



## ***Glass Mineral Wool***

*"In the short term, producing glass mineral wool demands significant energy, but it leads to substantial energy savings in buildings over time."*



Required process temperature:  
up to **1,600 °C**



**KNAUF**

# *Energy-intensive industry: Escape to the US?*

*Montel German Energy Day, Düsseldorf  
April 24, 2024*

**MONTEL GROUP**  
- at the forefront of energy markets

***Build on us.***



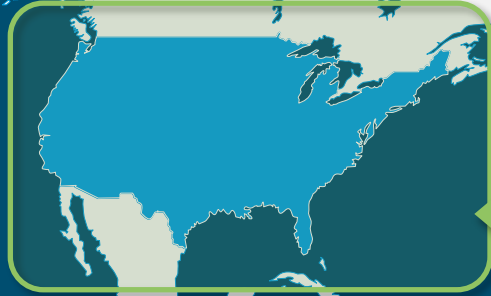
1

## ***Knauf Group***

*A regional overview of (some of the) energy-intensive products.*

# Knauf Group

*The footprint of (some of the) energy-intensive products, e.g. Glass Mineral Wool.*



## Total Energy Consumption

Natural Gas: 22 TWh p.a.

Electricity: 4 TWh p.a.





# 2

## ***Energy-intensive industries***

*Definition & Consumption.*

# What is the definition of energy-intensive industries or processes?



Bundesministerium  
für Wirtschaft  
und Klimaschutz

## Bundesministeriums für Wirtschaft und Klimaschutz = Federal Ministry for Economic Affairs and Climate Protection

[...] “The term “energy-intensive industries” is included in many regulations, but there is no conclusive and universally valid definition. One criterion that is often used to identify energy-intensive industries is the *share of energy costs in gross value added or production value*. For example, the EU Energy Tax Directive defines an energy-intensive business as a business unit in which either the energy and electricity procurement costs amount to at least 3.0% of the production value or the national energy tax to be paid is at least 0.5% of the added value. Within the special equalization scheme of Sections 40 et seq. EEG, companies are *designated as electricity-intensive if the electricity costs account for more than 14 percent of gross value added*. These examples show that, depending on which criteria are applied, different sectors and different companies fall under the definition of energy-intensive industries.” [...]



## ChatGPT



- Energy-intensive industries *demand significant energy for operations*.
  - They consume large amounts of electricity, natural gas, or other fuels, as well as energy-intensive materials or processes.
- Examples include steel, cement, chemical, and paper production.
- **Challenges include high energy costs, environmental regulations, and sustainability concerns due to significant energy consumption and greenhouse gas emissions.**

# What is the definition of energy-intensive industries or processes?



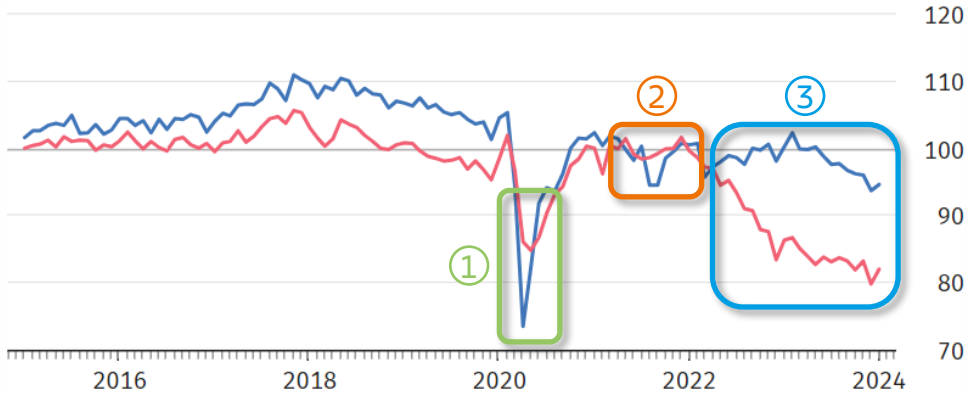
- Energy-intensive industries *demand significant energy for operations.*
  - They consume large amounts of electricity, natural gas, or other fuels, as well as energy-intensive materials or processes.
- Examples include steel, cement, chemical, and paper production.
- **Challenges include high energy costs, environmental regulations, and sustainability concerns due to significant energy consumption and greenhouse gas emissions.**



# Production development in energy-intensive industries

Recognizable break between conventional industry and energy-intensive sectors.

