



Poland's energy transition and Russian fossil fuels phaseout

Warsaw, May 19, 2022

Main conclusions

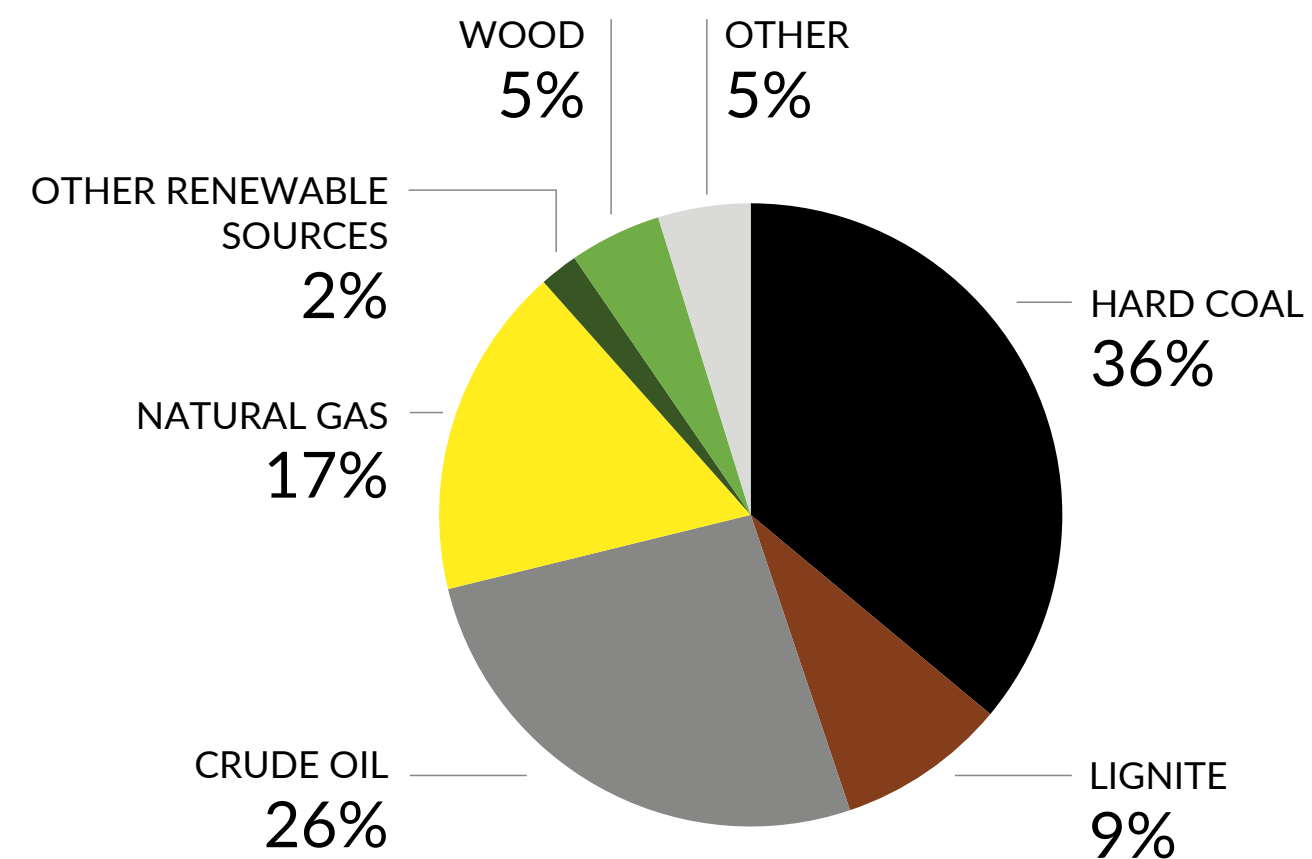
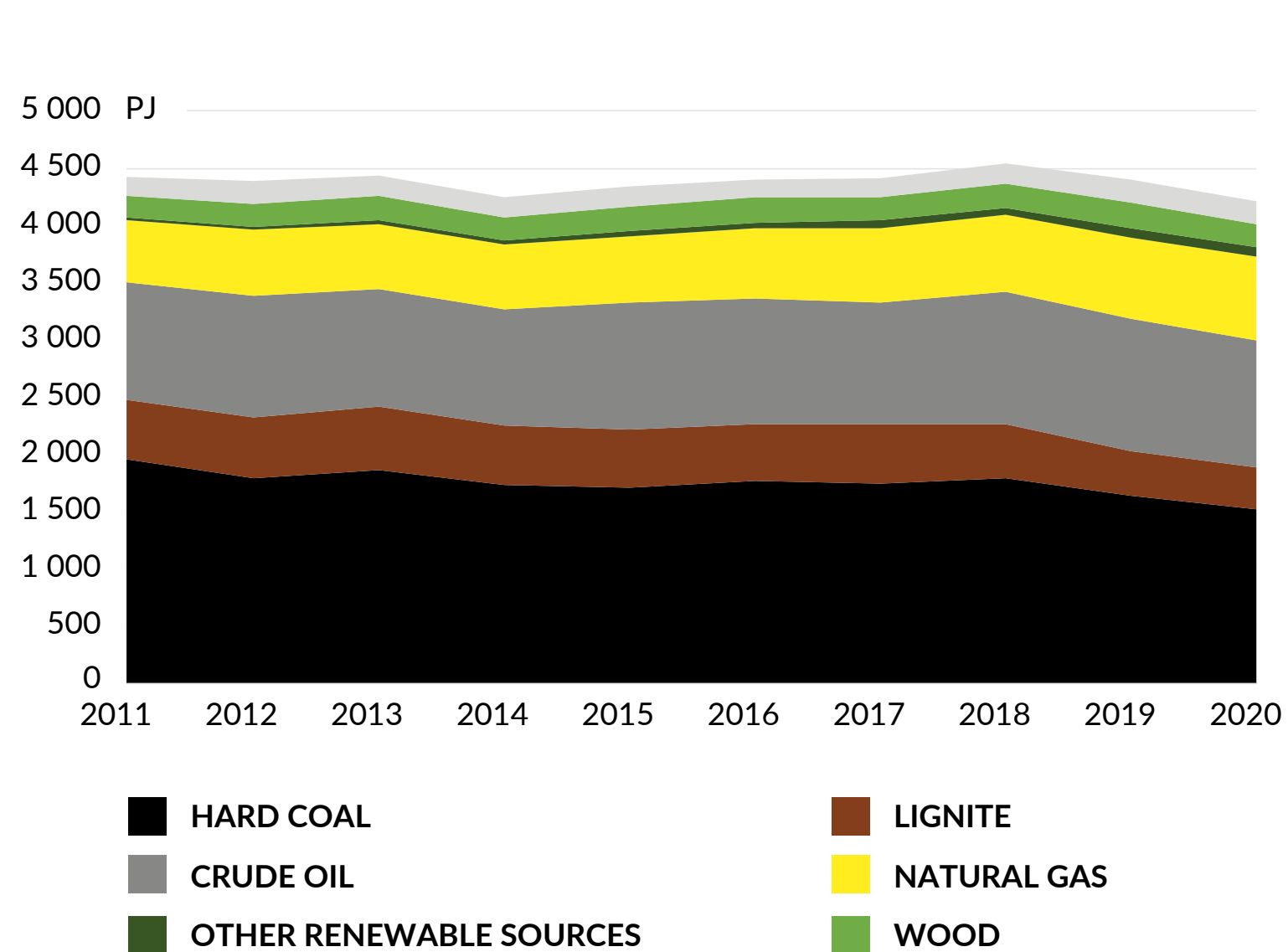
- Share of coal in electricity generation increased to 72%.
- Share of renewables fell to 17% despite record production from these sources.
- Record in electricity production (179.4 TWh, +14% y/y) and consumption (180.3 TWh, +5.4% y/y).
- Capacity increased by 3.7 GW.
- For the first time in years, wholesale electricity prices in Poland were among the lowest in this part of Europe.
- Russia has been the main supplier of fossil fuels to Poland—its share in total imports in 2020 was 65% in oil, 55% in natural gas and 75% in coal.

