

A futuristic landscape featuring several tall, lattice-structured solar towers with blue solar panels at their tops. In the background, several wind turbines are visible against a hazy, light blue sky. A winding, multi-lane road curves through the foreground. The overall scene is bathed in a soft, blue-tinted light, suggesting a clean, sustainable energy environment.

# AUFGELADEN

**“Künstliche Intelligenz, Grüne Wirtschaft, BRICS und steigender Energiebedarf”**

$$\begin{bmatrix} 3 & 1 \\ 1 & 2 \end{bmatrix} \begin{bmatrix} -1 \\ 2 \end{bmatrix}$$

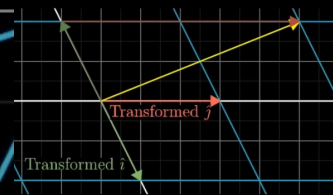
# DIE MATRIX

$$\begin{bmatrix} 1 \\ 2 \end{bmatrix}$$

$$\begin{bmatrix} 3 \\ 1 \end{bmatrix}$$

$$\begin{bmatrix} 3 & 2 \\ -2 & 1 \end{bmatrix}$$

$$\begin{bmatrix} 5 \\ 7 \end{bmatrix}$$



$$5 \begin{bmatrix} 3 \\ -2 \end{bmatrix} + 7 \begin{bmatrix} 2 \\ 1 \end{bmatrix}$$

$$\begin{bmatrix} a & b \\ c & d \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix} = x \begin{bmatrix} a \\ c \end{bmatrix} + y \begin{bmatrix} b \\ d \end{bmatrix} = \begin{bmatrix} ax + by \\ cx + dy \end{bmatrix}$$



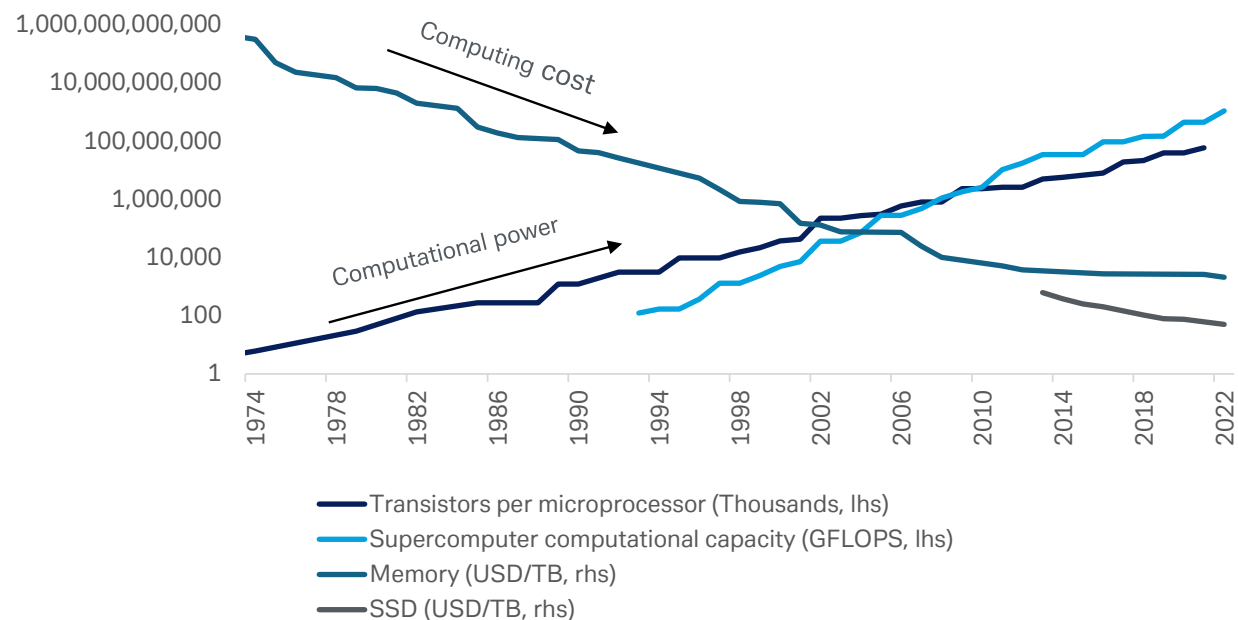
# LERNEN IN DER ZUKUNFT\*



# RECHENKOSTEN UND LEISTUNG

Sharp falls in the cost of SSD storage and memory (down 92% and 43% USD per terabyte respectively during the last decade) are examples of this