2015 = 100



— Production index industry (manufacturing and mining)  
— Production index for energy-intensive industries

## Production index for energy-intensive industries

- Tracks price-adjusted production value since 2005.
- Graph depicts development since base year 2015.

## Recent Trends

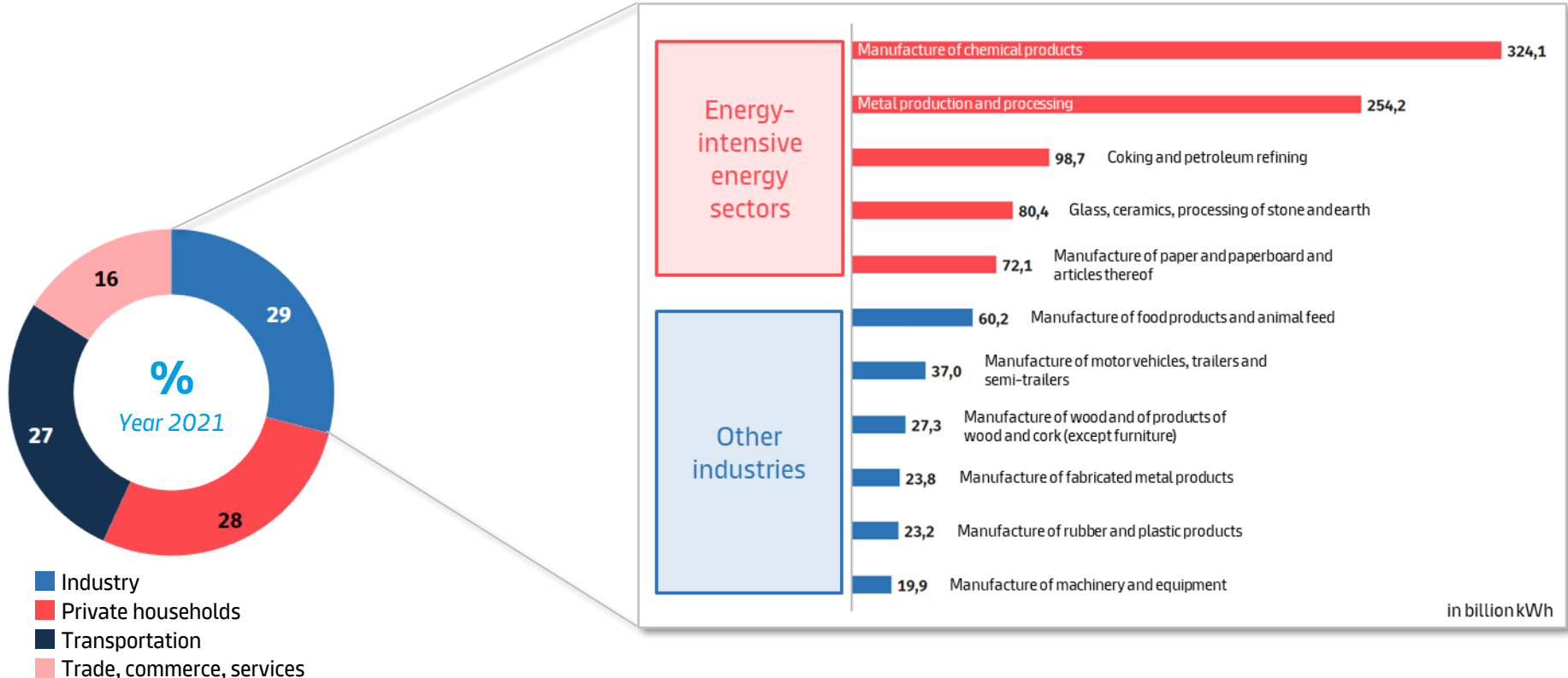
- ① Notable resilience during 2020 pandemic.
- ② During 2021, slightly outperformed the industry.
- ③ Continuous decline since early 2022.

