
FRAUNHOFER-INSTITUT FÜR SOLARE ENERGIESYSTEME ISE

Net Public Electricity Generation in Germany in 2020



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www.ise.fraunhofer.de

www.energy-charts.info

Net public electricity generation in 2020

Renewable energy sources: solar and wind

Solar Photovoltaic systems fed approx. 50,7 TWh into the public grid in 2020. Production increased by approx. 4,3 TWh or 9,3% compared to the previous year.

The installed PV capacity at the end of November was approx. 53,6 GW. The increase in 2019 amounted to approx. 4,4 GW until November. The maximum solar capacity was approx. 37,2 GW on June 1, 2020 at 1 pm. At this time, 56% of the total electricity generation came from photovoltaics. The maximum share of solar energy in the total daily energy of all electricity sources was 32% on May 21. From March to September 2020, the monthly power generation of PV systems was higher than that of coal-fired power plants.

Wind energy produced around 132 TWh in 2020 and production was around 4,6% than in 2019. Wind energy is thus the second strongest source of energy after lignite, but ahead of hard coal and nuclear energy. In ten months, wind power generation exceeded generation from hard coal and nuclear energy. The maximum capacity generated was approx. 46,9 GW on February 22, 2020 at 08:30 pm. The share of **onshore** wind was approx. 105 TWh. **Offshore wind** increased production from 24,5 TWh in 2019 to 27 TWh in 2020. Approximately 22,8 TWh were generated in the **North Sea**. Offshore production in the **Baltic Sea** was approx. 4,2 TWh. At the end of November 2020, the installed capacity of onshore wind was 54,6 GW and of offshore wind 7,74 GW.

Together, solar and wind turbines produced approx. 183 TWh in 2020. This puts them ahead of all fossil sources (lignite, hard coal, oil, gas) for the first time (178 TWh).

1 TWh = 1 terawatt hour = 1000 gigawatt hours (GWh) = 1 million megawatt hours (MWh) = 1 billion kilowatt hours (kWh)

Net public electricity generation in 2020

Renewable energy sources: hydropower and biomass

Hydropower produced only approx. 18,3 TWh compared to 20,6 TWh in 2019. The installed capacity was approx. 4,8 GW and remains unchanged compared to 2019.

About 45.5 TWh were produced from **biomass**. Production is slightly higher than in 2019, but lower than in 2018.

In total, the renewable energy sources solar, wind, water and biomass produced approx. 246 TWh in 2020. This is 4% above the previous year's level of 236 TWh. The share of public net electricity generation, i.e. the electricity mix that actually comes from the socket, was over 50%.

The share of the total gross electricity generation including the power plants of the "companies in the manufacturing industry as well as in mining and quarrying" is approx. 35% according to BDEW.

See <https://www.bdew.de>

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Net public electricity generation in 2020

Non-renewable electricity generation

Net electricity production from **nuclear power plants** amounted to 60,9 TWh and was thus 14% the previous year's level of 71 TWh. The decline is due to the shutdown of the Philippsburg 2 nuclear power plant.

Lignite-fired power plants produced 82 TWh net. This is approx. 20 TWh or 19,6% less than in 2019. The sharp decline in lignite-fired power generation is due to a number of factors: higher CO2 certificate prices, higher power generation from renewables, lower electricity exchange prices, lower gas prices, lower power consumption, and fewer power exports.

Net production from **hard coal-fired** power plants amounted to 35,6 TWh. It was 13,9 TWh or 28% lower than in 2019, when 49,5 TWh were produced net.

Gas-fired power plants produced 59 TWh net for the public electricity supply. They were thus 6 TWh or 11,7% over the level of the previous year. Reasons for the increase include low gas prices and high CO2 certificate prices. In addition to the power plants for public power supply, there are also gas-fired power plants in the mining and manufacturing sectors for captive power supply. These produced an additional approx. 25 to 30 TWh for industrial captive use, which is not included in this publication.

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Net public electricity generation in 2020

Export surplus

In 2020 an **export surplus (physical flows)** of approx. 18 TWh was achieved. This is a strong decline compared to 2019, when the export surplus was 34 TWh. The majority of exports went to Poland (11,2 TWh), followed by Austria (8,4 TWh), the Czech Republic (6 TWh) and Switzerland (5 TWh). Germany imported 10,3 TWh from France. The physical flows of electricity do not provide information on whether the electricity was actually consumed in the country or whether it was transmitted to neighboring countries.

The picture is different for **scheduled electricity trade**, with exports to Austria (18.4 TWh), the Czech Republic (3.8 TWh), Luxembourg (3.8 TWh), Poland (2.9 TWh) and France (1.6 TWh). Imports are from Denmark (6.9 TWh), Sweden (2.1 TWh), Netherlands (1.6 TWh) and Switzerland (1.4 TWh).

The 90 km long direct current line ALEGrO connects Belgium with Germany since 25.09.2020 and the direct current line NordLink connects Norway with Germany since 20.10.2020. In electrical terms, this means that Germany now has two new neighboring countries to exchange electricity with.

In terms of **foreign trade in electricity**, 34.9 TWh were imported up to and including October at a value of 1.5 billion euros. Exports amounted to 45.2 TWh and were worth 2.05 billion euros. The net result for the first ten months was an export surplus of 10.3 TWh and revenues worth 549 million euros. Imported electricity cost an average of 42.87 euros/MWh and exported electricity 45.27 euros/MWh.

1 TWh = 1 Terawatt hour = 1000 Gigawatt hours (GWh) = 1 Million Megawatt hours (MWh) = 1 Billion Kilowatt hours (kWh)

Net public electricity generation in 2020

Load, spot market prices and market value

The **load** amounted to 475 TWh. This is about 2% less than in 2019 with 485 TWh.

Load includes power consumption and grid losses, but not pumped-storage power consumption and own consumption by conventional power plants.

The average volume-weighted day-ahead exchange electricity price was €29.52/MWh. This is 19% lower than in 2019, when it was €36.64/MWh.

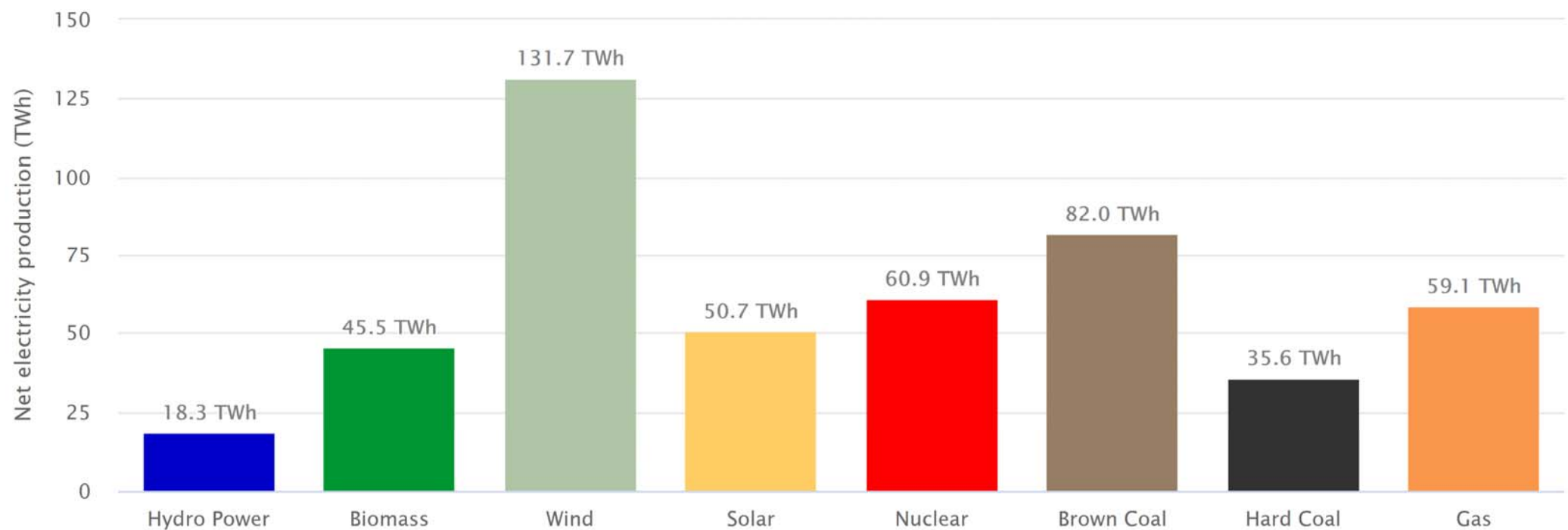
The trading volume in 2020 was 216 TWh.

The average volume-weighted intraday hourly price was €32.53/MWh, 15.5% lower than in 2019, with a trading volume of 46 TWh.

The market value of wind power was €25.26/MWh, or 83%. Solar power had a market value of €24.38/MWh or 80%.

1 TWh = 1 terawatt hour = 1000 gigawatt hours (GWh) = 1 million megawatt hours (MWh) = 1 billion kilowatt hours (kWh)

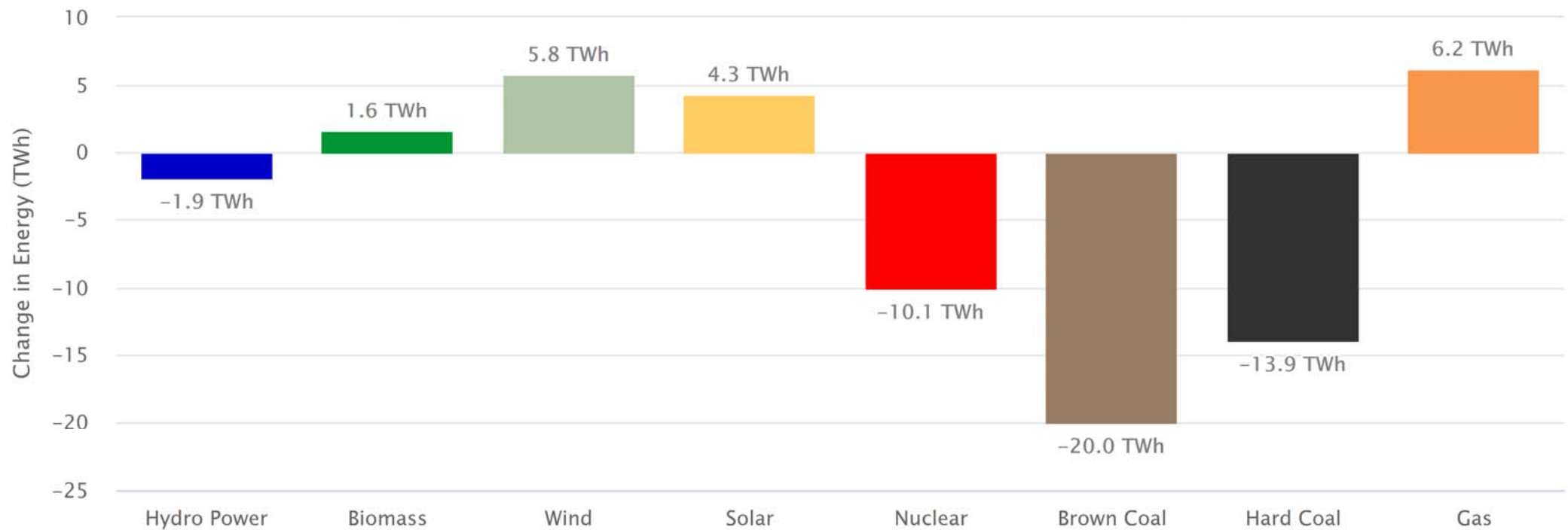
Net public electricity generation 2020



The chart shows the net electricity generation from power plants for the public power supply. Generation from power plants in the manufacturing, mining and quarrying industries, i.e. the self-generation of electricity in industry, is not included.

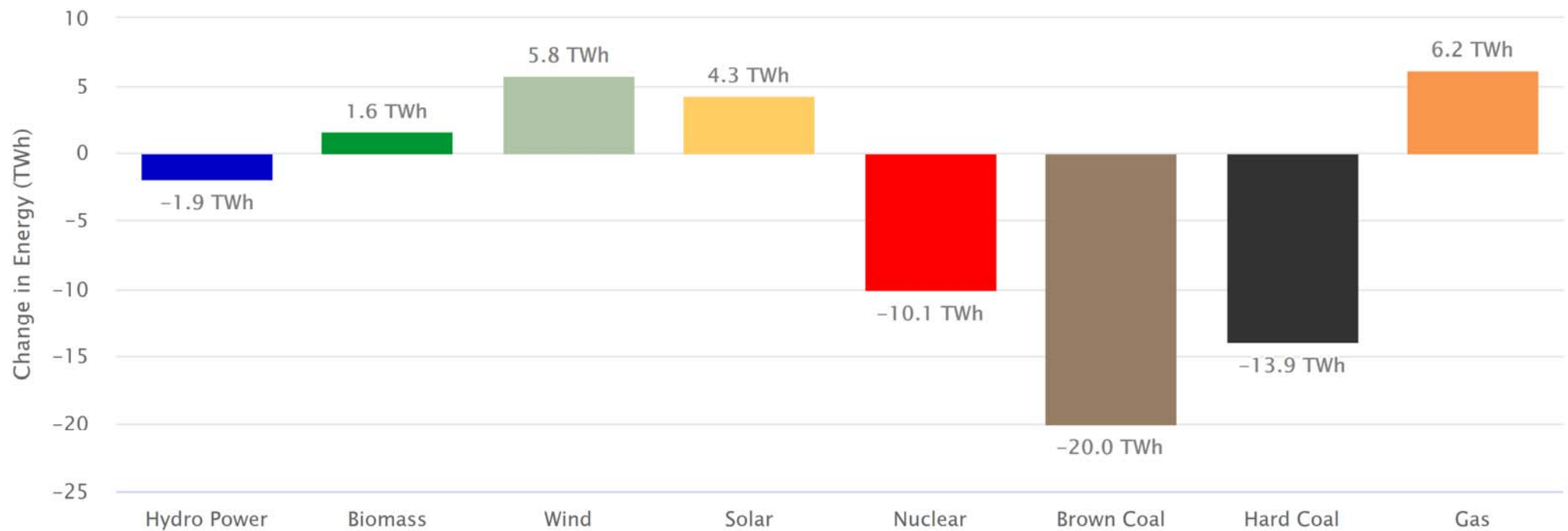
Graph: B. Burger, Fraunhofer ISE; Data: DESTATIS and Leipzig electricity exchange EEX, energetically corrected values

Absolute change in net electricity generation 2020 compared to 2019



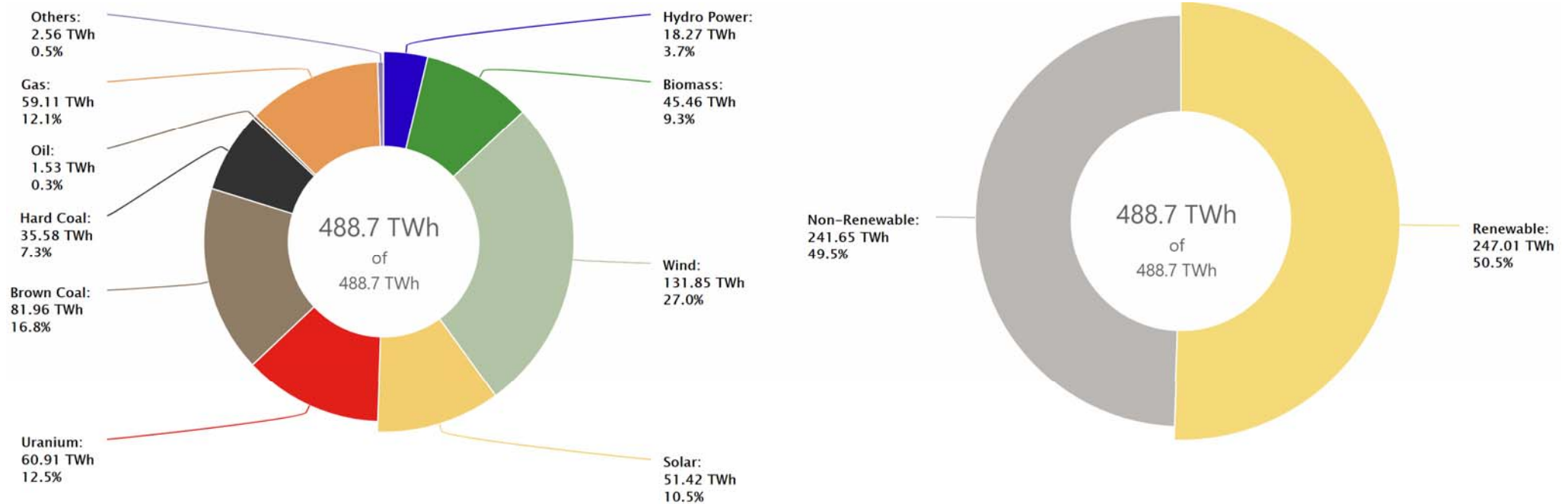
Graph: B. Burger, Fraunhofer ISE; Data: DESTATIS and Leipzig electricity exchange EEX, energetically corrected values

Relative change in net electricity generation 2020 compared to 2019



Graph: B. Burger, Fraunhofer ISE; Data: DESTATIS and Leipzig electricity exchange EEX, energetically corrected values

Net public electricity generation 2020

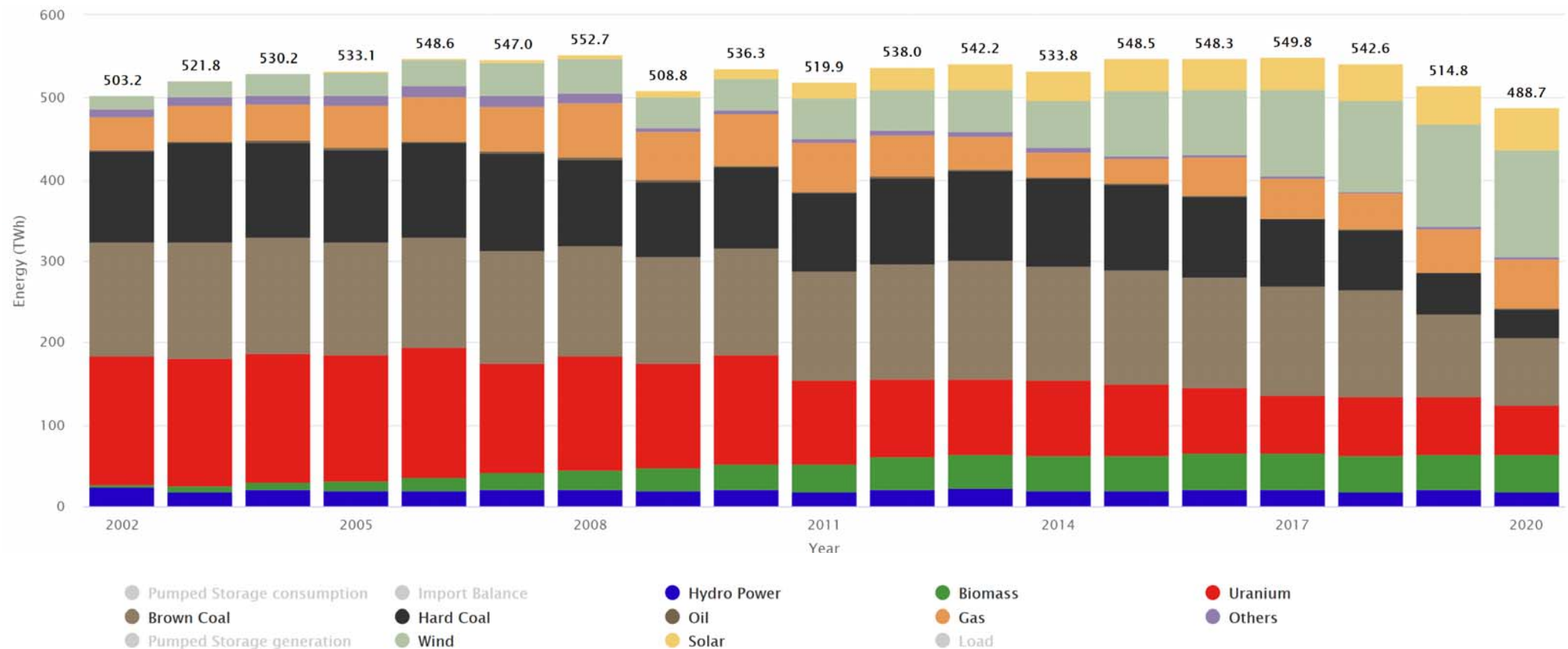


The chart shows the net electricity generation from power plants for the public power supply. Generation from power plants in the manufacturing, mining and quarrying industries, i.e. the self-generation of electricity in industry, is not included.

