

Statistics report

# World Energy Prices

Overview

2020

**leda**



This overview presents a selection of data from the [Energy prices](#) database of the International Energy Agency (May 2020). This database includes annual energy prices data for more than 100 non-OECD countries, for gasoline, automotive diesel, natural gas, electricity and other products ([World energy prices](#)), and data on end-use prices and taxes updated quarterly for OECD countries ([Energy prices and taxes of OECD countries](#)).

More information is available at <https://www.iea.org/subscribe-to-data-services/prices-and-taxes>.

Please address your inquiries to [prices@iea.org](mailto:prices@iea.org).

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## IEA *Energy prices*

Energy prices are a significant part of our domestic expenditures, play an important role for industrial competitiveness and influence energy consumption patterns. End-use prices -paid by final consumers- are affected by movements in commodity markets as well as policy decisions. As countries move away from regulated pricing in energy markets, monitoring energy end-use prices around the world has become increasingly important for analysts and policy makers. The IEA [Energy prices](#) database serves this purpose by being the most reliable global database that uses official sources with transparent and documented methodologies for each country.

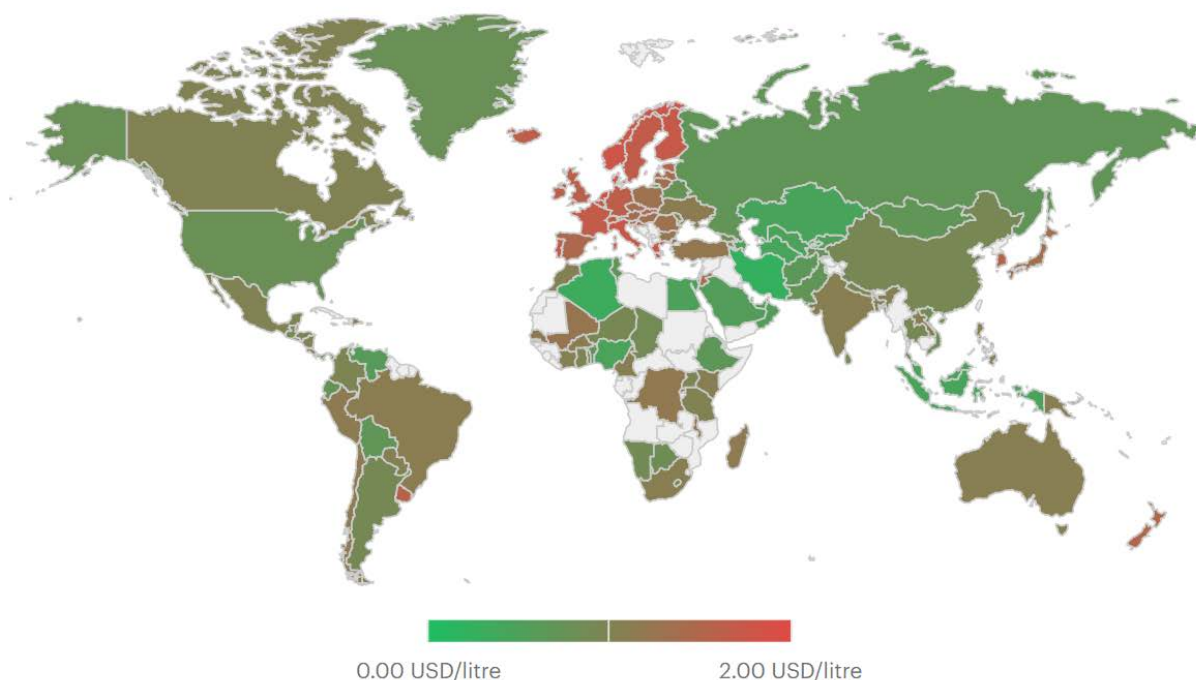
Complementing its historical quarterly data for [Energy prices and taxes of OECD member countries](#), the IEA's [World energy prices](#) database provides users with high-quality annual data on end-use prices for most non-OECD countries in the world. Following the efforts to enhance the coverage of this database, the 2020 edition has expanded to include fifteen new countries and eighty-five new products/sectors across countries. The database also contains sub-national transport fuel prices for selected countries, and Consumer Price Indices for all countries covered.

In an effort to enhance the value of this database, the IEA is glad to note that the 2020 edition has been expanded to include a dedicated taxation database which contains a detailed breakdown covering seven categories of taxes across sectors and products for around fifty countries. The *Energy price* database casts light on how energy prices (and taxes) vary around the world and how they change over time.

