

World energy prices

An overview

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This overview presents a selection of data from the second release of the [World Energy Prices](#) database of the International Energy Agency (May 2019). This database includes annual energy prices data for more than 120 countries, for gasoline, automotive diesel, electricity and other products.

This document can be downloaded free of charge at the following link

<https://webstore.iea.org/world-energy-prices-2019-an-overview>

More information is available at <https://www.iea.org/statistics/prices/>.

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World Energy Prices

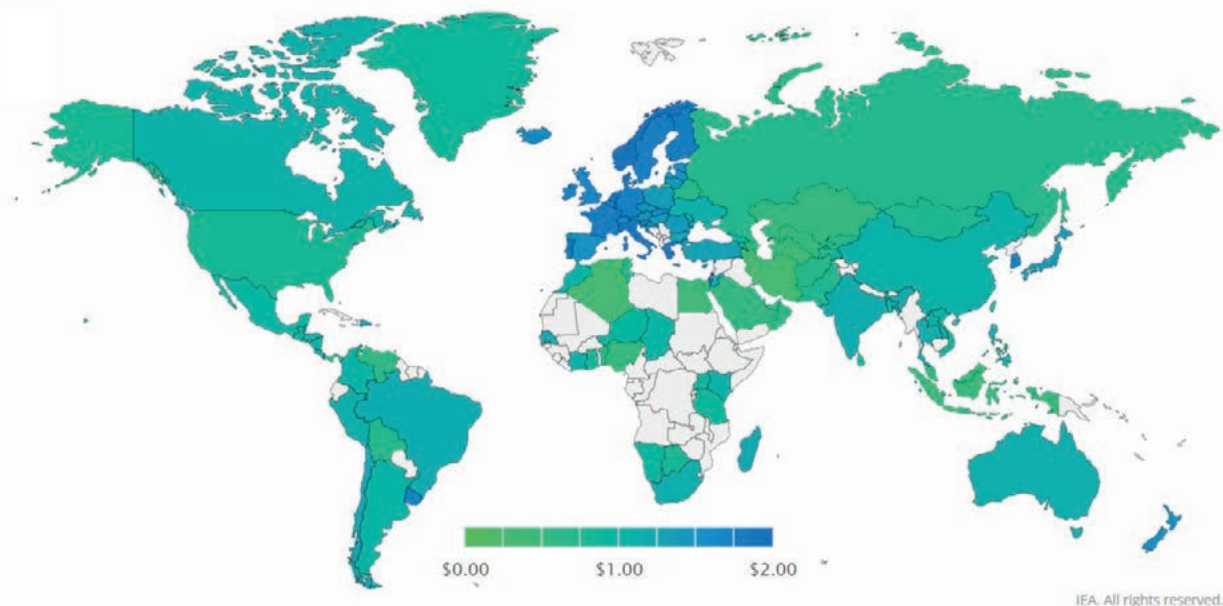
Energy prices are a significant part of our domestic expenditures, play an important role for industrial competitiveness and influence energy consumption patterns. End-use prices -paid by final consumers- are affected by movements in commodity markets as well as policy decisions. As countries move away from regulated pricing, monitoring energy end-use prices around the world has become increasingly important for analysts and policy makers. [World Energy Prices](#) aims to serve this purpose by being the most reliable 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 countries in the world. Following the efforts to enhance the coverage of this database, the 2019 edition has expanded to include eighteen new countries and one hundred and fifty-three new products/sectors for both previously-covered countries and new countries. Additionally, the 2019 edition contains sub-national transport fuel prices for selected countries and Consumer Price Indices for all countries covered.

This new database casts light on how energy prices vary around the world and how they change over time.