Graph: B. Burger, Fraunhofer ISE; Source: https://energy-charts.info/charts/energy_pie/chart.htm?l=en&c=DE&year=2020

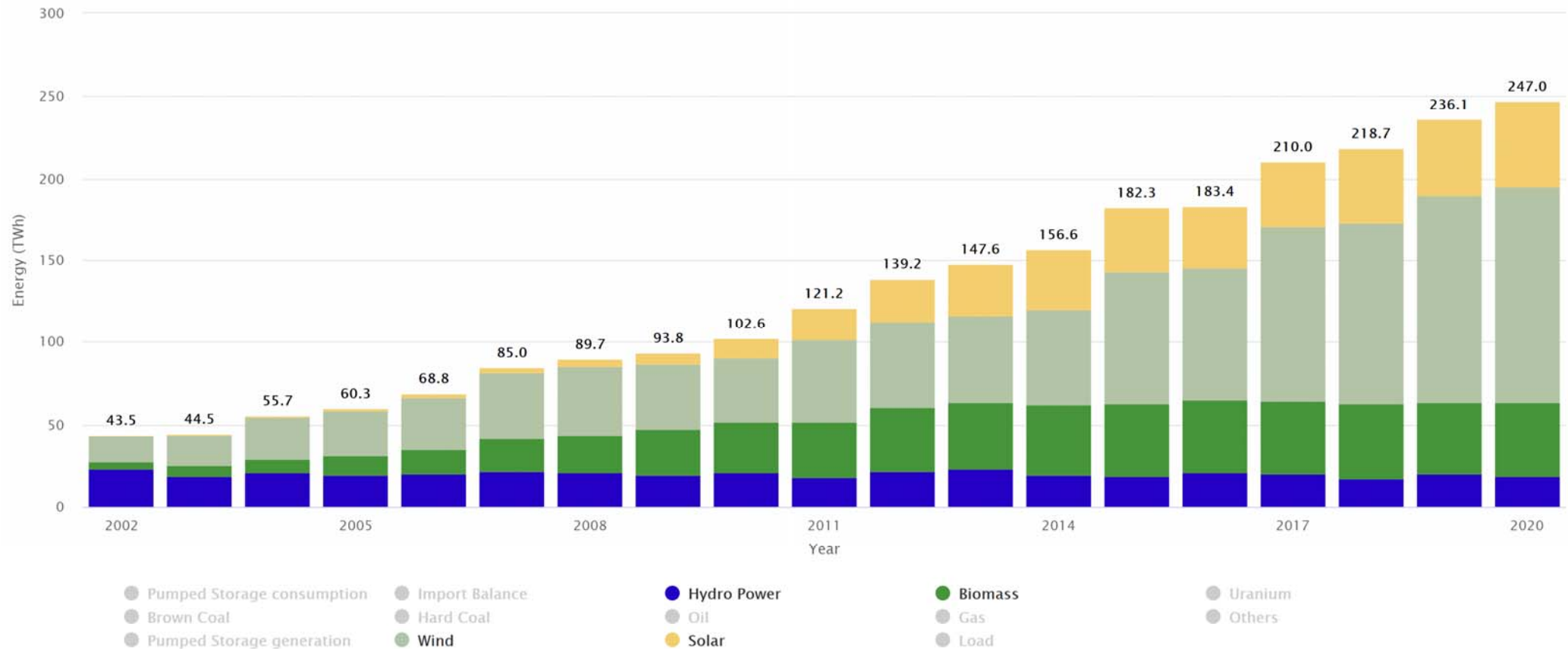
Net electricity generation

2002 - 2020



Graph: B. Burger, Fraunhofer ISE; Source: <https://energy-charts.info/charts/energy/chart.htm?l=en&c=DE&interval=year&year=-1&sum=1>

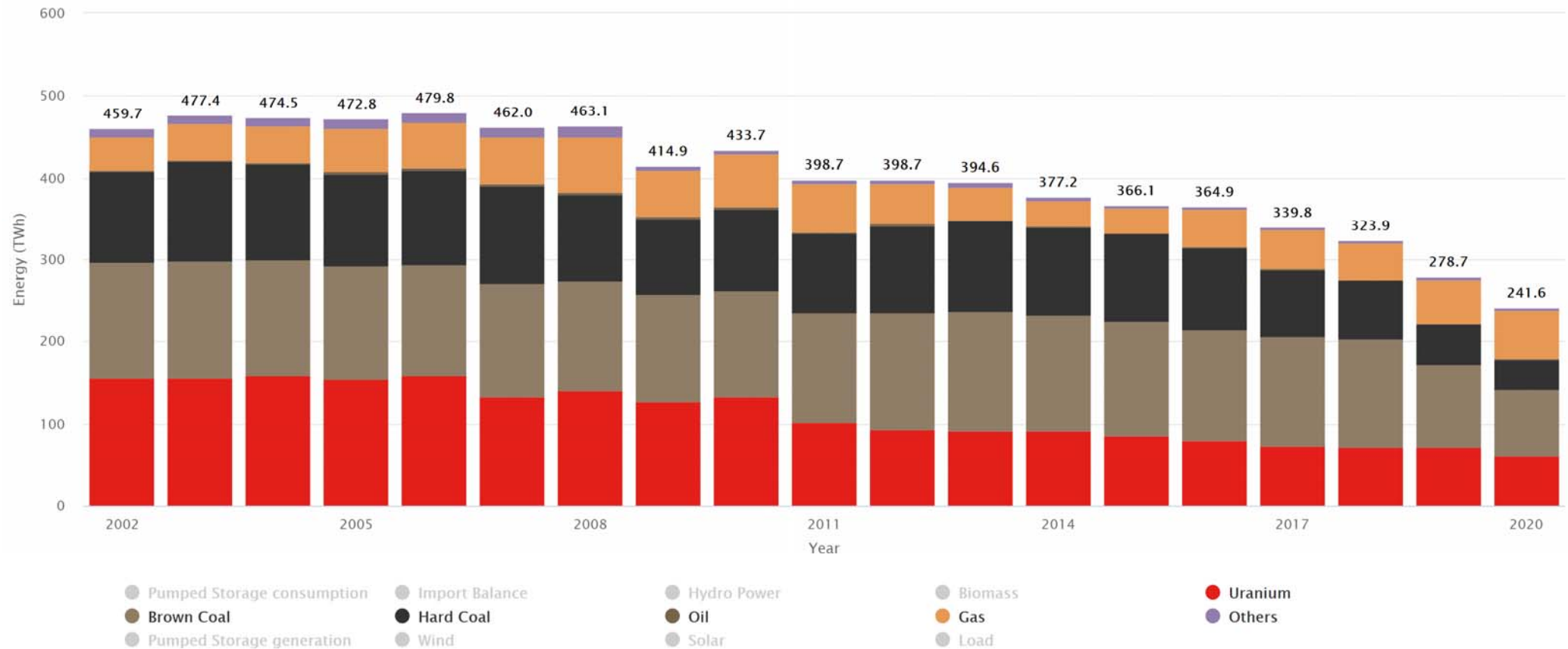
Net electricity generation from renewable energies 2002 - 2020



h: B. Burger, Fraunhofer ISE; Source: <https://energy-charts.info/charts/energy/chart.htm?l=en&c=DE&interval=year&year=-1&sum=1>

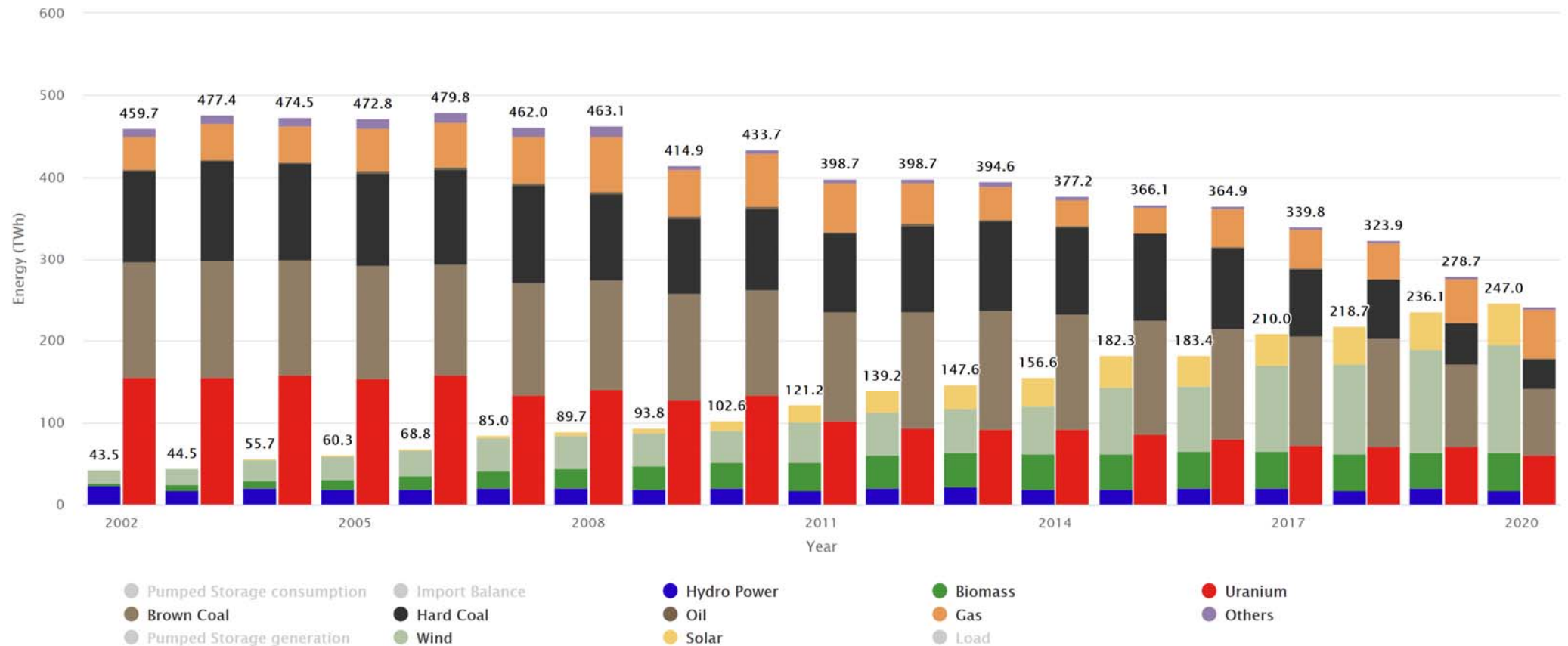
Net electricity generation from conventional sources

2002 - 2020



Graph: B. Burger, Fraunhofer ISE; Source: <https://energy-charts.info/charts/energy/chart.htm?l=en&c=DE&interval=year&year=-1&sum=1>

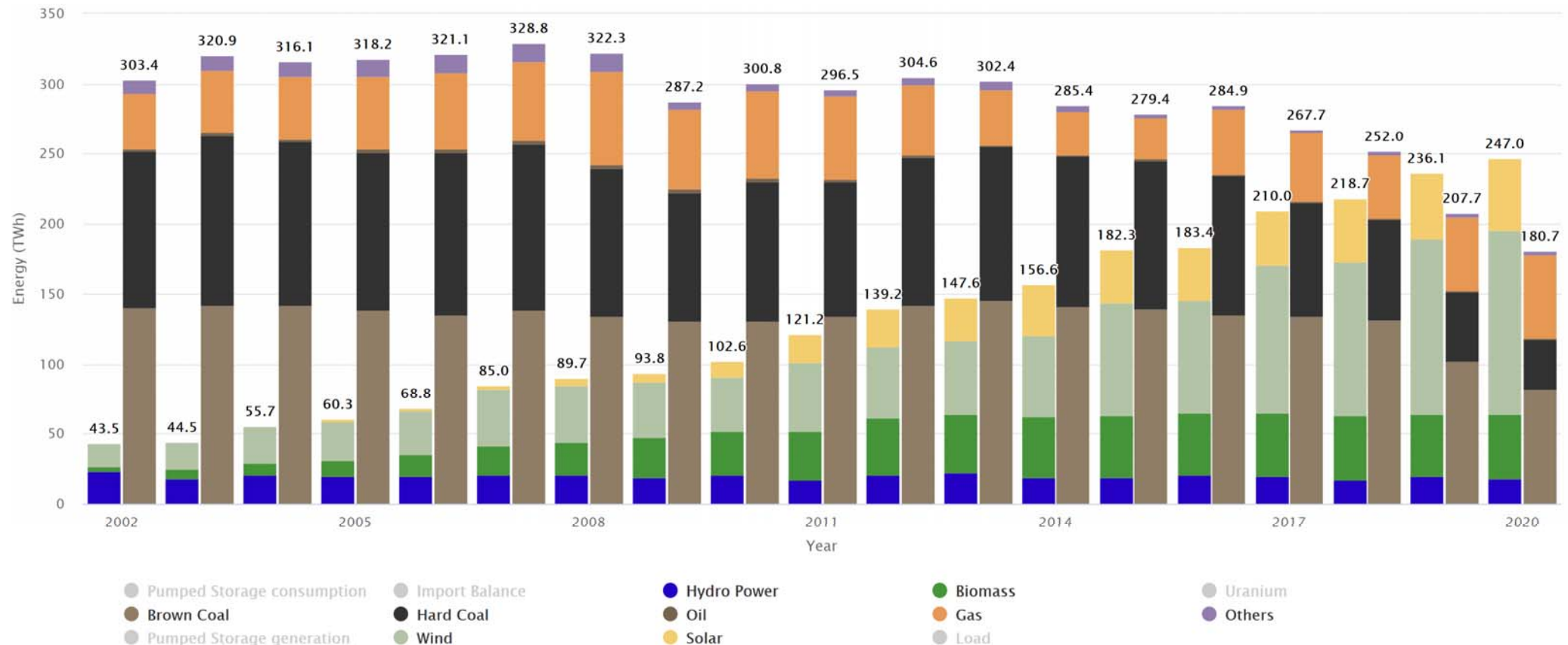
Net electricity generation from conventional and renewable sources 2002 - 2020



Graph: B. Burger, Fraunhofer ISE; Source: <https://energy-charts.info/charts/energy/chart.htm?l=en&c=DE&interval=year&year=-1&sum=1&stacking=sorted>

Net electricity generation from fossil and renewable sources

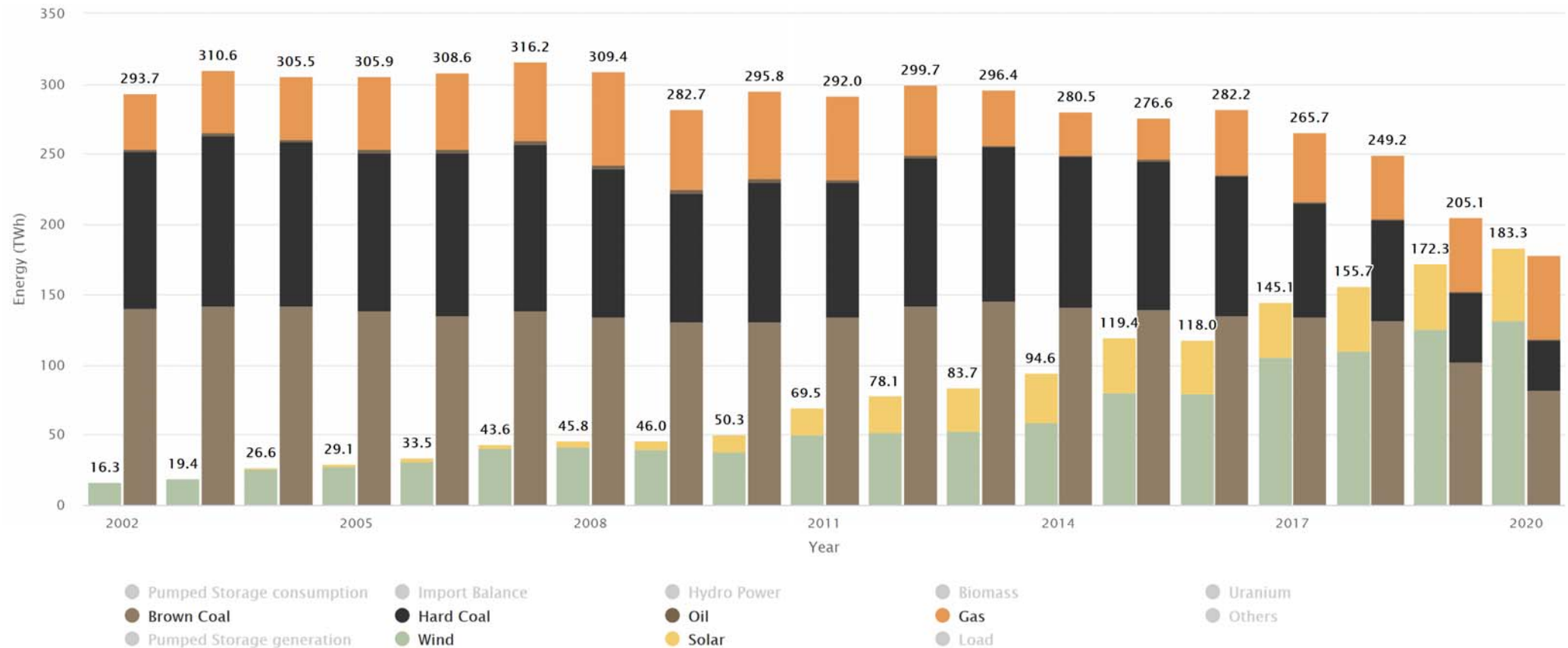
2002 - 2020



Graph: B. Burger; Source: <https://energy-charts.info/charts/energy/chart.htm?l=en&c=DE&interval=year&year=-1&sum=1&stacking=sorted>

Net electricity generation from solar and wind compared to fossil sources

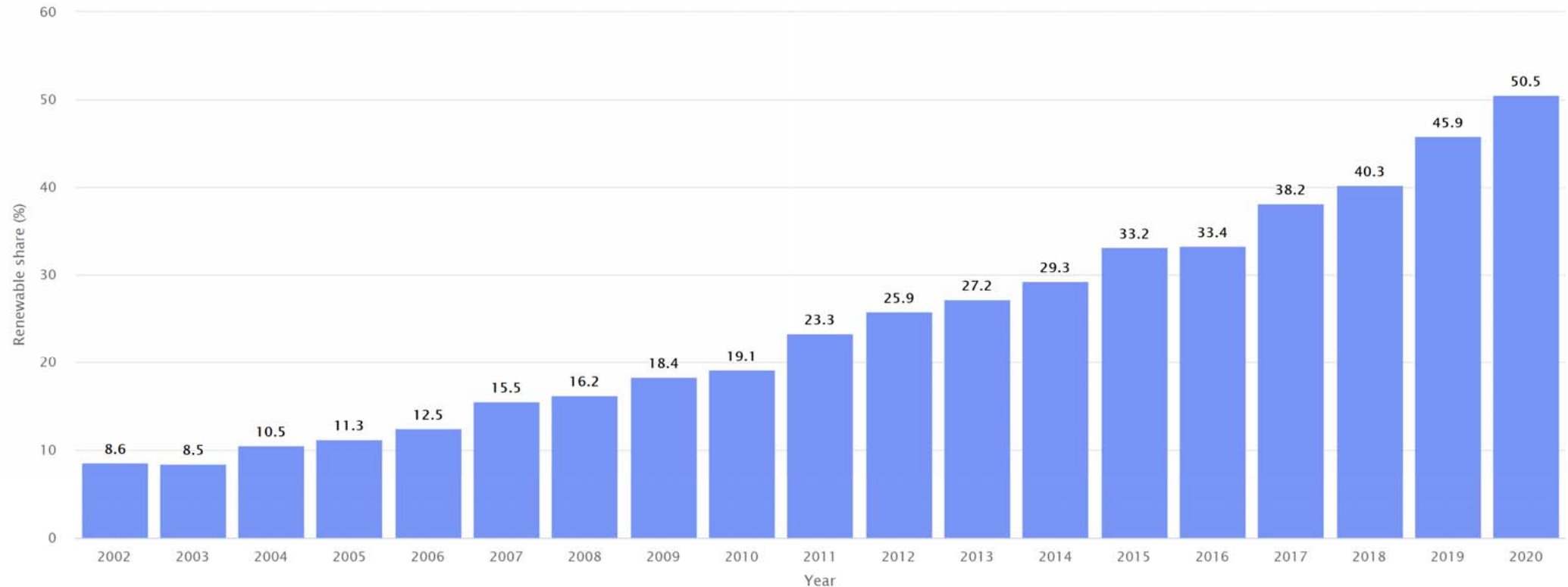
2002 - 2020



Graph: B. Burger; Source: <https://energy-charts.info/charts/energy/chart.htm?l=en&c=DE&interval=year&year=-1&sum=1&stacking=sorted>

Share of renewable energies in net public electricity generation

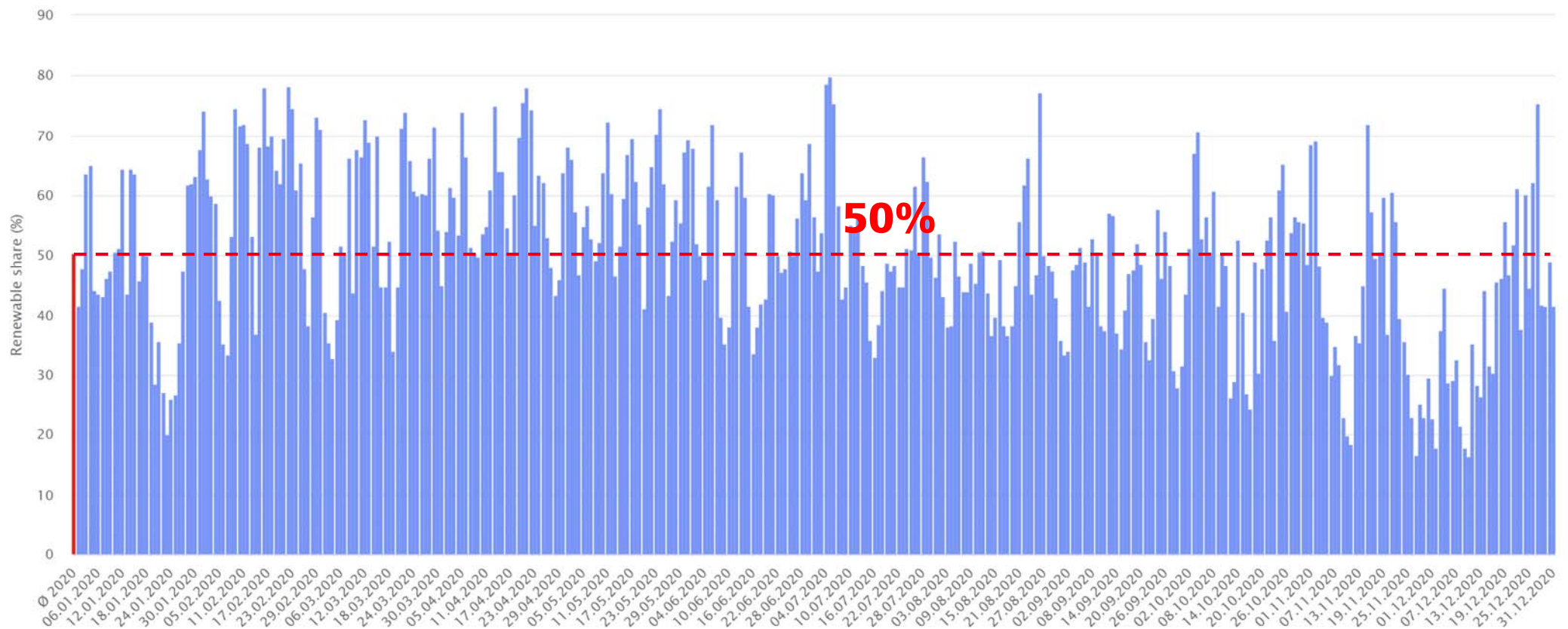
2002 - 2020



The chart shows the net electricity generation from power plants for the public power supply. Generation from power plants in the manufacturing, mining and quarrying industries, i.e. the self-generation of electricity in industry, is not included.