Feb 2022 to July 2023:  
16.7% drop vs. 2.8% in overall industry.

The production index for the energy-intensive industries is calculated as a weighted average of the industrial production indices for the industries concerned. The weights correspond to the relative gross value added at factor costs in the base year 2015.

# Energy consumption in Germany by sector and industry

Industry accounts for almost 30% of the energy consumption. Chemical industry requires the most energy.

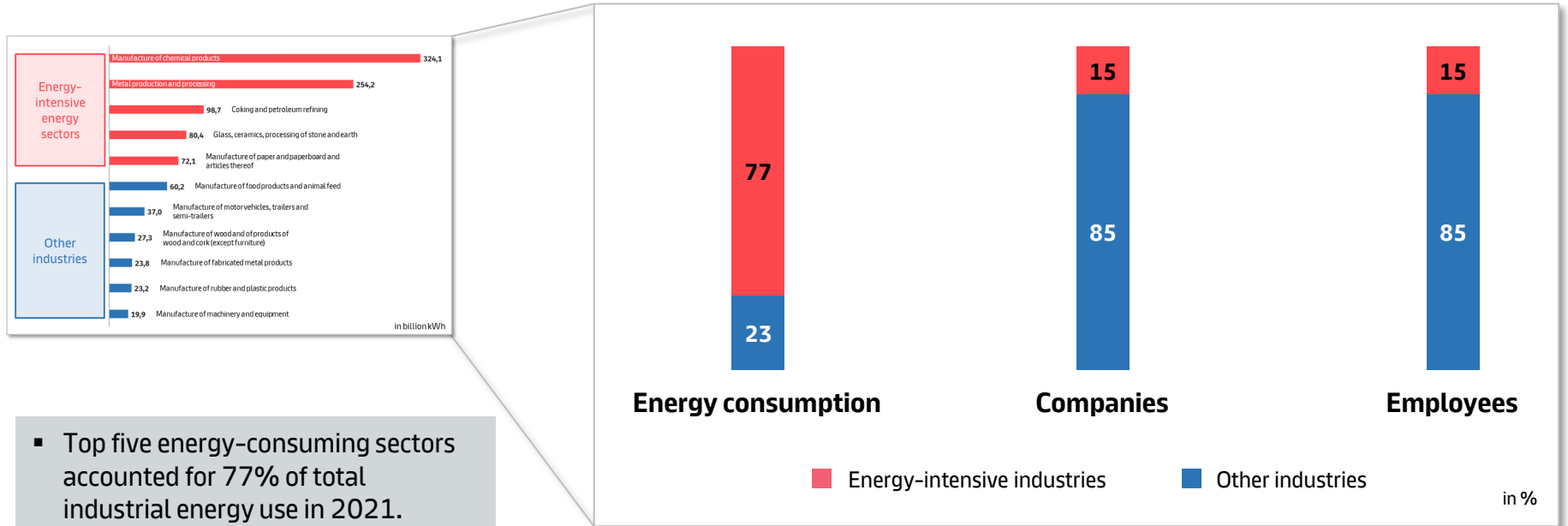


Source: Statistisches Bundesamt (Federal Statistical Office), Industrie, Verarbeitendes Gewerbe - Bedeutung der energieintensiven Industriezweige in Deutschland