Method

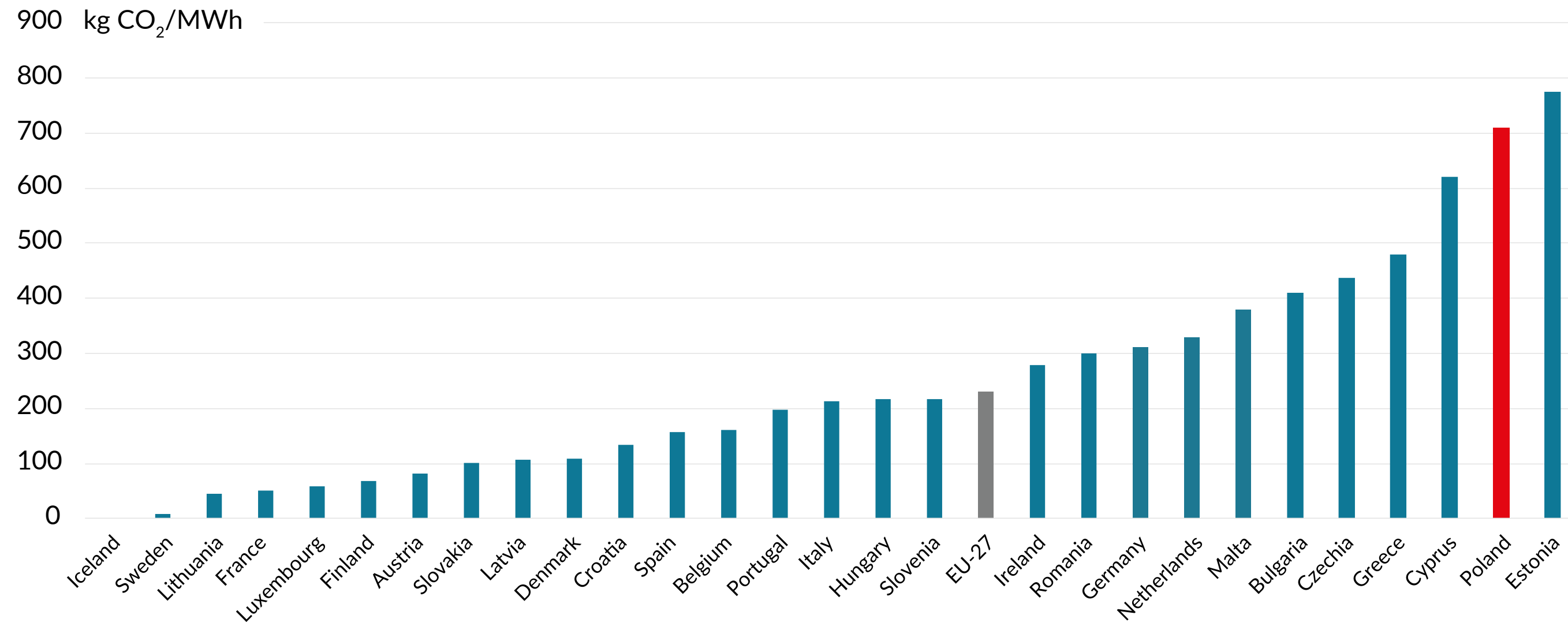
- We use the official, verified, most current data.
- We mostly rely on information from 2021.
- In some cases, we refer to data from 2020.



Structure of primary energy consumption in 2020

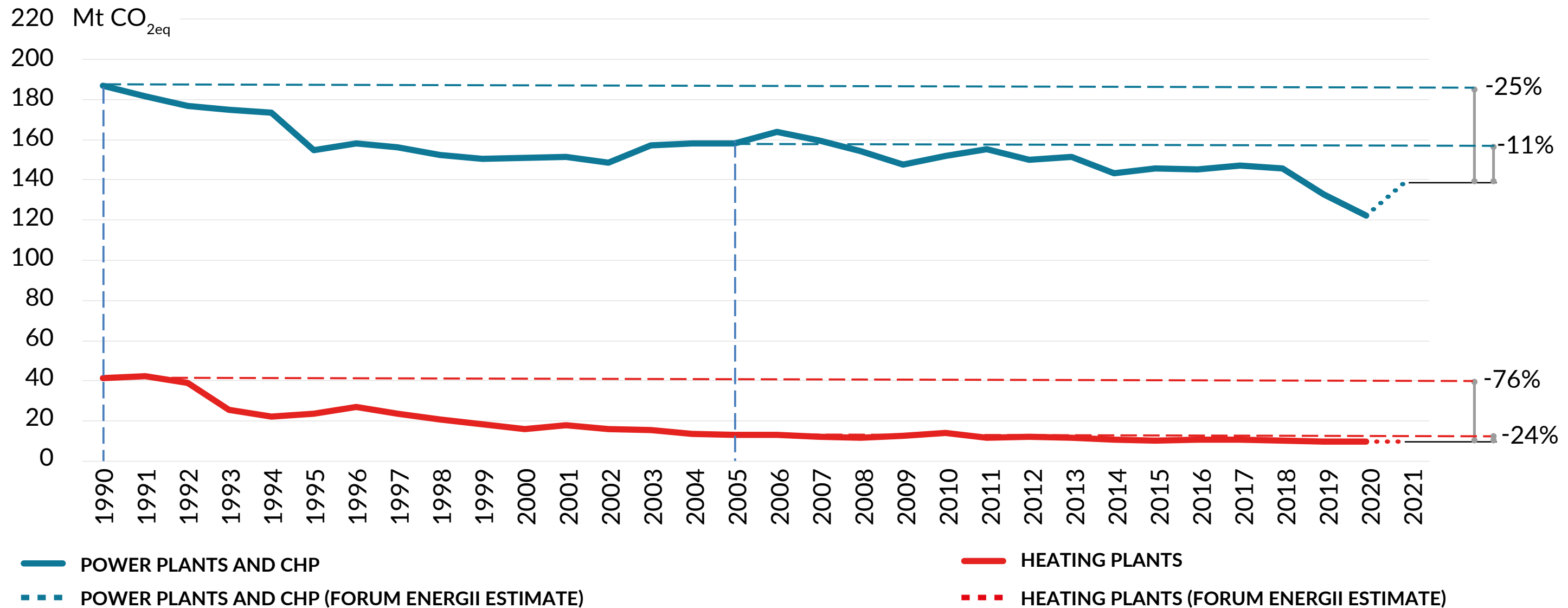


Carbon intensity of electricity generation



Source: Based on EEA data, 2022.

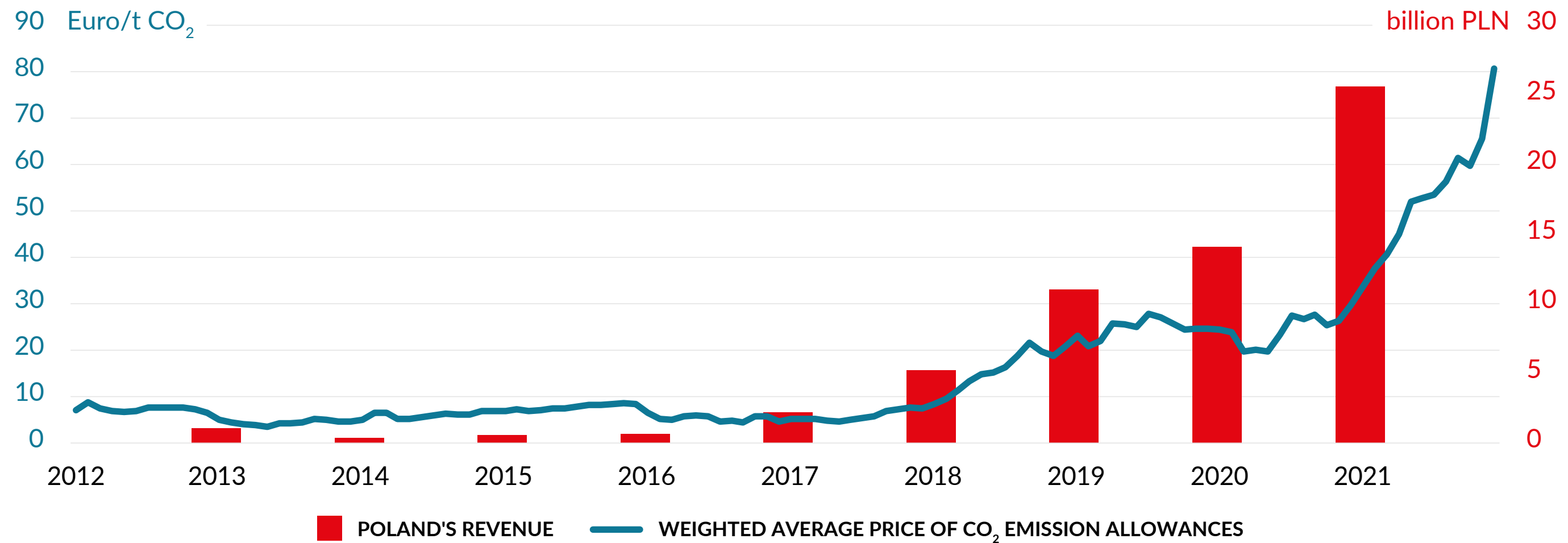
Changes in greenhouse gas emissions from electricity and heat production



Source: Based on EEA, KOBiZE, ARE and GUS data, 2022.

