ODYSSEE-MURE – Monitoring the EED-Recast
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Potential for industrial electrification in Europe

Branka Kovačević
Nikola Tesla Institute of Electrical Engineering, Belgrade, Serbia

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Introduction

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- Electrification is the most efficient and cost-effective way to decarbonize the European economy.
- For decarbonization to be faster, Europe needs to electrify much faster
- The share of electricity in final energy consumption in the EU has seemingly hit a plateau **in the last 10-15 years, standing at 23%**, when it should make a half of EU final energy consumption by 2040 according to the European Commission's Impact Assessment on 2040 targets. Additionally, decarbonization scenarios in the industry sector require **50% electrification by 2040** and between 66% and 70% by 2050.
- The importance of a large share of electricity in final energy consumption is not only in decarbonization, but also in **security of supply** and **energy efficiency**.

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Industrialization in Serbia

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- The strong period of industrialization in the former SFRY began in the early 1950s. The first period, from 1960 to 1990, showed an exceptional growth trend. (During that period, industry developed within the framework of the socialist self-management system, which was a specific mixture of a social market economy, based on social ownership as the dominant form of ownership.)
- At that time, Serbia, as one of the republics within the SFRY, experienced a rebirth from a predominantly agrarian country to a moderately developed industrial country. During this period, industrial production had an average growth rate of over 7%.
- Unfortunately, Serbia's industry suffered a setback in the 1990s. The industrial decline was caused by the civil war and the breakup of Yugoslavia, when the entire economy actually collapsed.

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Industrialization in Serbia

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- The period that followed brought great changes, primarily the transition from market socialism to liberal capitalism. But, instead of saving the country, the privatization of industrial capacities in Serbia brought about an even deeper decline, which was particularly felt in the metal and textile industries.

"Fun fact"

Industrial production in 2012 was only 38.4% of its 1989 level!

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Industrialization in Serbia

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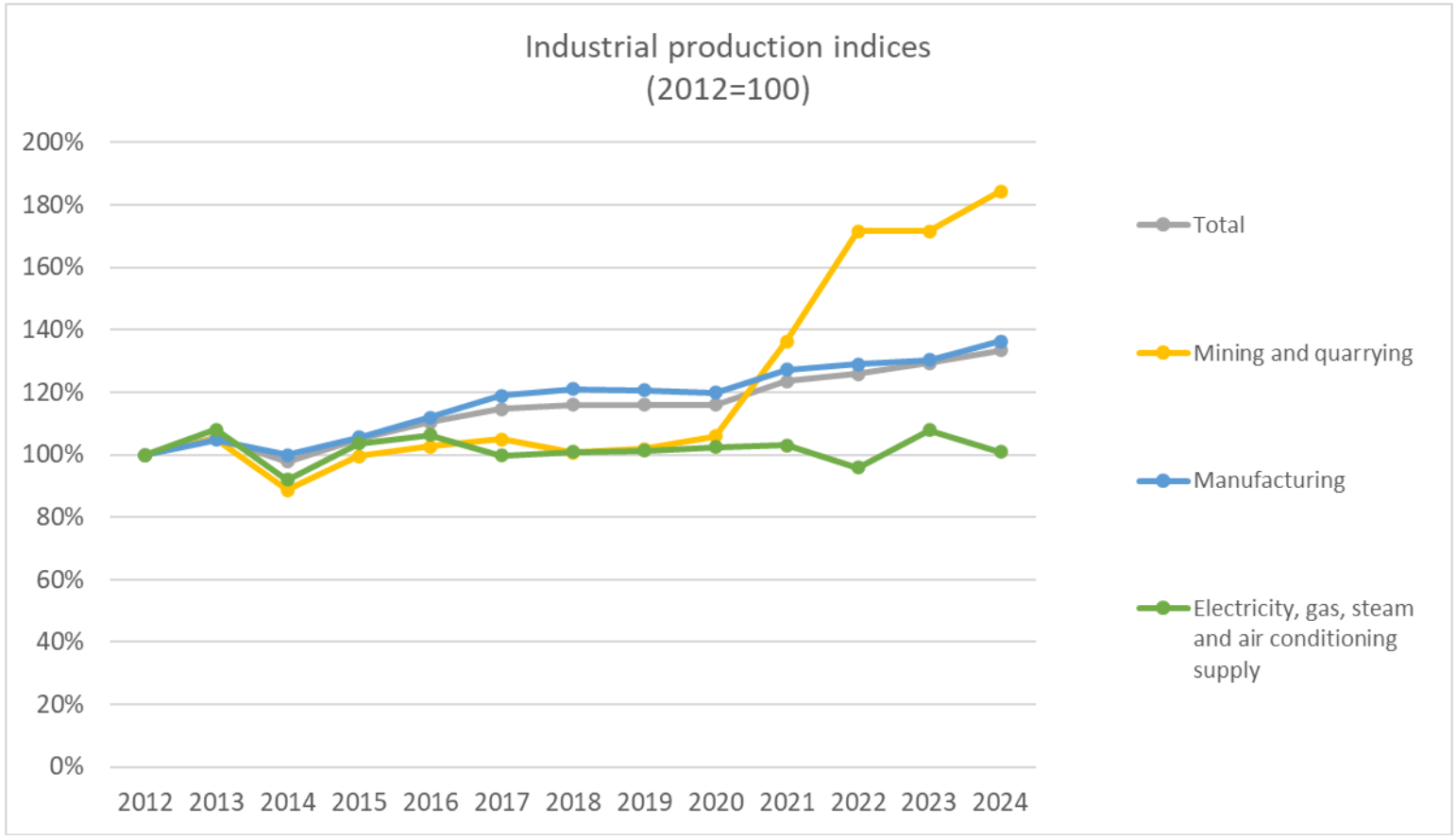
- Starting in 2012, the industry began its recovery, especially in mining (which unfortunately has its drawbacks, especially environmental ones).