Figure 1 - Gasoline prices in 2018*

USD/litre



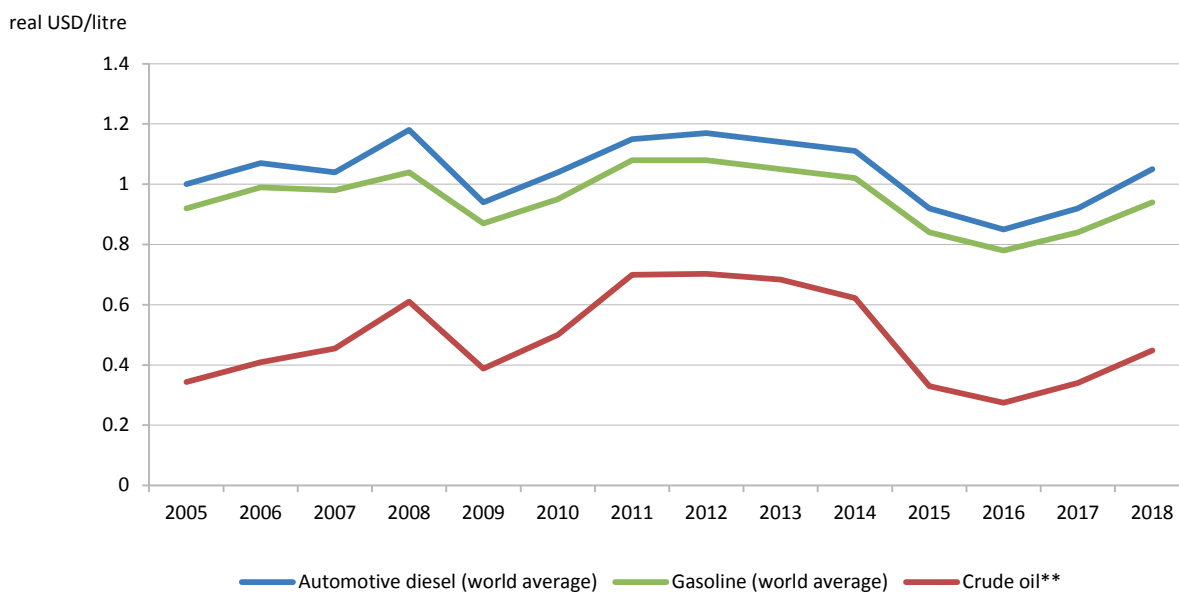
This map is without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

* In this figure, gasoline prices refer to 2018 or the most recent available year, i.e.: 2017 for Afghanistan, Armenia, Azerbaijan, the Islamic Republic of Iran, Jordan, Lao People's Democratic Republic, Madagascar, Mauritius, the United Republic of Tanzania and the Bolivarian Republic of Venezuela; 2016 for Greenland, Hong Kong (China) and Uganda; and 2015 for Ghana, 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 (≤ 92 RON) were used for the following countries: Afghanistan, Armenia, Azerbaijan, Bangladesh, Belarus, Benin, Chad, Côte d'Ivoire, Ghana, India, Indonesia, Japan, Niger, Nigeria, Pakistan, Senegal, Tajikistan, the United Republic of Tanzania and Uzbekistan. Prices for high-grade gasoline (≥ 97 RON) were used for Hong Kong (China).

In 2018, the global average price of gasoline¹ was 0.97 US dollar per litre (USD/l), a 14% increase compared to the previous year. Prices varied greatly across countries (Figure 1): from 0.33 USD/l in Algeria to over five times that amount in Norway (1.91 USD/l). Both of these countries are crude oil exporters, and the price difference between them is mainly determined by national policy decisions. Government policy - in the form of taxes and/or subsidies – strongly influences how prices at the pump vary around the world.

In general, European consumers pay the highest gasoline prices, generally reflecting high taxes on fuels². At the other end of the spectrum, the lowest prices are found among countries that subsidise liquid fuels.

Figure 2 – Global fuel price changes, 2005-2018



* 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*.

