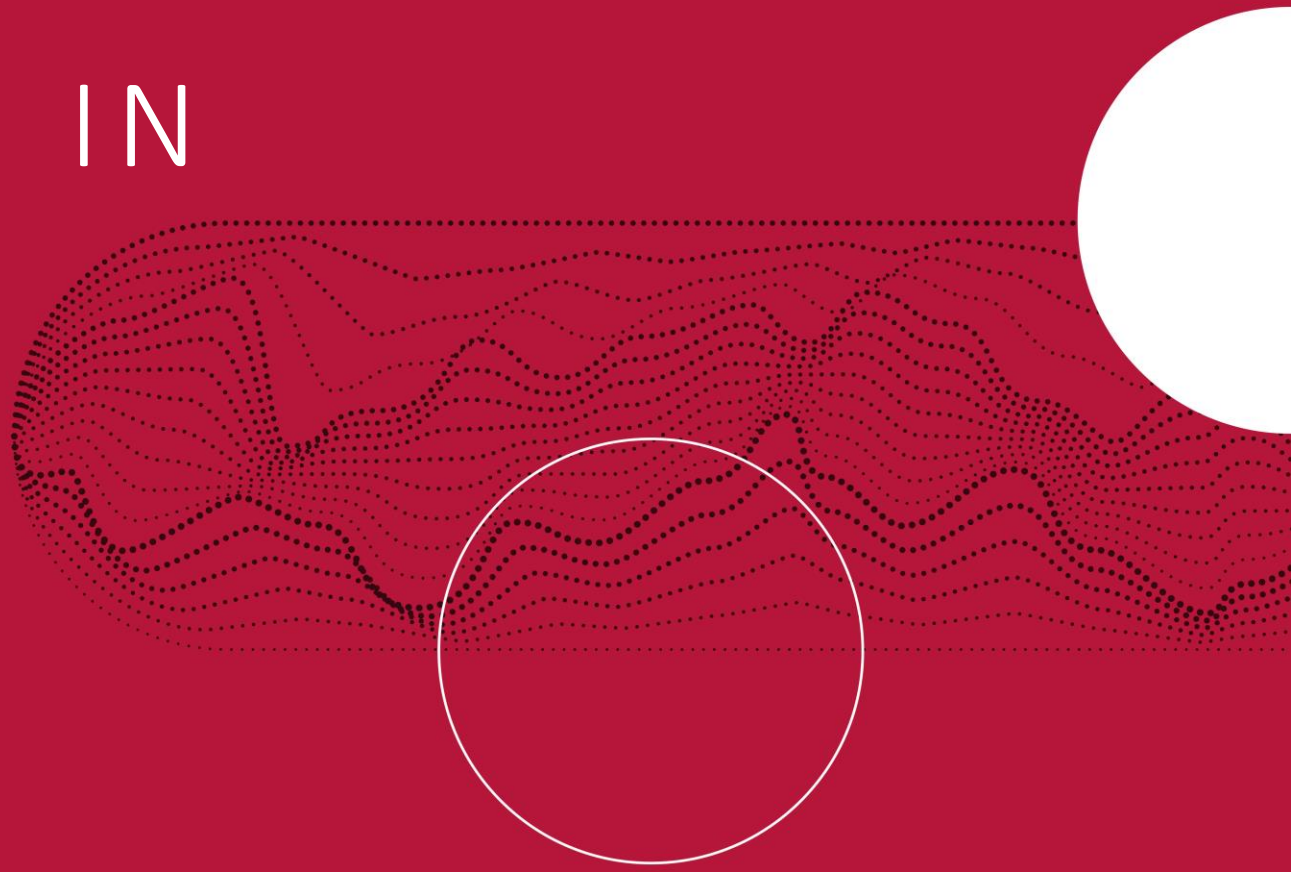
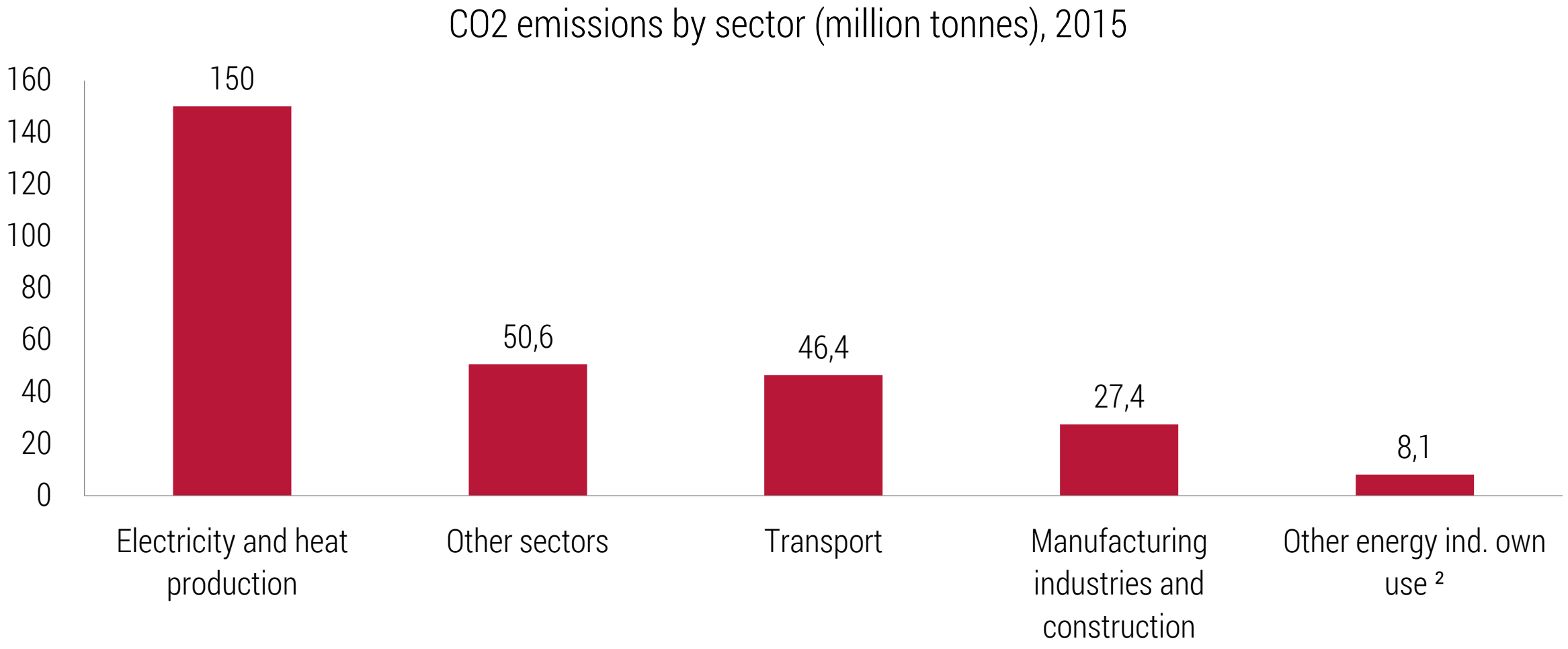
institute for structural research