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Final energy consumption in industry

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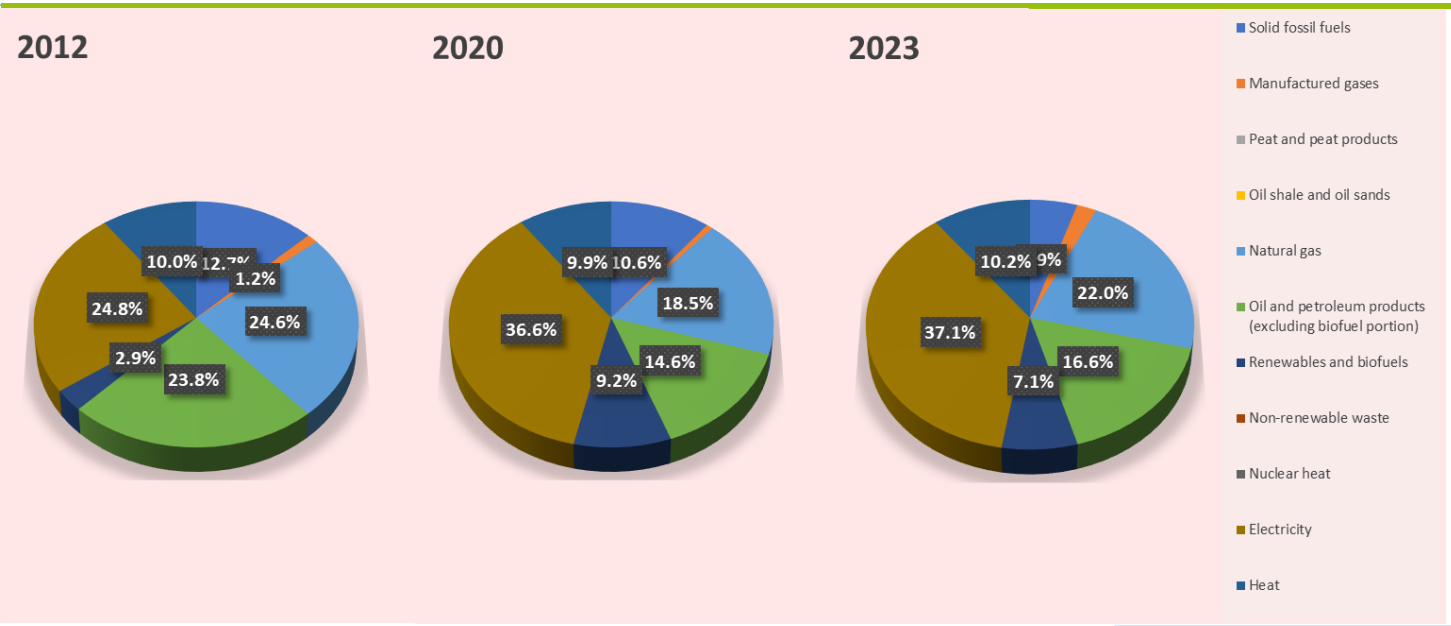
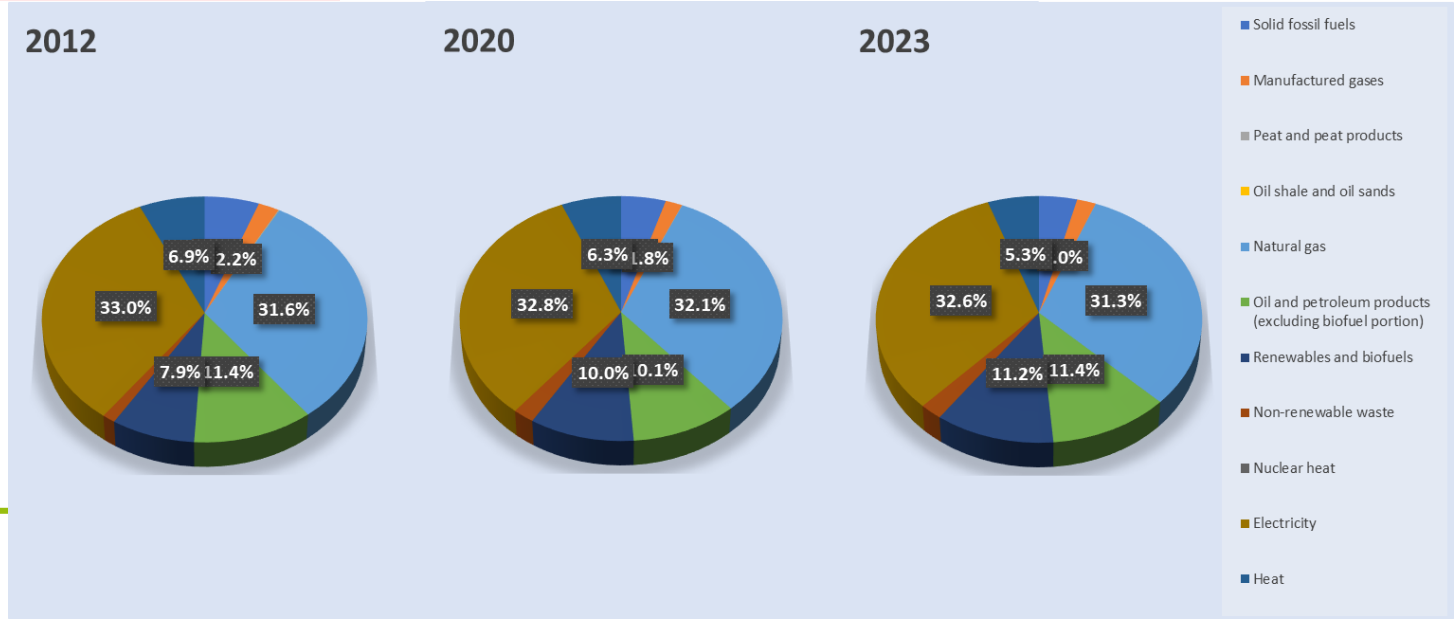
Serbia