## Global energy prices trends

In 2019, the global average price of gasoline<sup>1</sup> was 0.91 US dollar per litre (USD/l), a 2% decrease compared to the previous year. Price levels varied greatly across countries (Figure 1): from 0.24 USD/l in the Islamic Republic of Iran to over eight times that amount in Hong Kong (1.97 USD/l). There are many factors which explain price differences, but it is interesting to note that the former is a crude oil exporter while the latter is an importing country with high demand and higher taxes.

Figure 1 - Gasoline prices in 2019



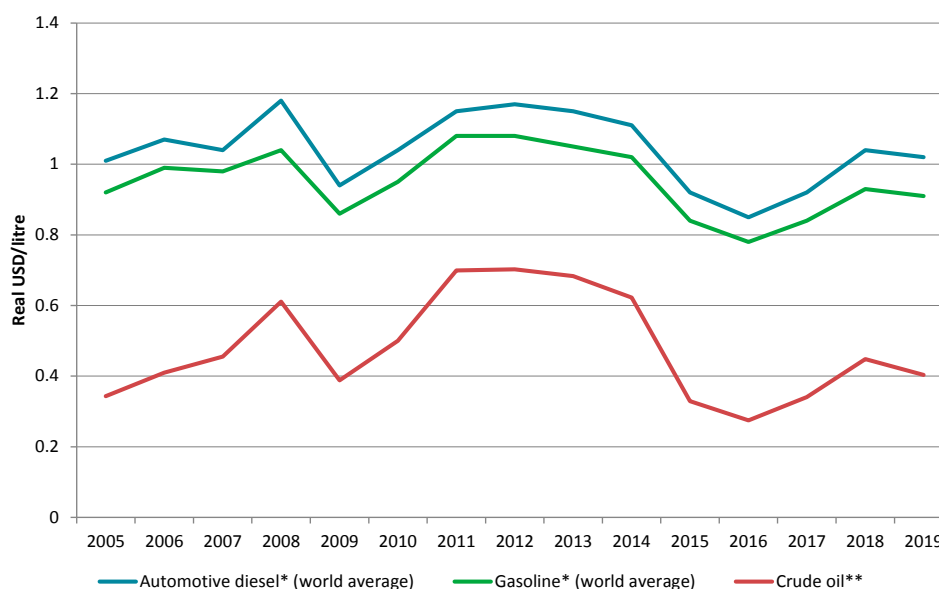
This map is without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

Gasoline prices refer to 2019 or the most recent available year, i.e.: 2018 for Algeria, Botswana, Burkina Faso, Indonesia, the Islamic Republic of Iran, Jamaica, Malawi, Papua New Guinea, Mexico, Peru, United Republic of Tanzania, 2017 for Uganda, Bolivarian Republic of Venezuela and 2015 for Iceland and Morocco. In general, country level prices refer to mid-grade gasoline, with a research octane number (RON) between 93 and 96. Prices for regular gasoline ( $\leq 92$  RON) were used for the following countries: Afghanistan, Armenia, Azerbaijan, Bangladesh, Belarus, Benin, Burkina Faso, Chad, Democratic Republic of Congo, Côte d'Ivoire, Ethiopia, Ghana, India, Indonesia, Jamaica, Japan, Kyrgyzstan, Malawi, Mali, Nepal, Niger, Nigeria, Papua New Guinea, Pakistan, Rwanda, Senegal, Tajikistan, Togo, the United Republic of Tanzania, Uzbekistan and Vietnam. Prices for high-grade gasoline ( $\geq 97$  RON) were used for Hong Kong (China).

1. The global average price of gasoline is the consumption-weighted average of gasoline prices in all countries where data are available.

Government policy - in the form of taxes and/or subsidies – strongly influences how prices at the pump vary around the world. For example, European consumers pay the highest gasoline prices, generally reflecting high taxes on fuels<sup>2</sup>. At the other end of the spectrum, the lowest prices are found among countries that subsidise<sup>3</sup> liquid fuels.

**Figure 2 – Global fuel price changes, 2005-2019**



\* Prices for gasoline and automotive diesel are in 2015 US dollars.

