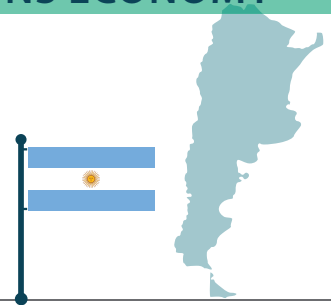


## BROWN TO GREEN:

2019

# THE G20 TRANSITION TOWARDS A NET-ZERO EMISSIONS ECONOMY

# ARGENTINA

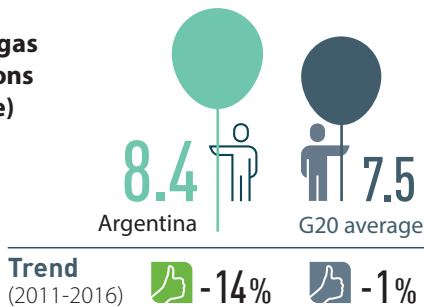


**Argentina's greenhouse gas (GHG) emissions are – per capita – slightly above the G20 average.**

Total GHG emissions (excl. land use) have increased by 52% since 1990 and are projected to rise further.

**Greenhouse gas (GHG) emissions (incl. land use) per capita<sup>1</sup>**  
(tCO<sub>2</sub>e/capita)

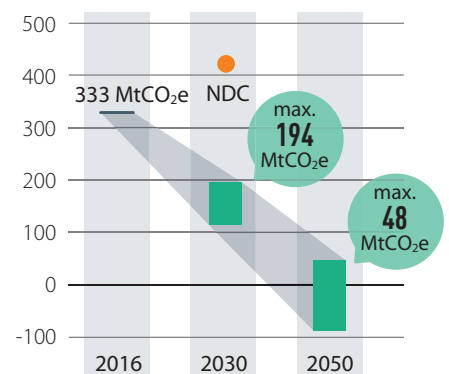
Data for 2016  
Source:  
BUR Argentina  
2019;  
World Bank 2019



**Argentina is not on track for a 1.5°C world.**

Argentina needs to reduce its emissions to below 205 MtCO<sub>2</sub>e by 2030 and to below 55 MtCO<sub>2</sub>e by 2050 to be within its fair-share range compatible with global 1.5°C IPCC scenarios. Argentina's 2030 NDC will only limit its emissions to 422 MtCO<sub>2</sub>e. All figures are drawn from the Climate Action Tracker and exclude land use.

**1.5°C compatible pathway<sup>2</sup>**  
(MtCO<sub>2</sub>e/year)



Source: CAT 2019

## Recent developments<sup>3</sup>



Argentina announced it would run, in 2019, a fifth round of renewable energy auctions under its RenovAr scheme, which also includes grid infrastructure projects to tackle grid capacity issues.



The government has awarded permits for offshore oil and gas exploration on its continental shelf.



Oil and gas production from Argentina's non-conventional fossil fuel reservoir in Vaca Muerta, Neuquen, is expected to triple between 2019 and 2021.

## Key opportunities for enhancing climate ambition<sup>3</sup>

Companies in Argentina received US\$ 3.66 bn in subsidies for the exploitation of shale oil and gas reserves (2016 to 2018)

→ **Set a clear pathway for renewable energy by progressively eliminating fossil fuel subsidies and halting the exploitation of new oil and gas reserves.**



Land use emissions account for more than a third of Argentina's GHG emissions

→ **Shift to sustainable agricultural practices and stop deforestation.**

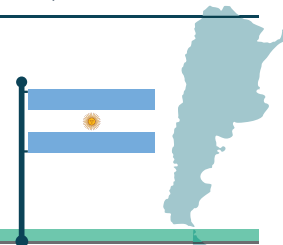


Transport emissions per capita have increased by 3% in the last five years

→ **Support a modal shift in passenger transport modes providing alternatives such as electricity-powered public transport and non-motorised transport modes.**

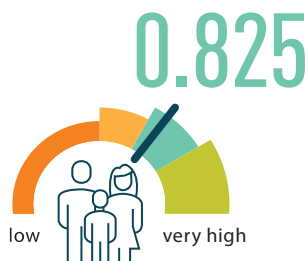


# ARGENTINA – SOCIO-ECONOMIC CONTEXT



## Human Development Index

The Human Development Index (HDI) reflects life expectancy, level of education, and per capita income. Argentina ranks very high.



Data for 2017 | Source: UNDP 2018

## Gross Domestic Product (GDP) per capita

(PPP US\$ const. 2018, international)

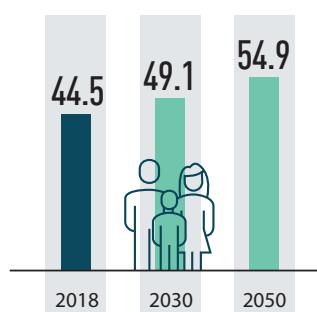


Data for 2018 | Source: World Bank 2019

## Population projections

(millions)

The World Bank expects Argentina's population to increase by around 23% between now and 2050.

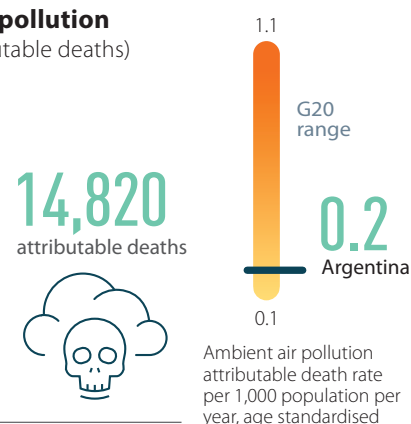


Source: World Bank 2019

## Death through ambient air pollution

(total ambient air pollution attributable deaths)

More than 14,000 people die in Argentina every year as a result of outdoor air pollution, due to stroke, heart disease, lung cancer and chronic respiratory diseases. Compared to the total population, this is at the lower end of the G20 range.



Data for 2016

Source: World Health Organization 2018

# JUST TRANSITION<sup>3</sup>

In the Americas, the TUCA (Trade Union Confederation of the Americas), through the PLADA (Development Platform of the Americas), expands the definition of 'just transition' and defines it as a set of policies to ensure that the path towards production with low emission of greenhouse gases also offers opportunities to workers and the communities involved.

One of the main difficulties in effectively implementing a just transition in Argentina is the scarcity or lack of assessment of social and job vulnerability, as well as the proper inclusion of unions in the design

and follow-up stages of climate change policies, making it difficult for the inclusion of a just transition in government agendas.

Despite the eventual participation of civil society (including labour organisations) on panel discussions within the Climate Cabinet\*, the concept of just transition loses strength or is distorted. Neither specific decisions nor methodologies have been discussed at national level.



\* Expanded Climate Cabinet consists of open meetings organised by the former Ministry of Environment to include civil society perspective in the NDC review process.

## Legend for all country profiles

### Trends

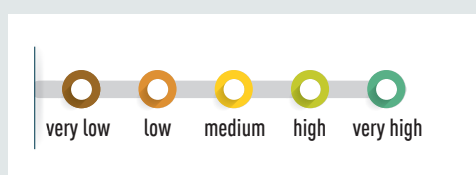


The trends show developments over the past five years for which data are available.

The thumbs indicate assessment from a climate protection perspective.

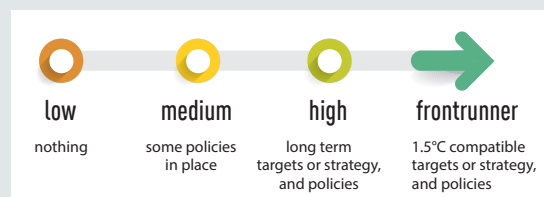
## Decarbonisation Ratings<sup>4</sup>

These ratings assess a country's performance compared to other G20 countries. A high scoring reflects a relatively good effort from a climate protection perspective but is not necessarily 1.5°C compatible.



## Policy Ratings<sup>5</sup>

The policy ratings evaluate a selection of policies that are essential pre-conditions for the longer-term transformation required to meet the 1.5°C limit.



For more information see the Annex and Technical Note

## MITIGATION BIG PICTURE

! Argentina's GHG emissions (excl. land use) have increased by around 38% (1990-2016), not counting forestry emissions. Argentina needs to scale-up its 2030 mitigation efforts to be in line with a 1.5°C pathway.

In 2030, global GHG emissions need to be 45% below 2010 levels and reach net zero by 2070.