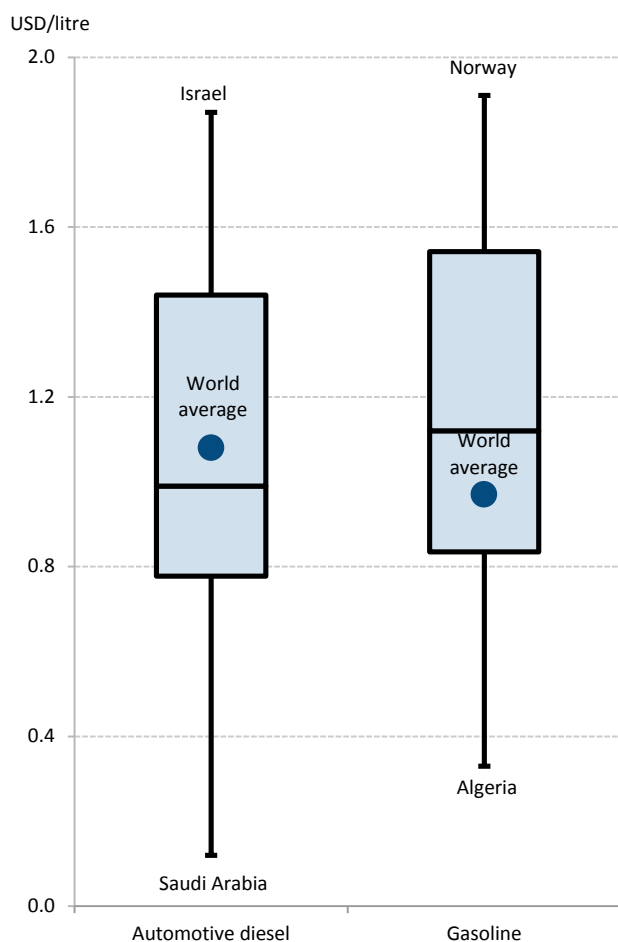
In recent years, automotive diesel and gasoline prices have tracked movements in crude oil prices (Figure 2). Global pump prices are, on average, significantly higher than the underlying crude spot prices as they also reflect transformation, transport and marketing costs, as well as taxes levied on fuel sales.

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

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

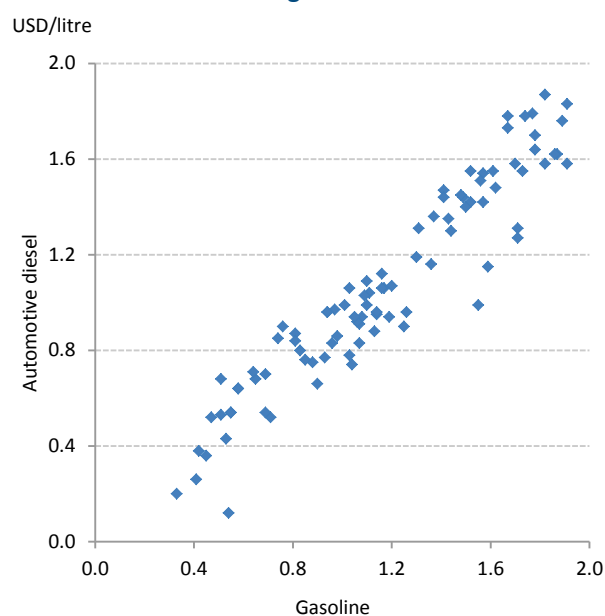
Figure 3 – Fuel price distribution across countries - 2018

Figure 3a



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.

