



**The European
Foundry
Association**

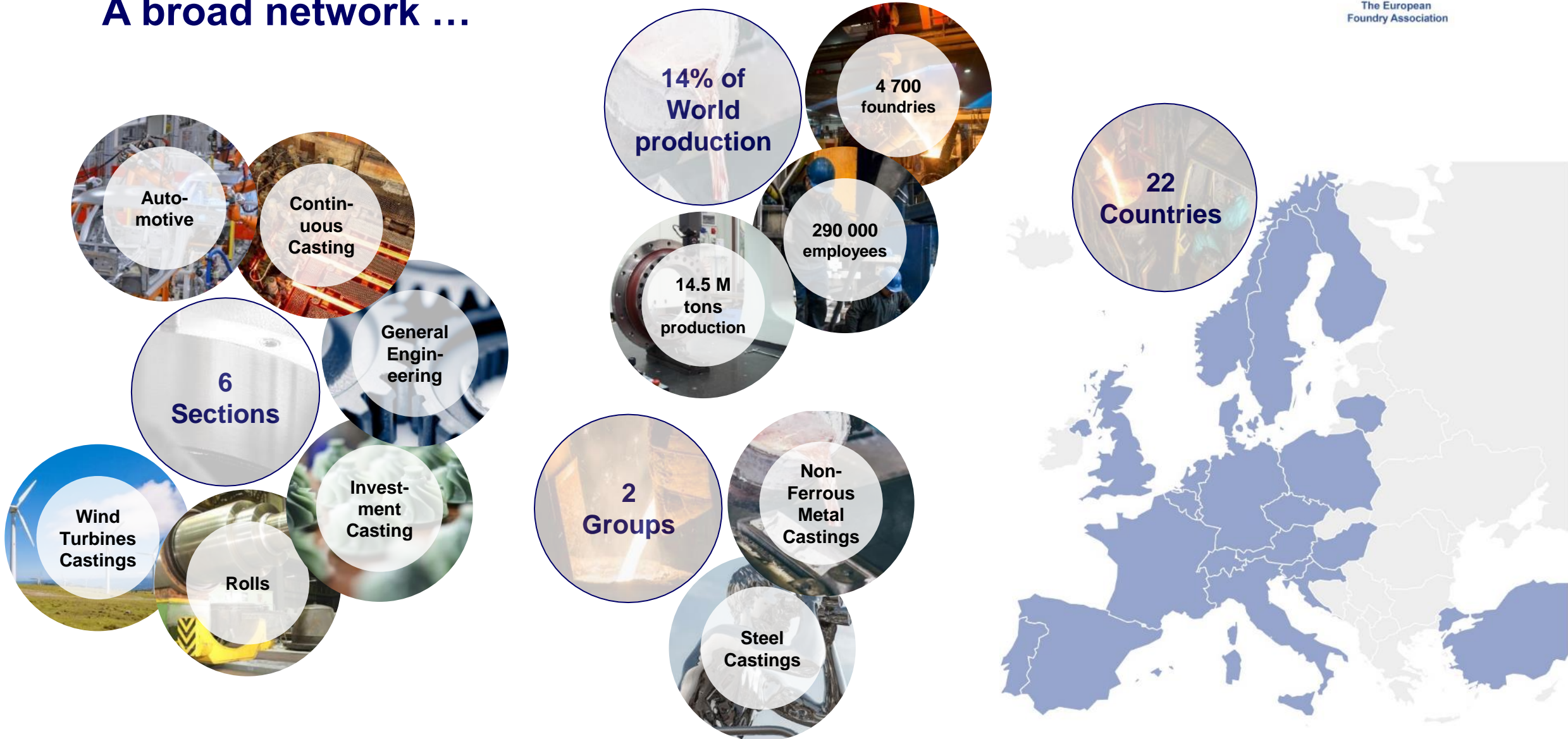
Does it cost a lot of energy or does energy cost a lot?

The European foundry industry and why crisis is our new normal

Tampere

03 November 2022

A broad network ...



Report of recent CAEF activities



Lectures

- Austrian Foundry Forum, Leoben (28-29 April 2022)
- National Foundry Congress Portugal, S. João de Madeira (10-12 May 2022)
- Polish Foundries CEOs Forum, Kielce (20 June 2022)
- Ankiros, Istanbul (6-8 October 2022)
- International Steel Casting Conference, Munich (18-19 October 2022)
- Finnish Foundry Forum Tampere (3-4 November 2022)

Others

- CAEF Summit (22/23 September 2022)
- CAEF Council (23/24 September 2022)
- Raw Material Working Group
- Social Media Working Group
- CAEF Yearbook 2021
- BREF
- NEPSI (Guidance on the proper management and safe use of crystalline silica materials)

Challenging Times

CAEF - The European Foundry Association
1,270 Follower:innen
1 Monat • Bearbeitet •

#standwithukraine

In solidarity with Ukrainian citizens CAEF strongly condemns war activities and supports the measures undertaken by the European Union.

The principals of CAEF follow the Coal and Steel Community (ECSC) from 1951 as a project of European integrity beyond European Union and NATO membership.

Plenty of CAEF member states are in direct proximity to and/or Ukraine. Economic consequences of the sanctions also hit the European industry hard. A price we as European citizens have to pay. Peace in Europe remains the highest and is unfortunately only cherished when being under external threat.

Fynn-Willem Lohe und 49 weitere Personen

CAEF - The European Foundry Association
1,260 Follower:innen
2 Wochen •

In deep empathy with the people in [#Ukraine](#) and for the sake of the European peace order, CAEF stands behind the [#sanctions](#) against [#Russia](#). In consequence, however, [#European](#) [#foundries](#) are facing exploding [#energy](#) prices ... mehr anzeigen

Übersetzung anzeigen




Exploding energy prices and raw materials supply difficulties require transparency across the value chain - CAEF - The European Foundry Association
caef.eu • Lesedauer: 2 Min.

Fynn-Willem Lohe und 97 weitere Personen

CAEF - The European Foundry Association
1,269 Follower:innen
1 Tag •

Rising [#rawmaterials](#) and [#energy](#) costs on the one hand, unclear demand on the other hand. [#European](#) [#foundries](#) are confronted with uncertainties in their production planning that are extremely difficult to manage. CAEF ... mehr anzeigen


Übersetzung anzeigen



„Exploding energy prices and difficulties in raw materials supply are a great challenge for the foundry industry.

In these extraordinary times, customers of cast products should communicate their needs transparently and recognise their suppliers more than ever as an elementary cornerstone of the value chain.

Transparency in the value chain is the order of the day!“



Fynn-Willem Lohe
CAEF Secretary General

Katja Wagner und 53 weitere Personen

2 Kommentare • 13 Shares

Image of Foundry Industry - Representation Matters!

Dark, dirty, dangerous

or

- attractive employer
- system-relevant enabler
- definition of circular economy
- driver of innovation
- ... and much more?

Send modern and representative photos of various casting materials and casting processes from your foundry to tillman.vandesand@caef.eu

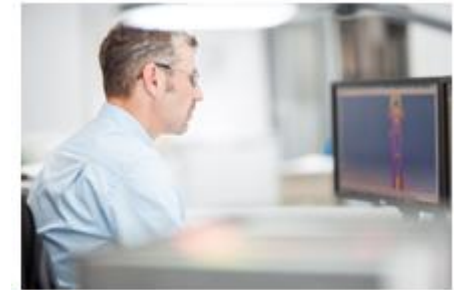
Image database set up on CAEF-Homepage

Includes freely accessible and cost-free photos for journalists, pupils/students and institutions (with acknowledgement of source).

Requirements for the photos:

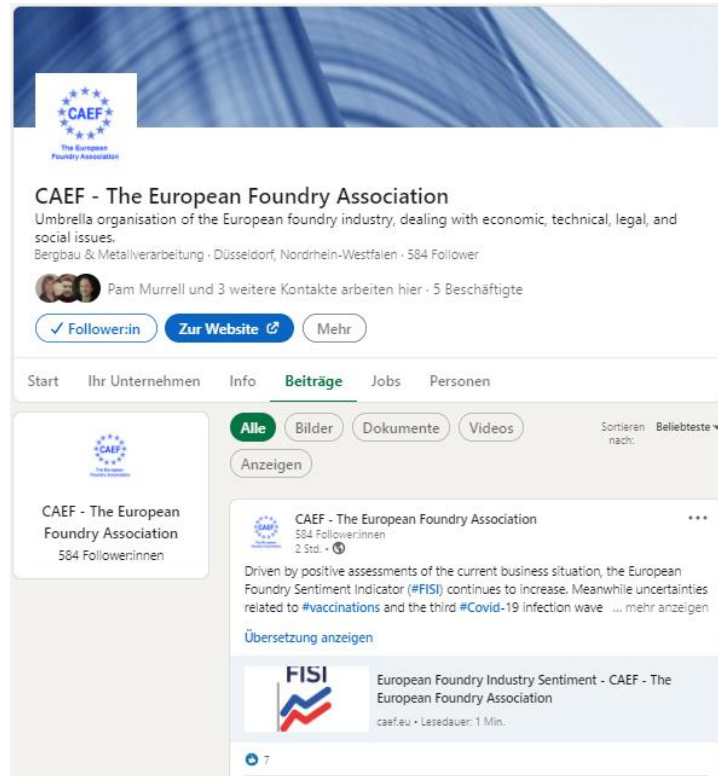
free of charge and free of third party rights

high image resolution (300 dpi, 5,000-6,000 pixels)



Source: Römheld & Moelle (Germany), www.roemheld-moelle.de;
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CAEF online



