

DATA COLLECTION

SOURCES AND METHODS

Neven T. Valev

GLOBALPETROLPRICES.COM

GENERAL PRINCIPLES

Multiple reliable sources

The data come from government and private sector sources with considerable and sustained presence in the country. We include only countries where we can obtain the data from several independent reliable sources as we explain in the country examples below.

No automation

Most countries do not make their data easy to find. The data are often in PDF or excel files or in press releases written in the local language. The documents often change format and location. Therefore, to track many countries and to ensure data consistency across countries and time, we collect the data “by hand” without scraping or any other automation.

Continuous review of the data and the sources

We run statistical diagnostics procedures every time we upload new data to detect any abnormal changes and we investigate any anomalies. Moreover, each data point is checked by at least two members of our team. The list of sources is evaluated and expanded continuously.

Using the data

We use our data to produce forecasts, world and regional averages, price dispersion measures, trend estimates, and price elasticity estimates. This adds another layer of quality checks.

Slow and steady growth

We have applied these principles since 2012 when we started tracking energy prices and have steadily expanded our data base always putting data quality first. Now we regularly monitor all retail fuel and electricity prices in over 160 countries and their major cities.

DATA COLLECTION – FUEL PRICES

For each country, we use at least three independent sources including the Ministries of Energy, Transport, or Commerce; fuel price transparency mechanisms; local automobile associations; consumer advocacy groups; international fuel companies; local petroleum monopolies; multilateral organizations; and the local media. We have collected the fuel price data on a weekly basis since 2012. Below are a few examples:

Belgium

We monitor the retail fuel prices of Lukoil, Q8, Shell, and Texaco. We compare the prices with the data from the weekly oil bulletin of the European Commission. We also track the official maximum prices announced by the Ministry of Economic Affairs. We follow the fuel market information released by the Belgian Petroleum Federation and the Statistical Office of Belgium.

Ghana

We use the fuel price data and fuel market information released by the National Petroleum Authority. We monitor the pump prices at Total and Allied. We check the publications of the Energy Media Group. We keep track of the government announcements about fuel prices.

Indonesia

We use the fuel price data and fuel market information released by the Ministry of Energy and Mineral Resources. We keep track of the publications of Pertamina. We also monitor the pump prices at Pertamina and Shell. We follow the fuel market information released by the local news portals and by international media sources.

Jordan

We monitor the fuel price data published by the Jordan Petroleum Refinery Company. We use fuel price data from a regional fuel price online platform. We keep track of the announcements of the Jordanian government and follow the fuel market information in the regional media.

DATA COLLECTION – HOUSEHOLD ELECTRICITY PRICES

Very few countries report up-to-date statistical data on electricity prices. Therefore, we collect data from the current price offers of electricity companies and produce a national average that takes into account the market shares of those companies and the relative population of regions within the country.

For each country, we investigate the structure of its electricity market and answer the following questions: Are prices set by a regulator or the market? What companies handle the distribution of energy and what companies sell electricity? How many companies serve the households and what are their market shares? What is the average household consumption of electricity according to national sources and the World Energy Council? Are prices determined on a regional basis or nationwide? What are the types of contracts available: fixed, variable, spot? What are the current price packages? Are there any taxes and fees that are not reported in the contracts but consumers actually pay?

Answering these questions allows us to compute a national average price based on the specifics of each country. Below are a few examples:

Australia

Five of the Australian states – the Australian Capital Territory, New South Wales, Queensland, South Australia, and Victoria – have liberalized electricity markets while the Northern Territory, Tasmania, and Western Australia regulate their electricity prices. In the liberalized markets, we take the prices of the largest electricity suppliers in the capital cities:

- ActewAGL in the Australian Capital Territory;
- AGL, Energy Australia, Red Energy, and Origin Energy in New South Wales;
- AGL, Energy Australia, and Origin Energy in Queensland (and Ergon Energy in the remote areas);
- AGL, Origin, and EnergyAustralia in South Australia; and
- AGL Victoria, Energy Australia, and Origin Australia in Victoria.

