Climate Transparency

CLIMATE ACTION TRACKER

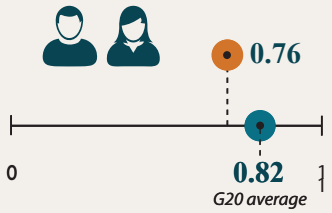
CLIMATE CHANGE PERFORMANCE index 2016

BROWN TO GREEN: G20 TRANSITION TO A LOW CARBON ECONOMY

Mexico

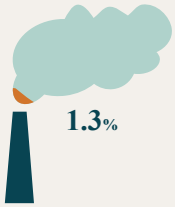
This country profile assesses the Mexico's past, present and indications of future performance towards a low-carbon economy by evaluating emissions, decarbonisation, climate policy performance and climate finance. The profile summarises the respective findings from, amongst others, the Climate Change Performance Index (CCPI, operated by Germanwatch and Climate Action Network Europe), the Climate Action Tracker (CAT, operated by Climate Analytics, NewClimate Institute, Ecofys and Potsdam Institute for Climate Impact Research), and analyses from the Overseas Development Institute (ODI).

Human Development Index



Source: UNDP, data for 2015

Share of global GHG emissions



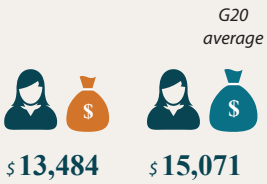
GHG emissions per capita

(tCO_2e/cap)

Source: World Bank Indicators, data for 2012

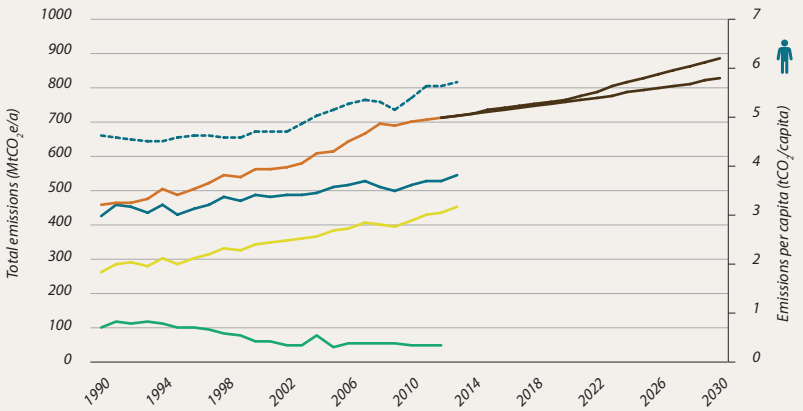
Share of global GDP

GDP per capita



Source: IEA, data for 2013

GREENHOUSE GAS (GHG) EMISSIONS



Historic emissions (excluding forestry)

Current policy emissions projections (excluding forestry)

Energy-related CO_2 emissions

Historic forestry emissions/removals

Energy-related CO_2 emissions per capita

G20 average of energy-related CO_2 emissions per capita

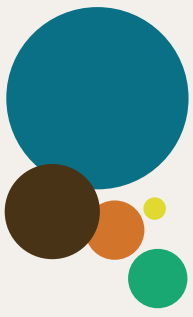
Mexico's GHG emissions have continuously increased in recent decades, up to 713 $MtCO_2e$ in 2012, and are likely to grow further by 2030. Emissions from land use, land-use change and forestry (LULUCF) declined since 1990 to 44 $MtCO_2e$ in 2012. Mexico's energy-related $C0_2$ emissions have grown similarly to total GHG emissions. Energy-related CO_2 per capita emissions have increased to nearly 4 tCO_2, but remain below the G20 average. The CCPI indicates a relatively good performance by Mexico, but the five-year trend indicates a worsening development.