Get in touch with us
via [CAEF LinkedIn](#)
and stay informed



Economic data & figures



Position papers & publications



Exchange of views & lobbying

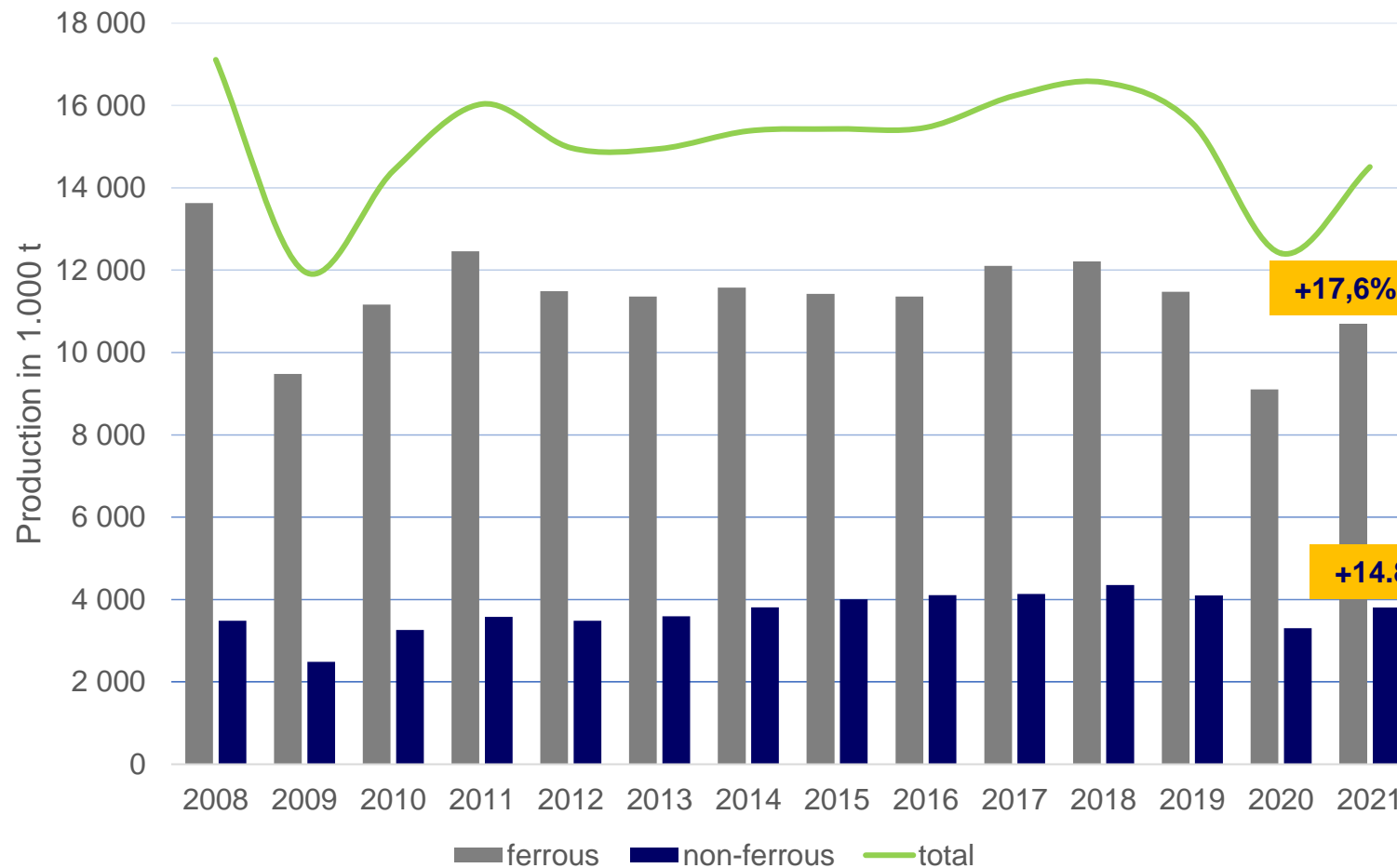


... and many more information



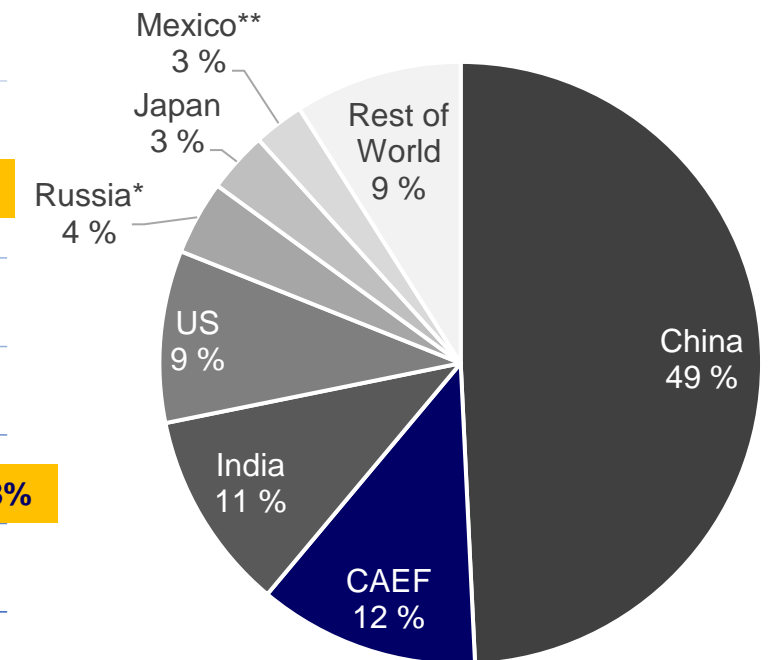
European Casting Production

CAEF Casting Production



Source: CAEF

Share of world casting production (2020) in %



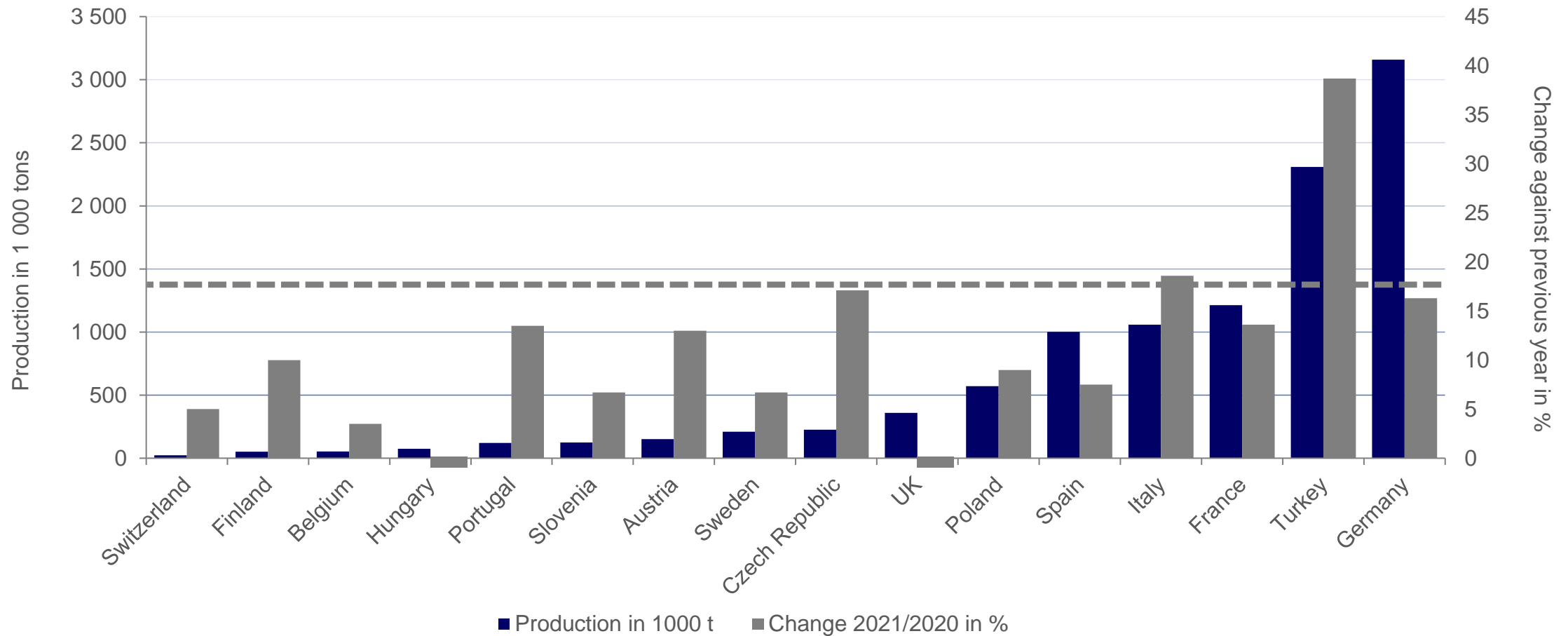
*2019 Data

**2017 Data

Source: ModernCasting

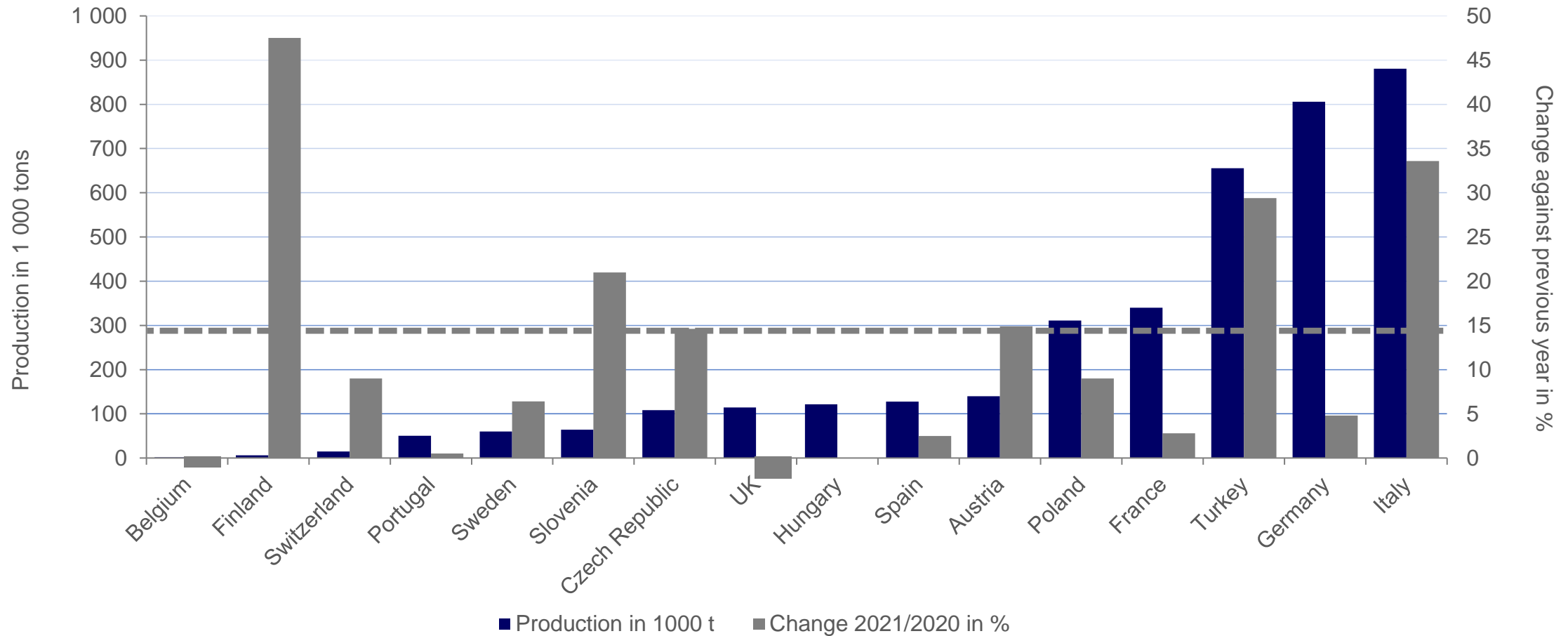
European Foundry Industry 2021


Production of Iron, Ductile Iron and Steel Castings (in 1.000 t)



European Foundry Industry 2021

Production of Non-Ferrous Metal Castings (in 1.000 t)





THE ECONOMIC TIMES

China's crumbling real estate sector has the world on edge!

THE NEW YORK TIMES

New Inflation Developments Are Rattling Markets and Economists!

THE GUARDIAN

World Bank warns higher interest rates could trigger global recession!

EPW

Another Global Debt Crisis!

FINANCIAL POST

Hard bargain: Unionized workers prepare to battle for big pay hikes amid super-charged inflation!

EURATIVE

Labour shortages felt all over Europe!

FINANCIAL TIMES

Eurozone factories suffer biggest output fall since pandemic hit!

BUSINESS STANDRARD

Energy crisis deepens in Europe as high temp, drought hits power supply!

FORBES

Can Italians Keep Up Their Pasta Intake When Energy Costs Are Rocketing?

Inflation

September 2022

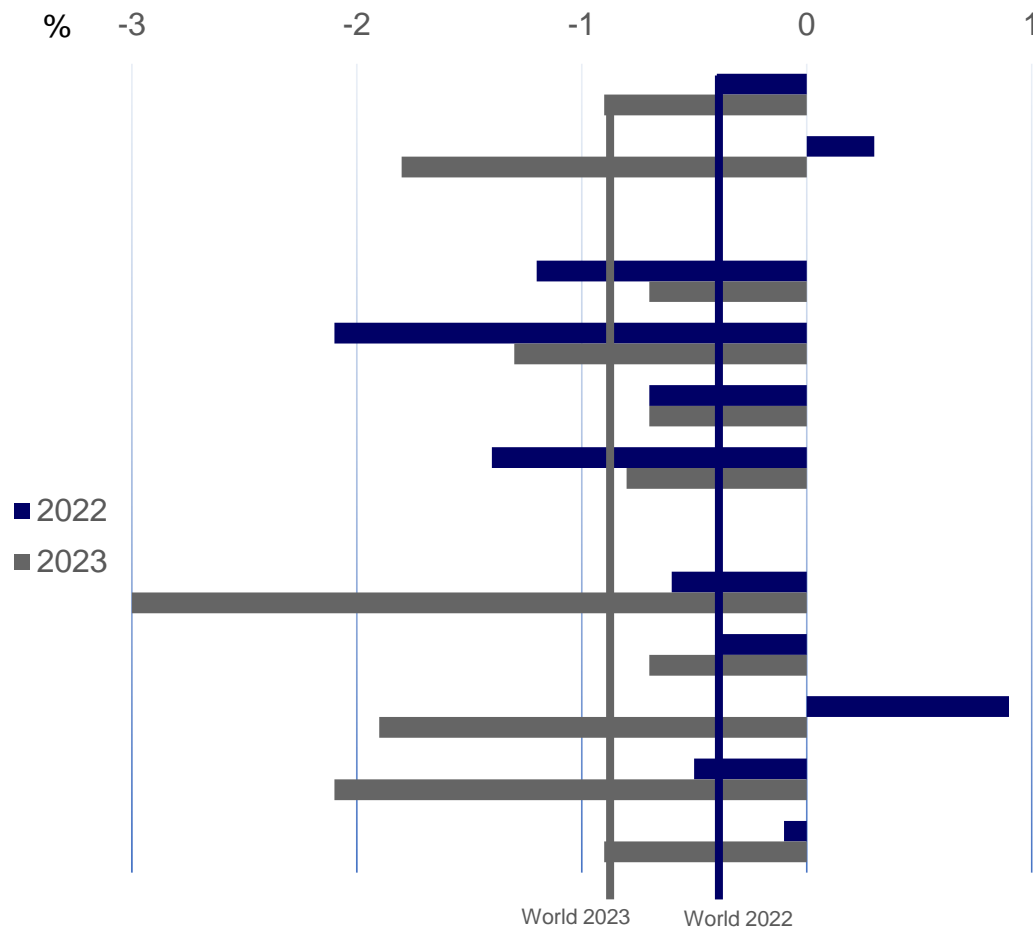
- Fight against Inflation becomes first priority in many countries
- Politicians and employers under pressure from trade unions
- Support for private households with increasing interest rates are resulting in less space for fiscal policy or lead to debt
- Lower private and public demand expected in upcoming years
- High interest rates and high energy costs lowering space for investments (less demand for foundries and less investments in foundry industry itself in light of transformation)
- Weak Euro is problem for energy and raw material costs

Increase supply or lower demand?
Does supply decrease due to structural shifts?



Crisis Years and Outlook

Global real GDP Growth (in %)



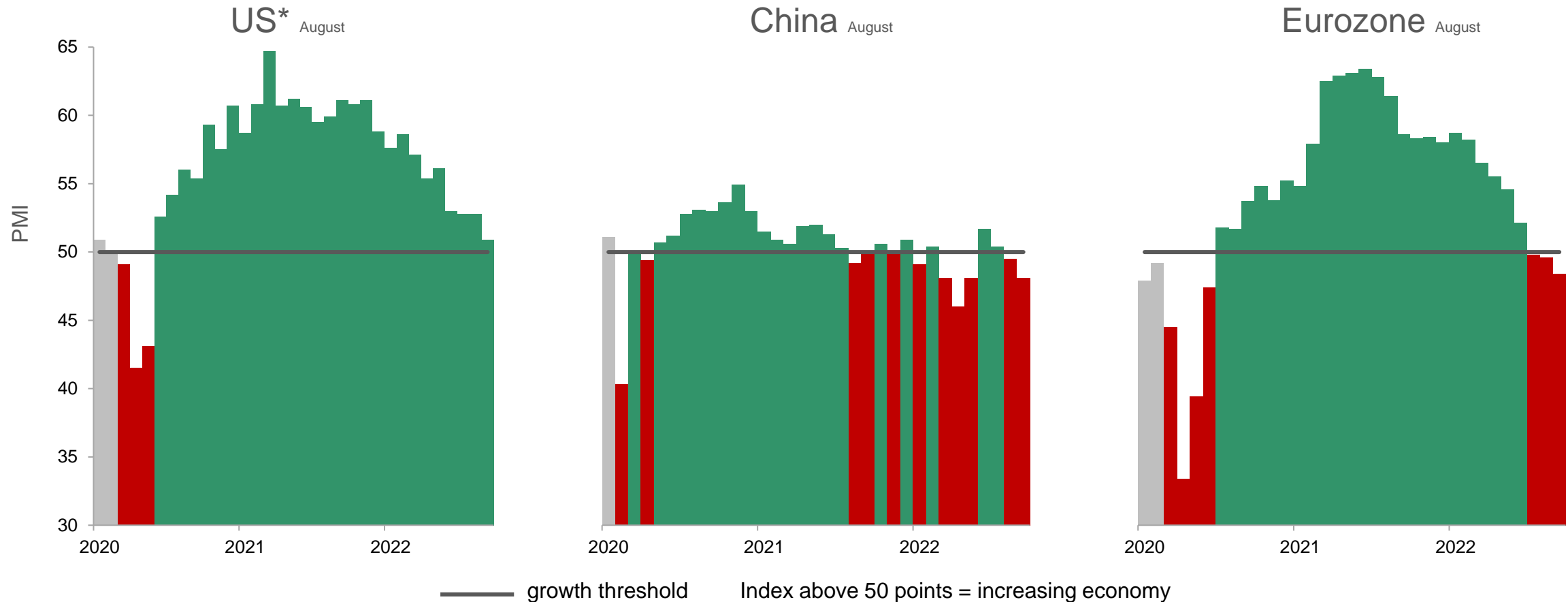
Source: IMF (October 2022)

Difference from April 2022 WEO

	2021	2022 ^E	2023 ^E
World	6.0	3.2	2.7
Euro Area	5.2	3.1	0.5
China	8.1	3.2	4.4
United States	5.7	1.6	1.0
Japan	1.7	1.7	1.6
India	8.7	6.8	6.1
Germany	2.6	1.5	-0.3
France	6.8	2.5	0.7
Italy	6.6	3.2	-0.2
Spain	5.1	4.3	1.2
United Kingdom	7.4	3.6	0.3