The number of transistors on a single microprocessor now averages around 60bn – compared to just over 2,000 five decades ago Whereas the quantity of transistors has increased substantially, the size of semiconductors has shrunk considerably since 1971, falling from 10,000 nm to a negligible 3 nm by 2022. Miniaturisation has allowed the development of smaller and more powerful devices, which has enabled the creation of new applications and services.



Source: J. C. McCallum, K. Rupp. Data as of 2022.

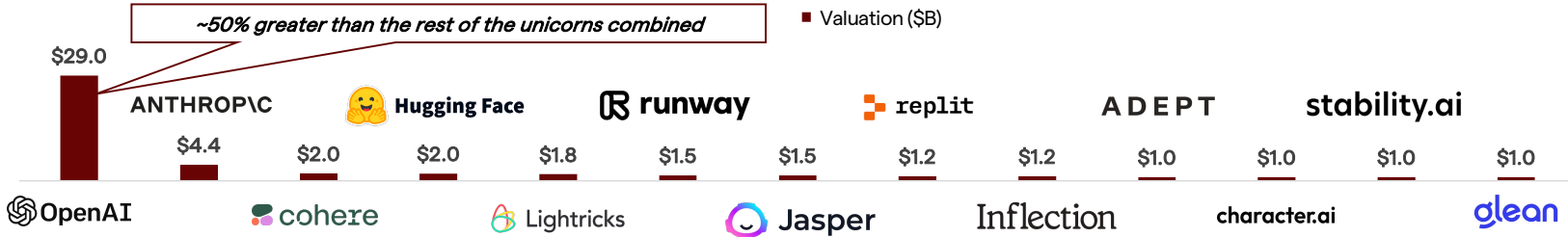
# WIE GEHABT

## Top VCs are aggressively pursuing opportunities in Generative AI

The Most Active US based VCs...

...have made over 200 investments in Generative AI since 2017

Although ~66% of Generative AI companies have not raised a Series A round, we have already seen 13 reach unicorn status (\$B)

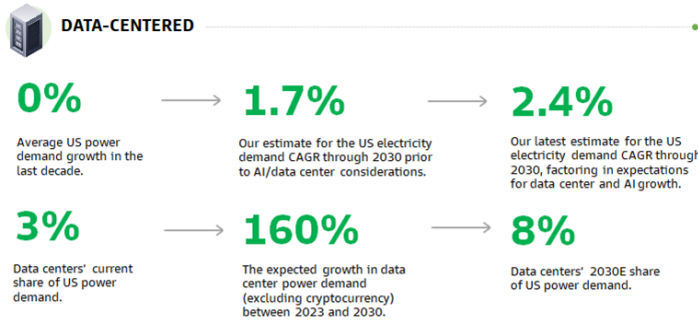


The average time for these companies to reach unicorn status is ~3.5 years. The average amongst all other unicorns is ~7 years.