MONTEL GERMAN ENERGY DAY 2024 | ENERGY-INTENSIVE INDUSTRY: ESCAPE TO THE US? | JENS BERGMANN | APRIL 24, 2024

# Energy consumption in Germany by sector and industry

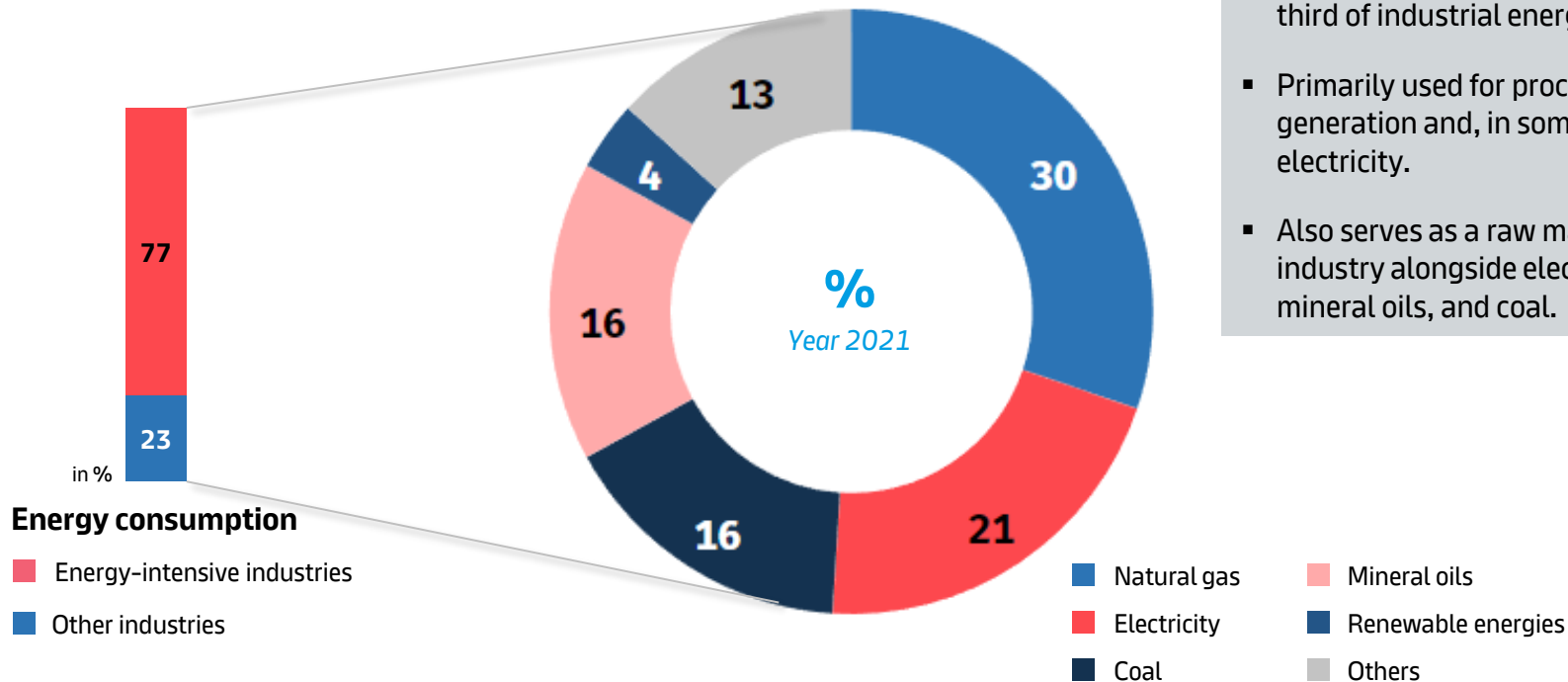
A fraction of businesses are energy-intensive, but these are responsible for almost 80% of energy consumption.



- Top five energy-consuming sectors accounted for 77% of total industrial energy use in 2021.
- These sectors employed nearly one million people in 6,986 German industrial companies in 2021.