In the states with regulated electricity prices, we take the tariffs from the regional regulators: the Utilities Commission of the Northern Territory (Jacana Energy as a major supplier); the Tasmanian Economic Regulator (usually sets the electricity rates once per year and the only supplier is Aurora Energy); and the Government of Western Australia (with Synergy as a major electricity supplier).

The national average electricity price for Australia is a weighted average price per kWh using the relative population of each state. We take into account the level of annual household electricity consumption for each state: 9316 kWh (Australian Capital Territory), 6753 kWh (Northern Territory), 6935 kWh (New South Wales), 5512 kWh (Queensland), 6059 kWh (South Australia), 9939 kWh (Tasmania), 7008 kWh (Victoria), and 6205 kWh (Western Australia).

Ivory Coast

Companie Ivorienne d'Electricite (CIE) controls the distribution and sale of electricity in the Ivory Coast. The National Electricity Sector Regulatory Authority (ANARE) regulates the electricity sector and, in particular, it proposes the electricity tariffs to the state.

The electricity bill in the Ivory Coast is bimonthly. It consists of two consumption tiers. The first is for households with electricity consumption between 0 and 80 kWh while the second is for consumption above 80 kWh. The second tier is two times more expensive than the first one. Only the electricity above 80 kWh is charged with VAT. In addition, there is a fixed bimonthly energy charge paid regardless of the level of consumption. The other components of the price are the rural electrification fee, the variable RTI fee, and the municipal tax.

Sweden

Swedish households sign two contracts to have access to electricity: 1) one with a distributor company that maintains the physical infrastructure and 2) another with an electricity supplier that sells electricity. The country is divided into four regions for the purposes of electricity distribution but there can be multiple distributor companies within a region with Ellivio, E.on and Vattenfall as leaders in the market. Customers pay a fixed monthly amount and a per kWh amount to the distribution companies that vary substantially across regions. For example, the fixed monthly fees in the North region are more than double what households in Stockholm pay because the cost of the maintenance of the electricity grid is spread among fewer consumers

in the sparsely populated North region. These prices are regulated by the Swedish government as each distributor is a natural monopoly in the area where it operates.

There are numerous suppliers of electricity across all of Sweden with a large variety of choices in terms of packages. In fact, households can choose from over 500 contracts with fixed or flexible prices and by selecting the type of energy source: wind, solar, or hydro. Yet, competition ensures that the cost in these contracts expressed in kronas per kWh are very similar across the companies and the regions of Sweden as suppliers have access to the same wholesale market: the NordPool energy bourse. Hence, almost all of the variation between regions in terms of retail electricity prices comes from the fixed cost of distribution.

To compute the average prices we identified the main distributor companies in the four regions of the country and obtained their distribution charges. Then, for the largest cities in each region we obtained the average cost in the electricity contracts for all electricity suppliers. The sum of the two gives the total average per kWh cost. The calculations are based on 8000 kWh consumption per year.

United Arab Emirates

To calculate the national average electricity price, we take into account the tariffs offered by the three suppliers operating in the two largest Emirates - Abu Dhabi and Dubai. The Al Ain Distribution company provides electricity in the eastern part of Abu Dhabi whereas the Abu Dhabi Distribution Co. supplies the rest of the Emirate. The Emirate of Dubai is supplied by the Dubai Electricity Authority.

We take the electricity prices of the three companies and use the population of each Emirate to derive a weighted average price per kWh for the country. We take into account the fact that in Abu Dhabi the majority of the population are immigrants and are charged higher electricity rates compared to UAE citizens. Hence, for this Emirate, we calculate a weighted average price taking into account the two different rates. The average annual consumption per household in the UAE is about 17 000 kWh.

ABOUT GLOBALPETROLPRICES.COM

We track retail fuel and electricity prices using data from companies, government institutions, regulatory agencies, statistical institutes, and major media outlets. The fuel price data are collected weekly for over 160 countries. The electricity prices are collected for most of these countries on a quarterly basis.

For inquiries or comments, please, write to Neven Valev at neven.valev@globalpetrolprices.com.