

## BROWN TO GREEN:

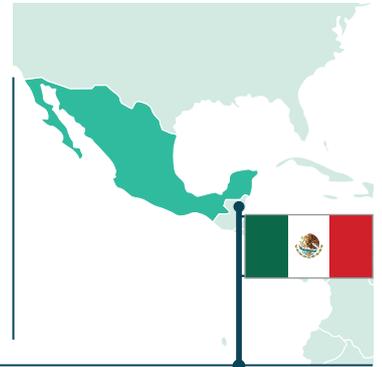
### THE G20 TRANSITION TO A LOW-CARBON ECONOMY | 2018

# MEXICO

GREENHOUSE GAS (GHG) EMISSIONS  
(INCL. FORESTRY) PER CAPITA  
(tCO<sub>2</sub>e/capita)



Data from 2015 | Source: INECC 2018



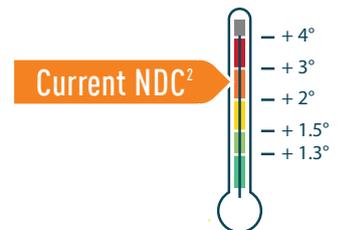
#### The gap:

Is Mexico on track to stay below the Paris Agreement temperature limit?

Based on implemented policies, Mexico's **GHG emissions** are expected to increase to a level of 844–852 MtCO<sub>2</sub>e by 2030 (excl. forestry). This emission pathway is not compatible with the Paris Agreement.<sup>1</sup>

Mexico's unconditional **NDC** commitment is not consistent with the Paris Agreement's temperature limit but would lead to a warming of between 2°C and 3°C.<sup>2</sup>

Mexico's sectoral **policies** still fall short of being consistent with the Paris Agreement, especially with respect to fossil fuel dependency on energy and industry (oil and gas), but its deforestation policies are a promising sign.<sup>3</sup>



Source: CAT 2018

#### Recent developments:

What has happened since the Paris conference?

↓ Mexico's current electricity mid-term forecast incorporates mainly gas and limits renewable energy penetration, compromising the decarbonisation actions to meet the unconditional NDC targets and the Paris Agreement's goals.

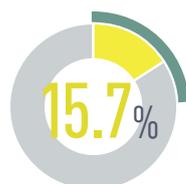
↑ Mexico has held three long-term power auctions, in which renewable energy accounted for all new energy added and prices reached world record-breaking lows.

↑ Mexico was the first developing country to submit its mid-century strategy to the UNFCCC in November 2016 and to pledge funds to the Green Climate Fund. Mexico has incorporated the Paris Agreement into its legal framework, with a mandate to elaborate a long-term roadmap with sectoral mitigation targets.

#### Brown and green performance:

Where does Mexico lead or lag compared to G20 countries?

SHARE OF RENEWABLES IN POWER GENERATION  
(incl. large hydro)



G20 average: 24%

Data from 2017 | Source: Ministry of Energy 2018

TRANSPORT EMISSIONS PER CAPITA  
(tCO<sub>2</sub>/capita)



G20 average

Data from 2017 | Source: Enerdata 2018

2012-2017 TREND IN ENERGY USE PER CAPITA  
(Total primary energy supply in GJ/capita)



G20 average: +0.8%

Source: Enerdata 2018

This country profile is part of the **Brown to Green 2018** report. The full report and other G20 country profiles can be downloaded at: <http://www.climate-transparency.org/g20-climate-performance/g20report2018>

**BACKGROUND INDICATORS:  
MEXICO**

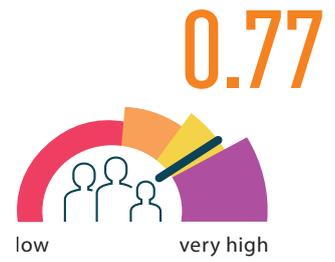


**GDP PER CAPITA<sup>4</sup>**  
(PPP US\$ const. 2015, international)



Source: World Bank 2017

**HUMAN DEVELOPMENT INDEX<sup>5</sup>**



Data from 2017 | Source: UNDP 2018

**MEXICO'S EXPOSURE TO CLIMATE IMPACTS<sup>6</sup>**

This indicator shows the extent to which human society and its supporting sectors are affected by the future changing climate conditions based on an approximately 2°C scenario. This sectoral exposure will be even higher given that the efforts depicted in current NDCs will lead to an approximately 3°C scenario.



**FOOD**



Projected climate impacts on cereal yields



Projected increase of food demand due to population growth



**WATER**



Projected climate impacts on annual run-off



Projected climate impacts on annual groundwater recharge



**HEALTH**



Projected climate impacts on a spread of malnutrition and diarrhoeal diseases



Projected climate impacts on spread of vector-borne diseases



**ECOSYSTEM SERVICE**



Projected climate impacts on biomes occupying the countries



Projected climate impacts on marine biodiversity



**HUMAN HABITAT**



Projected climate impacts on frequency of high temperature periods



Projected climate impacts on frequency and severity of floods



**INFRASTRUCTURE**



Projected climate impacts on hydropower generation capacity



Proportion of coastline impacted by sea level rise

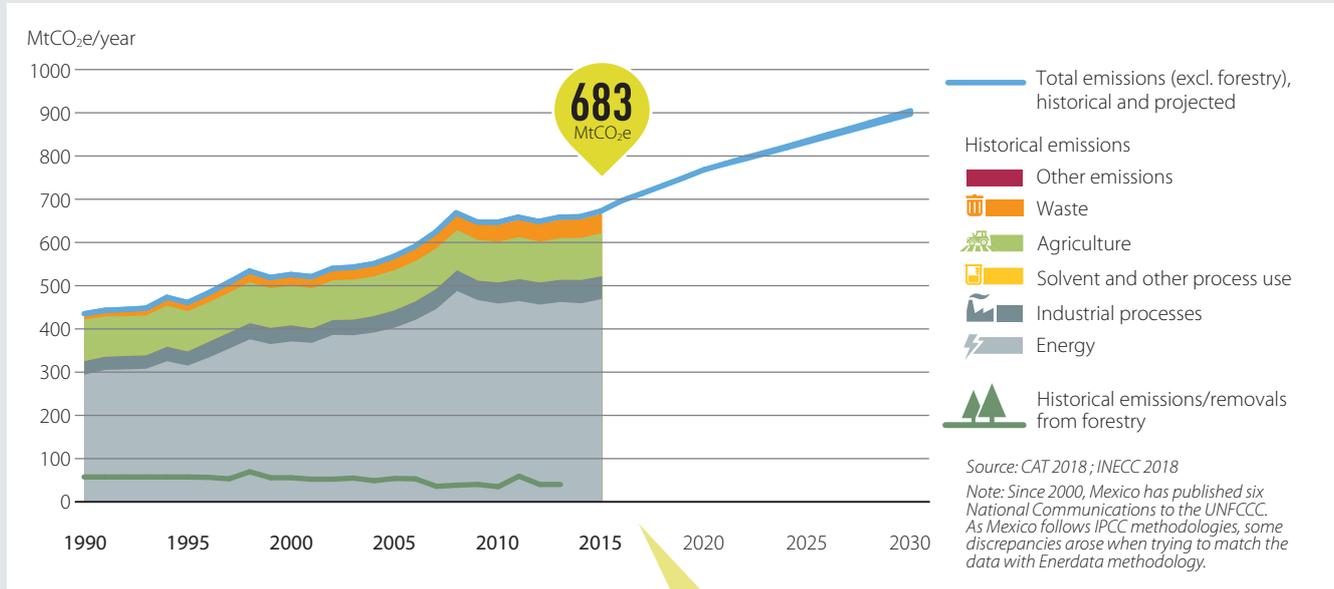


Own composition based on ND-GAIN 2017 (based on data for 2016)

