

Energy transition in Poland

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www.forum-energii.eu

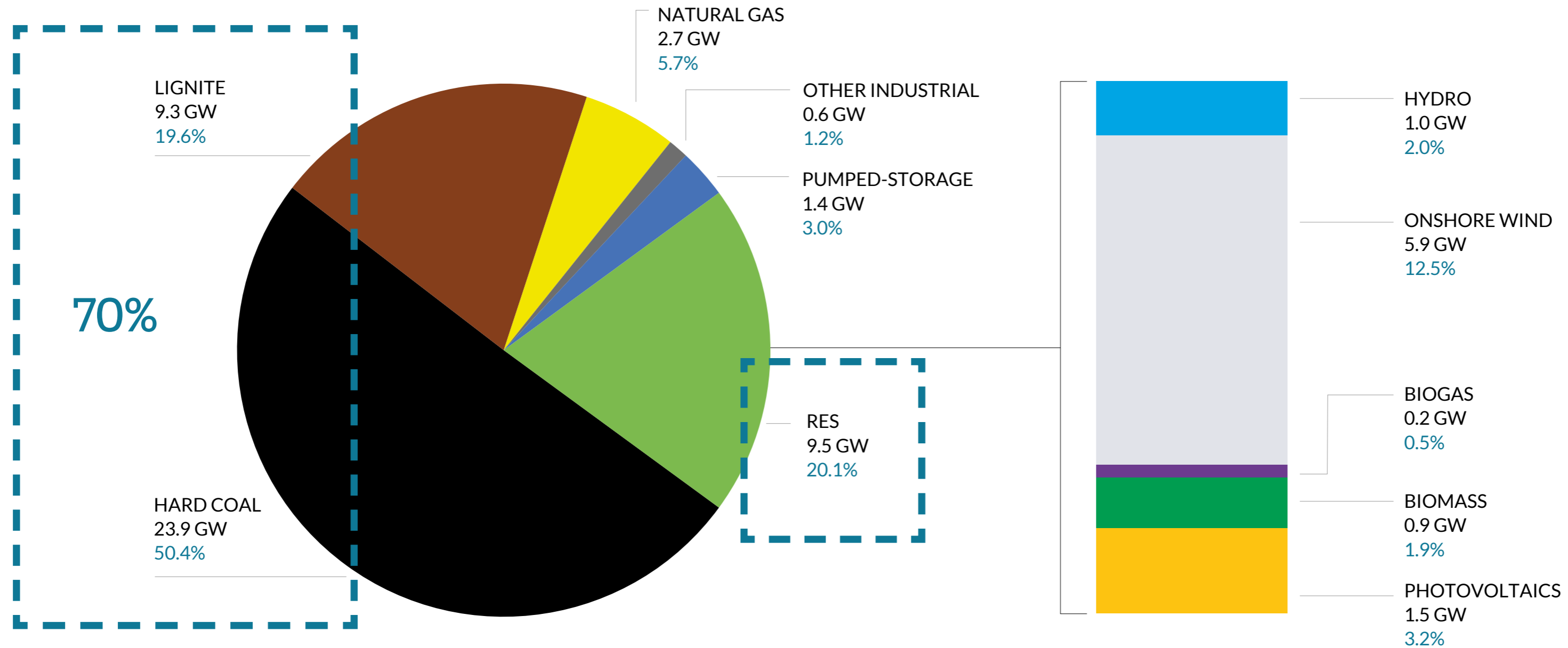
Who are we?

- Non profit think tank.
- Mission: efficient, safe, clean and innovative energy. Clean air. Climate protection.
- We support national regulations and European cooperation.
- Key programmes: energy market, RES, clean heat, LeadAir, Int-E-Grid.



Installed capacity at the end of 2019

47.4 GW

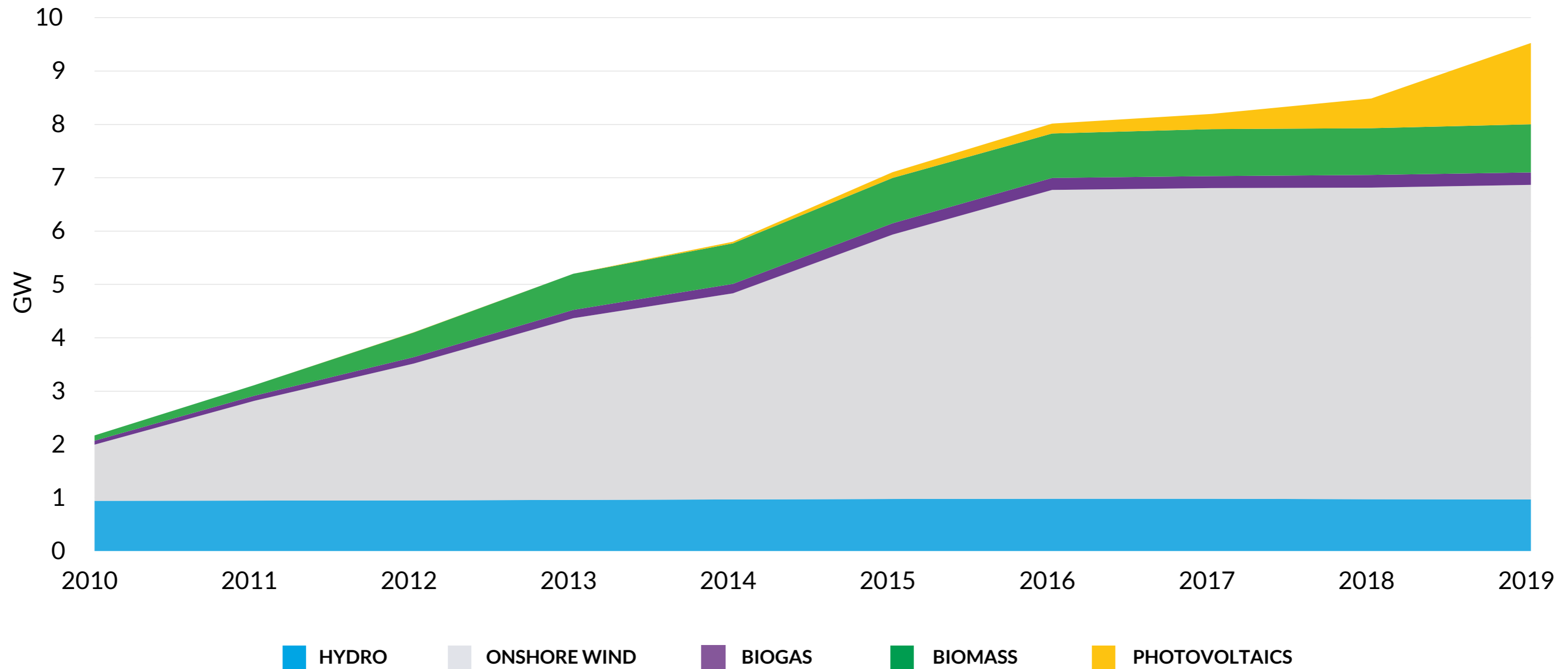


Source: based on data of the Agencja Rynku Energii S.A. (ARE).