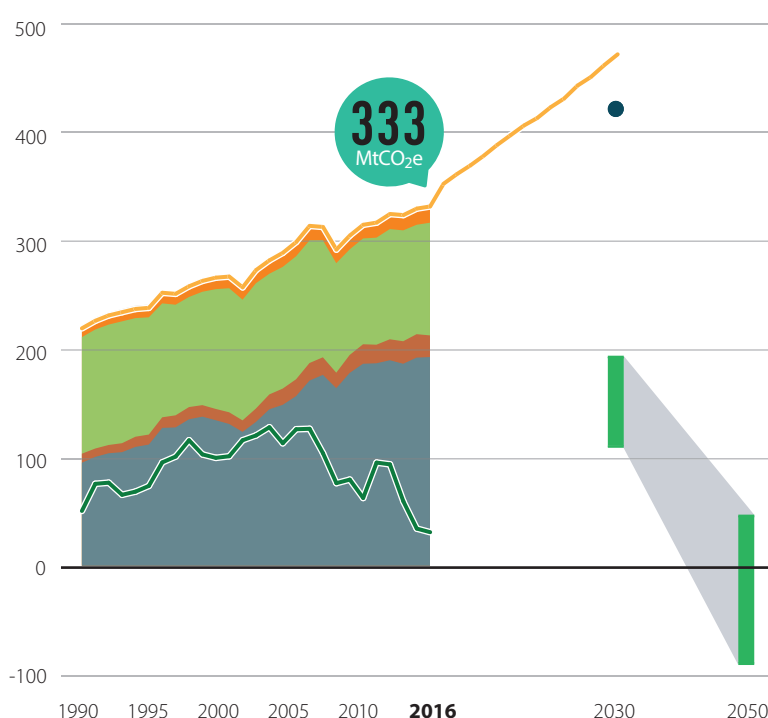


1.5°C<sup>6</sup>

Source: IPCC SR1.5 2018

Total GHG emissions across sectors<sup>2</sup>

MtCO<sub>2</sub>e/year



## GHG emissions by sector

- Other sectors
- Waste
- Agriculture
- Industrial processes
- Energy

**Total emissions** (excl. land use), historic and projected

Historical emissions/removals from land use

NDC

1.5°C fair share range

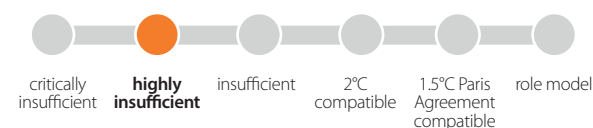
Argentina's emissions (excl. land use) increased by 52% between 1990 and 2016, and under current policies are projected to be more than double 1990 levels by 2030, according to the Climate Action Tracker. Recent studies by local experts show that total GHG emissions in 2030 will be below the unconditional NDC goal. Nevertheless, Argentina will need to scale up climate action to become 1.5°C compatible according to different studies on fair-share mitigation efforts.

Source: BUR Argentina 2019; CAT 2019

## Nationally-determined contribution (NDC): Mitigation

<b>Targets</b>	Not exceed a net emission of 483 million tons of carbon dioxide equivalent (tCO <sub>2</sub> e) by the year 2030
<b>Actions</b>	Actions mentioned (sectors: energy, agriculture, forestry, transport, industry, waste)

Source: UNFCCC, NDC of respective country

Climate action tracker (CAT) evaluation of NDC<sup>2</sup>

Source: CAT 2019

## Long-term strategy (LTS) to be submitted to the UNFCCC by 2020

<b>Status</b>	In preparation. Expected to be concluded in 2020. A participation process on energy and land use has been established
<b>2050 target</b>	–
<b>Interim steps</b>	–
<b>Sectoral targets</b>	–

Argentina is part of the Alliance for Climate Ambition, a group of countries committed to reviewing their NDCs by 2020 and to being carbon neutral by 2050. In September 2019, President Macri also announced at the UN that Argentina will be carbon neutral by 2050.

Source: UNFCCC, LTS of respective country

## MITIGATION ENERGY



## ARGENTINA

**!** Fossil fuels make up 86% of Argentina's primary energy mix (including power, heat, transport fuels, etc). Renewables are only slowly picking up, while gas use has increased considerably. Argentina needs to reverse this trend if it is to move towards a 1.5°C pathway.

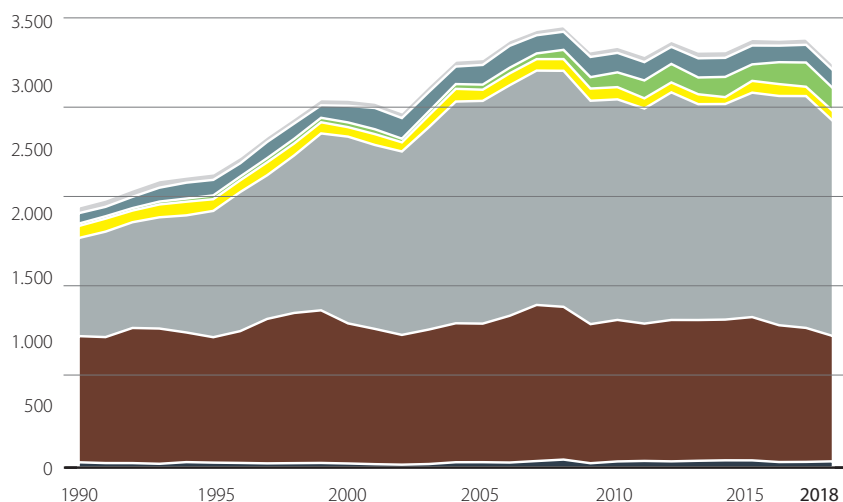
The share of fossil fuels globally needs to fall to 67% of global total primary energy by 2030 and to 33% by 2050 and to substantially lower levels without Carbon Capture and Storage.

**1.5°C**

Source: IPCC SR1.5 2018

Energy mix<sup>7</sup>

Total primary energy supply (PJ)



13%  
zero  
carbon

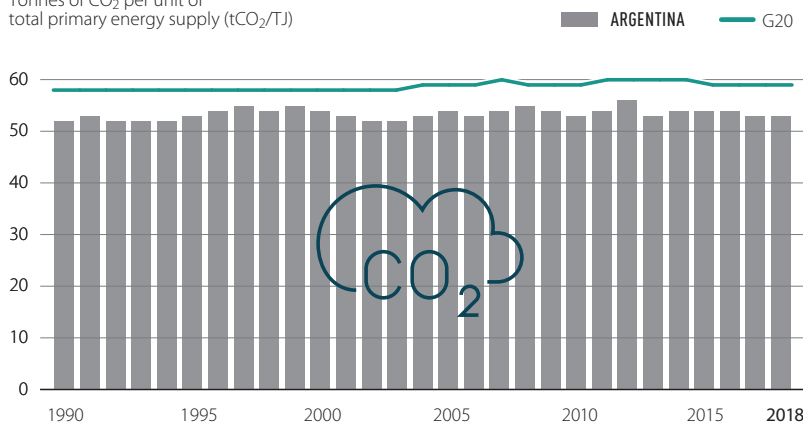
86%  
fossil

Source: Secretaría de Energía 2018; CAMMESA 2019

This graph shows the fuel mix for all energy supply, including energy used for electricity generation, heating, cooking, and transport fuels. Argentina increasingly uses oil and gas. Fossil fuels together make up almost 86% of Argentina's energy mix, which is around the G20 average.

## Carbon intensity of the energy sector

Tonnes of CO<sub>2</sub> per unit of total primary energy supply (tCO<sub>2</sub>/TJ)



Source: Enerdata 2019

Rating of carbon intensity compared to other G20 countries<sup>4</sup>

Rating trend (2013-2018)

low

Rating current level (2018)

medium

Source: own evaluation

Carbon intensity shows how much CO<sub>2</sub> is emitted per unit of energy supply. In Argentina, carbon intensity has remained almost constant at around 53 tCO<sub>2</sub> over the last five years, slightly below the G20 average. This level reflects the continuously high share of fossil fuels in the energy mix.