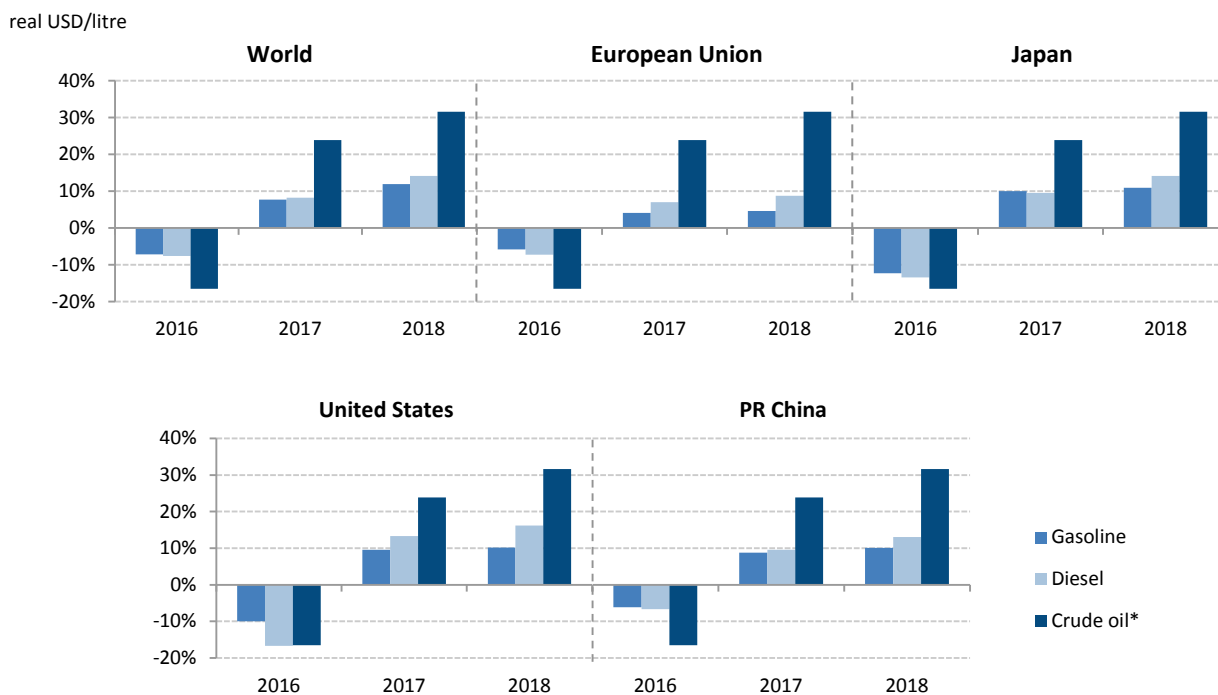
Figure 3b



Just as global prices for gasoline and automotive diesel track each other through time, within-country gasoline and automotive diesel prices in 2018 are strongly correlated (Figure 3b). At a global level, the consumption-weighted price of gasoline is lower than that of automotive diesel despite being more expensive in most individual countries. This is because the global average price for gasoline is more significantly influenced than that of automotive diesel by the lower price levels of the United States³. For similar reasons, the higher consumption of gasoline in the United States pulls the world average price well below the median price, and vice versa for automotive diesel.

