

Mexico's 2012 General Law on Climate Change (Ley General de Cambio Climático)

The Essentials:

- Mexico recently passed the General Law on Climate Change, which may have impacts on energy policy decisions made in Arizona. The Law calls for
 - Reducing CO₂ emissions by **51 million tons** by **2012**
 - A **30% reduction** in greenhouse gas emissions by **2020**
 - A **50% reduction** in greenhouse gas emissions by **2050**;
 - **35%** of electricity from renewable sources before **2024**.
- Mexico's natural gas consumption has increased over 30% since 2000, and their oil consumption dropped 30% over the same time. Mexico's energy use from renewable sources remains static at 4%.
- The 35% national renewable energy standard presents export opportunities for Arizona while Mexico builds its renewable energy infrastructure.

Mexico's electricity production and consumption profile

As of 2008, Mexico generated 248.26 billion kWhs of electricity, serving a population of 110 million people (97% of whom had access to electricity).¹² Between 2000-2010, natural gas replaced oil as the main energy product. (See Table 1 to see the changes in sources from 1971-2009). Natural gas production occurs primarily offshore in the Gulf of Mexico, although Mexico remains a net importer. The current emphasis of renewable energy development is wind power, and the government estimates a national total production potential of 71 GW of installed wind power generating capacity, concentrated in lowland Oaxaca, northern Baja California, and Zacatecas.³

¹ EIA Country Analysis Brief for Mexico <http://205.254.135.7/countries/country-data.cfm?fips=MX>

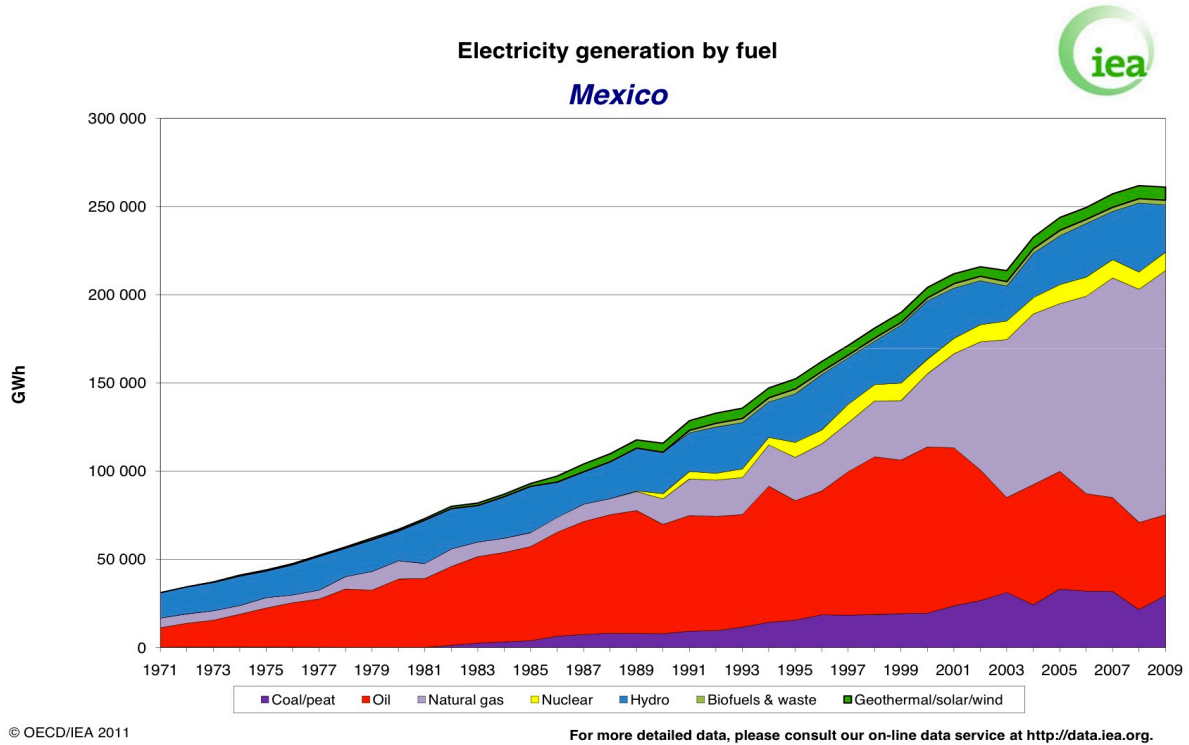
² In comparison, in 2008 the United States generated 4,119 billion kWhs of electricity, serving a population of 304 million in 2008. (EIA Country Analysis Brief for US <http://205.254.135.7/countries/country-data.cfm?fips=US&trk=p1>)