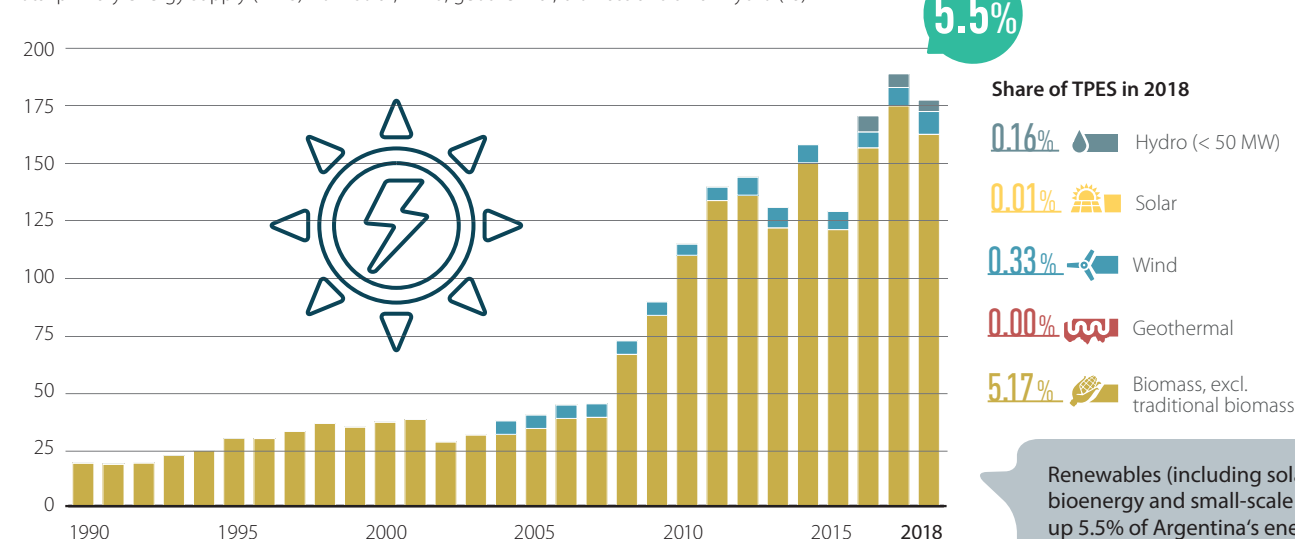
## MITIGATION ENERGY



## ARGENTINA

Solar, wind, geothermal and biomass development<sup>8</sup>

Total primary energy supply (TPES) from solar, wind, geothermal, biomass and small hydro (PJ)



Source: Secretaría de Energía 2018; CAMMESA 2019

Renewables (including solar, wind, bioenergy and small-scale hydro) make up 5.5% of Argentina's energy supply.

The share in total primary energy supply has increased by around 36% in the last five years.

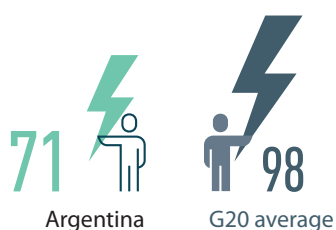
Bioenergy (for electricity, transport and heat) makes up the largest share.

Rating of share in TPES compared to other G20 countries<sup>4</sup>

Source: own evaluation

## Energy supply per capita

Total primary energy supply per capita (GJ/capita)



The level of energy supply per capita is closely related to economic development, climatic conditions and the price of energy.

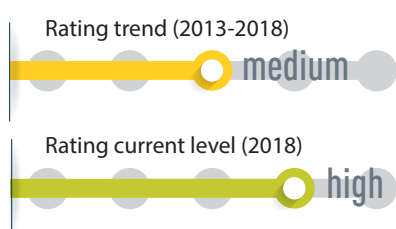
Energy supply per capita in Argentina (71 GJ/capita) is below the G20 average, and has decreased (-6%, 2013-2018) in contrast to the increasing G20 average (+1%).

**Trend (2013-2018)**

Argentina: -6%

G20 average: +1%

Data for 2018 |  
Source: Secretaría de Energía 2018;  
INDEC 2019

Rating of energy supply per capita compared to other G20 countries<sup>4</sup>

Source: own evaluation



## MITIGATION ENERGY



## ARGENTINA



Energy supply per capita and per GDP are below the G20 average. CO<sub>2</sub> emissions from energy have decreased marginally over the last two years.

Global energy and process-related CO<sub>2</sub> emissions must be cut by 40% below 2010 levels by 2030 and reach net zero by 2060.

1.5°C<sup>6</sup>

Source: IPCC SR1.5 2018

## Energy intensity of the economy

(TJ/PPP US\$2015 million)



## Trend

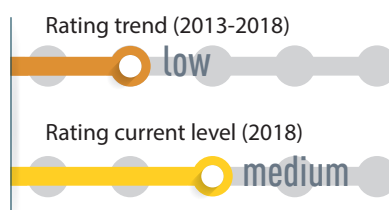
(2013-2018)

👍 -1%

👍 -12%

Data for 2018 | Source: Enerdata 2019; World Bank 2019

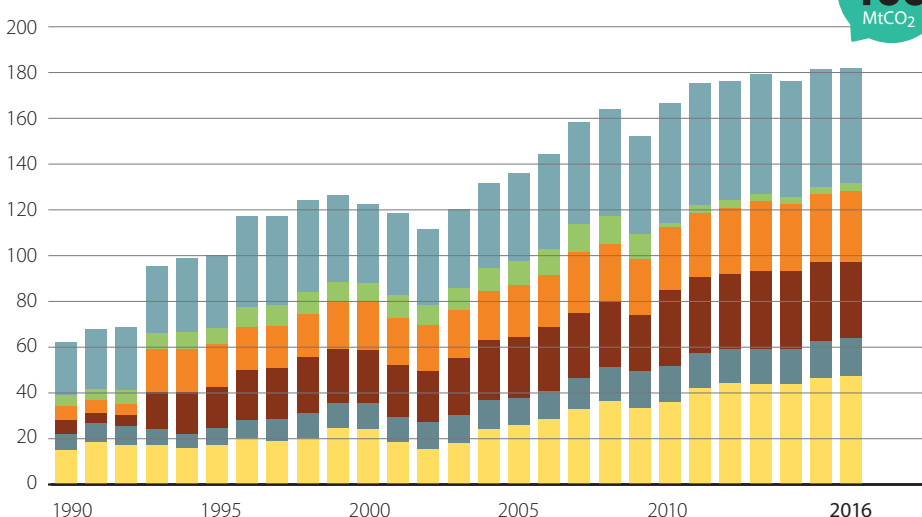
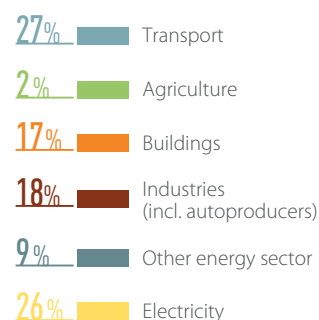
This indicator quantifies how much energy is used for each unit of GDP. This is closely related to the level of industrialisation, efficiency achievements, climatic conditions or geography among others. Argentina's energy intensity is less than the G20 average but has decreased less (-1%, 2013-2018) than the G20 average (-12%).

Rating of energy intensity compared to other G20 countries<sup>4</sup>

Source: own evaluation

Energy-related CO<sub>2</sub> emissions<sup>9</sup>

CO<sub>2</sub> emissions from fuel combustion (MtCO<sub>2</sub>/year)

Share of total energy-related CO<sub>2</sub> emissions in 2016

Source: Secretaría de Energía 2018; BUR Argentina 2019

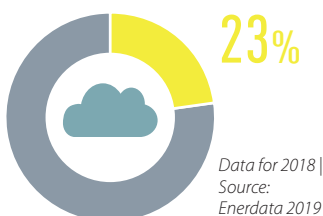
The largest driver of overall GHG emissions are CO<sub>2</sub> emissions from fossil fuel combustion. In Argentina, emissions have remained almost stable over the last decade, with only minor ups and downs. Transport, power and heat generation, industries and buildings are the major contributors.

## MITIGATION POWER SECTOR



## ARGENTINA

**!** Gas and large hydropower are the main electricity sources in Argentina. In order to stay within the 1.5°C limit, Argentina needs to phase out gas, oil and coal in the electricity mix, and speed up the use of renewables.