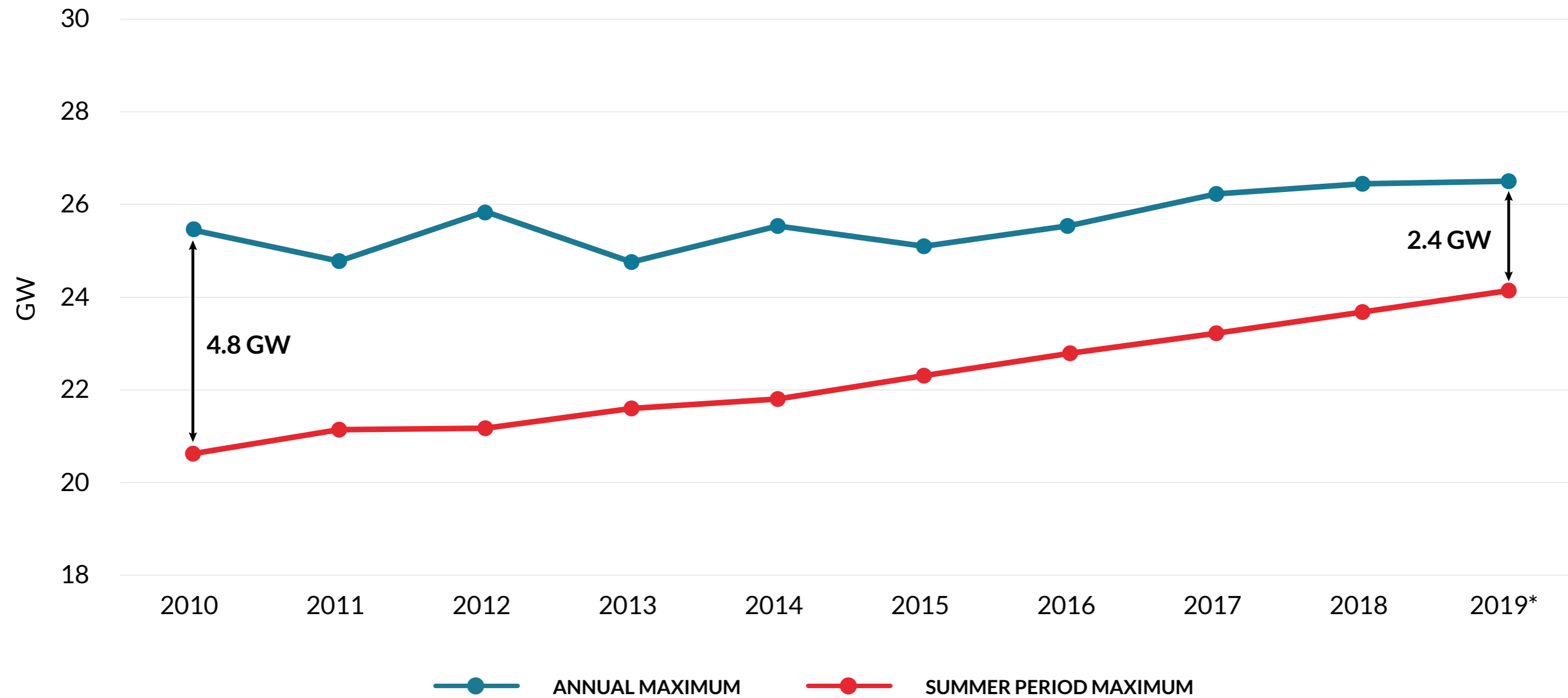
As of 31.12.2019

Changes in installed capacity in recent years

- 9.5 GW in RES of which 1.5 GW in PV



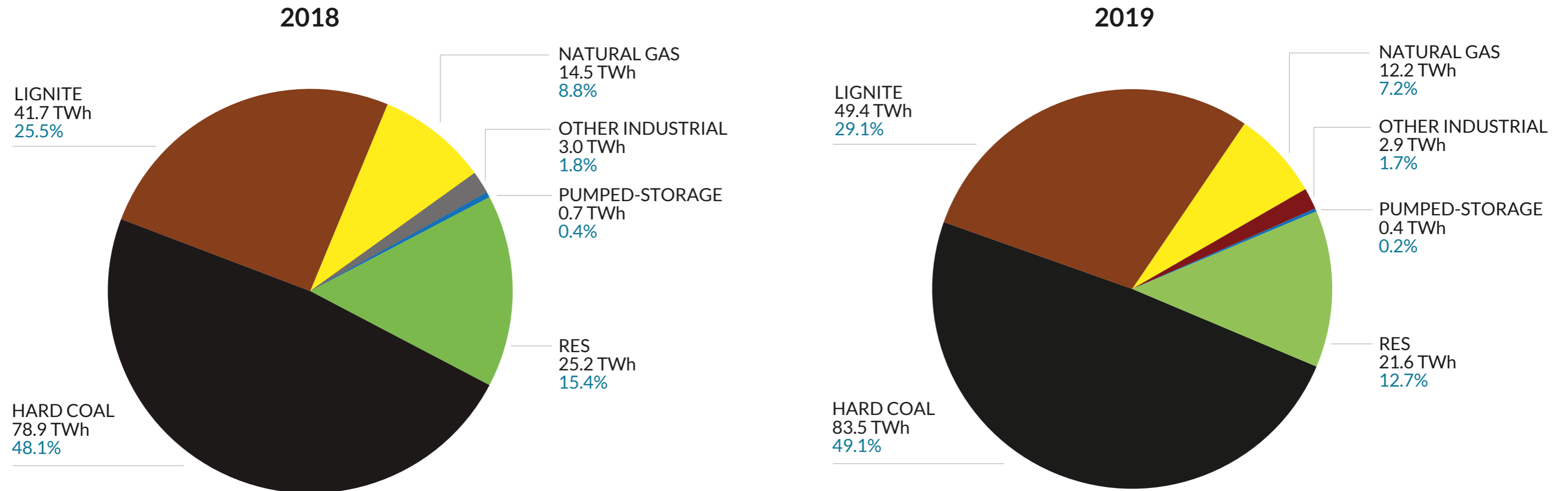
Changes in peak power demand



Source: based on data of the Polskie Sieci Elektroenergetyczne S.A. (PSE).