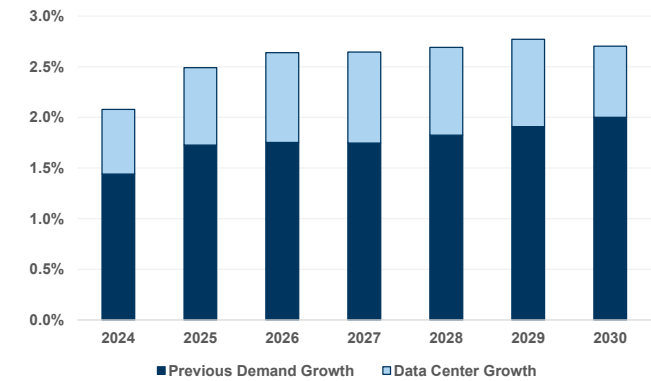
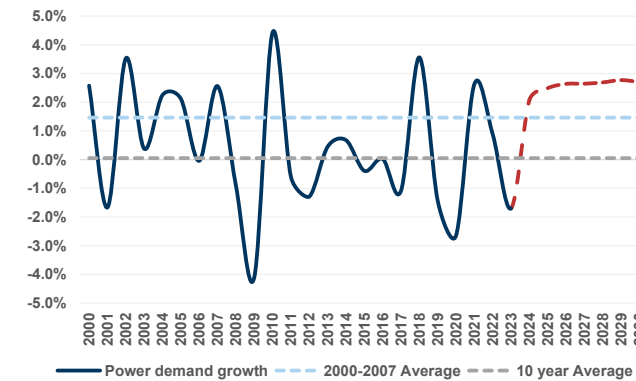


# TROTZ EFFIZIENZ MEHR BEDARF

## THE US POWER DEMAND SURGE in numbers



US power demand growth, %

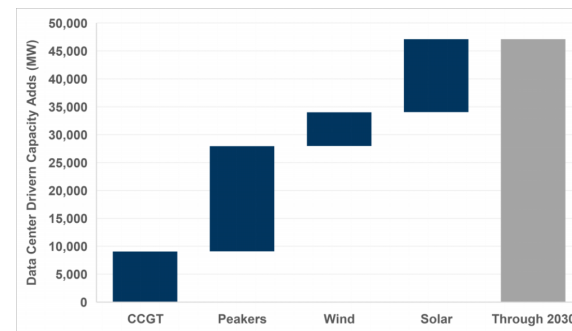


Source: EIA, Goldman Sachs Global Investment Research

Source: Goldman Sachs Global Investment Research

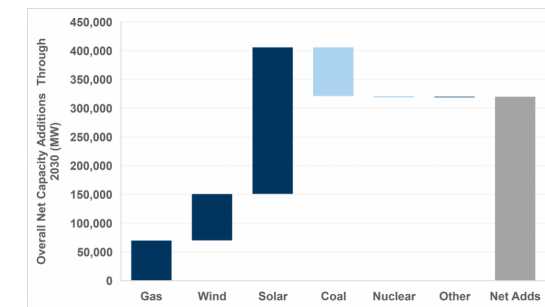
<p><b>WATTS UP</b></p> <p><b>47GW</b></p> <p>The incremental power generation required through 2030 to support data center demand growth.</p>	<p><b>GAS VS GREEN</b></p> <p><b>60%/40%</b></p> <p>The amount of incremental power generation that we expect to be met with gas/renewables, respectively.</p>	<p><b>AI'S ROLE</b></p> <p><b>20%</b></p> <p>AI's share of total data center power demand by 2030, in our base case.</p>
<p><b>INPUT</b></p> <p><b>\$50bn</b></p> <p>The amount of capex we expect in US power generation capacity through 2030.</p>	<p><b>POWER EFFICIENCY</b></p> <p><b>0.2KW</b></p> <p>The amount of power Nvidia's DGX B200 server requires per petaflop, representing 15x the compute speed over today's servers for only 2x the power.</p>	<p><b>3.3bcf/d</b></p> <p>Our expectations for data-center-driven daily incremental natural gas demand by 2030.</p>