Share in energy-related CO<sub>2</sub> emissions

Coal must be phased out in the EU/OECD no later than 2030, in the rest of the world no later than 2040. Electricity generation needs to be decarbonised before 2050, with renewable energy the most promising option.<sup>5</sup>

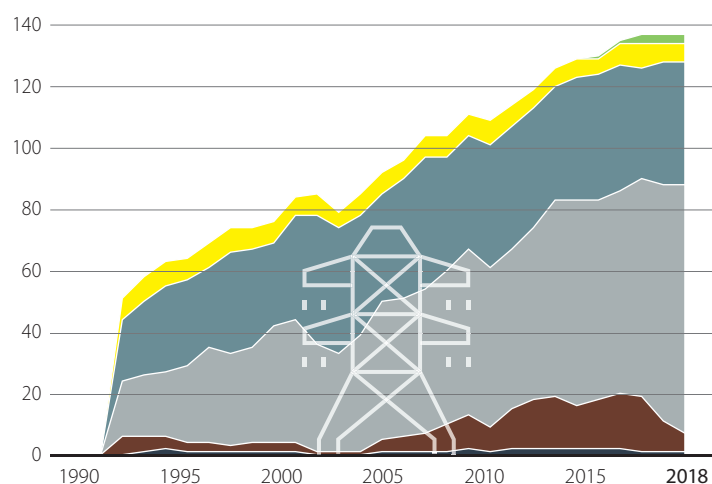
**1.5°C**<sup>6</sup>

Source: IPCC SR1.5 2018; Climate Analytics 2016; Climate Analytics 2019

## STATUS OF DECARBONISATION

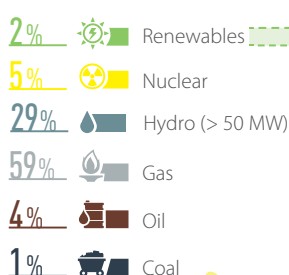
## Power mix

Gross power generation (TWh)

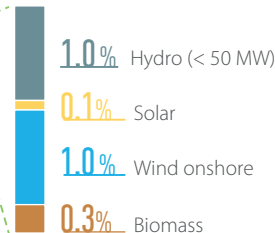


Source: Secretaría de Energía 2018; CAMMESA 2019

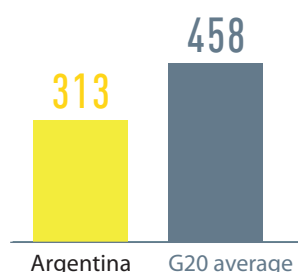
## Shares in 2018



## Renewables shares



In 2018, 2.4% of Argentina's electricity came from renewables, including solar, wind, bioenergy and small hydro (less than 50 MW). Gas continues to be the largest energy source for electricity production, at 59%; large hydro generated 29%.

Emissions intensity of the power sector (gCO<sub>2</sub>/kWh)

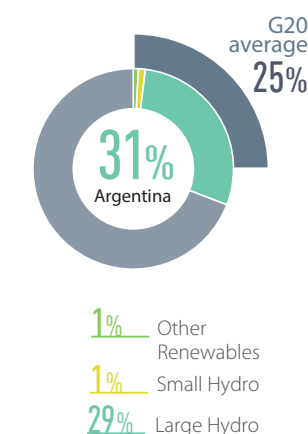
Data for 2018 | Source: CAMMESA 2019; BUR Argentina 2019

## Trend (2013-2018)

Rating of emissions intensity compared to other G20 countries<sup>4</sup>

Source: own evaluation

## Share of renewables in power generation (incl. large hydro)



Data for 2018 | Source: CAMMESA 2019

## Trend (2013-2018)

Rating of share of renewables compared to other G20 countries<sup>4</sup>

Source: own evaluation

For each kilowatt hour of electricity, 313 gCO<sub>2</sub> are emitted in Argentina. This is below the G20 average (458gCO<sub>2</sub>/kWh) but still high compared to the G20 frontrunners. Emission intensity has decreased slightly less (-10%, 2013-2018) than the G20 average (-11%).

## MITIGATION POWER SECTOR



## ARGENTINA

POLICIES<sup>5</sup>

## Renewable energy in the power sector



Argentina has no long-term strategy for renewables but aims to increase their share in the electricity mix to 20%, or around 10 GW installed capacity, by 2025 (and 26% by 2030). Since 2016, the government has awarded almost 5 GW of renewable projects through the RenovAr programme. In 2018, a US\$14 million fund – Distributed Generation of Renewables – was created.

**!** High voltage grid capacity is limited; government focus on oil and gas exploitation might put renewables development at risk.

Source: own evaluation

## Coal phase-out in the power sector

Not applicable

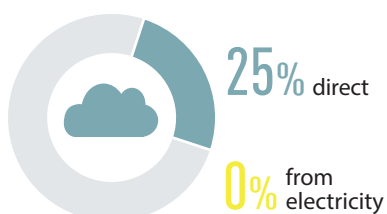
While the share of coal in the energy mix is currently negligible, it is important for Argentina to phase it out in the context of just transition and prevent any potential new developments.

Source: own evaluation

## MITIGATION TRANSPORT SECTOR



**!** Argentina's transport sector is still dominated by fossil fuels, while biofuels and electricity make up only 8% of the energy mix in transport. The rapid rise in aviation emissions is alarming. In order to stay within a 1.5°C limit, passenger and freight transport need to be decarbonised.

Share in energy-related CO<sub>2</sub> emissions

Data for 2018 | Source: Enerdata 2019

The proportion of low-carbon fuels in the transport fuel mix must increase to about 60% by 2050.

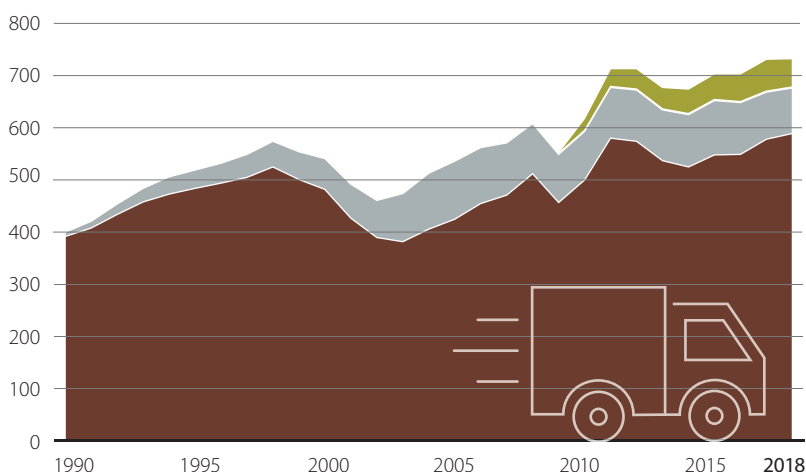
1.5°C<sup>6</sup>

Source: IPCC SR1.5 2018

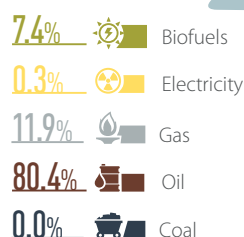
## STATUS OF DECARBONISATION

## Transport energy mix

Final energy consumption of transport by source (PJ/year)



## Share in 2018



Electricity and biofuels make up 8% of the energy mix in transport. The increase in the biofuel share in this mix should be carefully analysed, considering the potential social and environmental impacts of the lifecycle of biofuels.

Source: Enerdata 2019



## MITIGATION TRANSPORT SECTOR



## ARGENTINA

## STATUS OF DECARBONISATION (continued)

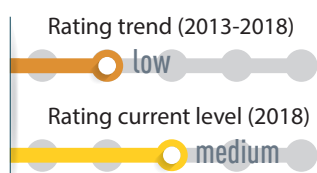
Transport emissions per capita<sup>10</sup>

(tCO<sub>2</sub>/capita,  
excl. aviation emissions)



Data for 2018  
Source: Enerdata 2019; World Bank 2019

## Trend (2013-2018)

Rating of transport emissions compared to other G20 countries<sup>4</sup>

Source: own evaluation

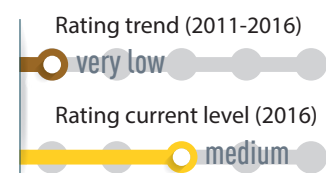
Aviation emissions per capita<sup>11</sup>

(tCO<sub>2</sub>/capita)



Data for 2016  
Source: Enerdata 2019; IEA 2018

## Trend (2011-2016)

Rating of aviation emissions compared to other G20 countries<sup>4</sup>

Source: own evaluation

## Motorisation rate

(vehicles per 1,000 inhabitants)



Data for 2017 | Source: Agora 2018

## Market share of electric vehicles in new car sales

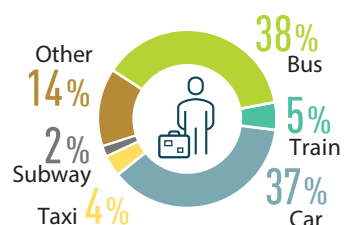
(%)



Data for 2018 | Source: IEA 2019

## Passenger transport

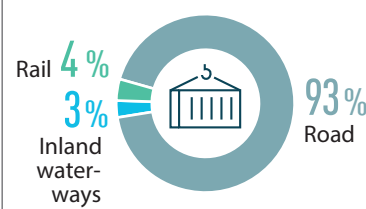
(modal split in % of passenger km)



Data for 2012 | Source: Argentinian Ministry of Environment 2017  
Note: Figures are for the city of Buenos Aires only

## Freight transport

(modal split in % of tonne-km)



Data for 2014 | Source: Argentinian Ministry of Environment 2017  
Note: Figures are for the city of Buenos Aires only

POLICIES<sup>5</sup>

## Phase out fossil fuel cars



The 2017 Transport Plan envisages reducing transport emissions by 7.2% by 2030 compared to business-as-usual. In 2017, Argentina adopted a mandatory efficiency labelling for cars, and a carbon tax that also affects transport fuels. However, Argentina has no plan to phase out fossil fuel cars, and is one of the few G20 countries that has no CO<sub>2</sub> or fuel efficiency standards in place.

