

Argentina

Energy efficiency report



Objectives:

- 5.4% energy savings in industry in 2016
- 6% electricity savings in 2016

Overview	2011		2000-2011 (%/year)	
Primary intensity (EU=100) ¹	106	-	-2.3%	+
CO ₂ intensity (EU=100)	115	-	-2.2%	+
CO ₂ emissions per capita (in tCO ₂ /cap)	4.5	+	1.6%	--
Power generation	2011		2000-2011 (%/year)	
Efficiency of thermal power plants (in %)	40	+	0.4%	+
Rate of electricity T&D losses (in %)	13.2	--	-1.3%	+
CO ₂ emissions per kWh generated (in gCO ₂ /kWh)	389	-	1.6%	--
Industry	2011		2000-2011 (%/year)	
Energy intensity (EU=100)	116	-	-3.4%	++

++ Among the best performing countries + Above the EU average¹ - Below the EU average¹ --Among the worst performing countries

Latest update: March 2013

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

1. Overview

1.1. Policies: energy savings targets by sector

In December 2007 the government launched the National Program for Rational and Efficient Use of Energy (PRONUREE). The PRONUREE includes short- and long-term objectives to improve energy efficiency in industry (5.4 percent energy savings target for 2016), transport, the residential sector (10 percent energy savings for 2016) and the services sector (7 percent energy savings for 2016), as well as in public buildings (10 percent energy savings target for 2016). PRONUREE aims to decrease electricity consumption by 6 percent, compared with a reference projection, and to save 1,500 MW by 2016.

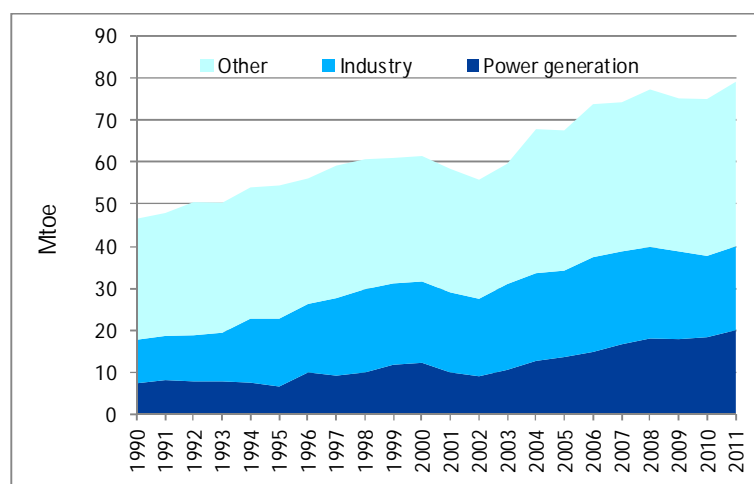
It also supports educational programs on energy efficiency, regulations to expand cogeneration activities, labeling of appliances, energy efficiency regulations, and broader utilization of the Clean Development Mechanism (CDM) to support the development of energy efficiency projects.

1.2. Energy consumption trends: rising per capita consumption

Total energy consumption per capita increased on a regular basis until 2000 when it reached 1.7 toe/cap, and then fell strongly in 2001 following the economic crisis (1.5 toe/cap). It then started to increase again and reached 1.9 toe in 2011, ie, the same level as the world average. That per capita consumption is among the highest in Latin America, after Venezuela.

Total energy consumption has been increasing rapidly since 2002 (3.9 percent/year). The national crisis in 2001 had a significant negative impact on consumption, causing it to fall by 10 percent between 2000 and 2002. The pace was again affected over 2008-2009, this time by the global economic downturn of 2009, which led to a 2.8 percent decline. Industry (including non-energy uses) and the power sector account for about 25 percent each of total energy consumption.

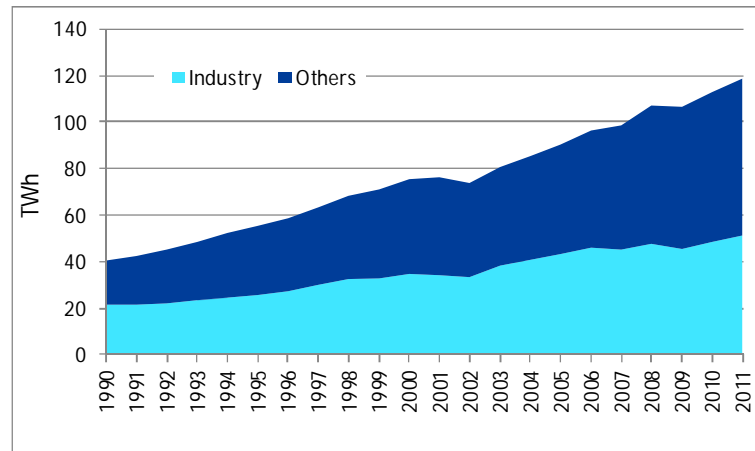
Figure 1: Energy consumption trends by sector



Source: Enerdata

Electricity demand per capita is approximately 2,900 kWh, which is slightly above the world average. Electricity consumption is growing strongly (5.4 percent/year since 2002). Industry is the largest electricity consumer (43 percent).