# Industrial energy use by energy source

Natural gas is the most important energy source in the industry.



- Natural gas comprises nearly one-third of industrial energy use.
- Primarily used for process heat generation and, in some cases, electricity.
- Also serves as a raw material in industry alongside electricity, mineral oils, and coal.



3

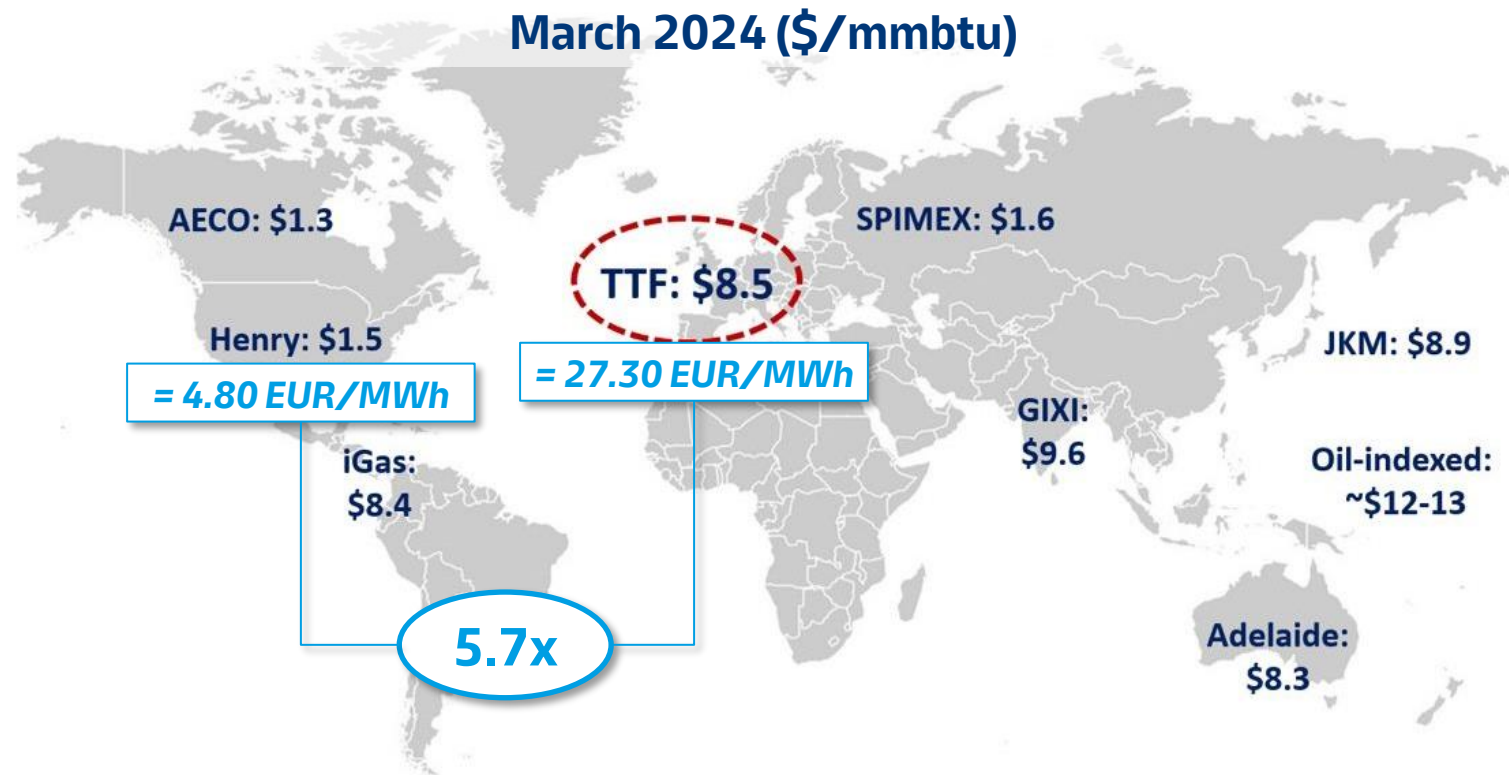
# *Energy-intensive industries*

*Energy costs.*



# Global Natural Gas Prices (Commodity only)

A clear price difference on both sides of the Atlantic.