Graph: B. Burger, Fraunhofer ISE; Source: https://energy-charts.info/charts/renewable_share/chart.htm

Daily share of renewable energies in net public electricity generation 2020

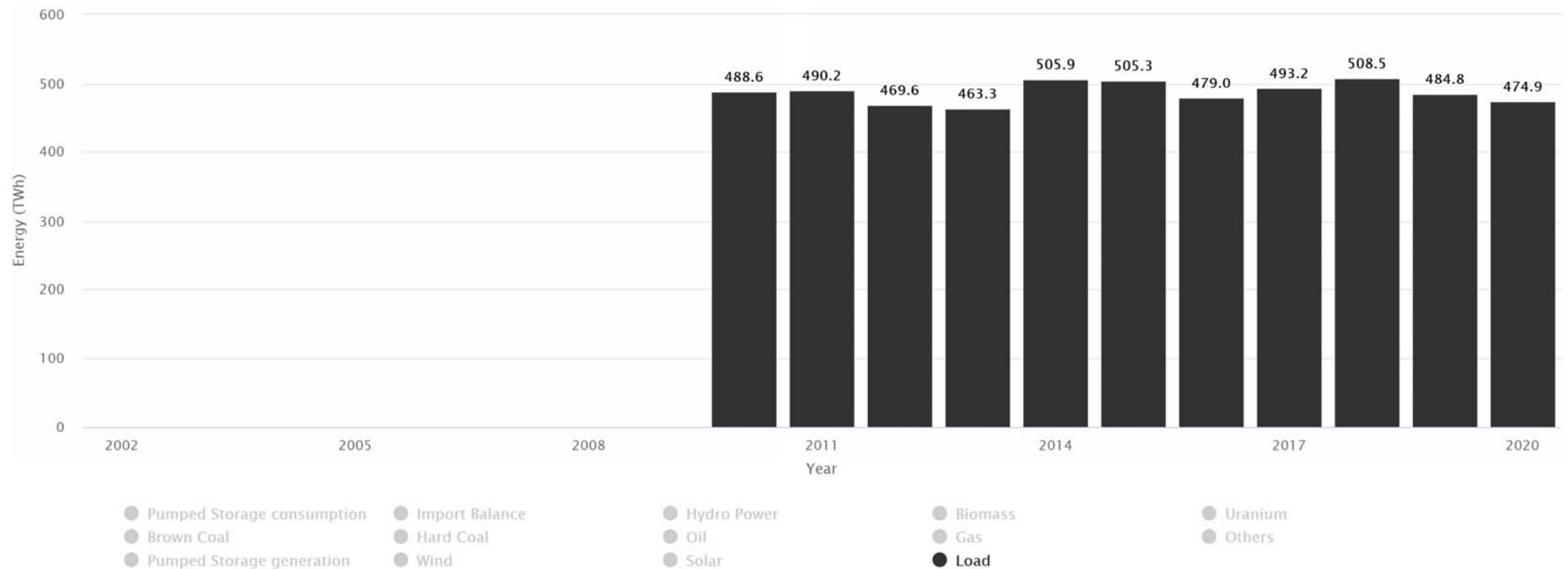


The daily share of renewable energies in net electricity generation 2020 was between 16,5% on Dec 10 and 79,9% on July 05, 2020.

Graph: B. Burger, Fraunhofer ISE; Source: https://energy-charts.info/charts/renewable_share/chart.htm

Load

2010 - 2020

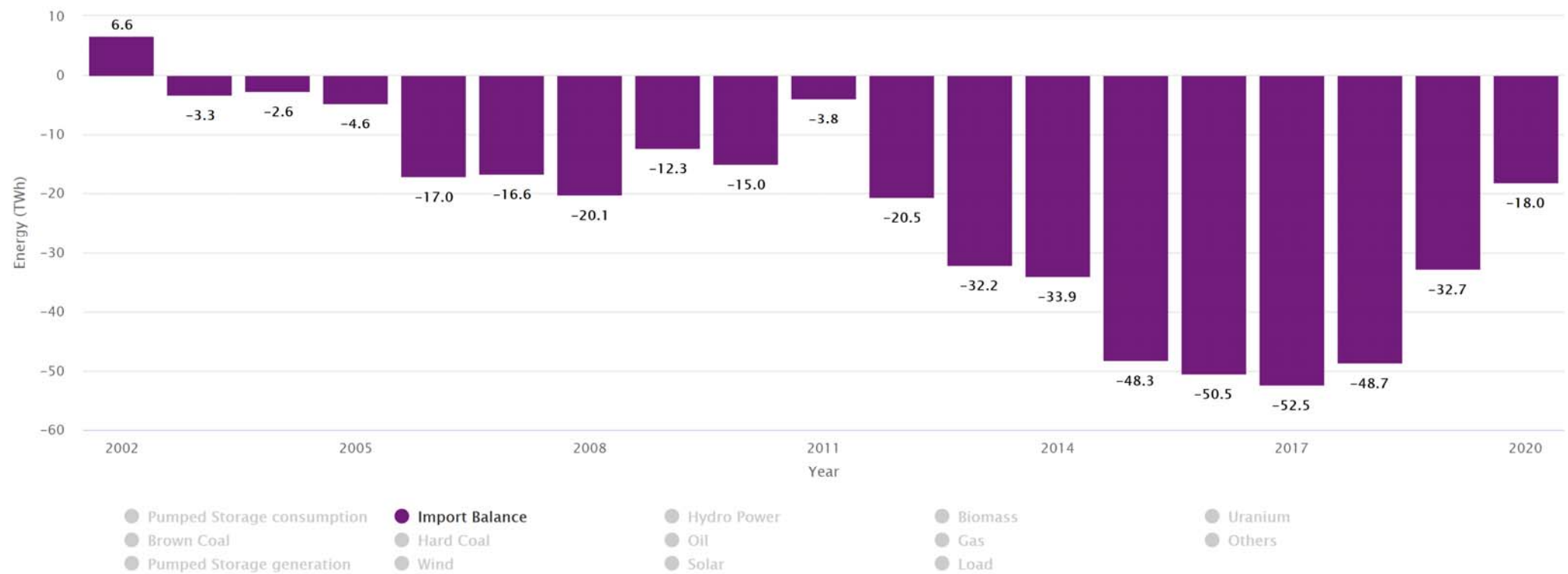


The load includes the electricity consumption and grid losses, but not the pump electricity consumption and the own consumption of conventional power plants.

Graph: B. Burger, Fraunhofer ISE; Source: <https://energy-charts.info/charts/energy/chart.htm>

Electricity exchange balance

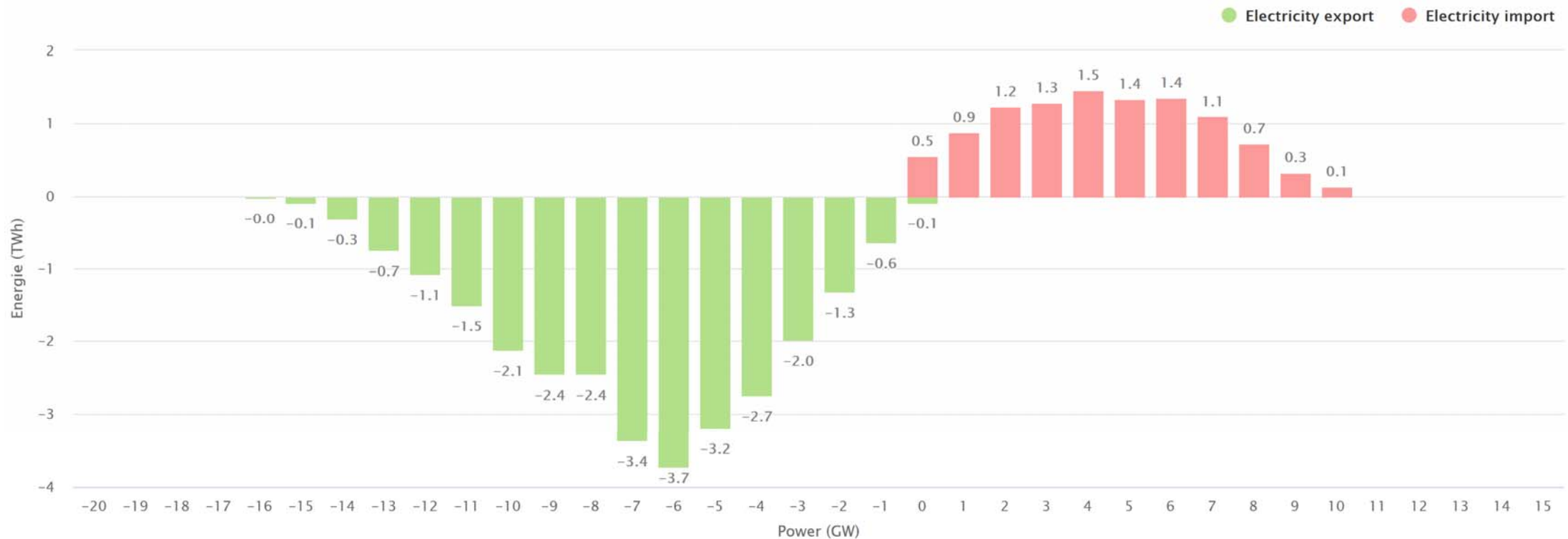
2002 - 2020



Positive values mean import. Negative values mean export.

Graph: B. Burger, Fraunhofer ISE; Source: <https://energy-charts.info/charts/energy/chart.htm>

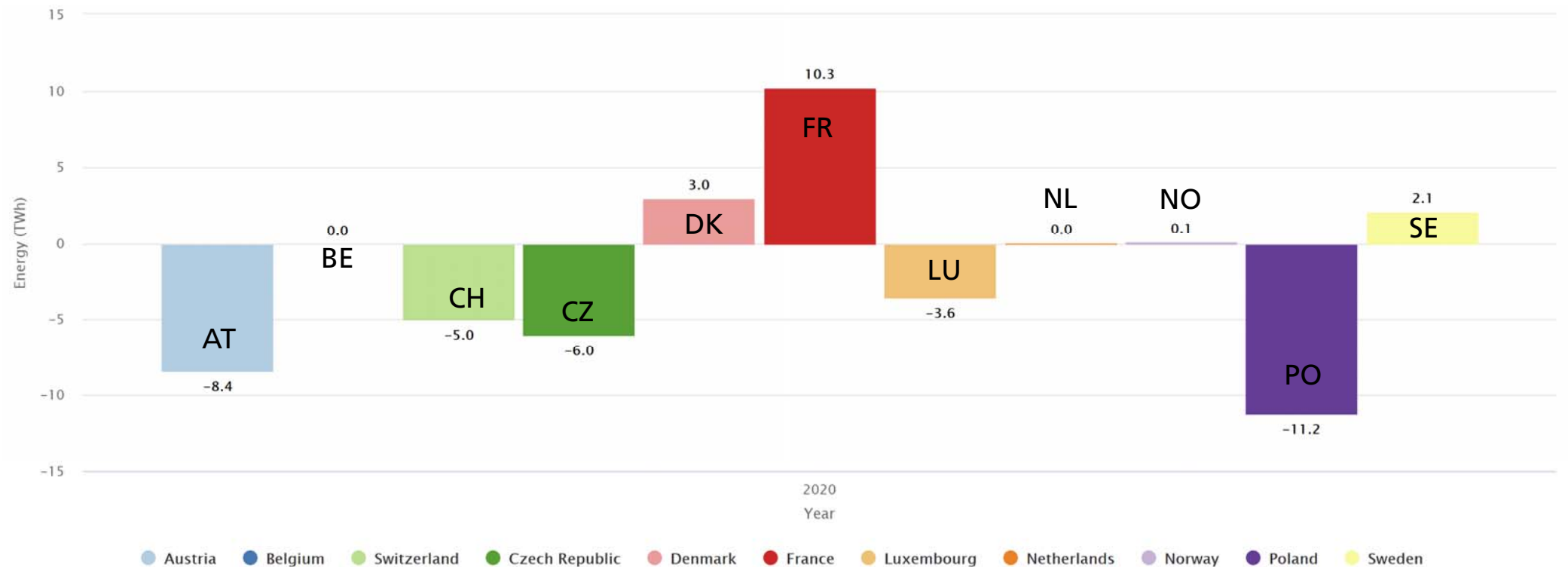
Electricity import and export, histogram 2020



Positive values mean import. Negative values mean export.

Graph: B. Burger, Fraunhofer ISE

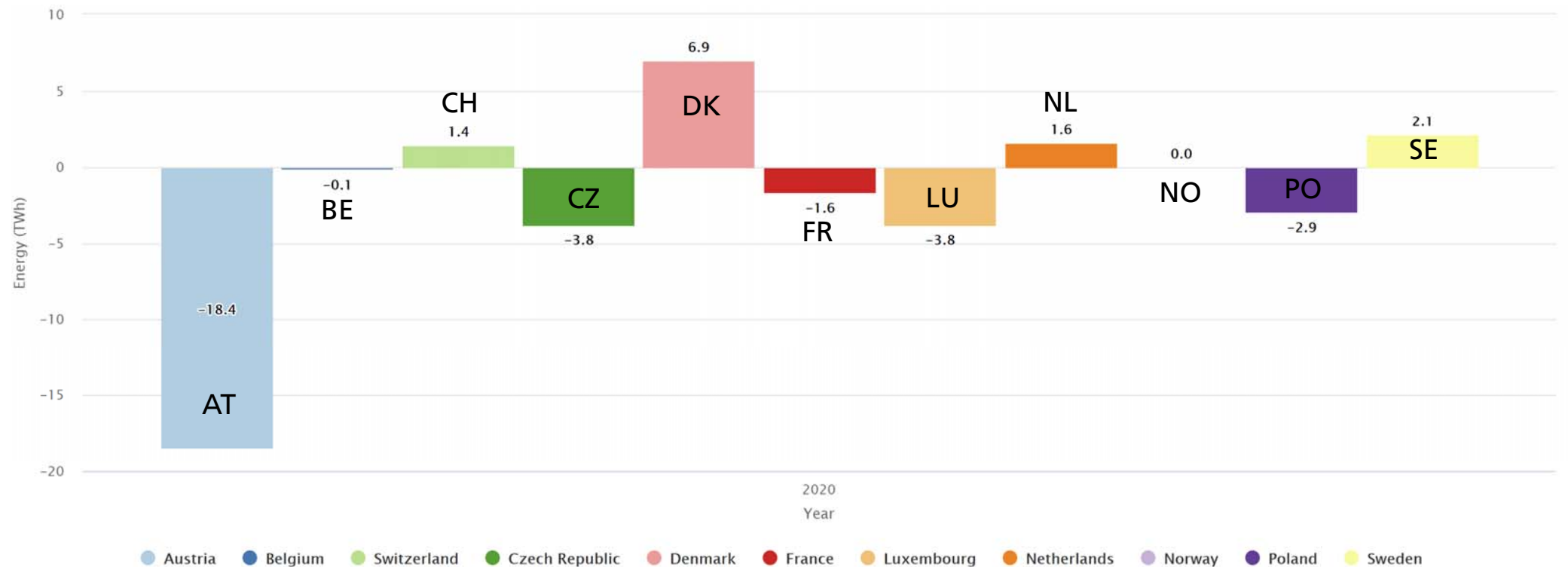
Electricity import and export, cross border physical flows 2020



Physical flows. Positive values indicate import. Negative values indicate export.

Graph: B. Burger, Fraunhofer ISE; Source: <https://energy-charts.info/charts/energy/chart.htm>

Electricity import and export, scheduled commercial exchanges 2020

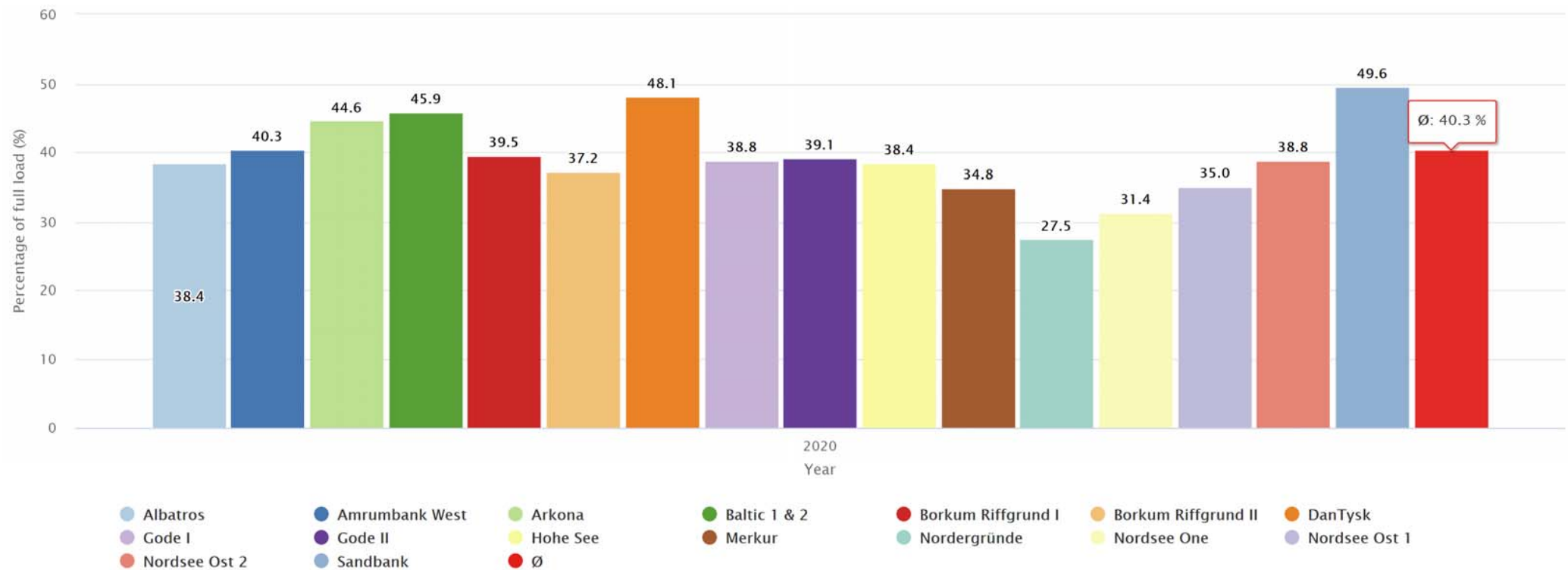


Scheduled commercial exchange. Positive values indicate import. Negative values indicate export.