Figure 2: Electricity consumption trends by sector

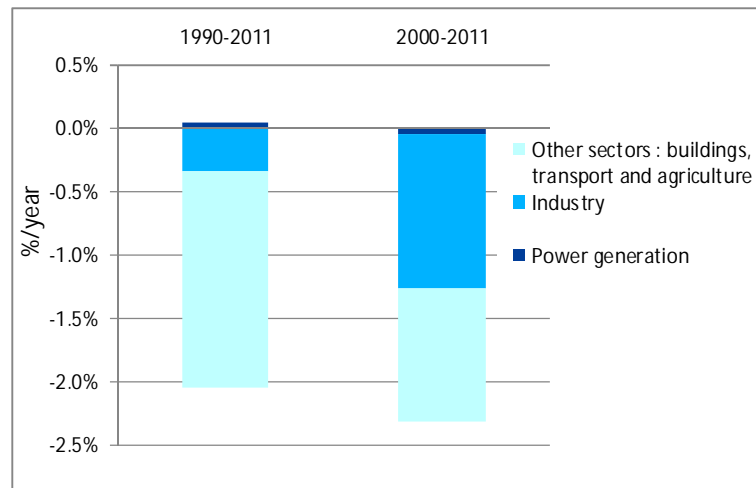


Source: Enerdata

1.3. Energy efficiency trends: introduction of new technologies

Total energy intensity (total energy consumption per unit of GDP), measured at purchasing power parity, is 33 percent lower than the world average. It is decreasing quite rapidly (2.3 percent/year between 2000 and 2011), with industry contributing to more than half of that reduction.

Figure 3: Energy intensity trends

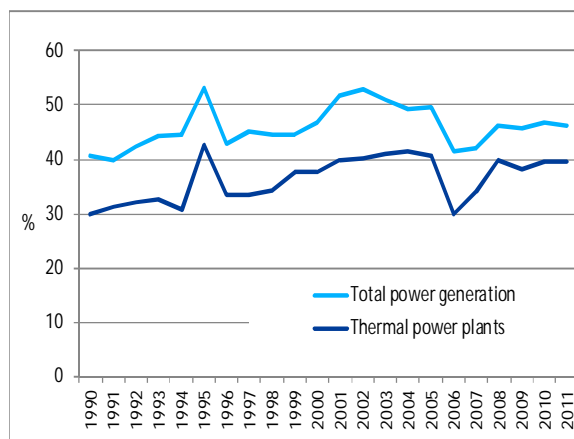


Source: Enerdata

2. Power generation: improvement in the efficiency of power plants

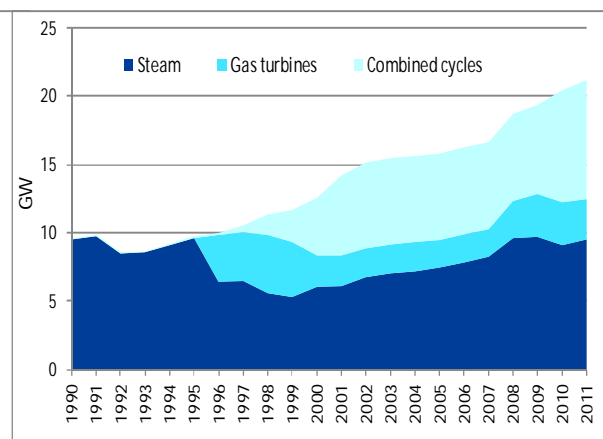
The efficiency of the thermal sector increased by 10 percentage points between 1990 and 2003 and has remained roughly stable since then (40 percent in 2011). That improvement was achieved through a switch, since 1995, in the power generation mix to gas combined cycle plants: in 2011, combined cycle plants accounted for more than 40 percent of the country's thermal capacity.