COAL TRANSITION IN POLAND



Aleksander Szpor i
Jan Witajewski-Baltvilks

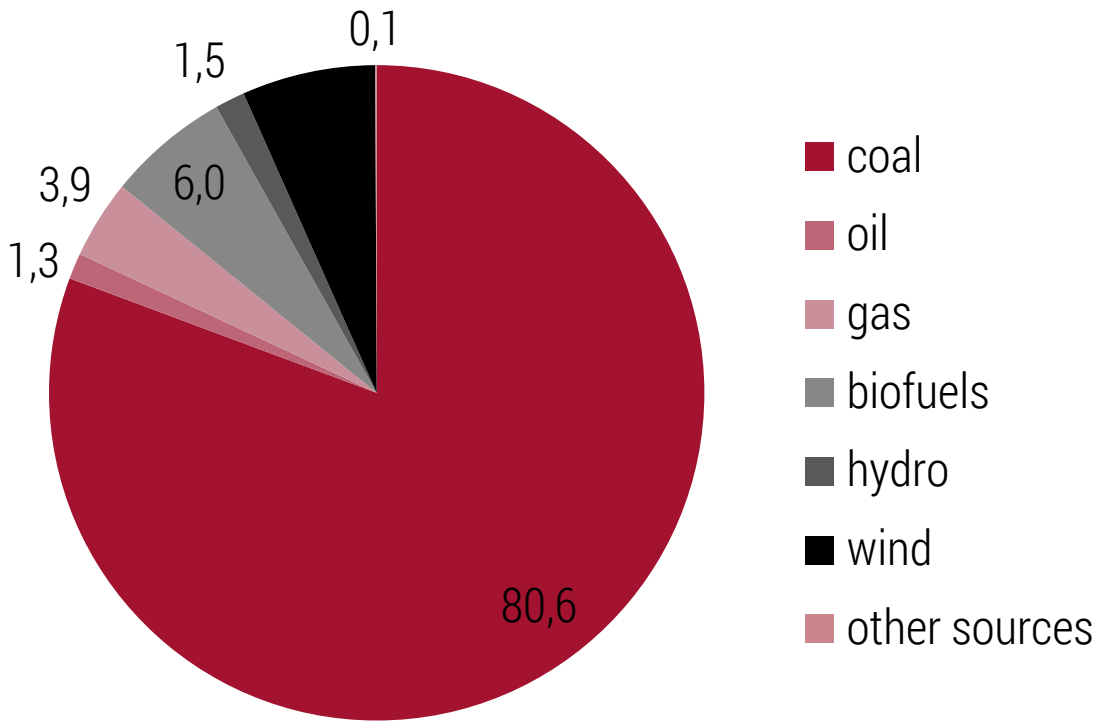
Electricity and heat production are responsible for 53% of Polish CO2 emissions