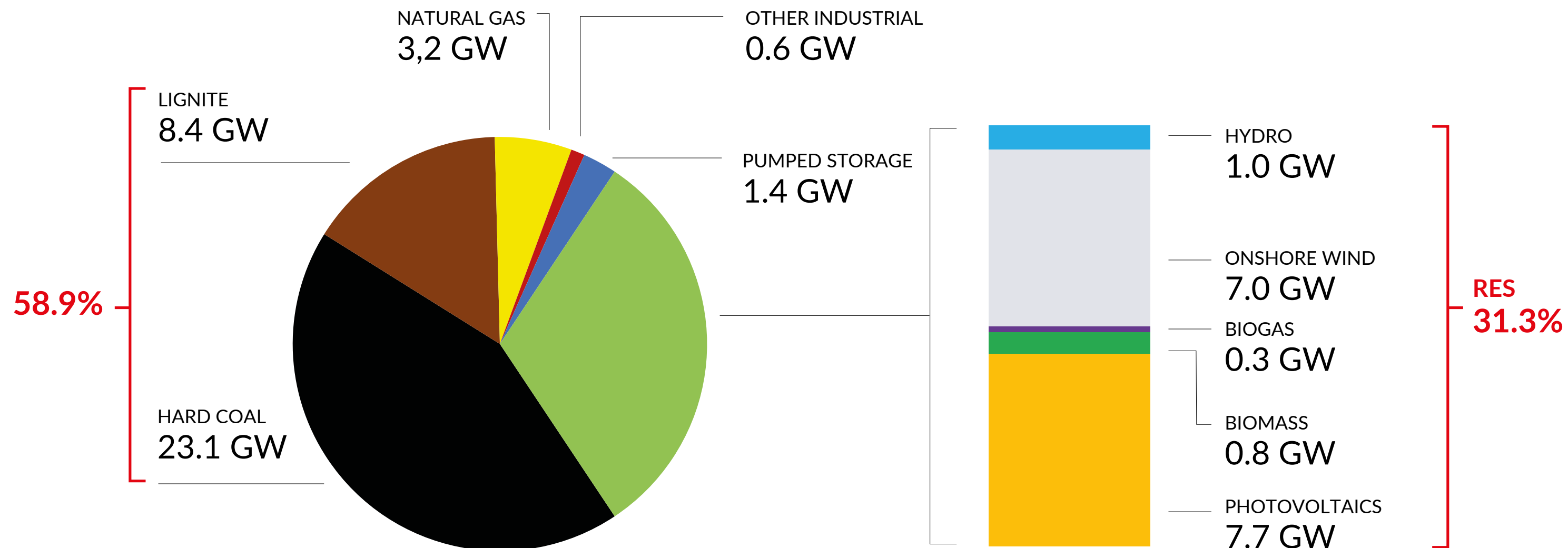
Greenhouse gases: CO₂, methane, nitrous oxid.

CO₂ emission allowance prices; Poland's income from their sale

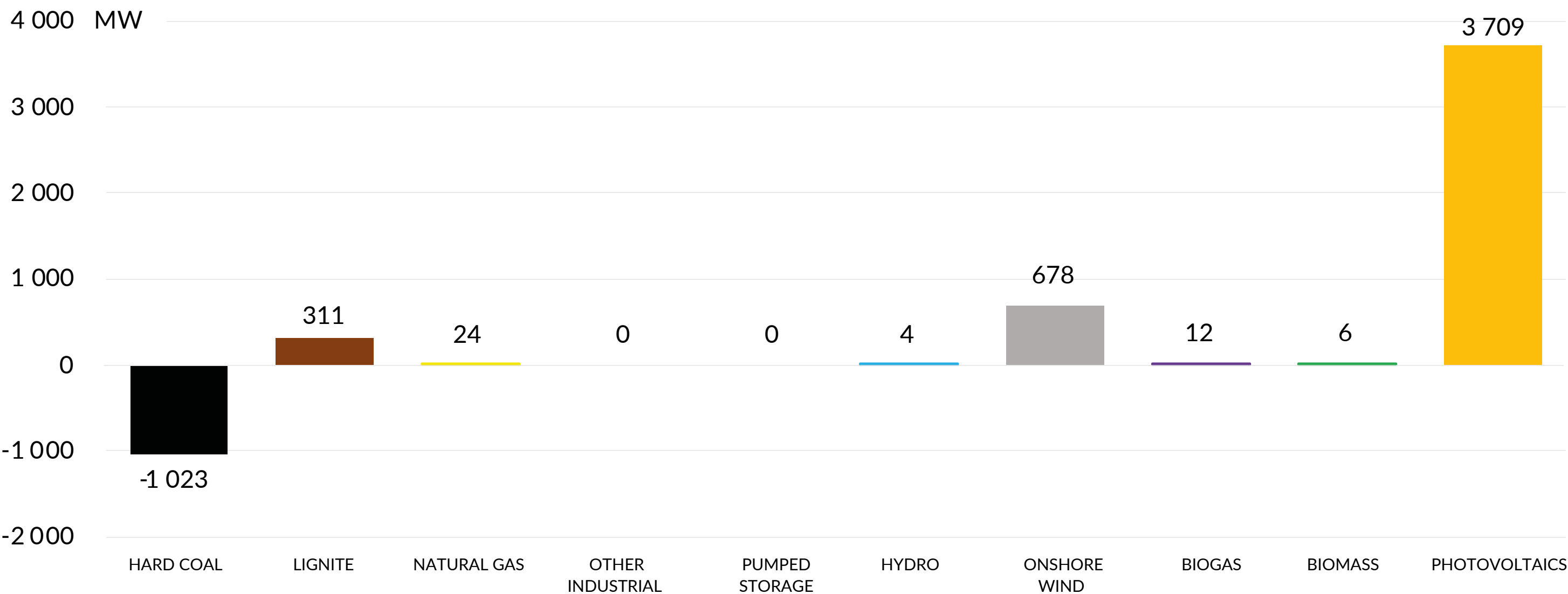


Source: Based on EEX data, 2022.