3. In 2016, the United States consumed 35% of global gasoline, compared to 14% of automotive diesel.

Figure 4 – Annual fuel price changes in selected major economies

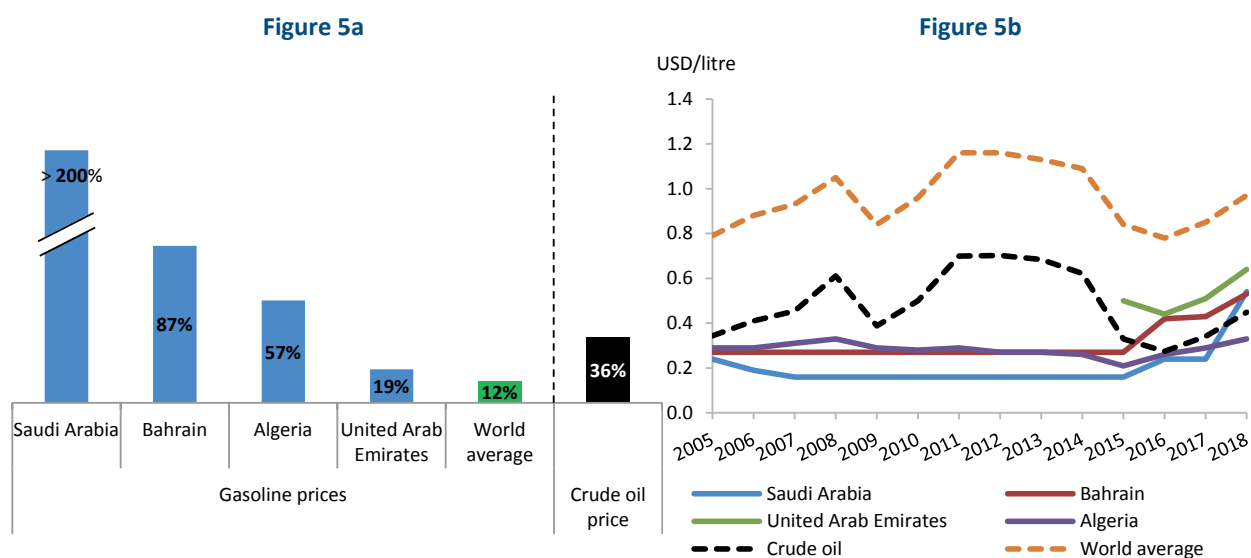


* Crude oil refers to nominal (i.e., not deflated) North Sea dated crude spot prices, as calculated from daily quotations from *Argus Crude*.

At a regional level, pump prices track movements in crude markets more closely in the United States than in the European Union – largely reflecting taxation structure⁴.

4. In Europe, most taxes are levied on a per volume basis while in the United States, taxes are usually *ad valorem* (proportional to the value).

Figure 5 – Largest gasoline end-use price increases versus crude oil price trend



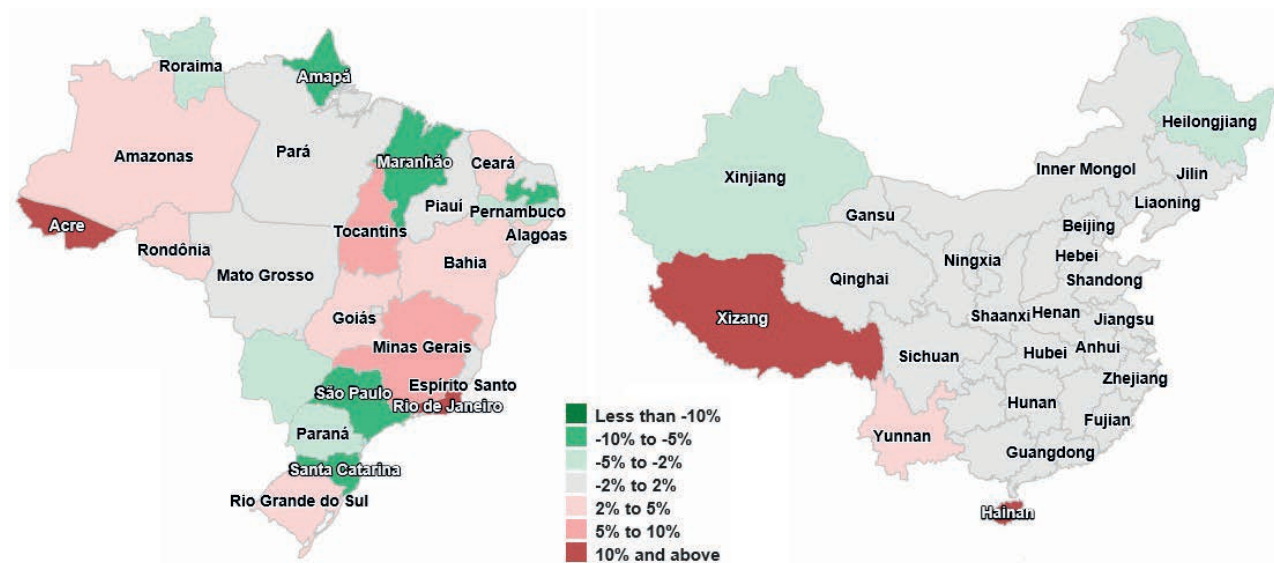
Percent changes are between years 2015 and 2018. Percent changes for individual countries are based on prices in national currency per litre deflated to 2015 levels. Crude oil percent change refers to nominal (i.e., not deflated) North Sea dated crude spot prices, as calculated from daily quotations from *Argus Crude*. World average percent change is based on 2015 US dollars.

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*.