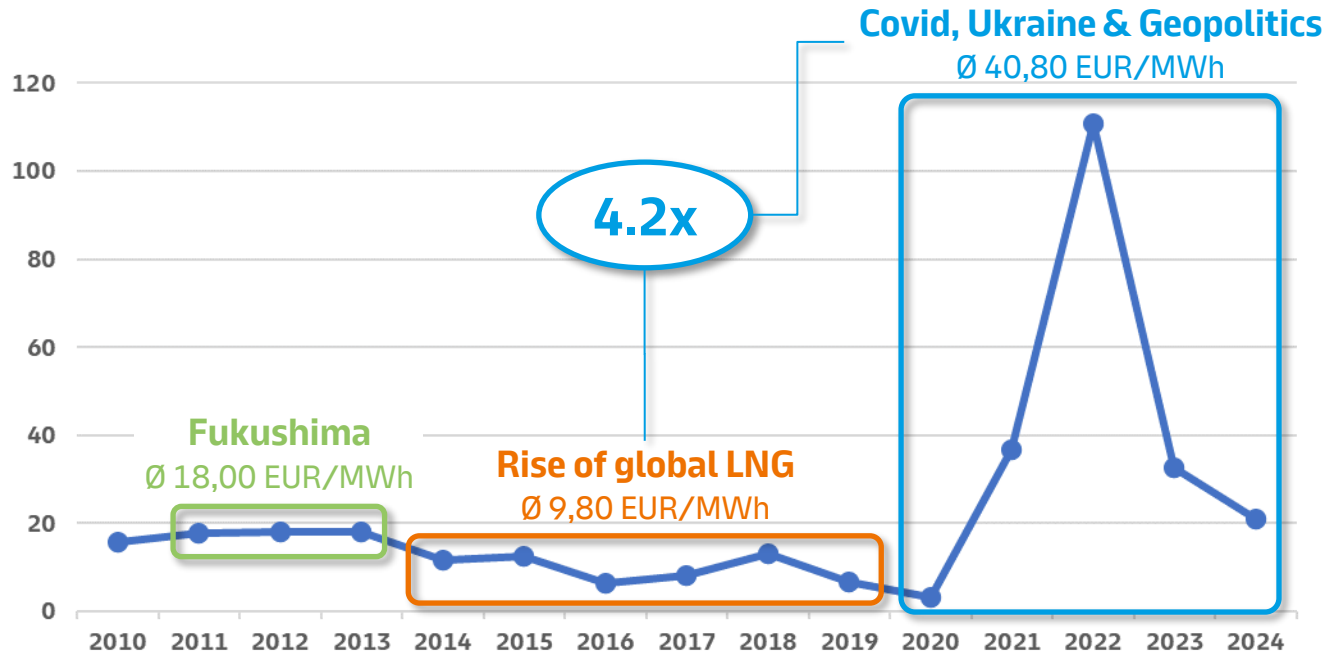


Source: Greg Molnár (Gas Analyst, IEA).

# Global Natural Gas Prices (Commodity only)

Henry Hub/TTF-spreads are well above the long-term average. Even the current year 2024.