Generation capacity in 2021

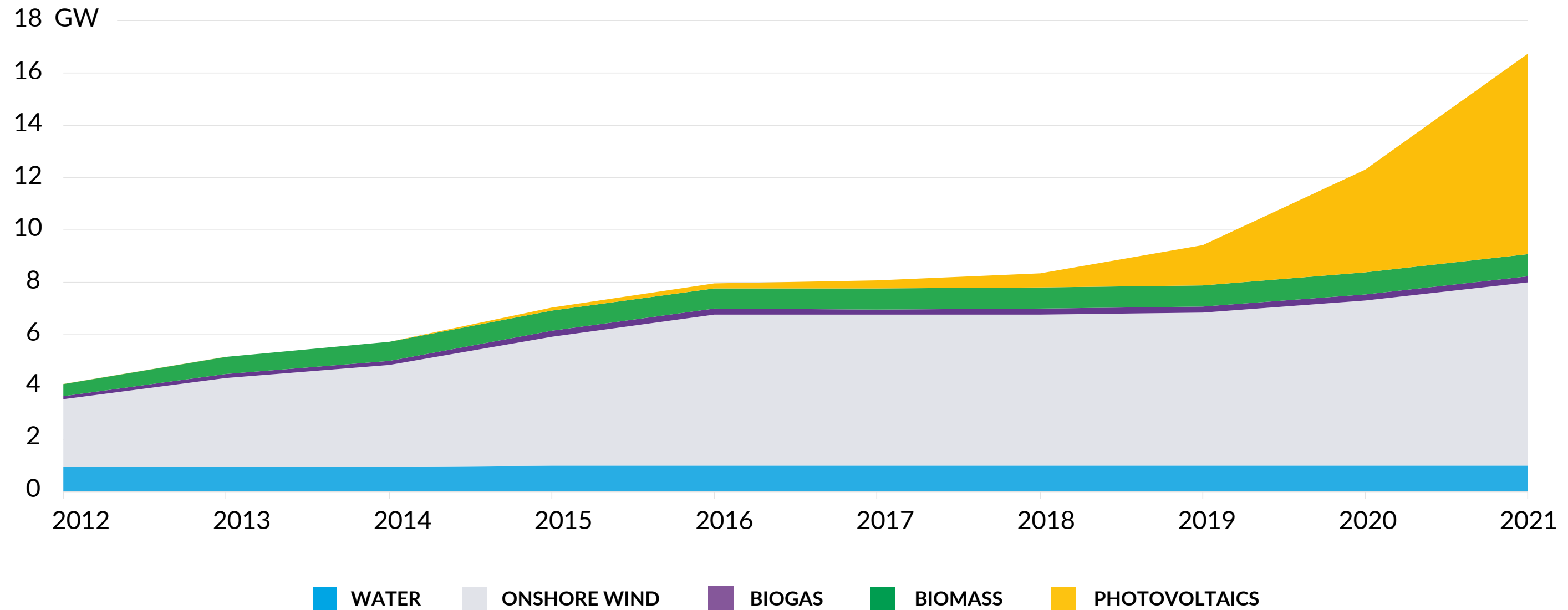


Changes in achievable capacity in 2021 as compared to 2020



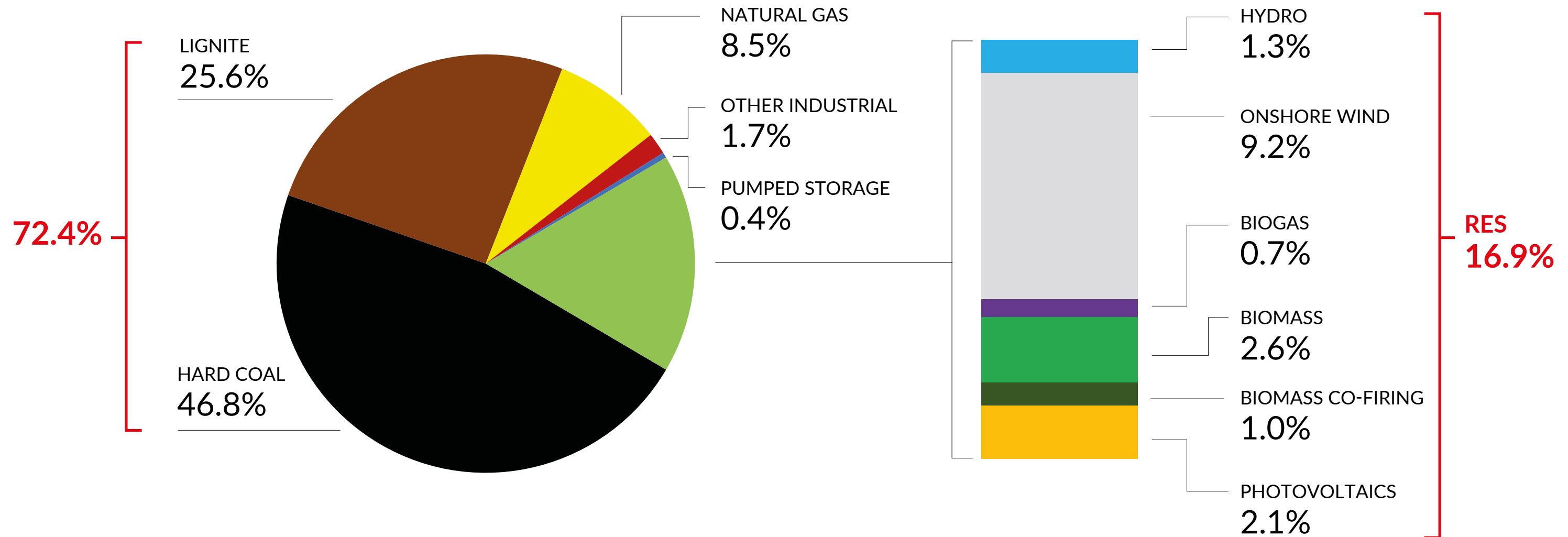
Source: Based on ARE data, 2022.

Changes in achievable renewable capacity over the last decade

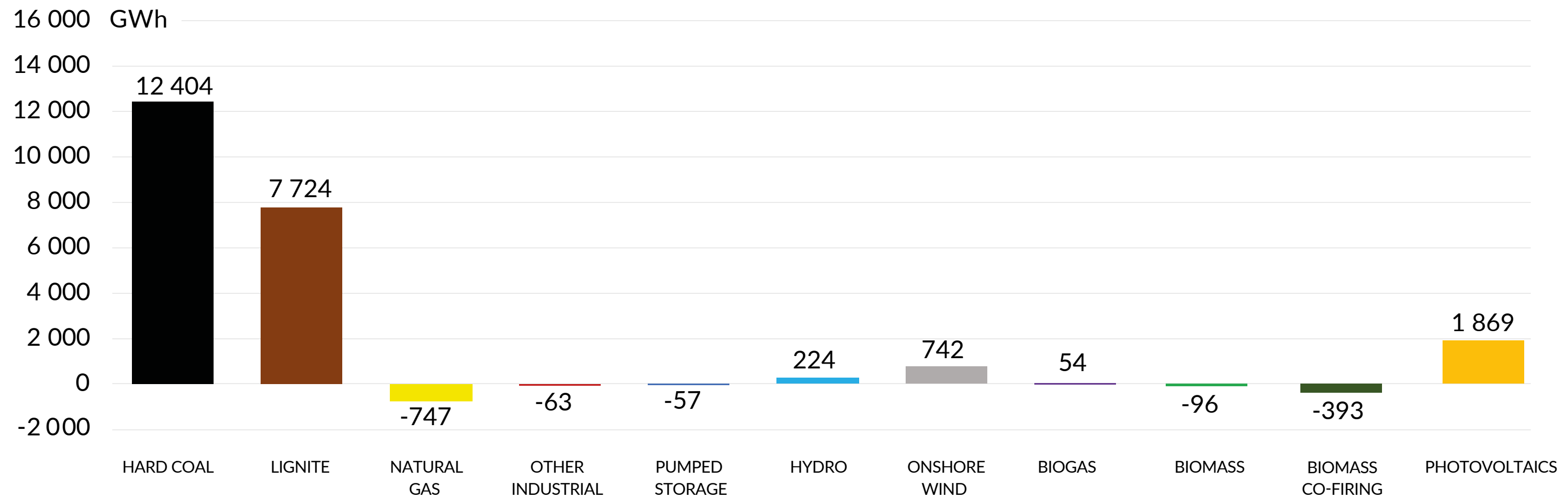


Source: Based on ARE data, 2022.