Graph: B. Burger, Fraunhofer ISE; Source: <https://energy-charts.info/charts/energy/chart.htm>

Percentage full load hours of wind offshore

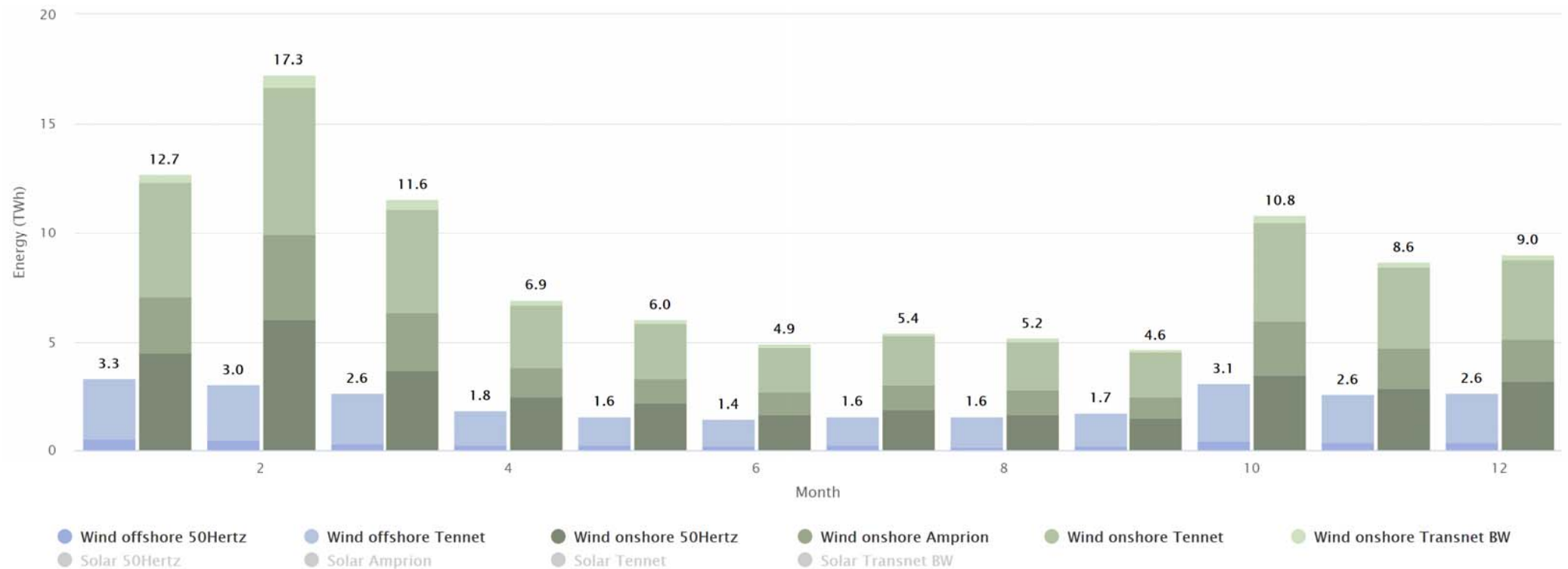
2020



Graph: B. Burger, Fraunhofer ISE; Source: https://energy-charts.info/charts/percentage_full_load/chart.htm

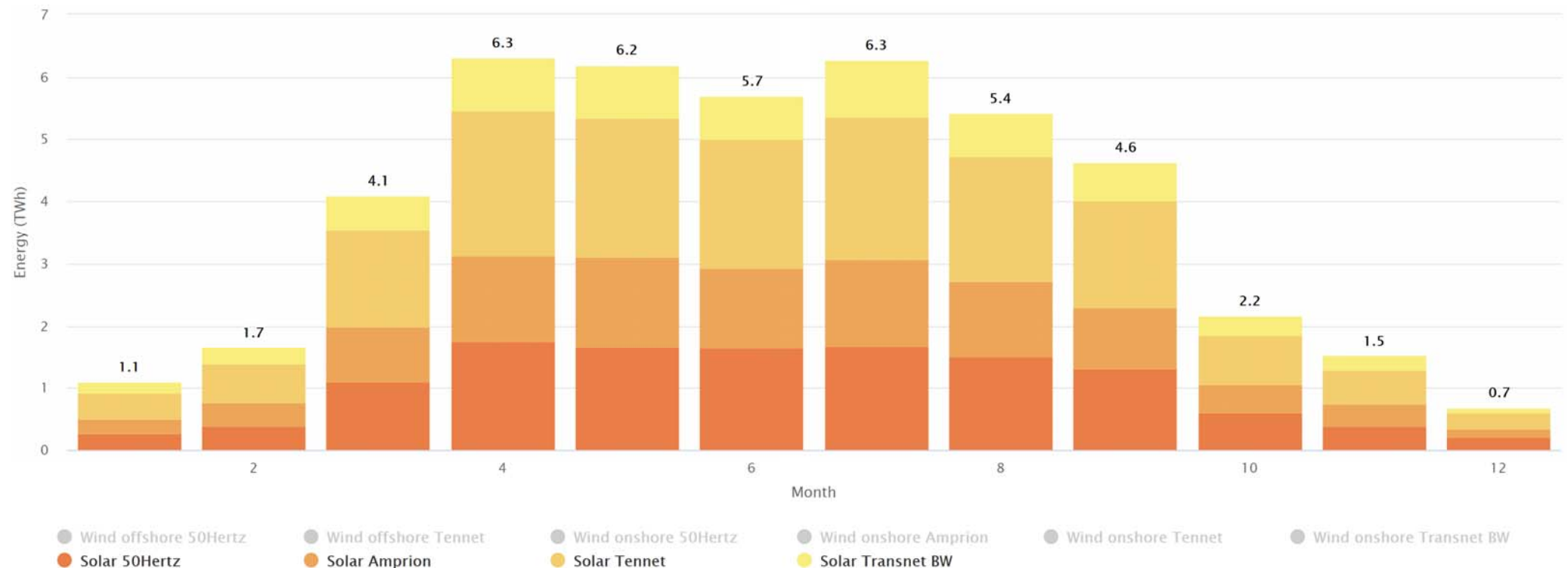
Monthly wind power generation, wind offshore and onshore

2020



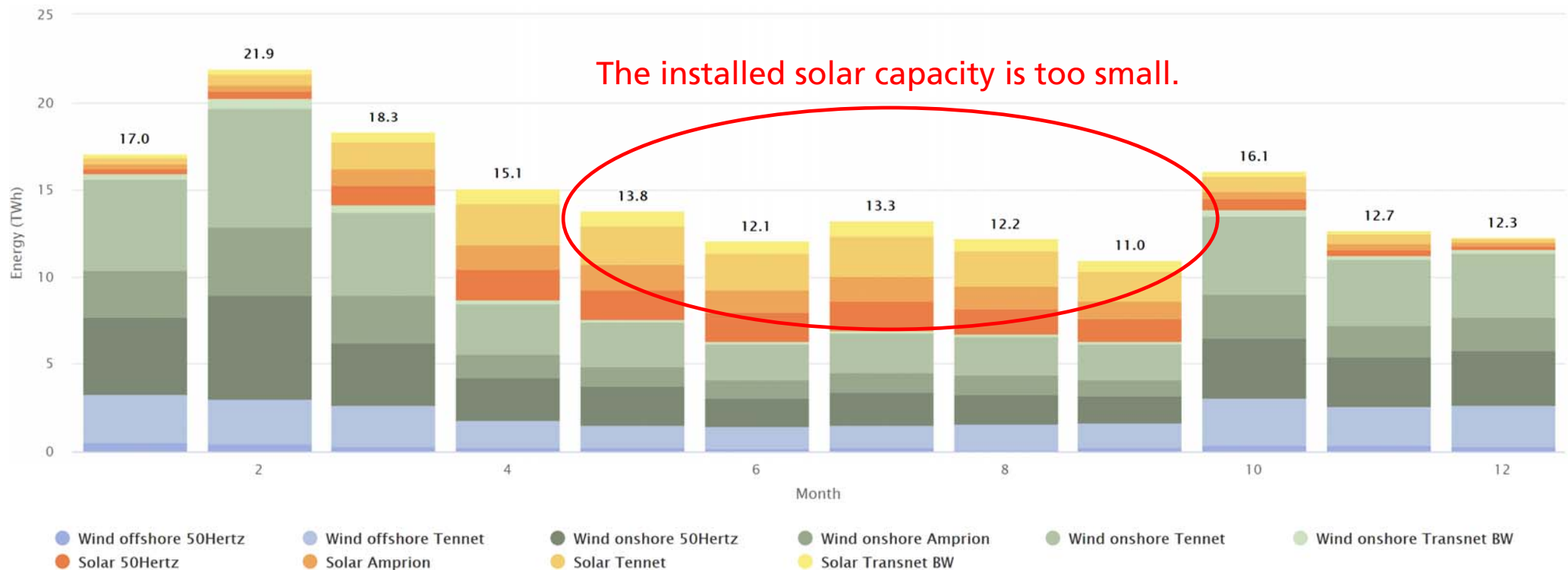
Graph: B. Burger, Fraunhofer ISE; Source: <https://energy-charts.info/charts/energy/chart.htm?l=de&c=DE&interval=month&year=2020&source=sw>

Monthly solar power generation 2020



Graph: B. Burger, Fraunhofer ISE; Source: <https://energy-charts.info/charts/energy/chart.htm?l=de&c=DE&interval=month&year=2020&source=sw>

Monthly wind and solar power generation 2020

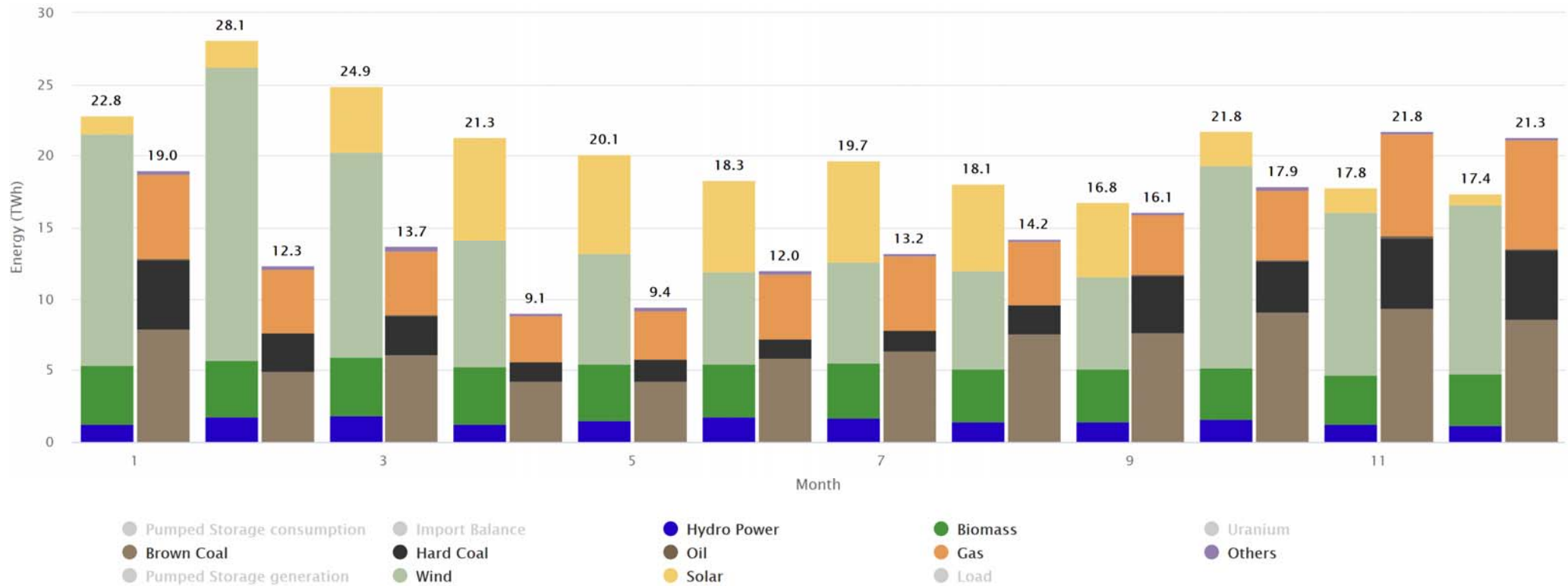


Despite high irradiation values in summer, solar power generation was too small to compensate for the drop in wind. The installed solar capacity is too small in relation to the installed wind capacity.

Graph: B. Burger, Fraunhofer ISE; Source: <https://energy-charts.info/charts/energy/chart.html?l=de&c=DE&interval=month&year=2020&source=sw>

Monthly renewable and fossil electricity generation

2020

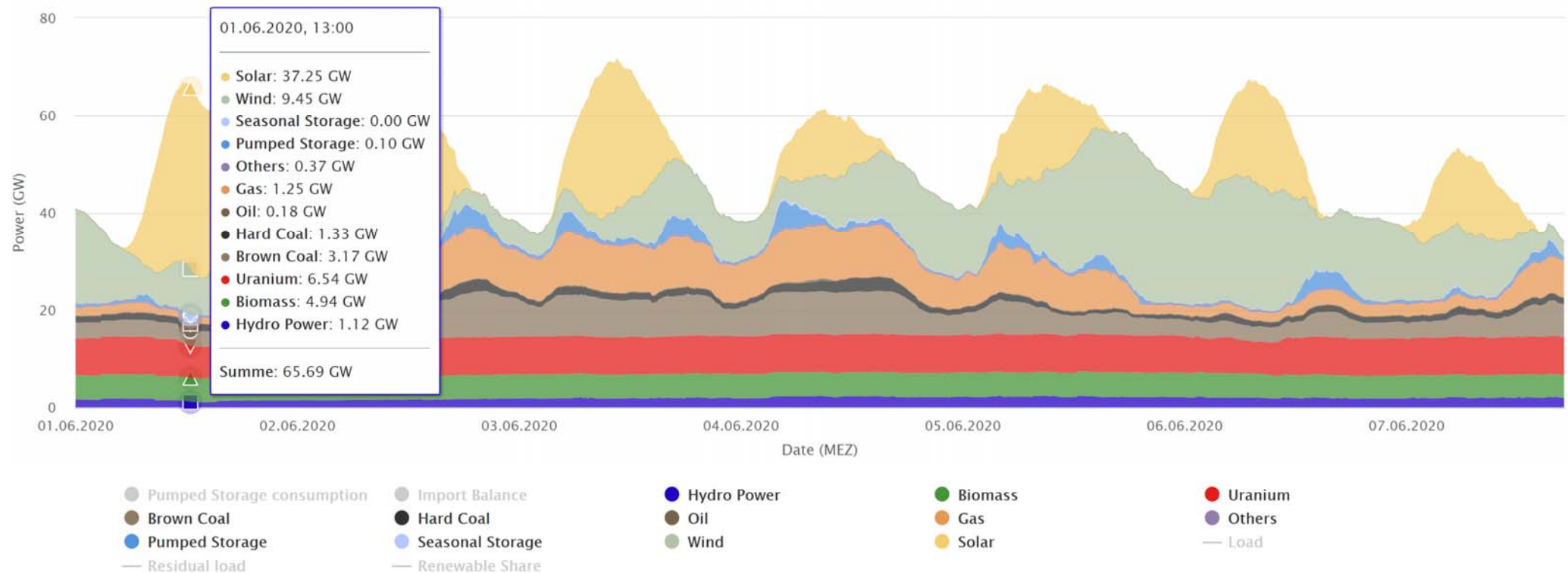


In ten months, net electricity generation from renewables was higher than from fossil fuels.

Graph: B. Burger, Fraunhofer ISE; Source: <https://energy-charts.info/charts/energy/chart.htm?l=en&c=DE&stacking=sorted&sum=1>

Highest power generation from solar energy

Week 23 2020

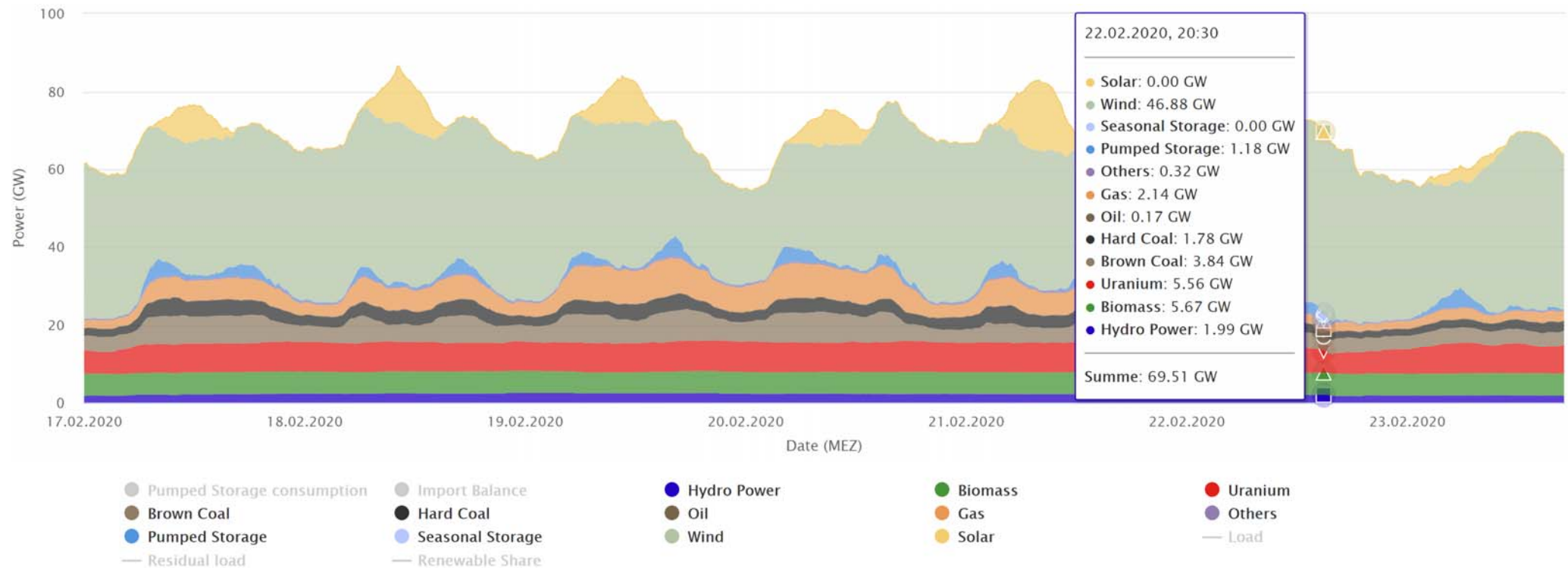


The maximum solar capacity was about 37.25 GW on 01.06.2020 at 1:00 pm. At that time, 56% of the total electricity generation came from photovoltaics.

Graph: B. Burger, Fraunhofer ISE; Source: <https://energy-charts.info/charts/power/chart.htm?l=en&c=DE&year=2020&week=23>

Highest power generation from wind energy

Week 8 2020

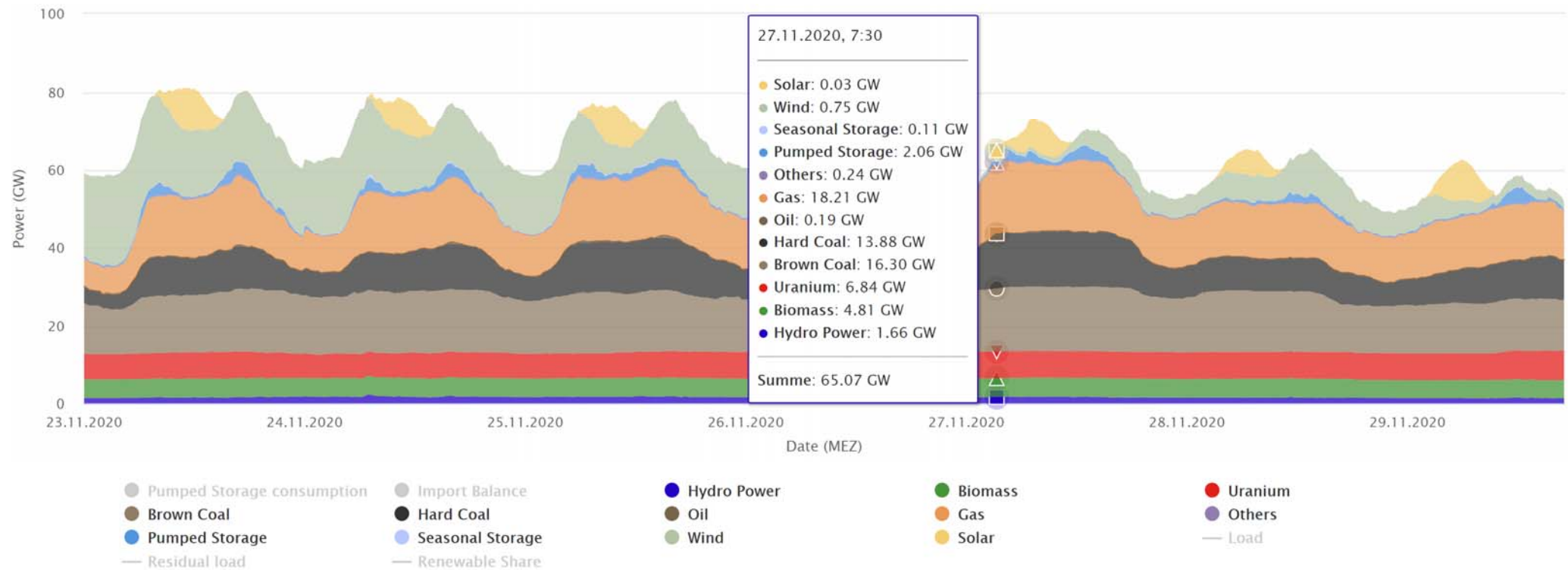


The maximum wind capacity was about 46.9 GW on February 22, 2020 at 08:30 pm. At that time, 67% of the total electricity generation came from wind power.

Graph: B. Burger, Fraunhofer ISE; Source: <https://energy-charts.info/charts/power/chart.htm?l=en&c=DE&year=2020&week=08>

Highest power generation from fossil sources

Week 48 2020

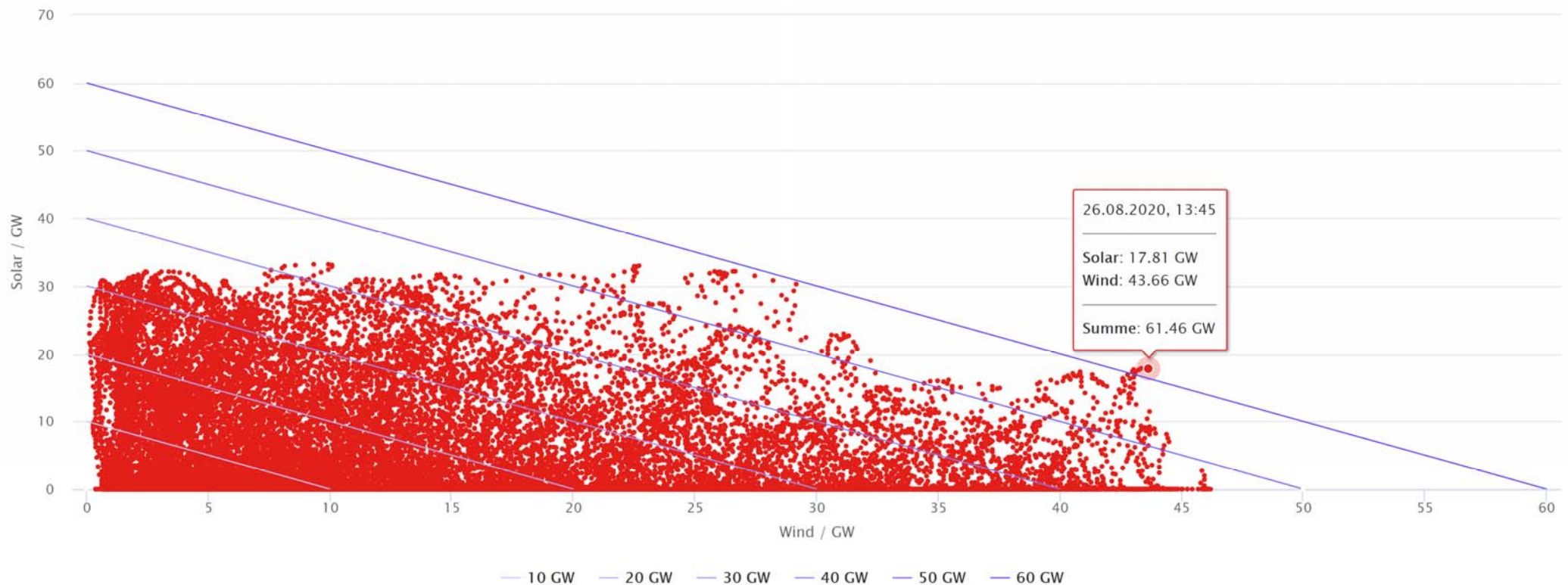


The maximum fossil power generation was approximately 48.8 GW on November 27 2020 at 07:30 am. At that time, 77% of the total electricity generation came from fossil sources.