CCPI evaluation of emissions level and trend

Level

Weak trend

Strong trend



Composition of GHG emissions

CO_2* 66%

N_2O 7%

CH_4 18%

F-Gases 1%

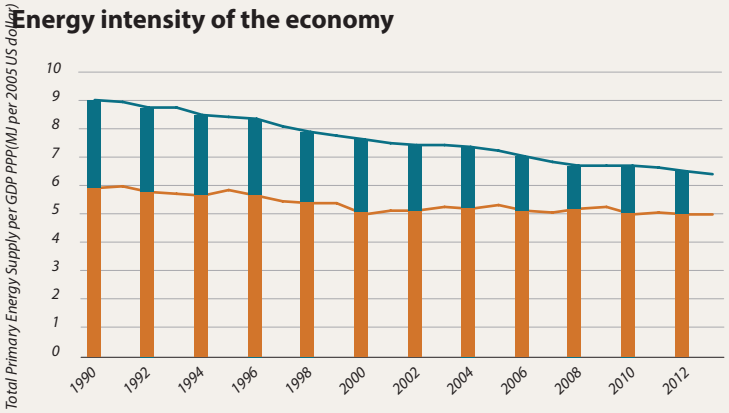
CO_2 emissions from forestry 7%

*CO_2 emissions excl. LULUCF
Source: Annex I countries: UNFCCC (2015); Non-Annex I countries: IEA (2014) and CAT (2015)*

Sources: Past energy related emissions from the Climate Change Performance Index (CCPI); past non-energy and future emissions projections from the Climate Action Tracker (CAT). CCPI calculations are primary based on the most recent IEA data; CAT calculations are based on national policies and country communications.

DECARBONISATION

Energy intensity of the economy

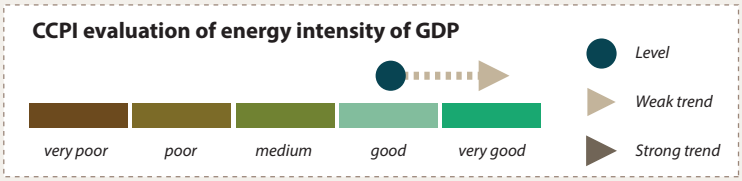


Energy intensity

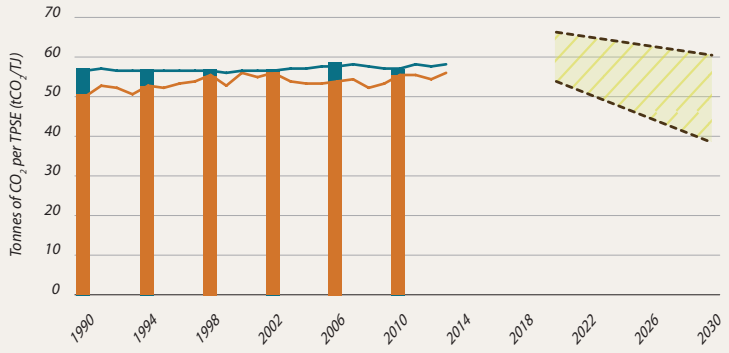
Average energy intensity in G20

Source: CCPI, 2016

The energy intensity of Mexico's economy (TPES/GDP) has slowly decline over the years. Starting one third below the G20 average, Mexico's energy intensity went down to around 5 TJ per million US$ in 2000 and has remained relatively stable at that level ever since. The CCPI ranked Mexico's level of energy intensity as good, with a positive trend.



Carbon intensity of the energy sector



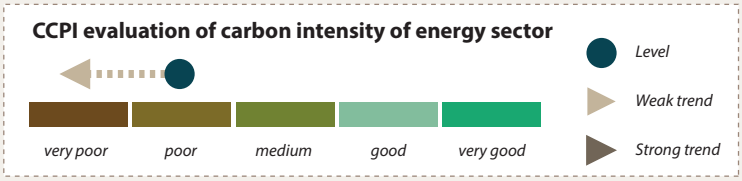
Carbon intensity (past trend)

Global benchmark for a 2°C pathway

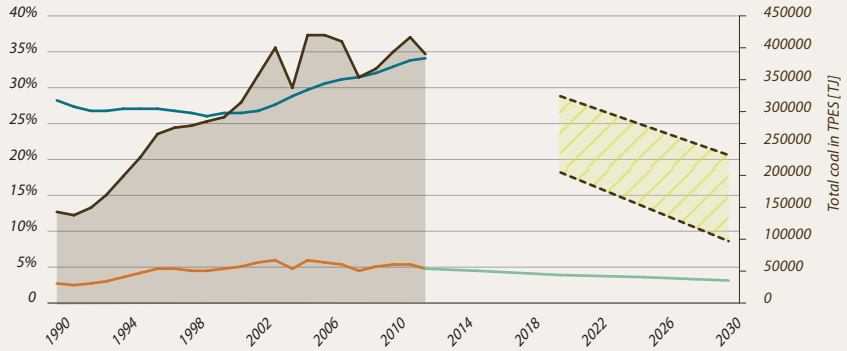
Average carbon intensity in G20

Sources: Past: CCPI; future projections: CAT

The carbon intensity of total primary energy (CO_2/TPES) in Mexico has increased throughout the years, but is still below the G20 average. Compared to other countries, the CCPI has evaluated Mexico as a relative poor performer. The ongoing increase over the last five years has led to a negative trend.