Electricity production in 2021

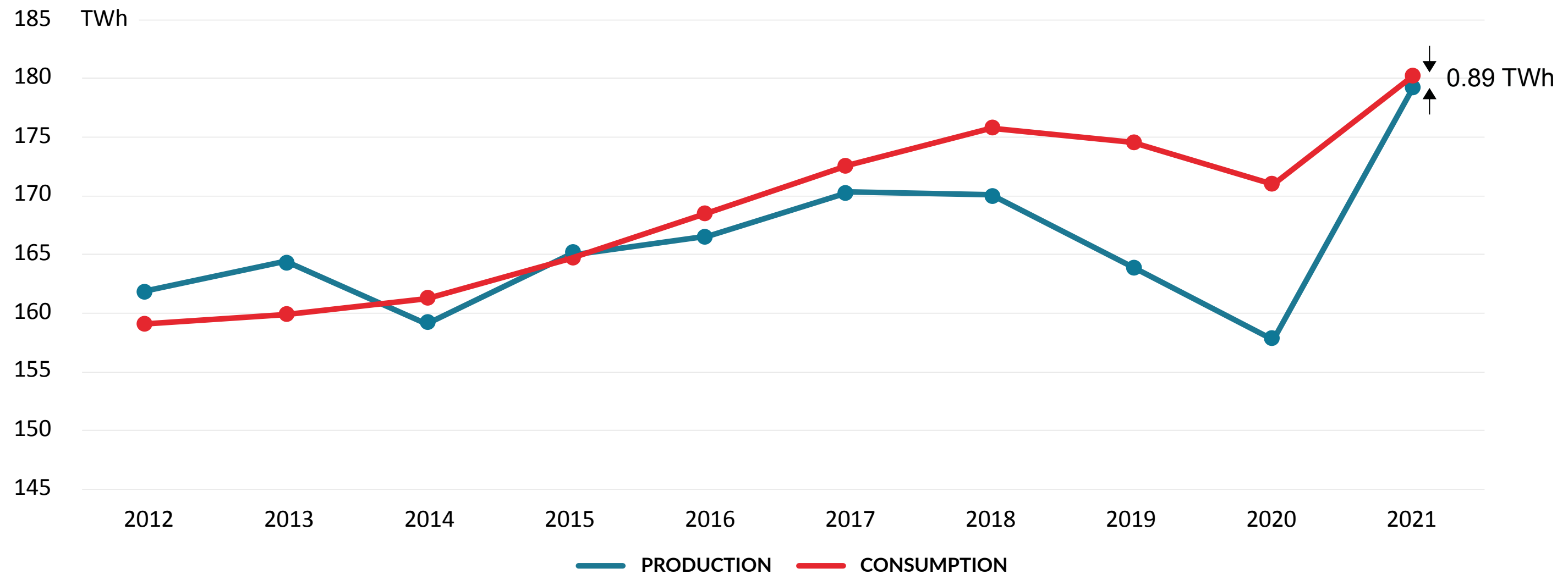


Changes in electricity generation in 2021 as compared to 2020

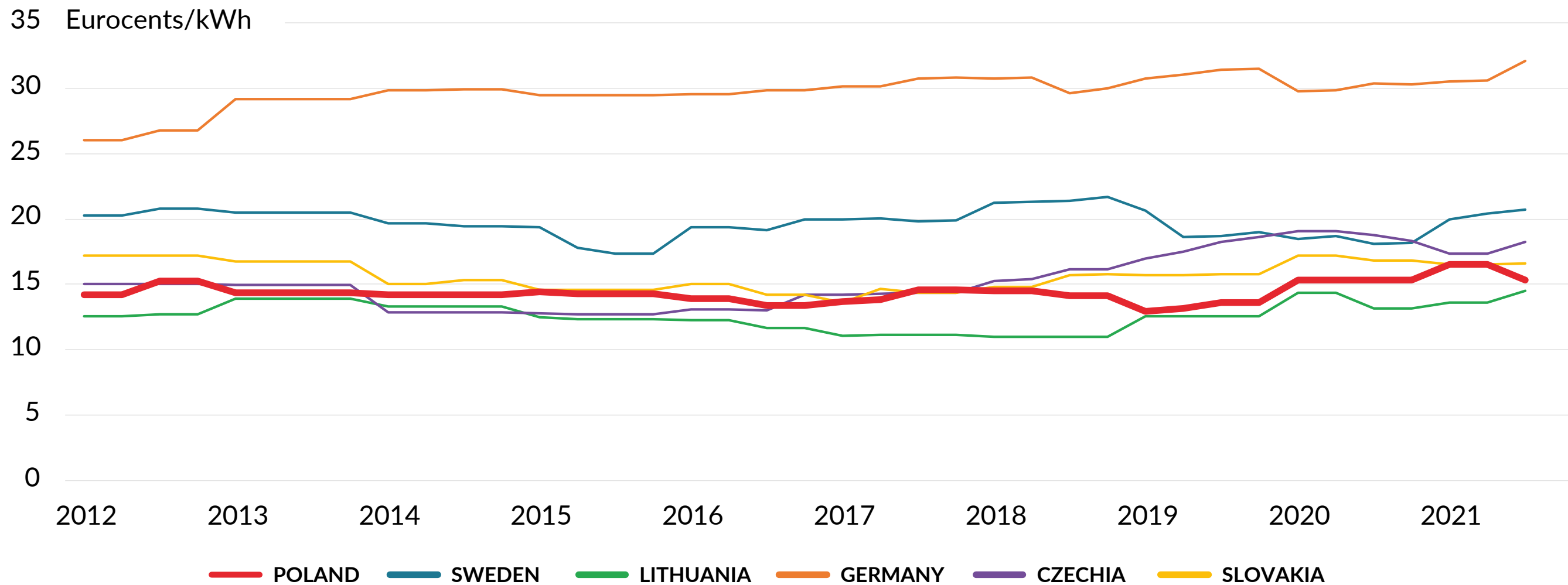


Source: Based on ARE data, 2022.

Balance of domestic electricity production and consumption

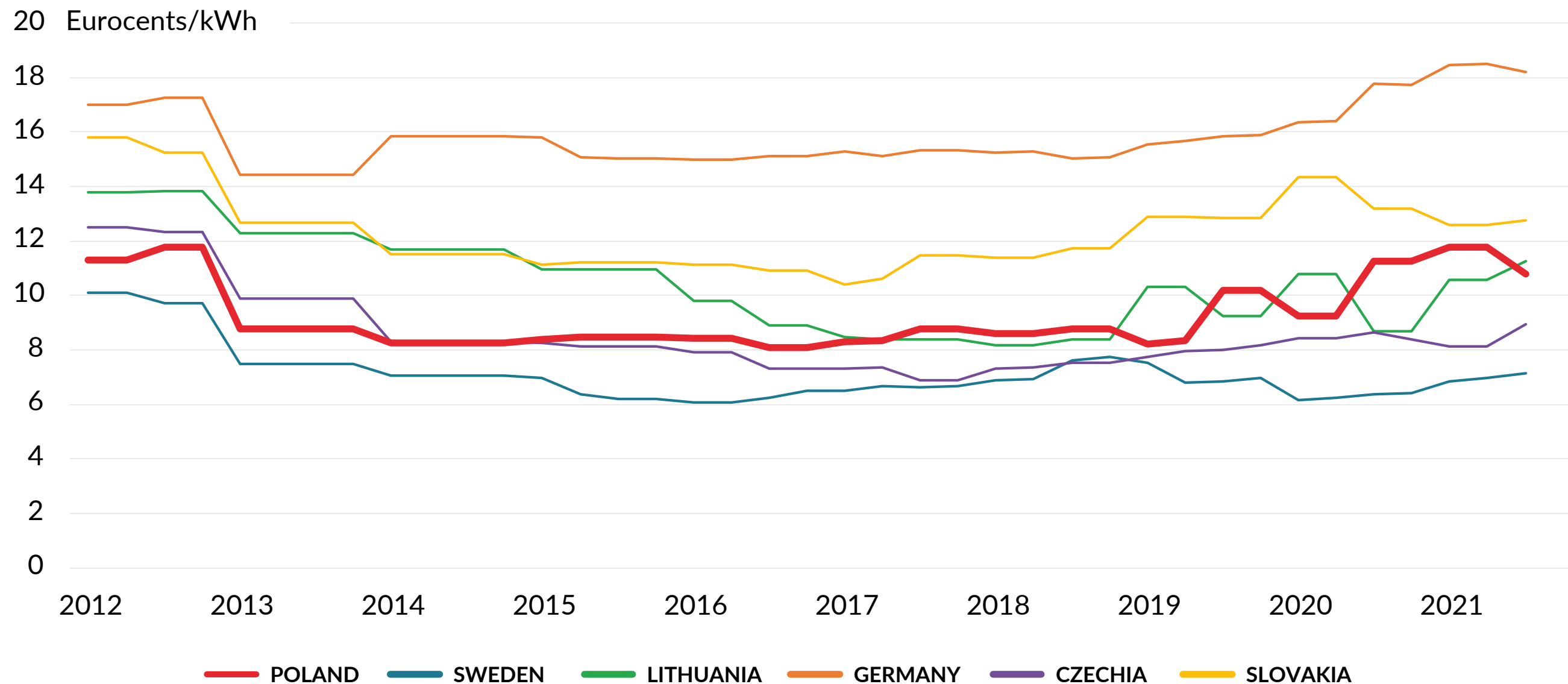


Comparison of electricity prices in neighbouring markets – prices for households



Source: Based on European Commission (Quarterly Report on Energy Markets) data, 2022.

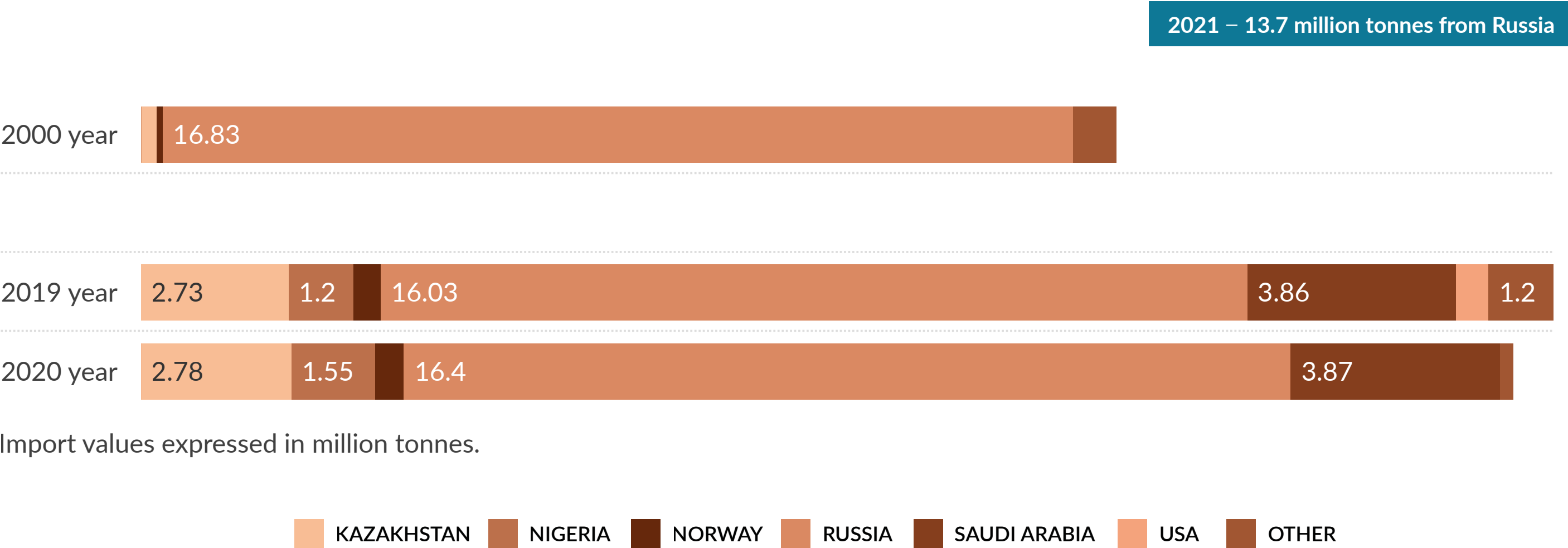
Comparison of electricity prices in neighbouring markets - industrial prices