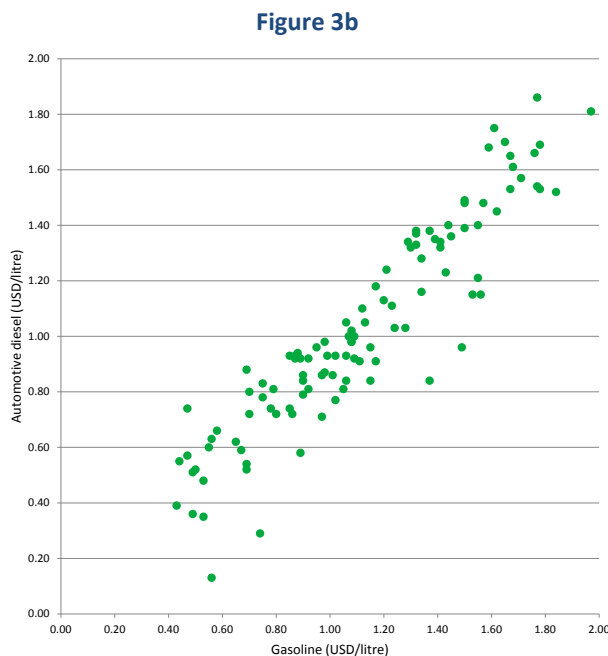
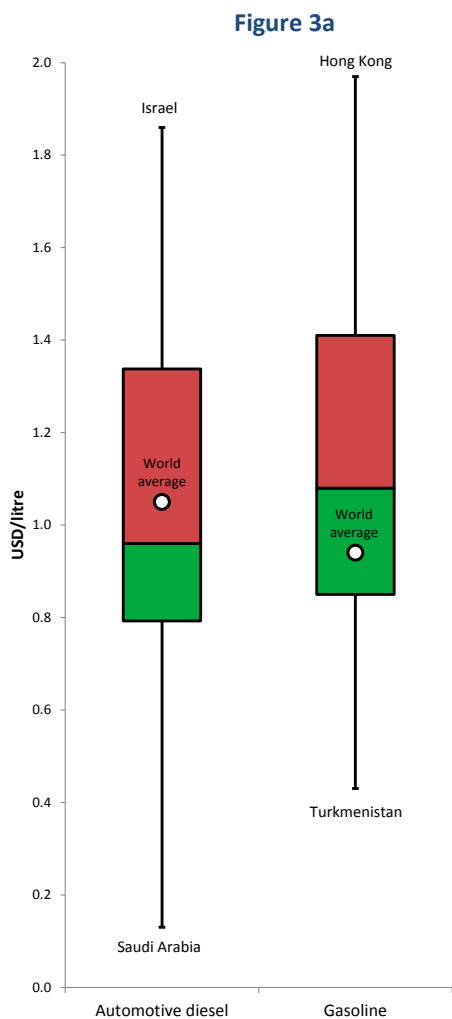
\*\* Crude oil refers to nominal (i.e., not deflated) North Sea dated crude spot prices, as calculated from daily quotations from Argus Crude.

In recent years, automotive diesel and gasoline prices have tracked movements in crude oil prices (Figure 2). Not surprisingly global pump prices are, on average, significantly higher than the underlying crude spot prices as they also reflect transformation, transport and marketing costs, besides taxes levied on fuel sales.

2. For disaggregated data on energy taxes in OECD member countries, please refer to the IEA [Energy prices and taxes](#) quarterly publication.

3. For more information on subsidies, please refer to the IEA's analysis at: <https://www.iea.org/articles/low-fuel-prices-provide-a-historic-opportunity-to-phase-out-fossil-fuel-consumption-subsidies>.

Figure 3 – Fuel price distribution across countries - 2019



Note: In this box-plot chart, the whisker tops are the countries with the highest prices and the whisker bottoms are the countries with the lowest prices. The top and bottom edges of the boxes represent the 75<sup>th</sup> and 25<sup>th</sup> percentiles, respectively. The lines inside the boxes represent the medians.

As for global prices, country-level prices for gasoline and automotive diesel are strongly correlated, with gasoline being more expensive in most countries (Figure 3). However, the global consumption-weighted price of gasoline is lower than that of automotive diesel in a number of important countries, including the United States<sup>4</sup>.

