



**Global Electricity  
Review 2021**  
G20 Profile

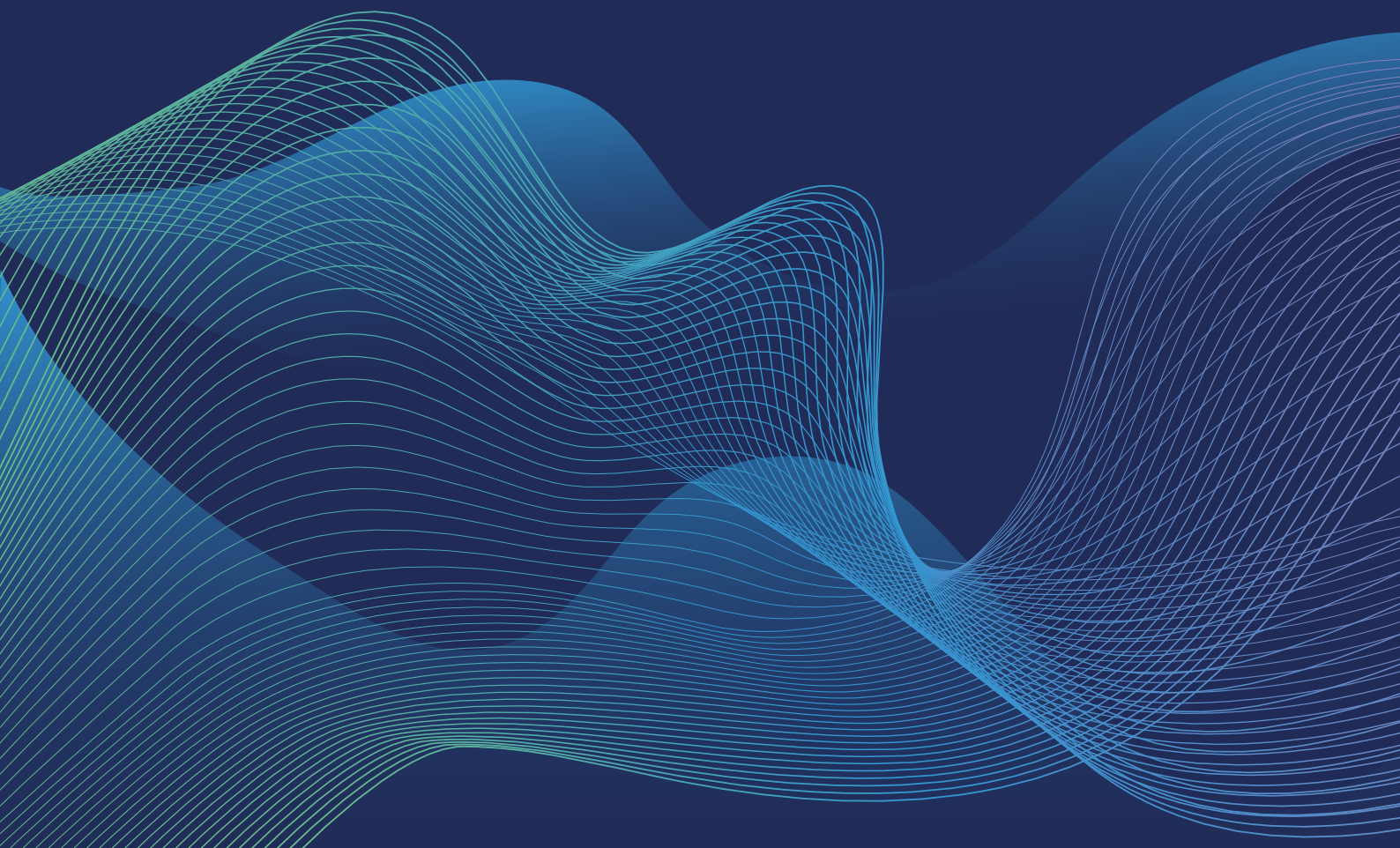
**EMBER**  
COAL TO CLEAN ENERGY POLICY

# MEXICO

Mexico tops G20 in reducing coal last year,  
but three quarters of electricity is still  
from fossil fuels