Share of coal in Total Primary Energy Supply (TPES)



% of coal (past trend)

Average % of coal in G20

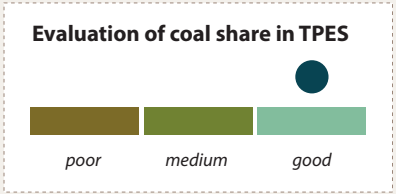
% of coal (current policy projections)

Global benchmark for a 2°C pathway (min & max)

Total coal consumption (TJ)

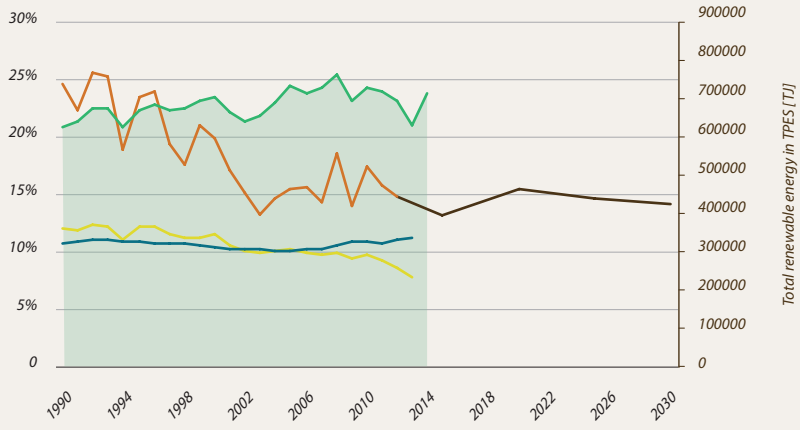
Source: CAT

At 5%, the share of coal in Mexico's primary energy supply is low, compared to other G20 countries. Future projections expect the coal share to drop even further until 2030.



Source: own evaluation

Renewable energy in TPES and electricity sector



% of renewable energy in electricity (past trend)

% of renewable energy in TPES (past trend)

% of renewable energy in electricity (current policy projections)

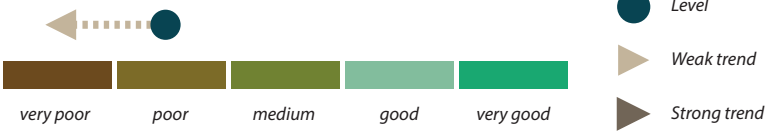
G20 average % of renewable energy in TPES

Total renewable energy consumption (TJ)

Sources: CCPI and CAT

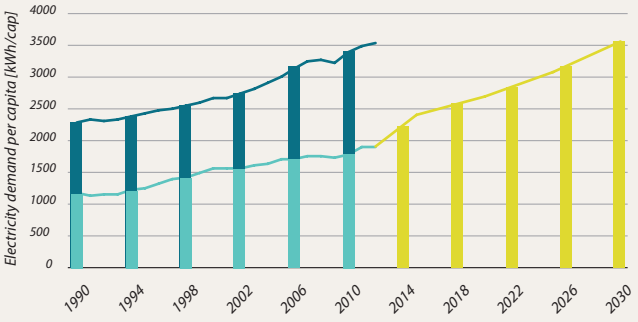
Mexico's share of renewables in electricity has decreased over the years, down to a level of 15% in 2012. According to future projections, the share will stagnate around 13-16% until 2030. However, these projections do not yet include the effects of a recently approved Energy Transition Law and its target of 35% clean energy by 2024. As with the share of renewables in electricity, Mexico's share of renewable energy in primary energy supply is decreasing, going from 12% in 1990 to a level of 8% in 2013, now below the G20 average. The CCPI evaluates Mexico's renewable energy level as relatively poor, with a negative trend.

CCPI evaluation of renewable share in TPES



Electricity demand per capita

The electricity demand in Mexico increased from a very low level in 1990 to nearly 2000 kWh per capita in 2012. According to future projections, it is expected that this growth will continue in the coming years.