4. In 2018, the United States consumed 35% of global gasoline and 14% of global automotive diesel.

Figure 4 – Annual fuel price changes in selected major economies



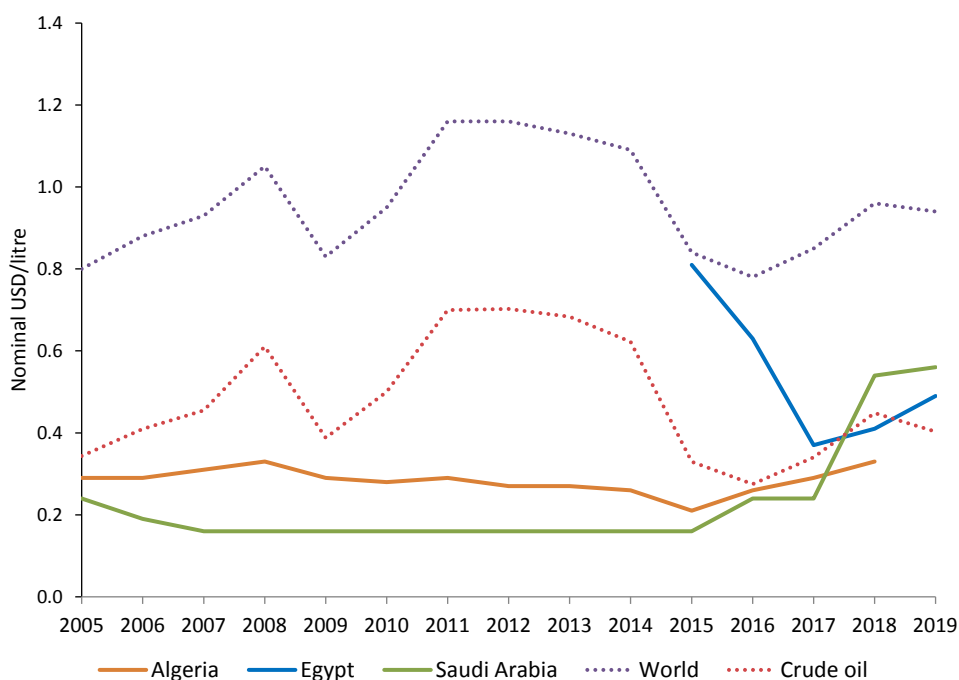
\* Crude oil refers to nominal (i.e., not deflated) North Sea dated crude spot prices, as calculated from daily quotations from *Argus Crude*.

In 2019, prices for gasoline and diesel decreased both globally and on a country level following the marked decrease (-10%) of the crude oil price. At a regional level, pump prices tracked movements in crude markets more closely in the United States and China than in the European Union – largely reflecting taxation levels and market<sup>5</sup> structure.

5. In China, the market is regulated by the government by fixing refining margins according to crude oil price variations.



Figure 5 – Gasoline end-use prices trends at regional level: the example of MENA region



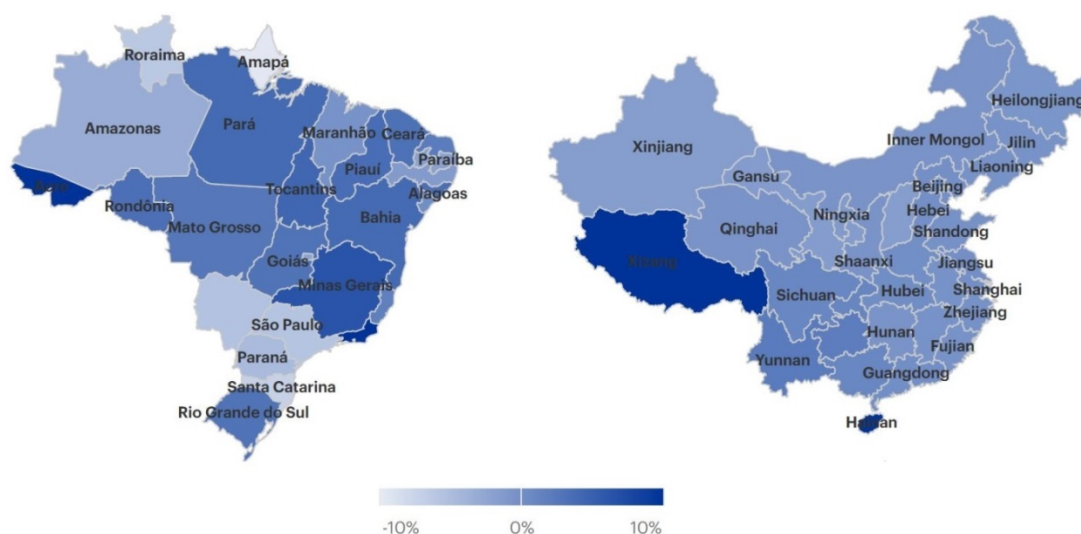
Prices for individual countries are in nominal US dollars to emphasize that gasoline prices in these countries remained relatively stable for many years until recently. World average gasoline prices are also in nominal US dollars. Crude oil percent change refers to nominal (i.e., not deflated) North Sea dated crude spot prices, as calculated from daily quotations from *Argus Crude*. MENA refers to Middle East and North Africa.

While the global gasoline price follows crude spot trends, different dynamics occur at regional level. For example, significant changes were seen in the MENA region in recent years (Figure 5) due to both policy developments and economic effects (exchange rates and inflation).

Due to the role of policy, prices in Algeria and Saudi Arabia have shown little correlation with crude price movements until the recent increases due to reductions in fuel subsidies, and also the introduction of value-added taxes (VAT)<sup>6</sup> in Saudi Arabia. Despite such trends, prices in these two countries were still among the lowest in the world in 2019. Egypt has been progressively increasing the fixed pump price to reduce the burden on the country budget; still, the price expressed in 2015 US dollars decreased (-28%) because of the combined effect of inflation and depreciation of the national currency.