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March 2021



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## Published date

March 2021

## About Ember's Global Electricity Review

This annual report analyses electricity data from every country in the world to give the first accurate view of the global electricity transition in 2020. It aggregates generation data by fuel by country from 2000. 68 countries comprising 90% of world electricity generation have full-year data to 2020 and have formed the basis of an estimate for changes in worldwide generation. All remaining countries have full data as far as 2019. G20 countries, which comprise 84% of world electricity generation, each have a separate in-depth country analysis. All the data can be viewed and downloaded freely from Ember's website.

[www.ember-climate.org/global-electricity-review-2021](http://www.ember-climate.org/global-electricity-review-2021)

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Document design & layout by Designers For Climate

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# MEXICO

**Mexico tops G20 in reducing coal last year, but three quarters of electricity is still from fossil fuels**

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**Falling demand due to the Covid-19 pandemic prompts halving of coal generation**

*"After a year of progress, increasingly conservative energy policies — including betting on fuel oil and reversing the phase-out of coal plants — are putting Mexico's energy transition at serious risk of again falling behind the global trend."*

**Nicolas Fulghum**

Junior Data Analyst, Ember

## Key findings

### 1 Mexico tops the G20 in reducing coal last year, amid demand falls due to the Covid-19 pandemic

Mexico's electricity generation from coal halved (-48%) in 2020. This was the largest percentage reduction of any G20 country. Since 2015, coal generation has fallen 60% in Mexico. Only the UK, Italy and France cut coal production at a higher rate.

### 2 Three quarters of Mexico's electricity comes from fossil fuels

Its dependence on gas and oil means it has the fourth highest share of fossil fuels in their electricity mix among G20 countries.

### 3 Wind and solar now make up 10% of Mexico's electricity mix

This is higher than the global average (9.4%) for the first time, as Mexico's wind and solar market share increased 7 percentage points since 2015. Given stable demand in this period, the increases in renewable energy allowed for the significant reductions in coal generation.

### 4 Recent progress is jeopardized by a shift in energy policy away from renewables

The current administration under President Obrador is critical of renewable sources of electricity and is moving to allow easier access to the electricity market for fossil fuels.