*preliminary data

Electricity production

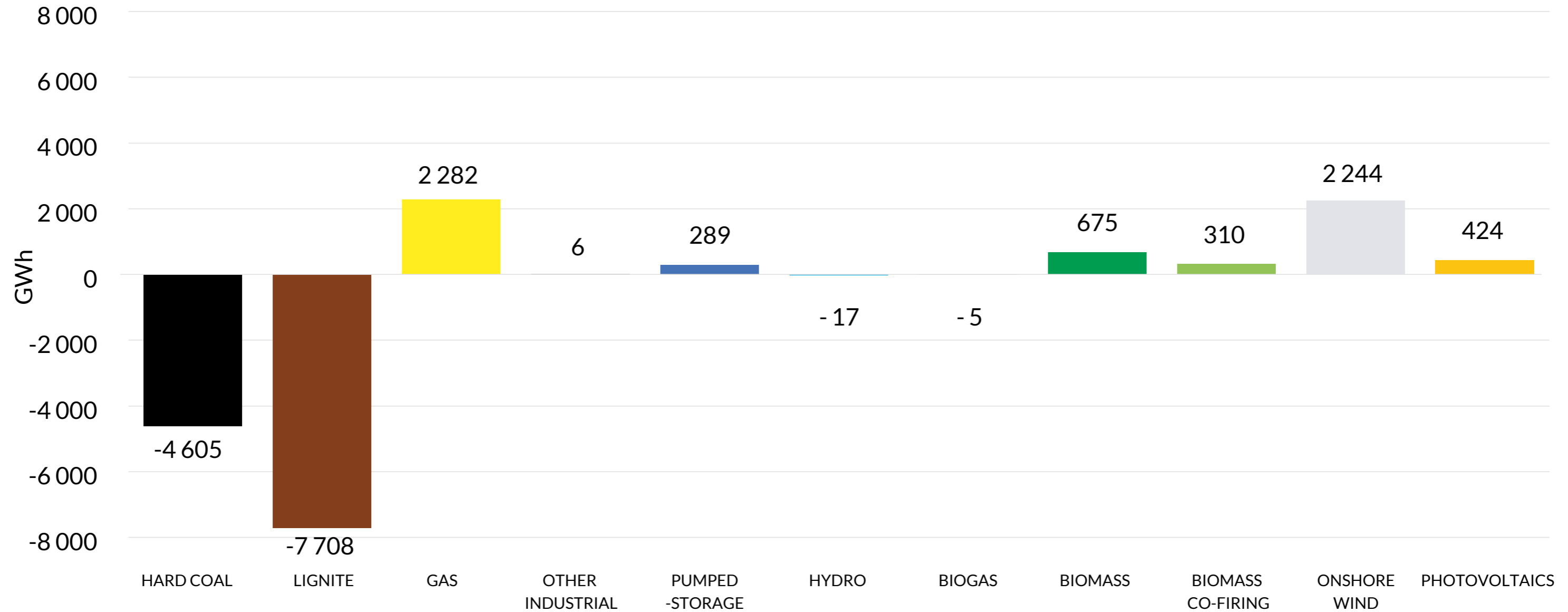


Coal 78.2% ↓ 73.6%

RES 12.7% ↑ 15.4%

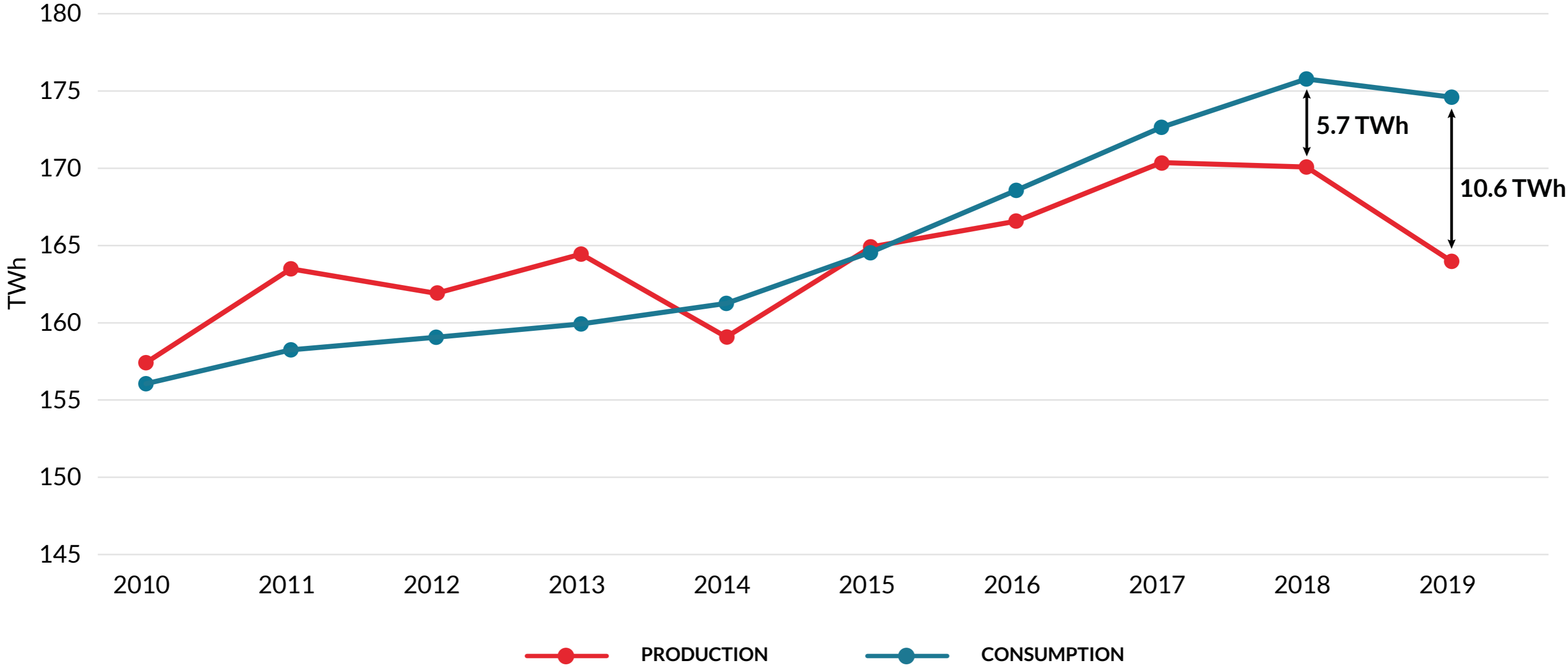
Gas 7.2% ↑ 8.8%

Changes in electricity production 2019/2018



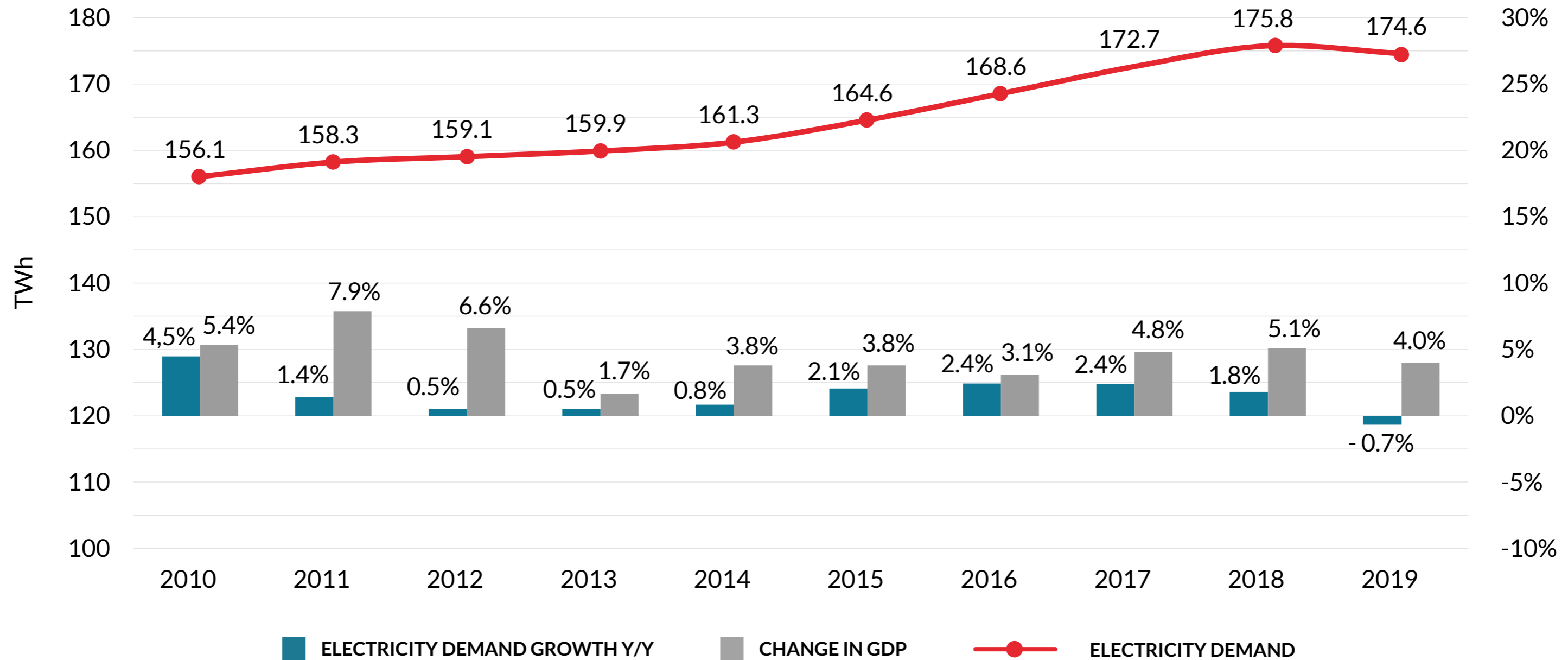
Source: based on data of ARE.

Balance of domestic electricity production and consumption



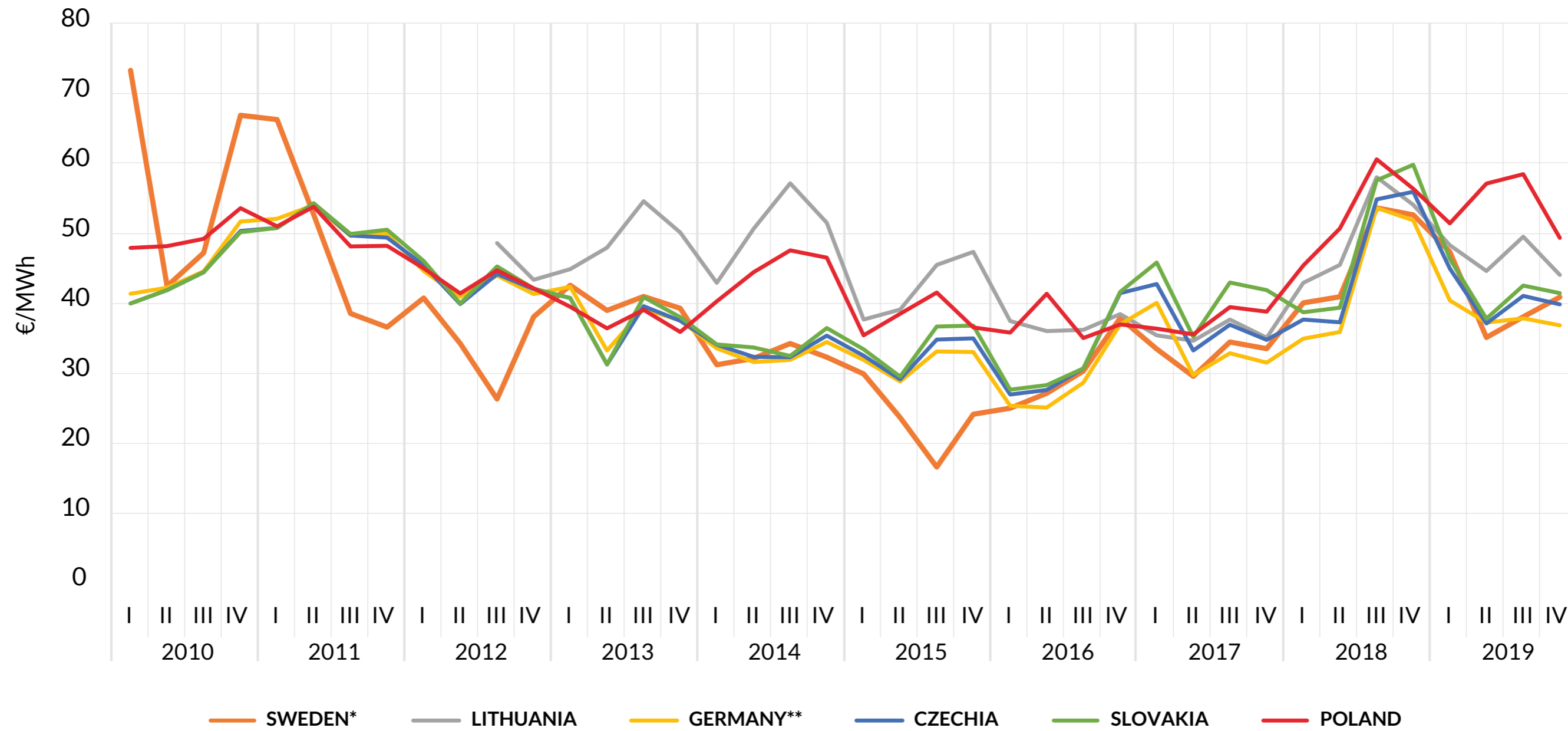
Source: based on data of ARE.

Economic growth and energy consumption balance



Source: based on data of ARE and Główny Urząd Statystyczny (GUS).