Data center driven capacity adds, MW



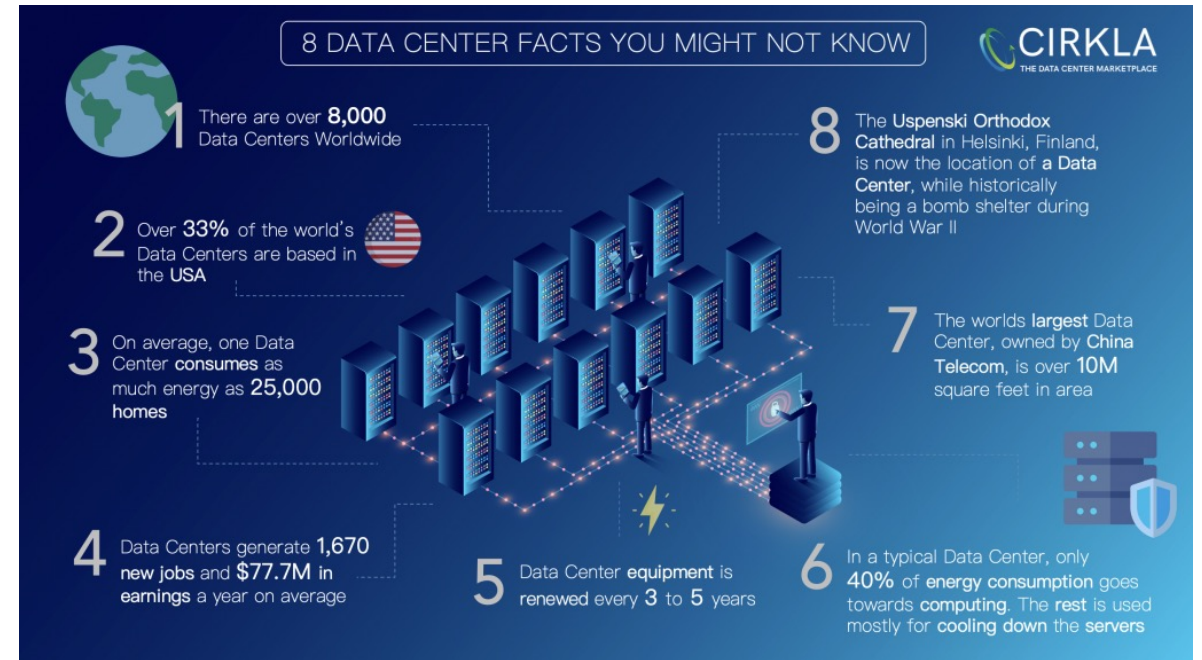
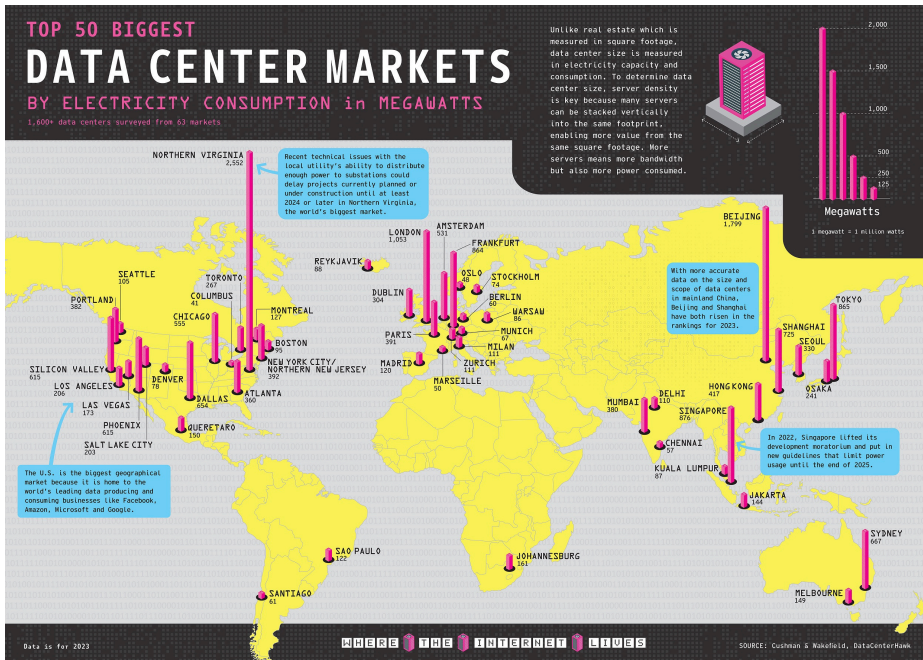
Source: Goldman Sachs Global Investment Research