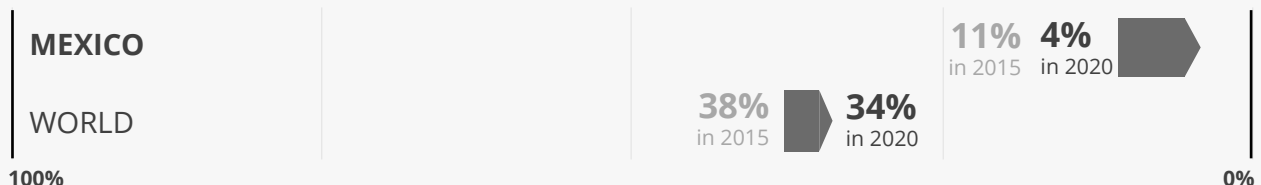
#### Progress to 100% clean electricity

Percentage of all renewables & nuclear in total generation



#### Progress on phasing out coal

Percentage of coal in total generation

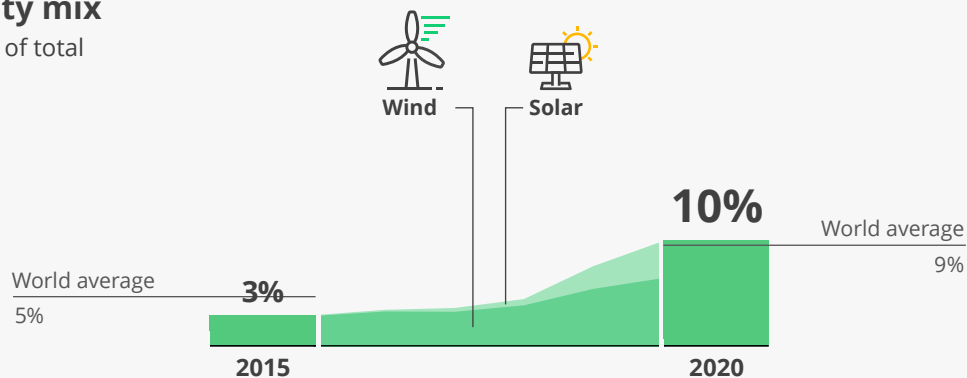


# Mexico's electricity transition in the spotlight: 2015-2020

## Wind and solar rise in line with global average

### Wind & solar in electricity mix

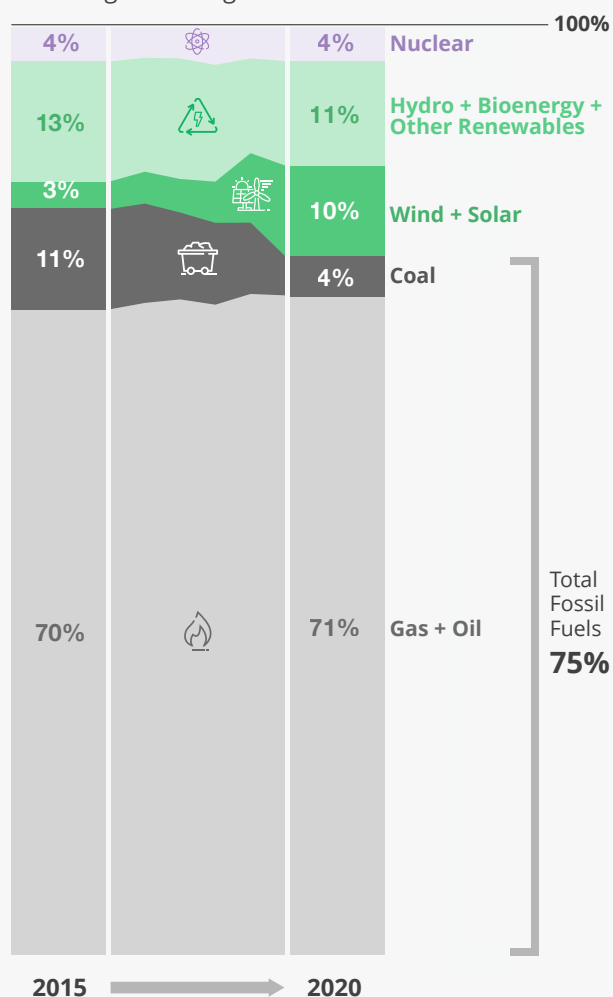
Percentage of total generation



## 75% of Mexico's electricity still comes from fossil fuels

### Electricity mix

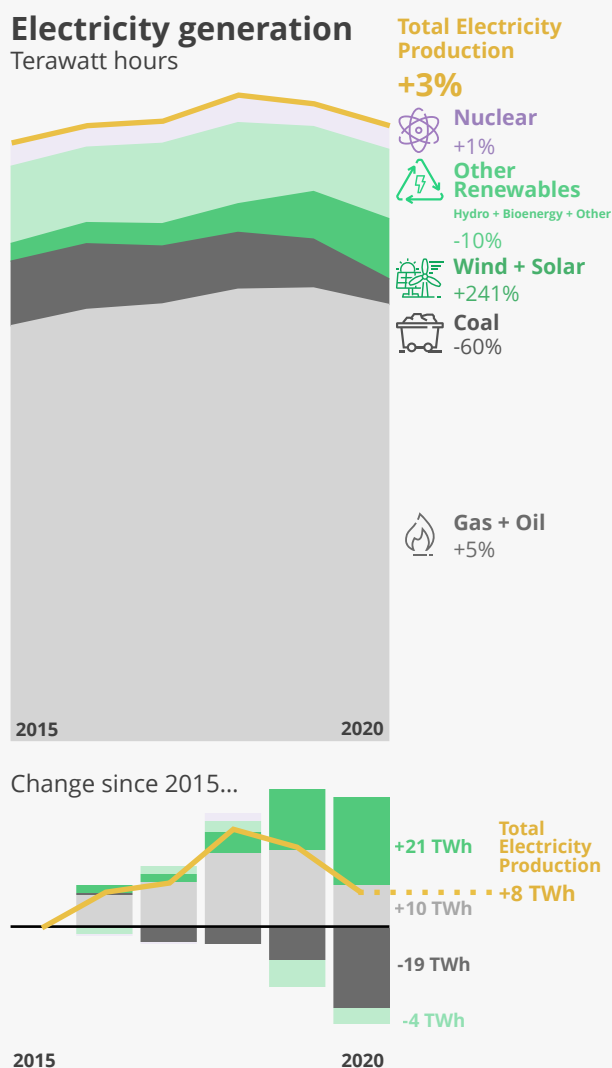
Percentage of total generation



## Coal has fallen 60% since 2015

### Electricity generation

Terawatt hours