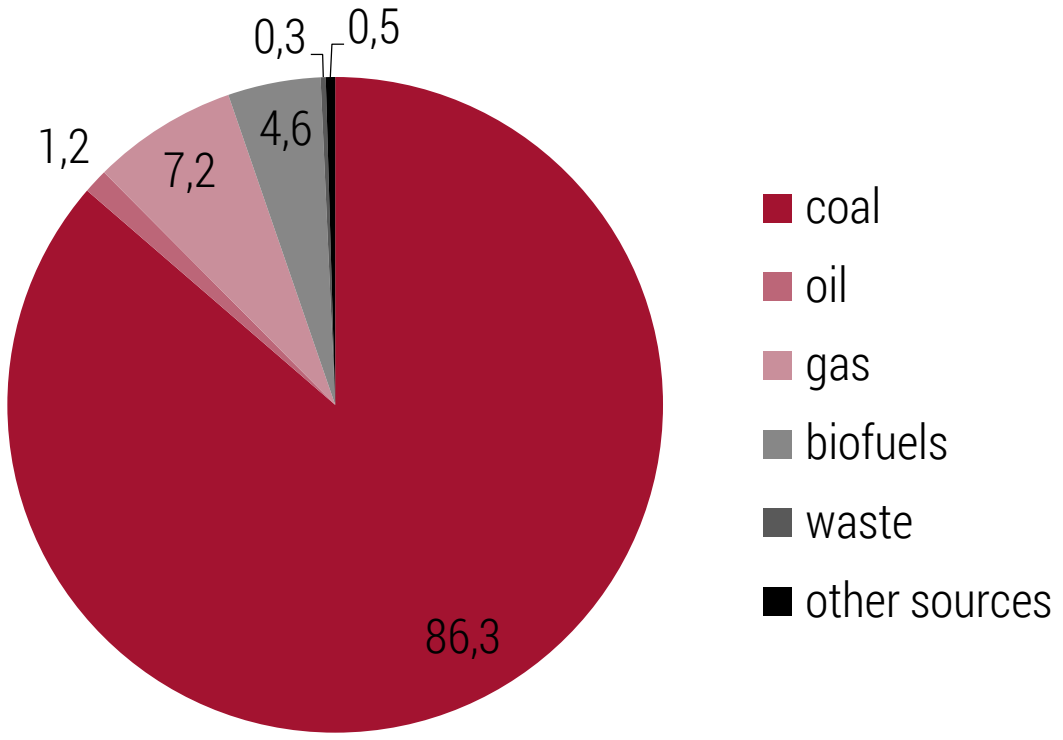
Source: IEA, 2017

Share of coal in electricity and heat production is above 80%

Production of electricity (%), 2015



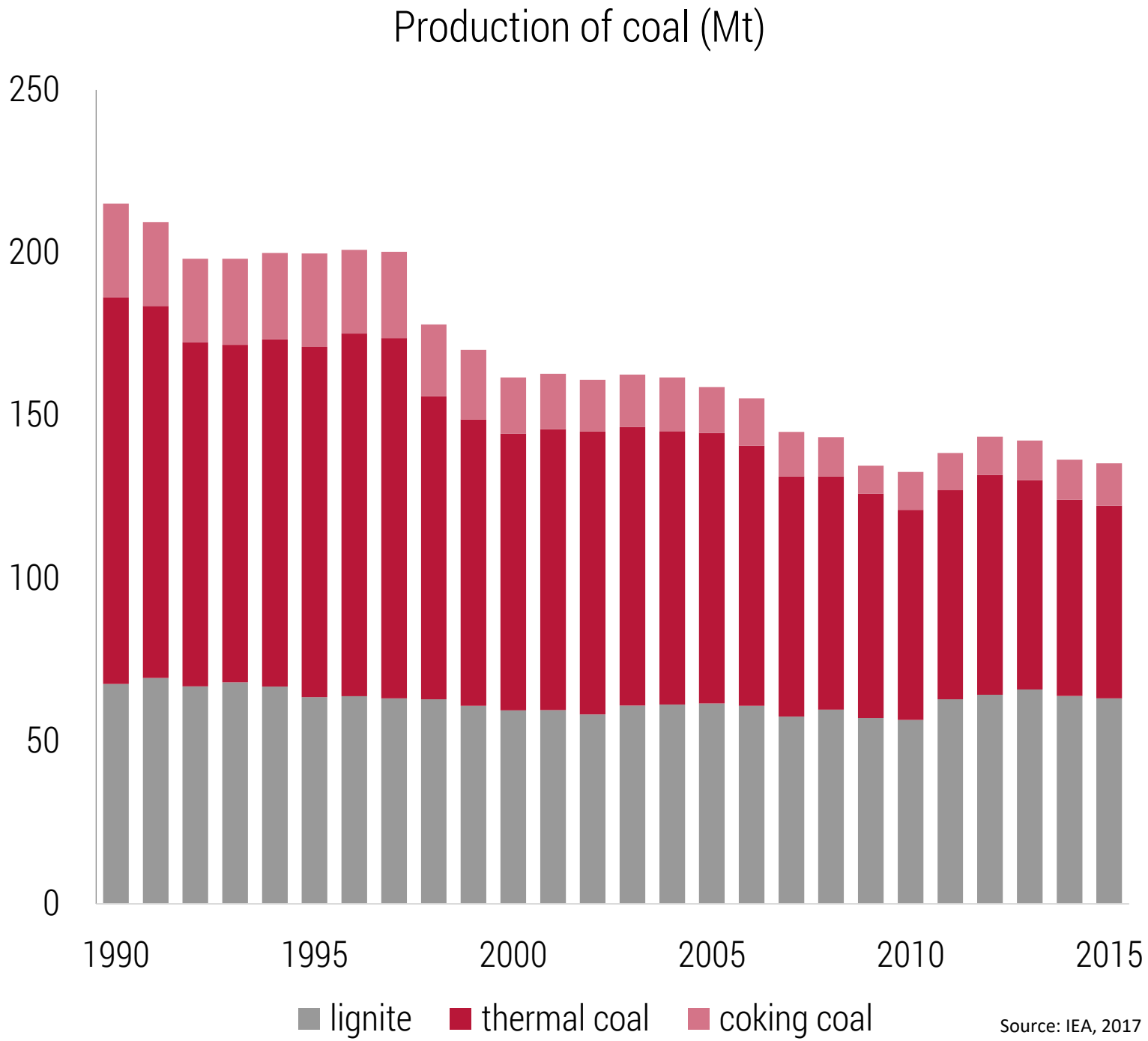