Comparison of spot prices

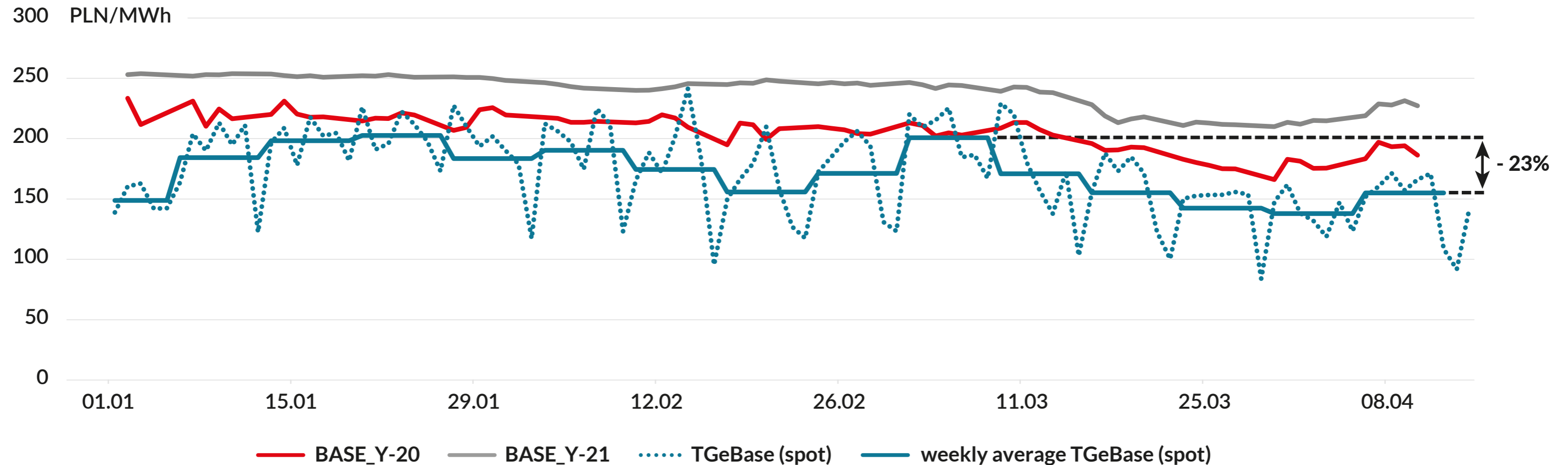


Source: based on data of Towarowa Giełda Energii S.A. (TGE), European Energy Exchange AG (EEX), Nordpool, OTE, a.s.

*from Q4 2011 on the basis of prices for the SE4 area;

** due to data unavailability, the price in 2019 is expressed as the arithmetic mean of daily prices. Other prices are expressed as a volume-weighted daily average

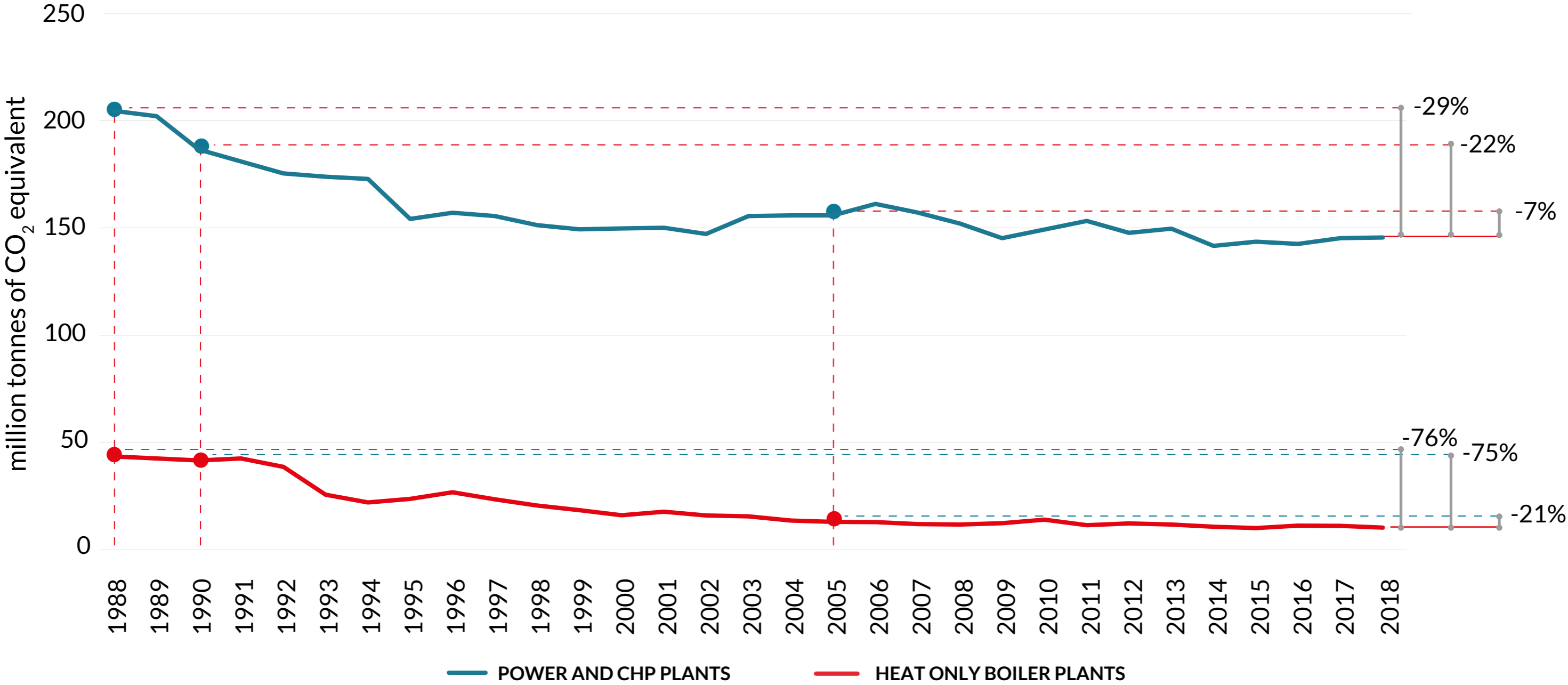
Wholesale energy prices are decreasing



Source: own calculations based on POLPX.

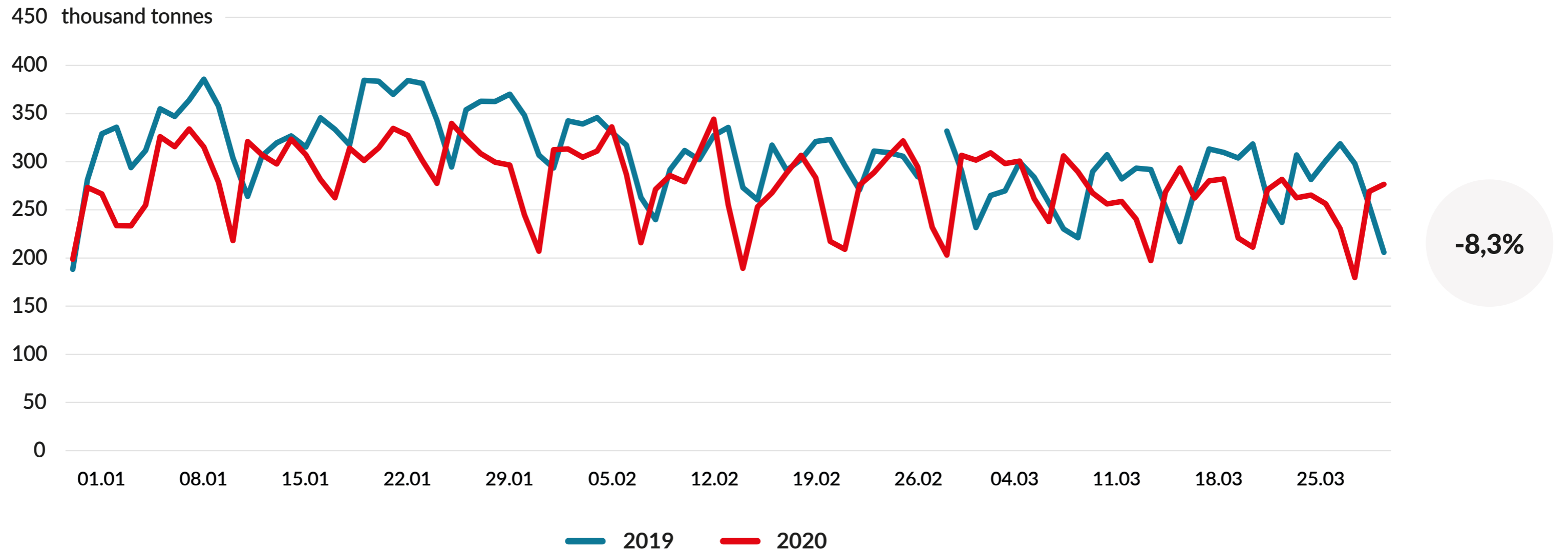
- **Wholesale prices** on the spot and forward markets decreased by **23% and 10%** respectively compared to the beginning of March.
- **Two reasons:** decrease in power demand – exclusion of the most expensive generators from the market (spot) and lower prices of CO₂ (spot and forward).