**The last five years saw a significant uptick in market share of wind and solar from just 3% in 2015 to 9.8% in 2020.** Coal's market share is now at only a third of its 2015 share, falling from 11% to 4%. Most of this fall came in 2020, as coal generation was cut in half (-11 TWh).

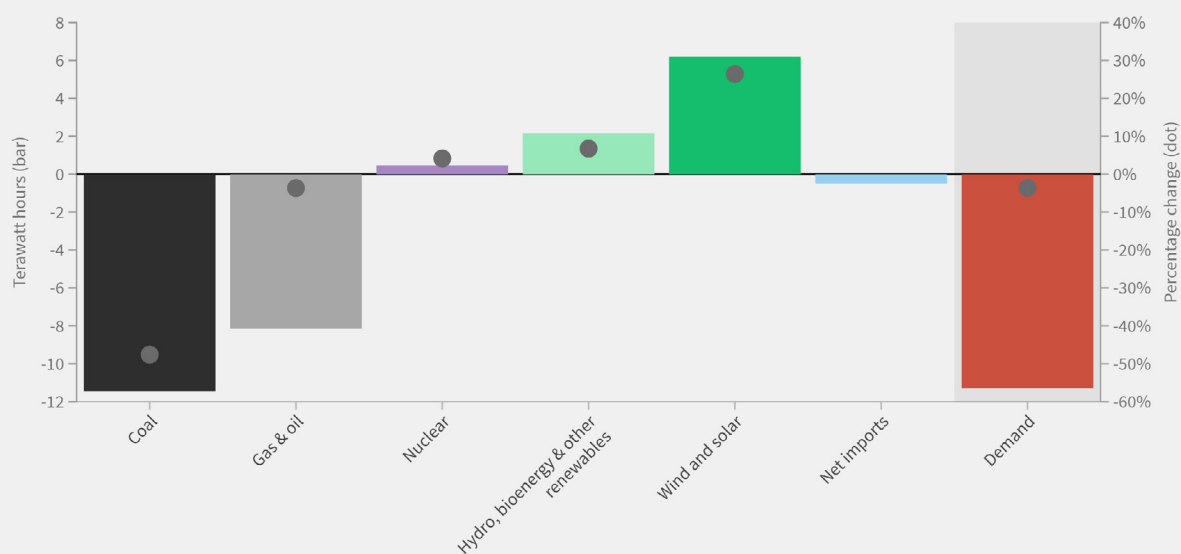
**Despite these recent trends, fossil fuels still make up 75% of Mexico's electricity mix.** This marks just a 5 percentage point reduction in their market share from 2015. The country's continuing reliance on gas and oil, investments in gas infrastructure and a lack of investments in the expansion of transmission grids is holding back the country's transition to renewable electricity sources.