Production of heat (%), 2015



Source: IEA, 2017

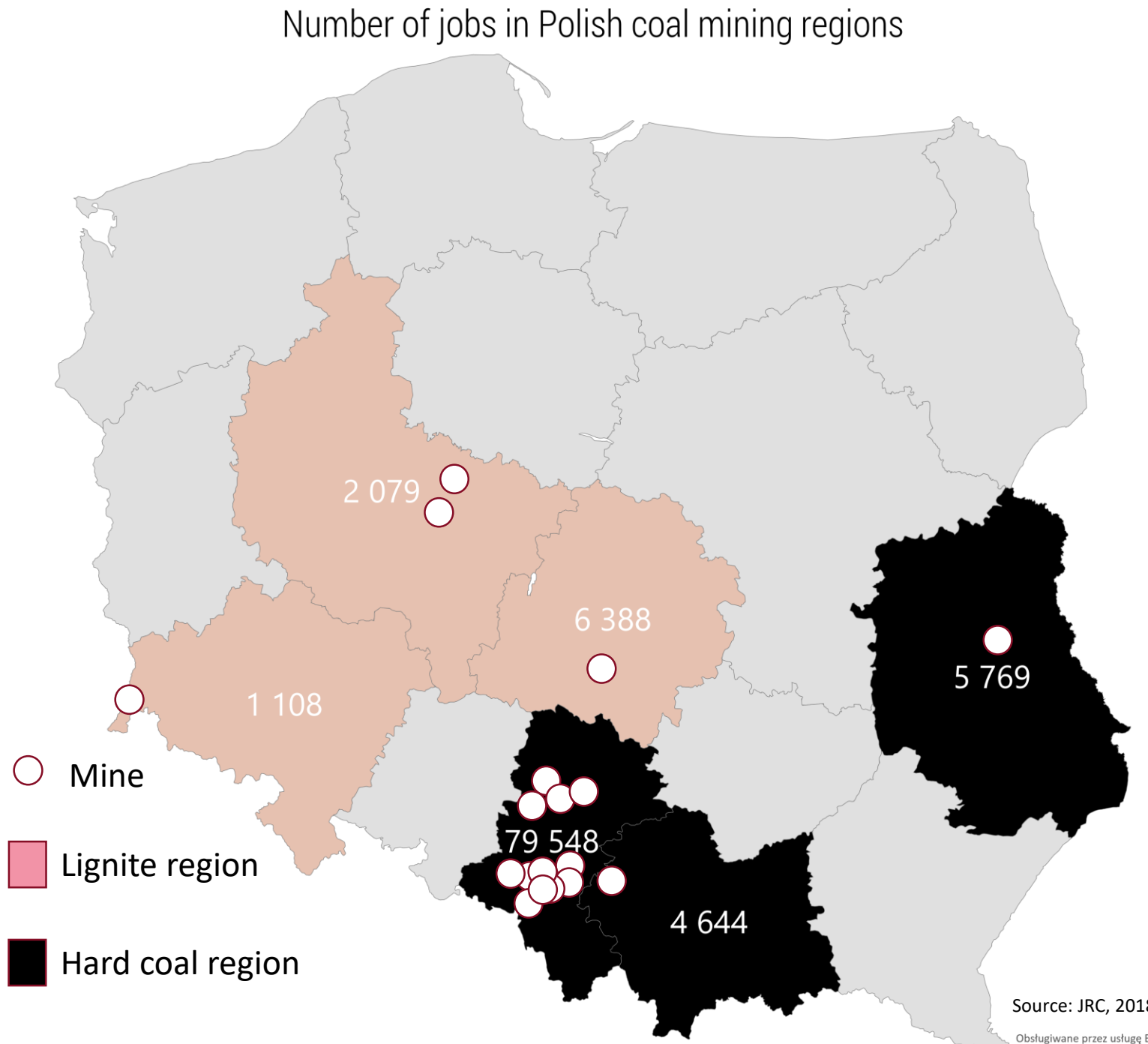
Three types of coal in Poland

- Lignite – the most CO_2 intensive
- Thermal coal – the most imported
- Coking coal - the most profitable