Graph: B. Burger, Fraunhofer ISE; Source: <https://energy-charts.info/charts/power/chart.htm?l=en&c=DE&year=2020&week=48>

Scatter diagram for solar and wind power

Quarter-hour values from 2020



The graph shows about 35 thousand quarter-hourly values of solar output over wind output in 2020. The maximum sum of solar and wind output was 61.5 GW on Aug. 26, 2020, of which 17.8 GW was solar and 43.7 GW was wind. This is only 53% of the installed capacity of 116 GW (53.5 GW solar and 62.4 GW wind).

Graph: B. Burger, Fraunhofer ISE; Source: https://energy-charts.info/charts/power_scatter/chart.htm?l=de&c=DE&interval=year

Foreign trade statistics in TWh

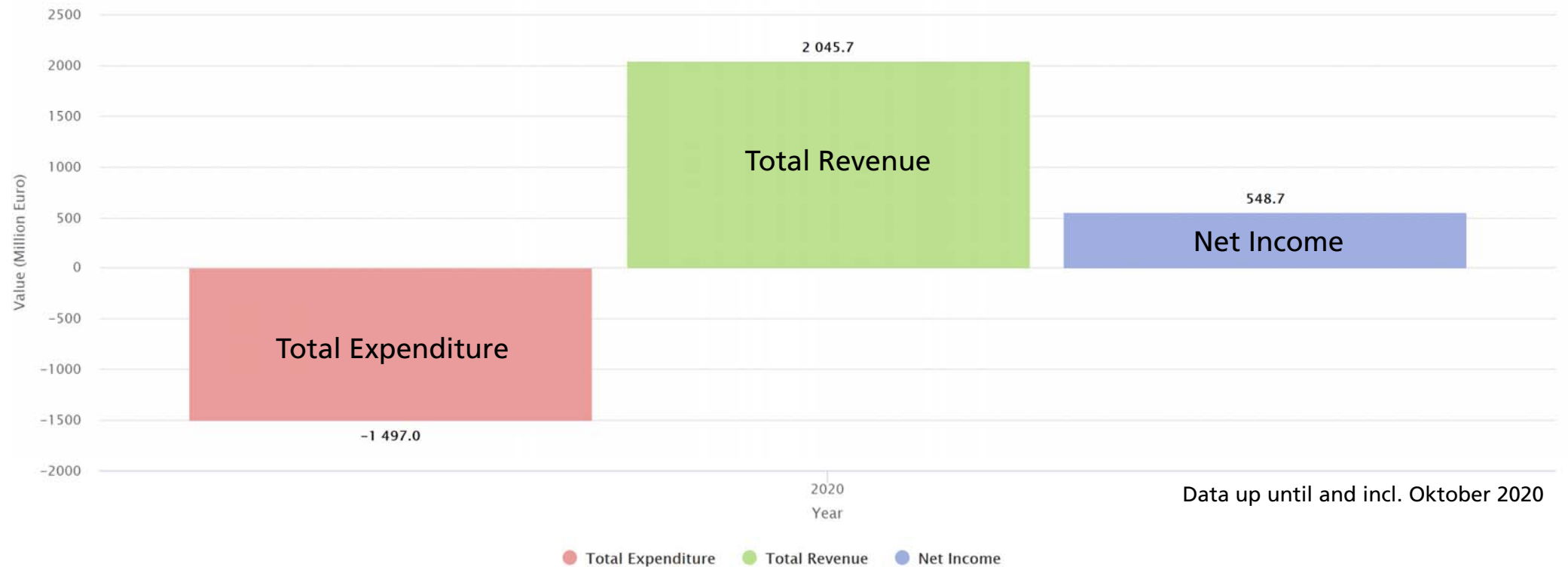
2020



Physical Flows. Positive values mean import. Negative values mean export.

Graph: B. Burger, Fraunhofer ISE; Source: https://energy-charts.info/charts/power_trading/chart.htm?l=en&c=DE&dataBase=trade_sum_twh&stacking=grouped

Foreign trade statistics for electric power in Euro 2020

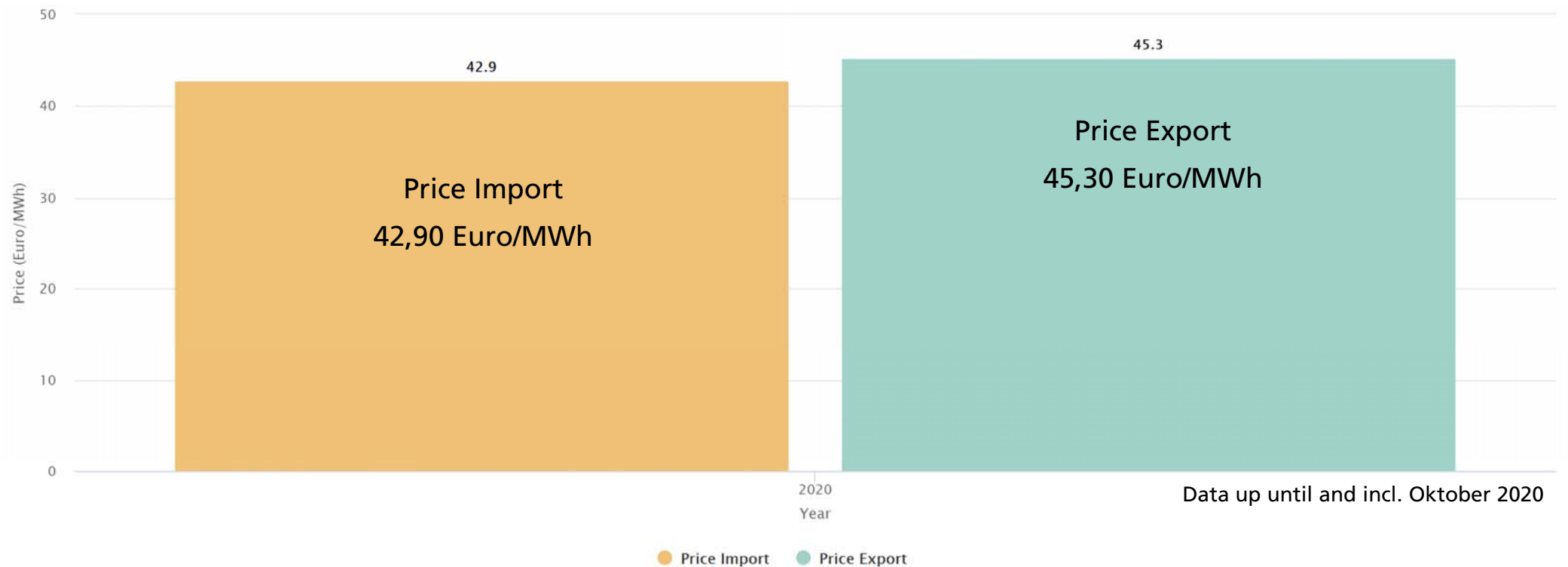


Positive values mean import. Negative values mean export.

Graph: B. Burger, Fraunhofer ISE; Source: https://energy-charts.info/charts/power_trading/chart.htm?l=en&c=DE&dataBase=trade_sum_euro&stacking=grouped

Foreign trade statistics for electric power in Euro/MWh

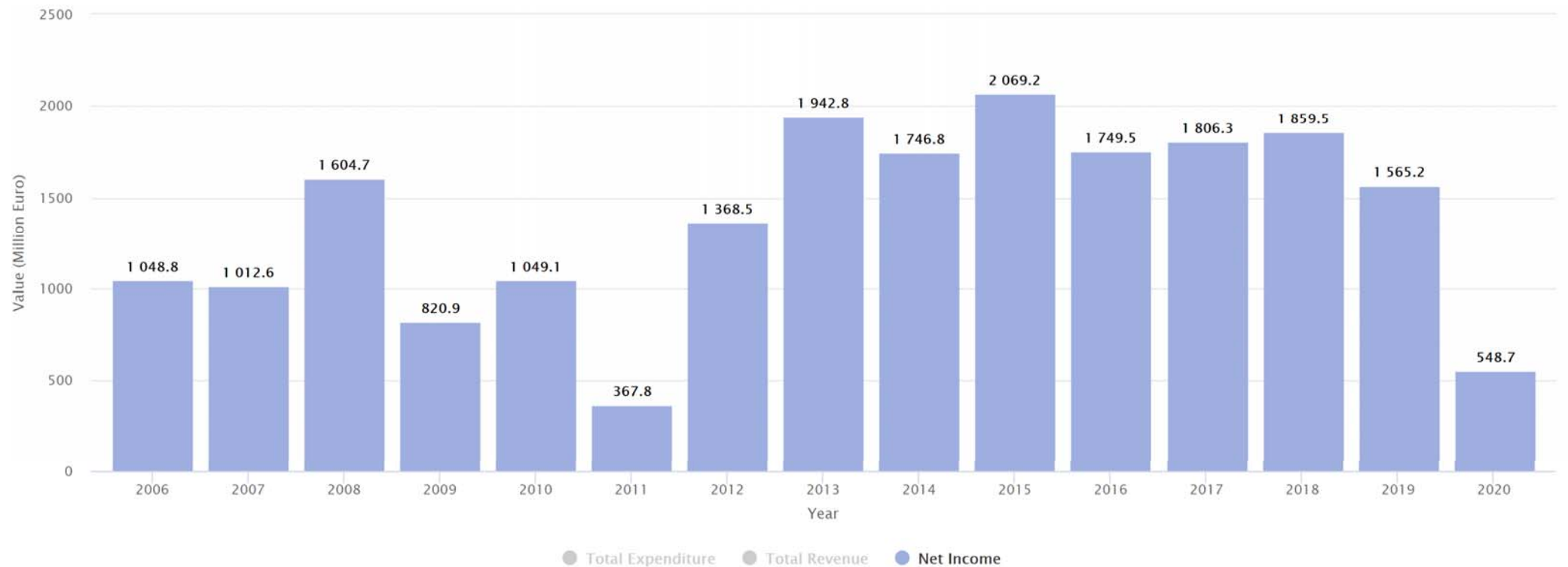
2020



Graph: B. Burger, Fraunhofer ISE; Source: https://energy-charts.info/charts/power_trading/chart.htm?l=en&c=DE&dataBase=trade_sum_euro_mwh

Foreign trade statistics for electric power in Euro

Net Income 2006 - 2020



Graph: B. Burger, Fraunhofer ISE; Source: https://energy-charts.info/charts/power_trading/chart.htm?l=en&c=DE&dataBase=trade_sum_euro

Foreign trade statistics for electric power

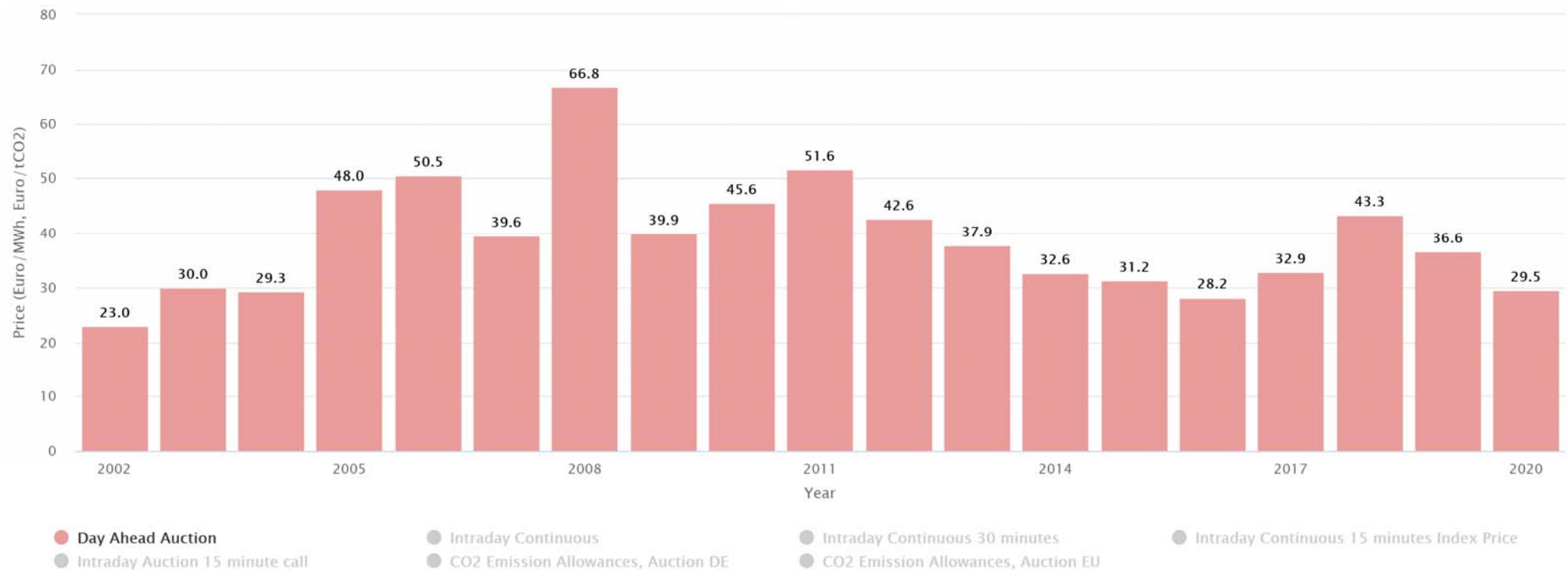
Volume-weighted average prices for imports and exports



Graph: B. Burger, Fraunhofer ISE; Source: https://energy-charts.info/charts/power_trading/chart.htm?l=en&c=DE&dataBase=trade_sum_euro_mwh

EPEX Day-Ahead spot price

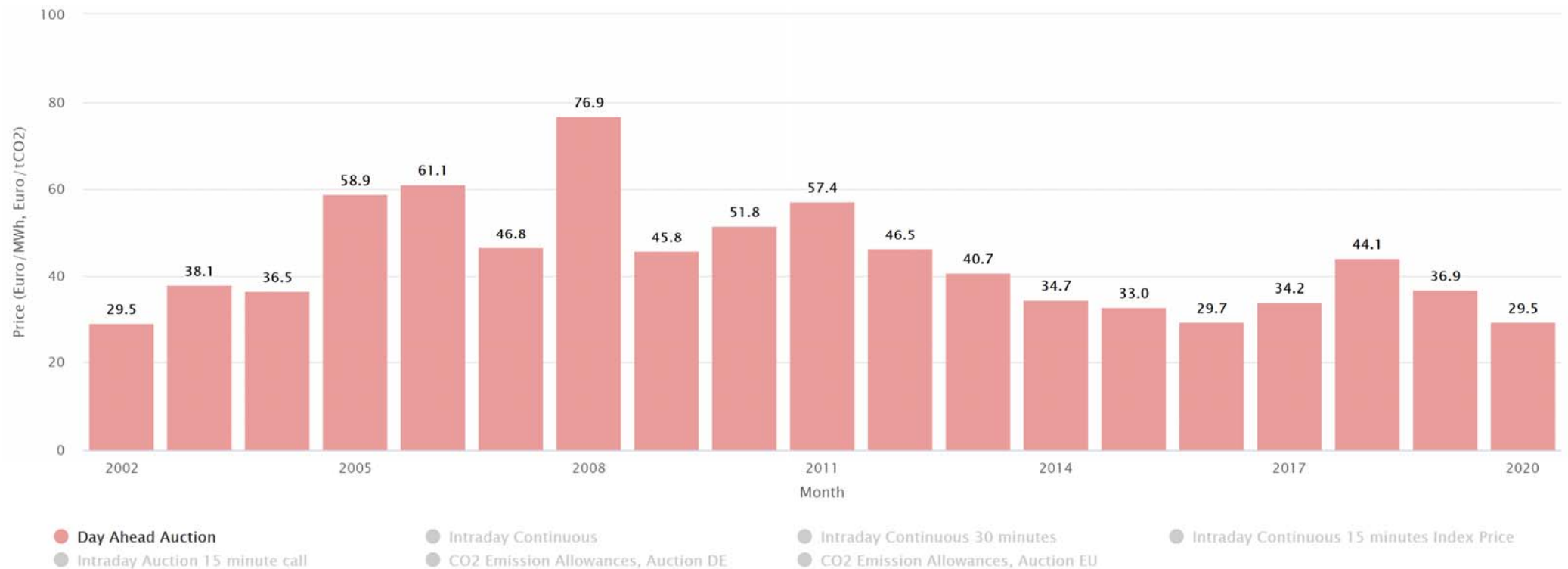
Weighted by volume, nominal prices, not inflation-adjusted



Graph: B. Burger, Fraunhofer ISE; Data: EPEX, Source: https://energy-charts.info/charts/price_average/chart.htm?l=en&c=DE&interval=year&year=-1

EPEX Day-Ahead spot price

Weighted by volume, inflation-adjusted

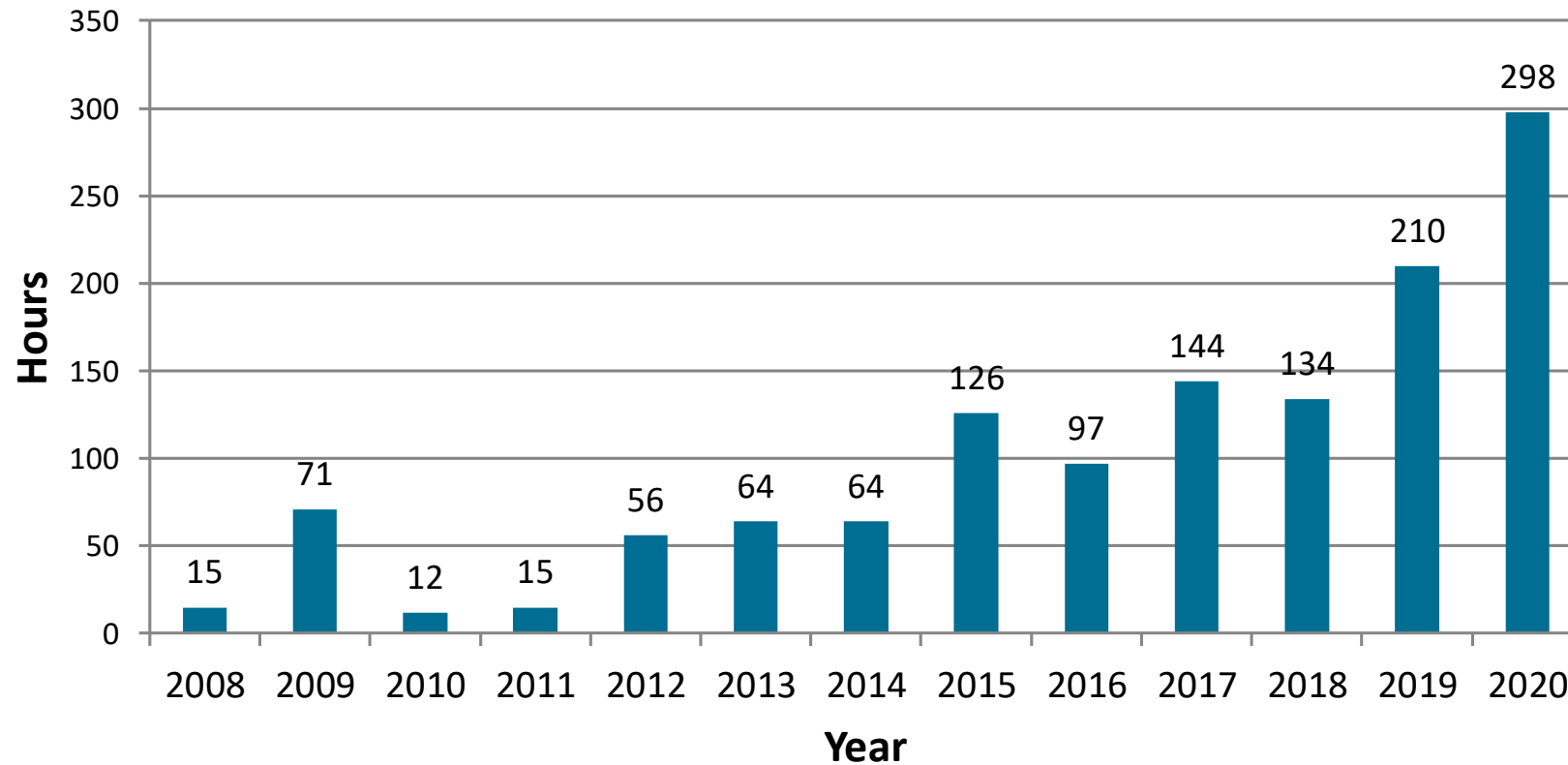


In 2020, the day-ahead electricity price, adjusted for inflation, was at the 2002 level.

