

Electricity and heating consumption: Where do you live?

Electricity consumption at home:

The energy needed for electricity was computed from real data of 44 Luxembourgish households. The data are anonymous and were divided into three categories depending on the habitable surface: households with 100 m² or less were considered as apartments, households with 100-200 m² surface were considered row houses and households with above 200 m² surface were considered free-standing houses. Thus we get:

- 4.05 kWh/d/p for apartments
- 5.91 kWh/d/p for row houses
- 6.66 kWh/d/p for free-standing houses

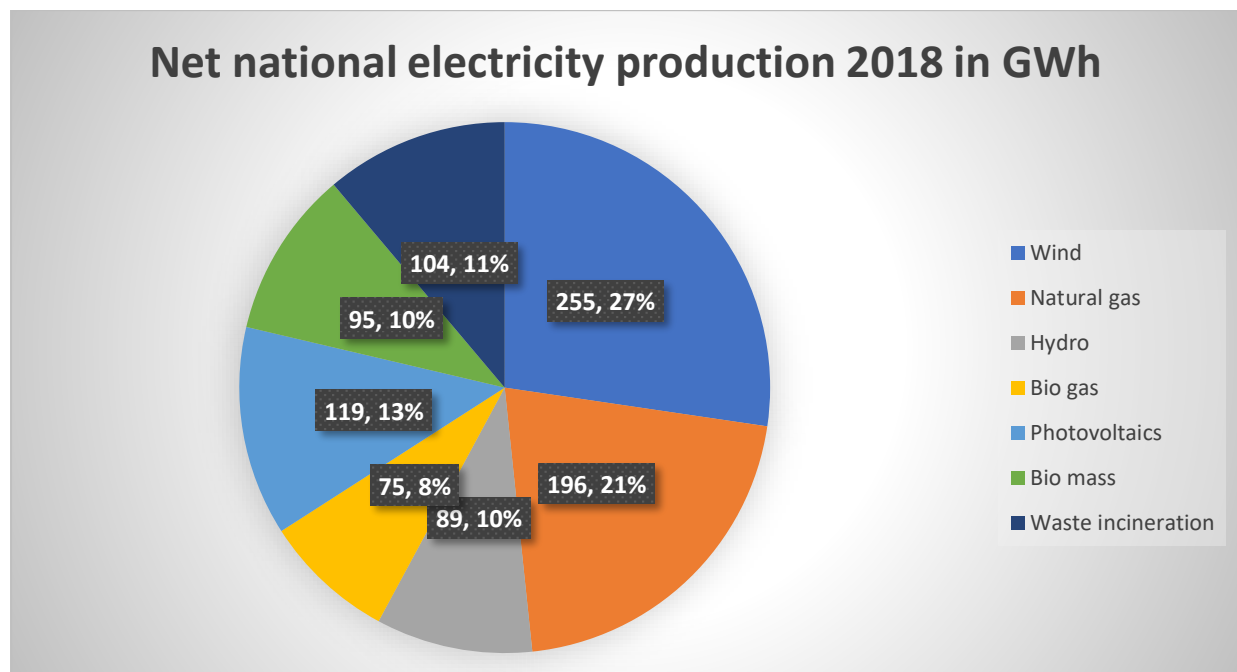
The SEWTHA book divides electricity usages into the categories “light” and “gadgets” and attributes 2.7 kWh/d/p to lighting and 5 kWh/d/p to gadgets i.e. 7.7 kWh/d/p for both.

More electricity statistics for Luxembourg:

In 2018, the total electricity consumption in Luxembourg amounted to 6611 GWh. From these were imported:

- 4137 GWh from Germany (62.6%)
- 1302 GWh from France (19.7%)
- 386 GWh from Belgium (5.8%)

Locally, Luxembourg produces 933 GWh of electricity according to the pie chart below. Only 786 GWh are necessary to cover the electricity needs left by the imported electricity, while the remaining 147 GWh are exported.