Power sector greenhouse gas emissions

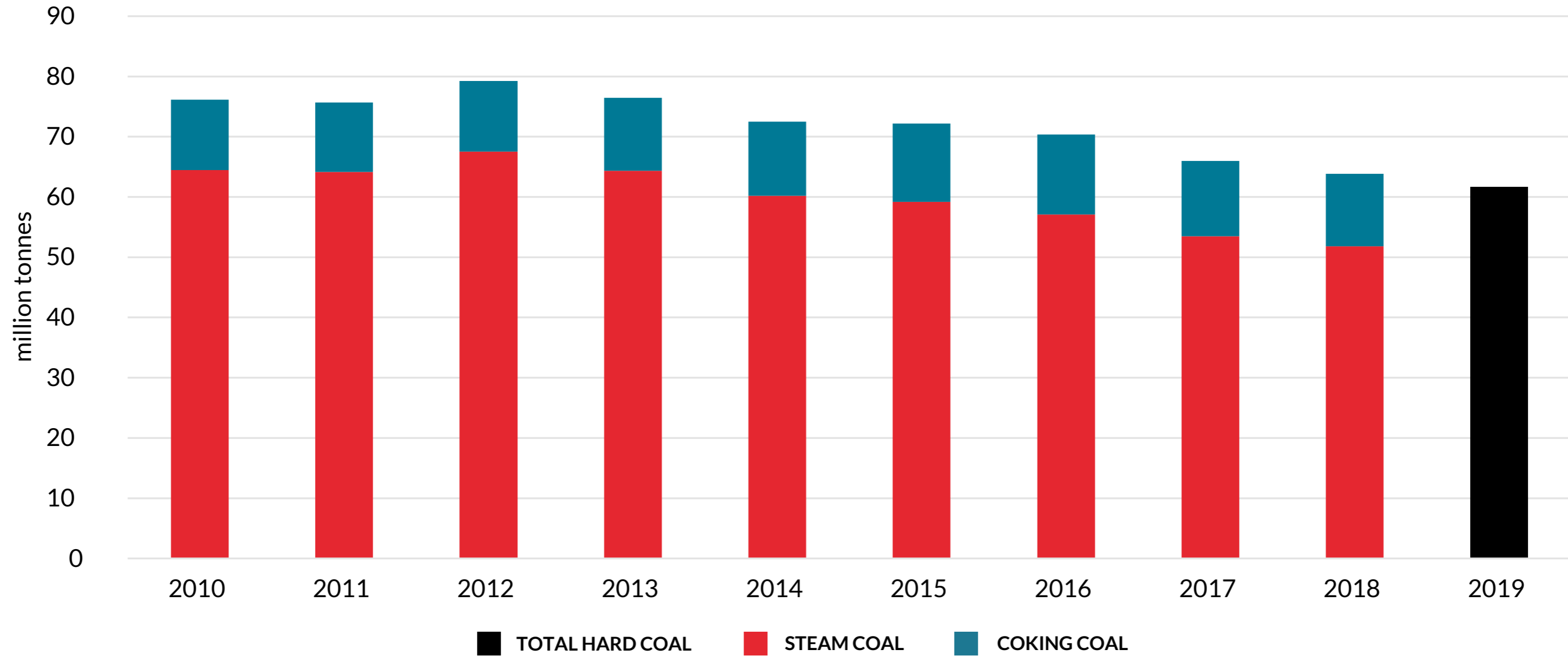


Source: based on data of EEA.

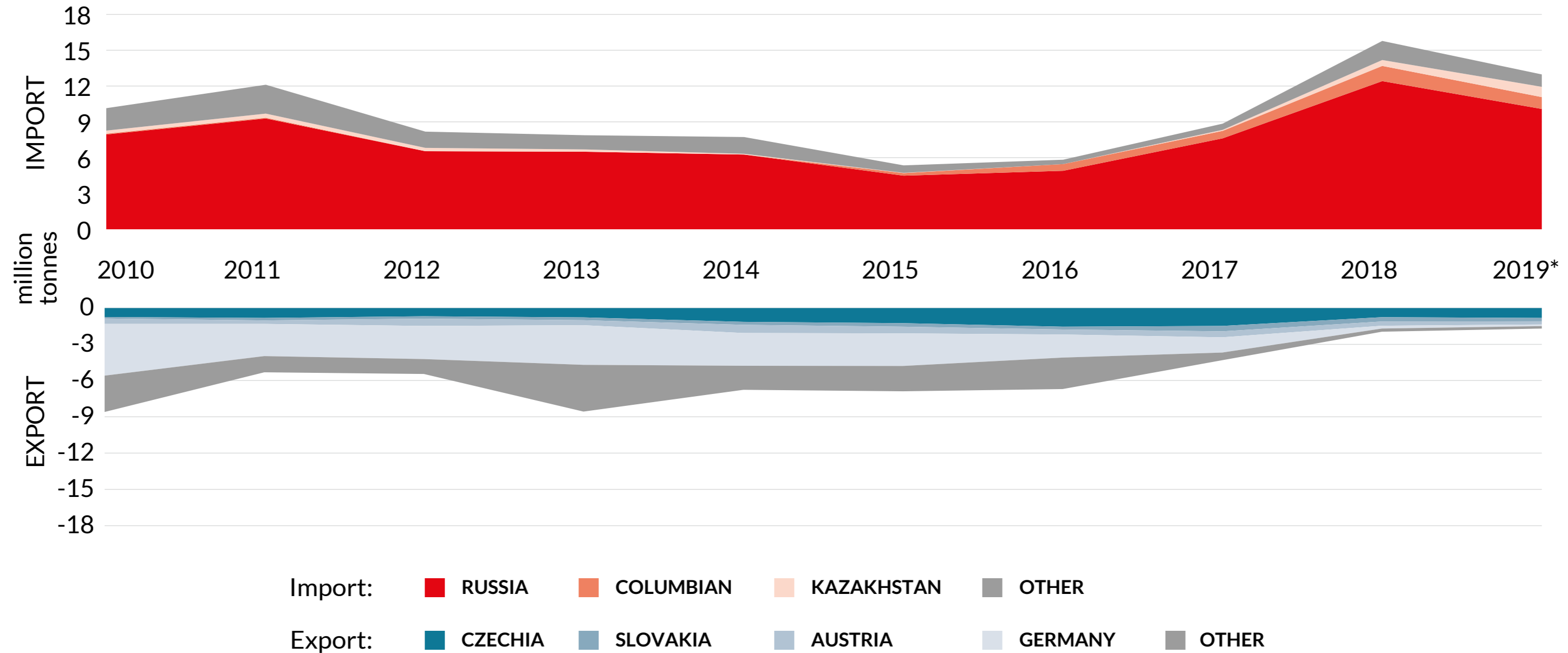
CO₂ emissions from power generation (Q1 2020)



Coal production is steadily decreasing



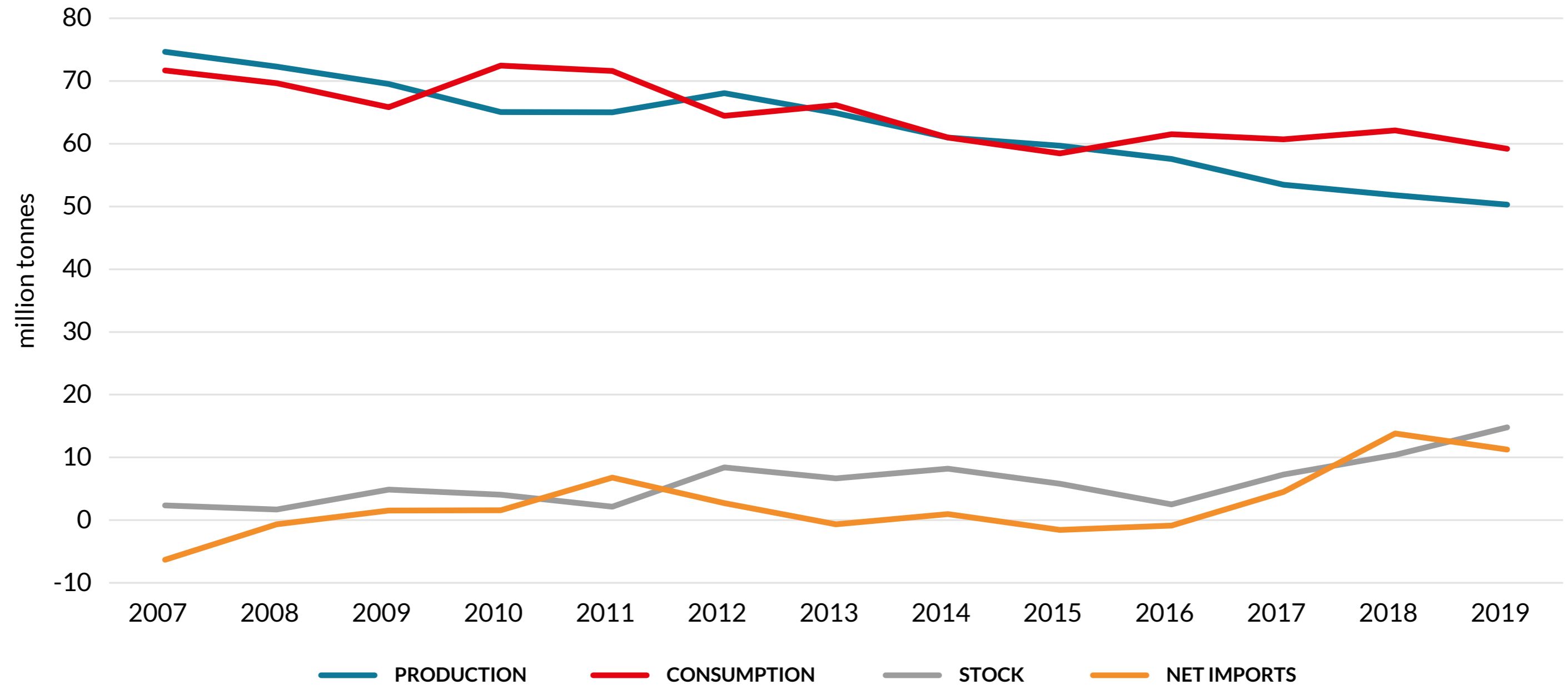
Coal imports have decreased, but it still dominates over domestic production



Source: based on data of Eurostat.