Graph: B. Burger, Fraunhofer ISE; Data: EPEX, Source: https://energy-charts.info/charts/price_average/chart.html?l=en&c=DE&interval=year&year=-1

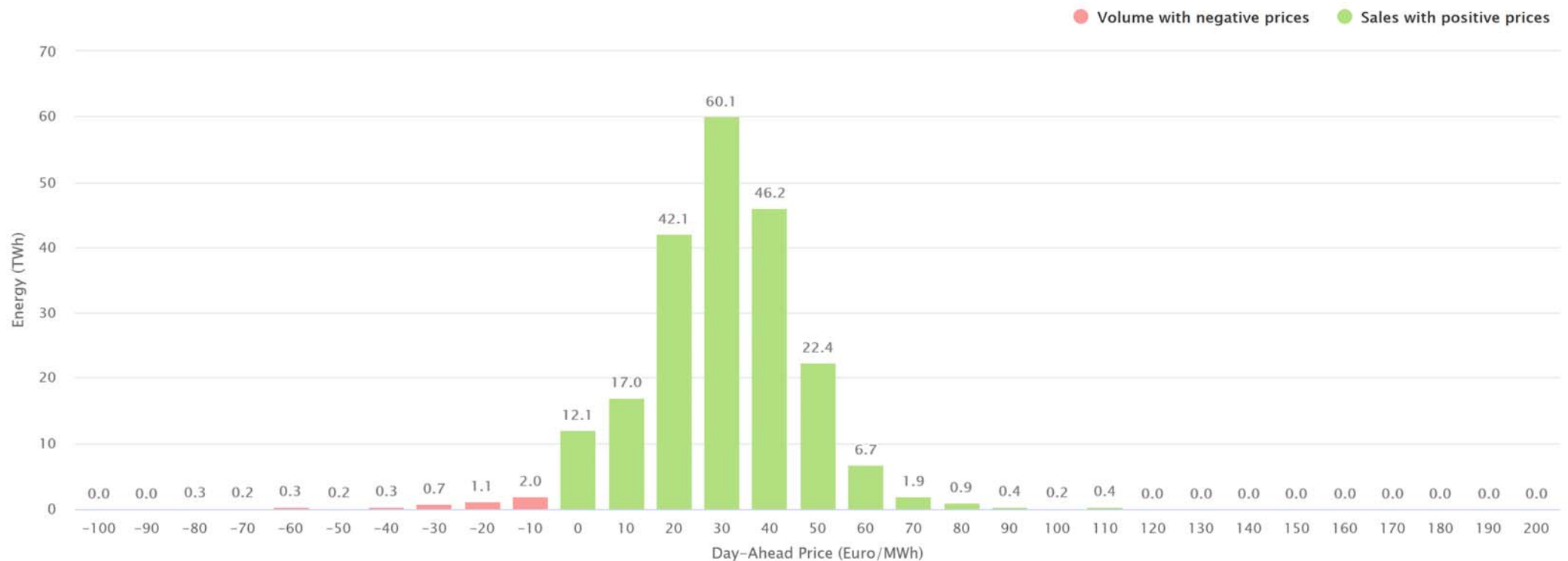
Negative Day-Ahead electricity prices

Hours per year



Graph: B. Burger, Fraunhofer ISE; Data: EPEX

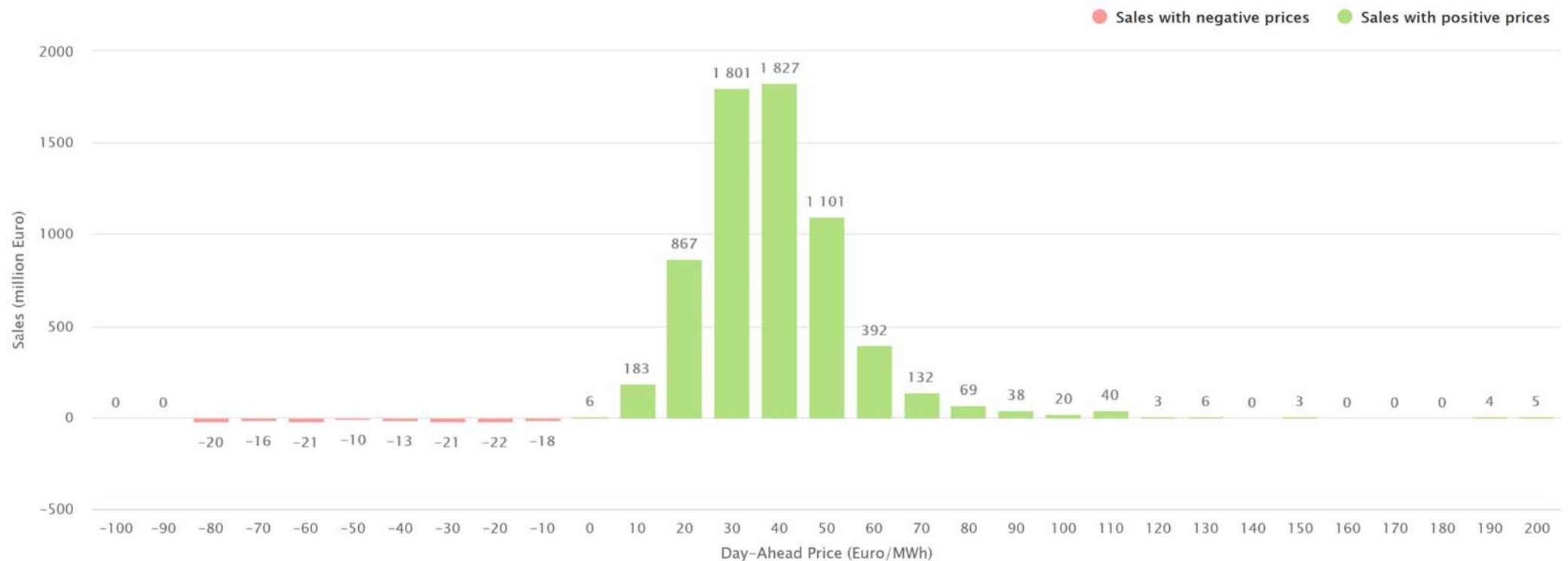
Day-Ahead market volume, histogram 2020



The traded volume with positive prices amounted to 207.091 TWh (95.8%), with negative prices 9.1 TWh (4.2%).

Graph: B. Burger, Fraunhofer ISE; Data: EPEX

Sales on the Day-Ahead market, histogram 2020

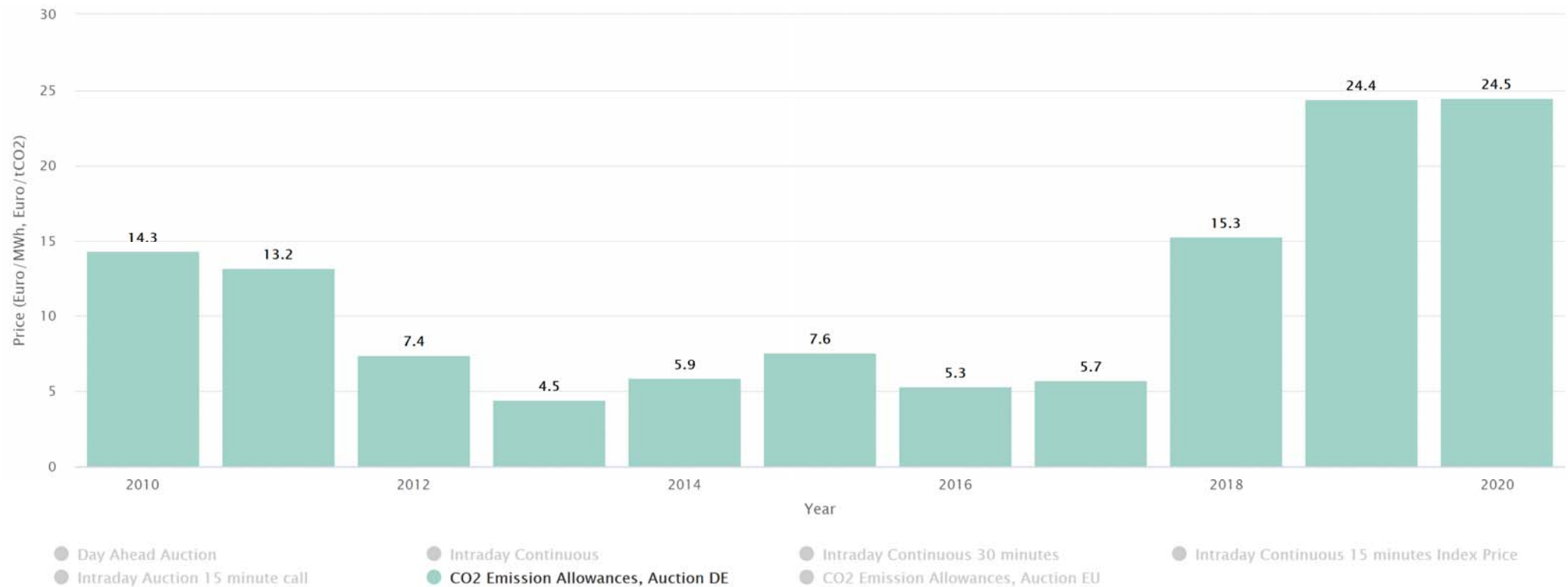


Sales with positive prices were 6530 million euros (97.8%), with negative prices 149 million euros (2.2%).

Graph: B. Burger, Fraunhofer ISE; Data: EPEX

CO2 certificate price (EUAs)

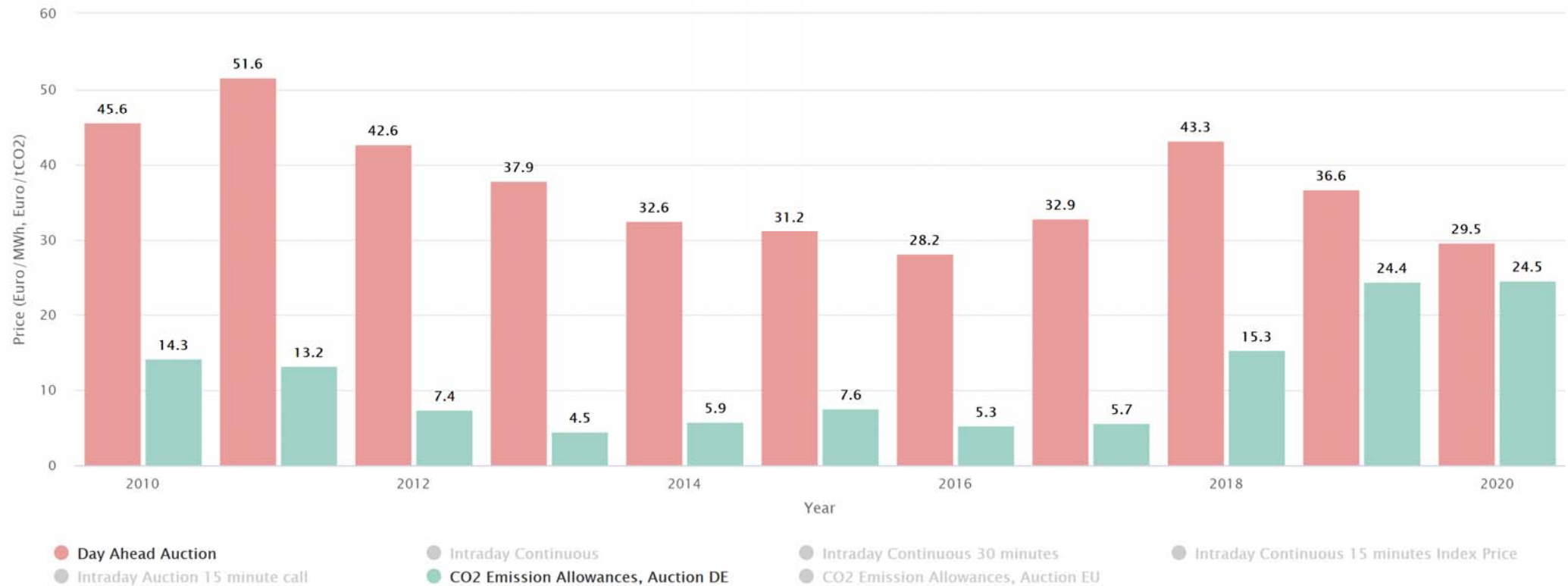
Since 2010



Graph: B. Burger, Fraunhofer ISE; Data: EPEX, Source: https://energy-charts.info/charts/price_average/chart.htm?l=en&c=DE&interval=year&year=-1

Day-Ahead electricity price and CO2 certificate price

Annually

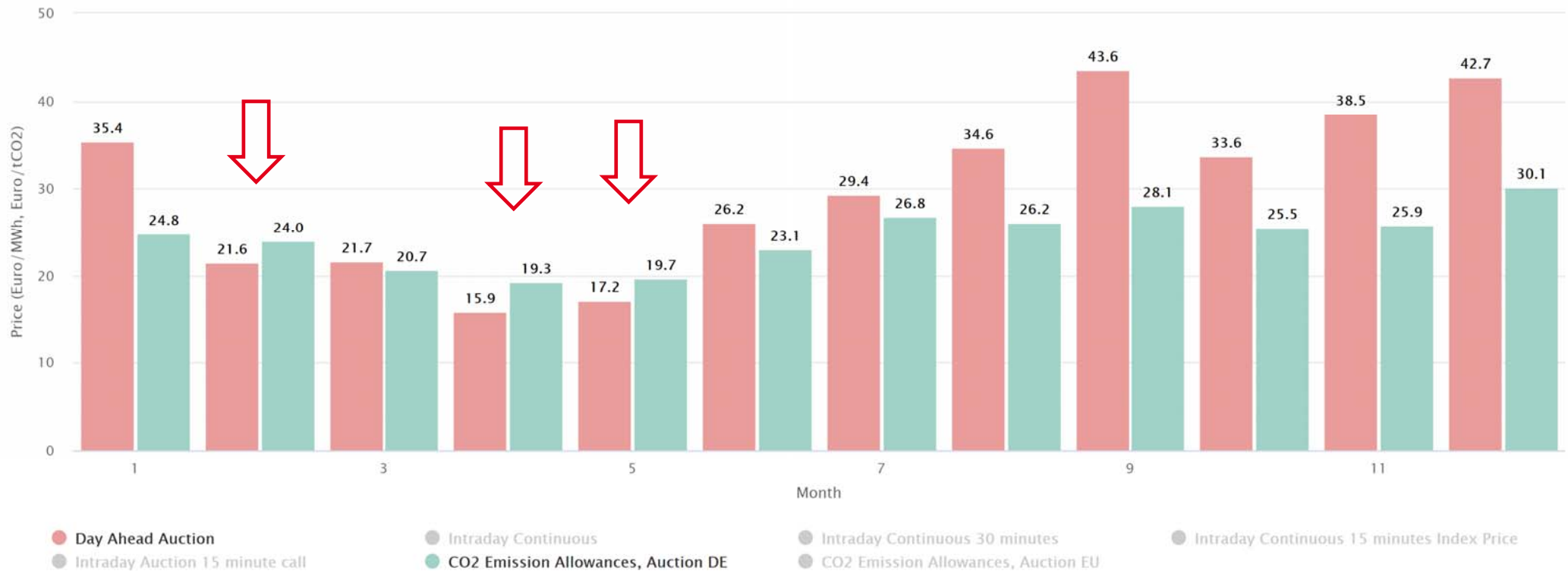


Power generation from lignite emits about 1 ton of CO₂ per MWh_{el}. If the electricity price and the CO₂ certificate price are at the same level, electricity generation from lignite becomes unprofitable.

Graph: B. Burger, Fraunhofer ISE; Data: EPEX, Source: https://energy-charts.info/charts/price_average/chart.htm?l=en&c=DE&interval=year&year=-1

Day-Ahead electricity price and CO2 certificate price

Monthly in 2020

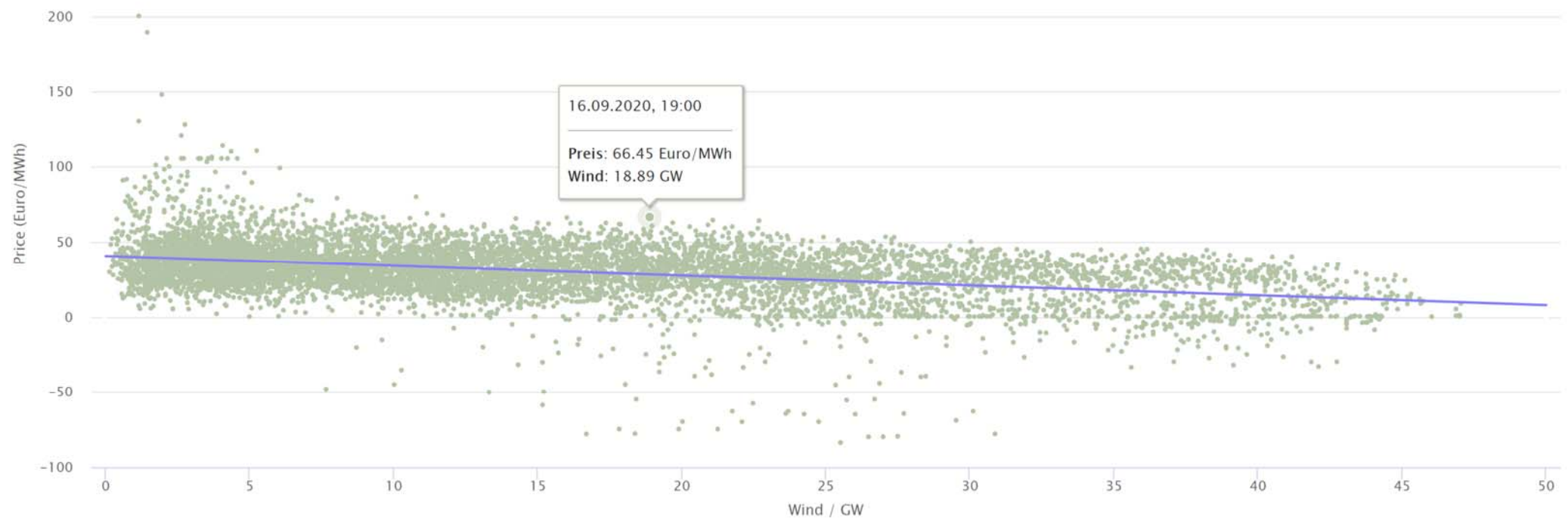


In February, April and May, the CO₂ certificate price was higher than the day-ahead electricity price. This made electricity generation from lignite unprofitable.

Graph: B. Burger, Fraunhofer ISE; Data: EPEX, Source: https://energy-charts.info/charts/price_average/chart.htm?l=de&c=DE

Day-Ahead spot price vs. wind power

Hourly values in 2020

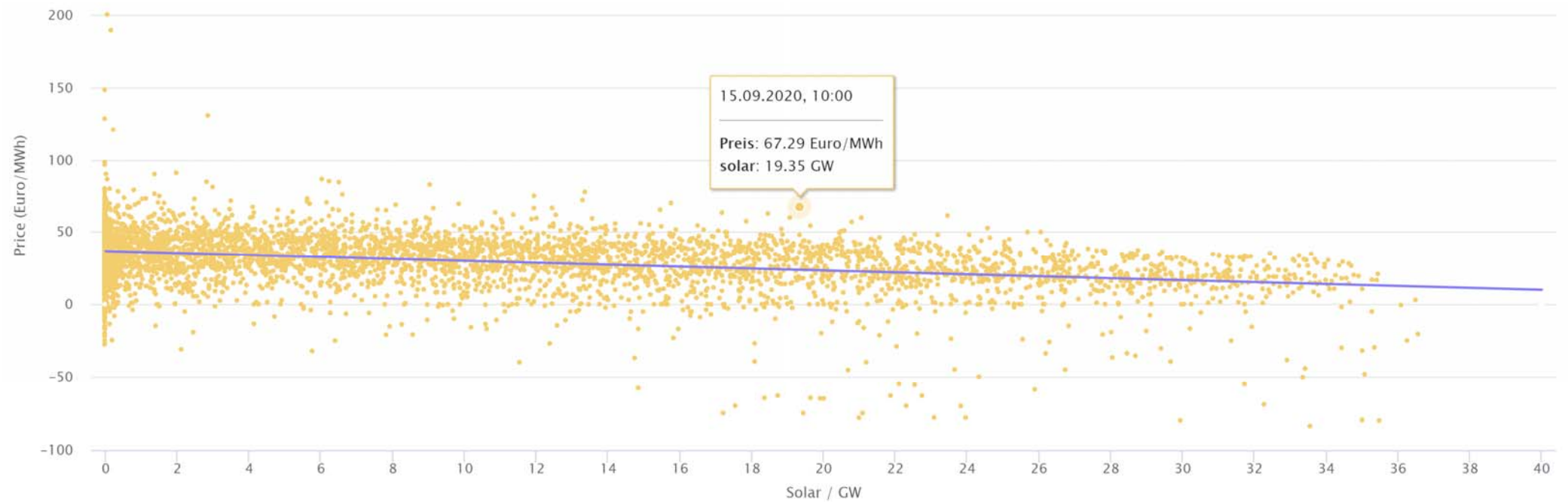


Wind power reduces the Day Ahead Spot Market Price by 0,66 Euro/MWh per GW installed.

Graph: B. Burger, Fraunhofer ISE; Data: EPEX; Source: https://energy-charts.info/charts/price_scatter/chart.htm?l=en&c=DE&enemy=wind

Day-Ahead spot price vs. solar power

Hourly values in 2020

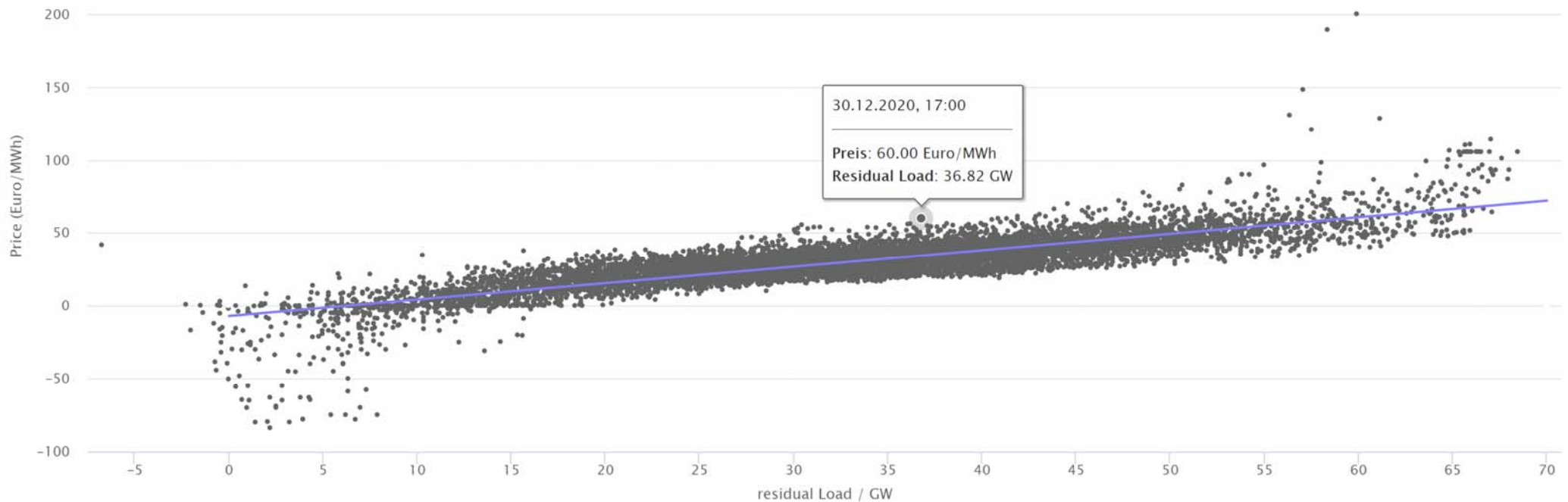


Solar power reduces the Day Ahead Spot Market Price by 0,67 Euro/MWh per GW installed.