⚠ The impact of the carbon tax on the cost of liquid fuel is less than 1%.

Source: own evaluation

## Phase out fossil fuel heavy-duty vehicles



Argentina's sectoral plan for transport includes several measures to reduce emissions from freight transport as well as HDVs, including fuel efficiency policies and standards. Some of these measures are already beginning to be implemented and others are still pending.

Source: own evaluation

## Modal shift in (ground) transport



Argentina aims to invest US\$16.6bn by 2023 to reactivate railway lines for freight and long-distance passenger transport, and to triple urban rail capacity in the capital, Buenos Aires. Apart from the Transport Sectoral Plan there is no long-term strategy to promote modal shift.

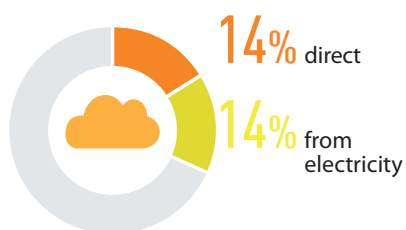
Source: own evaluation

## MITIGATION BUILDINGS SECTOR



## ARGENTINA

**!** Argentina's building emissions – including heating, cooking and electricity use – make up almost a third of total energy-related CO<sub>2</sub> emissions. Argentina has reduced buildings emissions slightly.

Share in energy-related CO<sub>2</sub> emissions

Data for 2018 | Source: Enerdata 2019

Global emissions from buildings need to be halved by 2030, and be about 80% below 2010 levels by 2050, achieved mostly through increased efficiency, reduced energy demand and electrification in conjunction with complete decarbonisation of the power sector.

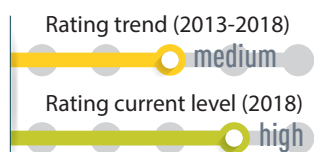
**1.5°C**<sup>6</sup>

Source: IEA ETP B2DS scenario assessed in IPCC SR1.5 2018

## STATUS OF DECARBONISATION

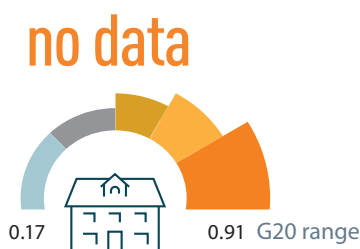
Building emissions per capita  
(incl. indirect emissions)  
(tCO<sub>2</sub>/capita)

Trend (2013-2018)

Rating of building emissions compared to other G20 countries<sup>4</sup>

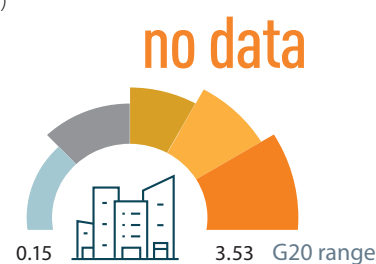
Source: own evaluation

Data for 2018 | Source: Enerdata 2019; World Bank 2019

Residential buildings:  
energy use per m<sup>2</sup>  
(GJ)

Data: year different per country | Source: ACEEE 2018

Building-related emissions per capita are below the G20 average. In contrast to the G20 average, Argentina has reduced that level by 3% (2013-2018).

Commercial and public buildings:  
energy use per m<sup>2</sup>  
(GJ)

Data: year different per country | Source: ACEEE 2018

Building emissions in Argentina are largely driven by natural gas used in heating, cooling, water heating and cooking. There is a trend away from gas for heating towards heat pumps. No data on energy use per m<sup>2</sup> is available for Argentina.

POLICIES<sup>5</sup>

## Near-zero energy new buildings



Argentina has no strategy to require new buildings to comply with near-zero energy standards. There is no national building code but different cities are developing and implementing energy building codes, eg requiring the use of solar water heaters in new public buildings. Plans on buildings within the National Cabinet of Climate Change target energy efficiency in social housing.

Source: own evaluation

## Renovation of existing buildings



Argentina has no energy retrofitting strategy for existing buildings. No national building code exists but different cities are developing and implementing energy building codes, eg requiring replacement of inefficient heating systems. The city of Buenos Aires is in the process of developing the rulebook for the recently approved urban code.

Source: own evaluation

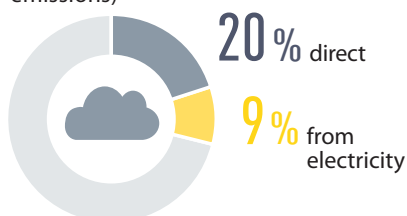
## MITIGATION INDUSTRY SECTOR



## ARGENTINA

**!** Energy-related industry emissions make up almost third of CO<sub>2</sub> emissions in Argentina (direct and indirect). The emission intensity of industry has increased in recent years. Argentina needs to reverse this trend to stay within a 1.5°C limit.

**Share in energy-related CO<sub>2</sub> emissions** (not including process emissions)



Data for 2018 | Source: Enerdata 2019

Global industrial CO<sub>2</sub> emissions need to be reduced by 65–90% from 2010 levels by 2050.



Source: IPCC SR1.5 2018

## STATUS OF DECARBONISATION

**Industry emissions intensity<sup>12</sup>**  
(tCO<sub>2</sub>e/US\$2015 GVA)



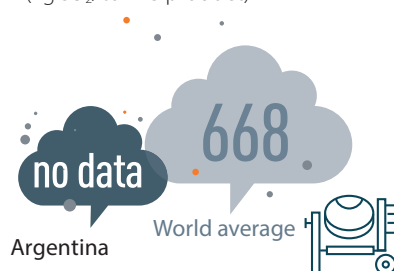
**Trend** (2011–2016)

**Rating of emissions intensity compared to other G20 countries<sup>4</sup>**



Source: own evaluation

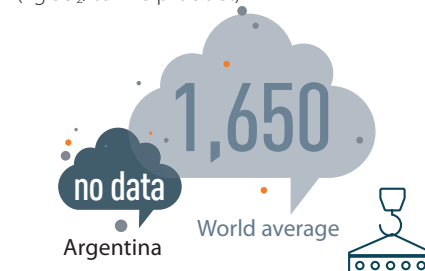
**Carbon intensity of cement production<sup>13</sup>**  
(kgCO<sub>2</sub>/tonne product)



Data for 2015 | Source: CAT 2019

When comparing industrial emissions with the gross value added (GVA) from the industry sector, Argentina is close to the G20 average. However, the emission intensity of industry has increased (+12%, 2011–2016).

**Carbon intensity of steel production<sup>13</sup>**  
(kgCO<sub>2</sub>/tonne product)



Data for 2015 | Source: CAT 2019

Steel production and steelmaking are significant GHG emission sources, and are challenging to decarbonise. For Argentina, there are no intensity data available. Argentina's largest cement and steel industries emit 35 MtCO<sub>2</sub>e (including energy-related and industrial process emissions), that is, 9.5% of total emissions in 2014.

POLICIES<sup>5</sup>

**Energy efficiency**



In 2009, Argentina established an Energy Efficiency Fund to finance energy audits in small and medium-sized enterprises but the Fund has been temporarily suspended for restructuring.

**!** Argentina subsidises the electricity consumption of largescale users.

Source: own evaluation



## MITIGATION LAND USE



## ARGENTINA

**!** In order to stay within the 1.5°C limit, Argentina may need to make the land use and forest sector a net sink of emissions, eg by halting the expansion of farmland on native forest land, and by creating new forests.