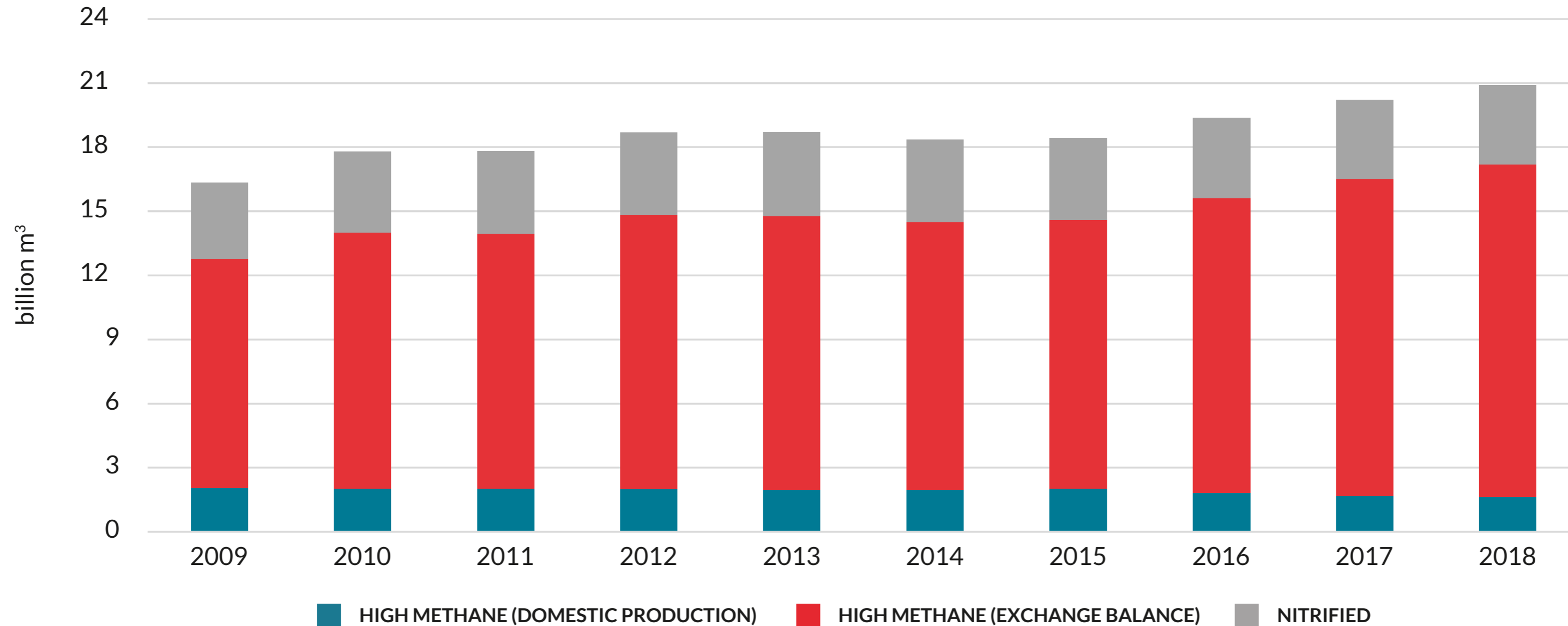
*preliminary data

Coal paradox



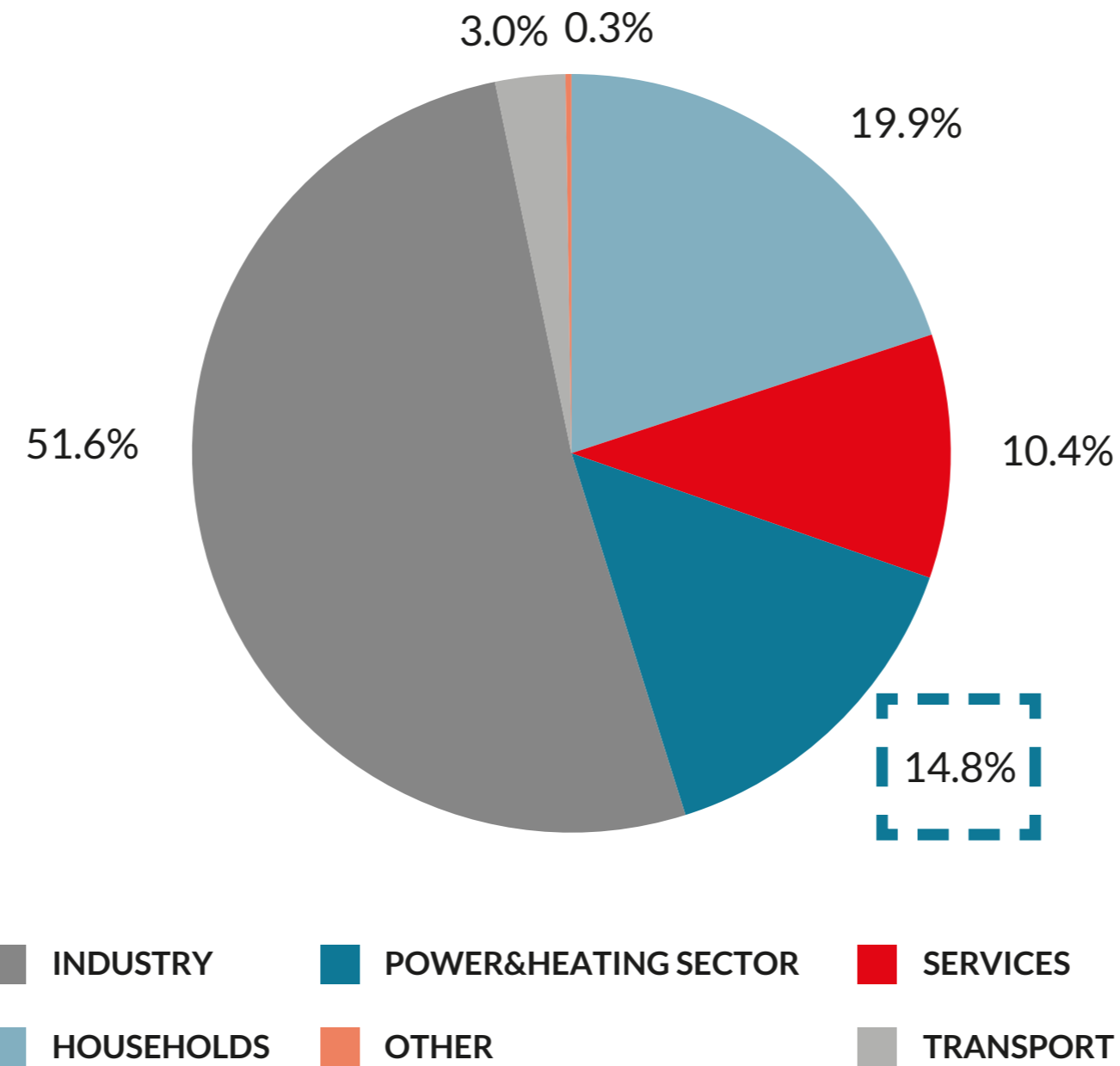
Source: based on data of GUS and Polski Rynek Węgla.