**Similarly, the role of wind and solar in the mix is currently in a precarious political position.** Capacity additions in 2020 fell by 44% for solar and 19% for wind compared to the previous year and were at 1.1 GW and 1.4 GW respectively. Mexico's president Andrés Manuel López Obrador has repeatedly criticised wind and solar as reliable sources of electricity. In early 2021, the Mexican legislature approved a reform bill changing the country's regulatory framework for the power sector. Among other changes, it obligates the Energy Regulatory Commission to follow the Energy Ministry's guidelines in granting permits for new capacity. This would effectively stop additions of new renewable capacity, as the Energy Ministry's current planning program doesn't foresee any renewable additions until 2027.

# What happened in 2020?

## Mexico - Electricity changes in 2020 by source

Year-on-year change



In 2020, coal generation fell a staggering 48% compared to 2019. This constitutes a fall of 11 TWh, similar in size to that of gas which fell by 6.9 TWh (-4%). This comes as 2020 saw demand fall in many countries hit by the Covid-19 pandemic. Mexico was no exception as demand fell by 3.6% (-13 TWh). Wind and solar continued rising in

2020, despite falling demand, as the two sources grew a combined 6.2 TWh (+26%) compared to 2019. Capacity additions in 2020 for wind and solar totalled 1.4 GW and 1.1 GW respectively, which is slightly below 2019 additions of 1.7 GW and 1.9 GW.