6. Saudi Arabia introduced VAT for the first time on 1 January 2018, at a rate of 5%.

Figure 6 – Sub-national transport fuel prices – Brazil and China – 2019

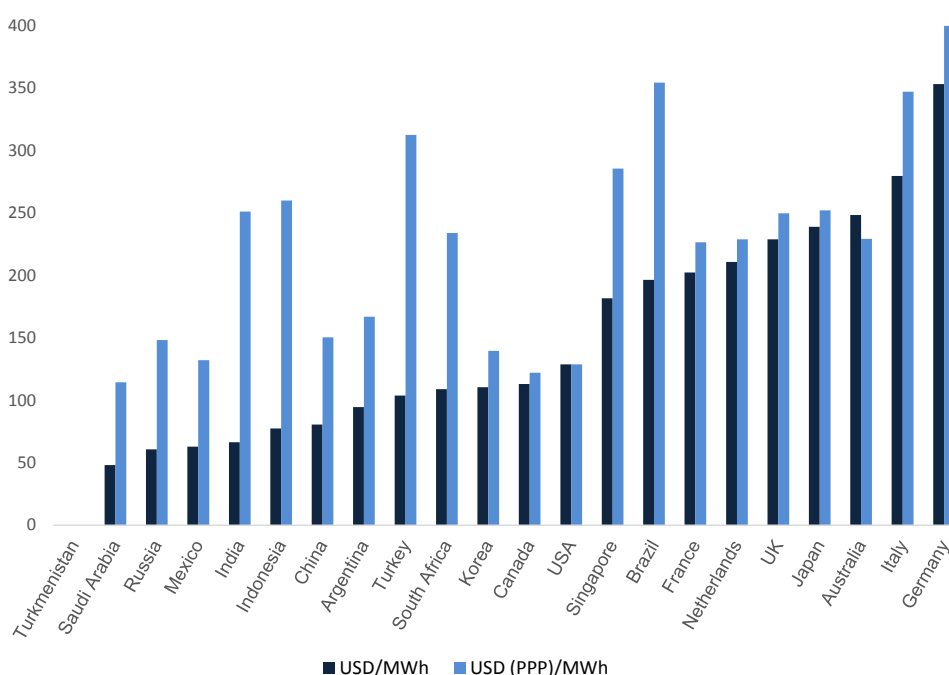


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Geographical variations in transport fuel prices exist within a country due to several factors including pricing framework, sub-national taxes, distribution costs (proximity of consumers to suppliers), marketing costs (retail competition and margins) and refining costs (different environmental regulations).

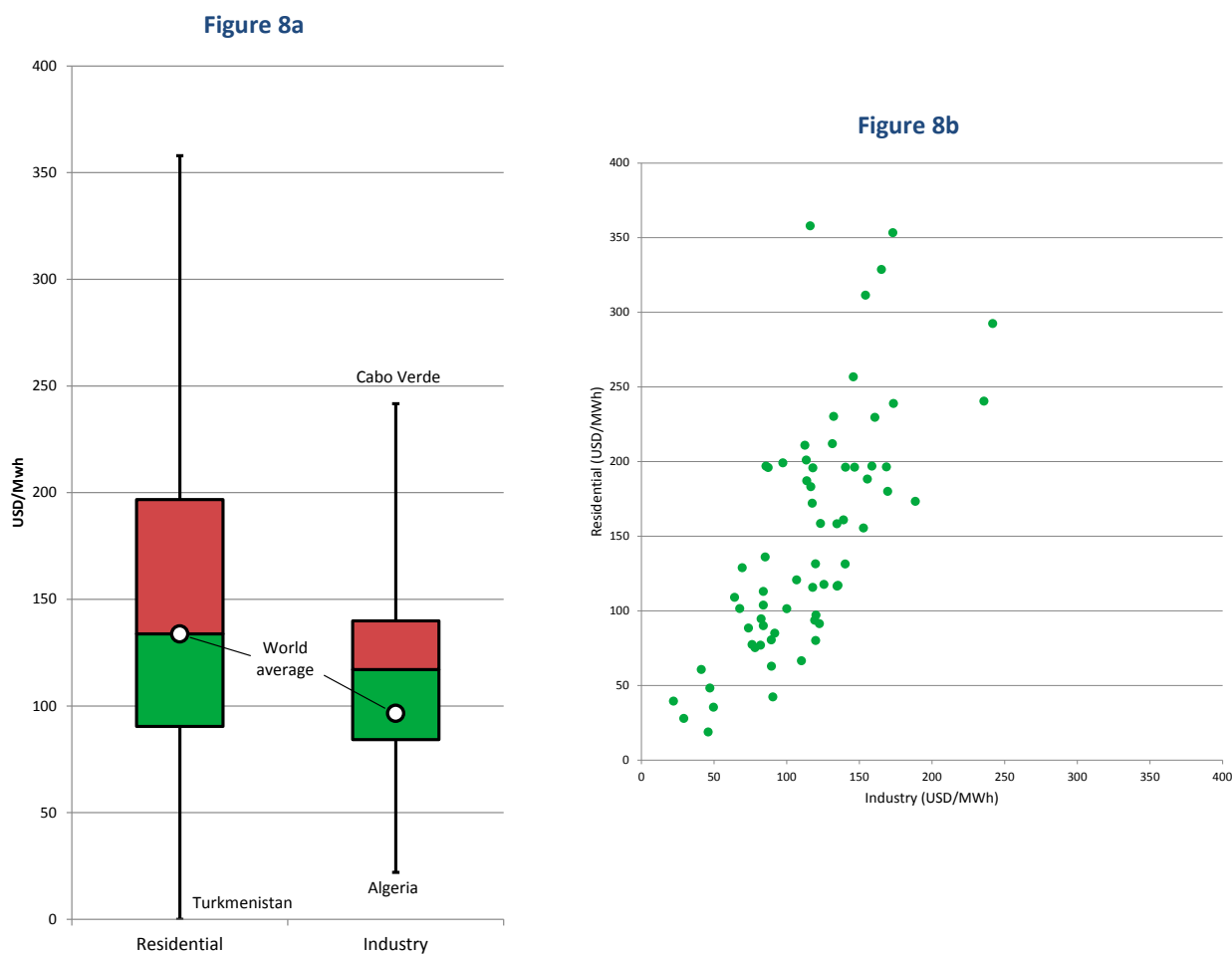
For example, sub-national gasoline prices in China are more homogenous due to national price regulations compared to those in Brazil where prices are market-based and largely affected by local taxes (Figure 6).