Electricity demand per capita (past trend)

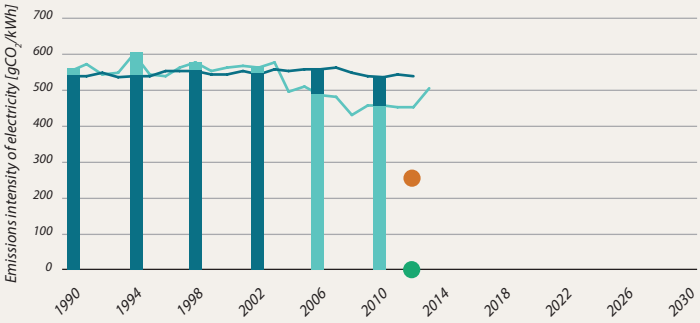
Electricity demand per capita (current policy projections)

Average electricity demand per capita in G20

Source: CAT, 2015

Emissions intensity of the electricity sector

After slightly exceeding the G20 average up to 2003, Mexico's electricity emissions intensity dropped to a low in 2008. Since then, emissions intensity has been increasing again towards the G20 average.



Emissions intensity (past trend)

Average emissions intensity in G20

Good practice benchmark: without nuclear or large hydro potential (Denmark)

Good practice benchmark: with large hydro potential (Norway)

Source: CAT, 2015

Evaluation of the electricity emission intensity

Source: own evaluation

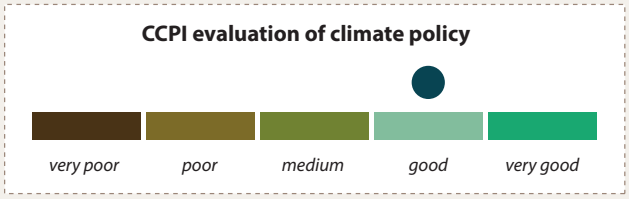
CLIMATE POLICY PERFORMANCE

Checklist of the climate policy framework

*Low emissions development plan for 2050**	✓
2050 GHG emissions target	✓
Building codes, standards and incentives for low-emissions options	✓
Support scheme for renewables in the power sector	✓
Emissions performance standards for cars	✓
Emissions Trading Scheme (ETS)	✗
Carbon tax	✓

** understood as decarbonisation plans and not specifically as the plans called for in the Paris Agreement*

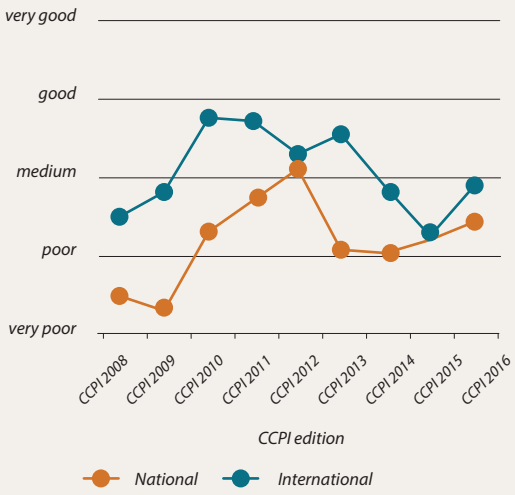
Source: Climate Policy Database, 2016



Climate policy evaluation by experts

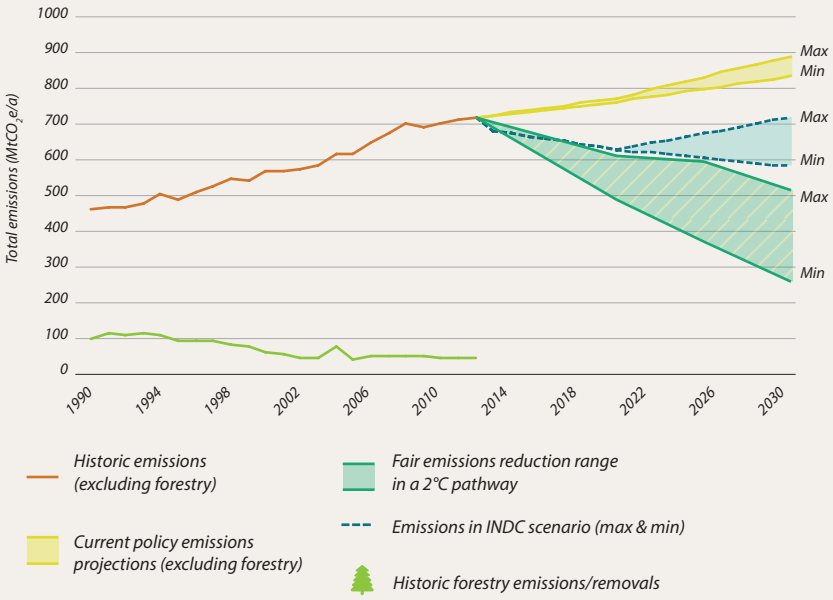
Internationally, Mexico was evaluated as a good performer until CCPI's 2011 evaluation, when its performance declined. Experts say energy policies are not aligned with the emissions reduction targets set by the Climate Change Law and the INDC. While Mexico strongly supports the fossil fuel sector, the CCPI still rates it well relative to other countries.