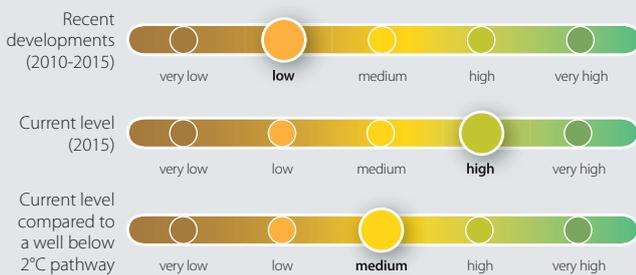
# GREENHOUSE GAS (GHG) EMISSIONS

# MEXICO

## TOTAL GHG EMISSIONS ACROSS SECTORS<sup>7</sup>

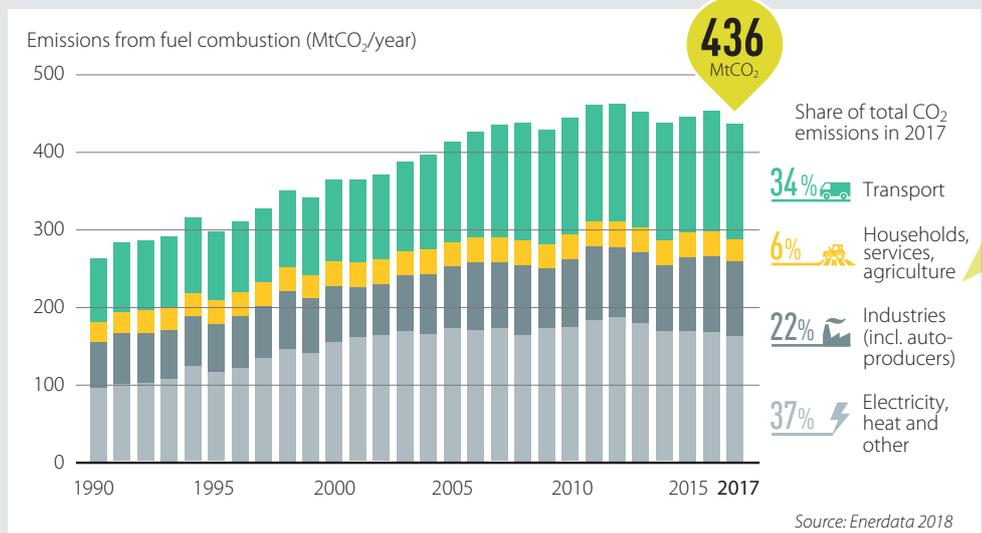


## CCPI PERFORMANCE RATING OF GHG EMISSIONS PER CAPITA<sup>8</sup>



Mexico's emissions increased by 54% between 1990 and 2015 and are expected to grow at a similar rate towards 2030. The energy sector is by far the largest contributor with 70.4% of GHG emissions in 2015.

## ENERGY-RELATED CO<sub>2</sub> EMISSIONS<sup>9</sup>



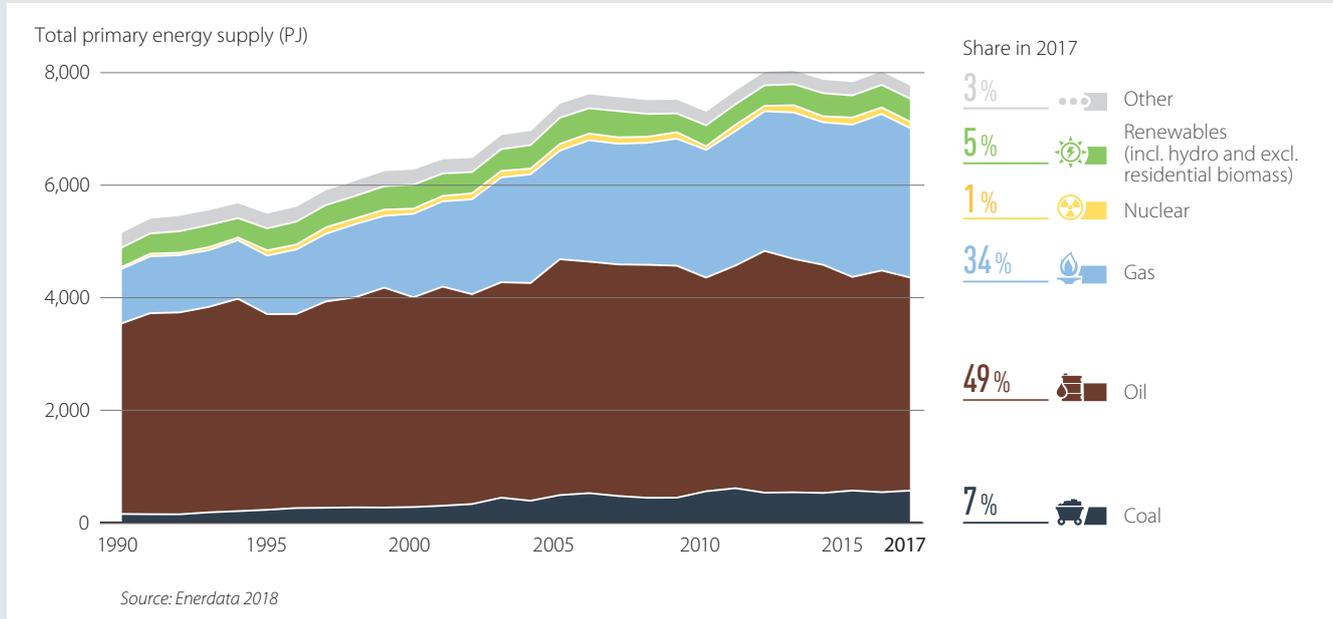
The largest driver for overall GHG emissions is CO<sub>2</sub> emissions from energy, which show a slight downward trend in Mexico since 2012 (-6%). Electricity and transport account for the largest share.

Note: Since 2000, Mexico has published six National Communications to the UNFCCC. As Mexico follows IPCC methodologies, some discrepancies arose when trying to match the data with Enerdata methodology.