EU



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Final energy consumption in industry - RS

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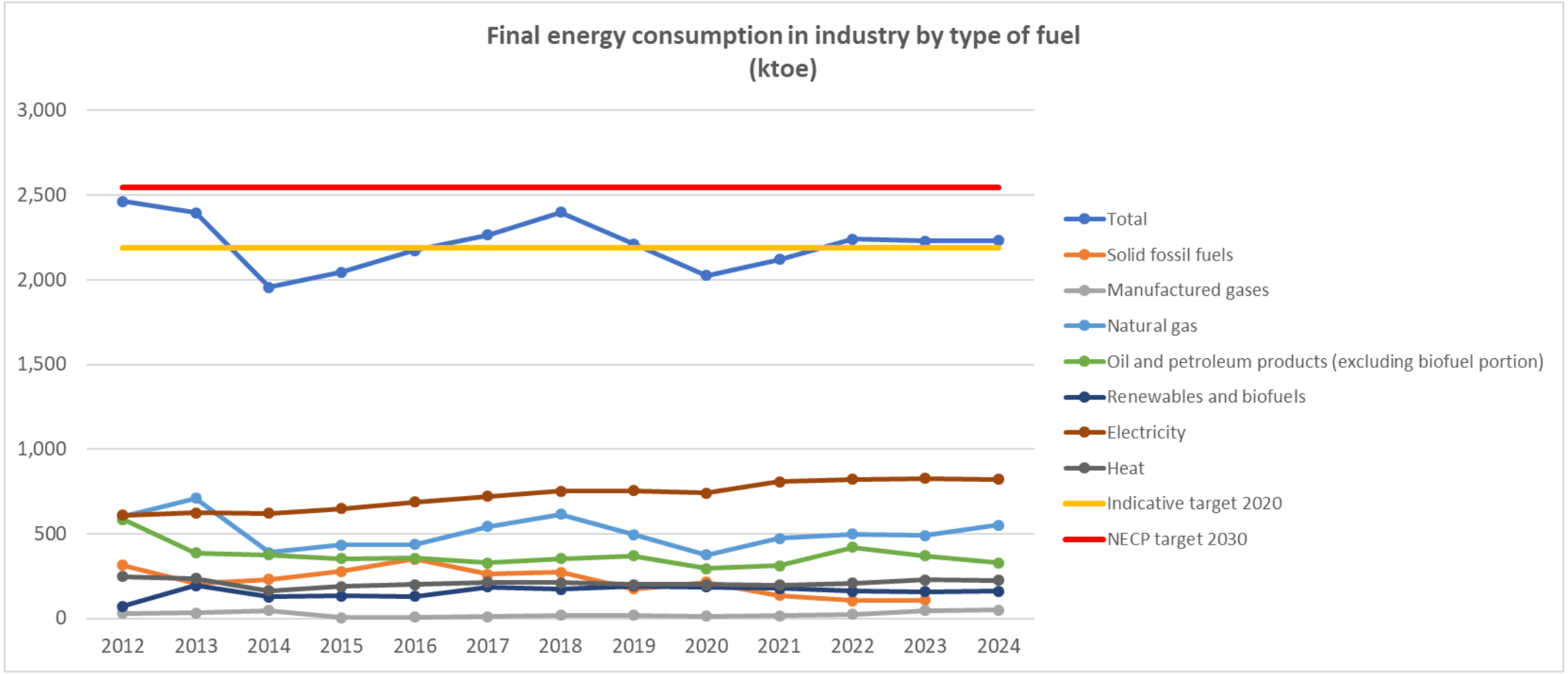

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Final energy consumption in industry - RS