Source: Based on European Commission (Quarterly Report on Energy Markets) data, 2022.

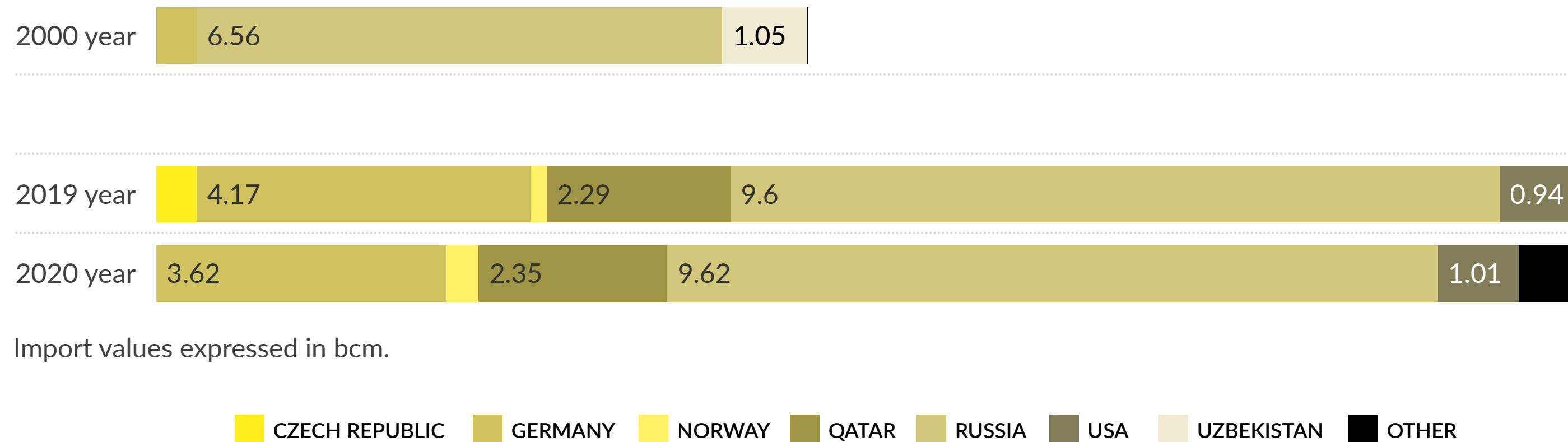
Russian fossil fuels in the Polish economy

Directions of crude oil imports to Poland (2020)



Source: Based on data of: EUROSTAT.

Directions of natural gas imports to Poland (2020)



Directions of coal imports to Poland (2020)

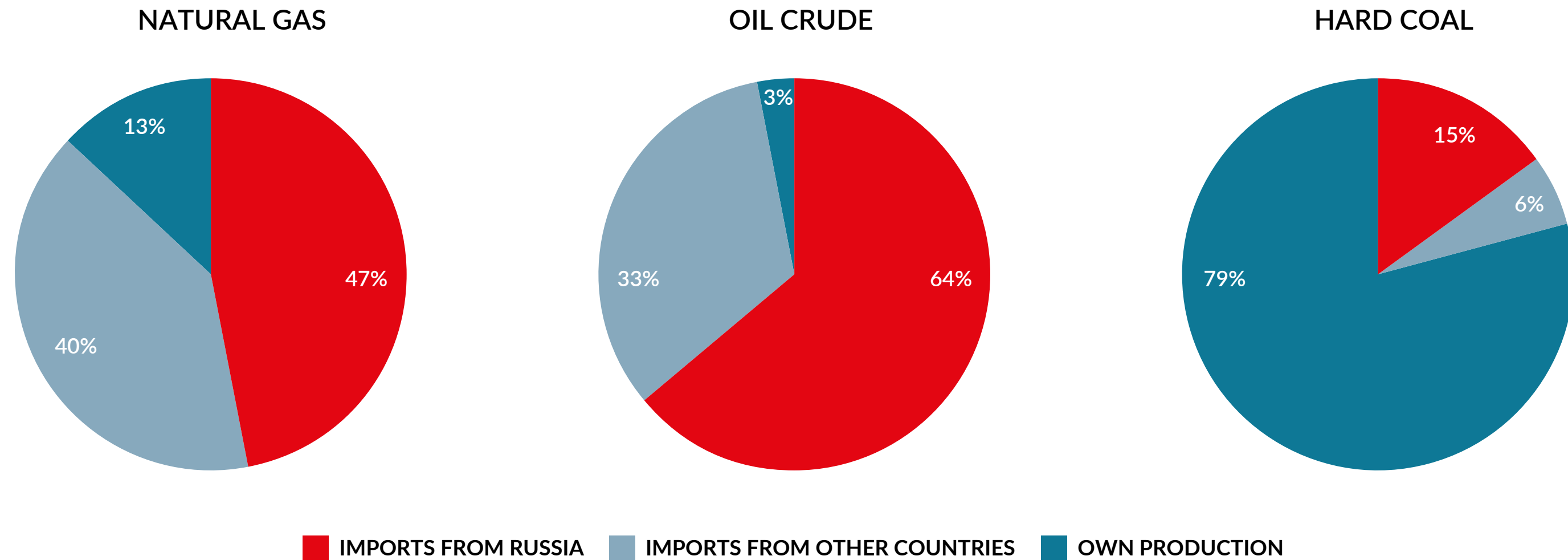
2021 – 8.2 million tonnes from Russia



Import values expressed in million tonnes.