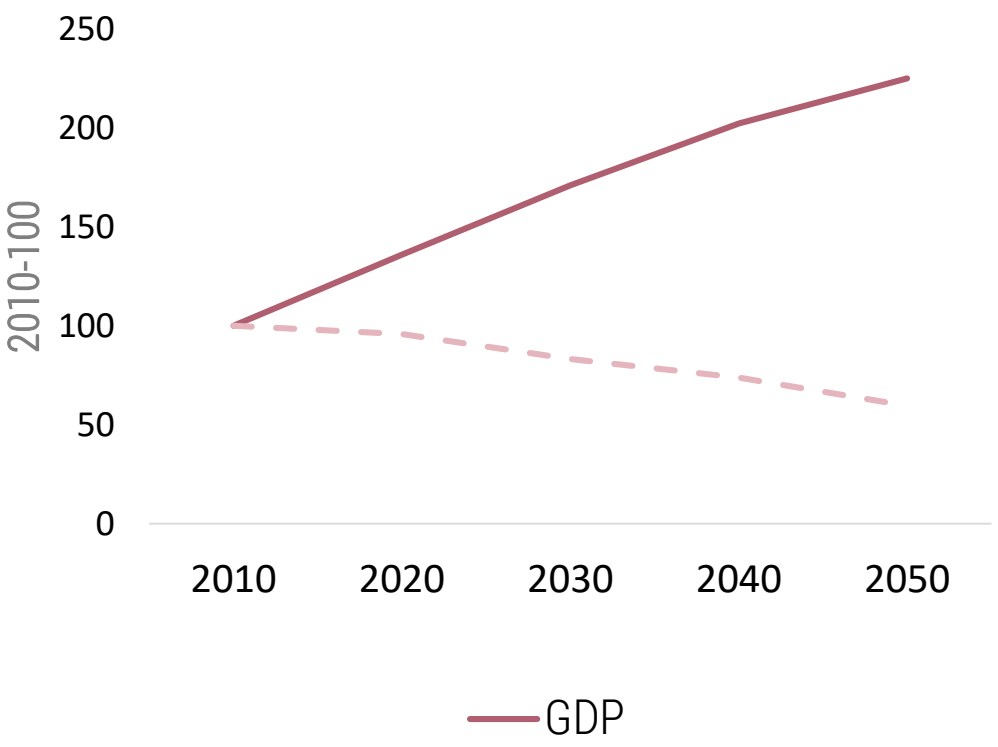
Polish coal regions

- Hard coal is more labour intensive
- Concentration of mines in Silesia

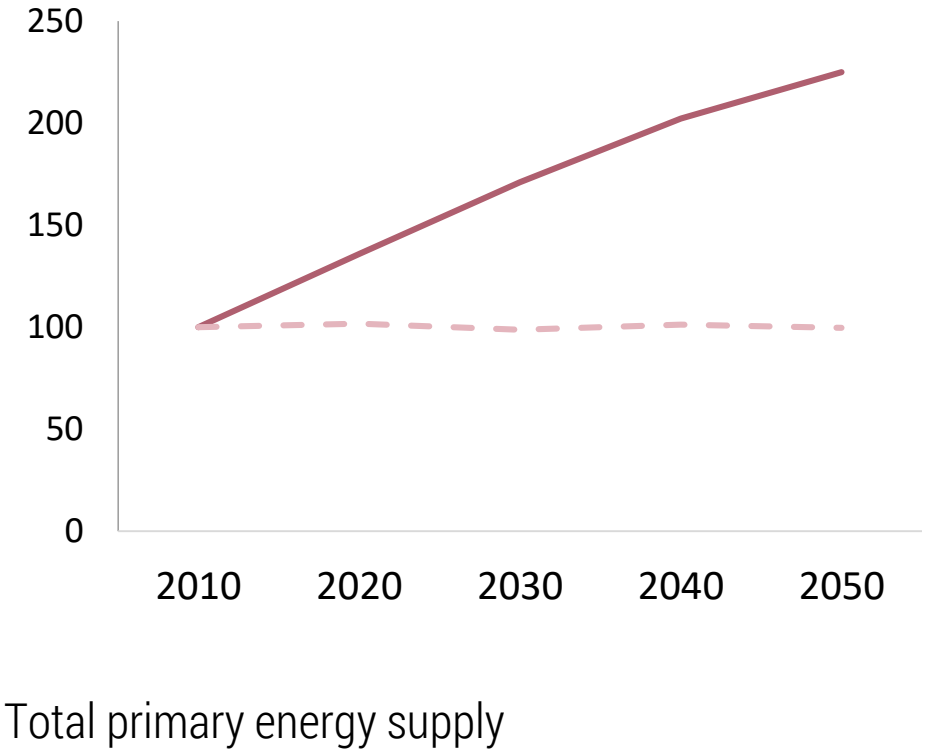


Faster energy efficiency improvement essential for decarbonization

Pathway of 2 degrees



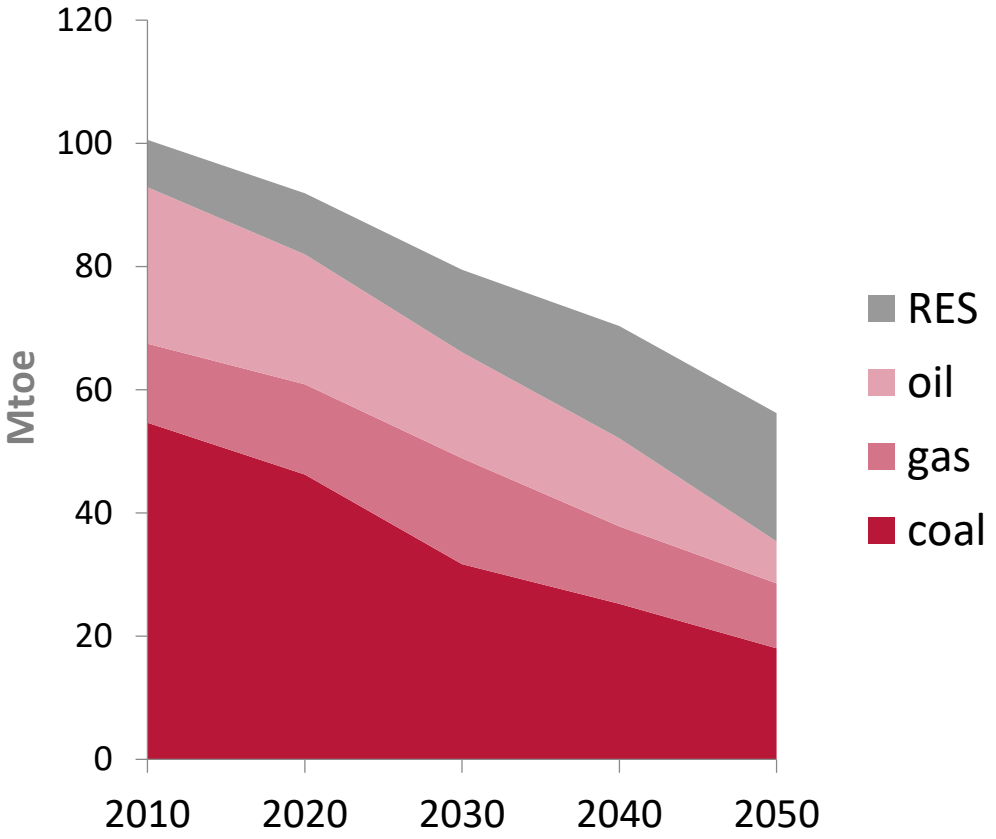
Pathway based on past trends



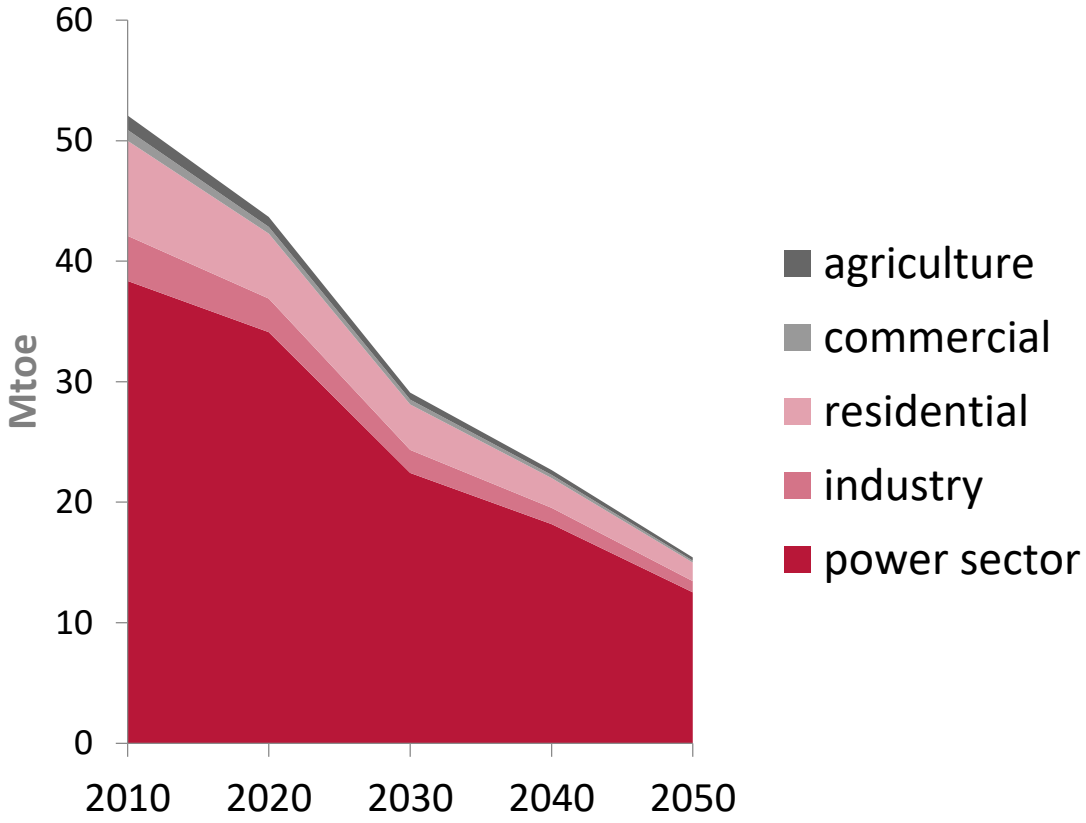
Source: Witajewski-Baltvilks et al. (2018a)