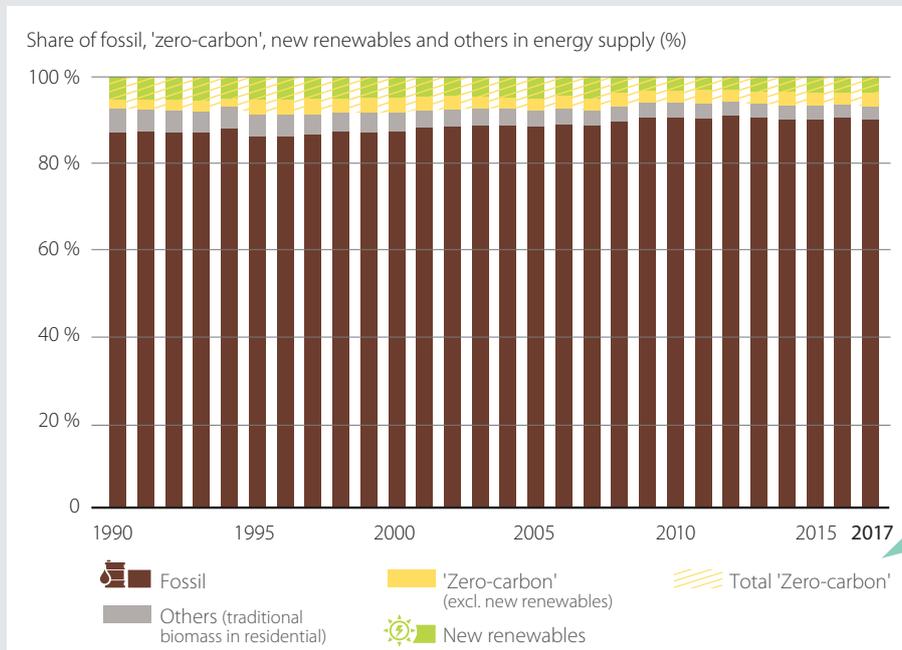
DECARBONISATION

MEXICO

ENERGY MIX<sup>10</sup>



SHARE OF FOSSIL FUELS AND 'ZERO-CARBON' FUELS IN ENERGY SUPPLY<sup>11</sup>



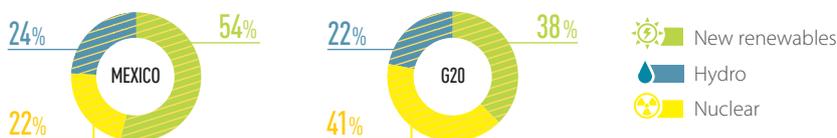
PERFORMANCE RATING OF SHARE OF FOSSIL FUELS<sup>12</sup>



Source: own evaluation

Zero-carbon fuels include nuclear, hydropower, new renewables. In Mexico, these account for 7% of the energy mix, only half of the G20 average.

'ZERO-CARBON' SHARES



Source: Enerdata 2018

PERFORMANCE RATING OF SHARE OF ZERO-CARBON TECHNOLOGY<sup>12</sup>

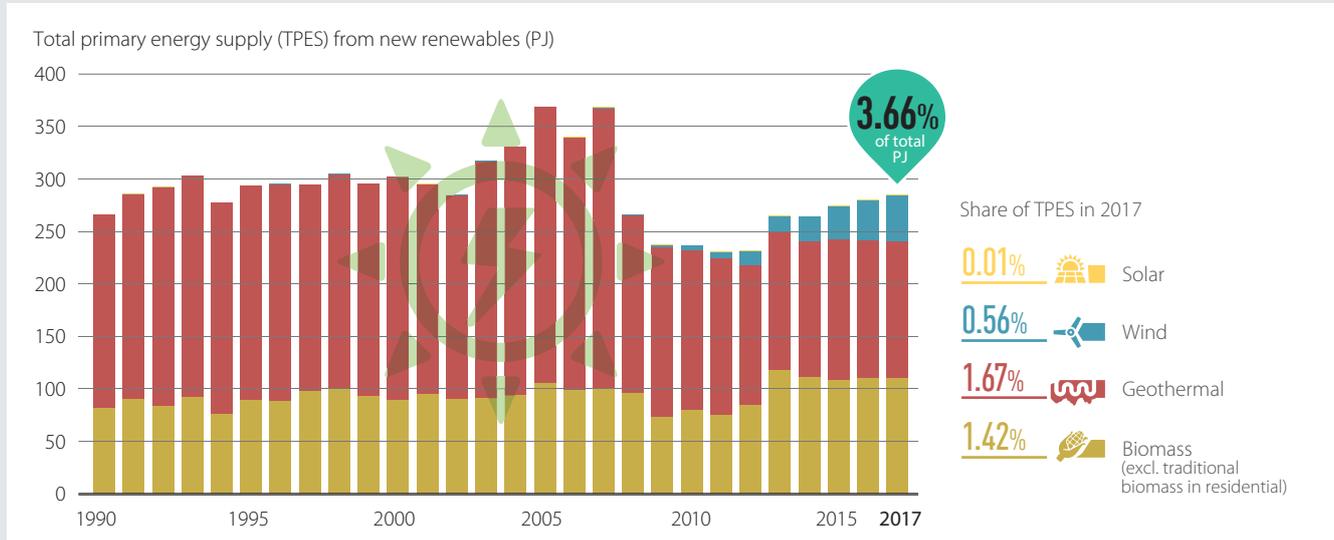


Source: own evaluation

DECARBONISATION

MEXICO

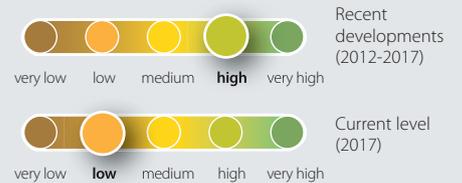
NEW RENEWABLES<sup>13</sup>



Source: Enerdata 2018

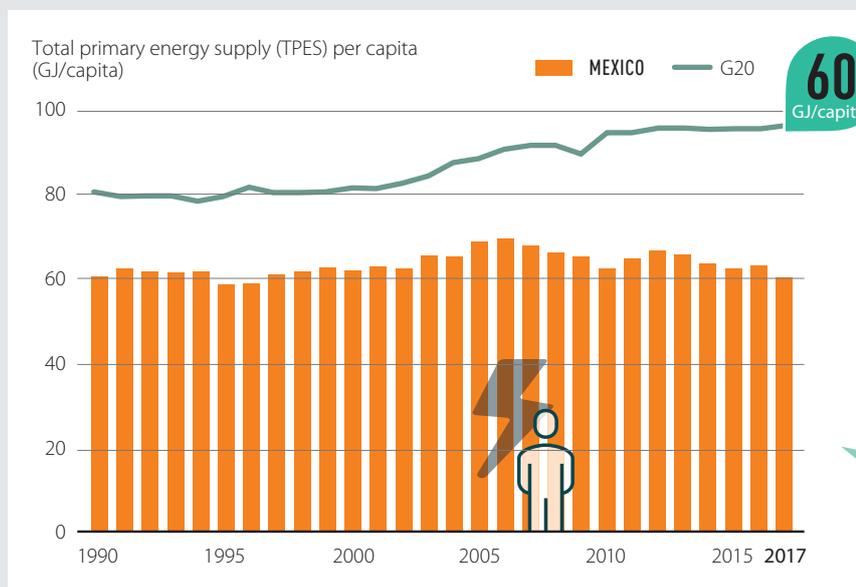
“New renewables” excludes unsustainable renewable sources such as large hydropower. New renewables, mainly from biomass and geothermal, provide 3.66% of energy supply. The recent upwards trend (23% between 2012 and 2017) is driven by the increasing use of wind energy.