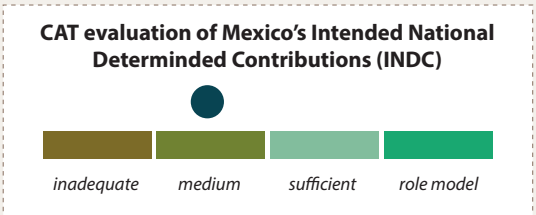
The CCPI evaluates a country's performance in national and international climate policy through feedback from national energy and climate experts.



Source: CCPI, 2016

Compatibility of national climate targets (INDCs) with a 2°C scenario





Source: CAT, 2015

Mexico's Intended Nationally Determined Contribution (INDC) was submitted on 28 March 2015 and proposes to unconditionally reduce its greenhouse gases (GHGs) emissions and black carbon by 25% below baseline levels in 2030, equivalent to an increase of 35.8% above 1990 levels (including Land Use and Land Use Change and Forestry – LULUCF emissions).

Based on this target, the Climate Action Tracker rates Mexico as "medium" since Mexico's ambition level is not yet consistent with limiting global warming to below 2°C, and would require other countries to make deeper reductions and comparably greater efforts.

Current policies imply emissions levels of 8–17% above the INDC target in 2030. Mexico has shown strong progress in policy planning and institution building, including the adoption of its General Law on Climate Change (LGCC in Spanish) in 2012. This was the first law on climate change in a developing country, under which Mexico aims to reduce its emissions by 50% from 2000 levels by 2050. This target is consistent with the INDC objective.

FINANCING THE TRANSITION

Investment attractiveness

Allianz Energy and Climate Monitor	LOW
RECAI (E&Y index) Category (own assessment)*	MEDIUM
*Trend***	↑

**Adapted from RECAI and re-classified in 3 categories (low, medium, high) for comparison purposes with Allianz Monitor.*

***Taken from RECAI issue of May 2016*

Climate Transparency rates Mexico's investment attractiveness as low to medium, due to the historical state monopoly in the energy sector and no substantive support schemes for renewables uptake. However, the new "pro-market" government has begun an overhaul of the energy sector. The 2014 constitutional reforms have opened up the electricity sector to private developers who have been awarded contracts worth 1,720 MW of renewable power.

Sources: Allianz Energy and Climate Monitor and RECAI reports

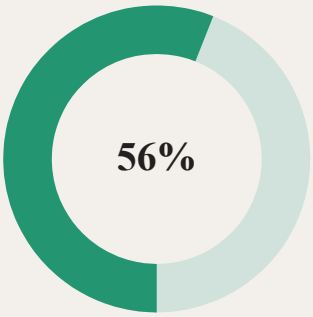
The Allianz Energy & Climate Monitor ranks G20 member states on their relative fitness as potential investment destinations for building low-carbon electricity infrastructure. The investment attractiveness of a country is assessed through four categories: Policy adequacy, Policy reliability of sustained support, Market absorption capacity and the National investment conditions. The Renewable Energy Country Attractiveness Index (RECAI) produces score and rankings for countries' attractiveness based on Macro drivers, Energy market drivers and Technology-specific drivers which together compress a set of 5 drivers, 16 parameters and over 50 datasets.