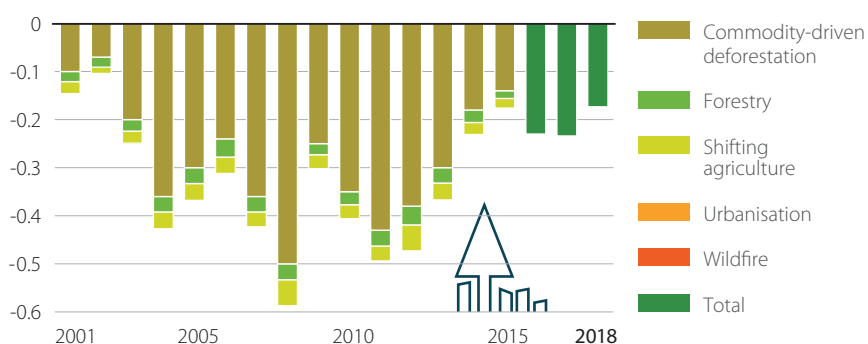
Global deforestation needs to be halted and changed to net CO<sub>2</sub> removals by around 2030.

**1.5°C**<sup>6</sup>

Source: IPCC SR1.5 2018

Gross tree cover loss by dominant driver<sup>14</sup>

Tree cover loss  
(million hectares)



Source: Global Forest Watch 2019

Note: 2000 tree cover extent | >30% tree canopy | these estimates do not take tree cover gain into account

POLICIES<sup>5</sup>

## (Net) zero deforestation



The 2017 National Action Plan on Forests and Climate Change aims to reduce GHG emissions from the forest sector by at least 27 MtCO<sub>2</sub>e by 2030, without, however, providing a baseline. The 2007 Native Forests Law aims to reduce deforestation of native forests. In September 2019, President Macri announced a target of net zero deforestation by 2030 at the UN.

**!** Only 4.5% of the budget required by law for the implementation of the Native Forest Law has been allocated under the 2019 budget.

Source: own evaluation

From 2001 to 2018, Argentina lost 5.77Mha of tree cover, equivalent to a **15% reduction since 2000**. This does not take tree-cover gain into account. The main drivers are intensive cattle raising and transformation of woodland into farmland for cultivating soy.

## MITIGATION AGRICULTURE



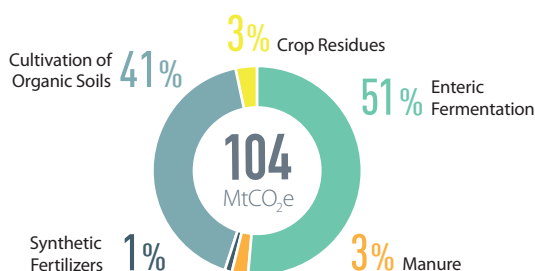
**!** Agriculture makes up a large share of Argentina's emissions, largely related to digestive processes in animals, and to livestock manure. A 1.5°C pathway requires less fertilizer use, dietary shifts, and increased organic farming.

Global methane emissions (mainly enteric fermentation) need to decline by 10% by 2030 and by 35% by 2050 (from 2010 levels). Nitrous oxide emissions (mainly from fertilizers and manure) need to be reduced by 10% by 2030 and by 20% by 2050.

**1.5°C**<sup>6</sup>

Source: IPCC SR1.5 2018

## GHG emissions from agriculture (not including energy)



Data for 2016 | Source: BUR Argentina 2019

Agriculture and livestock emissions represent 27.6% of total GHG emissions, according to the official GHG inventory for 2016. The largest source are digestive processes in animals (enteric fermentation) and livestock manure. A shift to organic farming, agroecology, more efficient use of fertilizers, ending the expansion of the agriculture frontier, and diet changes could help reduce emissions.

## ADAPTATION

- Argentina is vulnerable to climate change and adaptation actions are needed.
- On average, 28 fatalities and losses amounting to US\$984 million occur yearly due to extreme weather events.
- With global warming, urban areas and agricultural production are increasingly exposed to severe climate events, rising costs and diminishing returns. With a 3°C warming, Argentina would experience around 35 days per year when temperatures reach higher than 35°C.



## ADAPTATION POLICIES

## Nationally-determined contribution: Adaptation

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

Source: UNFCCC, NDC of respective country

## National adaptation strategies

Document name	Publication year	Fields of action (sectors)												M&E process (reporting frequency)
		Agriculture	Biodiversity	Coastal areas & fishing	Education & research	Energy & industry	Finance & insurance	Forestry	Health	Infrastructure	Tourism	Transport	Urbanism	
No adaptation policy														

Source: own research

While there are no specific adaptation policies in place, every Sectorial Plan under the NDC includes references to adaptation in each sector. Work on a National Adaptation Plan began in 2019 and will probably be completed in 2020.

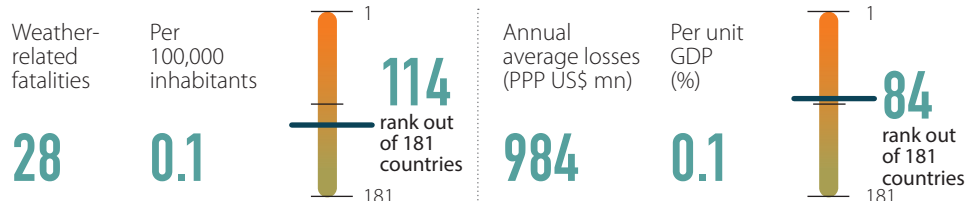


## ADAPTATION NEEDS

Climate Risk Index  
for 1998-2017

Impacts of extreme weather events in terms of fatalities and economic losses that occurred

## Global Climate Risk Index 2019 | All numbers are averages (1998-2017)



Source: Germanwatch 2018



Argentina has already been struck by extreme weather events such as flash floods, extreme heat, extreme storms and droughts. As highlighted by the numbers from the Climate Risk Index, such extreme weather events result in fatalities and economic losses. Climate change is expected to worsen the intensity, frequency and impacts of extreme weather events.

## Exposure to future impacts at 1.5°C, 2°C and 3°C

		1.5°C	2°C	3°C
<b>Water</b>	% of area with increase in water scarcity	Low	Medium	High
	% of time in drought conditions	Low	Medium	High
<b>Heat &amp; Health</b>	Heatwave frequency	Low	Medium	High
	Days above 35°C	Low	Medium	High

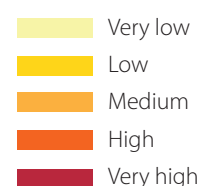
Source: own research

Overall, with rising temperatures, most sectors are adversely affected. In the water sector, water scarcity and time spent in drought conditions increase. Heat wave frequency increases together with a higher number of days when temperatures reach higher than 35°C.

<b>Agriculture</b>	Maize	Reduction in crop duration	Low	Medium	High
		Hot spell frequency	High	High	Very high
		Reduction in rainfall	High	High	High
	Soybean	Reduction in crop duration	High	High	Very high
		Hot spell frequency	Low	Medium	High
		Reduction in rainfall	Medium	Medium	Medium
	Wheat	Reduction in crop duration	Medium	High	Very high
		Hot spell frequency	Low	Medium	Medium
		Reduction in rainfall	Medium	Medium	Low

Source: Based on Arnell et al 2019

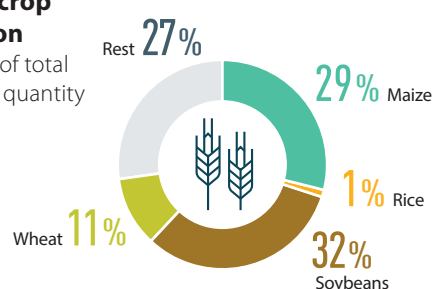
## Impact ranking scale



Blank cells signify that there is no data available

National crop  
production

(share in % of total production quantity in tonnes)



Data for 2017 | Source: FAOSTAT 2019

Soybeans, maize and wheat are impacted by a slight increase in rainfall as well as an increase in hot spell frequency (drastic for soybeans). All crops also experience a reduction in crop duration; this reduction is drastic for wheat.

## FINANCE



**Argentina's fossil fuel subsidies totalled US\$6.3 billion in 2018. Argentina has recently introduced a carbon tax, but natural gas is not covered. Most emissions are not yet taxed or only at very low rates.**

Investment into green energy and infrastructure needs to outweigh fossil fuel investments by 2025.