Manufacturing Purchasing Manager Index (PMI) in large regions

August 2022



Source: IHS Markit, J.P. Morgan, *ISM

Dutch TTF Gas Futures November 2022

Dutch TTF DAily Natural Gas Forward Daily Futures

wallstreet:online



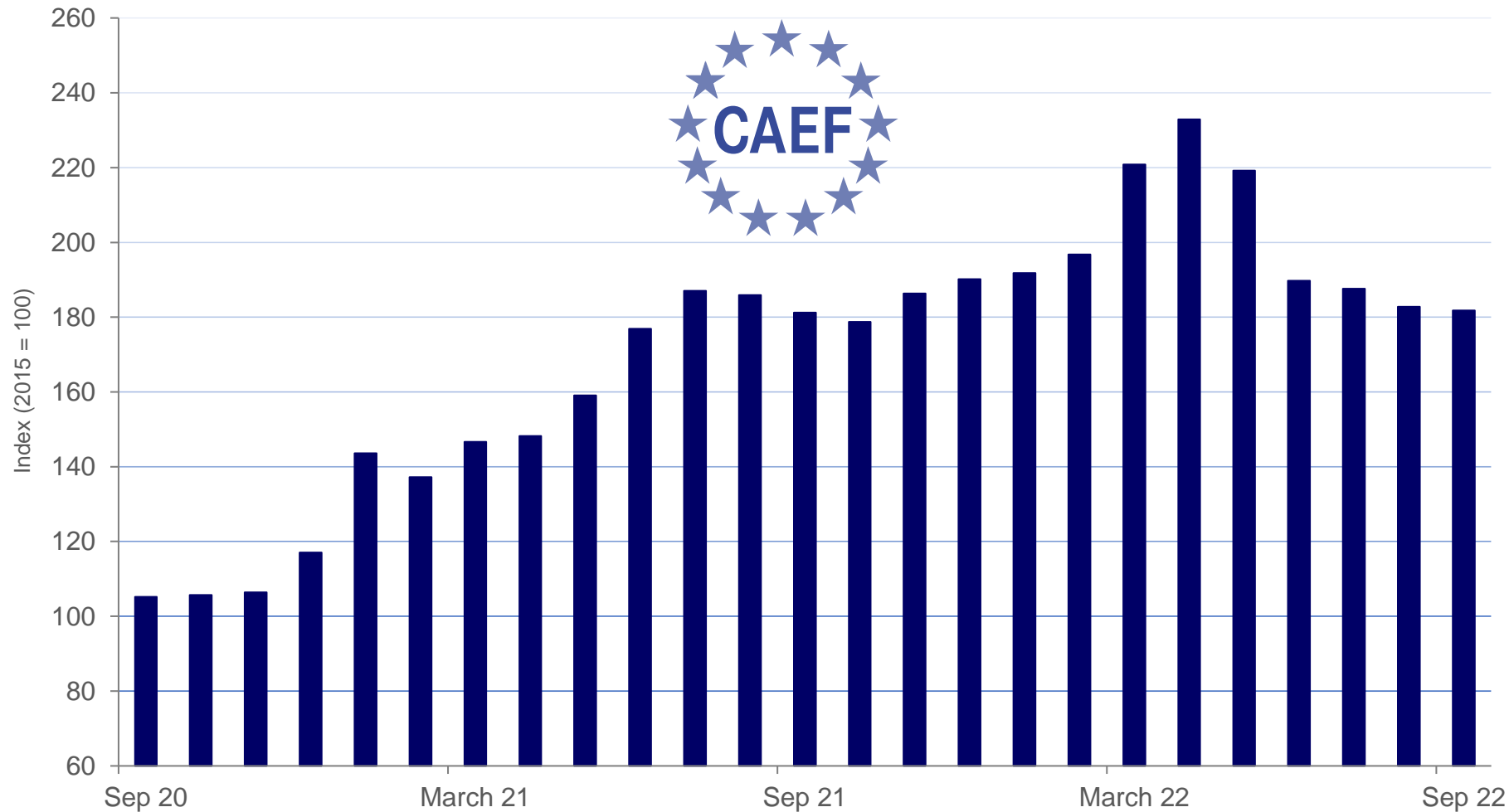
November 2022

Against Nov 2019
+ 191 %

Against Nov 2021
- 64 %

Against Oct 2022
- 86 %

CAEF Scrap Price Index September 2022



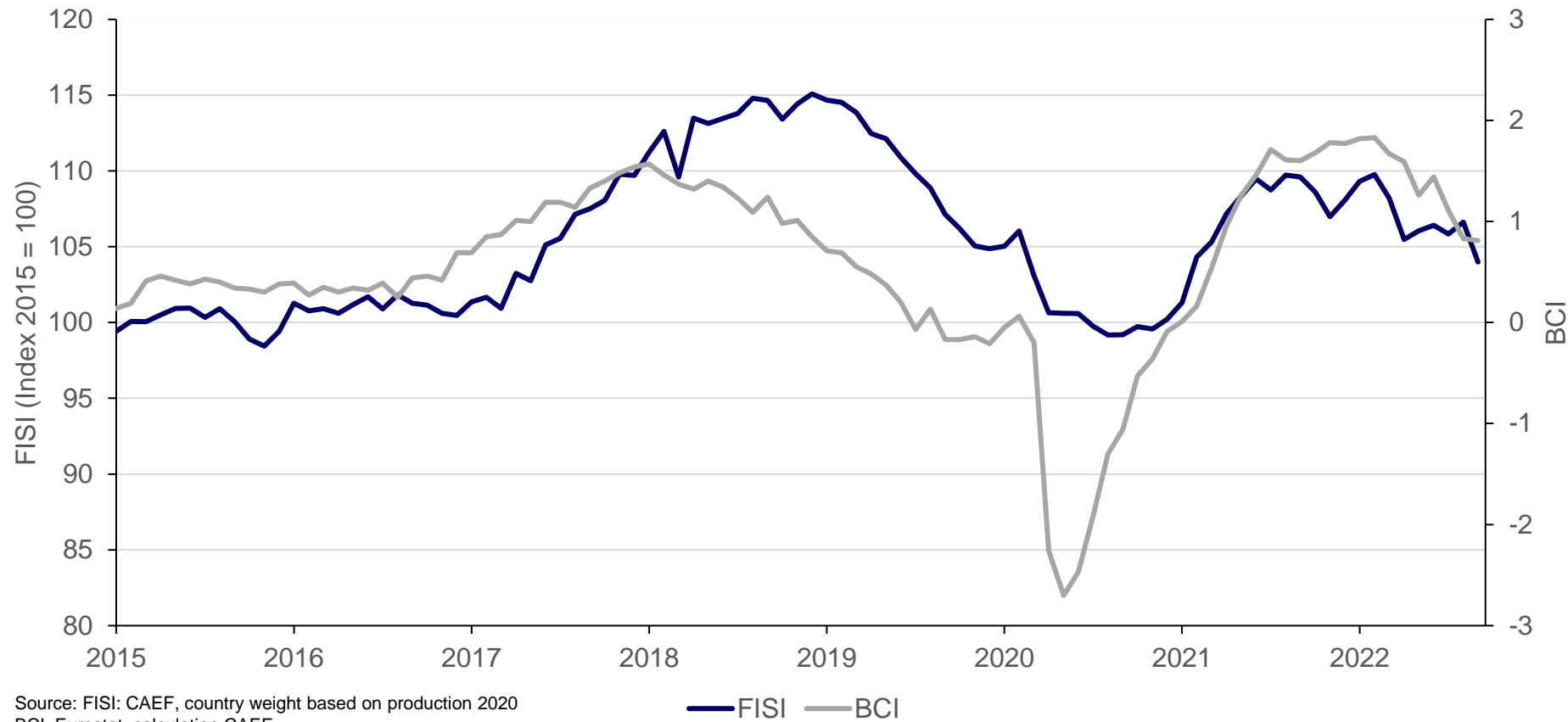
September 2022

against 2021
- 0%

against 2020
+ 72%

European Foundry Industry Sentiment Indicator (FISI) and Business Climate Indicator Euro Area (BCI)

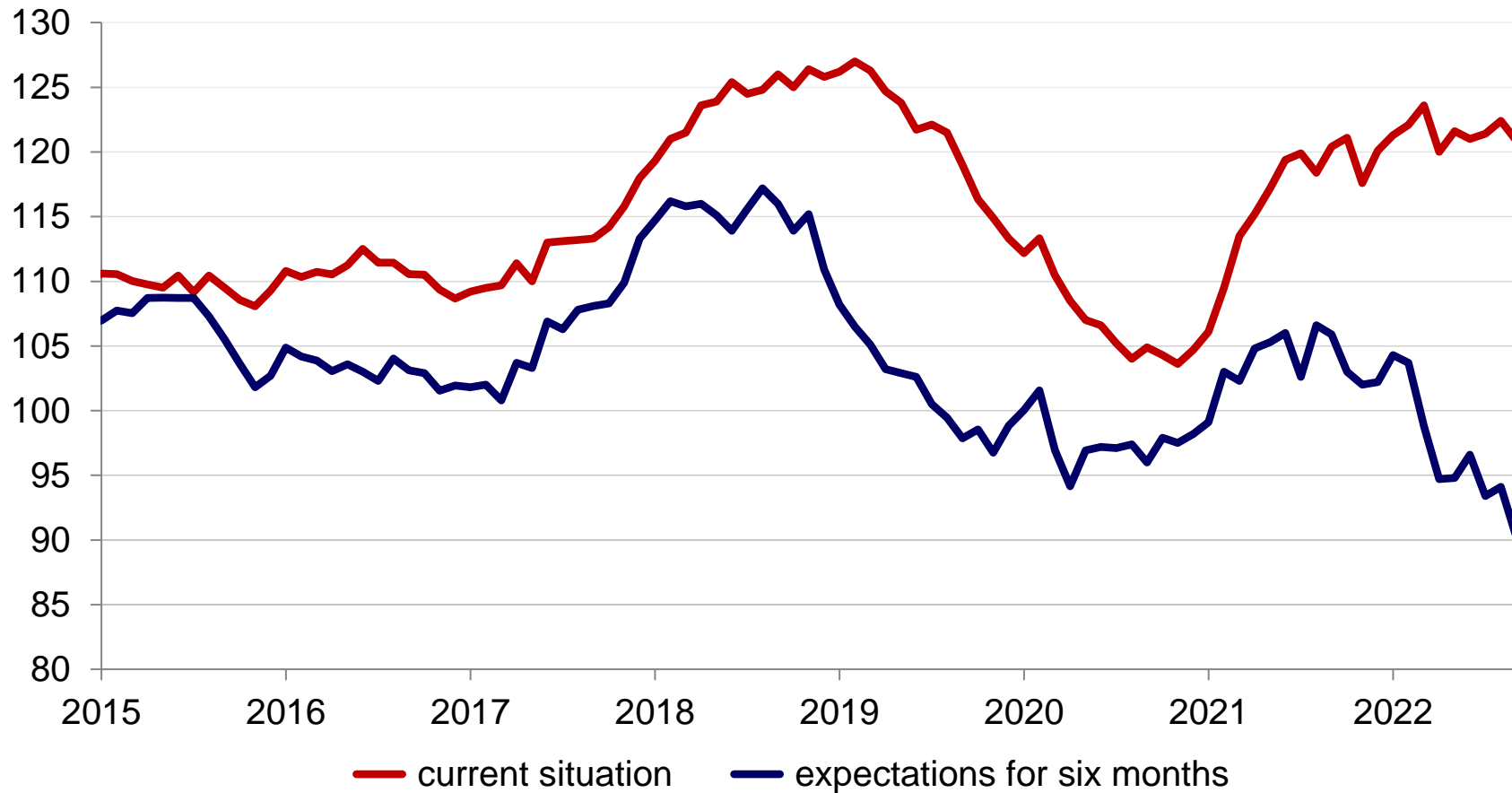
September 2022



Source: FISI: CAEF, country weight based on production 2020
BCI: Eurostat, calculation CAEF

European Foundry Industry Sentiment Indicator FISl

Ferrous Castings - September 2022

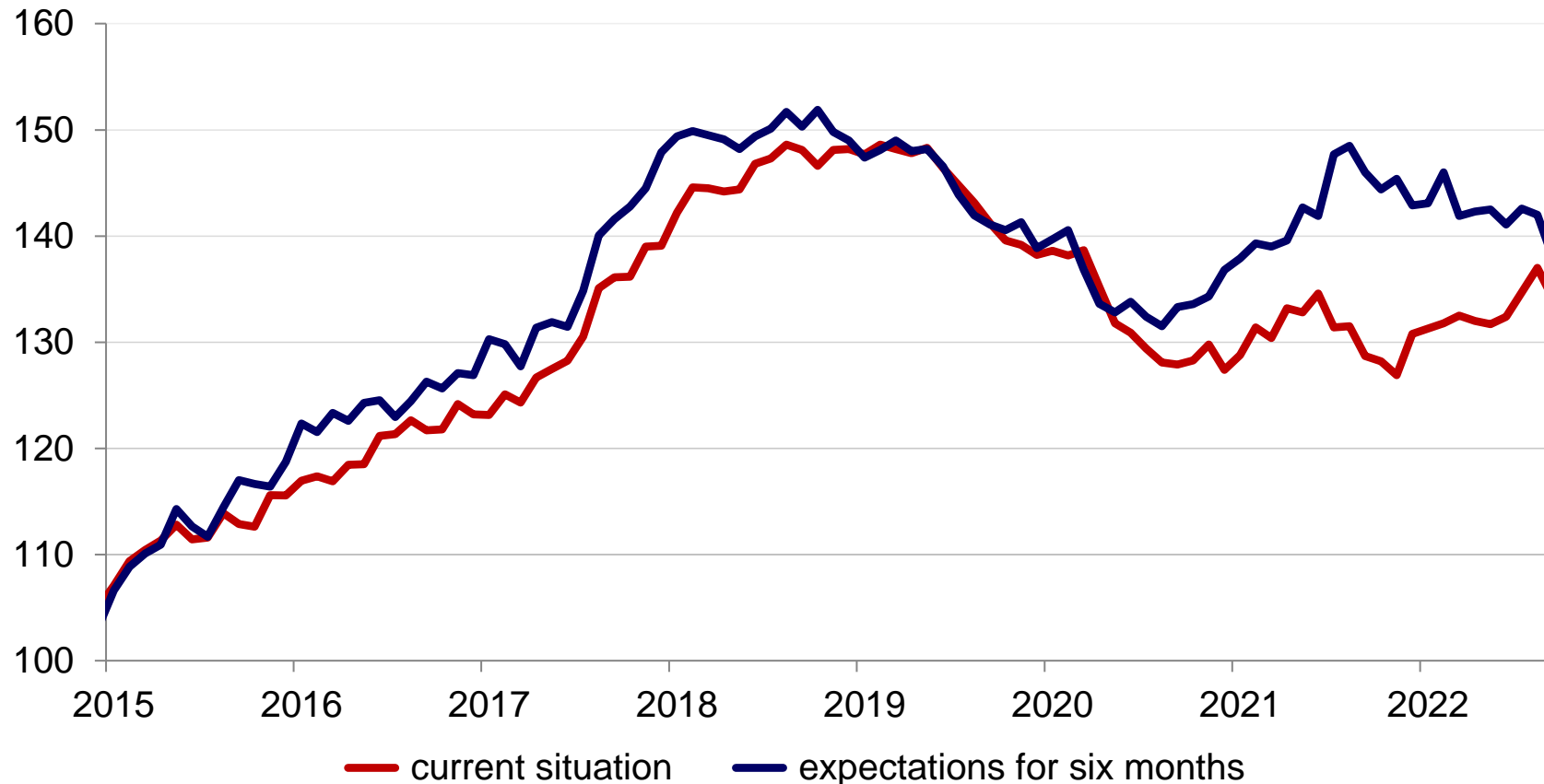


The assessment of the current business situation of the European iron foundries decreased in September. The index shows a minus of 1.5 points compared to the previous month putting the figure at 120.9 points. Expectations for the next 6 months, meanwhile, decreased by 3.8 index points at 90.8.

Source CAEF, Index 2010 = 100, country weight based on production 2020

European Foundry Industry Sentiment Indicator FISl

Non-Ferrous Castings - September 2022



In September, the assessment of the current business situation of European non-ferrous foundries decreased. The new index value is at 134.1 points, 2.9 lower than last month. Expectations for the next 6 months, at the same time decreased by 4.1 points to an index value of 137.9.

Source CAEF, Index 2010 = 100, country weight based on production 2020



Main Customer Industries

- Engineering Sector -

Incoming Orders & Production: Engineering Sector (Germany) - August 2022



**Change in % cumulated
against previous year's period**

01. - 08. 2022

Production - 1.3 %
Incoming Orders - 1.4 %

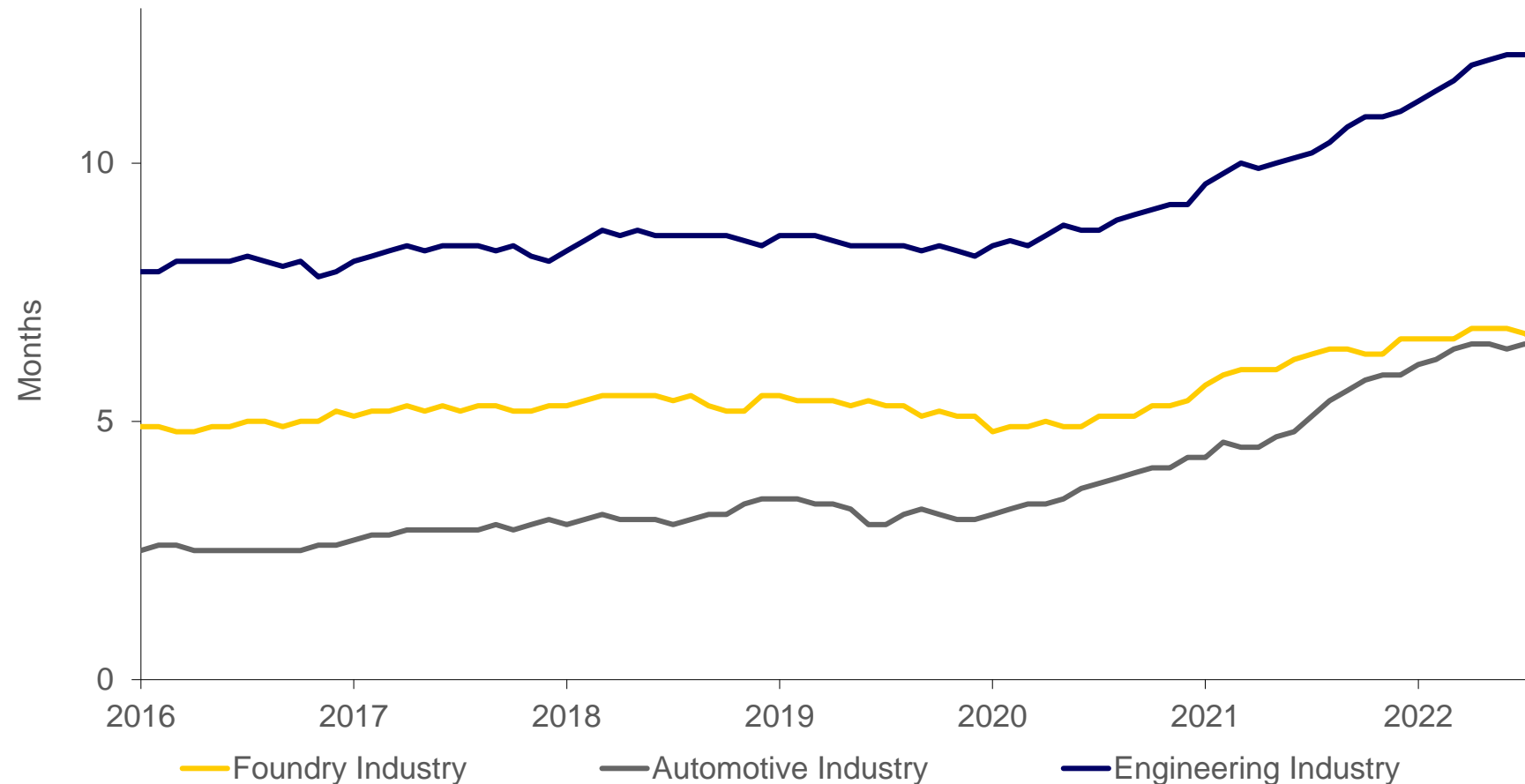
German engineering sector
production forecast 2022:

7 % → 4 % → 1 %

Source: Stat. BA, Index 2015=100, calendar and seasonally-adjusted, Calculation BDG