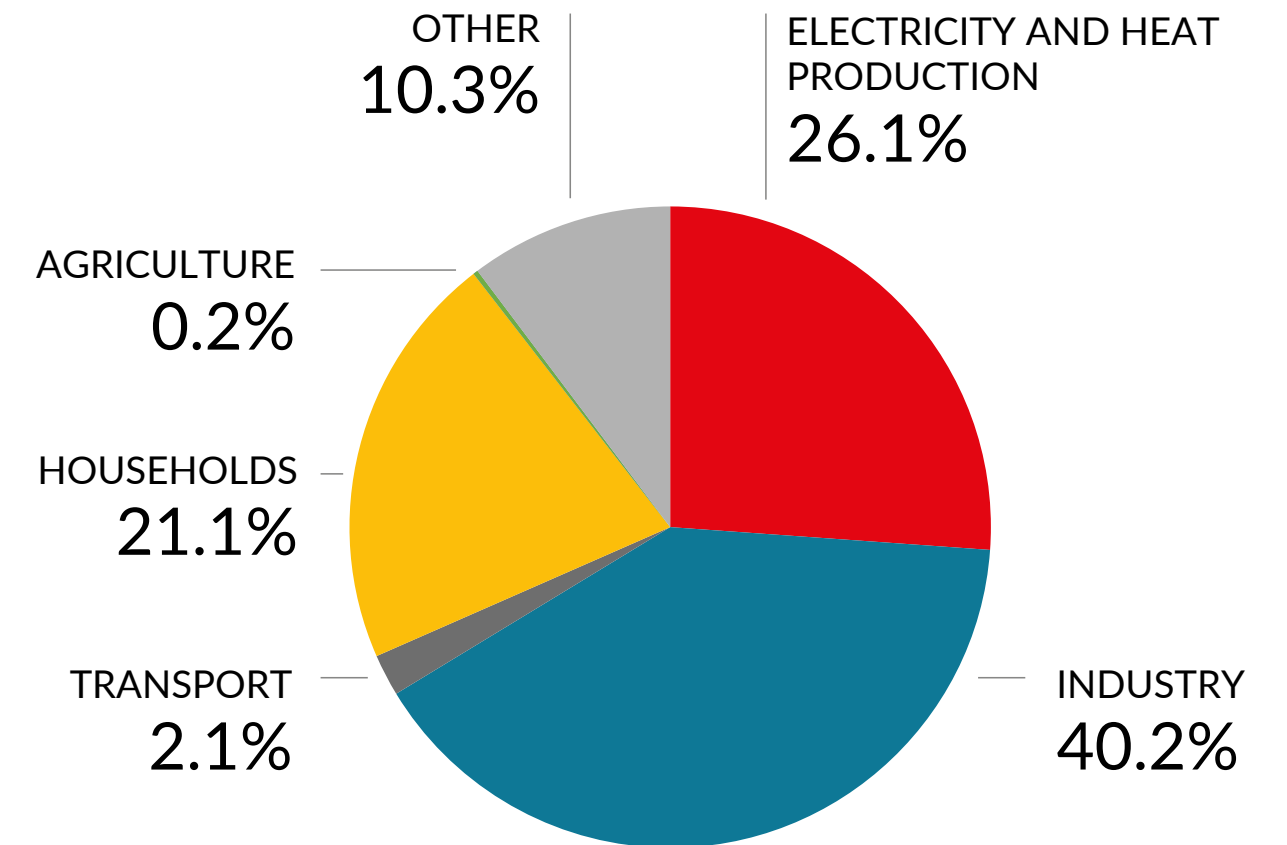
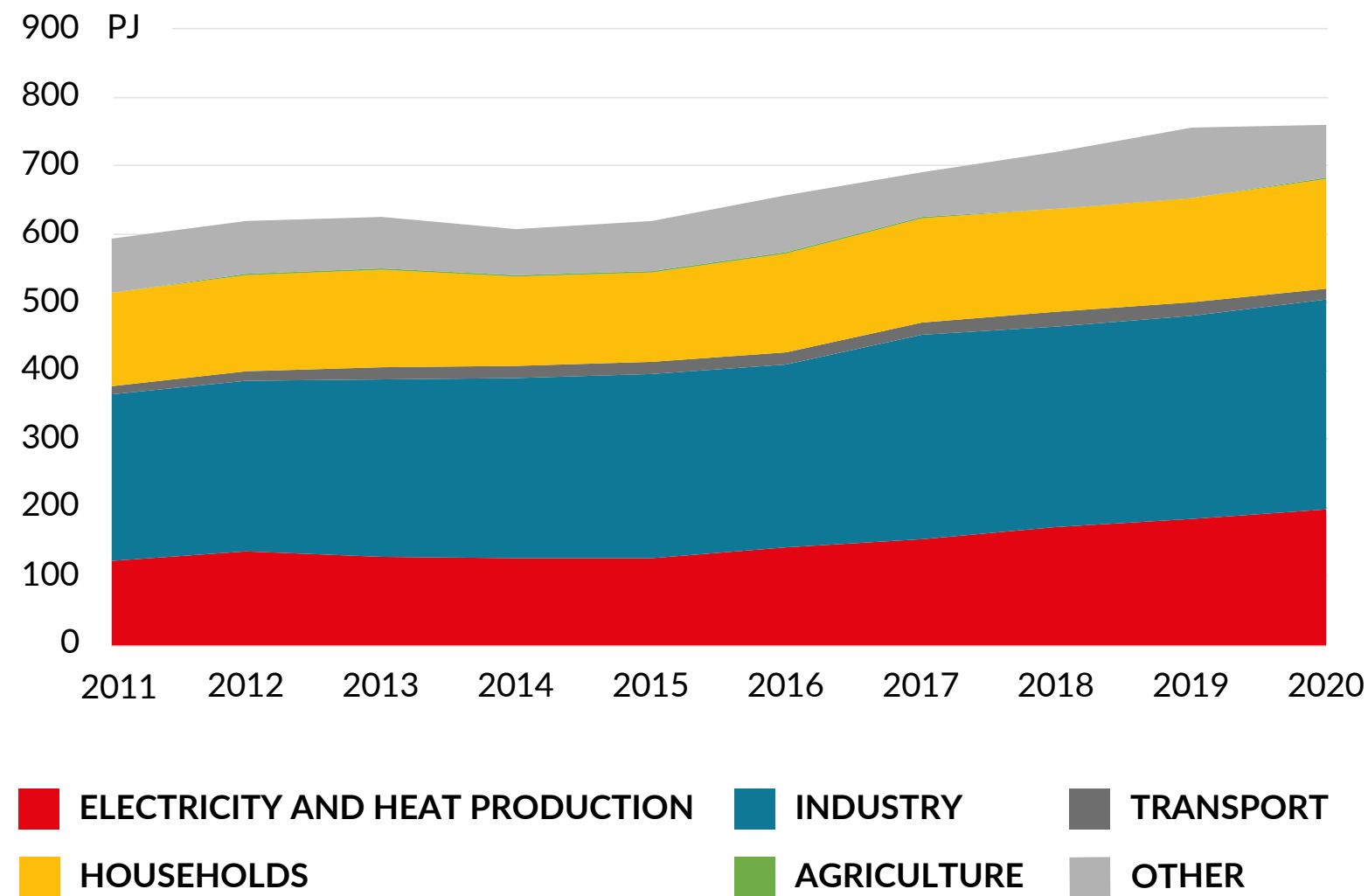
AUSTRALIA COLOMBIA CZECH REPUBLIC KAZAKHSTAN MOZAMBIQUE RUSSIA SOUTH AFRICA USA OTHERS

Share of imports of energy resources from Russia (2020)