³ Vance, Eric. April 24, 2012. Mexico sets climate targets. <http://www.nature.com/news/mexico-sets-climate-targets-1.10503>

Table 1 - Mexico's Electricity Production Sources 1971-2009 (in GWh) ⁴

IEA Energy Statistics

Statistics on the Web: <http://www.iea.org/stats/index.asp>



Consumption

In 2010, 89% of Mexico's energy consumption was sourced from fossil fuels. Alternative and nuclear sources accounted for 6% of Mexico's energy consumption.^{5 6}

Table 3 - Electric power consumption (kWh) and source type (% of total)

Title	2000	2005	2010
Electric power consumption (kWh)	176,568,000,000	205,201,000,000	unknown
Fossil fuel energy consumption (total %)	87	88	89
Alternative and nuclear energy (% of use)	7	7	6

Emissions

Mexico emitted 4.1 metric tons of greenhouse gases (GHGs) per capita in 2008.⁷ (In comparison, the emission rate per capita in the US was 19.2 metric tons in 2008).⁸

⁴ [International](http://www.iea.org/stats/countryresults.asp?COUNTRY_CODE=MX&Submit=Submit) Energy Agency, Mexico Statistics.

http://www.iea.org/stats/countryresults.asp?COUNTRY_CODE=MX&Submit=Submit

⁵ World Bank databank <http://databank.worldbank.org/ddp/home.do>.

⁶ The remaining 5% is from traditional sources, such as wood.

Mexico's current greenhouse gas emissions are 1.5% of the global total. It is the 11th largest GHG contributing country and without the General Law of Climate Change, it is projected to be the 5th largest contributor of total emissions by 2050.⁹

Sector organization and regulatory body

The Comisión Federal de Electricidad (CFE) is state-owned and controls about two-thirds of installed generating capacity. CFE also holds a near-monopoly on electricity transmission and distribution and operates Mexico's national transmission grid, which consists of 27,000 miles of high voltage lines, 28,000 miles of medium voltage lines, and 370,000 miles of low voltage distribution lines.¹⁰

The Comisión Reguladora de Energía (CRE) is the main regulatory body for the electricity industry. CRE gives permits to companies seeking to install private electricity generating capacity or begin importing/exporting electric power.¹¹

Policy details

The General Law on Climate Change establishes legally binding metrics for both renewable sourcing and emission reduction. It also supports future research, climate change adaptation and mitigation policies, as well as national databanks to quantify and track the metrics.

Renewable energy goals

- Produce **35%** of electricity from renewable sources before **2024**.

Reduced emissions goals

- Reduce carbon dioxide emissions by **51 million tons** by **2012**;
- Reduce national greenhouse gas emissions **30%** by **2020** (from 2000 levels);
- Reduce national greenhouse gas emissions **50%** by **2050**.