Order Book Reserve

August 2022



**Order Book Reserve
August 2022
(historical 2016-2020)**

**Foundry Industry
6.5 Months
(5.2 Months)**

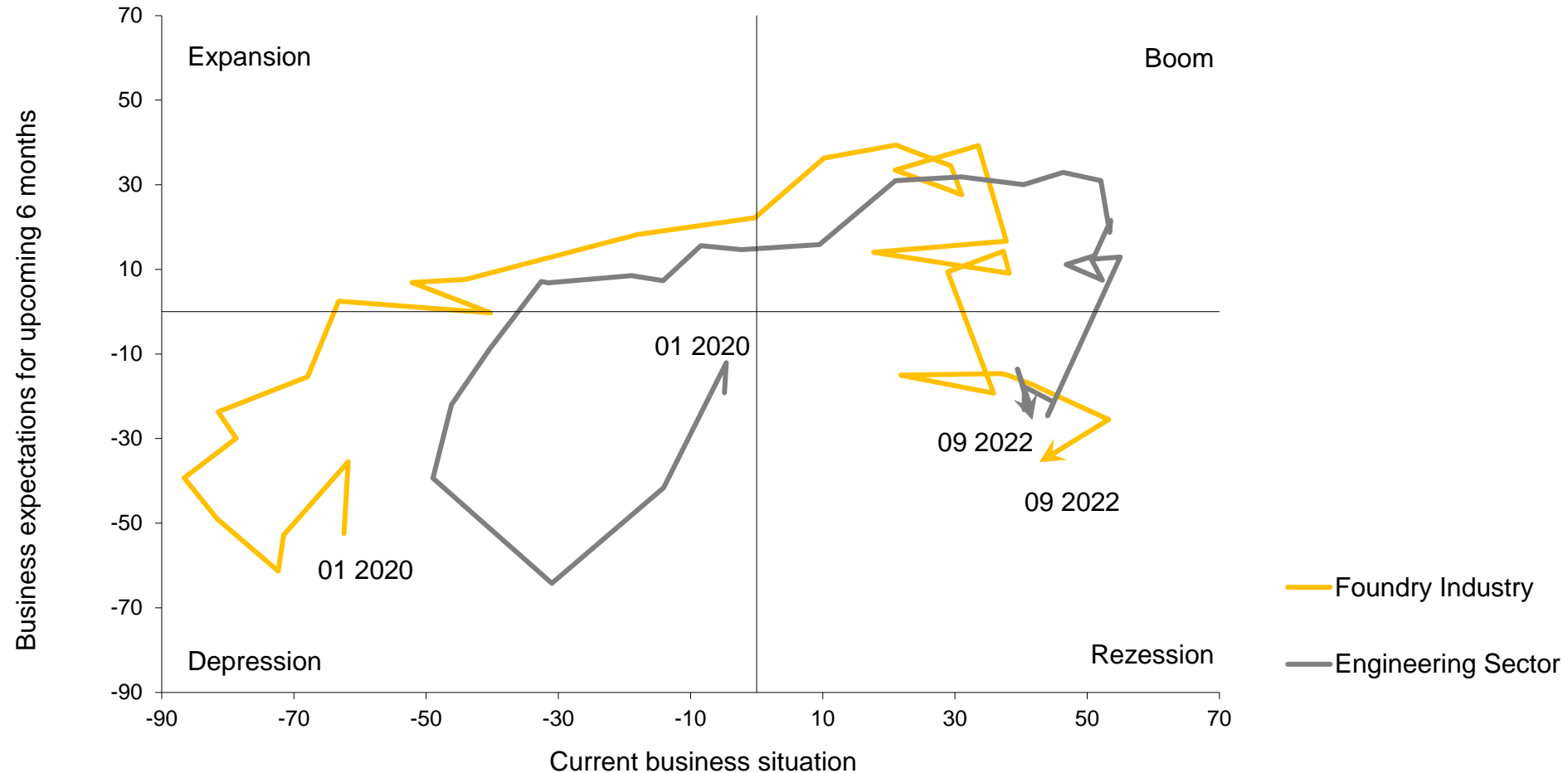
**Automotive Industry
6.4 Months
(3.0 Months)**

**Engineering Industry
12.1 Months
(8.3 Months)**

Source: Stat. BA, Index 2015=100, calendar and seasonally-adjusted, Calculation BDG

Business Cycle Clock (Germany)

Engineering Sector & Foundry Industry - September 2022



Source ifo-Institut, calculation by BDG, season adjusted data



Main Customer Industries

- Automotive Sector -

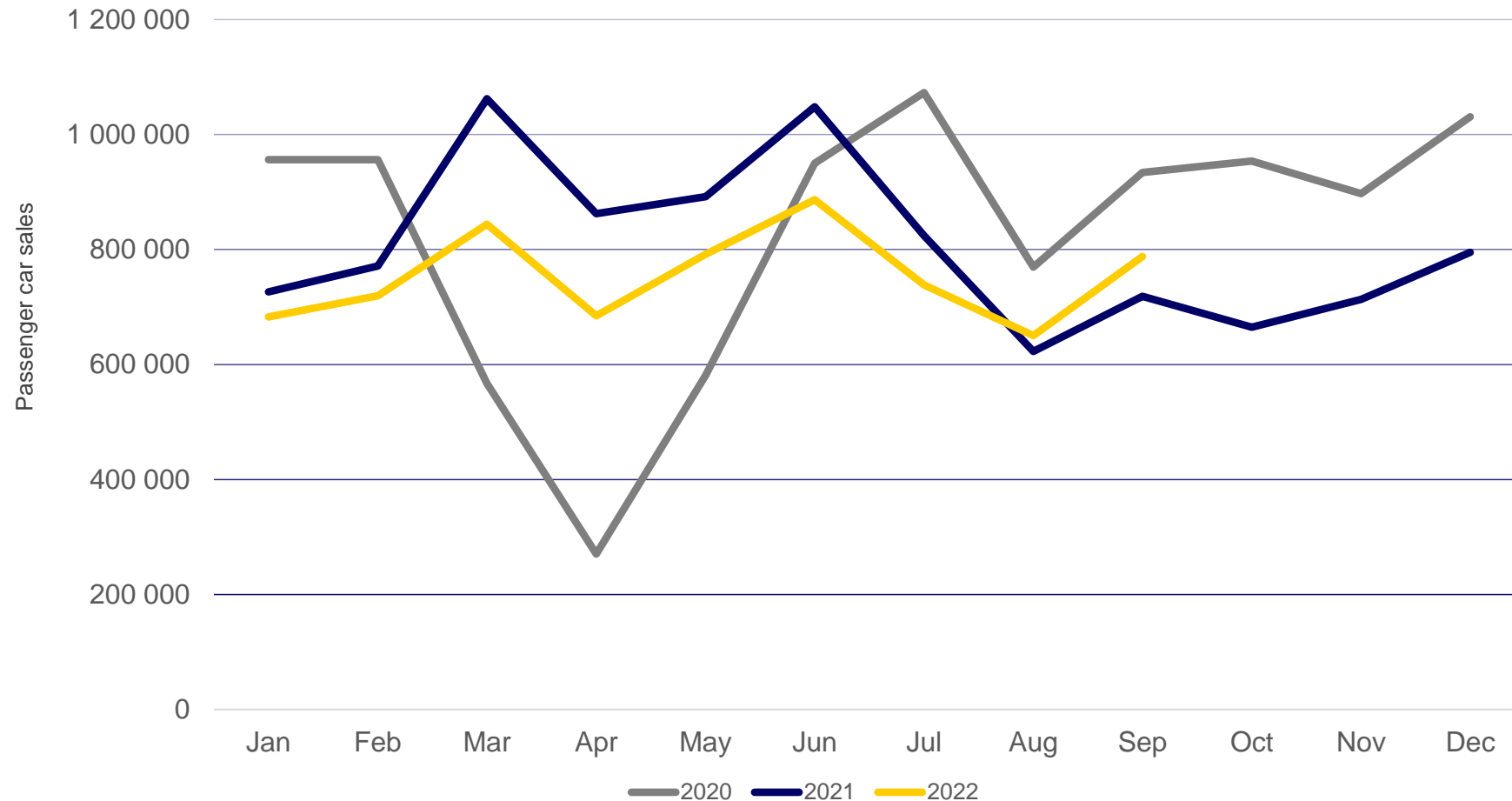
International Vehicle Market 01. – 09. 2022 – Passenger cars

	New Registrations January – September 2022		
	Total	Change 22/21 in %	Change 22/19 in %
Europe (EU27+EFTA+UK)	8.300.000	- 10	- 32
US	10.100.000	- 13	- 20
China	16.800.000	15	12
Japan	2.600.000	- 11	- 23
India	2.900.000	23	31
Brasil	1.400.000	- 5	- 26

Source: VDA, September 2022

European Vehicle Market

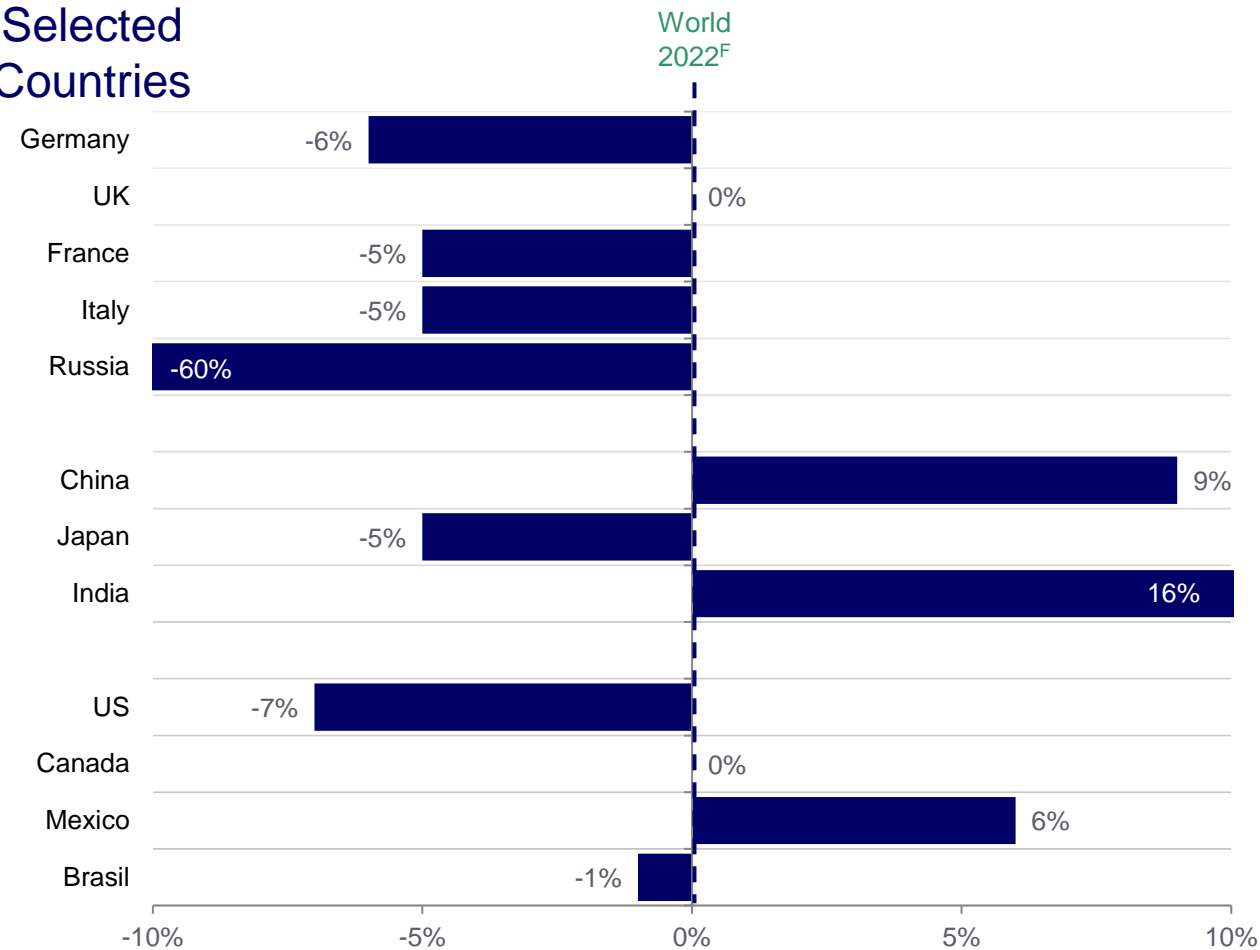
September 2022 - New Registrations Passenger Cars (EU)



Jan - Sep 2022
 against 2021
 - 10 %
 against 2020
 - 4 %

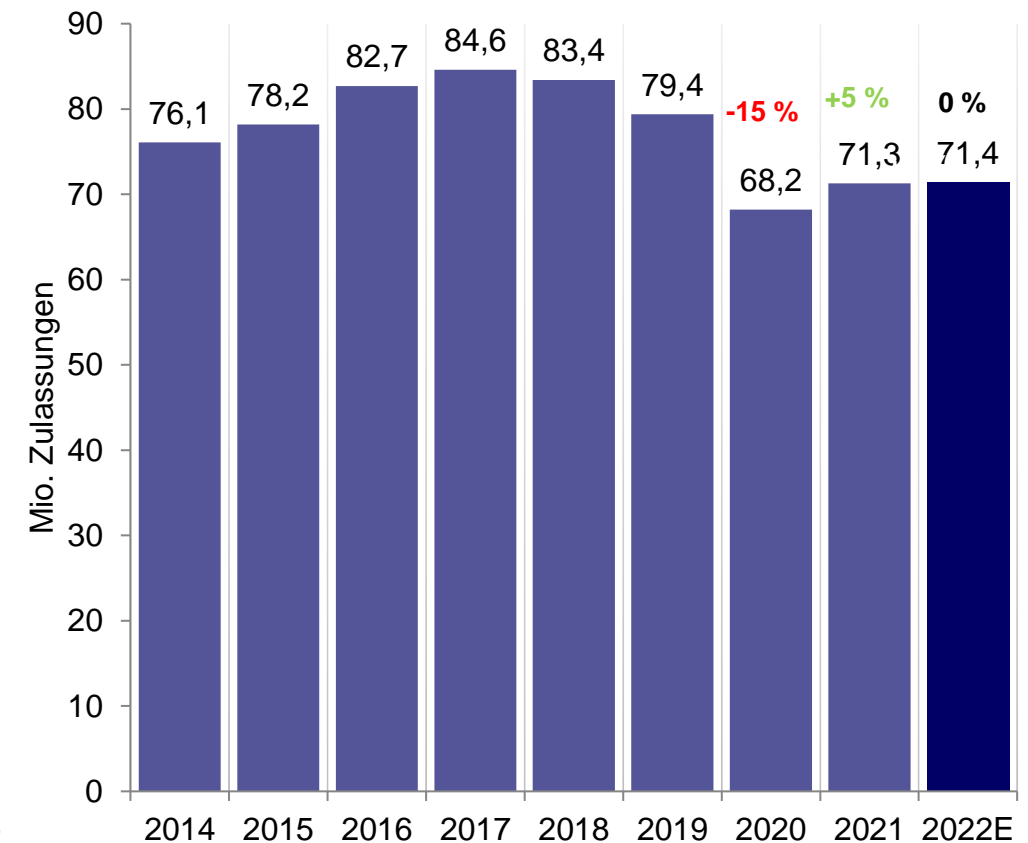
Forecast 2022 – Passenger car sales

Selected Countries



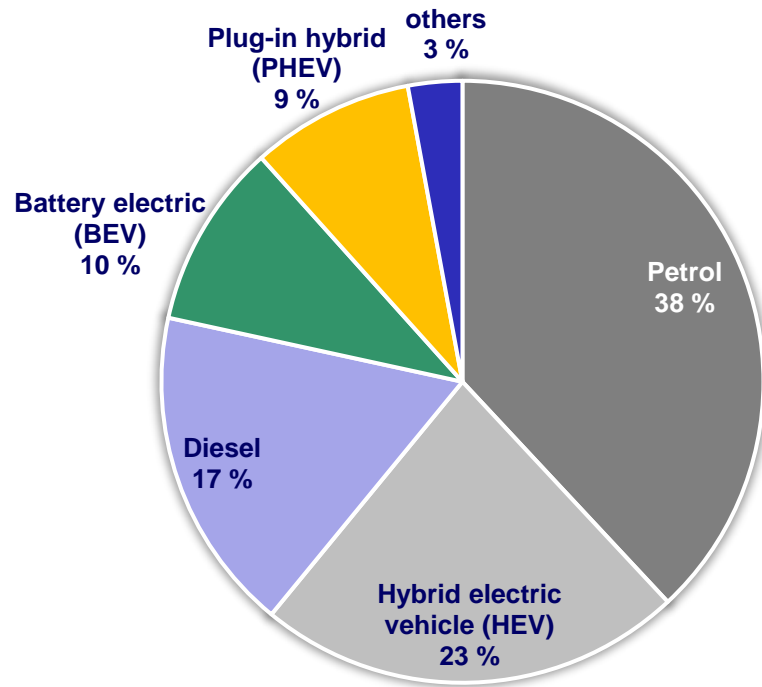
Change against prev. year in %

World

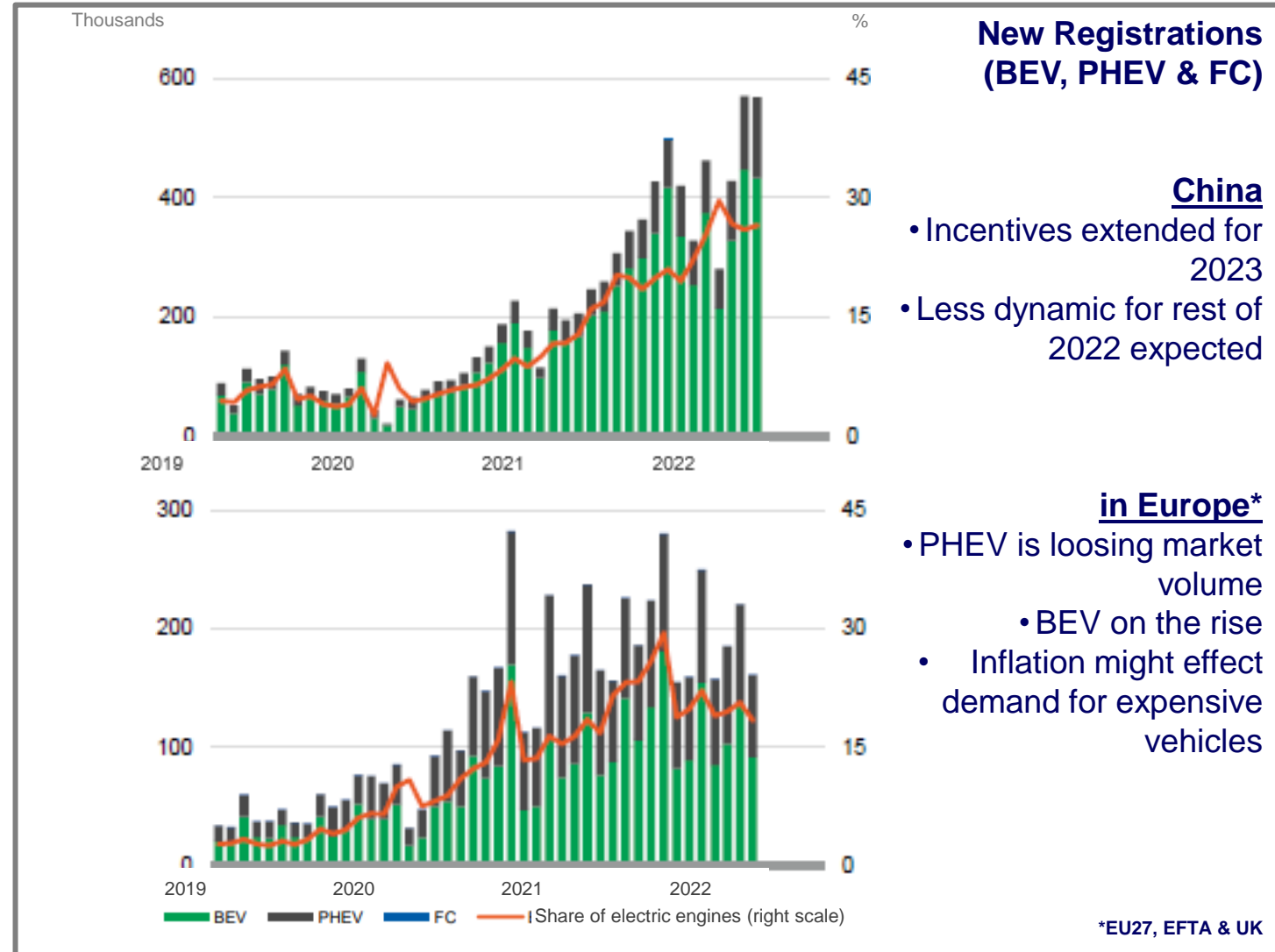


Mobility Transition in Europe

Share of new passenger cars by fuel type in EU (H1 2022)