Gas consumption is increasing

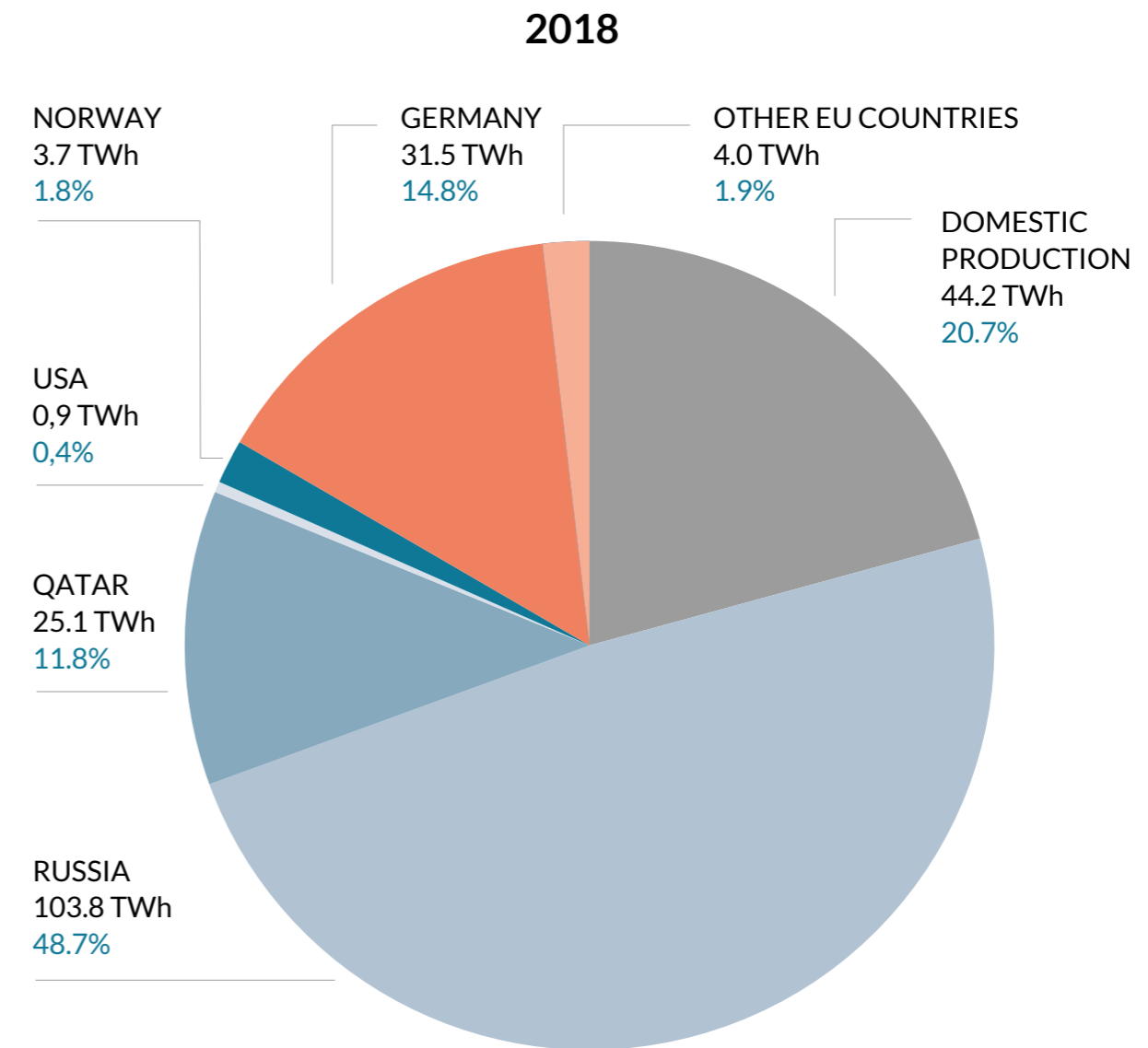
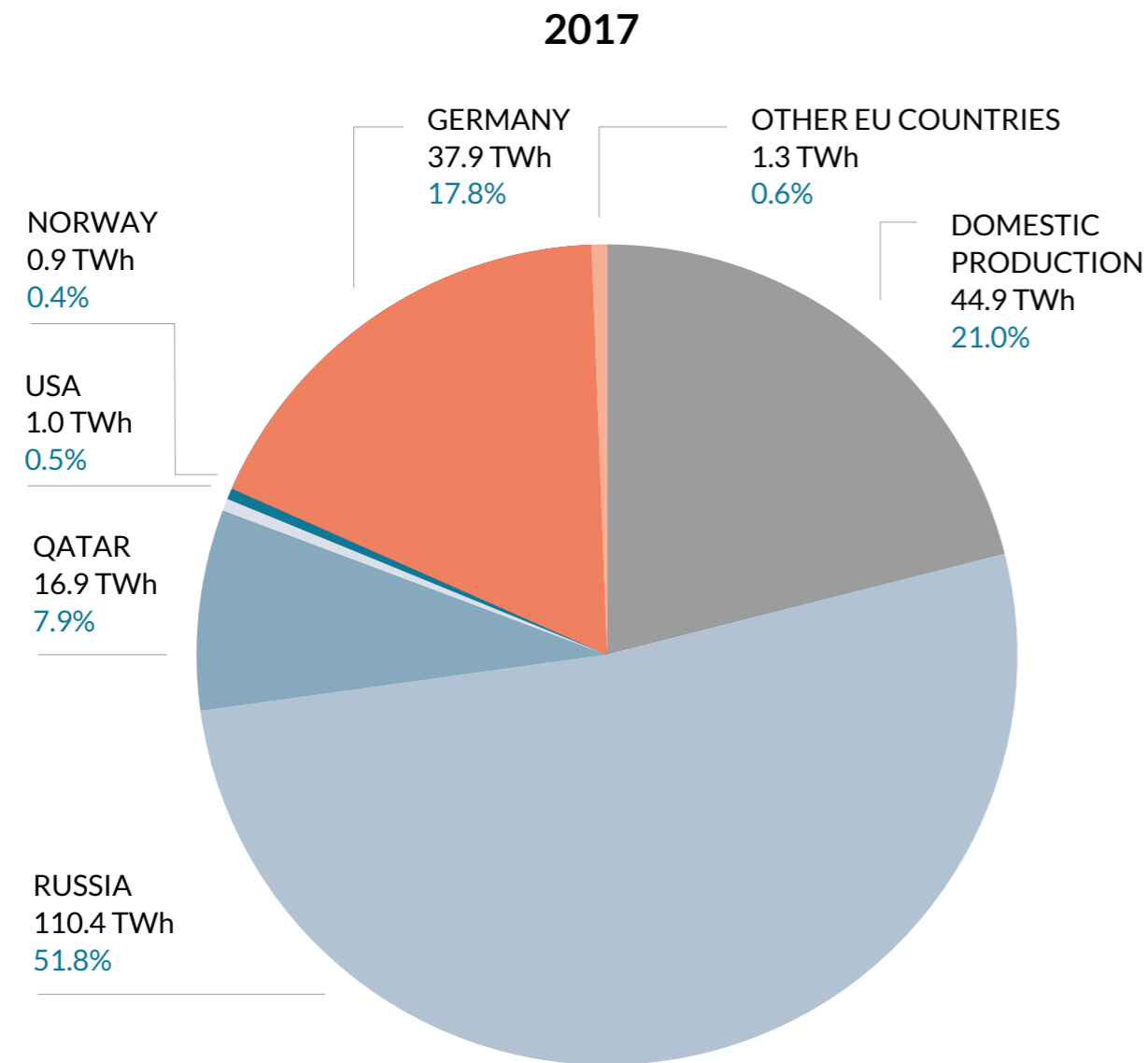


Source: based on data of GUS, URE, and Ministry of Energy.

Gas consumption is increasing (2018)