Graph: B. Burger, Fraunhofer ISE; Data: EPEX; Source: https://energy-charts.info/charts/price_scatter/chart.htm?l=en&c=DE&enemy=solar

Day-Ahead spot price vs. residual load

Hourly values in 2020

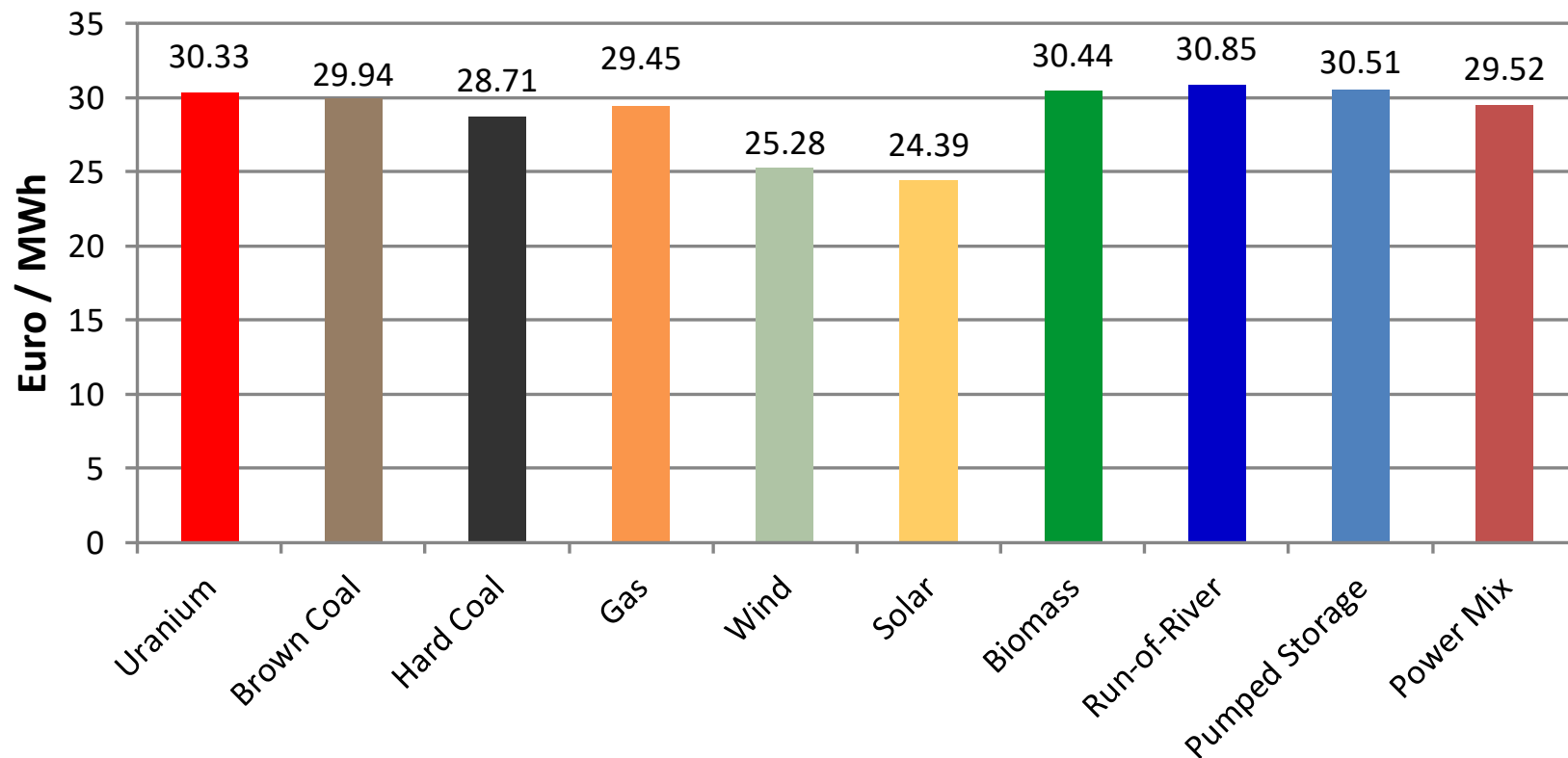


The residual load (= Load – Wind – Solar) increases the Day Ahead Spot Market Price by 1,13 Euro/MWh per GW load.

Graph: B. Burger, Fraunhofer ISE; Data: EPEX; Source: https://energy-charts.info/charts/price_scatter/chart.htm?l=en&c=DE&enemy=residual_load

Day-Ahead market values, weighted by volume in Euro/MWh

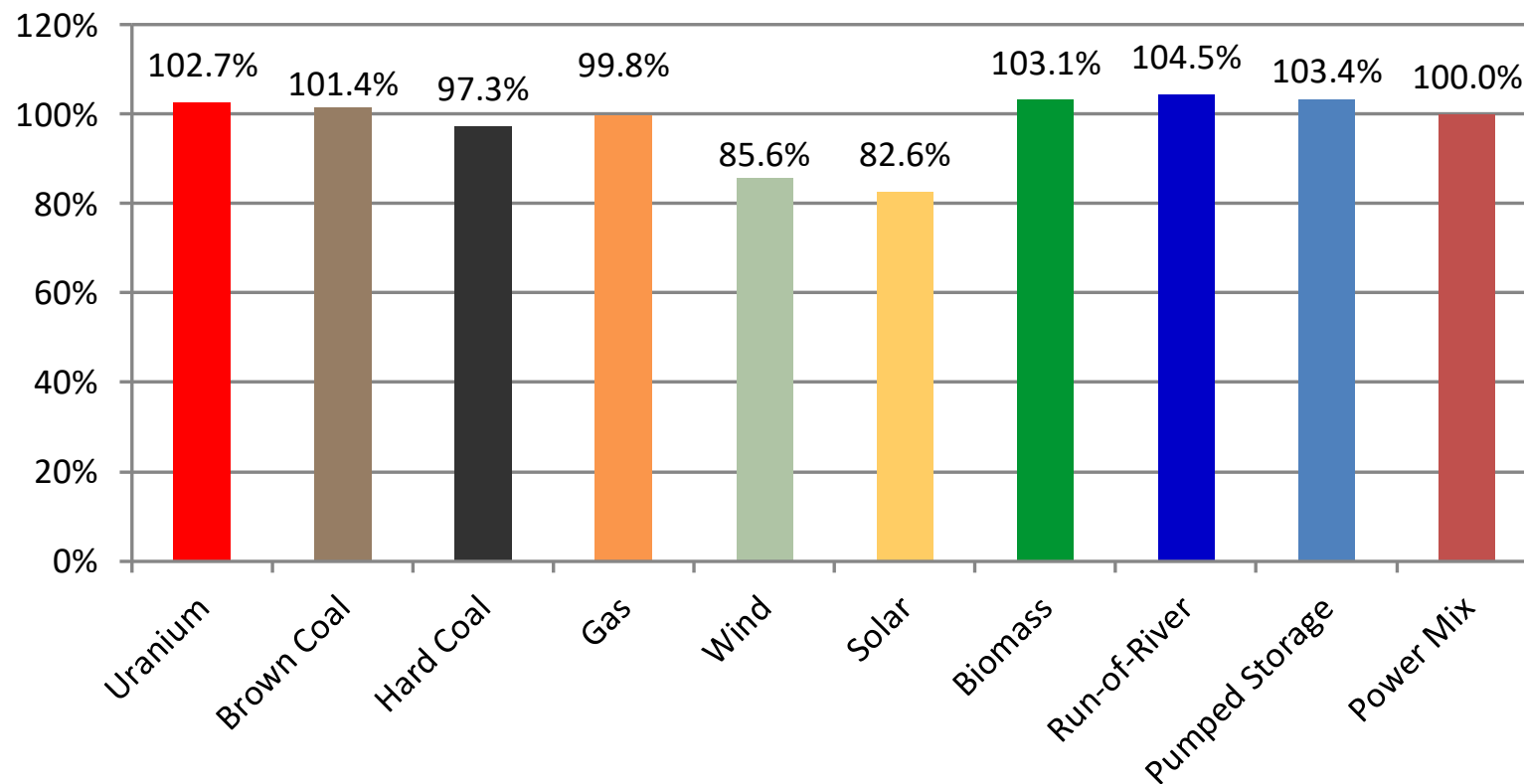
Year 2020



Graph: B. Burger, Fraunhofer ISE; Data: EPEX

Relative Day-Ahead market values, weighted by volume

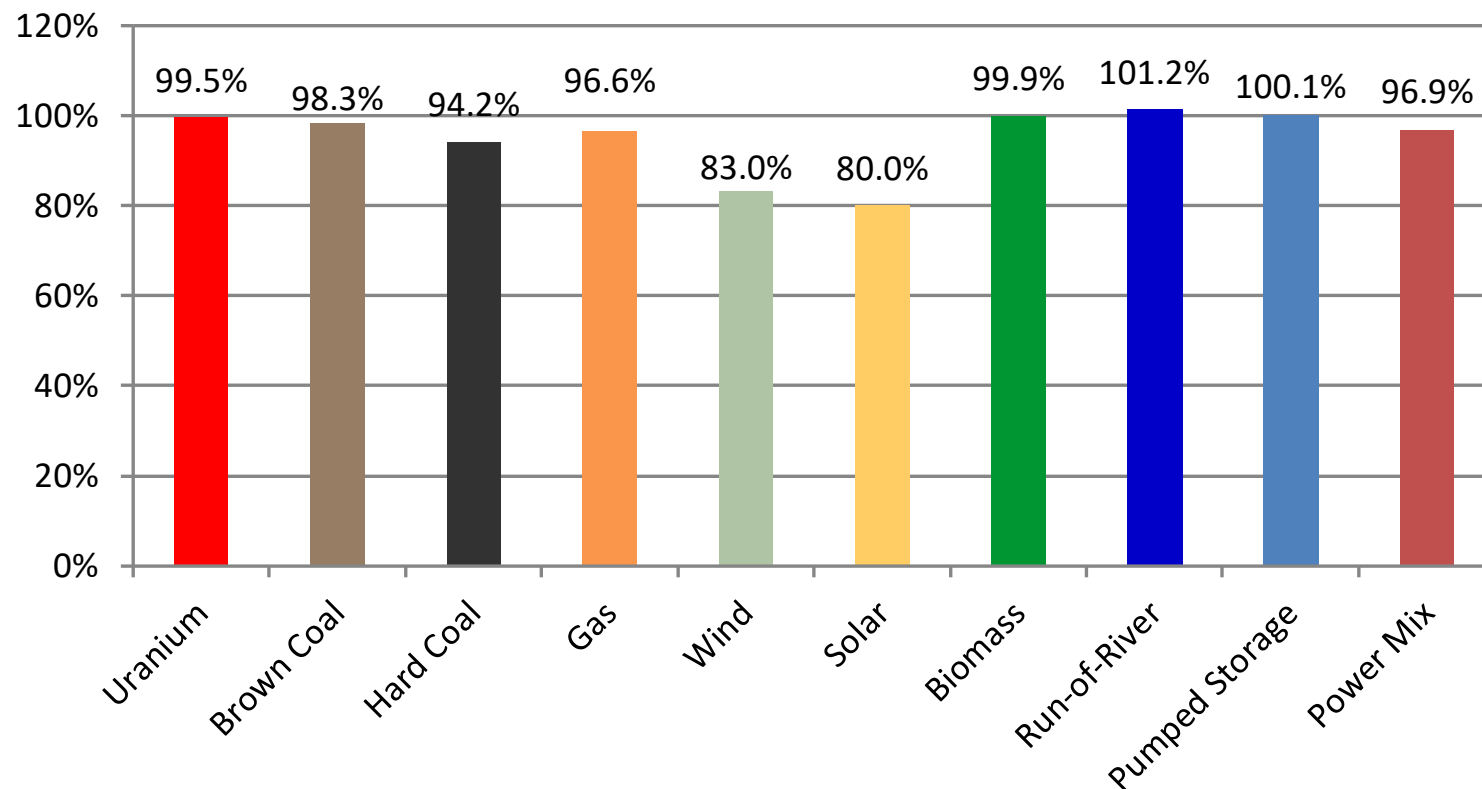
Year 2020



Graph: B. Burger, Fraunhofer ISE; Data: EPEX

Market value factors

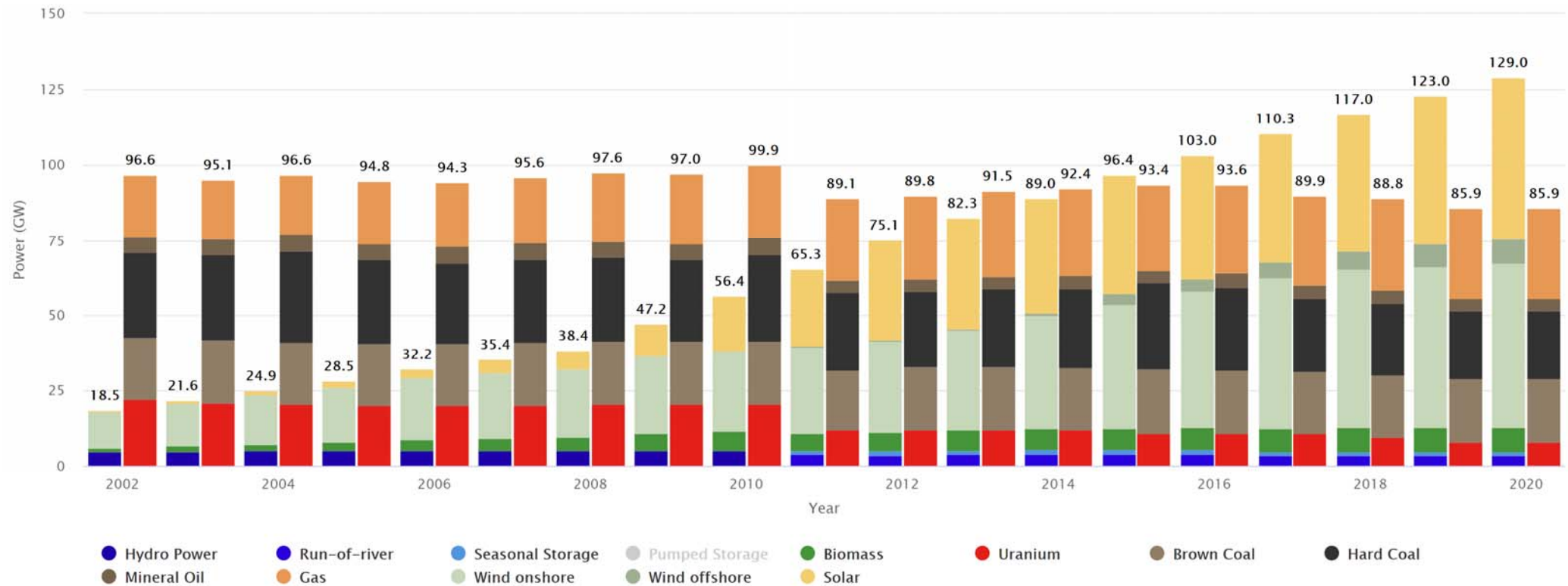
Year 2020



Graph: B. Burger, Fraunhofer ISE; Data: EPEX

Installed capacity

Renewable (left bar) and fossil/nuclear (right bar)



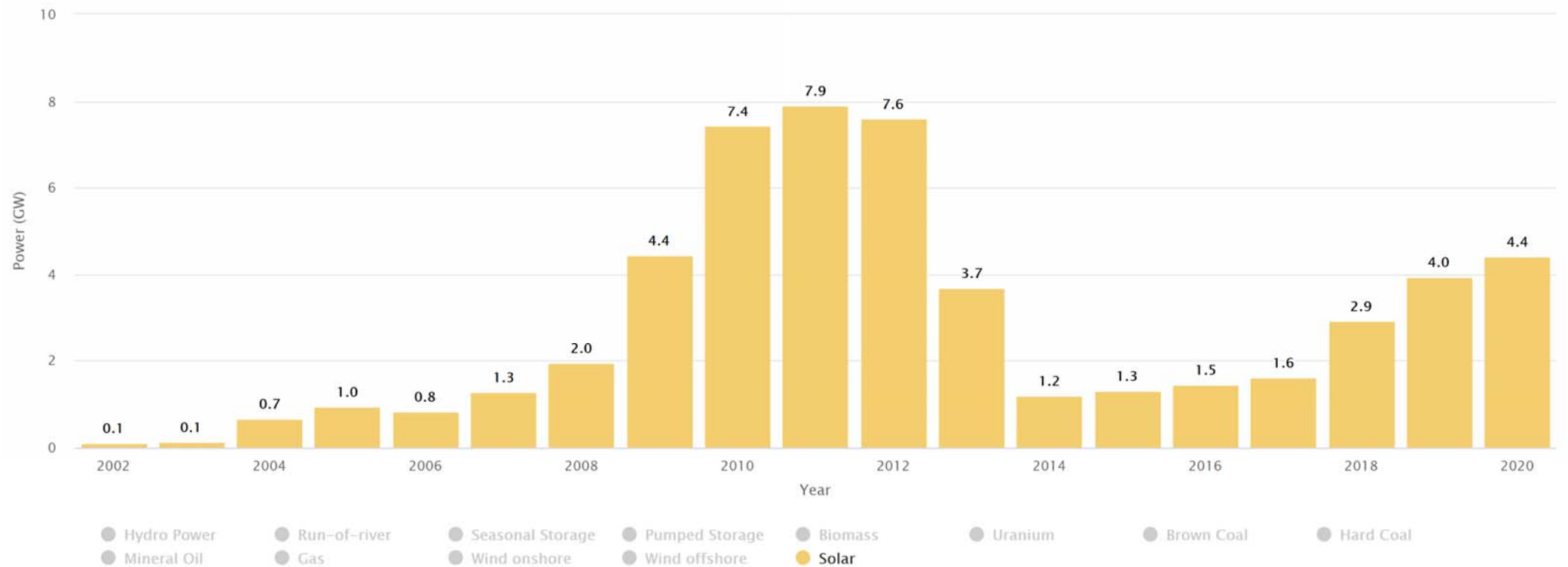
2020: January - November

Since 2015, the installed capacity of renewable energy has been greater than the fossil/nuclear capacity.