For gasoline, the four largest price increases were seen in Saudi Arabia, Bahrain, Algeria and the United Arab Emirates (Figure 5a). All four cases were linked to policy developments, as these countries reduced their fuel subsidies and/or introduced value-added taxes (VAT)⁵, resulting in successive increases in prices at the pump. Despite the high increases in relative terms, prices for gasoline in these countries were still among the lowest in the world as of 2018. As illustrated in Figure 5b, due to the role of policy settings, gasoline prices in Algeria, Bahrain and Saudi Arabia showed little correlation to commodity price movements until recently, with the United Arab Emirates tracking the movements most closely among the four countries in the last four years.

5. Saudi Arabia and the United Arab Emirates introduced VAT for the first time on 1 January 2018 at a rate of 5%.

Figure 6 – Sub-national transport fuel prices – Brazil and PR China – 2018

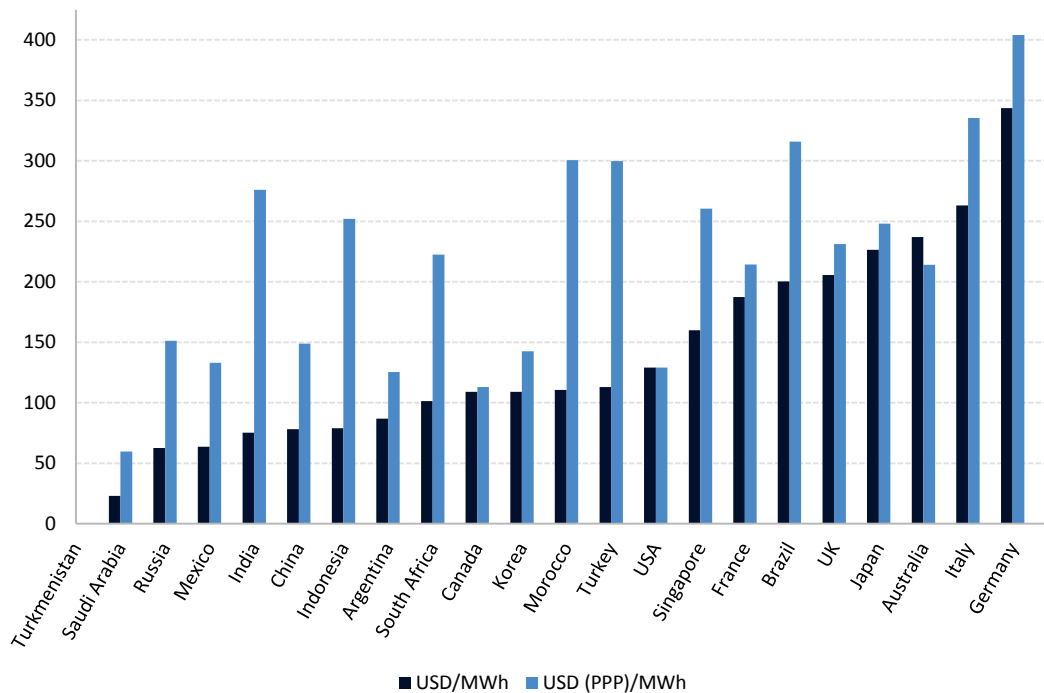


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Geographical variations in transport fuel prices exist within a country due to several factors including pricing framework, sub-national taxes, distribution costs (proximity of consumers to suppliers), marketing costs (retail competition and margins)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

For example, sub-national gasoline prices in PR 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 - 2017



Residential electricity prices also vary significantly across countries, as reflected in the figure above. In Turkmenistan, households benefit from free electricity⁶ while consumers in several other countries face high utility bills (Figure 7). 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. By converting the data using purchase power parity (PPP) adjusted exchange rates, electricity appears significantly more expensive in Morocco than Australia, for example, while the opposite is true when comparing prices using nominal exchange rates.

6. 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 the current 25 kWh per person per month.