Figure 7 – Residential electricity prices in selected economies - 2018



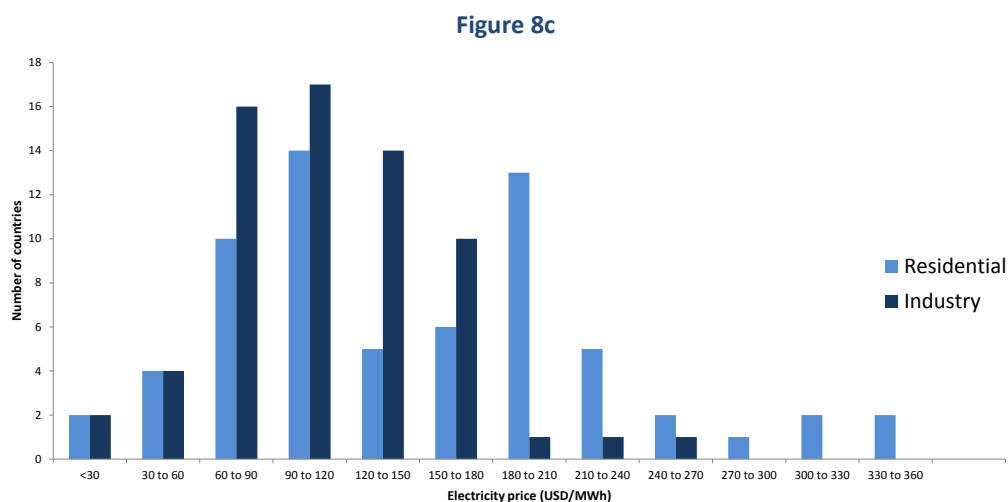
Residential electricity prices also vary significantly across countries (Figure 7). For example, in Turkmenistan, households had benefitted from free electricity<sup>7</sup> until 2018, while consumers in several other countries face high utility bills. It should be borne in mind that prices in US dollars do not consider differences in the cost of living across countries, making it hard to assess how expensive or affordable electricity is for consumers in each country. As an example, by converting the data using purchase power parity (PPP) adjusted exchange rates, electricity appears significantly more expensive in Brazil than Australia, while the opposite is true when comparing prices using nominal exchange rates.

**Figure 8 – Electricity price distribution - 2018**



Note: In this box-plot chart, the whisker tops are the countries with the highest prices and the whisker bottoms are the countries with the lowest prices. The top and bottom edges of the boxes represent the 75th and 25th percentiles, respectively. The lines inside the boxes represent the medians.

7. All households receive free electricity up to a certain level of consumption. The free-consumption threshold was reduced from 35 kWh per person per month in 2013 to 25 kWh per person per month. The government changed the regulation and the price was 7.14 USD/MWh in 2019.



Electricity prices for residential use are generally higher and also vary more widely across countries than those for industry (Figure 8a, 8b and 8c).