Historical investments in renewable energy and investment gap

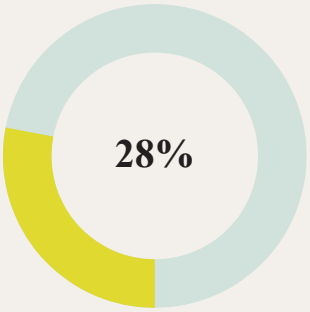
This section shows Mexico's current investments in the overall power sector (including distribution and transmission) as well as in renewable energy expressed as the share of the total annual investments needed to be in line with a 2°C compatible trajectory

Investments in the power sector

% of current investments in the power sector compared to the investment needs under a 2°C pathway



Investments in renewable energy for the power sector



% of current investments for renewable energy in the power sector compared to the investment needs under a 2°C pathway

Source: Adapted from WEIO, 2014[2]

[2] WEIO (2014) compares annual average investments from 2000 to 2013 with average annual investments needed from 2015 to 2030 under a 2°C scenario

Carbon pricing mechanisms

Emissions Trading Schemes (ETS)

An ETS caps the total level of GHG emissions and allows industries to trade allowances based on their marginal abatement cost. By creating a supply and demand for allowances, an ETS establishes a market price for GHG emissions.

Carbon Tax

A Carbon tax directly sets a price on carbon by defining a tax rate on GHG emissions or – more commonly – on the carbon content of fossil fuels. Unlike an ETS, a carbon tax is a price-based instrument that pre-defines the carbon price, but not the emissions reduction outcome of a carbon tax.

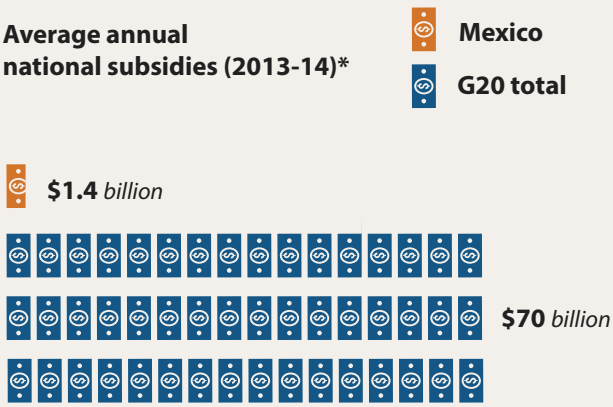
In 2014, Mexico introduced a national carbon tax that, covered 46% of the country's emissions, and generated almost US$ 1 billion in revenue by mid-2016. The existing carbon tax, in combination with other climate initiatives such as a national emissions registry and the Clean Energy Certificates (CEC) scheme, are expected to enable a carbon market in 2018.

Sources: World Bank and Ecofys, 2016; other national sources

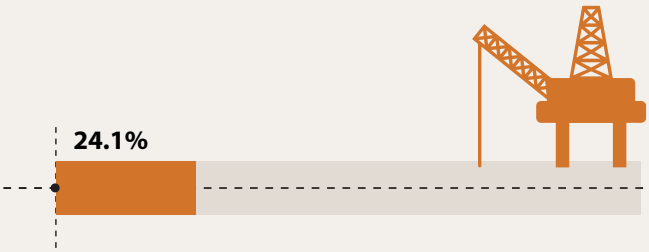
Fossil fuel subsidies

Despite productivity decreases in ageing oil fields since 2005, Mexico is one of the world's largest producers of oil and gas. In 2013, Mexico initiated an energy reform to reduce oil industry restrictions to raise production and attract international players. Most of Mexico's fossil fuel subsidies are consumption subsidies, although some production subsidies intended to reduce operating costs for new companies and spur a competitive market for oil and gas, currently exist (e.g. 100% deduction of exploration expenditures). In 2015, the government began a new fiscal regime for the oil and gas industry to create a level playing field between the monopoly producer, Petroleos Mexicanos (Pemex), and private players by reducing Pemex tax and royalty payments.

Average annual national subsidies (2013-14)*



% of government's income from oil and gas production (2013)*



Source: ODI, 2015

**The indicators above refer only to subsidies for fossil fuel production, and include direct spending (e.g. government budget expenditure on infrastructure that specifically benefits fossil fuels), tax expenditure (e.g. tax deductions for investment in drilling and mining equipment) and other support mechanisms (e.g. capacity mechanisms).*

Public climate finance

As a developing country, Mexico is not obliged to provide climate finance. It has nevertheless pledged $10 million to the GCF. Mexico has also created a national climate fund.