PERFORMANCE RATING OF NEW RENEWABLES<sup>12</sup>



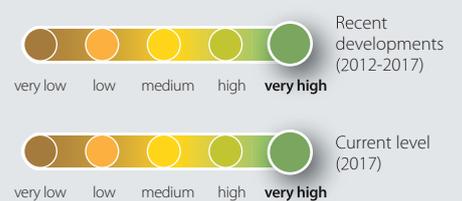
Source: own evaluation

ENERGY USE PER CAPITA<sup>14</sup>



Source: Enerdata 2018

PERFORMANCE RATING OF ENERGY USE PER CAPITA<sup>12</sup>



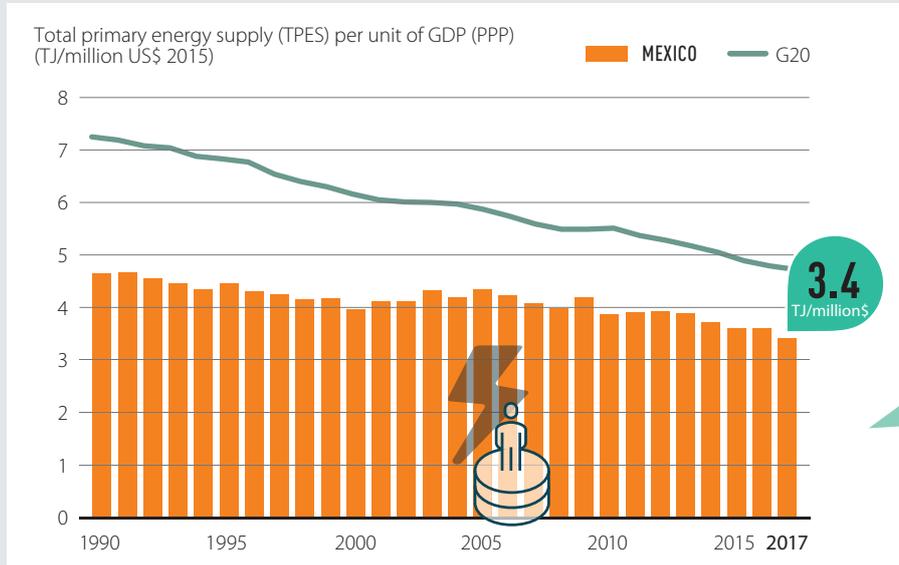
Source: own evaluation

Energy use per capita in Mexico has decreased at much higher rates (-9%, 2012–2017) than in most of the other G20 countries.

DECARBONISATION

MEXICO

ENERGY INTENSITY OF THE ECONOMY<sup>15</sup>



This indicator quantifies how much energy is used for each unit of GDP. Mexico's energy intensity remains below the G20 average and has decreased at a slightly higher pace than the G20 average.

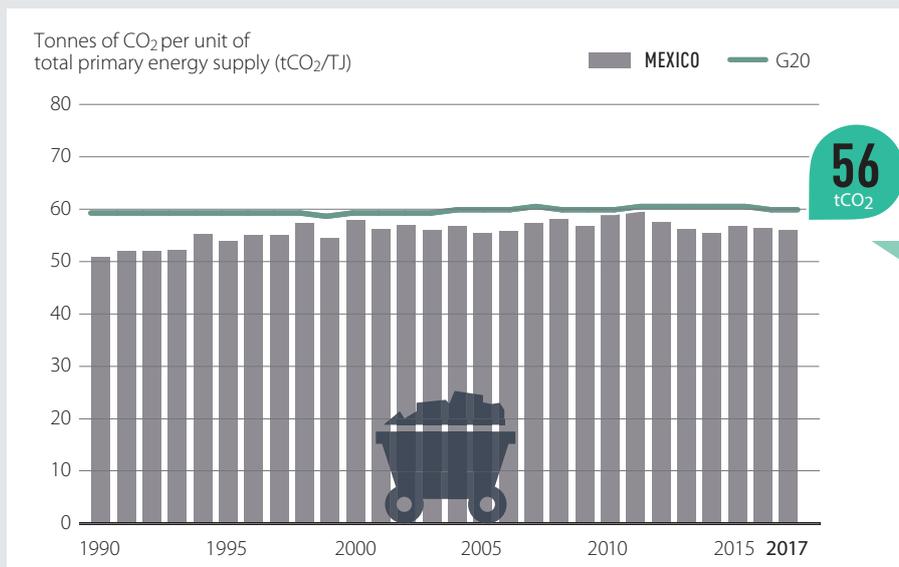
Source: Enerdata 2018

PERFORMANCE RATING OF ENERGY INTENSITY<sup>12</sup>



Source: own evaluation

CARBON INTENSITY OF THE ENERGY SECTOR<sup>16</sup>



The carbon intensity of Mexico's energy sector decreased only slightly by 2.6% (2012–2017), reflecting the constantly high share of fossil fuels in the energy mix.

Source: Enerdata 2018

PERFORMANCE RATING OF CARBON INTENSITY<sup>12</sup>



Source: own evaluation

DECARBONISATION

MEXICO

SECTOR-SPECIFIC INDICATORS

Legend for trend: negative positive

The trend number shows developments over the past five years, where data is available

POWER SECTOR

<p><b>ELECTRICITY DEMAND PER CAPITA</b> (kWh/capita)</p> <p>G20: 3,920 Mexico: 2,065</p> <p>Trend:  +6%</p> <p><small>Data from 2017 Source: Enerdata 2018</small></p>	<p><b>EMISSIONS INTENSITY OF THE POWER SECTOR</b> (gCO<sub>2</sub>/kWh)</p> <p>G20 average: 490 Mexico: 466</p> <p>Trend:  -4%</p> <p><small>Data from 2016 Source: Enerdata 2018</small></p>	<p><b>SHARE OF RENEWABLES IN POWER GENERATION</b> (incl. large hydro)</p> <p>G20 average: 24% Mexico: 16%</p> <p>Trend:  +3%</p> <p><small>Data from 2017 Source: Ministry of Energy 2018</small></p>	<p><b>SHARE OF POPULATION WITH ACCESS TO ELECTRICITY</b></p> <p>84%</p> <p>Trend:  +1%</p> <p><small>Data from 2016 Source: World Bank 2018</small></p>	<p><b>SHARE OF POPULATION WITH BIOMASS DEPENDENCY</b></p> <p>0%</p> <p><small>Data from 2014 Source: IEA 2016</small></p>
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TRANSPORT SECTOR

<p><b>TRANSPORT EMISSIONS PER CAPITA</b> (tCO<sub>2</sub>/capita)</p> <p>G20 average: 1.13 Mexico: 1.16</p> <p>Trend:  -8%</p> <p><small>Data from 2017 Source: Enerdata 2018</small></p>	<p><b>MOTORISATION RATE</b> (Vehicles per 1000 inhabitants)</p> <p>278</p> <p><small>Data from 2015   Source: Agora Verkehrswende 2018</small></p>	<p><b>PASSENGER TRANSPORT</b> (modal split in % of passenger-km)</p> <p>n.a.</p> <p><small>Source: Agora Verkehrswende 2018</small></p>	<p><b>FREIGHT TRANSPORT</b> (modal split in % of tonne-km)</p> <p>Legend: road, air, rail, inland waterways, pipeline</p> <p><small>Data from 2016   Source: Agora Verkehrswende 2018</small></p>	<p><b>MARKET SHARE OF ELECTRIC VEHICLES IN NEW CAR SALES</b> (%)</p> <p>1.30%</p> <p><small>Data from 2017 Source: IEA 2018</small></p>
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INDUSTRY SECTOR