Source: ACEA, VDA



International Passenger Car Production

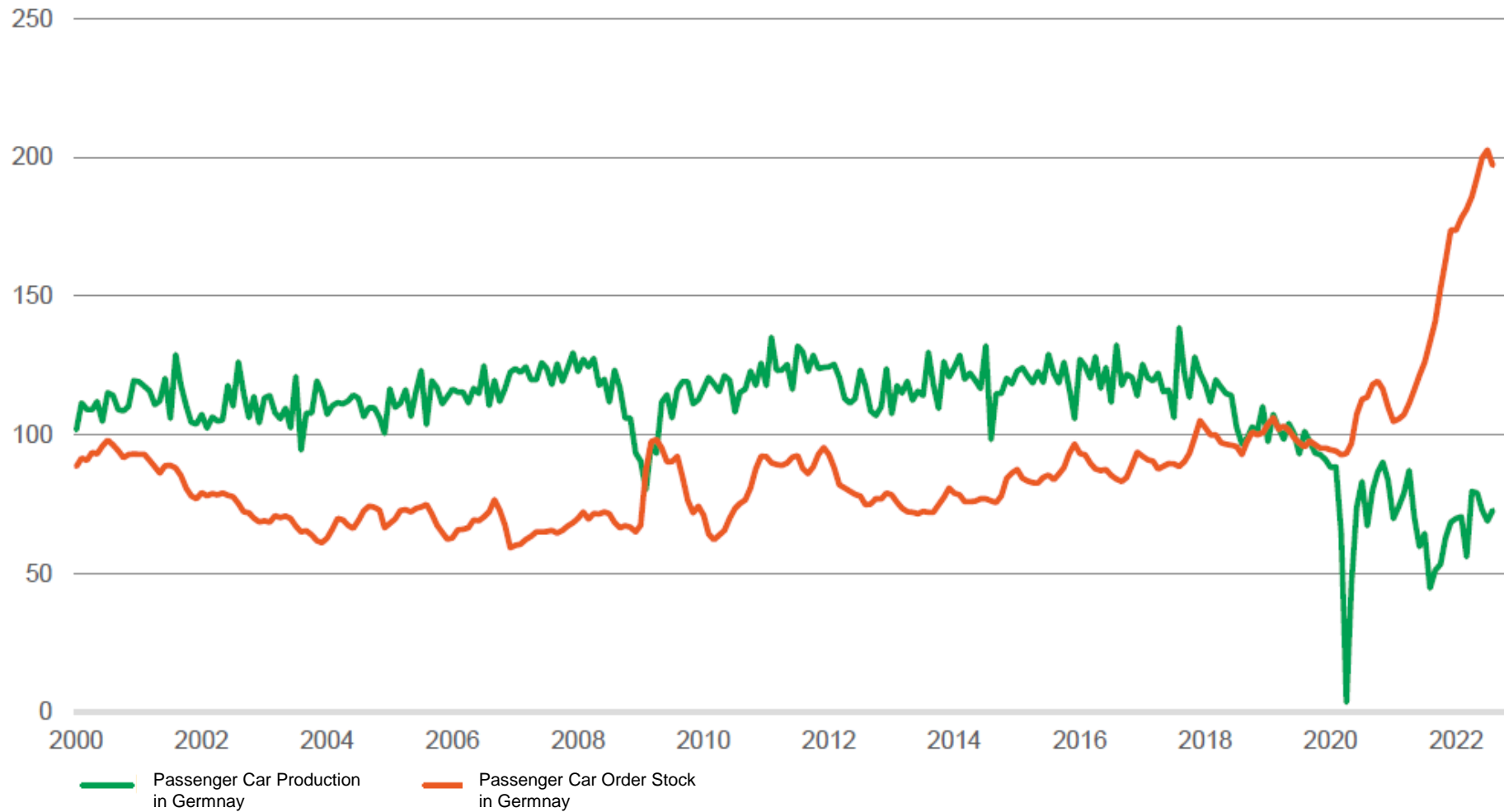
Europe lagging behind

	Passenger Car Production						
	Total 2020	Change 20/19 in %	Total 2021	Change 21/20 in %	Total* 2022	Change* 22/21 in %	Change* 22/19 in %
Europe (EU27+UK + Turkey+ Russia)	14.155.000	- 23	13.434.000	- 5	14.571.000 12.955.000	8 - 4	— 21 - 29
US (LV)	8.581.000	-18	8.873.000	3	9.683.000 9.203.000	9 4	— 8 - 13
China	19.599.000	-7	21.010.000	7	21.641.000 22.890.000	3 9	3 9
Japan	6.960.000	-16	6.619.000	-5	7.281.000 6.421.000	10 - 3	— 13 - 23
South Korea	3.212.000	-11	3.163.000	-2	3.289.000	4	- 9
World	63.488.000	-17	65.177.000	3	69.665.000 67.948.000	7 4	— 11 - 14

Source: VDA, * Forecast (before war in Ukraine)

German Passenger Car Production & Order Stock

Index (2019 = 100)

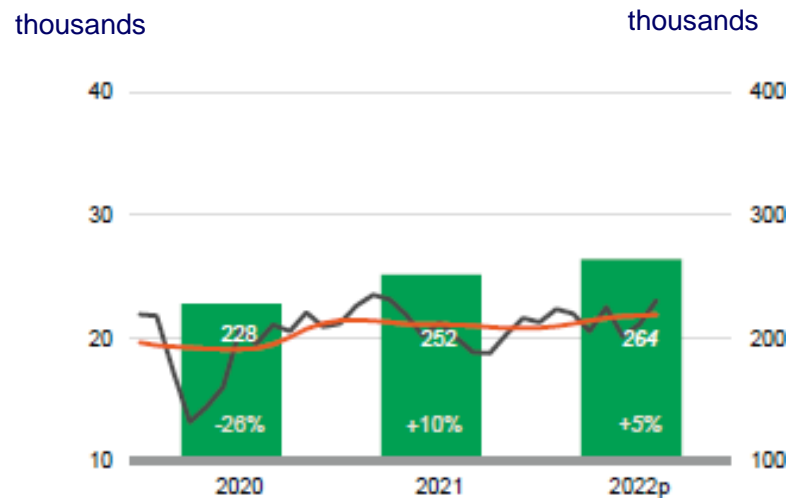


Source: VDA

International Vehicle Markets Outlook 2022

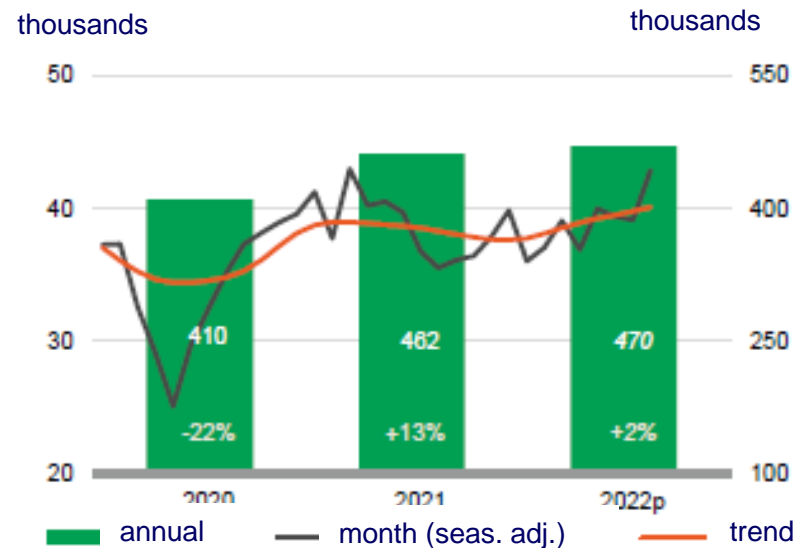
New Registrations of Commercial vehicles > 6 t

Western Europe



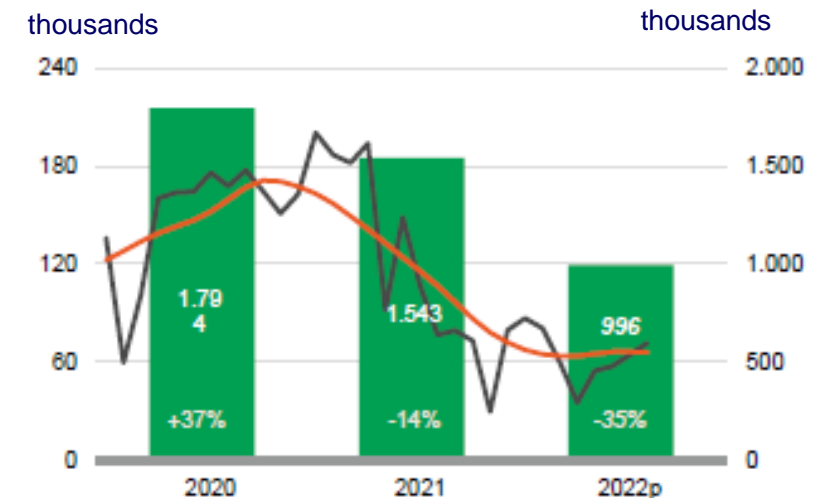
August 2022/2021: +14 %
 Jan. – Aug. 2022/2021: - 1 %
 Forecast 2022: + 5 %

US



August 2022/2021: +21 %
 Jan. – Aug. 2022/2021: - 1 %
 Forecast 2022: + 2 %

China

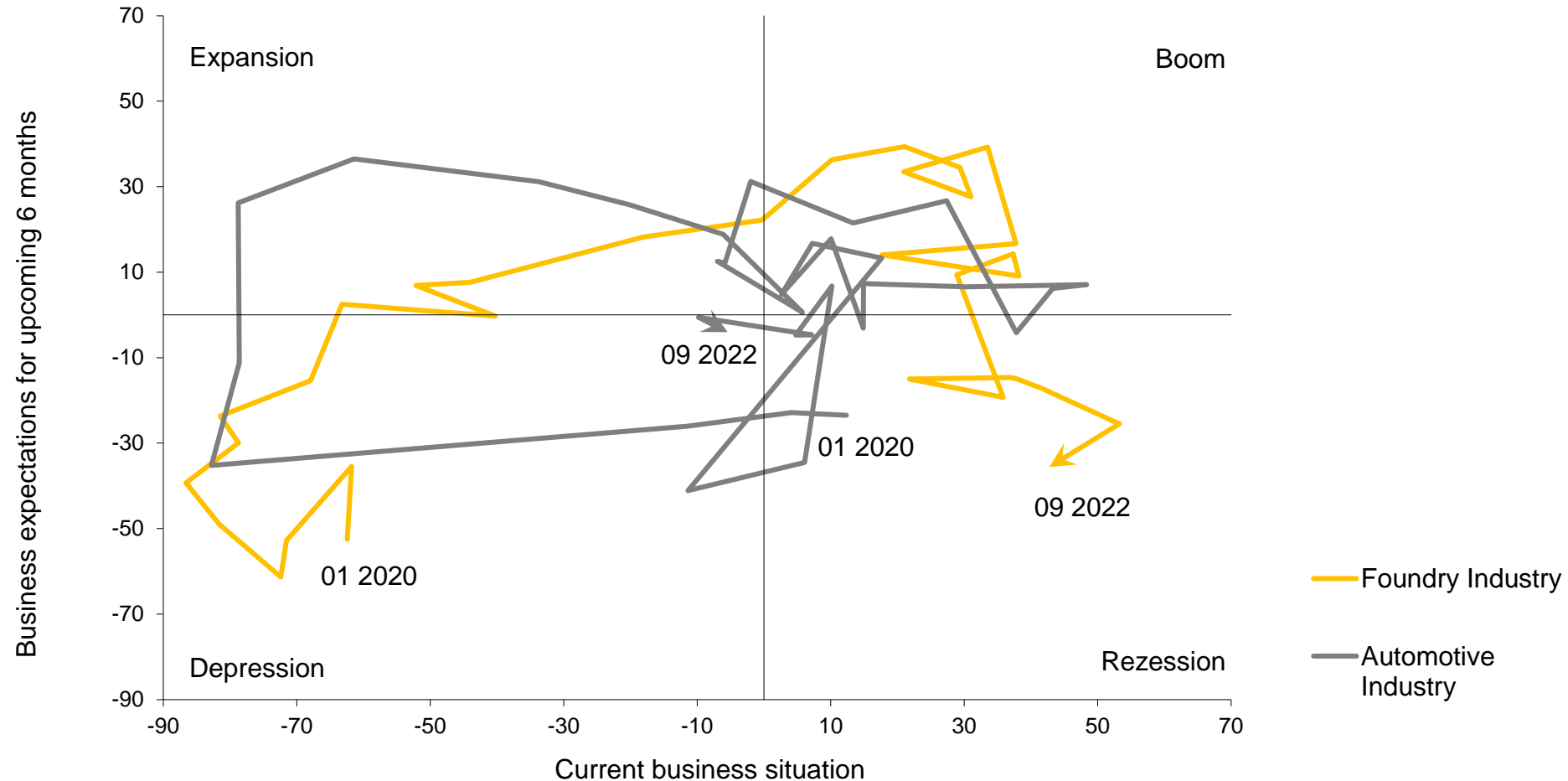


August 2022/2021: - 11 %
 Jan. – Jul. 2021/2020: - 58 %
 Forecast 2022: - 35 %

Source: ACEA, Wards Intelligence, CAAM, Fourin, VDA - August 2022

Business Cycle Clock (Germany)

Automotive Industry & Foundry Industry - September 2022



Source ifo-Institut, calculation by BDG, season adjusted data

What is required?