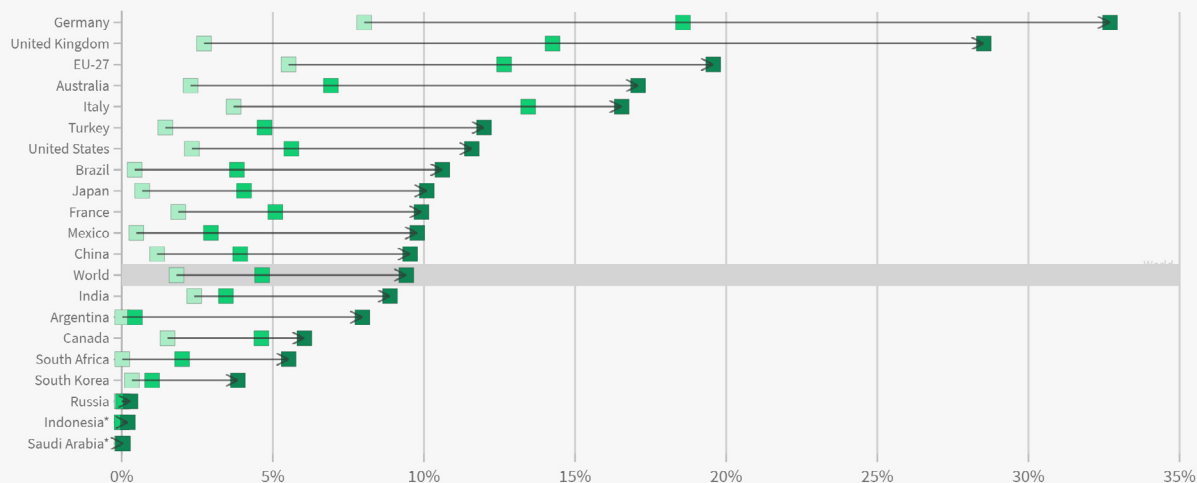


# Mexico's transition in comparison with G20 countries

Mexico now produces 10% of its electricity from wind and solar

Wind and solar as % share of electricity production for G20 countries

Year 2010 2015 2020

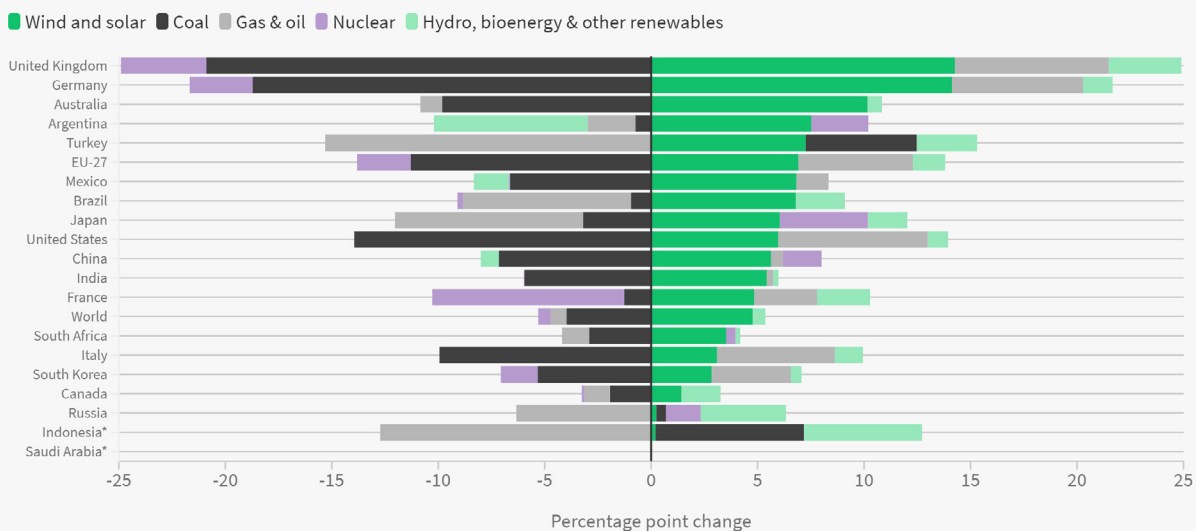


\*For Indonesia and Saudi Arabia, 2019 is used as no 2020 data exists  
Ember's Global Electricity Review, March 2021.

At the start of the decade, Mexico had one of the lowest market shares of wind and solar among G20 countries. After speeding up its transition in the second half of the decade, it now produces 10% of its electricity through wind and solar, slightly above the world average. However, Mexico is still in the bottom half of G20 countries for wind and solar market share, below Brazil and Japan. While wind power had been growing modestly even before 2015, solar power saw nearly all of its growth since then, rising from a mere 0.2 TWh in 2015 to now almost 10 TWh.

## Wind and solar are replacing coal's market share

Change in electricity market share between 2015 and 2020, for G20 countries

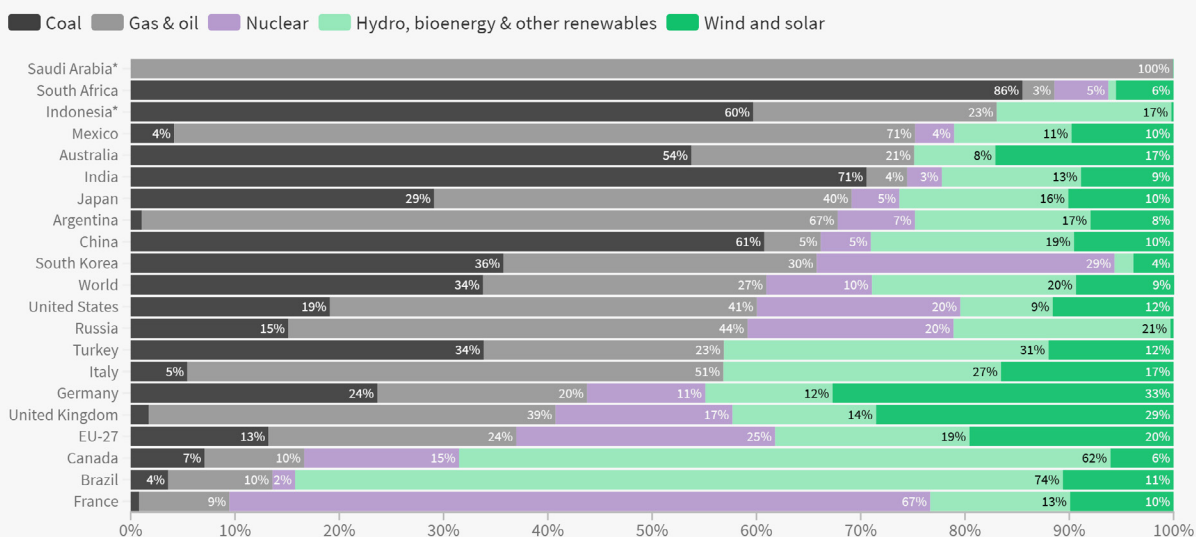


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Ember's Global Electricity Review, March 2021.