At a global level, the consumption-weighted electricity price for industry falls between the median and 25<sup>th</sup> percentile, showing that countries where prices are relatively lower tend to have a relatively greater specialisation for industrial sectors.

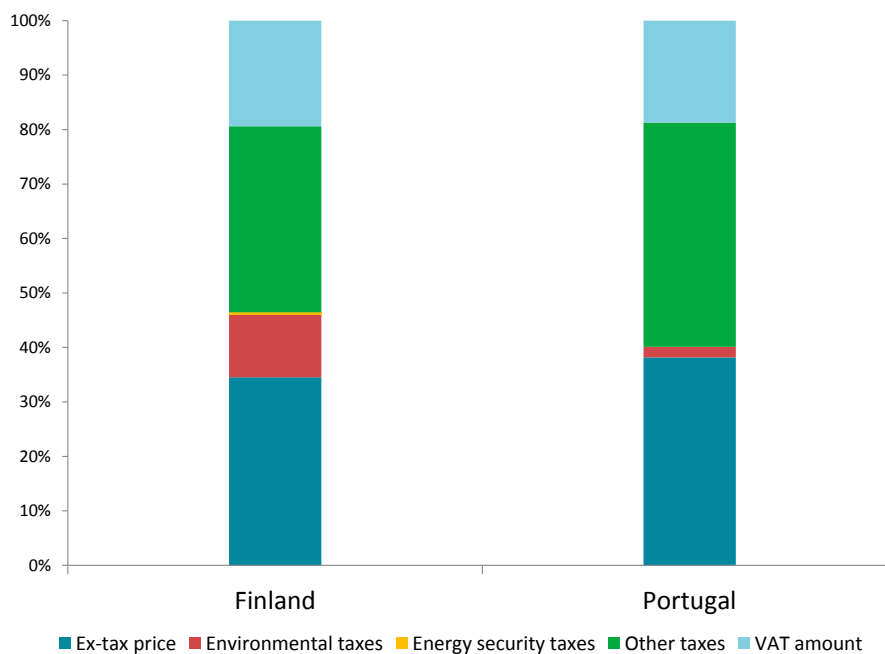
Electricity prices for residential use have a wider spread and seem to follow a bimodal distribution across countries, while the distribution of electricity prices for industry shows less variability, probably due to the fact that market regulations tend to keep the price for industry low to maintain competitiveness.

## Energy taxation structures

The end-use price of an energy commodity is influenced by the amount of taxes) that are added to the cost of production, transportation and distribution. For gasoline, the incidence of taxation over the final price can reach levels as high as 65%<sup>8</sup>. The 2020 edition of the IEA *Energy prices* database has been expanded to include more information on taxation by category (or motivation) of tax. In addition for gasoline, qualitative data on the extent of price regulation have been included for ninety-five countries.

Taxation is an important source of revenues for governments and is used to raise funds for the general budget or to internalize the external costs associated with the use of a given commodity. An increasing number of countries have started earmarking taxation to more transparently show the purpose of single excise taxes. Examples include: environmental taxes (either linked to sulphur or carbon content); energy security taxes; or social taxation to subsidize access to energy for all (Figures 9 and 10).