**INDUSTRY EMISSIONS INTENSITY**  
(tCO<sub>2</sub>e/thousand US\$2015 sectoral GDP (PPP))

G20 average: 0.357  
Mexico: 0.19

Trend: -4%

Data from 2015  
Source: INECC 2018

BUILDING SECTOR

**BUILDING EMISSIONS PER CAPITA**  
(tCO<sub>2</sub>/capita)

G20 average: 0.48  
Mexico: 0.17

Trend: -25%

Data from 2016  
Source: Enerdata 2018

AGRICULTURE SECTOR

**AGRICULTURE EMISSIONS INTENSITY**  
(tCO<sub>2</sub>e/thousand US\$2015 sectoral GDP (PPP))

G20 average: 0.95  
Mexico: 1.75

Trend: -5%

Data from 2015  
Source: INECC 2018

FOREST SECTOR

**FOREST AREA COMPARED TO 1990 LEVEL**  
(%)

95%

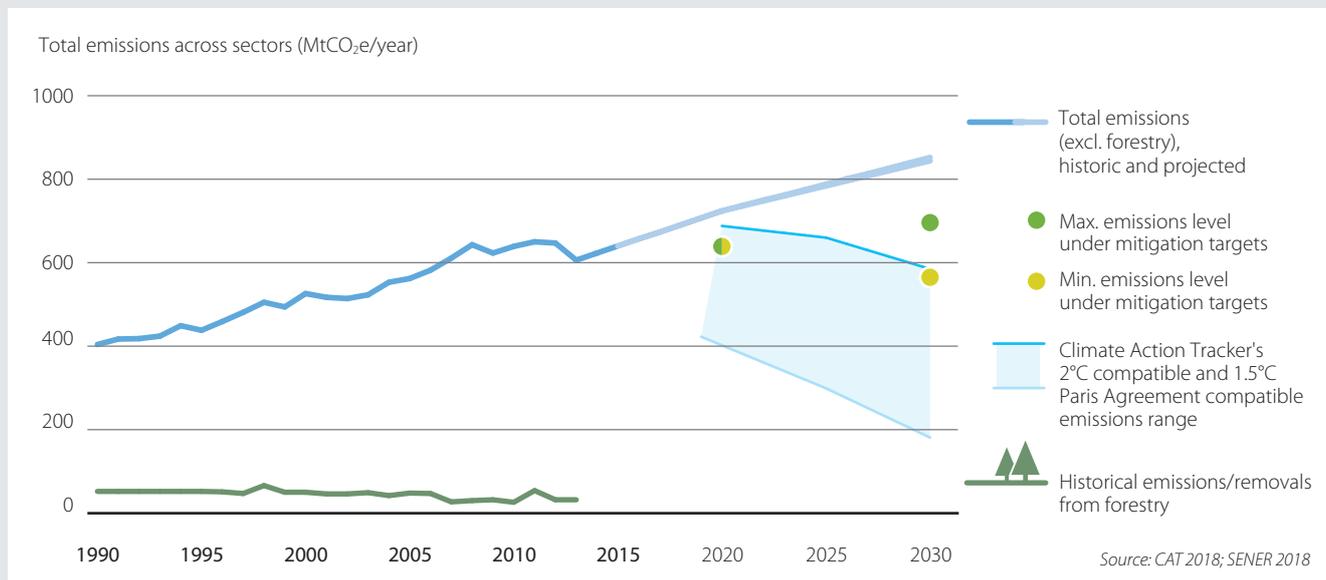
Data from 2015  
Source: PRIMAP 2018



**CLIMATE POLICY**

**MEXICO**

**COMPATIBILITY OF CLIMATE TARGETS WITH THE PARIS AGREEMENT<sup>2</sup>**



The CAT rates Mexico’s NDC “insufficient” as it is not consistent with holding warming to below 2°C, let alone to 1.5°C. The government plans to double renewable energy capacity. However, it also plans to add new coal-fired capacity in 2020 and more than 40 gas power plants until 2032. The CAT estimates that, under current policies, Mexico will not meet its NDC target unless additional policies are implemented, reverting the direction of fossil fuels and increasing renewable energy.

**CLIMATE ACTION TRACKER (CAT) EVALUATION OF NDC<sup>2</sup>**



**NATIONALLY DETERMINED CONTRIBUTION (NDC)**

**MITIGATION**

<b>Targets</b>	<p><b>Overall targets</b></p> <ul style="list-style-type: none"> <li>To reduce unconditionally 25% of its GHGs and Short Lived Climate Pollutants emissions (below ‘business as usual’) for the year 2030. This commitment implies a reduction of 22% of GHG and a reduction of 51% of black carbon</li> <li>This commitment implies a net emissions peak starting from 2026, decoupling GHG emissions from economic growth: emissions intensity per unit of GDP will reduce by around 40% from 2013 to 2030</li> </ul> <p><b>Coverage</b> 100% of emissions covered (all sectors and gases)</p>
<b>Actions</b>	Actions mentioned (sectors: energy, transport, urban, agriculture and forestry)

**ADAPTATION**

<b>Targets</b>	Not mentioned
<b>Actions</b>	Actions specified (sectors: water, biodiversity/ ecosystems, forestry, agriculture, health, infrastructure)

**FINANCE**

<b>Conditionality</b>	The 25% reduction commitment could increase to a 40% commitment (-36% GHG, -70% black carbon) conditional among others on financial support
<b>Investment needs</b>	Not specified
<b>Actions</b>	Not mentioned
<b>International market mechanisms</b>	Mexico’s unconditional NDC commitment will be met regardless of such mechanisms, although these would assist cost-effective implementation (conditional target relies on market mechanisms)

Source: own compilation based on UNFCCC 2018



**CLIMATE POLICY**

**MEXICO**

**POLICY EVALUATION<sup>17</sup>**

The ratings evaluate a selection of policies that are essential pre-conditions for the longer-term transformation required to meet the 1.5°C limit. They do not represent a complete picture of what is necessary.

Legend:

- low** No action
- medium** Some action
- high** Significant action and a long-term vision
- frontrunner** Significant action, and a long-term vision that is compatible with 1.5°C

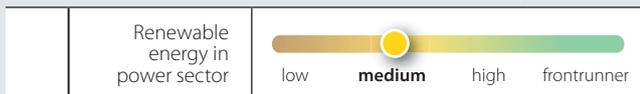
! most important measures based on share of emissions and political relevance



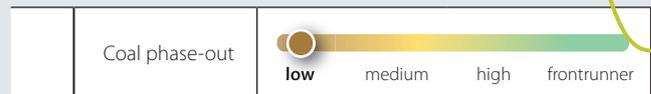
Mexico was the first developing country to submit its long-term low emissions development strategy to the UNFCCC, but the strategy does not contain interim or sectoral targets. However, a 2018 reform to Mexico's 2012 General Law on Climate Change

mandates the federal government to elaborate a long-term mitigation roadmap with sectoral and interim targets to comply with the 2050 GHG reduction target of 50% from 2000 levels.

**POWER**

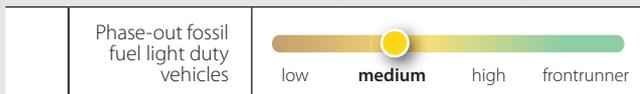


The government has set a target to increase the share of renewables in the electricity mix to 35% by 2024 and to 50% by 2050 (aspirational only), and has introduced an auctioning system for energy, capacity and clean energy certificates.