## Henry Hub/TTF-Spread (EUR/MWh)



# Total energy costs for energy-intensive industries

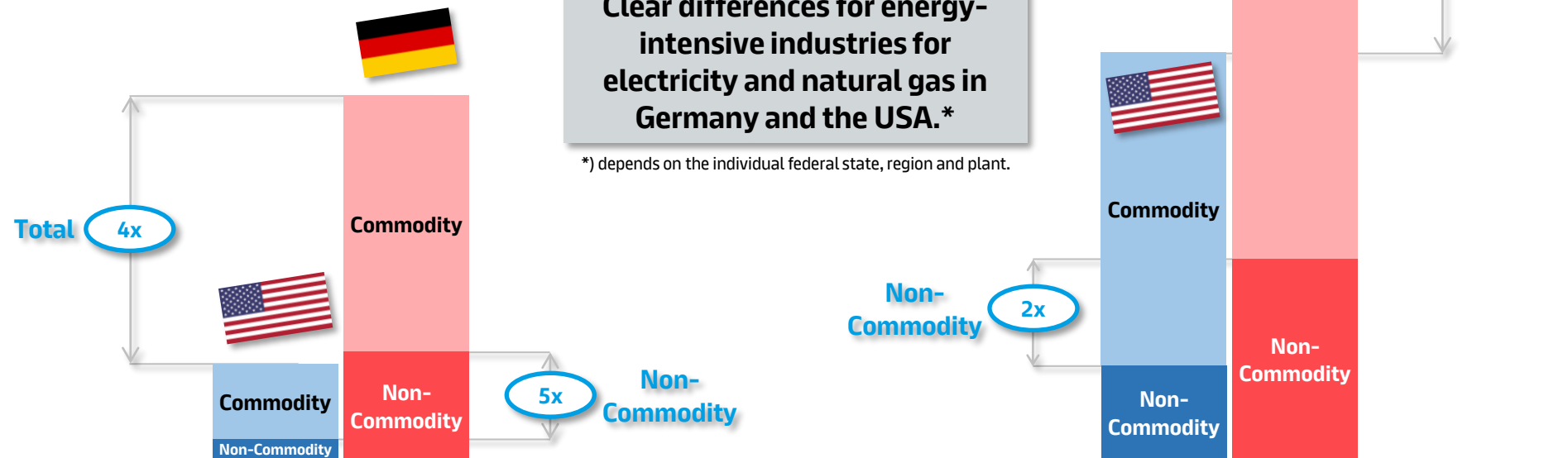
The magnitude in price differences is clearly visible.

## Natural Gas

## Electricity

Clear differences for energy-intensive industries for electricity and natural gas in Germany and the USA.\*

\*) depends on the individual federal state, region and plant.



Source: NYMEX, Pegas, EEX, THE

# Impact of electricity prices increase on industrial companies

A clear change can be seen since 2019.

## Drastic Price Increases

Large consumers face significant cost hikes.

## Competitive Disadvantage

Electricity-intensive industries now pay higher electricity prices than competitors.