Figure 9 Taxation breakdown for selected countries



8. This level of taxation is reached in Finland and the Netherlands.

Figure 10 – Environmental taxes on gasoline for selected countries

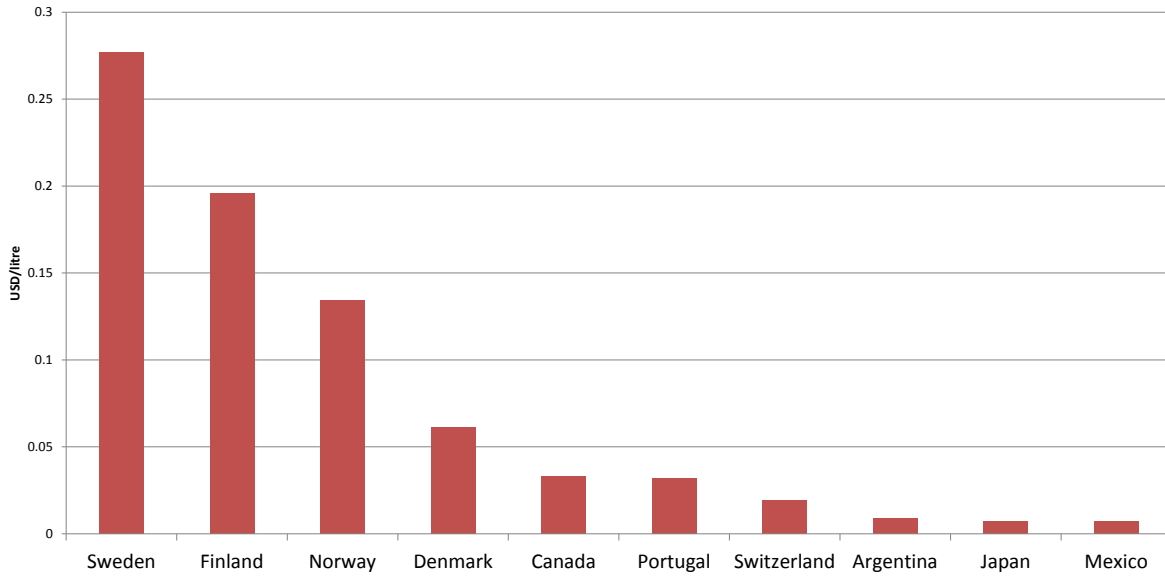
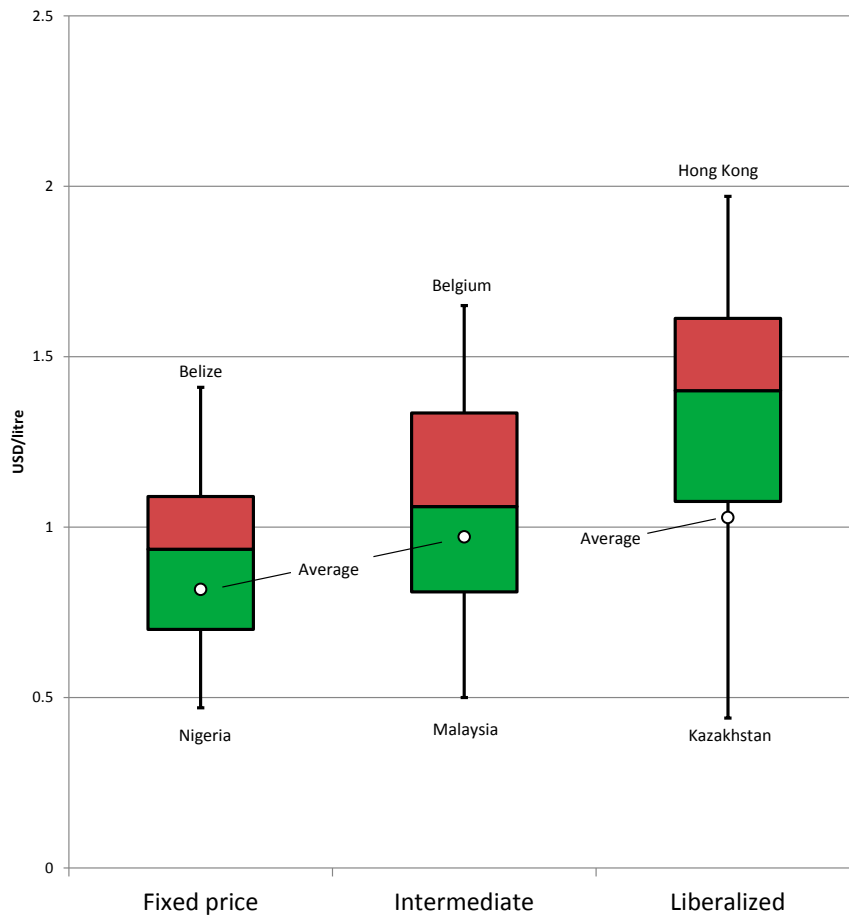


Figure 11 – Price distribution for gasoline in different market frameworks - 2019



Note: In this box-plot chart, the whisker tops are the countries with the highest prices and the whisker bottoms are the countries with the lowest prices. The top and bottom edges of the boxes represent the 75<sup>th</sup> and 25<sup>th</sup> percentiles, respectively. The lines inside the boxes represent the medians. The fixed category includes 38 countries, Intermediate 15 countries and liberalized 44 countries.

Governments adopt different regulations and approaches to ensure the balance between affordability, environmental concerns, and other policy objectives.

For example, a significant number of countries fix the price to encourage greater access for the population, effectively subsidizing consumption. Other countries, where affordability is less of an issue and spending for energy represents a smaller share of household expenditure, markets are more liberalized, with interventions restricted to taxation. In a third group of countries, governments adopt an intermediate scheme, partially controlling the end-use price (e.g. through a price cap) limiting the fluctuations of the end-use price linked to the crude spot market. Post-tax prices in liberalized markets are generally higher (Figure 11). For example, the average price for gasoline is 0.82 USD/l in a subset of thirty-eight countries with fix price, while is 1.03 USD/l in a subset of forty-four market countries.

## Reference to databases

*Energy prices* [Database information](#).

*World energy prices* [Database documentation](#)

*Energy prices and taxes for OECD countries* [Database documentation](#)



## Sources

2020 [World Energy Prices](#), OECD/IEA, Paris

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