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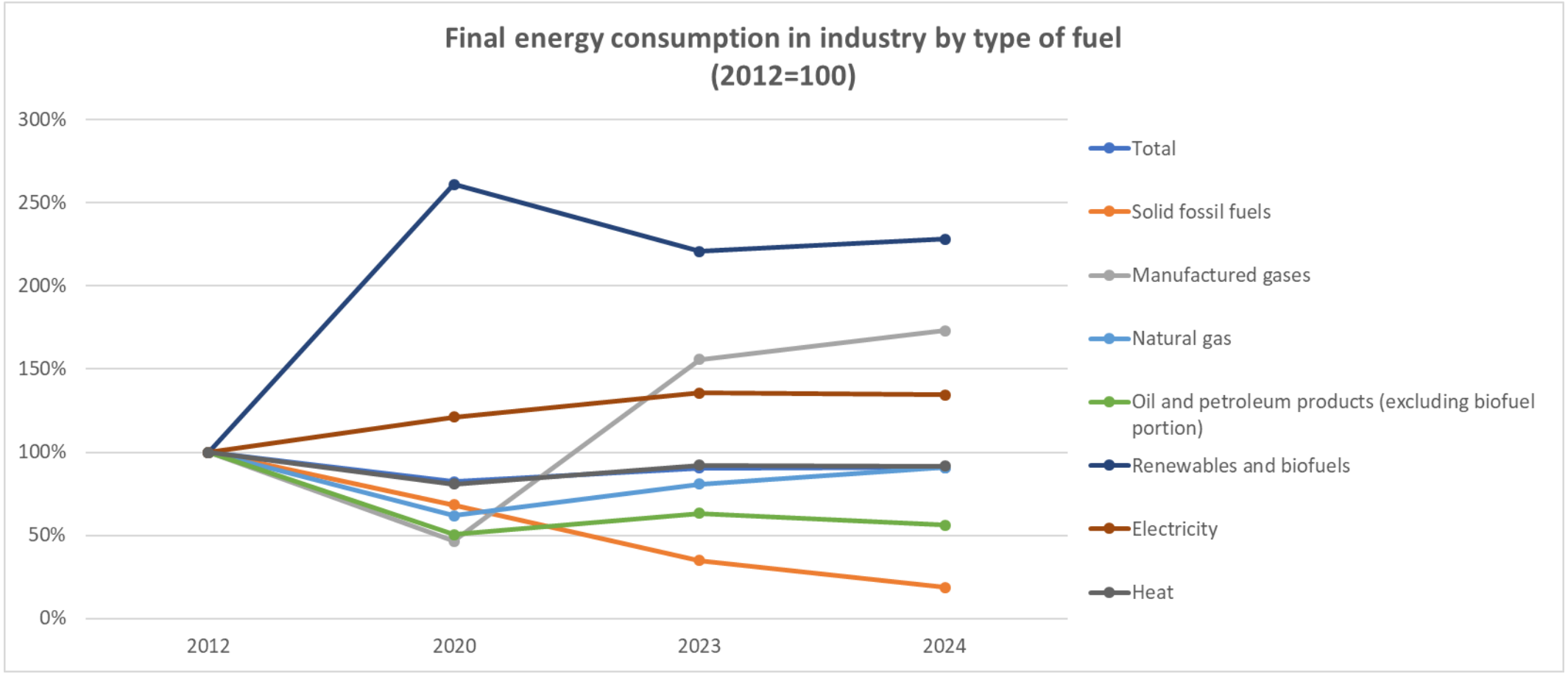

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Final energy consumption in industry - EU

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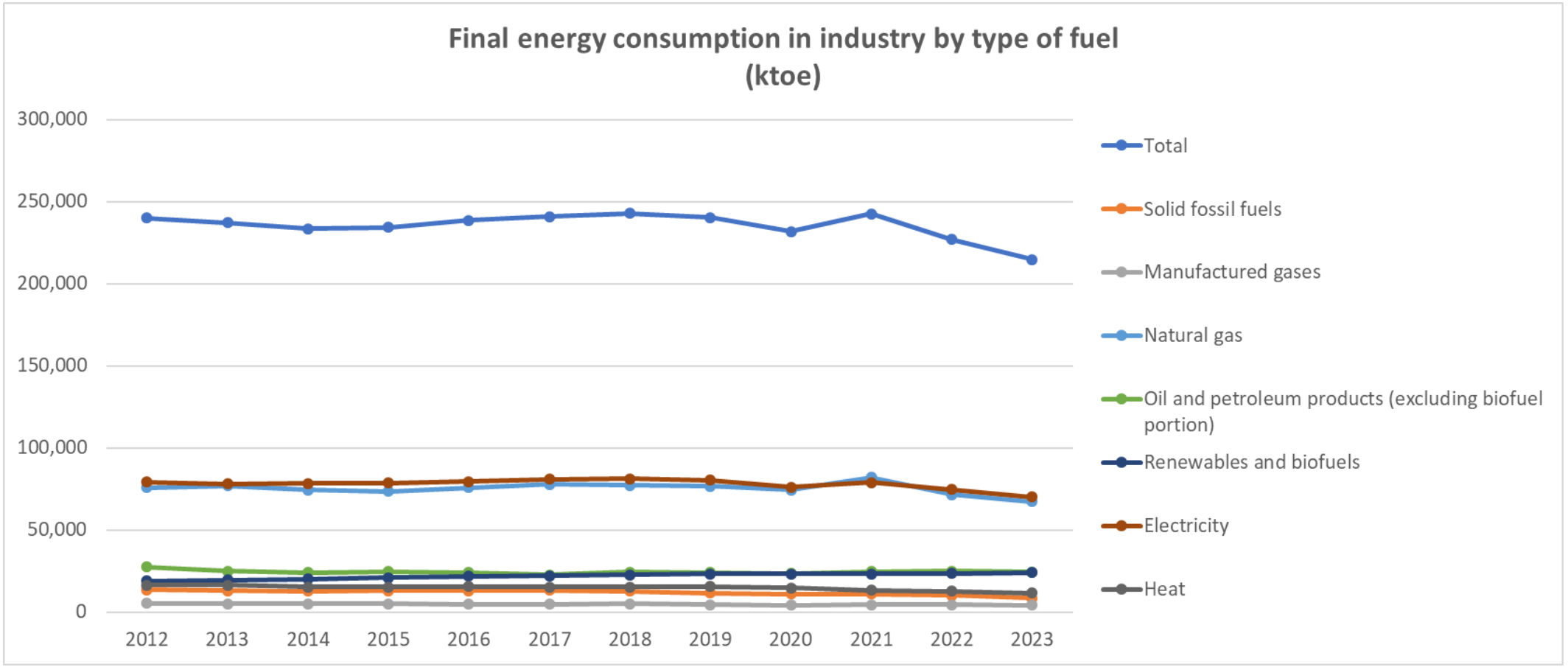