Figure 8 – Electricity price distribution - 2017

Figure 8a

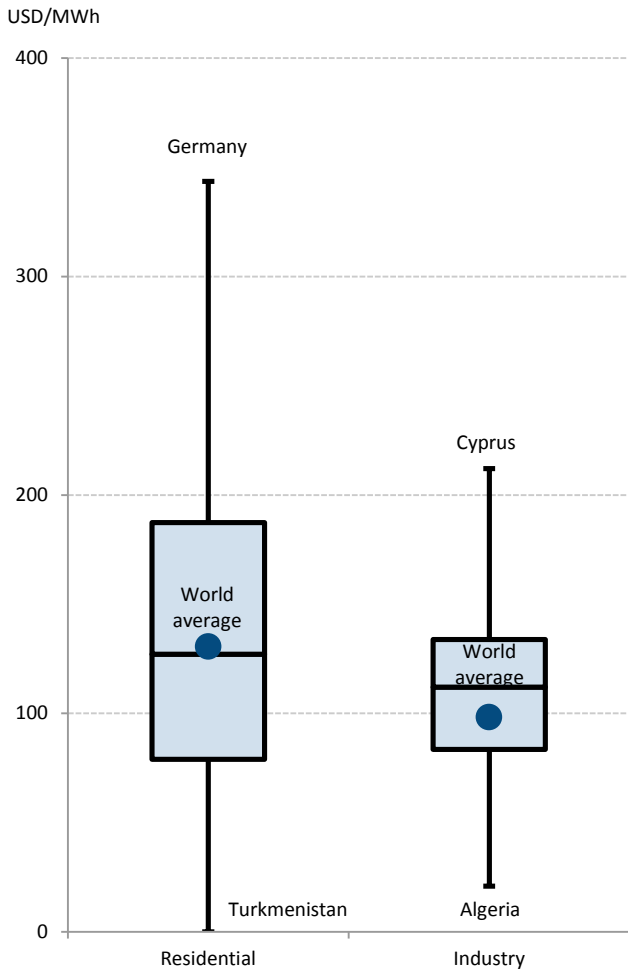
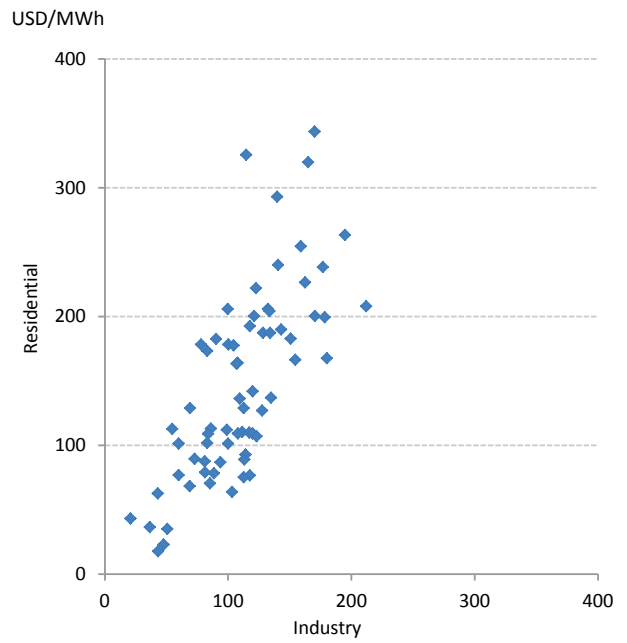
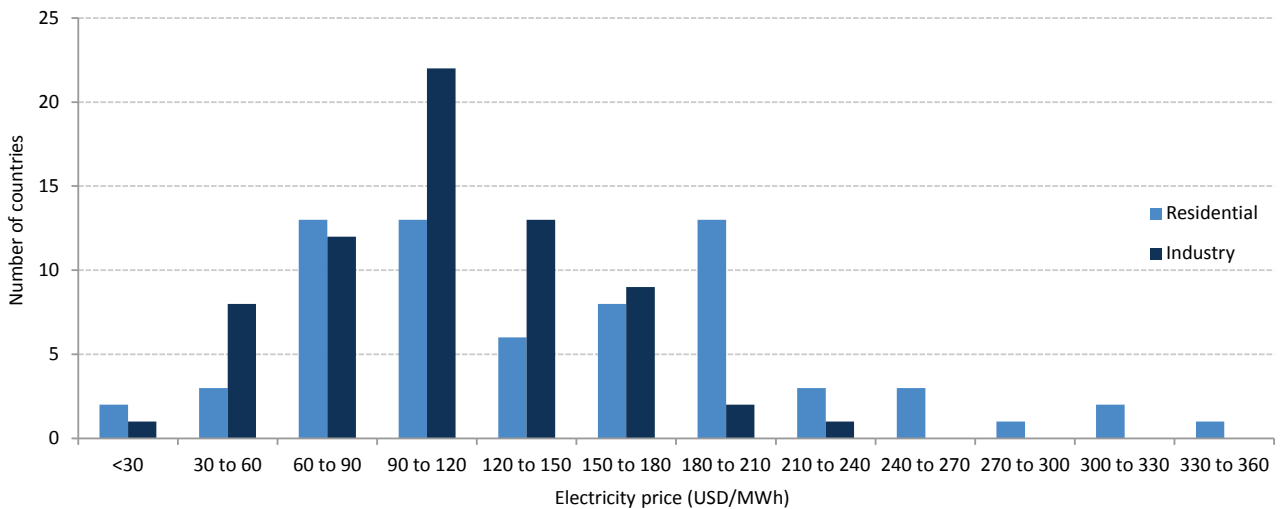