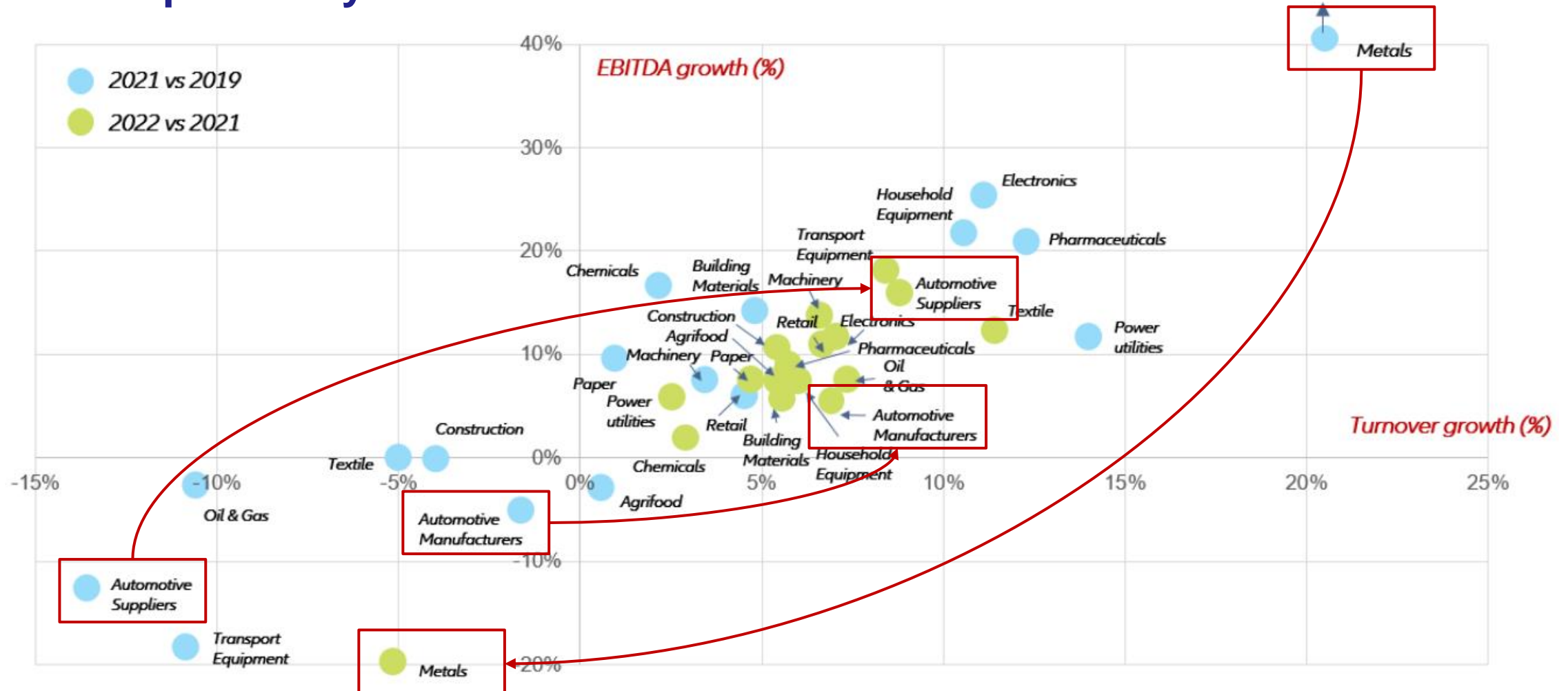
What is possible?

What are the risks?



**Drive responsibly on sight
Or
be courageous and use the crisis for transformation?**

Turnover and profitability growth for listed European companies by sector



Source: Euler Hermes, Allianz Research, Refinitiv Eikon consensus estimates ([Link](#))



Copyright: Winni Scheibe ([Link](#))

I build motorcycles to burn off gasoline with pleasure!

(Fritz W. Egli)

The **GOOD**: Lots of castings in motorcycle!

The **BAD**: Lots of (carbon-) emissions!



The **UGLY**: Green Deal, Fit for 55, Sustainable Finance, CBAM, CCfD...???

There was only one direction: growth

World War II	→ Volume
Marshall Plan	→ Sales Investment Protektionism
Cold War	→ „Iron Curtain“ Protection from cheap iron
Reconsturction East	→ Symbolic price for a lot of volume and tonnage
EU Expansion	→ Additional Markets Enormous Volume (e.g. engineering)
China Asia	→ Huge Market with „Hunger“ for wealth and cars

- ... and now?
- China is technologically on a level with the rest of the world and in many ways more advanced. Several issues e.g. human rights, surveillance
 - Worldwide conflicts over raw materials | Climate Damage | Weak West
 - Society wants „Media Consumption“ and is tired of „Material Consumption“
 - Iron Curtain 2.0... Protectionism is double-edged sword
 - Two extremes: nationalism (Putin) vs. individualism (Musk)

How Crude Oil becomes Petrol

1 Extract

Crude oil is pumped out of the ground and is graded according to **thickness** and **sulphur content**



West Texas Intermediate (WTI) is sourced from US oil fields



Brent is drilled out of the North Sea between the UK and Norway

2 Transport

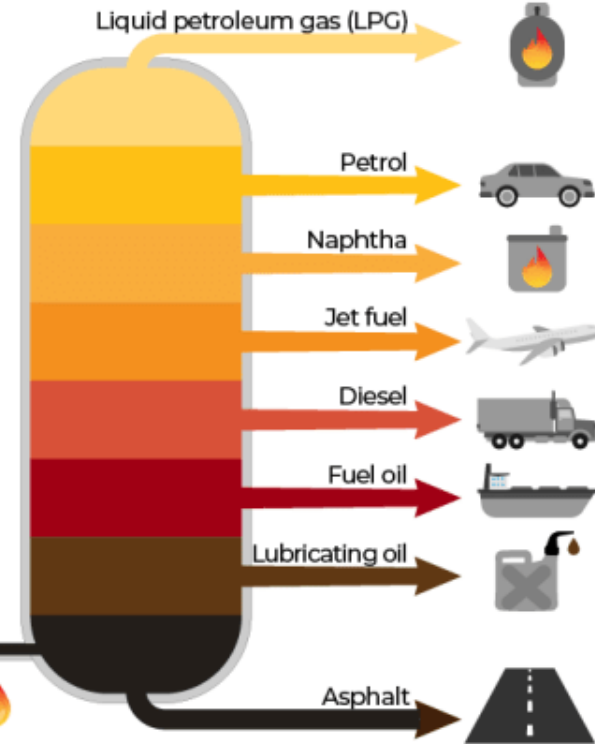


Oil is usually transported at sea in large oil tankers or via oil pipelines

3 Refine



4 Distribute



Source: OPEC Annual Statistical Bulletin 2020 | March 9, 2022

@AJLabs ALJAZEERA

Which Countries have the most Oil?



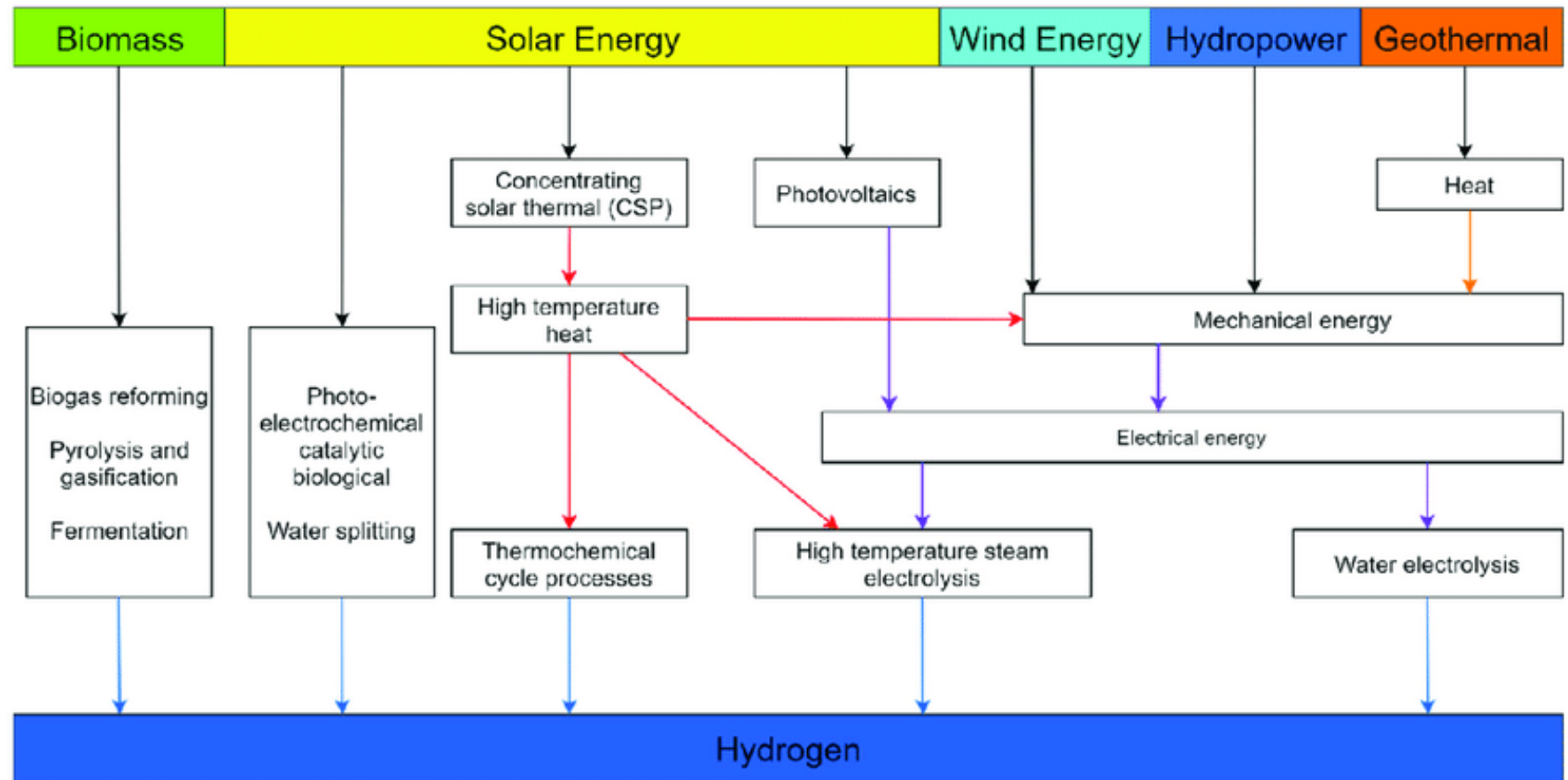
TOP OIL CONSUMERS (MILLION BARRELS PER DAY)



Source: OPEC Annual Statistical Bulletin 2020, International Energy Agency | March 9, 2022

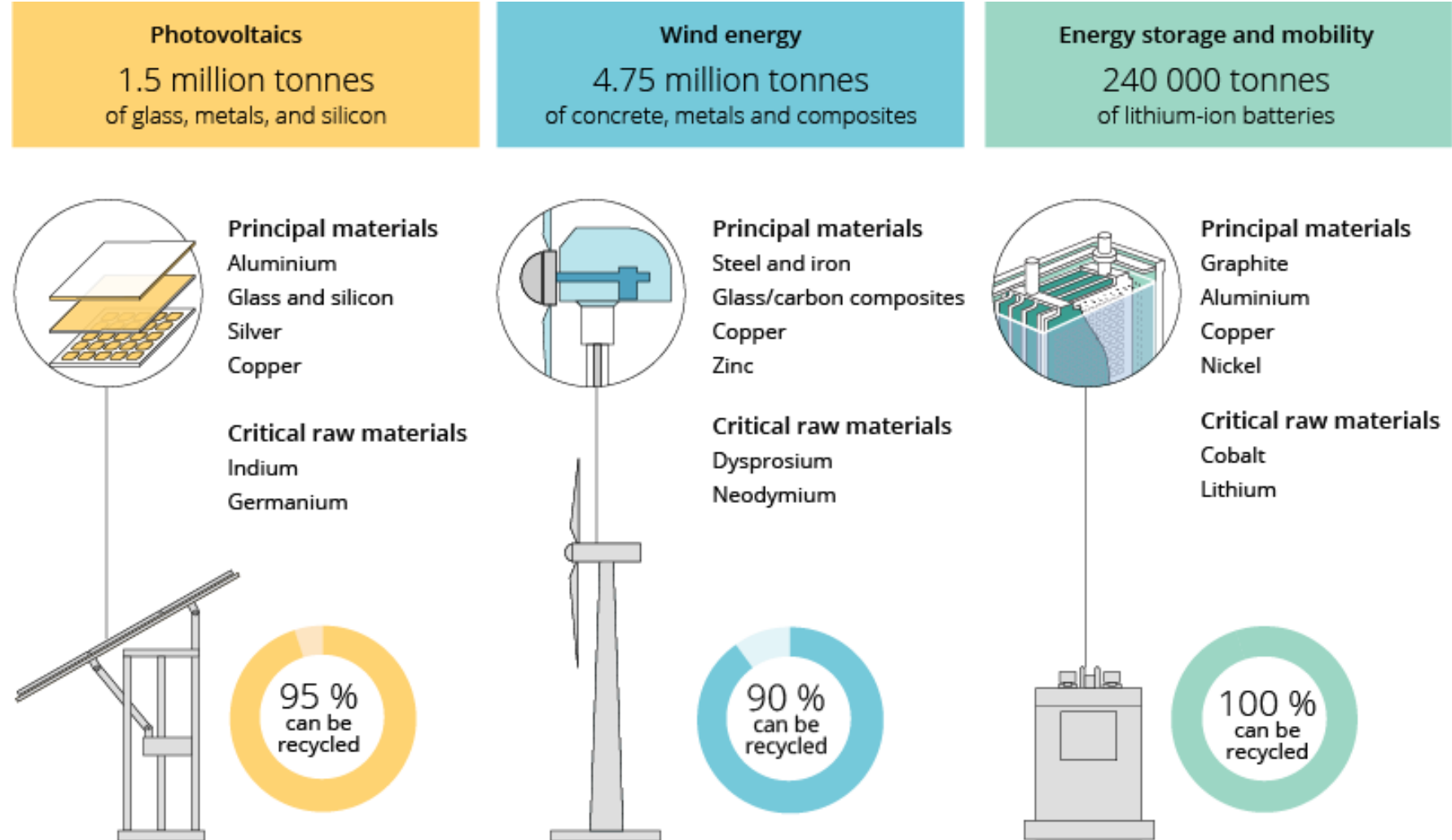
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Renewable Energy: Paths and Streams



Source: DLR

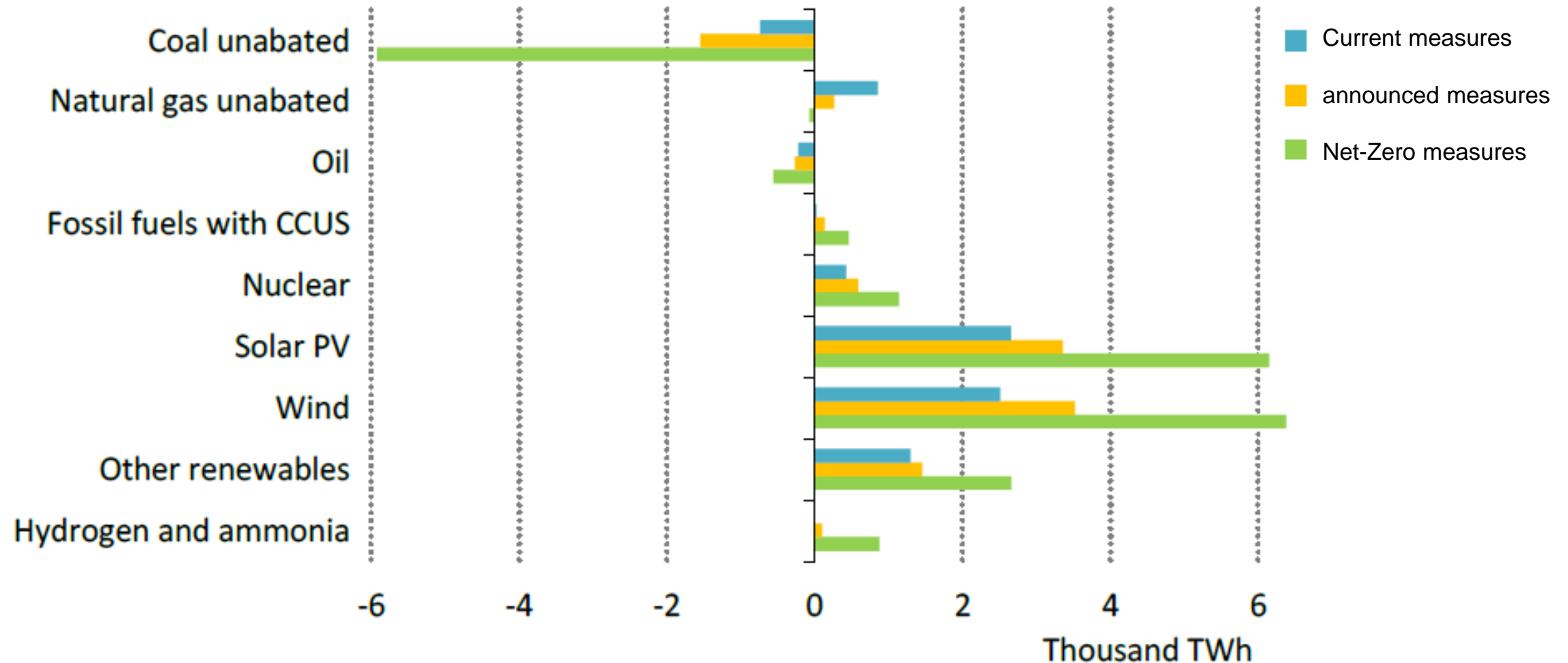
Recyclability



Source: European Environment Agency

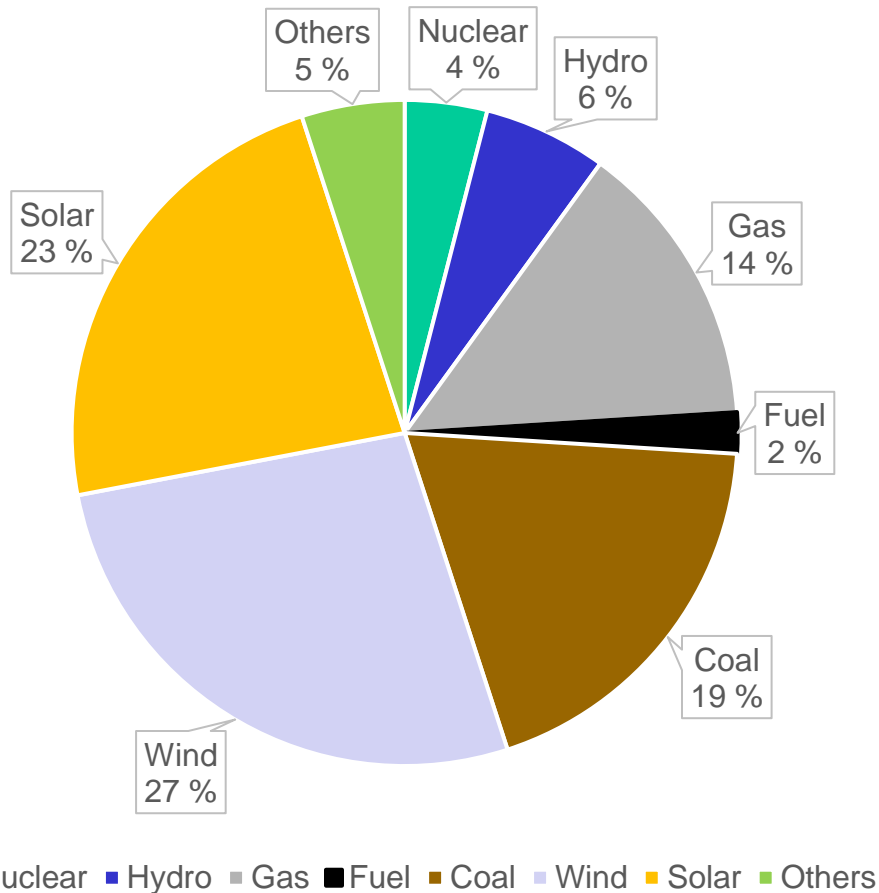
Change in Electricity Generation by Source and Scenario

2020 to 2030 - On the globe



German „Wunschdenken“: Wish vs. Reality

Installed Energy Facilities (2021)



No Sun in Winter and at night, no Wind in summer...