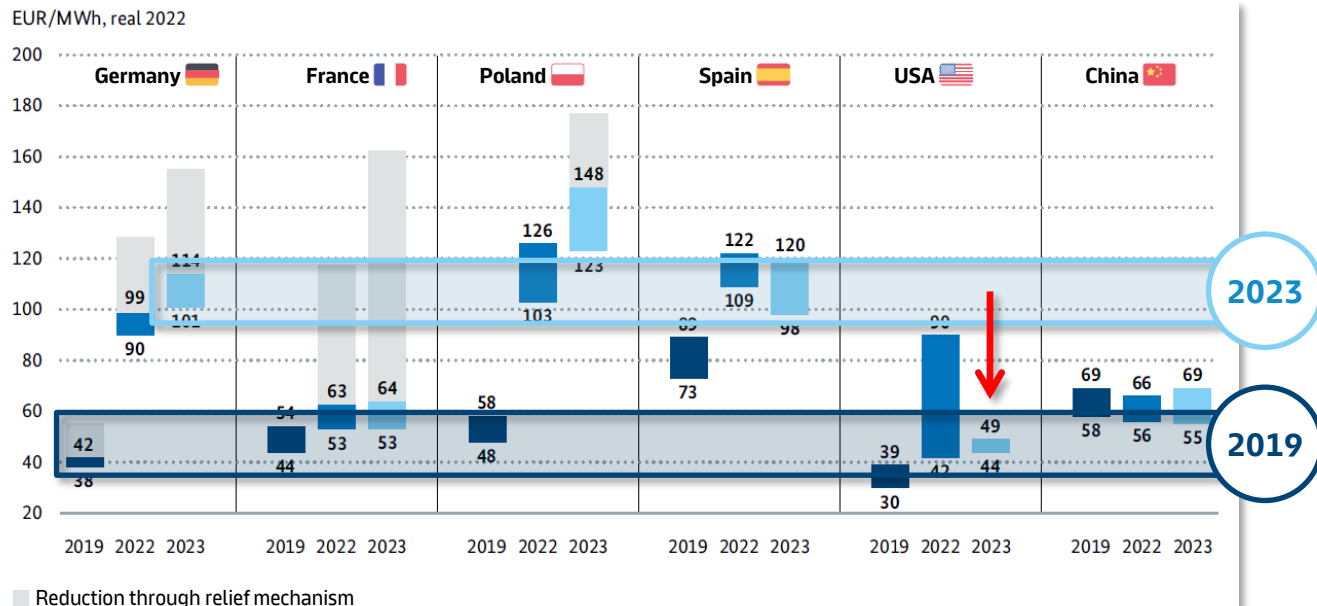
## Pre-War Competitiveness

Before the war in Ukraine, these industries had competitive prices.

## Current Situation

Their competitive position has weakened compared to counterparts in other regions.

## International comparison of electricity procurement costs for industry



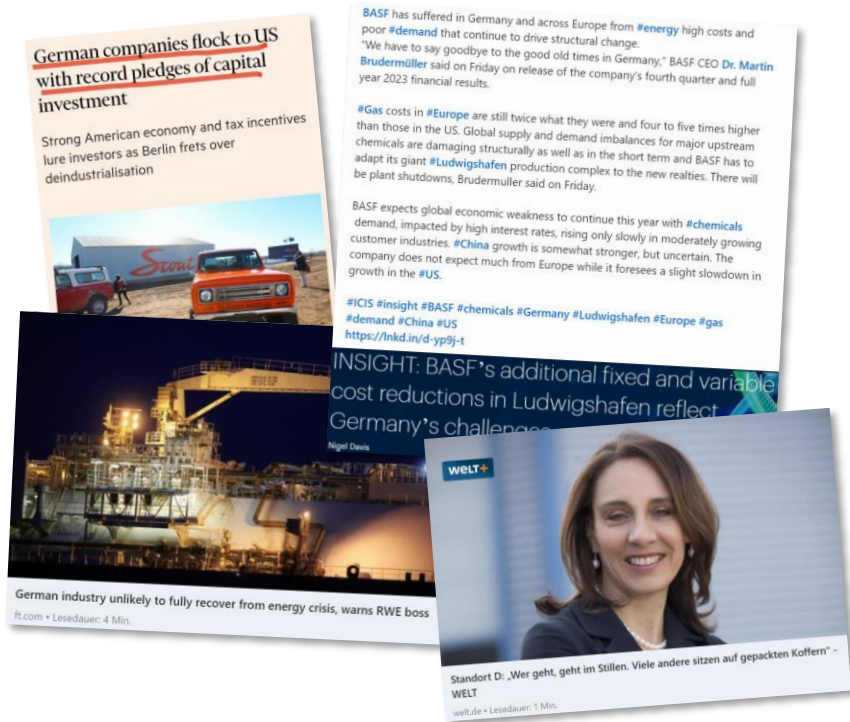


4

# ***Energy-intensive industry: Escape to the US?***



# Energy-intensive industry: Escape to the US?



Some of the energy-intensive industries shared their thoughts recently.

**Energy costs play a very important role but may not be the only criterion in the decision.**

## Opportunities

Lower energy prices

Tax incentives

Innovation ecosystem

...

## Risks

Supply chain disruptions

Freight costs

Currency fluctuations

...

***Thank You***