (2010); it has fallen to the benefit of gas (29 percent in 2010 compared with 19 percent in 1990). Coal, primary electricity (nuclear, hydro and wind) and biomass supply the rest of the market (approximately 5 percent each).

The share of industry (including non-energy uses) in total energy consumption has decreased steadily since 1990 (from 29 percent in 1990 to 20 percent in 2010). The overall increase in the share of the power sector was slow, although it followed two different trends: (i) it increased to more than 20 percent until 2002, (ii) and has been decreasing since then.

Figure 1: Energy consumption trends by sector

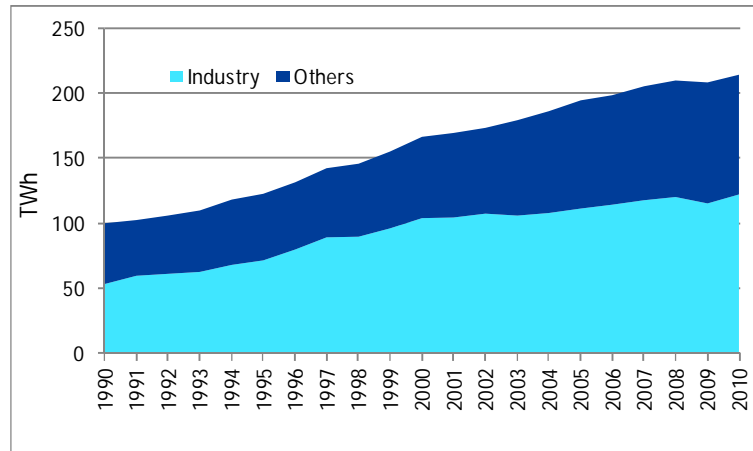


Source: Enerdata

In 2010 electricity consumption per capita corresponded to almost 2,000 kWh, which is 30 percent higher than non-OECD per capita consumption but around 30 percent lower than the world average. Total electricity consumption increased at the steady pace of 3.8 percent/year between 1990 and 2010, except in 2009 when it fell due to the global crisis (-0.7 percent).

Electricity accounts for 16 percent of the country's energy consumption. Industry saw its share increase from 53 percent to 57 percent.

Figure 2: Electricity consumption trends by sector



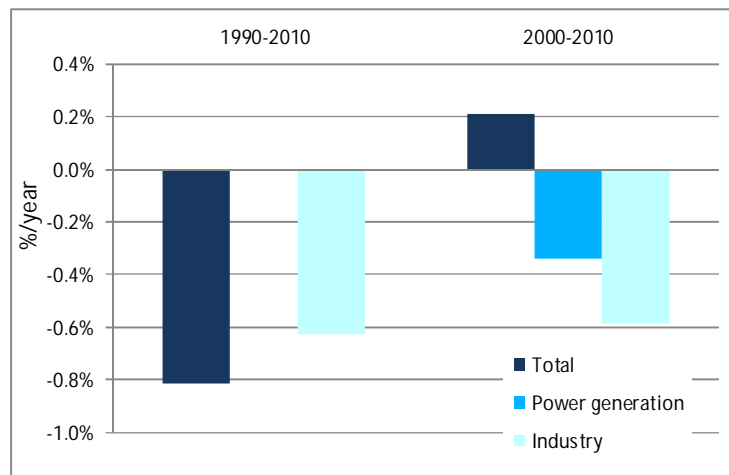
Source: Enerdata

1.3. Energy efficiency trends: increasing energy and CO₂ intensities since 2000

Total energy consumption per unit of GDP (primary energy intensity), measured at purchasing power parity, is about 35 percent lower than the world average. It has been decreasing by 0.8 percent/year since 1990, ie slightly slower than the world trend (-1.2 percent/year). The industry sector contributed about three quarters of this decrease.

In 2010 energy intensities were above their 2000 levels, mainly as a result of the deep recession in 2009, when energy consumption decreased much less rapidly than GDP (primary energy consumption decreased by 2 percent whereas GDP dropped by 7 percent).