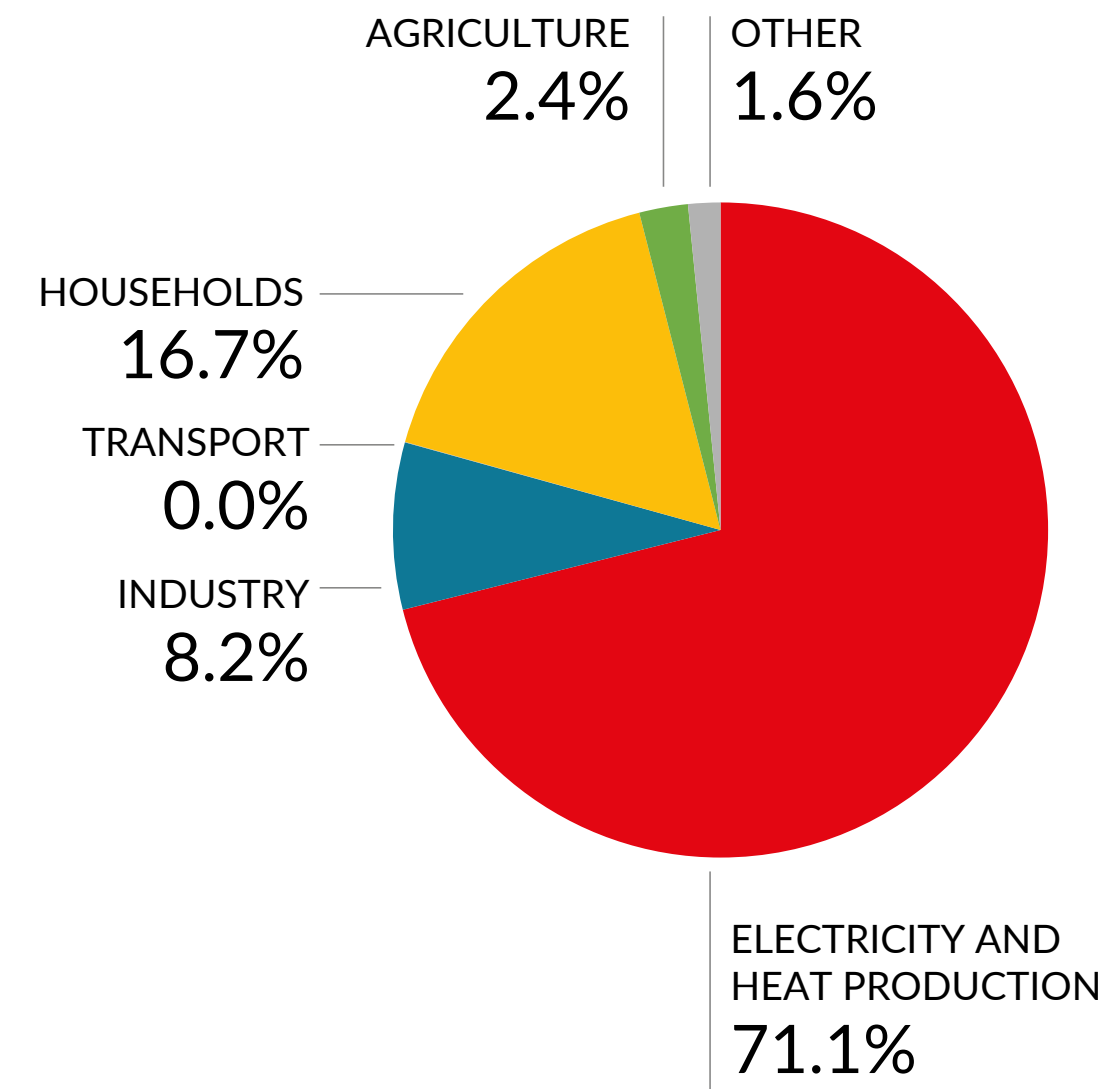
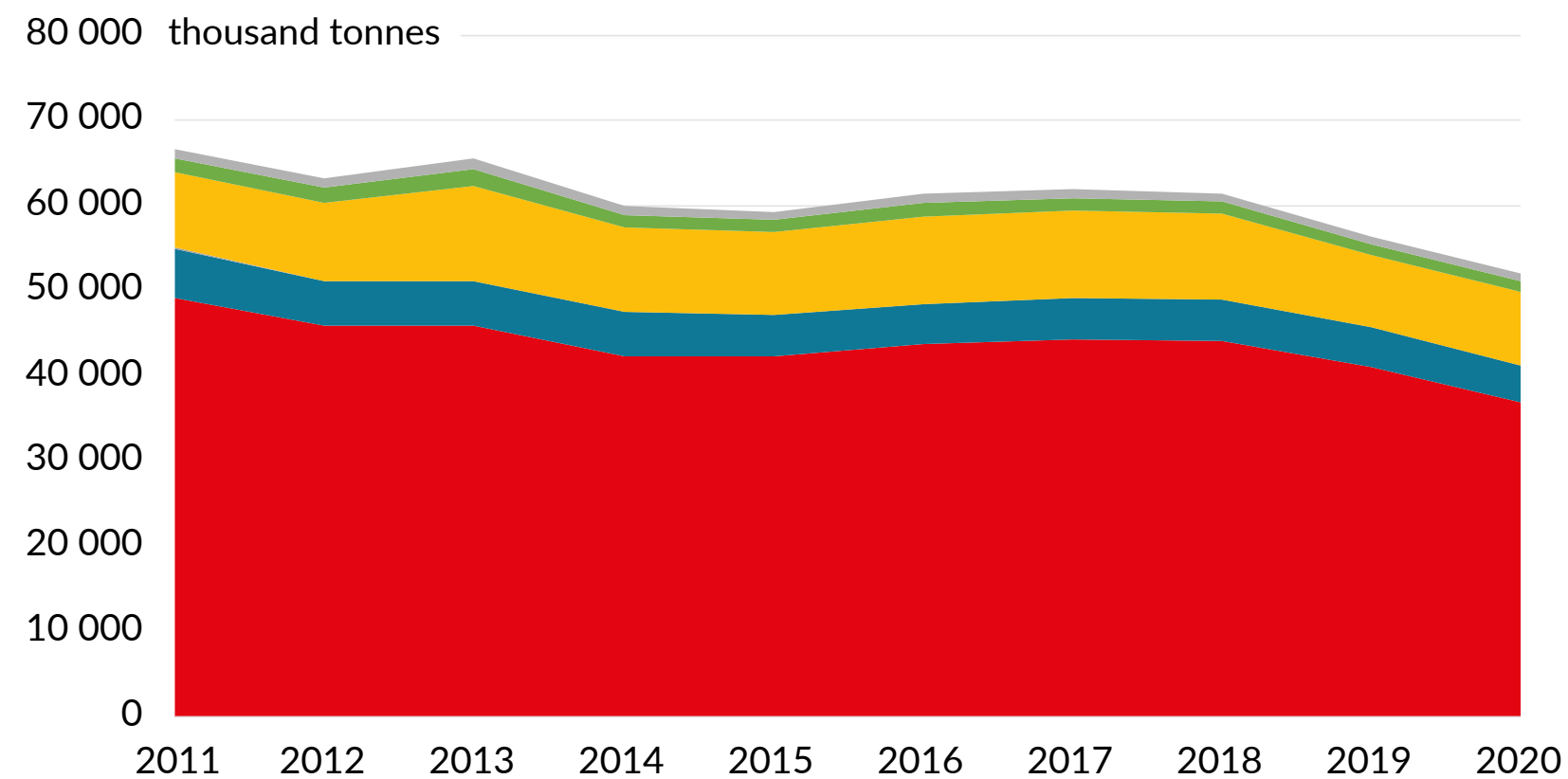
Structure of natural gas consumption

2020



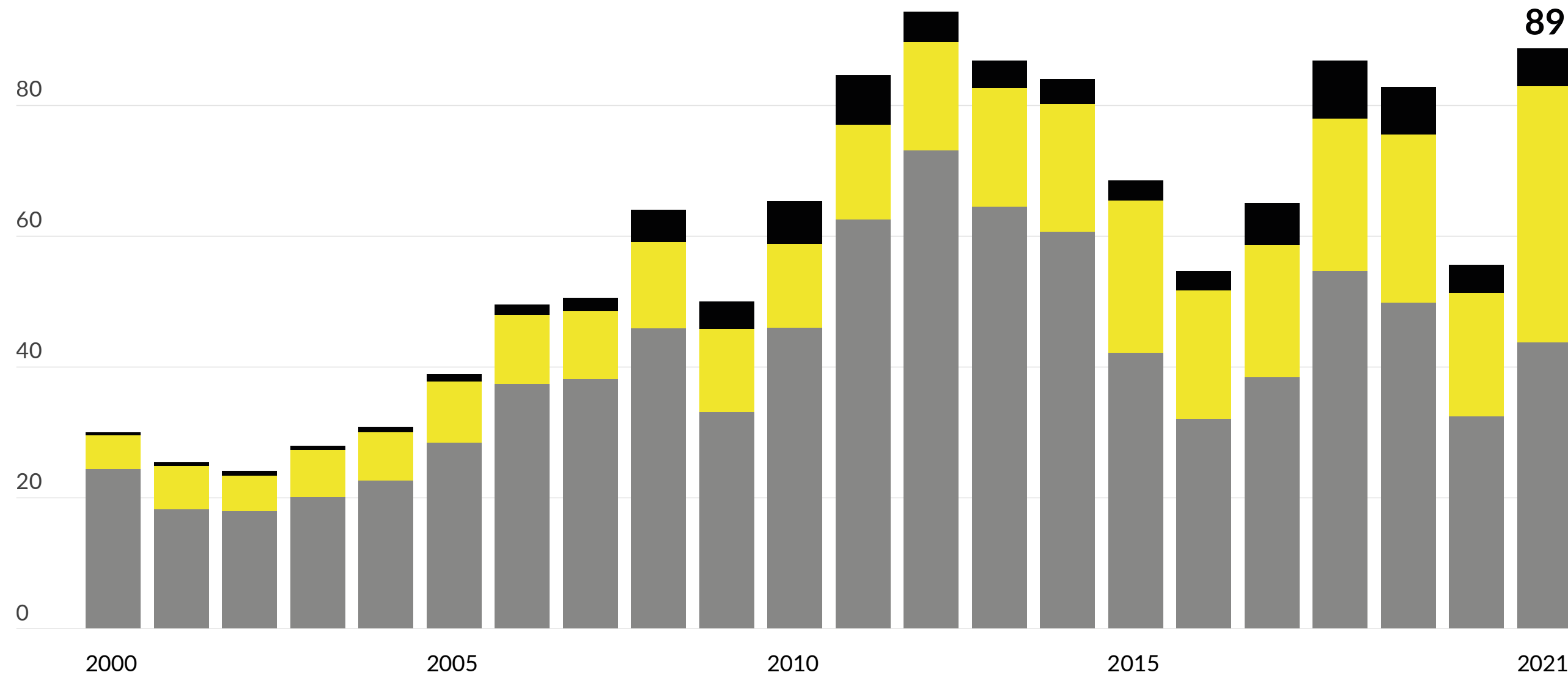
Structure of steam coal consumption

2020



Costs of fossil fuels imports to Poland between 2000 and 2021

100 BILLION PLN



Costs are expressed in PLN billion indexed to inflation.

■ OIL ■ GAS ■ COAL

THANK YOU FOR YOUR ATTENTION



Joanna
Maćkowiak-Pandera, PhD
President



Aleksandra
Gawlikowska-Fyk, PhD
Director of Power Sector
Programme