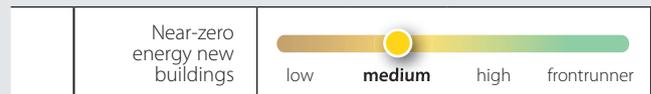
Mexico joined the Power Past Coal Alliance at COP 23, yet it plans to add new coal-fired capacity in 2020.

**TRANSPORT**



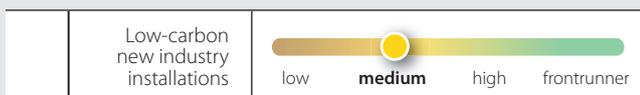
The government established emissions limits for passenger cars. Companies producing cars that are outperforming these limits are able to obtain transferable and tradable credits for the reduced emissions. An electric vehicle strategy is currently under development but the government has not yet set a target to phase out fossil fuel LDVs.

**BUILDINGS**



The Ministry of Energy in 2016 endorsed an Energy Conservation Code for Buildings in Mexico but no zero-energy building strategy exists.

**INDUSTRY**



No policy that covers minimum energy performance and equipment standards in industry is in place. However, the 2017 Energy Efficiency Roadmap sets out more than 40 actions to target energy use in industry.

**FORESTS**



Mexico aims to reach a rate of 0% deforestation by 2030, while restoring forests and ecosystems with high carbon capture potential such as mangroves and seagrasses.

Source: own evaluation

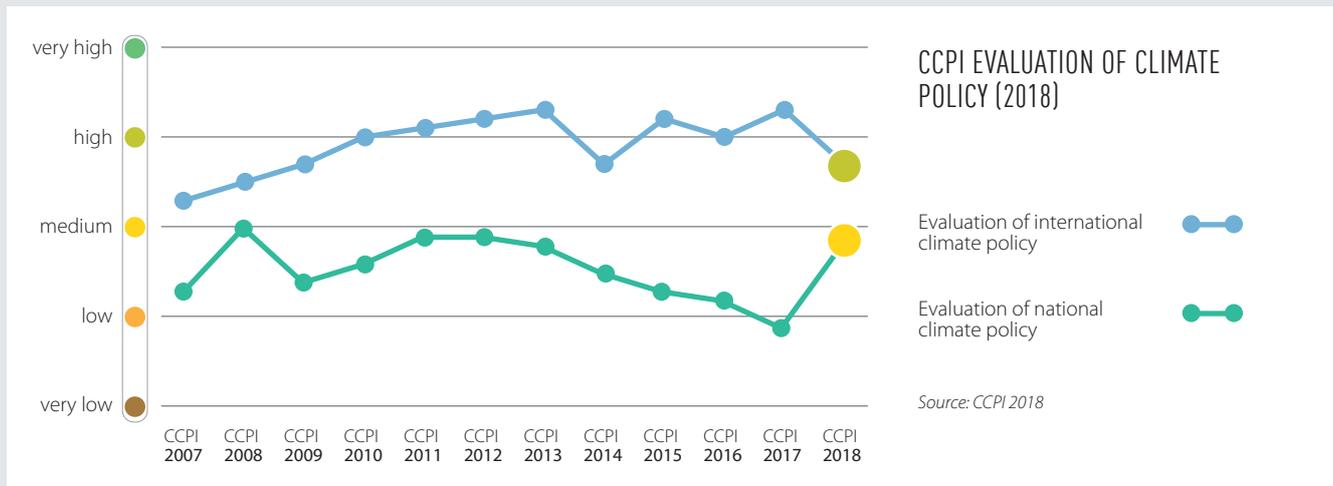
**CLIMATE POLICY**

**MEXICO**

**CCPI EXPERTS' POLICY EVALUATION<sup>18</sup>**

Experts rate Mexico's performance in national climate policy as medium. They praise recent actions to reduce fossil fuels subsidies and deforestation, but criticise a lack of stringent energy efficiency policies across sectors and plans to build more than 40 gas power plants. They call for implementation of a roadmap with sectoral mitigation targets for the 2050 GHG emission goal. Mexico's performance in international climate policies is rated high due

to its proactive position in international climate negotiations and recent adjustments to align the Mexican General Law for Climate Change with the Paris Agreement, including the creation of a carbon market to support climate action. Mexico is on many international coalitions promoting climate policies and clean energy.



**JUST TRANSITION<sup>19</sup>**

Mexico's energy sector is in rapid transition, with legislation adopted since 2013 allowing policy and market decision-making to shift from fossil fuels towards new and renewable energy sources. The transition has however been limited to economic and technology-based considerations, without broader, socially oriented and democratic governance and planning. From 2018, there have been no policies on just transition. The incoming federal government must address tensions with expected increases in national oil production and fuel-oil generation, after campaigning to guarantee energy security and achieve energy self-sufficiency.

Nevertheless, the next administration has an opportunity to make policies to distribute the social benefits of the energy transition. For example, it has expressed an intention to increase job creation and participation of communities and users in renewable energy projects, emphasising medium, small-scale and distributed-generation.



## FINANCING THE TRANSITION

# MEXICO

### FINANCIAL POLICIES AND REGULATIONS

Through policy and regulation governments can overcome challenges to mobilising green finance, including: real and perceived risks, insufficient returns on investment, capacity and information gaps.

#### APPROACHES TO IMPLEMENTING THE RECOMMENDATIONS OF THE TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES (TCFD)<sup>20</sup>

This indicator establishes the degree of government engagement with the recommendations of the G20 Financial Stability Board's Task Force on Climate-Related Financial Disclosure.

No formal engagement with TCFD	Political and regulatory engagement	Formal engagement with private sector	Publication of guidance and action plans	Encoding into law
<div style="width: 10%;"></div>	<div style="width: 20%;"></div>	<div style="width: 10%;"></div>	<div style="width: 10%;"></div>	<div style="width: 10%;"></div>

Source: CISL 2018

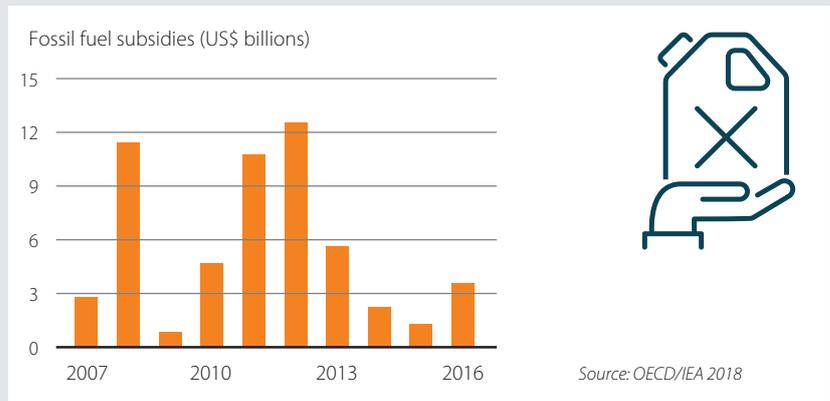
The Banco de México is a founding member of the Central Banks and Supervisors Network for Greening the Financial System (NGFS) that will advance TCFD recommendations. Additionally, Mexico's national stock exchange, Bolsa Mexicana, committed in 2016 to create voluntary ESG reporting guidance for issuers.