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Final energy consumption in industry - EU

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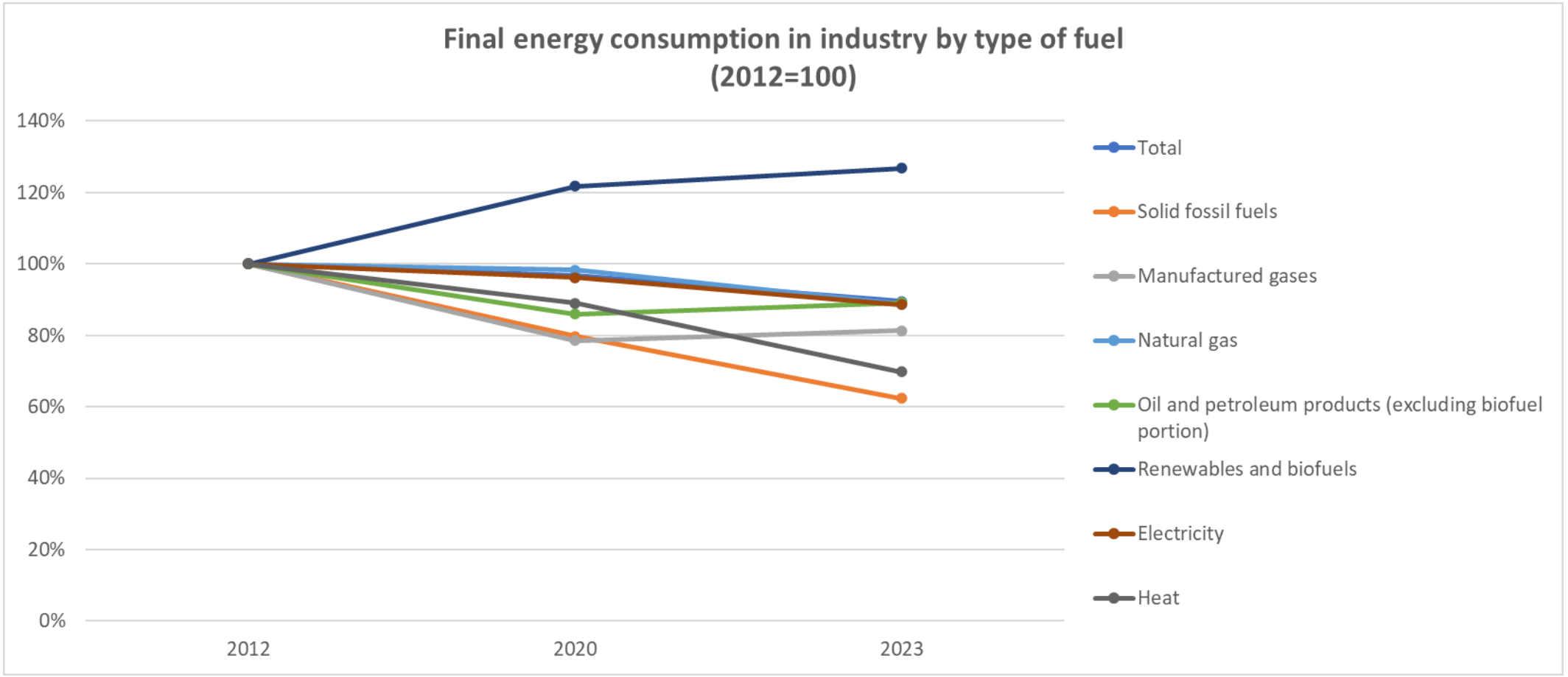