Figure 8b



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.

Figure 8c



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 electricity price for industry falls between the median and 25th percentile, showing that countries where prices are relatively lower tend to have a relatively greater specialisation in industrial sectors (Figure 8a).

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 is approximately normal (Figure 8c).

Reference to databases

World Energy Prices 2019 Edition [Database documentation](#)

Energy Prices and Taxes [Database documentation](#) (for OECD countries)

Geographical coverage⁷

OECD includes Australia, Austria, Belgium, Canada, Chile, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States.

Americas includes Argentina, Belize, the Plurinational State of Bolivia (Bolivia), Brazil, Canada, Chile, Colombia, Costa Rica, Cuba, Curaçao, the Dominican Republic, Ecuador, El Salvador, Greenland, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Trinidad and Tobago, the United States, Uruguay, the Bolivarian Republic of Venezuela (Venezuela).

Asia includes Afghanistan, Armenia, Azerbaijan, Bahrain, Bangladesh, Brunei Darussalam, Cambodia, the People's Republic of China, Cyprus, Georgia, Hong Kong (China), India, Indonesia, the Islamic Republic of Iran, Iraq, Israel, Japan, Jordan, the Democratic People's Republic of Korea, Korea, Kazakhstan, Kuwait, Kyrgyzstan, Lao People's Democratic Republic, Lebanon, Malaysia, Mongolia, Myanmar, Nepal, Oman, Pakistan, the Philippines, Qatar, Saudi Arabia, Singapore, Sri Lanka, the Syrian Arab Republic, Tajikistan, Chinese Taipei, Thailand, Turkey, Turkmenistan, the United Arab Emirates, Uzbekistan, Viet Nam, and Yemen.

Africa includes Algeria, Angola, Benin, Botswana, Cabo Verde, Cameroon, Chad, the Republic of the Congo (Congo), Côte d'Ivoire, the Democratic Republic of the Congo, Egypt, Eritrea, Ethiopia, Gabon, Ghana, Kenya, Libya, Madagascar, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Senegal, South Africa, South Sudan, Sudan, Swaziland, the United Republic of Tanzania (Tanzania), Togo, Tunisia, Uganda, Zambia, Zimbabwe.

Europe includes Albania, Austria, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, the Czech Republic, Denmark, Estonia, Finland, the Former Yugoslav Republic of Macedonia, France, Germany, Gibraltar, Greece, Hungary, Iceland, Ireland, Italy, Kosovo, Latvia, Lithuania, Luxembourg, Malta, the Republic of Moldova (Moldova), Montenegro, the Netherlands, Norway, Poland, Portugal, Romania, the Russian Federation, Serbia, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Ukraine, and the United Kingdom.

Oceania includes Australia and New Zealand.

World includes Africa, Americas, Asia, Europe and Oceania.

7. This document 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. In this publication, "country" refers to country or territory, as the case may be.

Sources

2019 [World Energy Prices](#), OECD/IEA, Paris

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