Since 2015, wind and solar has filled the gap left by coal, with only small amounts of gas generation added. It performed better in this regard than the United States, which added large amounts of gas generation to make up for a loss in coal. Mexico was able to avoid this.

## Fossil fuels still dominate Mexico's electricity mix

Electricity production mix in 2020, for G20 countries



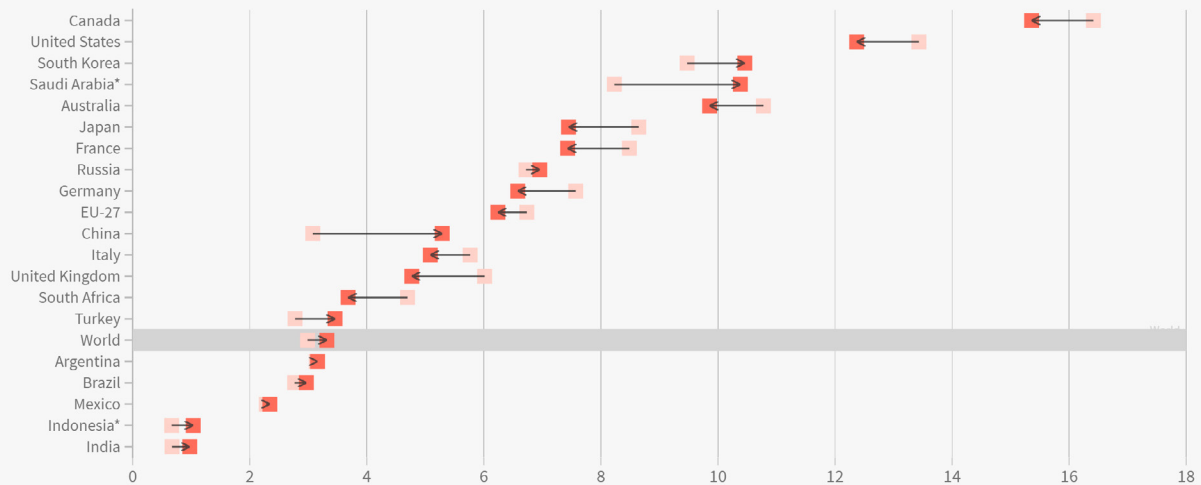
\*For Indonesia and Saudi Arabia, 2019 is used as no 2020 data exists.  
Ember's Global Electricity Review, March 2021.

Despite recent progress on reducing coal generation and adding wind and solar, Mexico has the fourth highest share of fossil fuels in the electricity mix among G20 countries. Coal, gas and oil make up three quarters of its electricity production, compared to a world average of 61%.