Consumption of coal in Poland expected to drop

Energy mix under 3-fold reduction in emissions

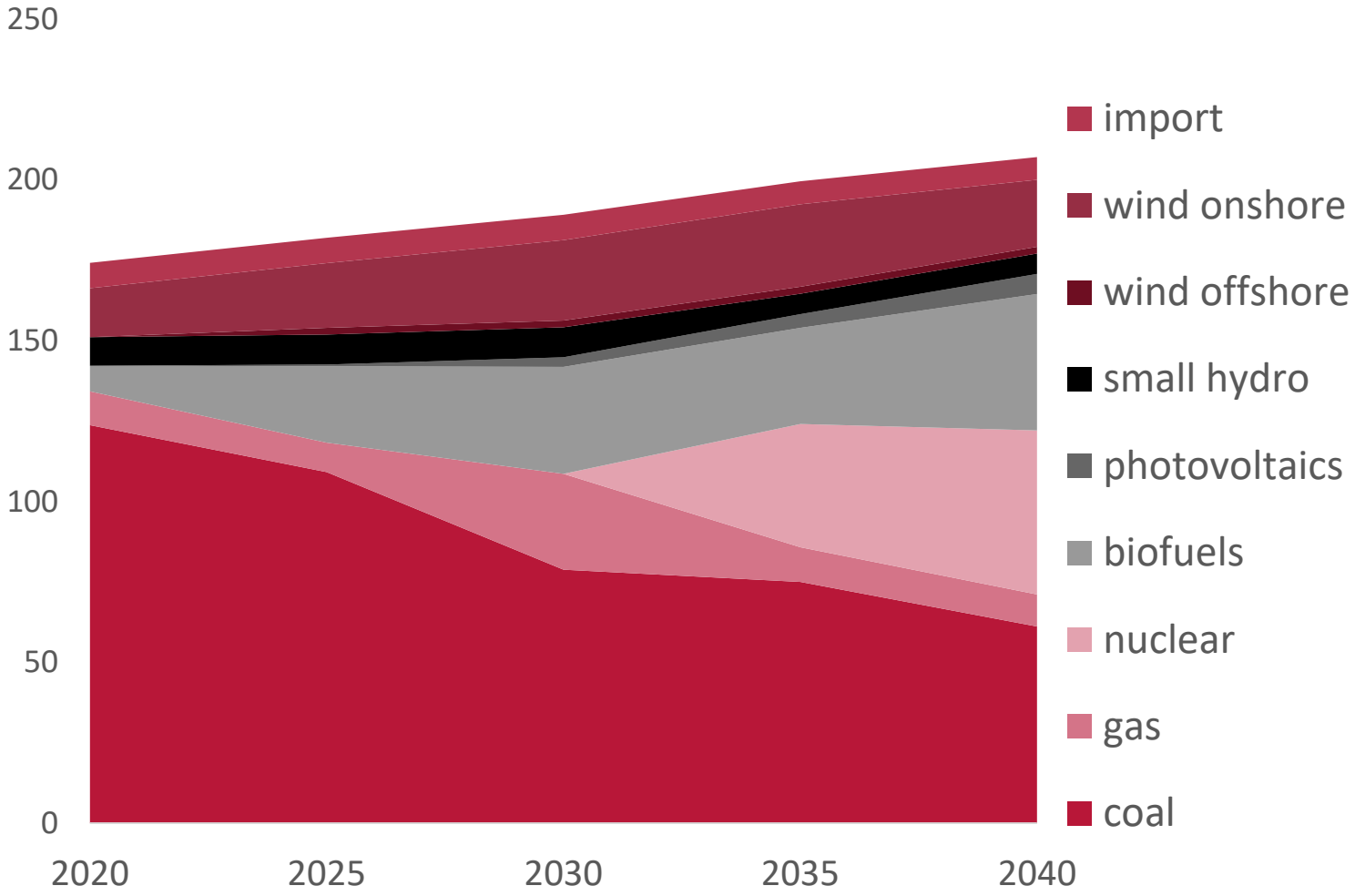


Sectoral decomposition of coal consumption



Source: Witajewski-Baltvilks et al. (2018a)

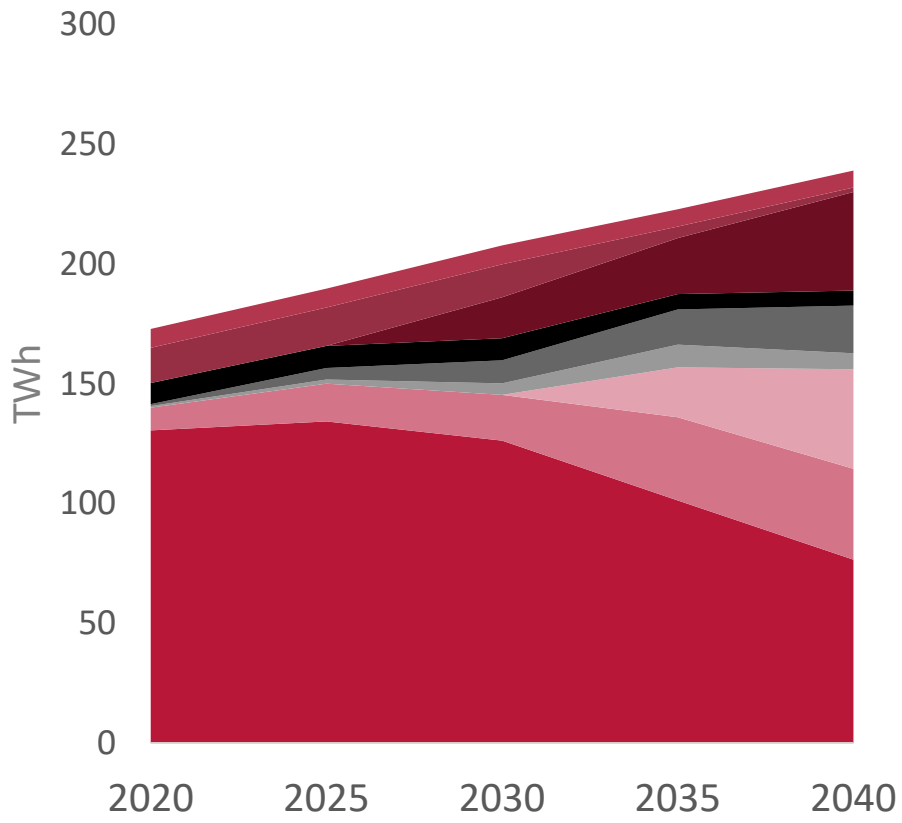
Onshore wind, nuclear and biofuels and are the cheapest substitutes of coal electricity according to the MOEM model



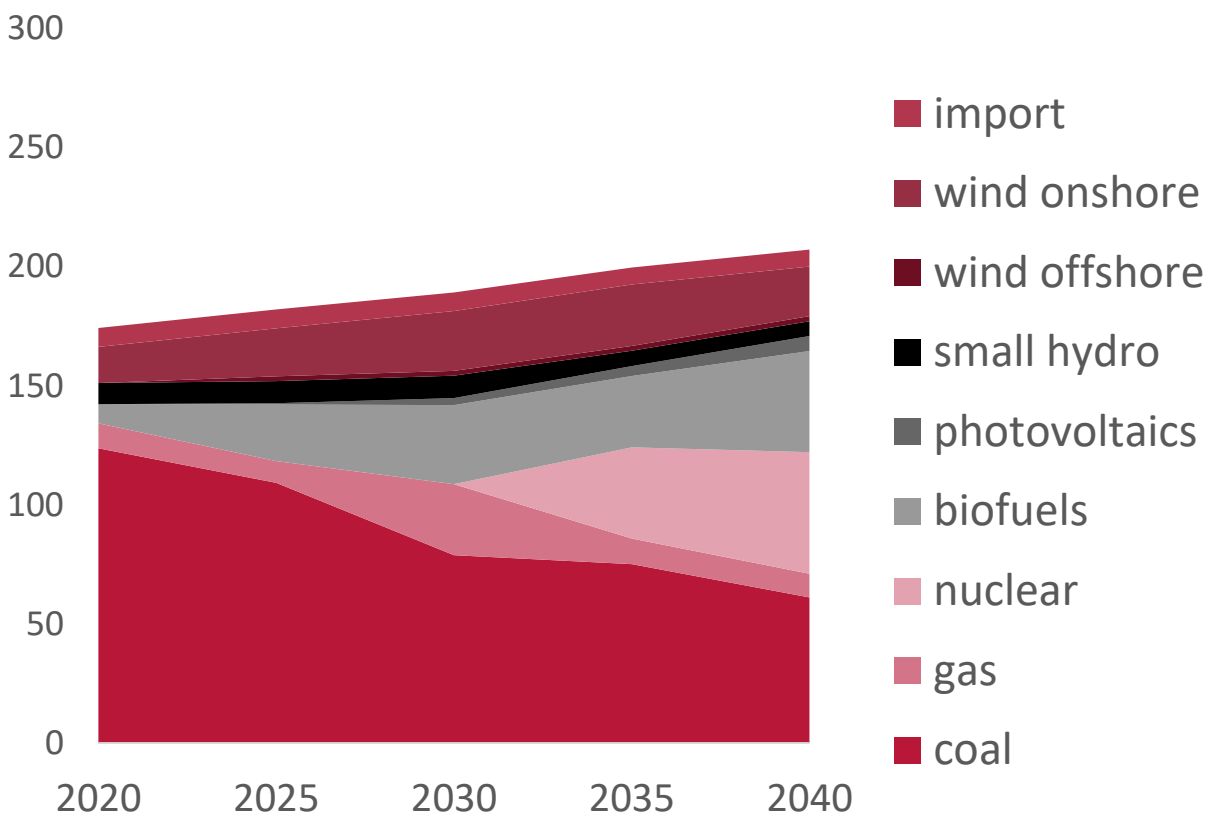
Source: Witajewski-Baltvilks et al. (2018a)