Mandates funding and development of programs to support these goals:

- climate change research;
- a national adaptation policy with annual budget;
- a national mitigation policy with annual budget;
- a national policy effectiveness evaluation and coordination body;
- a National Greenhouse Gas Inventory, Climate Change Information System and

⁷ U.S. Energy Information Administration. International Energy Statistics for North America, 2008. <http://www.eia.gov/cfapps/ipdbproject/iedindex3.cfm?tid=90&pid=45&aid=8&cid=r1,&syid=2008&eyid=2008&unit=MTCDDPP>

⁸ *Id.*

⁹ Perez, Vanessa. 2012. Joint Center for Political and Economic Studies. Mexico's New Climate Law – Mexico Talking Points pdf. Retrieved from <http://www.jointcenter.org/newsroom/press-releases/mexicos-new-climate-law-mary-nichols-experts-assess-implications-for-us-poli>.

¹⁰ EIA Country Analysis Brief, <http://www.eia.gov/cabs/Mexico/Full.html>

¹¹ *Id.*

- Emissions Sources Registry;
- fund for adaptation and mitigation;
 - focus on forest health and loss prevention;
 - an incentive program to make renewable energy as competitive as other conventional sources of energy before 2020;
 - consolidation of a measuring, reporting and verification scheme;
 - development of a sanctions system.

Passage and implementation

In the spring of 2012, the General Law on Climate Change passed by a margin of 128-10 in the Chamber of Deputies (the lower house of the Republic's bicameral Congress) and by a margin of 78-0 in the Senate. President Felipe Calderón signed the bill into law on June 5, 2012.¹² The law had such overwhelming political support due to two main reasons: 1) there is increasing worry about climate change as a result of parts of Mexico having faced severe drought while other parts have had extreme flooding and 2) (perhaps most importantly) there's a growing interest in clean energy as an economic booster.^{13 14}

There are concerns about actual implementation of the law. As noted above, the law calls for development of measuring and verification protocols and databases, as well as sanctions for noncompliance.¹⁵

Relevance to Arizona

The border population in Mexico is about 12 million people, and includes some of the fastest growing areas in Mexico.¹⁶ As noted above, Mexico currently sources about

¹² Presidencia de la República, Decree of the General Law on Climate Change
<http://en.presidencia.gob.mx/2012/06/decreto-of-the-general-law-on-climate-change/>

¹³ Vance, Eric. April 24, 2012. *Nature*. Mexico sets climate targets.
<http://www.nature.com/news/mexico-sets-climate-targets-1.10503>.

¹⁴ See also Black, Richard. April 20, 2012. *BBC News*. Inside Mexico's climate revolution.
<http://www.bbc.co.uk/news/science-environment-17777327>

¹⁵ Villarreal, Ryan. June 6, 2012. *International Business Times*. In a first for developing world, Mexico enacts climate change law. <http://www.ibtimes.com/articles/349422/20120606/mexico-climate-change-calderon-carbon-greenhouse-emission.htm>

¹⁶ Migration Policy Institute. 2006. The US-Mexico Border.
<http://www.migrationinformation.org/feature/display.cfm?ID=407>



Figure 1 Map of US-Mexico Border (source: Border Energy Forum, Texas General Land Office)

only about 6% of its energy from renewables and nuclear (not including hydropower). With Mexico's new mandate to obtain 35% of its electricity from renewable sources before 2024, Arizona may be able to export electricity from renewable sources to help Mexico achieve its goal. At this point, however, there are only 3 transmission lines running between the two countries, with only tentative plans to build more for export to Mexico. The DOE, however, recently published an FEIS approving a transmission line route to carry electricity from wind from Mexico into the U.S.¹⁷

Read more:

Columbia University's Climate Law Blog has a link to the full statutory text (in Spanish): <http://blogs.law.columbia.edu/climatechange/2012/05/07/mexicos-congress-passes-climate-change-bill/>

U.S.'s Energy Information Administration's Country Analysis Brief

<http://www.eia.gov/cabs/Mexico/Full.html>

Decree of the General Law on Climate Change

<http://en.presidencia.gob.mx/2012/06/decree-of-the-general-law-on-climate-change/>

¹⁷ http://www.renewablesbiz.com/article/12/06/route-recommended-usmexico-transmission-line%26utm_medium=eNL%26utm_campaign=RB_DAILY2%26utm_term=Original-Member