



# eCO<sub>2</sub>mix - CO<sub>2</sub> emissions per kWh of electricity generated in France ?



PERIOD

Wednesday, January 31, 2024 ▼

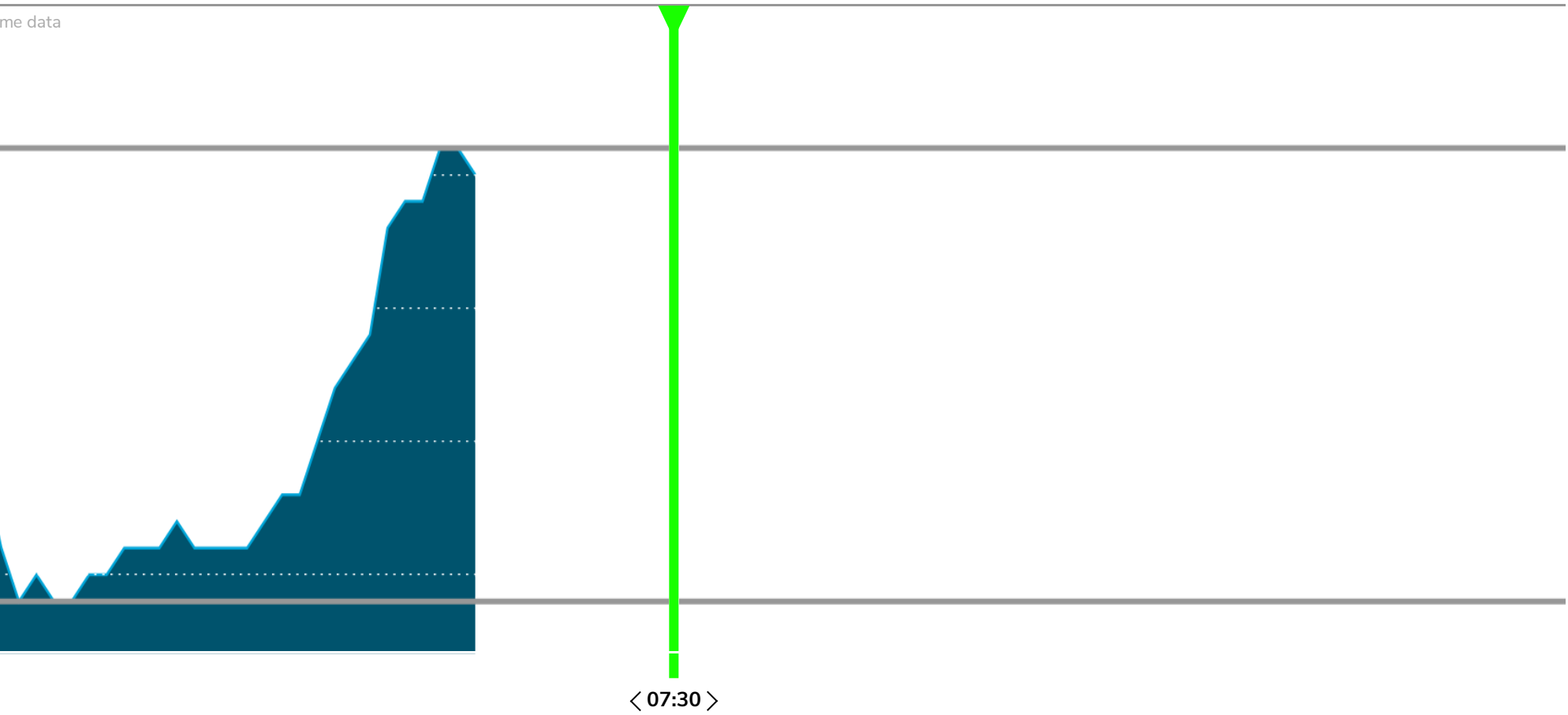
min

max

CO<sub>2</sub> Emissions

55g CO<sub>2</sub> eq/kWh

me data



Compare two periods

Data overview

## Tracking and understanding CO<sub>2</sub> emissions per kWh generated in France

RTE continuously provides an estimate of carbon-dioxide gas emissions resulting from the generation of electrical power, expressed in grams of CO<sub>2</sub> per kWh generated.

### How are CO<sub>2</sub> emissions calculated?

In France, electrical power is generated by power plants that use different primary energy sources. These primary energy sources are all of natural origin: they include fossil fuels (coal, petroleum, natural gas) and low-carbon energy sources (nuclear, renewables) that release little or no CO<sub>2</sub> to the atmosphere.

The displayed indicator only illustrates CO<sub>2</sub> emissions generated by the consumption of primary fuel used on power plants located in France. They do not include carbon emissions generated during the construction of power plants or during the mining/processing/transportation of these fuels.

Last but not least, CO<sub>2</sub> emissions per kWh generated in France do not include exchanges of energy at interconnections (electricity imports or exports).

## Real-time calculation of CO2 emissions

An average coefficient per fuel type is calculated in order to provide the most accurate estimate possible.

The contribution of each energy source to CO2 emissions is as follows:

- 0.986 t CO2 eq /MWh for coal-fired plants
- 0.777 t CO2 eq /MWh for oil-fired plants
- 0.429 t CO2 eq /MWh for gas-fired plants
- 0.494 t CO2 eq /MWh for biofuel plants (waste)

For energy sources that are not mentioned, their contribution to CO2 emissions is considered equal to 0 t CO2 eq / MWh.

These figures will be regularly revised depending on technological upgrades to generation facilities and the proportion of different technologies within one sector.

## Calculation of CO2 emissions based on finalised consolidated data

This indicator is calculated on the basis of two factors:

- 1 The ADEME carbon base in order to obtain the fuel emission factor (gas, coal and oil)
- 2 ENTSO-E guidelines for determining standard plant efficiency.

The contribution of each energy source to CO2 emissions is as follows:

- 0.986 t CO2 eq/MWh for coal-fired plants
- 0.777 t CO2 eq /MWh for oil-fired plants
- 0.486 t CO2 eq /MWh for gas-turbine plants
- 0.352 t CO2 eq /MWh for co-generation & combined-cycle plants
- 0.583 t CO2 eq /MWh for other gas-fired plants
- 0.494 t CO2 eq /MWh for household waste

## Browsing through the CO2 emissions calendar

The calendar enables you to view data over a period of one day or more (up to 8 weeks on desktop and 1 week on a smartphone).

Historical data is updated twice following initial publication:

- 0 In the course of the following month, historical data is consolidated ("consolidated data" in green in the calendar, based on available metering data).
- 0 In the course of the first half of the following year, historical data is finalised ("final data" in red in the calendar, based on all metering data).

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