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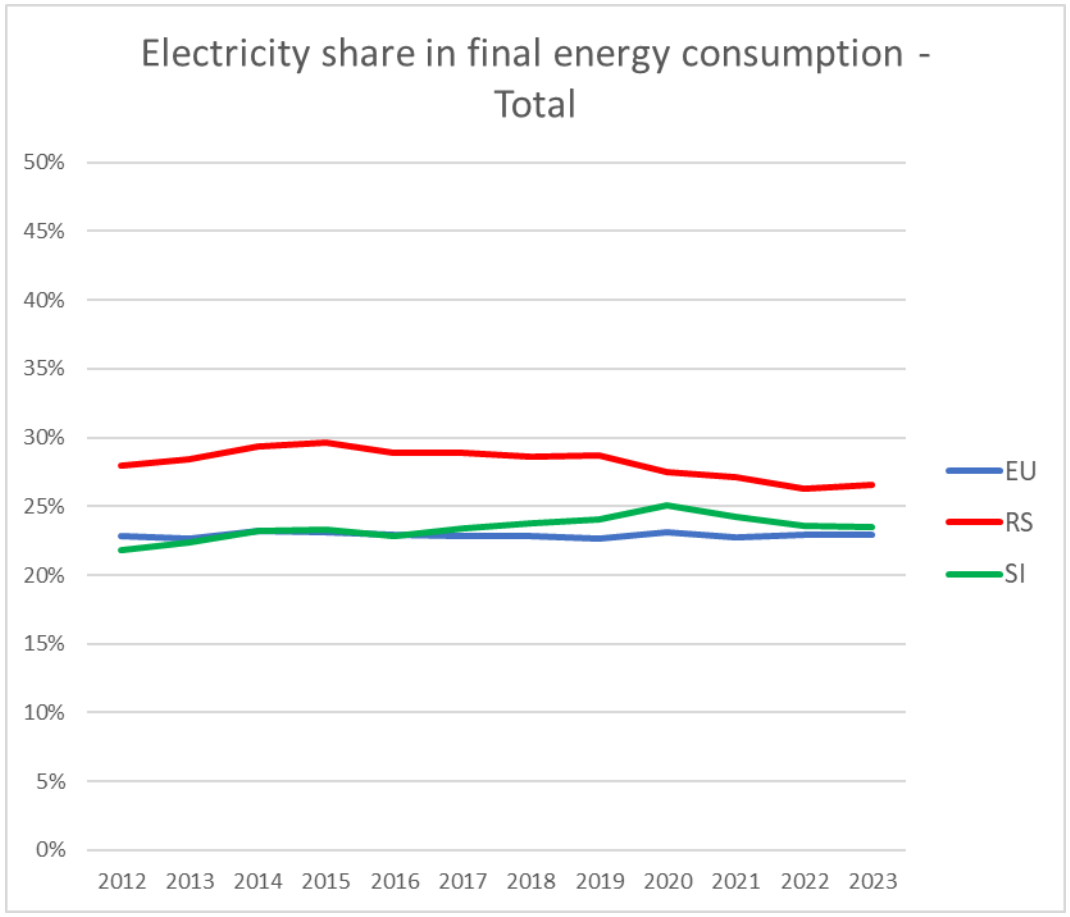
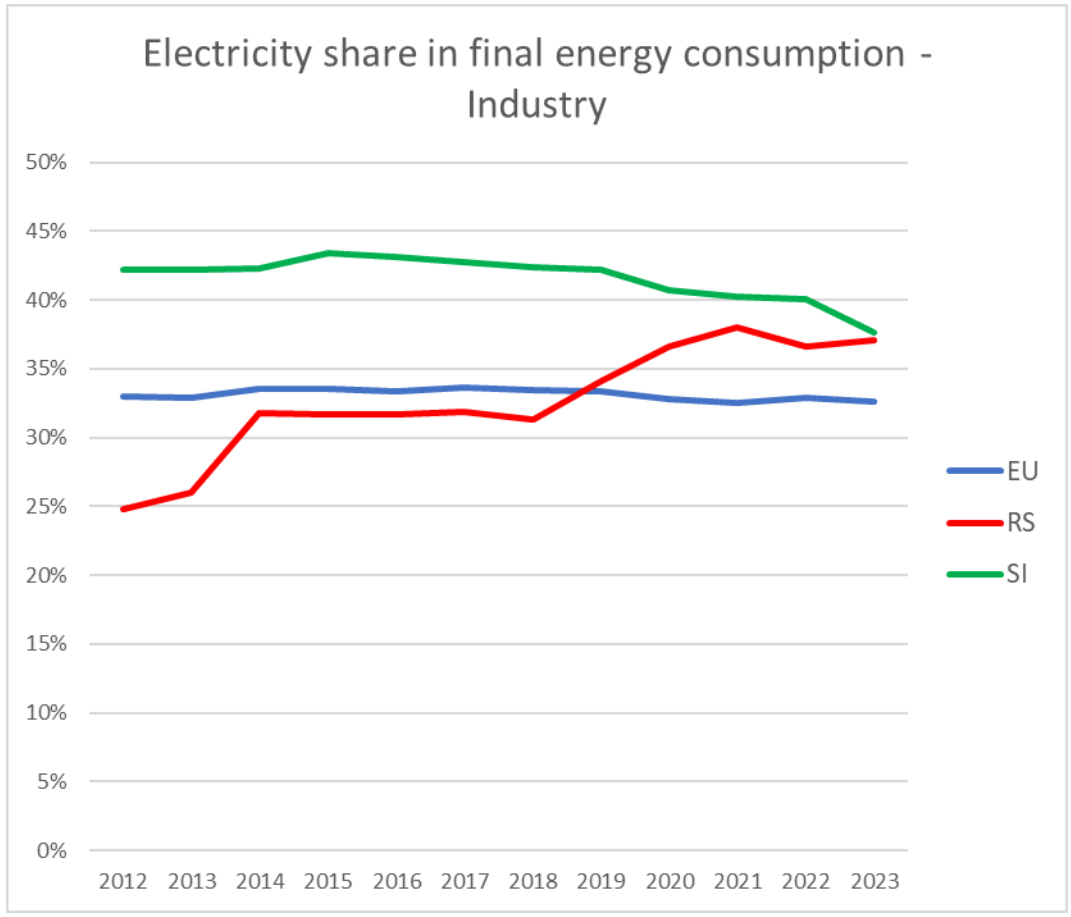
Final energy consumption in industry - EU