PEP: delayed coal replacement with offshore, nuclear, gas and PV

Energy Policy of Poland (PEP)

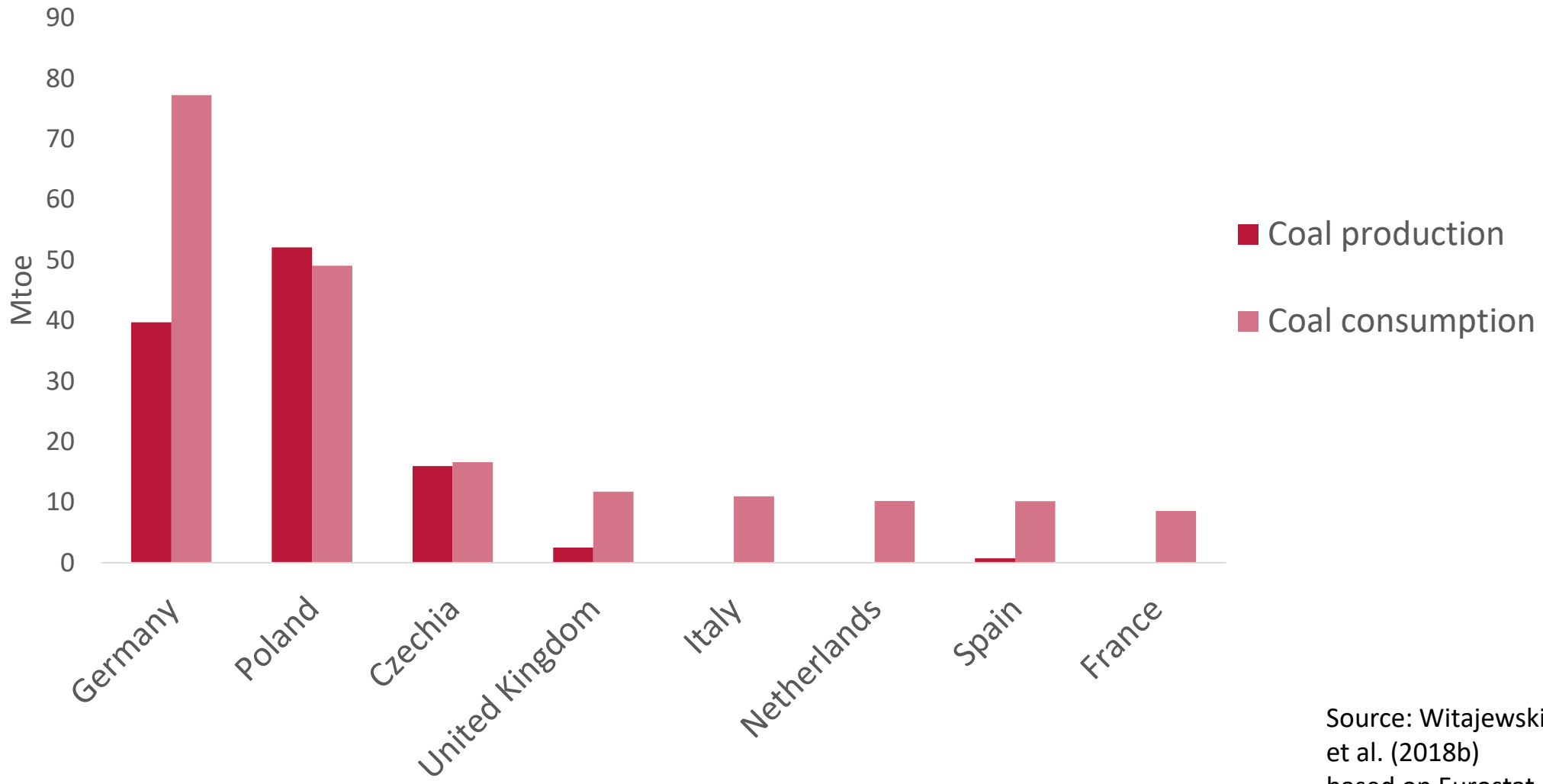


Pathway permitting 3-fold reduction of CO2 emissions



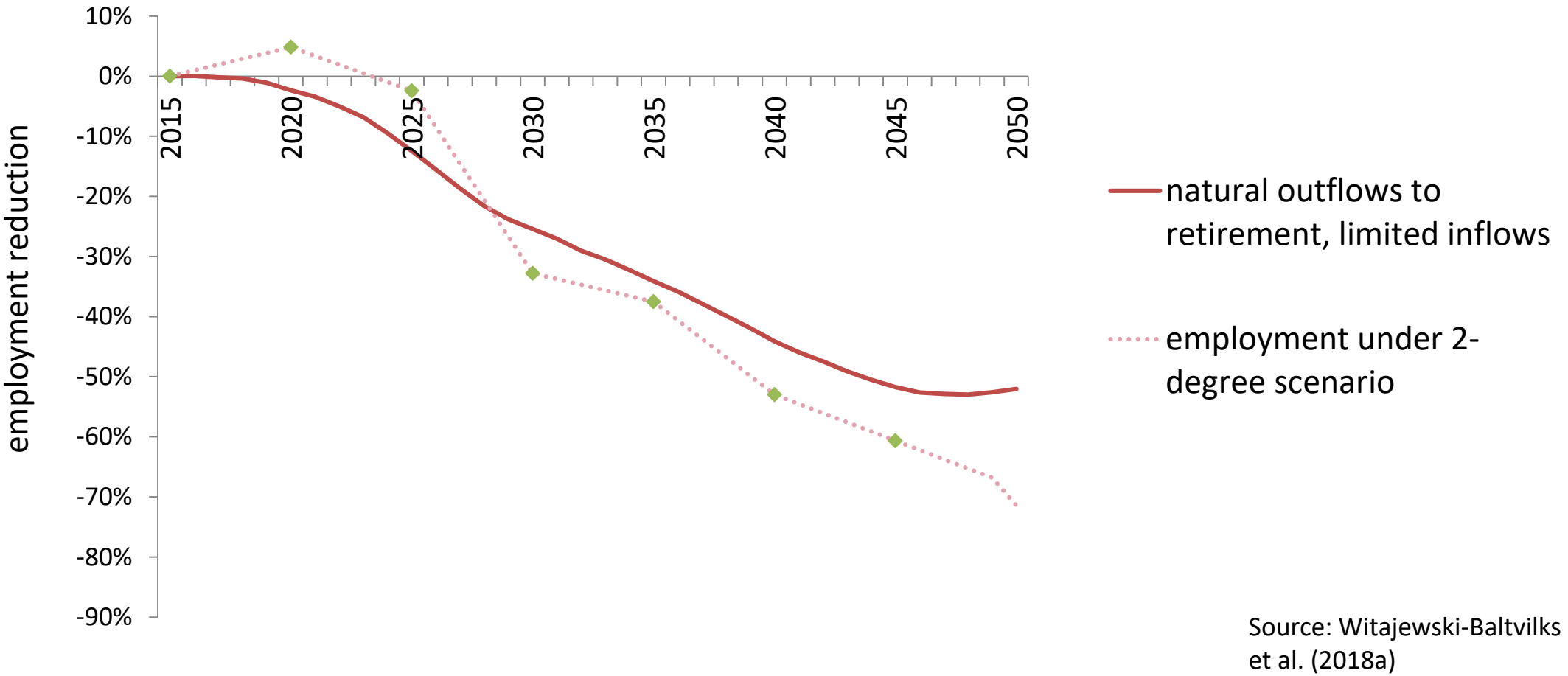
Source: Witajewski-Baltvilks et al. (2018a)

Drop in consumption implies phase-down of coal sector, unlike in most EU countries



Source: Witajewski-Baltvilks et al. (2018b)
based on Eurostat. Data for 2016.

Coal phase-down will take 30 years – no massive lay-offs expected



Source: Witajewski-Baltvilks et al. (2018a)

Cushion for the regional economy

- Opportunities in other sectors
  - Expected further growth of industry
  - 10,000 additional jobs in Silesia could be created with ambitious retrofitting programmes