High volatility needs gas power plants (problem of Merit Order System)

German plan 2020:

Wind: 65 %

Solar: 20 %

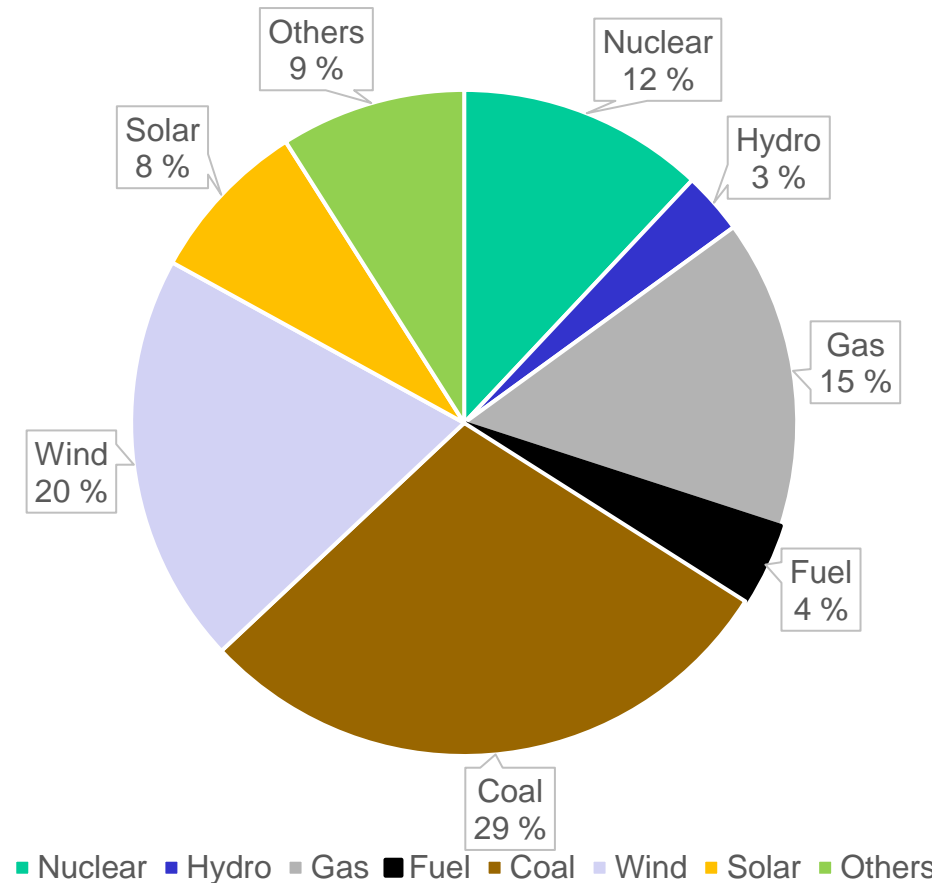
Few wind energy permits, vanishing hand moulding capacity!

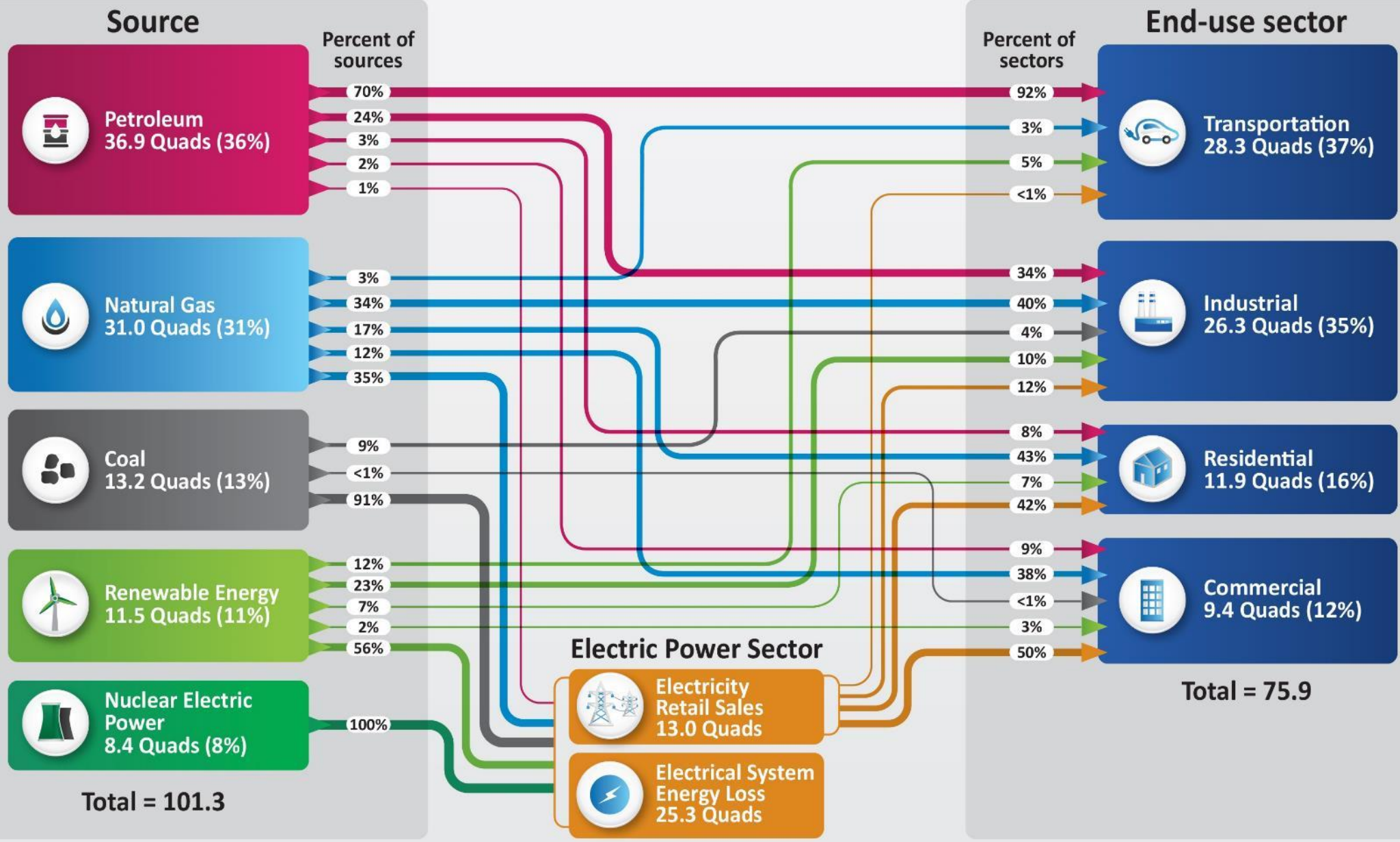
Reality 2022:

Gas: 48 % from Russia!

SOLUTION???

Energy Production Mix (2021)

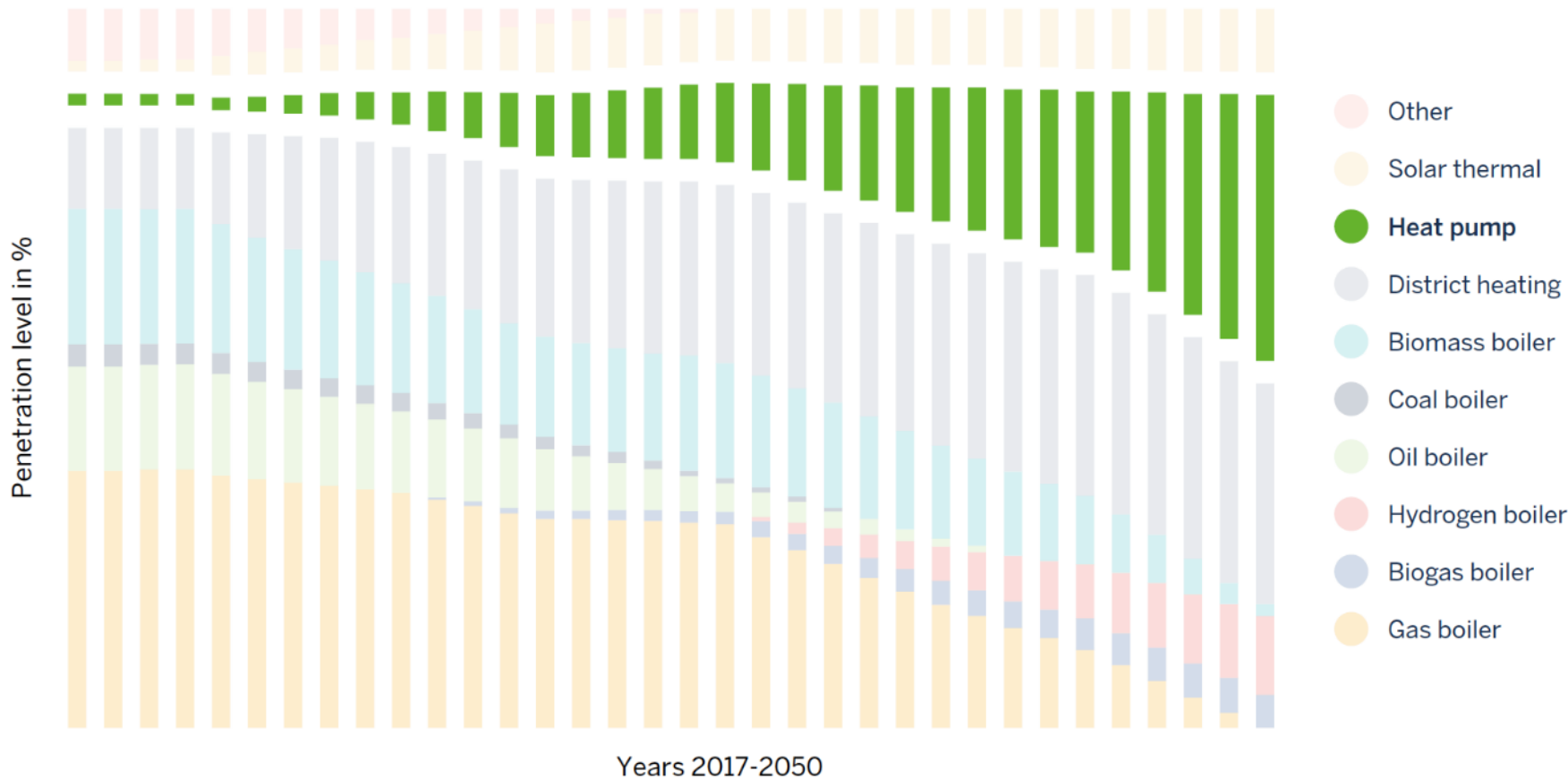




End use	Loss
Industrial boilers	20%
Industrial process heat	15%
Pumps and fans	40%
Motors	5% - 10%
Incandescent light bulb	90%
LED light bulb	10%

Heat pumps - High potential through EU taxonomy Buildings

Scenario comparison: Share of heat grids in the final energy demand of buildings in percent