## Demand as low as in 2010 in pandemic year

Electricity demand per capita (Megawatt hours), for G20 countries

Year 2010 2020

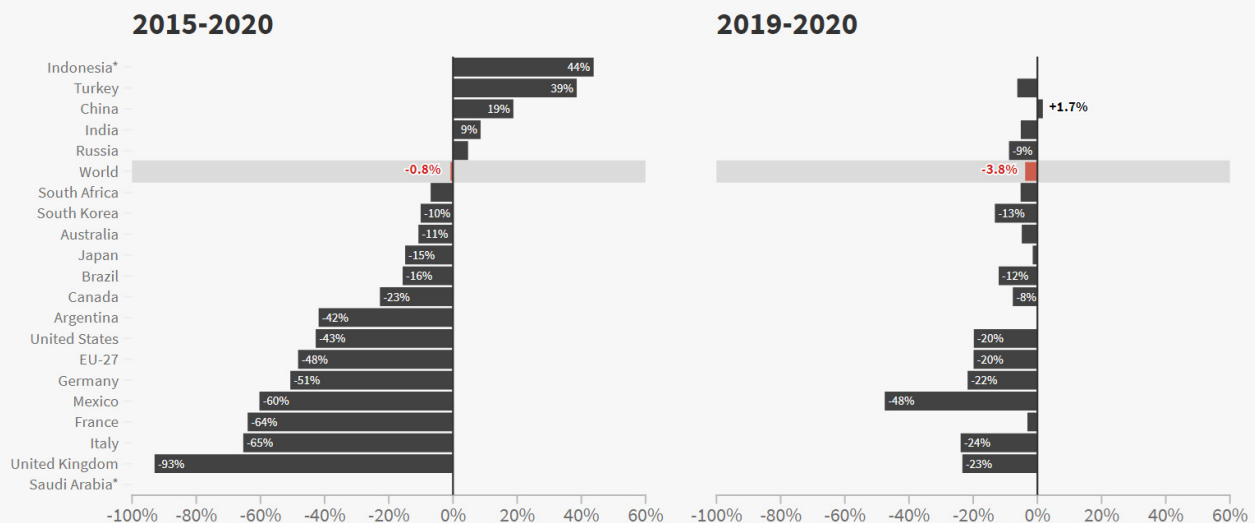


For Indonesia and Saudi Arabia, 2019 is used as no 2020 data exists. \* Population sourced from United Nations. Ember's Global Electricity Review, March 2021.

After increases prior to 2010, the last decade saw almost no overall shift in demand per capita. Following modest increases between 2013 and 2018, the last two years – and especially the Covid-19 pandemic in 2020 – brought demand back to nearly 2010 levels. Mexico ranks third last among G20 countries with a demand per capita of 2.3 MWh and well below the world average (3.4 MWh). Only Indonesia and India have a lower demand per capita.

## Mexico tops G20 in reducing coal last year

Change in coal generation, for G20 countries



\*For Indonesia and Saudi Arabia, 2019 is used as no 2020 data exists.  
Ember's Global Electricity Review, March 2021.

Mexico reduced its coal generation by half in 2020 and 60% since 2015. In the last five years, only the United Kingdom (-93%), Italy (-65%) and France (-64%) cut coal production at a higher rate. In 2020, Mexico led the G20 with coal falling by 48% year on year, among falling demand. While Mexico was following the trend of other G20 countries in reducing its coal generation in the last five years, this might soon come to an end or even reverse. The administration of president Andrés Manuel López Obrador, who took office in late 2018, is actively pushing for the reactivation of old coal fired power plants while discouraging further development of renewable energy.

## Concluding remarks

Mexico's transition looked to be well underway given the additions of wind and solar in the last decade and especially in the last five years. However, capacity additions slowed down in 2020 and this trend is set to continue, as Obrador's government has put [restrictions on the connection of new renewable energy projects to the grid](#), effectively stopping new renewable energy development. After five years of progress that continued through 2020, increasingly conservative energy policies – including betting on fuel oil and reversing the phase out of coal plants – are putting Mexico's energy transition at serious risk of again falling behind the global trend.

The significant reductions in coal generation in 2020 caused by the Covid-19 pandemic are contrasted by the continued reliance on gas and oil whose important role is set to continue. The [government](#)

[aims to make continued and additional use of fuel oil as a source of electricity](#).

This includes plans for a new oil refinery, which is set to produce oil at amounts that go beyond current storage capacity. The current administration introduced legislation – recently approved by the Mexican legislature – to give dispatch priority to thermal power plants. This will effectively lead to excess oil being used for electricity generation over other sources of electricity.

To fundamentally change the makeup of its electricity mix, Mexico cannot waste time by halting new renewable energy development and expanding fossil fuels. Instead, it must continue to add wind and solar to the mix to replace gas and oil as it has done for coal over the last five years, as well as phase out the remaining coal generation.

## More information about the Global Electricity Review 2021

### Global Electricity Review 2021

[www.ember-climate.org/global-electricity-review-2021](http://www.ember-climate.org/global-electricity-review-2021)

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