Figure 3: Energy intensity trends

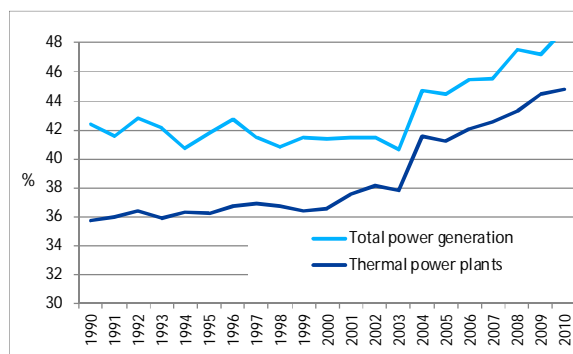


Source: Enerdata

2. Power generation

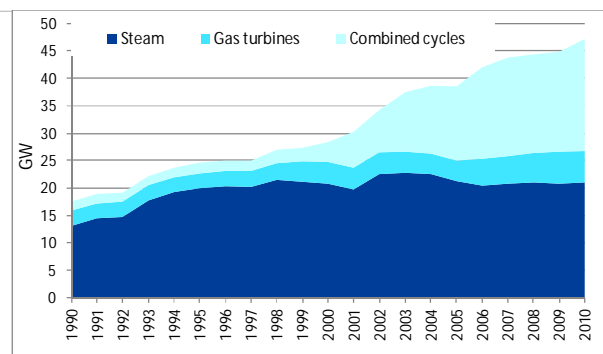
The efficiency of thermal power generation and of the power sector as a whole has been increasing rapidly since 2002 (from 38 percent to 45 percent in 2010 in the case of thermal power generation). This recent improvement is due to a switch in the power generation mix to natural gas, and to the spread of gas combined cycle plants: in 2010, the gas combined cycle power capacity accounted for 43 percent of the total thermal capacity.

Figure 4: Efficiency of power generation and thermal power plants



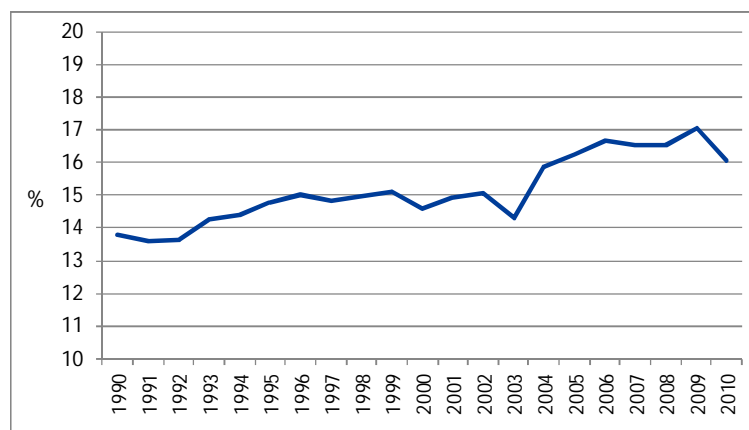
Source: Enerdata

Figure 5: Thermal electricity capacity, by technology



The rate of transmission and distribution losses (T&D) in the Mexican grid is about 17 percent of the distributed volumes, which is much higher than the world average (9 percent). Those losses have increased slightly over time (14 percent in 1990).

Figure 6: Evolution of T&D losses



Source: Enerdata

3. Industry

3.1. Policies: standards on electric motors

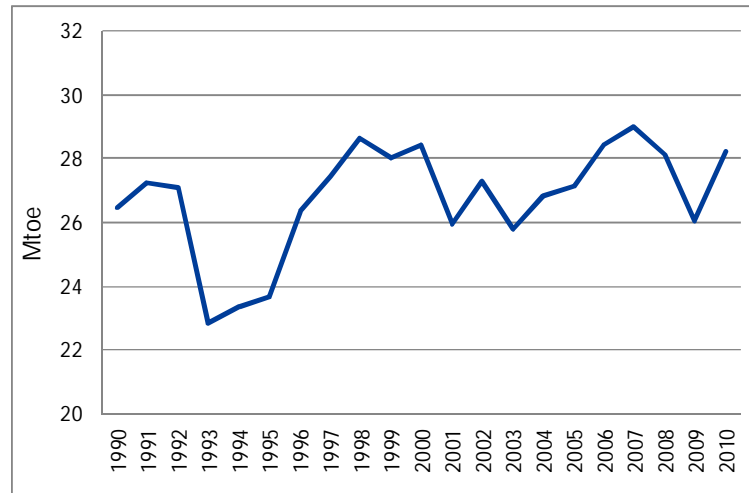
The *Programa Nacional para el Aprovechamiento Sustentable de la Energía 2009-2012* promotes the development of cogeneration. The actual cogeneration capacity of 2,800 MW is expected to increase to 3,500 MW in 2014.