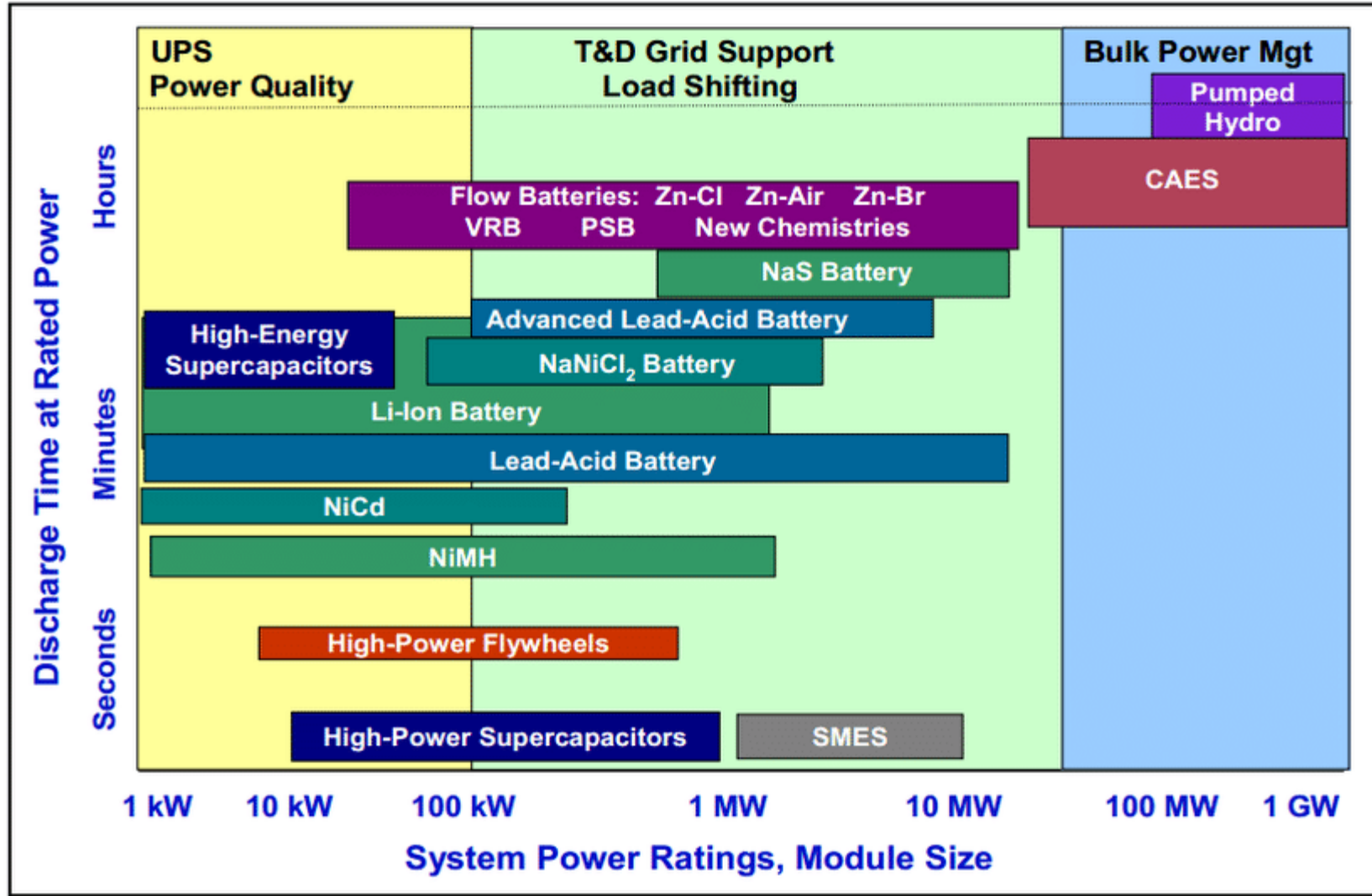


Waste heat pump - Industry

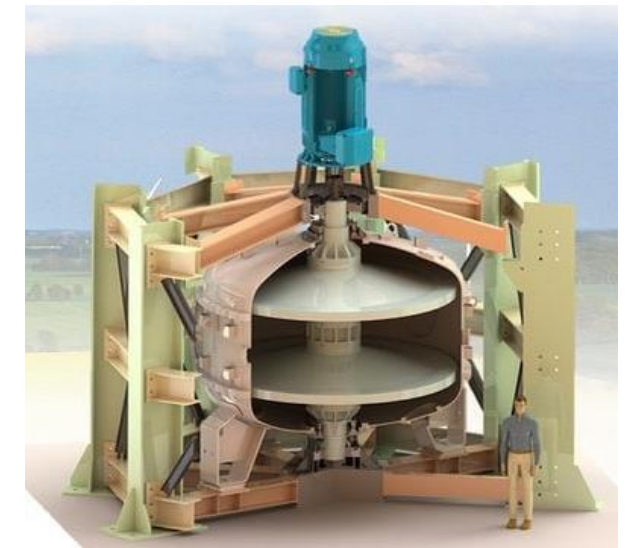


Domestic heat pump



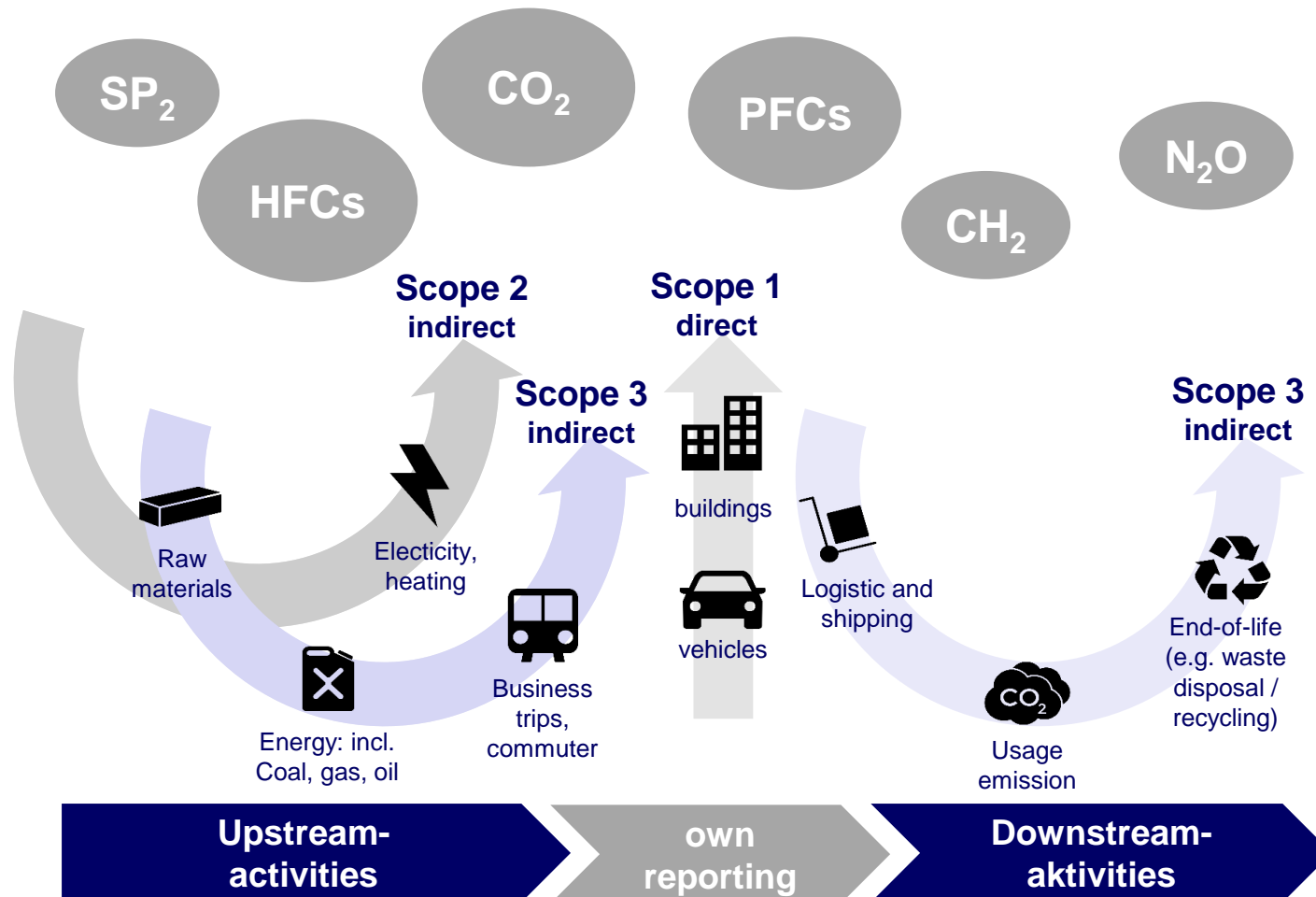


Fly Wheel TU Dresden: Storage capacity 500 kWh and electric charging and discharging capacity 500 kW



Source: Suitability of energy storage technologies to different power and rate of discharge requirements from (Electric Power Research Institute, 2010); Stiftungprofessur für Baumaschinen

Reduction of Greenhouse Gases

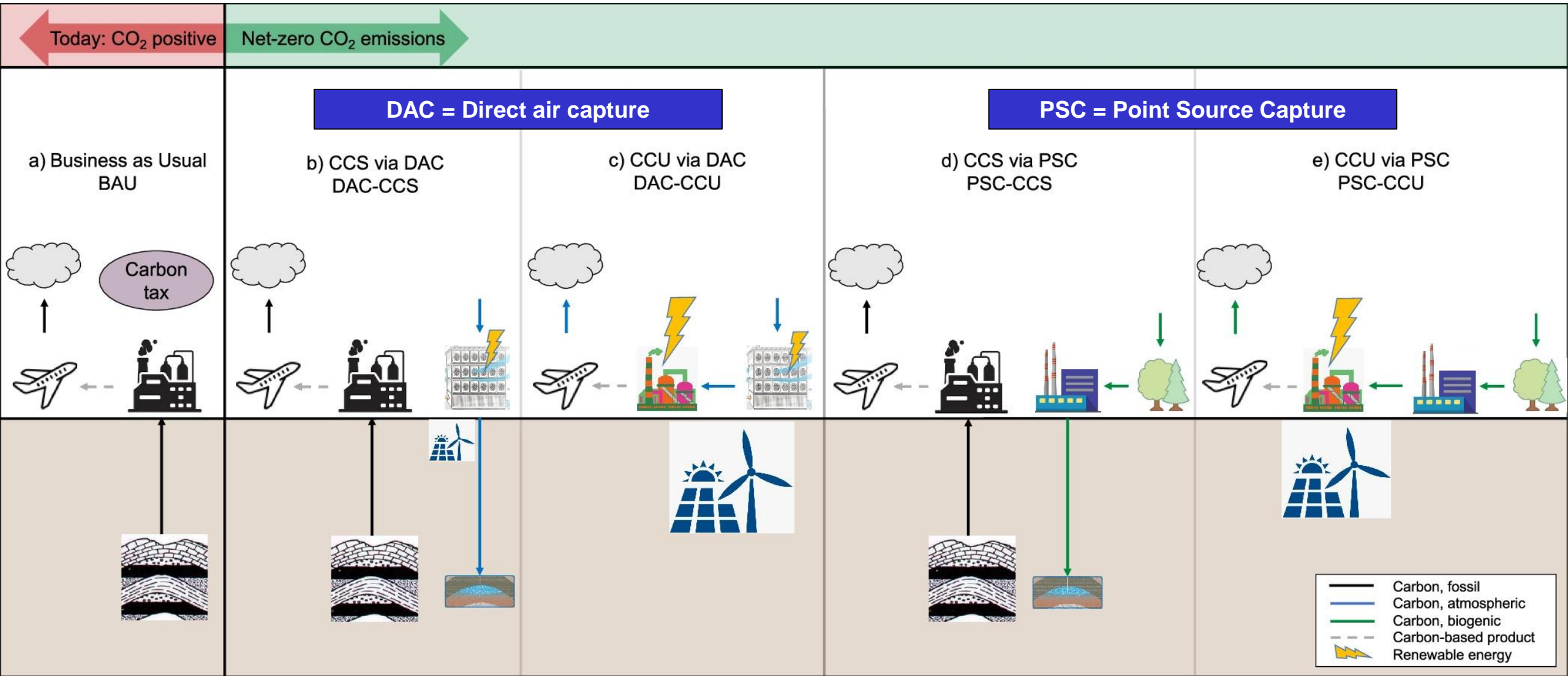


Foundries reducing GHG emissions

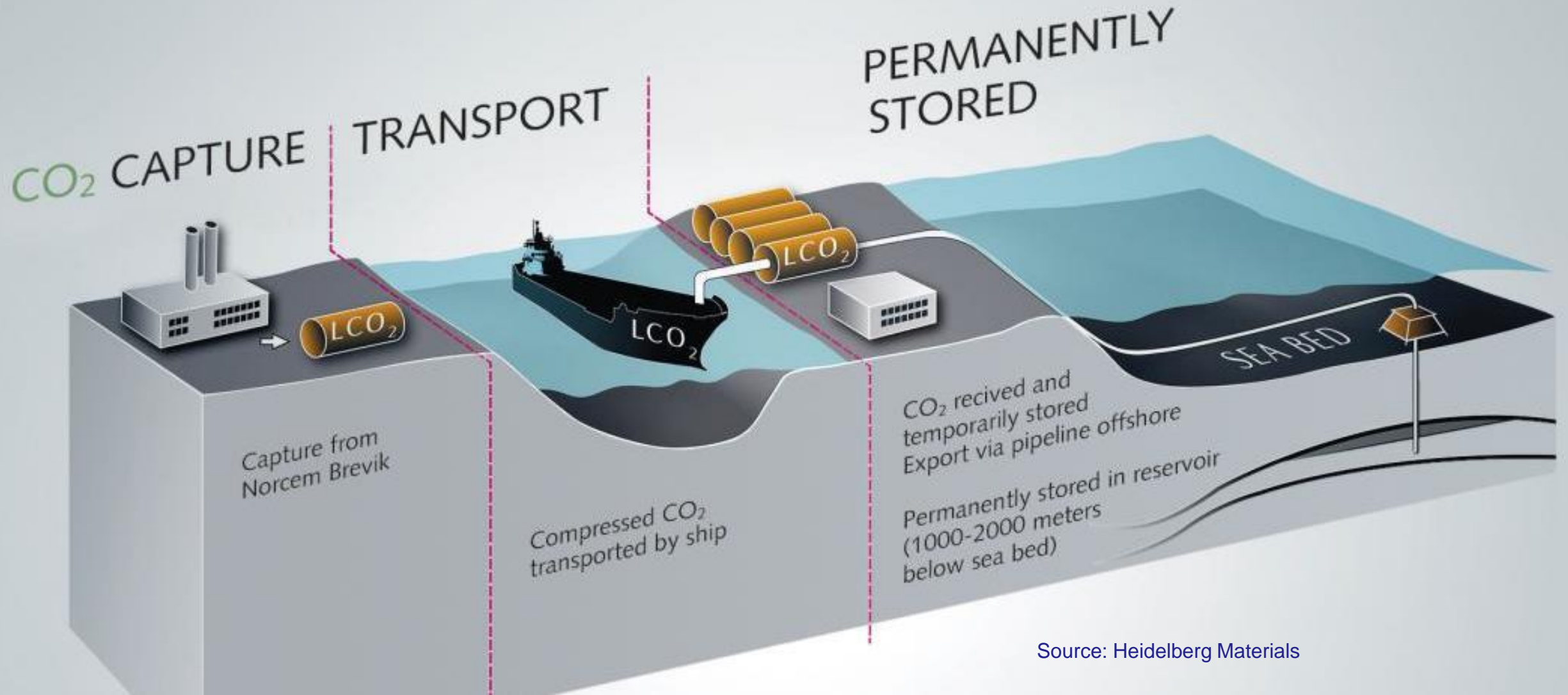
- Increasing CO_2 prices
- Pressure from customers
- Regulatory measures
- Circular economy

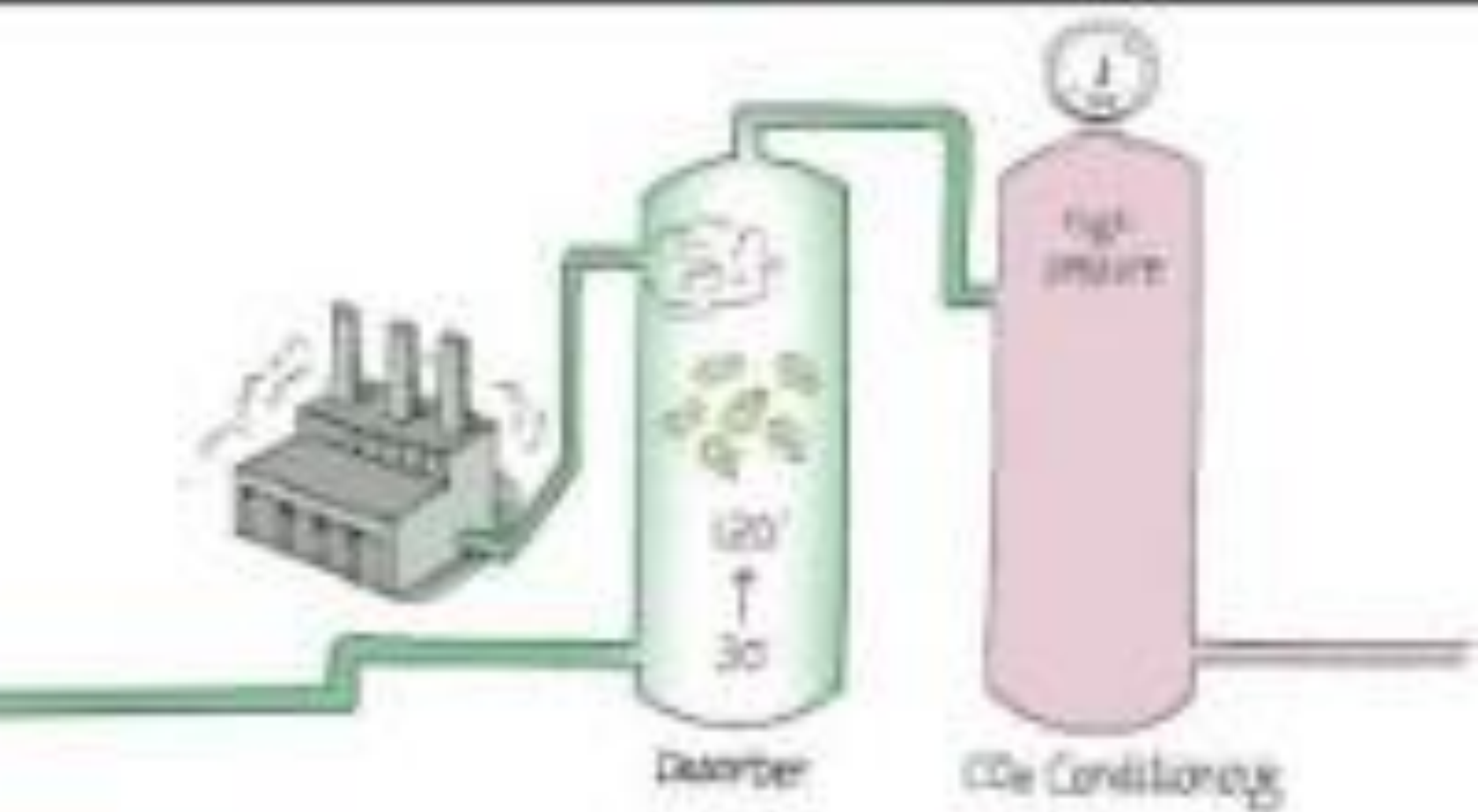
Foundries as core of sustainable value chain

Carbon Capture Storage (CCS) and Carbon Capture Usage (CCU)



Cement Plant Norcem Brevik





What does Decarbonization also mean?

Renewable Energy

=

Energy Independence

Local Energy Production

=

Reduced Energy „loss“

Standardized Energy Production

=

Lower Energy Costs

Decentralized Energy Storage

=

More Castings 😊

Reminder: Many Things were Unthinkable 3 Years ago!

Elon Musk: SpaceX not Space Shuttle carried astronauts to the ISS a few months ago...

Vladimir Putin attacks a young dynamic democracy that knows how to defend itself via good leadership and professional social media campaigns.

A 36-year-old mother (Sanna Marin) is the head of Finland's government and asks to join NATO due to real threat of war.



Source: [Deutsche Welle](#); FinnishGovernment - [Lapsen oikeuksien juhla 19.11.2021](#)

Look at Iran...

it might be the first female revolution!



The
Economist

Rishi Sunak's very low bar
The real risk of Bidenomics
Pondering a Putinless future
Welcome to Hikelandia

OCTOBER 29TH - NOVEMBER 4TH 2022

WILL IRAN'S WOMEN WIN?



Our Crisis is indeed a Crisis... But keeping Peace is vital!



PAWIAK Prison

- During the January 1863 Uprising, it served as a transfer camp for Poles sentenced by Imperial Russia to deportation to Siberia.
- During the World War II German occupation of Poland, it was used by the Germans for deportation into concentration camps, and in 1944 destroyed by the Nazis in the Warsaw Uprising.
- The elm tree died in 1984. After it almost fell, the decision was taken to replace it by an alternative
- The Technical Equipment Works in Gliwice casted the elm tree in its original shape out of metal to remain there – hopefully – forever in memory of the victims.



**The European
Foundry
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Thank you.

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