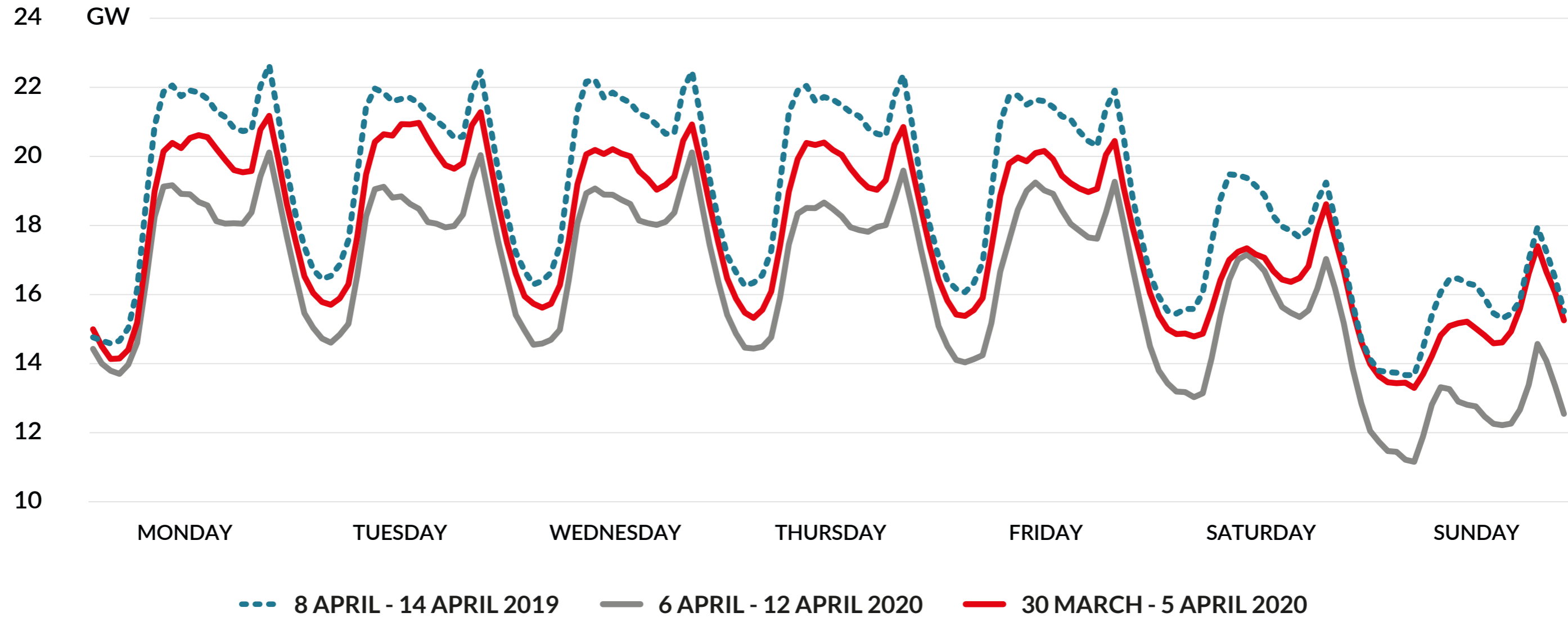
Gas imports from Russia are falling



51.8% – 48.7%

Coronavirus vs energy transition

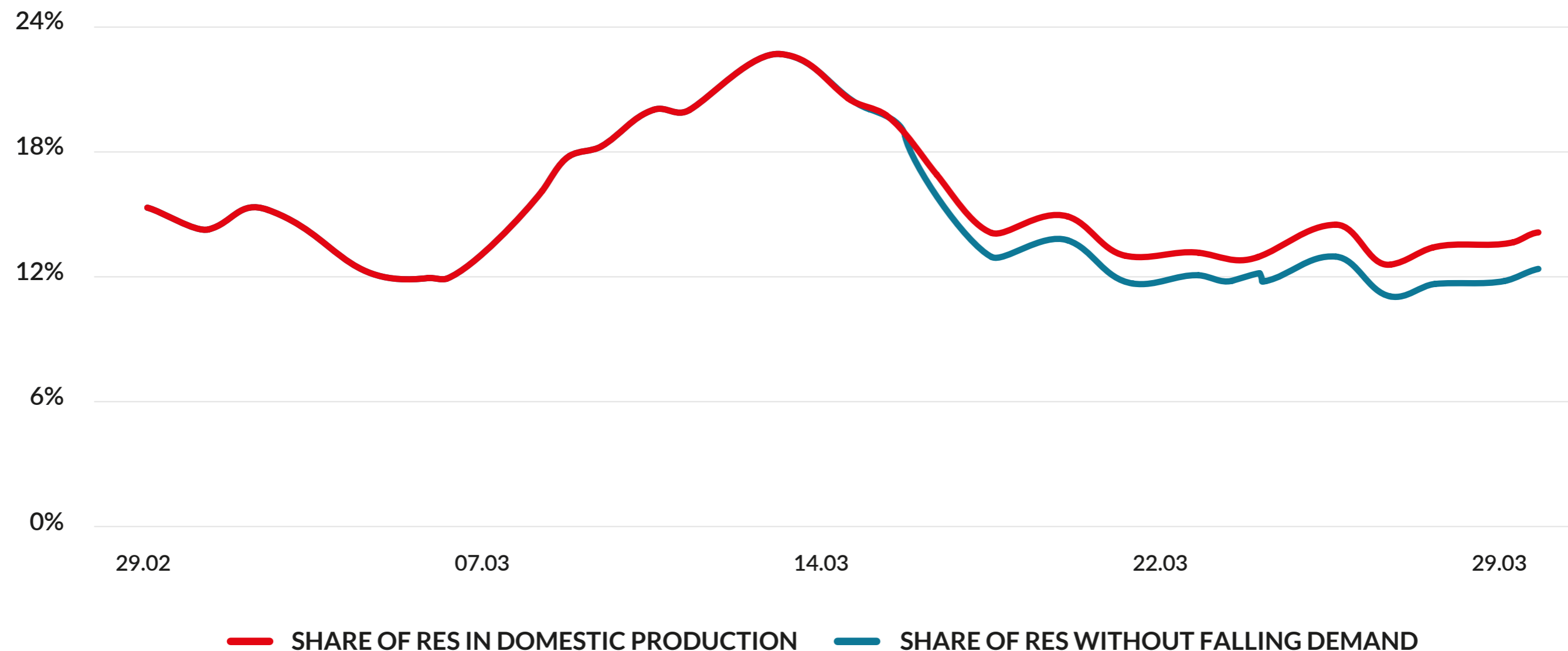
Power demand in Poland is decreasing



Source: PSE (TSO).

Electricity demand in the second week of April **dropped by 13.7%** compared to April 2019 (by 2.5 GW on average).

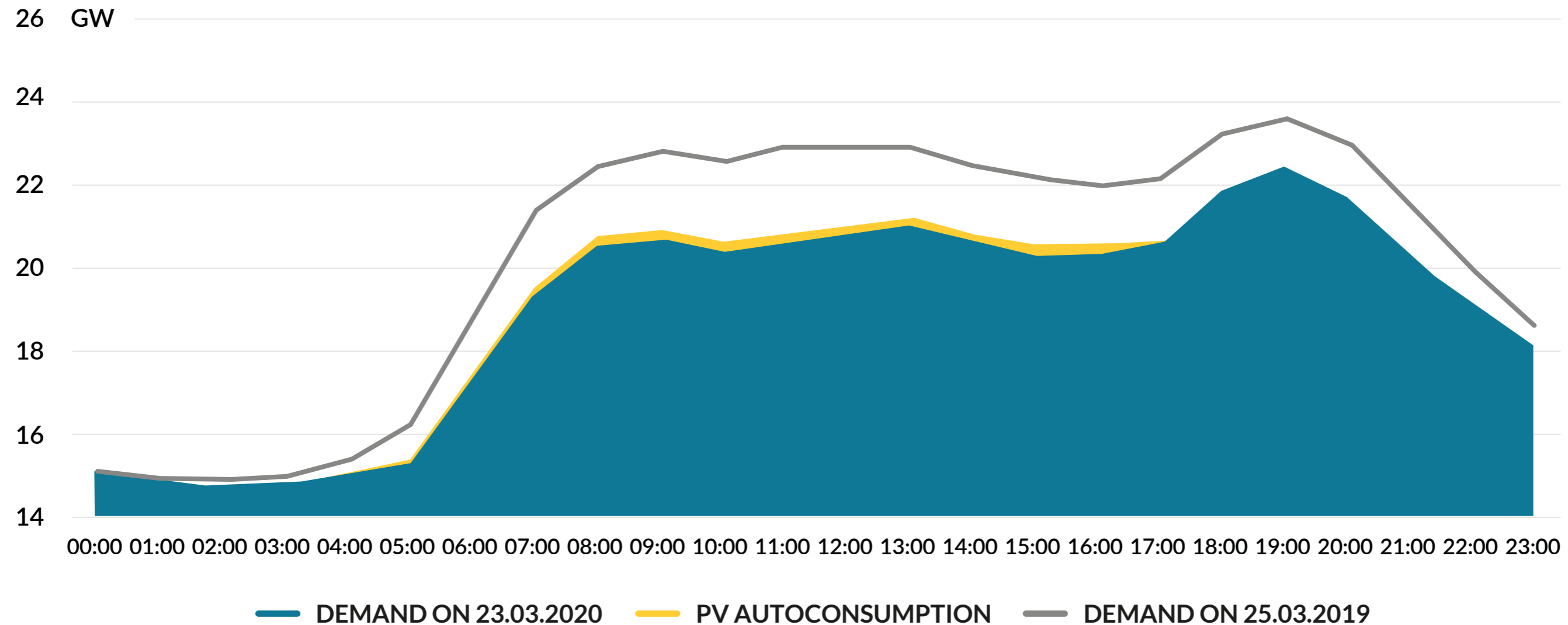
RES share is increasing



Source: own estimates based on TSO.

- The share of RES in electricity generation was **15.4%** in March.
- The share of RES has increased by **0.6 percentage point**.

PV becoming more and more visible



Source: own estimates based on TSO data.

The autoconsumption of energy produced by photovoltaic panels in prosumer installations is responsible for approximately **200 MW** of power demand decrease (out of **2 GW** of total decrease in power demand during the sunny hours).

- Coal down in electricity production by **4.8 p.p.** – currently **73.6%**.
- Record high electricity production from RES - **25 TWh.**
- RES installed capacity **9.5 GW** of which **1.5 GW** in PV.
- Record high (**10.6 TWh**) electricity import to Poland.
- Diversification of gas supplies - share of gas from Russia **48.7%** compared to **51,8%** year ago.
- **Coal paradox:** lower domestic extraction, coal imports, high demand, growing stockpiles.

Coronavirus effects

- **13.7%** - the level of decrease in power demand in second week of April 2020 vs April 2019 (2.5 GW).
- Share of RES up **15.4% 0.6 p.p.**
- **23%** - decrease of the wholesale prices.
- **8.3%** - drop in the CO₂ emissions from power generation (Q1 2020).

THANK YOU FOR YOUR ATTENTION



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President
Forum Energii

COOPERATION



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23 kwietnia 2020, czwartek
godz. 9.30

**EBI dla samorządów.
Dobre praktyki i zasady
pozyskiwania funduszy**



30 kwietnia 2020, czwartek,
godz. 16:00

Rynek mocy i co dalej?