Graph: B. Burger, Fraunhofer ISE; Data: Bundesnetzagentur, Source: https://energy-charts.info/charts/installed_power/chart.htm?l=en&c=DE&stacking=sorted

Annual increase in installed capacity

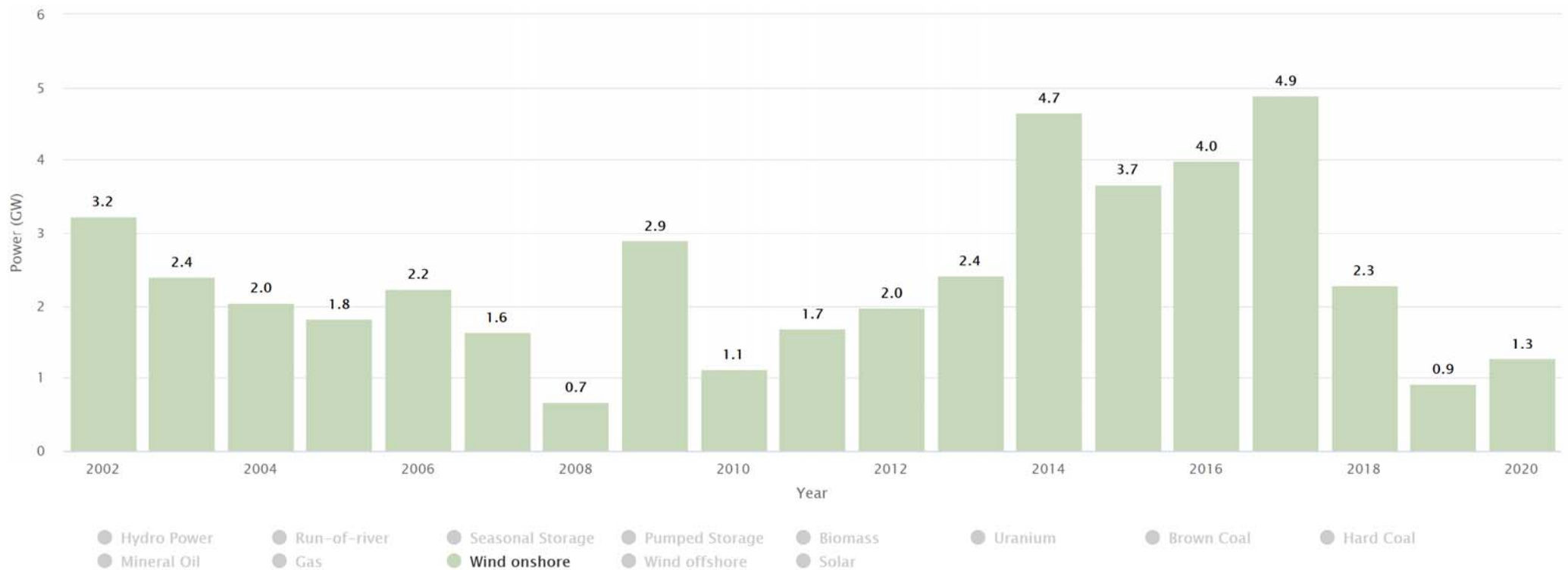
Solar



Graph: B. Burger, Fraunhofer ISE; Data: Bundesnetzagentur, Source: https://energy-charts.info/charts/installed_power/chart.htm?l=en&c=DE&stacking=sorted

Annual increase in installed capacity

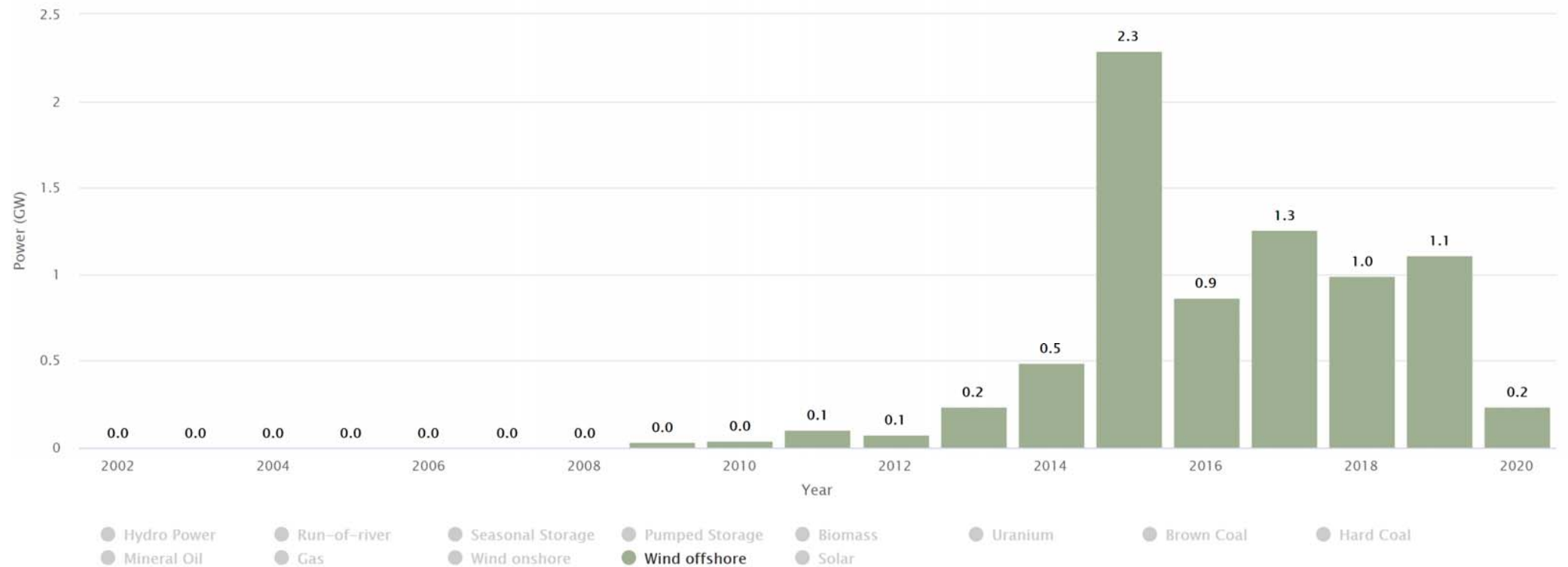
Wind onshore



Graph: B. Burger, Fraunhofer ISE; Data: Bundesnetzagentur, Source: https://energy-charts.info/charts/installed_power/chart.htm?l=en&c=DE&stacking=sorted

Annual increase in installed capacity

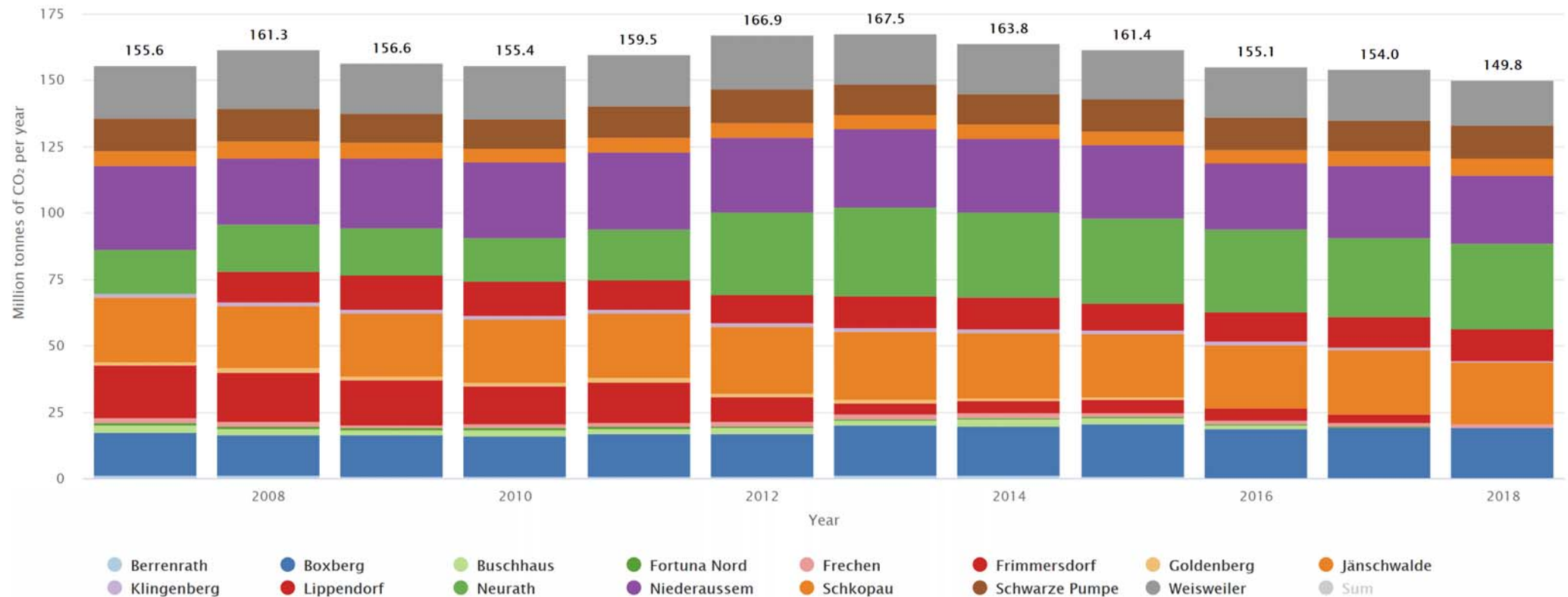
Wind offshore



Graph: B. Burger, Fraunhofer ISE; Data: Bundesnetzagentur, Source: https://energy-charts.info/charts/installed_power/chart.htm?l=en&c=DE&stacking=sorted

Carbon dioxide (CO₂) emissions of power plants

Brown coal

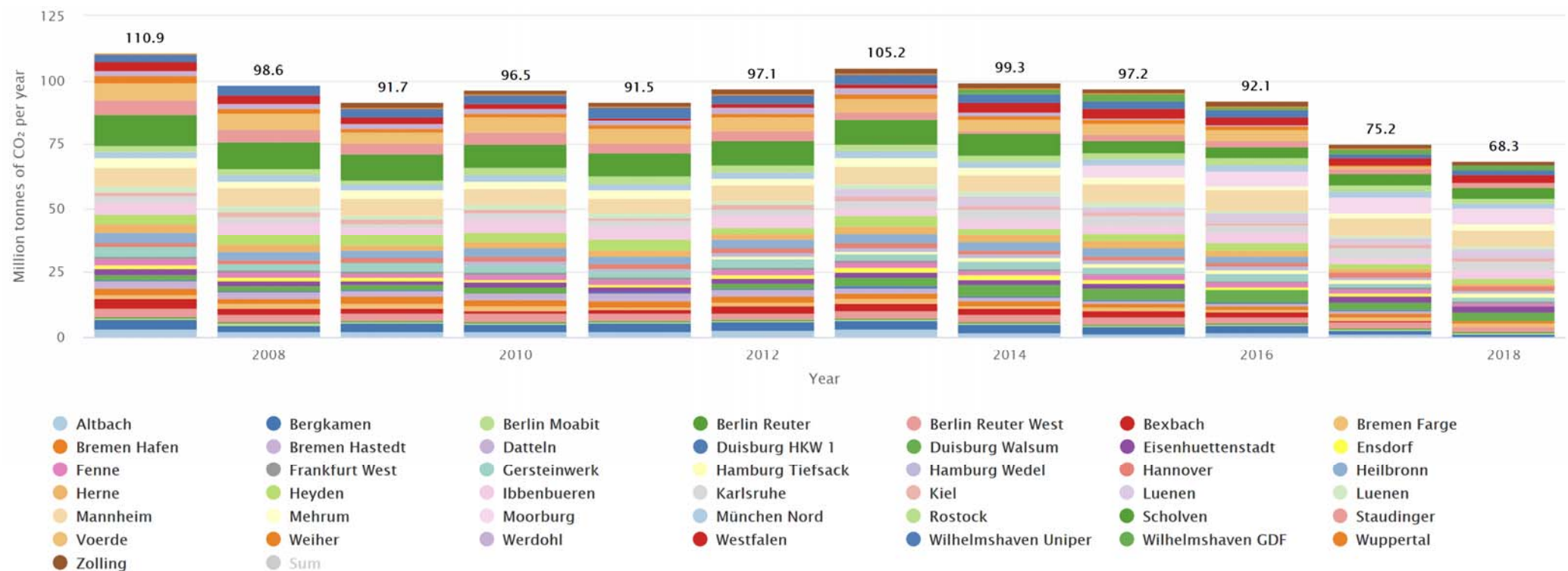


Releases to air. Pollutant threshold: 0.1 million metric tons of CO₂ per year. Data source: German Federal Environment Agency (UBA), PRTR Register

Graph: B. Burger, Fraunhofer ISE; Source: <https://energy-charts.info/charts/emissions/chart.htm?!=en&c=DE&sum=1>

Annual carbon dioxide (CO₂) emissions of power plants

Hard coal

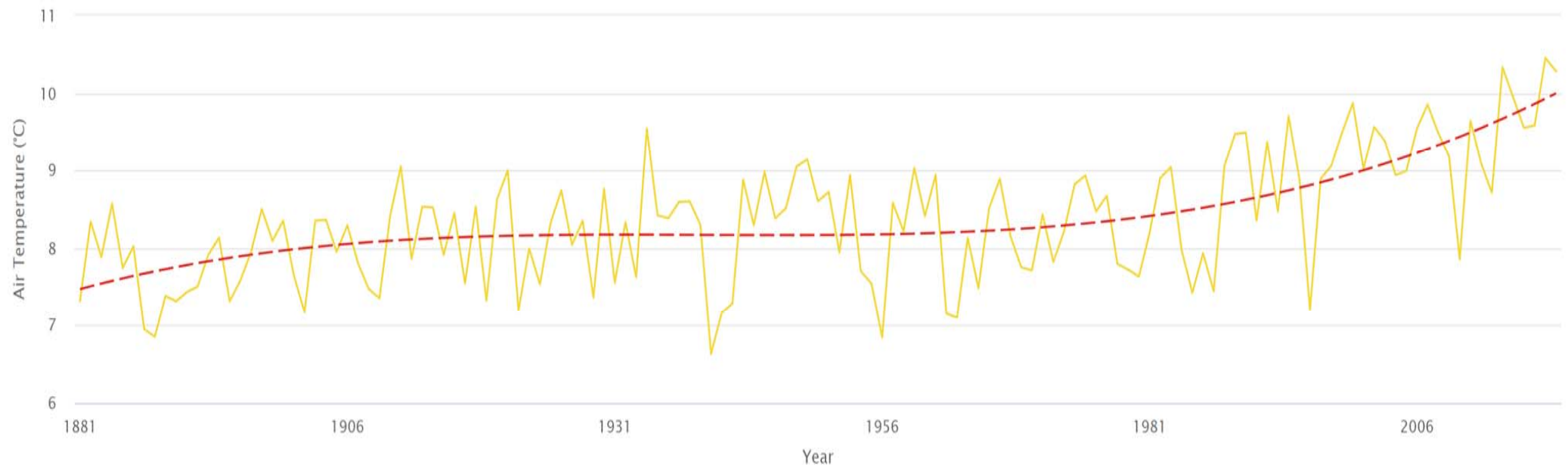


Releases to air. Pollutant threshold: 0.1 million metric tons of CO₂ per year. Data source: German Federal Environment Agency (UBA), PRTR Register

Graph: B. Burger, Fraunhofer ISE; Source: https://energy-charts.info/charts/emissions/chart.htm?!=en&c=DE&sum=1&source=hard_coal

Average air temperature in Germany

1881 to 2020

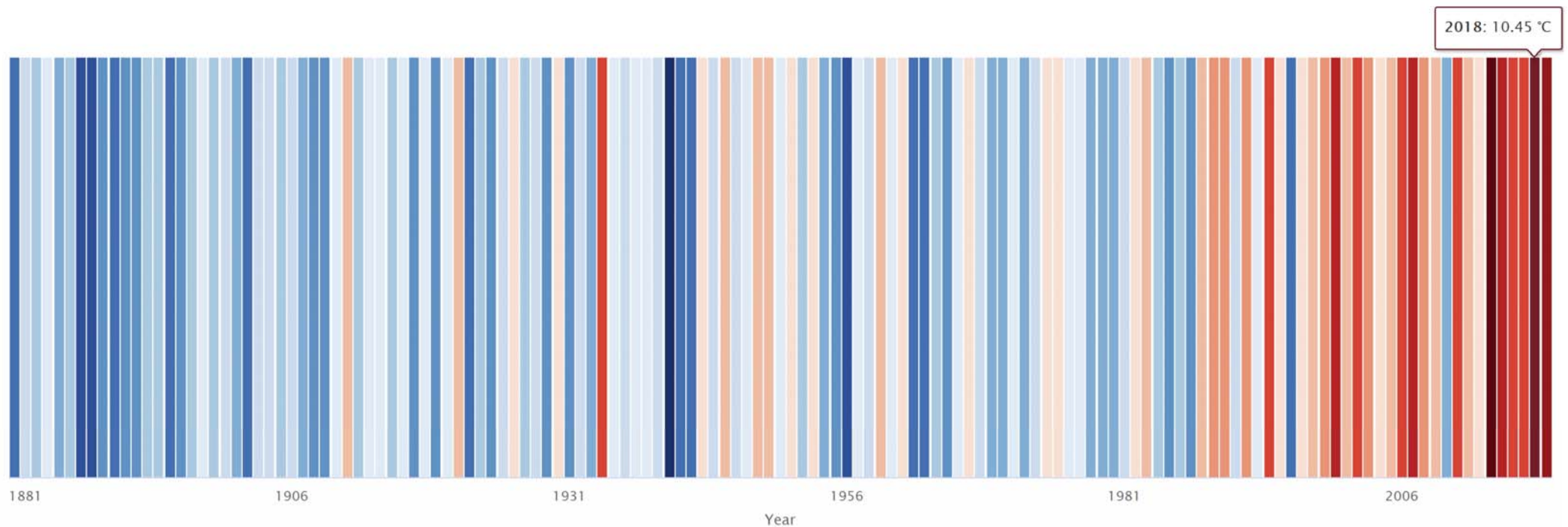


Data source: Deutscher Wetterdienst (DWD)

Graph: B. Burger, Fraunhofer ISE; Source: https://energy-charts.info/charts/climate_annual_average/chart.htm?l=en&c=DE

Average air temperature in Germany

Warming stripes from 1881 to 2020



Temperature strip based on an idea by Ed Hawkins. The color scale ranges from 6.63°C in 1940 (dark blue) to 10.45°C in 2018 (dark red), mean from 1881 to 2019: 8.36°C. Data source: German Weather Service DWD

Graph: B. Burger, Fraunhofer ISE; Source: https://energy-charts.info/charts/climate_annual_average/chart.htm?l=en&c=DE&source=air_color_flat

Appendix and Notes

Net electricity generation in Germany in 2020

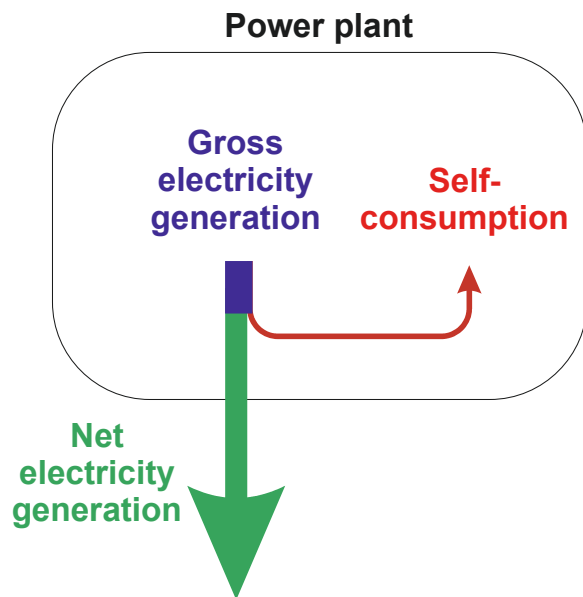
The **first version** of the annual evaluation 2020 of 02.01.2021 takes into account all power generation data of the Leipzig power exchange EEX up to and including 31.12.2020. Via the available monthly data of the Federal Statistical Office (Destatis) on electricity generation up to and including September 2020 and the monthly data on imports and exports of electricity up to and including October 2020, the hourly values of the EEX were corrected energetically. For the remaining months, the correction factors were estimated on the basis of past annual data. The extrapolated values are subject to larger tolerances.

Hourly updated data can be found on the Energy Charts:

<https://www.energy-charts.info>

Net electricity generation in Germany in 2020

Difference between net and gross power generation



This report presents data on Germany's net electricity generation for public power supply. When net figures are used, a power plant's own consumption is supplied directly from the power plant's gross electricity generation. The difference between gross electricity generation and own consumption is the net electricity generation fed into the grid. According to this convention, a coal mill in a lignite-fired power plant, for example, is supplied directly from the power plant's electricity generation and is thus powered exclusively by lignite-fired electricity.

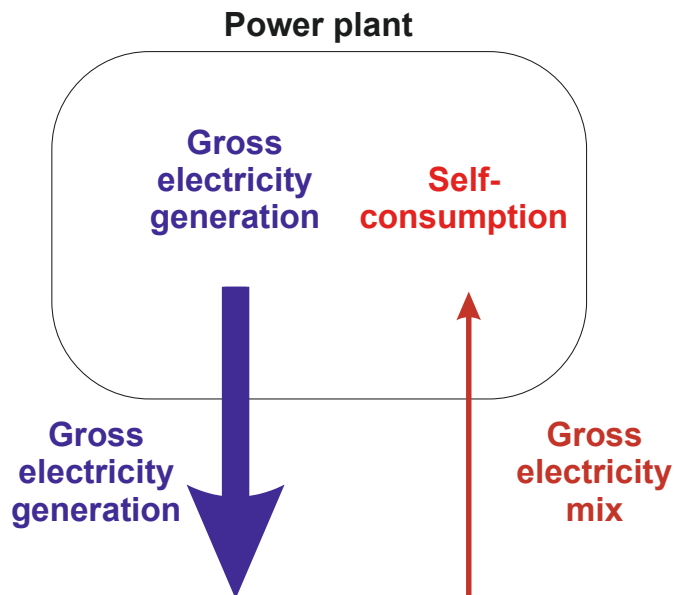
The entire electricity industry calculates with net figures, e.g. for electricity trading, grid calculation, grid utilization, power plant deployment planning, etc.

On the German power exchange EEX, only net power generation is traded, the transmission system operators calculate with net flows, and only net figures are measured for cross-border power flows.

Net electricity generation represents the electricity mix that actually comes out of the socket at home and is consumed in the household or with which electric vehicles are also publicly charged. The electricity meter in the home also measures the net electricity that is consumed or fed into the grid.

Net electricity generation in Germany in 2020

Difference between net and gross power generation

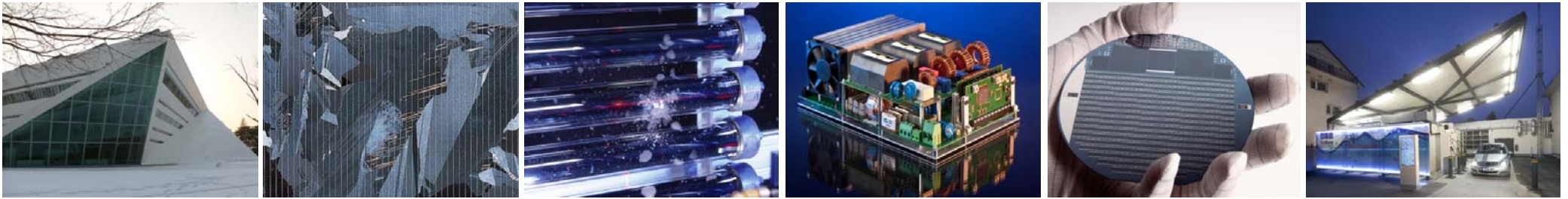


The **AG Energiebilanzen** uses the data for total gross electricity generation. This also includes the power plants' own consumption, which is consumed directly in the power plant and is not physically fed into the public power grid. On the consumption side, the power plants' own consumption is added to the gross electricity consumption so that the balance is correct again. According to this convention, a coal mill in a lignite-fired power plant, for example, is operated with the gross electricity mix and thus with approx. 46% renewable energies.

In addition, the AG Energiebilanzen also takes into account the own electricity generation of industry, the so-called "establishments in the manufacturing sector as well as in mining and quarrying". This own generation is consumed directly in the plants and is also not fed into the public grid. Gross figures are collected for statistical purposes only, but are not used in day-to-day electricity management.

The data on net public electricity generation and total gross electricity generation differ significantly. This also results in significantly different shares of renewable energies in electricity generation or electricity consumption.

Thank you very much for your Attention!



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<http://www.energy-charts.info>

https://twitter.com/energy_charts