 **1.5°C**<sup>6</sup>

Source: IPCC SR1.5 2018

## Nationally-determined contribution: Finance

<b>Conditionality</b>	Additional conditional target of 369 million tCO <sub>2</sub> eq by 2030 based on: international funding; transference, innovation and development of technologies; and capacity creation.
<b>Investment needs</b>	Investment needs not specified
<b>Actions</b>	Not mentioned
<b>International market mechanisms</b>	Any transfer of units of emissions reductions reached in the Argentine territory must have the authorisation of the national government

Source: UNFCCC, NDC of respective country

## Financial policy and regulation supporting a brown to green transition

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.

Category	Instruments	Objective	Under discussion/ implementation		Not identified	
<b>Green Financial Principles</b>	N/A	This indicates political will and awareness of climate change impacts, showing where there is a general discussion about the need for aligning prudential and climate change objectives in the national financial architecture.	<b>X</b>			
			<b>Mandatory</b>	<b>Voluntary</b>	<b>Under discussion</b>	<b>Not identified</b>
<b>Enhanced supervisory review, risk disclosure and market discipline</b>	Climate risk disclosure requirements	Disclose the climate-related risks to which financial institutions are exposed				<b>X</b>
	Climate-related risk assessment and climate stress-test	Evaluate the resilience of the financial sector to climate shocks				<b>X</b>
<b>Enhanced capital and liquidity requirements</b>	Liquidity instruments	Mitigate and prevent market illiquidity and maturity mismatch				<b>X</b>
	Lending limits	Limit the concentration of carbon-intensive exposures				<b>X</b>
		Incentivise low carbon-intensive exposures				<b>X</b>
	Differentiated Reserve Requirements	Limit misaligned incentives and canalise credit to green sectors				<b>X</b>

Source: own research



In February 2017, Argentina began examining how its financial system supports sustainable finance while the National Securities Commission (CNV) now explicitly includes sustainability and ESG (environmental, social and governance) in its remit and mandate. It released guidance on social, green and sustainable bonds in 2018, and its corporate governance code now works on a 'comply, apply or explain' basis. The financial institution BYMA is a member of the Sustainable Stock Exchanges initiative, demanding that listed companies comply with ESG metrics. Argentina's regulator is leading a working group analysing the role of securities markets in sustainability issues.

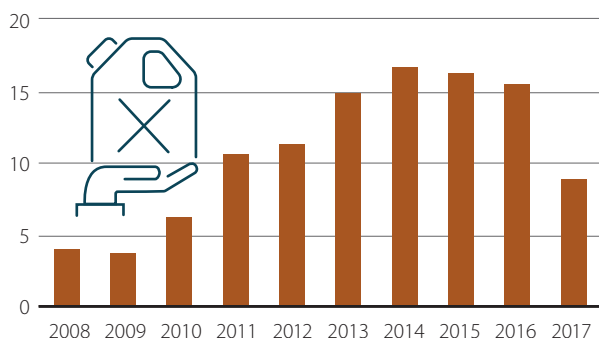
## FINANCE

## 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.

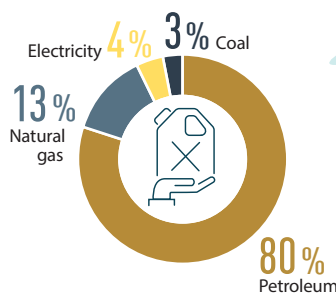
## Fossil fuel subsidies

US\$ billions



Source: OECD-IEA 2019

## Subsidies by fuel type

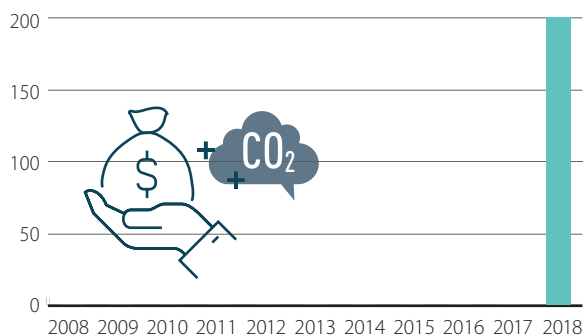


Data for 2017 | Source: OECD-IEA 2019

In 2017, Argentina's fossil fuel subsidies totalled US\$8.6bn (fluctuating between US\$6.1 and US\$16.6 between 2008-17). Of the subsidies quantified, 73% were for the consumption of fossil fuels, with the remainder for production. An independent study by FARN found that subsidies for production and consumption of fossil fuels totalled US\$6.3bn in 2018. This covers to subsidies for the energy sector, including for fossil fuel production but also for gas distribution and other energy-related activities. According to FARN, 97% of that amount was related to fossil fuels in 2018. Due to devaluation of the national currency, subsidies to fossil fuel production are decreasing in US\$, but increasing at very high rates under the VacaMuerta and Los Molles megaproject.

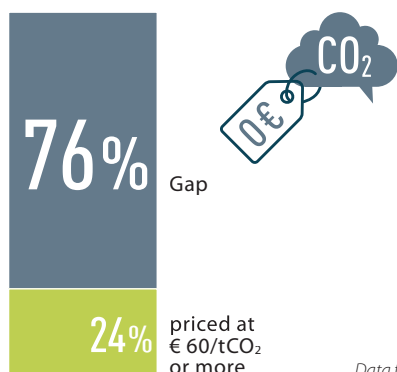
## Carbon revenues

Carbon revenues (US\$ millions) from explicit carbon pricing schemes



Source: IACE 2019

Argentina implemented a carbon tax in 2018 for most liquid fuels, but not for natural gas, the fossil fuel most used in the country. Thus, the carbon tax is estimated to cover just 20% of the country's emissions. In addition, the carbon tax was established and fixed in Argentinean pesos equivalent to US\$10 per ton of CO<sub>2</sub> at the exchange rate current at the moment it was approved; a year later the carbon tax represents approximately US\$3 per ton of CO<sub>2</sub>, making it negligible for all purposes.

Carbon pricing gap<sup>15</sup>% of energy-related CO<sub>2</sub> emissions

Data for 2015 | Source: OECD 2018

Only 24% of Argentina's CO<sub>2</sub> emissions are priced at EUR30 or higher (the low-end benchmark), creating a carbon pricing gap of 76%. This gap is higher than the G20 average of 71%. The price covers not only explicit carbon taxes but also specific taxes on energy use and the price of tradable emission permits.



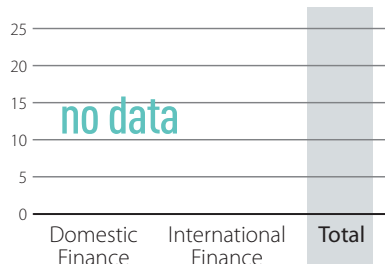
## FINANCE

## 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.

Public finance for coal<sup>16</sup>

(million US\$)



No finance was identified for coal or coal-fired power production between 2016-2017 by the public finance institutions of Argentina. However, there is evidence of public finance for other fossil fuels as recently as 2016.

● Domestic Finance  
● International Finance



Data year: 2016-2017 average  
Source: Oil Change International 2019

Commitments to restrict public finance to coal and coal-fired power<sup>17</sup>

MDB level	National development agencies and banks	Domestic export credit agencies	Export credit restriction in OECD	Comment
				No commitments identified

yes no not applicable

Source: own research

Provision of international public support<sup>18</sup>

Argentina is not listed in Annex II of the UNFCCC and is therefore not formally obliged to provide climate finance. While Argentina 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



United Nations  
Framework Convention on  
Climate Change

## Bilateral climate finance contributions

Annual average contribution  
(mn US\$, 2015-2016)

0

## Theme of support

Mitigation	Adaptation	Cross-cutting	Other
0%	0%	0%	0%

Source: Country reporting to UNFCCC

## Multilateral climate finance contributions

Annual average contribution  
(mn US\$, 2015-2016)

0

## Theme of support

Adaptation	Mitigation	Cross-cutting
0%	0%	0%

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

Source: Country reporting to UNFCCC

## Core/General Contributions

Annual average contribution  
(mn US\$, 2015-2016)

0

Source: Country reporting to UNFCCC

## ENDNOTES



1) 'Land use' emissions is used here to refer to land-use, land use change and forestry (LULUCF). The Climate Action Tracker (CAT) derives historical LULUCF emissions from the UNFCCC Common Reporting Format (CRF) reporting tables data converted to the categories from the IPCC 1996 guidelines, in particular separating Agriculture from Land use, land-use change and forestry (LULUCF), which under the new IPCC 2006 Guidelines is integrated into Agriculture, Forestry, and Other Land Use (AFOLU).