Final energy consumption in industry - EU

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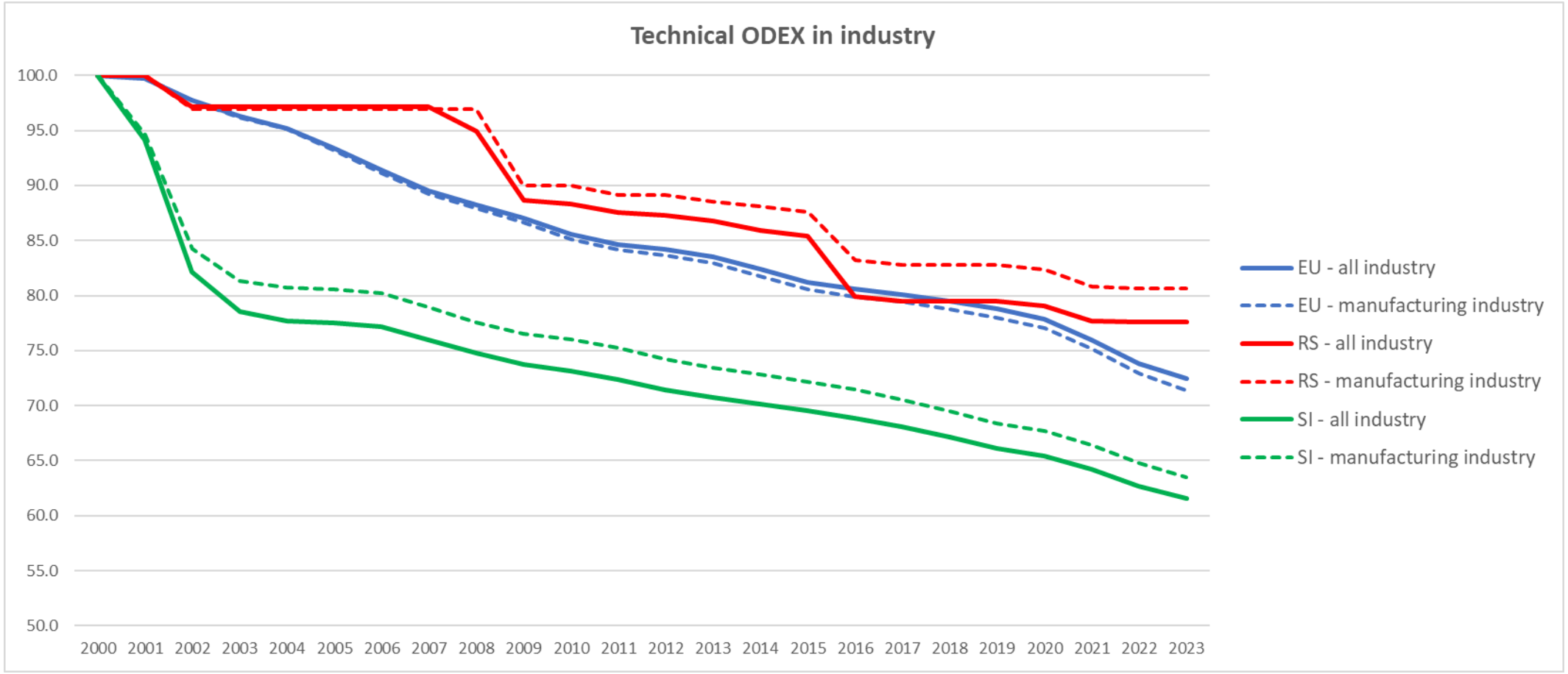

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Potential for industrial electrification

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- Industrial processes still rely on fossil fuels, mostly for heat generation.
- But, nowadays, quite a lot processes can be directly electrified with electric devices - boilers, arc furnaces, industrial heat pumps, induction heating, plasma torches, thermal storage.
- However, whether more intensive electrification will occur in the near future depends perhaps most on prices.
- At €0.19 per kilowatt-hour (kWh) of electricity in 2023, electricity is nearly three times more expensive than gas at €0.07/kWh for industry - the share additional charges (taxes, levies and fees) on the electricity bill are roughly 1.4 times more than the share on the gas bill (*Eurelectric*).
- This is the most likely the reason why countries like Serbia have a higher share of electricity in final energy consumption (in all sectors of consumption, including industry) compared to the EU.

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Electricity prices

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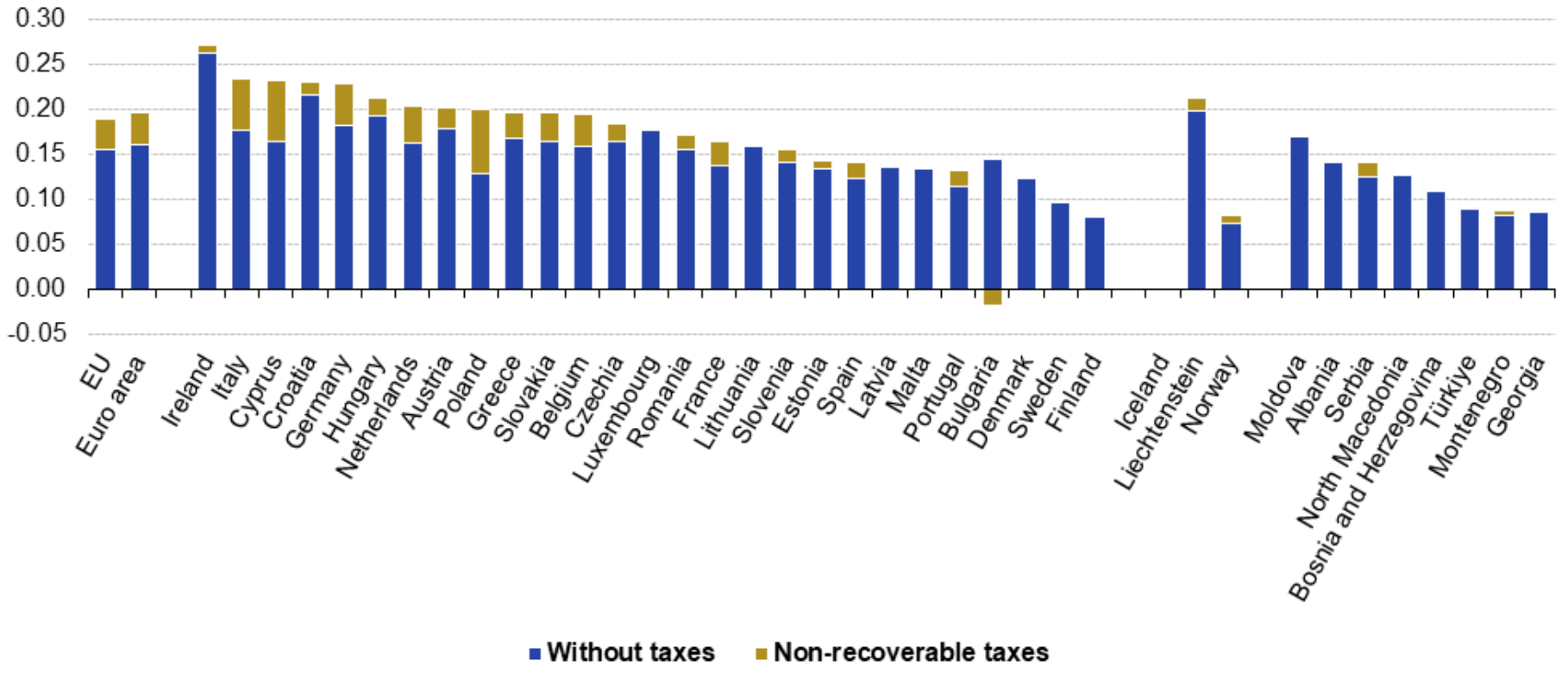
Electricity prices for non-household consumers, first half 2025 (€ per kWh)