### FISCAL POLICY LEVERS

Fiscal policy levers raise public revenues and direct public resources. Critically, they can shift investment decisions and consumer behaviour towards low-carbon, climate-resilient activities by reflecting externalities in prices.

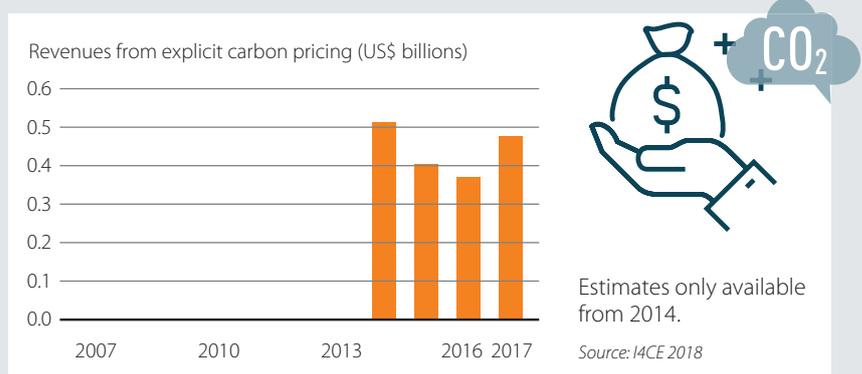
#### FOSSIL FUEL SUBSIDIES

In 2016, Mexico provided US\$3.6bn in fossil fuel subsidies. From 2007 to 2016, subsidies were similar to the G20 average (US\$0.003) per unit of GDP, though fluctuated highly (US\$0.8bn–US\$12.5bn). Subsidies primarily targeted consumption (100%), through direct budget support and tax exemptions. The largest subsidy is general excise duty reductions for gasoline consumption on the Mexico-US border. Subsidies to (fossil fuel-dominated) electricity are not included here.



#### CARBON REVENUES

In 2014, Mexico introduced a national carbon tax, which generated US\$0.5bn in revenues in 2017. This covers 46% of domestic emissions, with emissions priced at US\$2/tCO<sub>2</sub>. The scheme however excludes natural gas products. From 2014 to 2017, carbon revenues were lower (US\$0.0002) than the G20 average (US\$0.0005) per unit of GDP. A national emissions trading scheme is also under consideration. Mexico is planning to introduce a national emissions trading scheme by 2021.



FINANCING THE TRANSITION

MEXICO

PUBLIC FINANCE

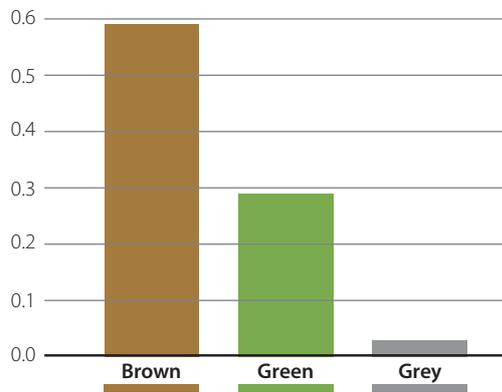
Governments steer investments through their public finance institutions including via development banks, both at home and overseas, and green investment banks. Developed G20 countries also have an obligation to provide finance to developing countries and public sources are a key aspect of these obligations under the UNFCCC.

NATIONAL AND INTERNATIONAL PUBLIC FINANCE IN THE POWER SECTOR<sup>21</sup>

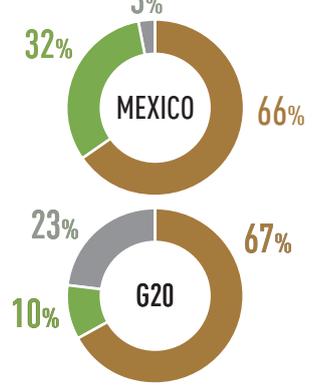
From 2013 to 2015, Mexico's public finance institutions spent an annual average of US\$0.6bn brown, US\$0.3bn green and US\$0.03bn grey financing in the power sector, domestically and internationally. The largest transaction was a US\$327m loan to refinance the Nuevo Pemex natural gas co-generation plant. This data is likely to be non-comprehensive due to a lack of transparency in public finance institutions.

- coal, oil and gas projects (and associated infrastructure) **brown**
- large-scale hydropower, biofuels, biomass, nuclear, incineration, transmission, distribution, storage, energy efficiency, other general electricity support **grey**
- renewable energy projects (excluding grey financing) **green**

2013-2015 annual average of power finance (US\$ billions)



Proportion of total public finance to power



Source: Oil Change International 2017

PROVISION OF INTERNATIONAL PUBLIC SUPPORT

Mexico is not listed in Annex II of the UNFCCC and is therefore not formally obliged to provide climate finance. While Mexico may channel international public finance towards climate change via multilateral and other development banks, it has not been included in this report.

OBLIGATION TO PROVIDE CLIMATE FINANCE UNDER UNFCCC



CONTRIBUTIONS THROUGH THE MAJOR MULTILATERAL CLIMATE FUNDS<sup>22</sup>

Note: See Technical Note for multilateral climate funds included and method to attribute amounts to countries

Source: Climate Funds Update 2017

Annual average contribution (mn US\$, 2015-2016)	Theme of support		
	Adaptation	Mitigation	Cross-cutting
1.72	12%	72%	16%

BILATERAL CLIMATE FINANCE CONTRIBUTIONS<sup>23</sup>

Source: Country reporting to UNFCCC

Annual average contribution (mn US\$, 2015-2016)	Theme of support			
	Mitigation	Adaptation	Cross-cutting	Other
n.a.	n.a.	n.a.	n.a.	n.a.



## ANNEX



For more detail on sources and methodologies, please refer to the Technical Note at:

[https://www.climate-transparency.org/wp-content/uploads/2018/11/Technical-Note\\_data-sources-and-methodology.pdf](https://www.climate-transparency.org/wp-content/uploads/2018/11/Technical-Note_data-sources-and-methodology.pdf)