2) The 1.5°C fair share ranges for 2030 and 2050 are drawn from the CAT, which compiles a wide range of perspectives on what is considered fair, including considerations such as responsibility, capability, and equality. Countries with 1.5°C fair-share ranges reaching below zero, particularly between 2030 and 2050, are expected to achieve such strong reductions by domestic emissions reductions, supplemented by contributions to global emissions-reduction efforts via, for example, international finance. On a global scale, negative emission technologies are expected to play a role from the 2030s onwards, compensating for remaining positive emissions.

The CAT's evaluation of NDCs shows the resulting temperature outcomes if all other governments were to put forward emissions reduction commitments with the same relative ambition level.

The 2030 projections of GHG emissions are from the CAT's June 2019 update and are based on implemented policies, expected economic growth or trends in activity and energy consumption.

The CAT methodology does not consider GHG emissions from LULUCF due to the large degree of uncertainty inherent in this type of data, and also to ensure consistency and comparability across countries.

- 3) See the Brown to Green 2019 Technical Note for the sources used for this assessment.
- 4) The Decarbonisation Ratings assess the relative performance across the G20. A high scoring reflects a relatively good efforts from a climate protection perspective but is not necessarily 1.5°C compatible. The ratings assess both the 'current level' and 'recent developments' to take account of the different starting points of different G20 countries. The 'recent developments' ratings compare developments over the last five available years (often 2013 to 2018).
- 5) The selection of policies rated and the assessment of 1.5°C compatibility are informed by the Paris Agreement, the Special Report on 1.5°C of the International Panel on Climate Change (2018), 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 2019 Technical Note for the sources used for this assessment.

On endnote 5)	low	medium	high	frontrunner
<b>Renewable energy in power sector</b>	No policy to increase the share of renewables	Some policies	Policies and longer-term strategy/target to significantly increase the share of renewables	Short-term policies + long-term strategy for 100% renewables in the power sector by 2050 in place
<b>Coal phase-out in power sector</b>	No target or policy in place for reducing coal	Some policies	Policies + coal phase-out decided	Policies + coal phase-out date before 2030 (OECD and EU28) or 2040 (rest of the world)
<b>Phase out fossil fuel cars</b>	No policy for reducing emissions from light-duty vehicles	Some policies (e.g. energy/emissions performance standards or bonus/malus support)	Policies + national target to phase out fossil fuel light-duty vehicles	Policies + ban on new fossil based light-duty vehicles by 2035 worldwide
<b>Phase out fossil fuel heavy-duty vehicles</b>	No policy	Some policies (e.g. energy/emissions performance standards or support)	Policies + strategy to reduce absolute emissions from freight transport	Policies + innovation strategy to phase out emissions from freight transport by 2050
<b>Modal shift in (ground) transport</b>	No policies	Some policies (e.g. support programmes to shift to rail or non-motorised transport)	Policies+ longer-term strategy	Policies + longer-term strategy consistent with 1.5°C pathway
<b>Near zero-energy new buildings</b>	No policies	Some policies (e.g. building codes, standards or fiscal/financial incentives for low-emissions options)	Policies + national strategy for near zero-energy new buildings	Policies + national strategy for all new buildings to be near zero-energy by 2020 (OECD countries) or 2025 (non-OECD countries)
<b>Retrofitting existing buildings</b>	No policies	Some policies (e.g. building codes, standards or fiscal/financial incentives for low-emissions options)	Policies + retrofitting strategy	Policies + strategy to achieve deep renovation rates of 5% annually (OECD) or 3% (non-OECD) by 2020
<b>Energy efficiency in industry</b>	No policies	Mandatory energy efficiency policies cover more than 26-50% of industrial energy use	Mandatory energy efficiency policies cover 51-100% of industrial energy use	Policies + strategy to reduce industrial emissions by 75%-90% from 2010 levels by 2050
<b>(Net) zero deforestation</b>	No policy or incentive to reduce deforestation in place	Some policies (e.g. incentives to reduce deforestation or support schemes for afforestation/reforestation in place)	Policies + national target for reaching net zero deforestation	Policies + national target for reaching zero deforestation by 2020s or for increasing forest coverage

## ENDNOTES (continued)

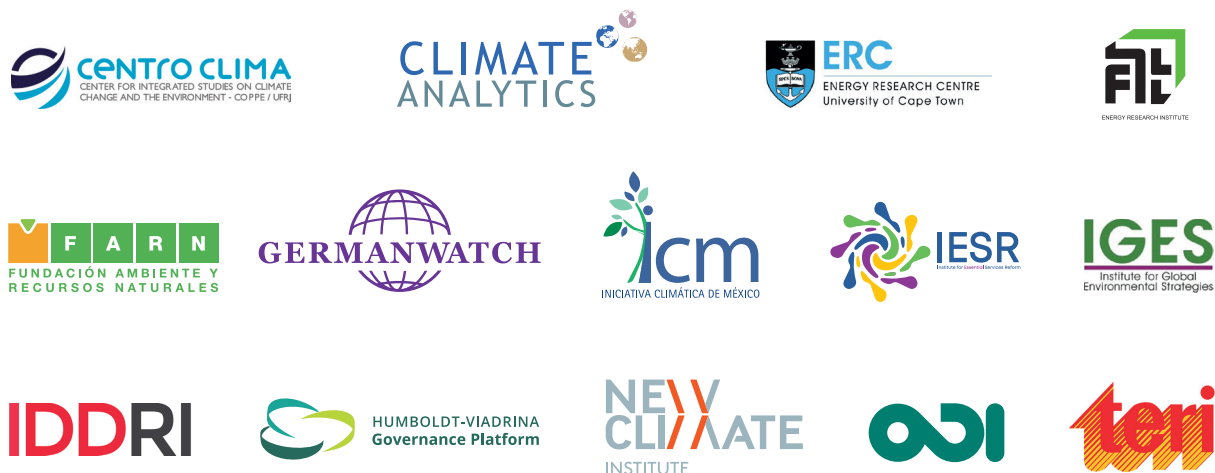


- 6) The 1.5°C benchmarks are based on the Special Report on 1.5°C of the International Panel on Climate Change (2018). See the Brown to Green 2019 Technical Note for the specific sources used for this assessment.
- 7) Total primary energy supply data displayed in this Country Profile does not include non-energy use values. Solid fuel biomass in residential use has negative environmental and social impacts and is shown in the category 'other'.
- 8) Large hydropower and solid fuel biomass in residential use are not reflected due to their negative environmental and social impacts.
- 9) The category 'electricity and heat' covers CO<sub>2</sub> emissions from power generation and from waste heat generated in the power sector. The category 'other energy use' covers energy-related CO<sub>2</sub> emissions from extracting and processing fossil fuels (e.g. drying lignite).
- 10) This indicator shows transport emissions per capita, not including aviation emissions.
- 11) This indicator adds up emissions from domestic aviation and emissions from international aviation bunkers in the respective country. Emissions by aircrafts in the higher atmosphere lead to a contribution to climate change greater than emissions from burning fossil fuels. In this Country Profile, however, only a radiative forcing factor of 1 is assumed.
- 12) This indicator includes only direct energy-related emissions and process emissions (Scope 1) but not indirect emissions from electricity.
- 13) This indicator includes emissions from electricity (Scope 2) as well as direct energy-related emissions and process emissions (Scope 1).
- 14) This indicator covers only gross tree-cover loss and does not take tree-cover gain into account. It is thus not possible to deduce from this indicator the climate impact of the forest sector. The definition of 'forest' used for this indicator is also not identical with the definition used for the indicator on page 3.
- 15) 'Effective carbon rates' are the total price that applies to CO<sub>2</sub> emissions, and are made up of carbon taxes, specific taxes on energy use and the price of tradable emission permits. The carbon pricing gap is based on 2015 energy taxes and is therefore likely to be an underestimate, as taxation has tended to increase in countries over time.
- 16) The database used to estimate public finance for coal is a bottom-up database, based on information that is accessible through various online sources, and is therefore incomplete. For more information, see to the Brown to Green 2019 Technical Note.
- 17) See the Brown to Green 2019 Technical Note for the sources used for this assessment.
- 18) Climate finance contributions are sourced from Biennial Party reporting to the UNFCCC. Refer to the Brown to Green Report 2019 Technical Note for more detail.

For more detail on the sources and methodologies behind the calculation of the indicators displayed, please download the Technical Note at: <http://www.climate-transparency.org/g20-climate-performance/g20report2019>

# CLIMATE TRANSPARENCY

## Partners:



## Funders:



## Data Partners:



<http://www.climate-transparency.org/g20-climate-performance/g20report2019>

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