(e) Estimate
(p) Provisional

Source: Eurostat (online data code: nrg_pc_205)

eurostat

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Electricity prices

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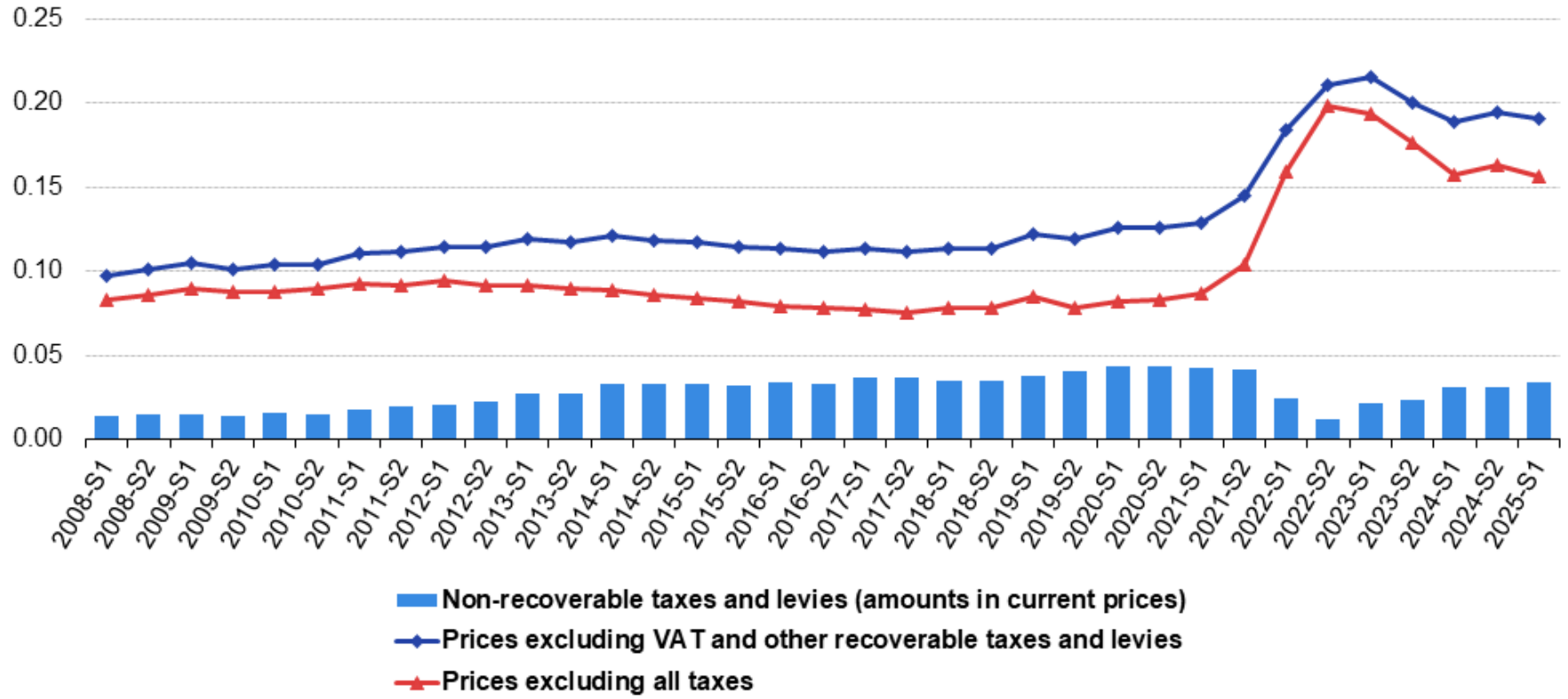
Development of electricity prices for non-household consumers, EU, 2008-2025
(€ per kWh)



Source: Eurostat (online data codes: nrg_pc_205)

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Thank you for your attention!