Figure 4: Efficiency of power generation and thermal power plants



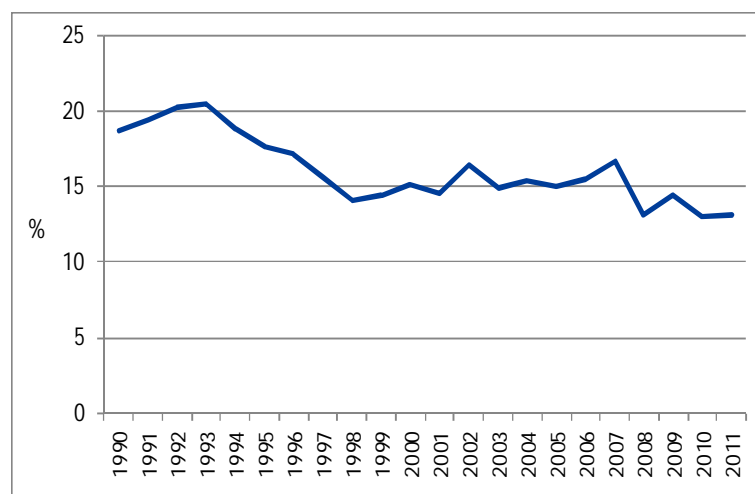
Source: Enerdata

Figure 5: Thermal electricity capacity, by technology



The rate of transmission and distribution losses (T&D) in the Argentinian grid has fallen from above 18 percent in 1990 to 14 percent in 2011, which is still above the world average (around 9 percent).

Figure 6: Electric T&D losses



Source: Enerdata

3. Industry

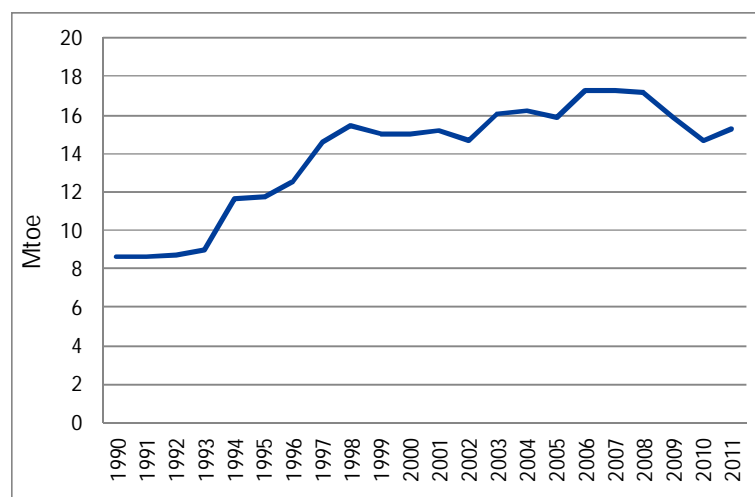
3.1. Policies: an energy savings target of 5.4% by 2016

The objective of the PRONUREE is to reach 5.4 percent energy savings in industry by 2016. To date, no specific measures have been implemented.

3.2. Energy consumption trends: a twofold increase between 1990 and 2011

Industrial energy consumption almost doubled between 1990 and 1998 (7.6 percent/year). It then increased more slowly until 2006 (1.3 percent/year) and remained stable until the global crisis, which caused it to fall by almost 8 percent in 2009 and in 2010.

Figure 7: Trends in industrial energy consumption

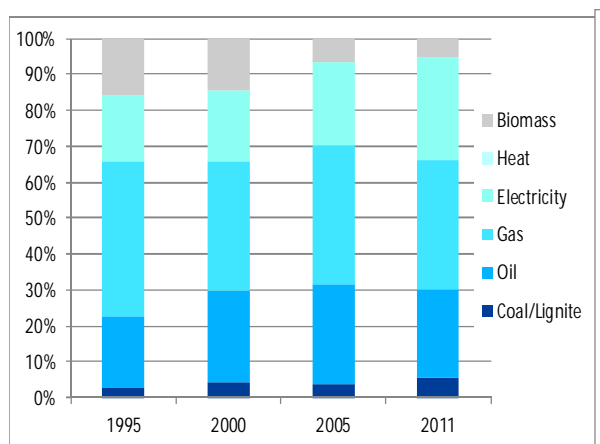


Source: Enerdata

The dominant fuel in industry is gas. Nevertheless, its consumption has decreased by 6 percentage points since 1995, reaching 36 percent in 2011. On the contrary, the use of oil increased from 19 percent in 1995 to 25 percent in 2011. The share of electricity is rather large and stable (29 percent), whereas coal accounts for just 5 percent of energy consumption.

The share of energy-intensive industries (steel, chemical, non-metallic minerals and paper) in overall industrial energy consumption has remained stable since 1995 (around 40 percent). The steel industry's share of energy consumption has increased slightly and now stands at 14 percent. The share of the paper industry is stable, and the share of the non-metallic minerals sector (cement, ceramics, etc.) has decreased slightly, accounting for 8 percent of total energy consumption in 2010.

Figure 8: Energy consumption of industry, by source



Source: Enerdata

Figure 9: Energy consumption of industry, by branch