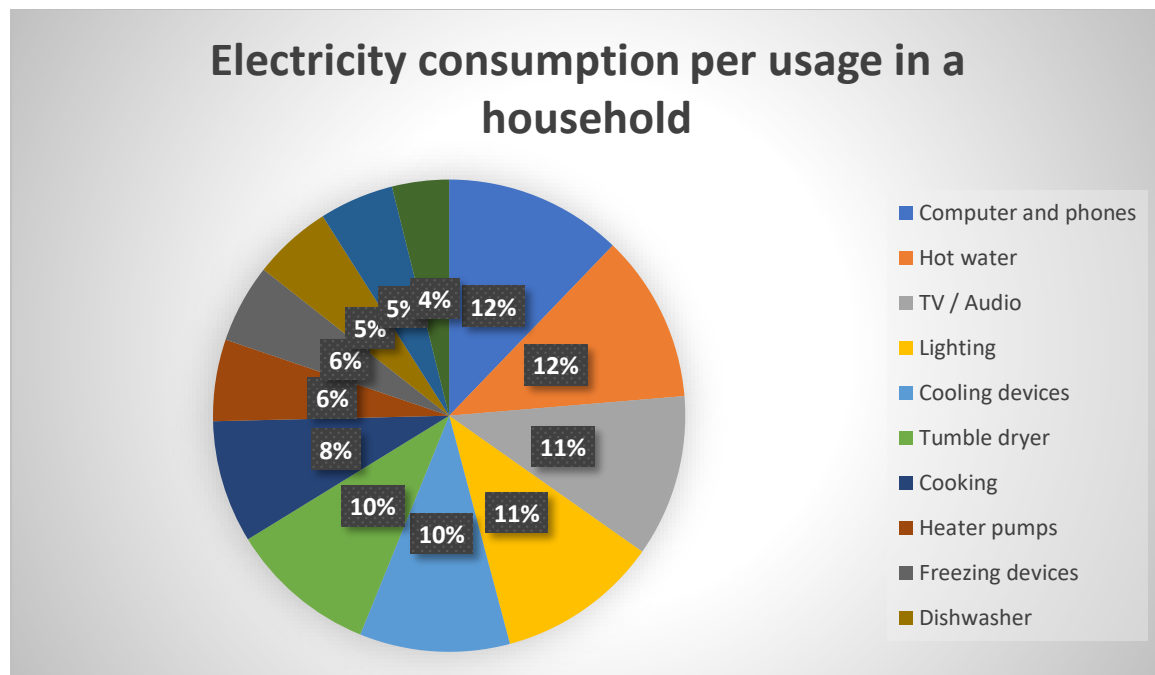
<https://assets.ilr.lu/energie/Documents/ILRLU-1685561960-667.pdf>

In terms of price, the ILR (*Institute Luxembourgeois de Régulation*, <https://web.ilr.lu/FR/ILR>) indicates an average of 169.1 € per MWh in 2018 for a residential user. This comes out at 0.1691 €/kWh. If we use our numbers for the electricity consumption, we get for the pricing

- 0.68 €/d/p or 250 € per person per year
- 1 €/d/p or 365 € per person per year
- 1.13 €/d/p or 411 € per person per year

Average electricity consumption per usage in a household

Data from V. Quaschnig “Erneuerbare Energien und Klimaschutz” who cites the “EnergieAgentur NRW”.



Source as in the book: *EnergieAgentur NRW: Stromcheck für Haushalte*. Wuppertal 2006. www.energieagentur.nrw.de

Advice on how to reduce electricity at home

- Use a electricity usage monitor to identify the devices that use the most electricity
- Switch off devices and lights that are not being used
- Use a switchable connector strip to connect your devices to the electricity grid. That way, once you switch off your connector strip, the devices will not be in stand-by mode and will not continue using electricity
- Replace incandescent and halogen lamps with LEDs.
- When buying new devices, pay attention to their electricity consumption
- Buy only the devices with the lowest consumption
- Cooling and freezing devices (fridge & freezer) should not be situated next to heating sources such as radiators, ovens, hot plates
- Thaw frozen goods by putting them into the fridge. Takes longer but helps keeping the fridge cool and thus reduces electricity consumption
- Regularly thaw freezer and fridges because the more ice inside the devices, the more electricity is needed to keep the temperatures at the set values

- Use the laundry machines only when they are full and wash the clothes at the lowest possible temperature (30°C)
- Consider drying the laundry in air and not using a tumble dryer
- If you want to use a tumble dryer, make sure that the laundry has been flung at the highest angular velocity (number of revolutions)
- Use lids for pots and pans during cooking

Heating at home:

The same 44 households that provided the electricity consumption data, also provide the heating data. From the 44 households, 17 use gas, 22 use petrol, 6 use buches (3 of which also use petrol), and 3 use pellets.

According to the data, we have on average an energy consumption for heating:

- 12.46 kWh/d/p for apartments
- 42.20 kWh/d/p for row houses
- 56.61 kWh/d/p for free-standing houses

The SEWTHA book estimates a consumption of 36 kWh/d/p for British households.

Advice on how to reduce heating at home

- Invest in a thermometer or thermostat and keep room temperature at a reasonable value. On average, every time the temperature is increased by 1 single degree, 6% more heating energy is necessary. Therefore, if you are able to wear shorts and t-shirts inside your home during winter, you are using a lot of (unnecessary) energy for heating purposes that you could mitigate by wearing long trousers and a pullover instead.
- Lower the radiator during the night or during absence.
- Lower shutters and close curtains during the night (makes it harder for the heat to escape through the windows)
- During winter, do not ventilate (or let air circulate) your home by having windows constantly open but shock ventilate your home several times daily by opening windows fully.
- Do not dress up radiators or block them with furniture or curtains
- Insulate your home/building with e.g. triple-glazed windows and doors (if doors have windows, which they should not have). A typical house built around 2004 uses, on average, needs a heating energy of 100 kWh / m² per year. Assuming a family of four and an area of 200 m², we get 13.7 kWh/d/p. This is however if the heating energy is used intelligently. More realistically, one can envision values of up to 150-200 kWh/m² per year. For old buildings, this values can rise up to 300 kWh/m² per year. Passive houses, on the contrary, only need 15 kWh/m² per year, or, with the same assumptions as above, 2 kWh/d/p which is ridiculously low. However, one needs to keep in mind that it is much harder to properly insulate and already-built house than to build a new one. (data from V. Quaschnig)