- Educational policy: direct new cohorts to growing sectors
- Unconditional cash offered only to workers close to retirement age

Thank you

The research leading to this paper was performed under the Coal Transition project that received funding from the KR foundation

For more details, consult

- Witajewski-Baltvilks et al. (2018a). Managing coal sector transition under the ambitious emission reduction scenario in Poland. *IBS research report 03/2018*
- Witajewski-Baltvilks et al. (2018b). Risks associated with decarbonising the Polish power sector. *IBS research report 05/2018*

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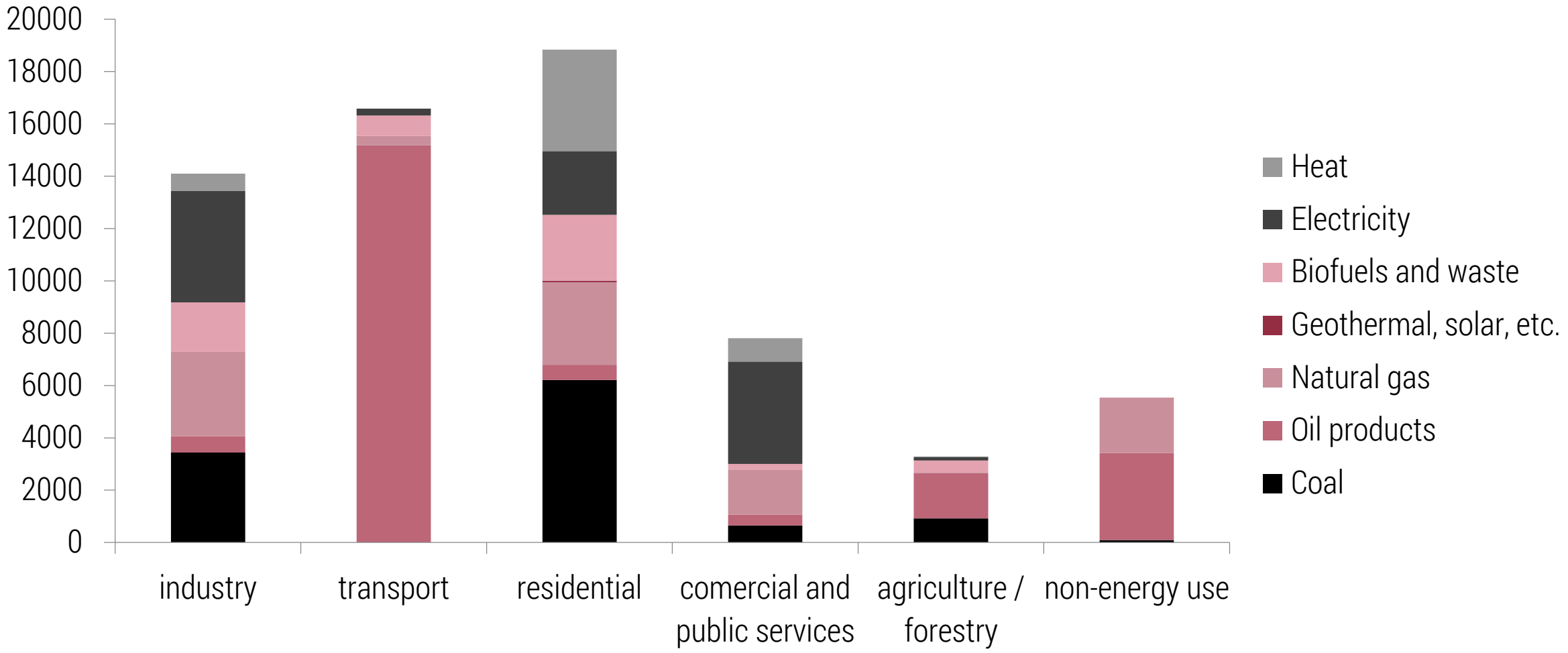
COAL TRANSITIONS

Total final energy consumption (ktoe), 2015



Source: IEA, 2017