The program also plans the implementation of standards for electric motors and subsidies to substitute inefficient electric motors. The energy consumption reduction potential of electric motors is estimated at 3.5 TWh by 2012.

3.2. Energy consumption trends: smaller contribution from energy-intensive industries

After a deep recession in 1992 which saw industrial energy consumption decrease by 14 percent in one year, consumption then increased by 1.8 percent per year until 2008. In 2009 industrial energy consumption dropped by 5.3 percent as a result of the economic crisis.

Figure 7: Trends in industrial energy consumption

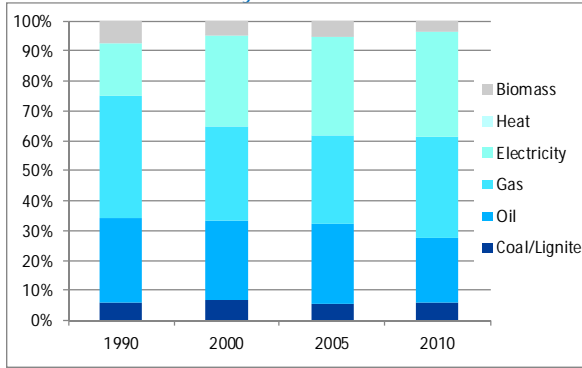


Source: Enerdata

The share of electricity in industrial energy consumption has increased very rapidly, reaching 35 percent in 2010 compared with 17 percent in 1990. The market share of natural gas fell from 41 percent in 1990 to 34 percent in 2010. The shares of coal and oil declined slightly.

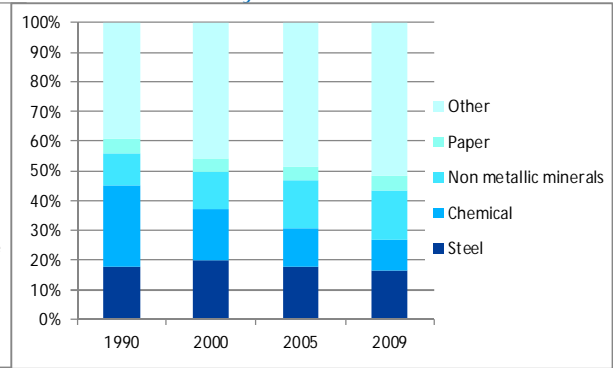
The contribution of energy-intensive industries has decreased since 1990, from around 60 percent of industrial consumption to 49 percent in 2009. The chemical industry is the most affected sector, since its energy consumption dropped to 10 percent in 2009 (from 25 percent in 1990).

Figure 8: Energy consumption of industry, by source



Source: Enerdata

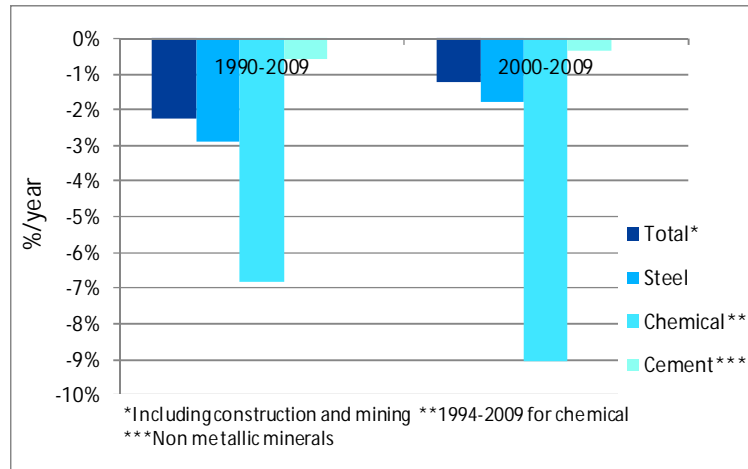
Figure 9: Energy consumption of industry, by branch



3.3. Energy intensity trends: slower energy intensity reduction since 2000

Industrial energy intensity (consumption per unit of industrial value added), which had been falling at a pace of 2 percent/year, has been decreasing less rapidly since 2000 (1 percent/year). The largest energy efficiency improvements were achieved in the chemical industry, which saw its energy intensity drop by nearly 7 percent/year between 1994 and 2009.

Figure 10: Trends in the energy intensity of industrial branches



Source: Enerdata