- 1) The 2030 projections of the future development of greenhouse gas (GHG) emissions under current policies are based on the Climate Action Tracker (CAT) estimates.
- 2) The CAT is an independent scientific analysis that tracks progress towards the globally agreed aim of holding warming to well below 2°C, and pursuing efforts to limit warming to 1.5°C. The CAT “Effort Sharing” assessment methodology applies state-of-the-art scientific literature on how to compare the fairness of government efforts and (Intended) Nationally Determined Contribution (I) NDC proposals against the level and timing of emission reductions consistent with the Paris Agreement. The assessment of the temperature implications of a country’s NDC is based on the assumption that all other governments would follow a similar level of ambition.
- 3) This assessment is based on the policy evaluation on page 9 of this Country Profile.
- 4) Gross Domestic Product (GDP) per capita is calculated by dividing GDP with mid-year population figures. GDP is the value of all final goods and services produced within a country in a given year. Here GDP figures at purchasing power parity (PPP) are used. Data for 2017.
- 5) The Human Development Index (HDI) is a composite index published by the United Nations Development Programme (UNDP). It is a summary measure of average achievement in key dimensions of human development. A country scores higher when the lifespan is higher, the education level is higher, and GDP per capita is higher.
- 6) The ND-GAIN index summarises a country’s vulnerability to climate change and other global challenges in combination with its readiness to improve resilience. This report looks only at the exposure indicators as part of the vulnerability component of the ND-GAIN index for six sectors. It displays the exposure scores provided by the ND-GAIN on a scale from low (score: 0) to high (score: 1).
- 7) The indicator covers all Kyoto gases showing historic emissions in each of the IPCC source categories (energy, industrial processes, agriculture, etc.). Emissions projections (excl. forestry) under a current policy scenario until 2030 are taken from the Climate Action Tracker and scaled to the historical emissions from PRIMAP (see Brown to Green Report 2018 Technical Note).
- 8) The ratings on GHG emissions are taken from the Climate Change Performance Index (CCPI) 2018. The rating of “current level compared to a well below 2°C pathway” is based on a global scenario of GHG neutrality in the second half of the century and a common but differentiated convergence approach.
- 9) CO<sub>2</sub> emissions cover only the emissions from fossil fuels combustion (coal, oil and gas) by sector. They are calculated according to the UNFCCC methodology (in line with the 2006 IPCC Guidelines for National Greenhouse Gas Inventories).
- 10) Total primary energy supply data displayed in this Country Profile does not include non-energy use values. Solid fuel biomass in residential use has negative environmental and social impacts and is shown in the category “other”.
- 11) Zero-carbon fuels include nuclear, hydropower and new renewables (non-residential biomass, geothermal, wind, solar).
- 12) Climate Transparency ratings assess the relative performance across the G20. A high scoring reflects a good effort from a climate protection perspective but is not necessarily 1.5°C compatible.
- 13) New renewables include non-residential biomass, geothermal, wind and solar energy. Hydropower and solid fuel biomass in residential use are excluded due to their negative environmental and social impacts.
- 14) Total primary energy supply (TPES) per capita displays the historical, current and projected energy supply in relation to a country’s population. Alongside the intensity indicators (TPES/GDP and CO<sub>2</sub>/TPES), TPES per capita gives an indication on the energy efficiency of a country’s economy. In line with a well-below 2°C limit, TPES per capita should not grow above current global average levels. This means that developing countries are still allowed to expand their energy use to the current global average, while developed countries have to simultaneously reduce it to that same number.
- 15) TPES per GDP describes the energy intensity of a country’s economy. This indicator illustrates the efficiency of energy usage by calculating the energy needed to produce one unit of GDP. Here GDP figures at PPP are used. A decrease in this indicator can mean an increase in efficiency but also reflects structural economic changes.
- 16) The carbon intensity of a country’s energy sector describes the CO<sub>2</sub> emissions per unit of total primary energy supply and gives an indication of the share of fossil fuels in the energy supply.



# ANNEX (continued)



- 17) The selection of policies rated and the assessment of 1.5°C compatibility are informed by the Paris Agreement and the Climate Action Tracker (2016): “The ten most important short-term steps to limit warming to 1.5°C”. The table below displays the criteria used to assess a country’s policy performance. See the Brown to Green Report 2018 Technical Note for the sources used for this assessment.
- 18) The CCPI evaluates a country’s performance in national climate policy, as well as international climate diplomacy through feedback from national experts from non-governmental organisations to a standardised questionnaire.
- 19) See the Brown to Green 2018 Technical Note for the sources used for this assessment.
- 20) The University of Cambridge Institute for Sustainability Leadership (CISL) in early 2018 reviewed the progress made by the national regulatory agencies of G20 members in making the Task Force on Climate-related Financial Disclosures (TCFD) recommendations relevant to their national contexts. See the Brown to Green Report 2018 Technical Note for more information on the assessment.
- 21) This data includes bilateral public finance institutions such as national development banks and other development finance institutions, overseas aid agencies, export credit agencies, as well as key multilateral development banks. The analysis omits most finance delivered through financial intermediaries and significant volumes of multilateral development bank (MDB) development policy finance (due to a lack of clarity on power finance volumes). Given a lack of transparency, other important multilateral institutions in which G20 governments participate are not covered. See the Brown to Green Report 2018 Technical Note for further details.
- 22) Finance delivered through multilateral climate funds comes from Climate Funds Update, a joint ODI/Heinrich Boell Foundation database that tracks spending through major multilateral climate funds. See the Brown to Green Report 2018 Technical Note for multilateral climate funds included and method to attribute approved amounts to countries.
- 23) Bilateral finance commitments are sourced from Biennial Party reporting to the UNFCCC. Financial instrument reporting is sourced from the OECD-DAC; refer to the Brown to Green Report 2018 Technical Note for more detail. Figures represent commitments of Official Development Assistance (ODA) funds to projects or programmes, as opposed to actual disbursements.

On endnote 17)	Criteria description			
	● Low	● Medium	● High	● Frontrunner
<b>GHG emissions target for 2050 or beyond</b>	No emissions reduction target for 2050 or beyond	Existing emissions reduction target for 2050 or beyond	Existing emissions reduction target for 2050 or beyond and clear interim steps	Emissions reduction target to bring GHG emissions to at least net zero by 2050
<b>Long-term low emissions development strategy</b>	No long-term low emissions strategy	Existing long-term low emissions strategy	Long-term low emissions strategy includes interim steps and/or sectoral targets	Long-term low emissions strategy towards full decarbonisation in the second half of the century; includes interim steps and/or sectoral targets, plus institutions and measures in place to implement and/or regularly review the strategy
<b>Renewable energy in power sector</b>	Allianz Monitor 2018 Category 1.2 (targets) and 2 (policies), average 0-25	Allianz Monitor 2018 Category 1.2 (targets) and 2 (policies), average 26-60	Allianz Monitor 2018 Category 1.2 (targets) and 2 (policies), average 61-100	Allianz Monitor 2018 Category 1.2 (targets) and 2 (policies), 61-100 plus 100% renewables in the power sector by 2050 in place
<b>Coal phase-out</b>	No consideration or policy in place for phasing out coal	Significant action to reduce coal use implemented or coal phase-out under consideration	Coal phase-out decided and under implementation	Coal phase-out date compatible with 1.5°C
<b>Phase-out of fossil fuel light duty vehicles (LDVs)</b>	No policy or emissions performance standards for LDVs in place	Energy/emissions performance standards or support for efficient LDVs	National target to phase out fossil fuel LDVs in place	Ban on new fossil-based LDVs by 2025/30
<b>Near zero-energy new buildings</b>	No policy or low emissions building codes and standards in place	Building codes, standards or fiscal/financial incentives for low emissions options in place	National strategy for near zero-energy buildings (at least for all new buildings)	National strategy for near zero-energy buildings by 2020/25 (at least for all new buildings)
<b>Low-carbon new industry installations</b>	No policy or support for energy efficiency in industrial production in place	Support for energy efficiency in industrial production (covering at least two of the country’s sub-sectors (e.g. cement and steel production))	Target for new installations in emissions-intensive sectors to be low-carbon	Target for new installations in emissions-intensive sectors to be low-carbon after 2020, maximising efficiency
<b>Net zero deforestation</b>	No policy or incentive to reduce deforestation in place	Incentives to reduce deforestation or support schemes for afforestation / reforestation in place	National target for reaching zero deforestation	National target for reaching zero deforestation by 2020s or for increasing forest coverage

# CLIMATE TRANSPARENCY

Partners:



Funders:



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based on a decision of the German Bundestag

Data Partners:



<http://www.climate-transparency.org/g20-climate-performance/g20report2018>

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