Overall net capacity additions through 2030 by source, MW



Source: Goldman Sachs Global Investment Research

# 1 RECHENZENTRUM = 25k HAUSHALTE



# GLORREICHE 7 – DIE AI GEWINNER

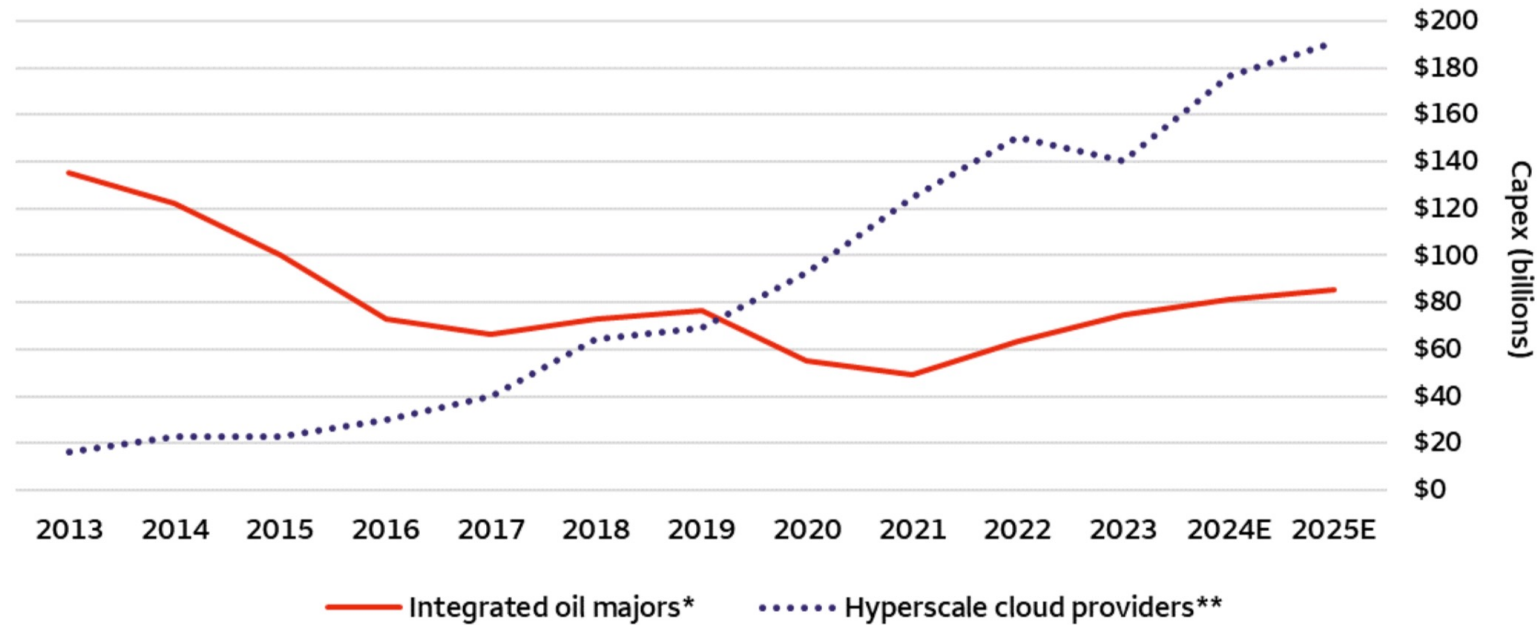
Input	Alphabet	Amazon	Apple	Microsoft	Meta	Nvidia	Tesla
Expected CAGR Revenue (next 5 years)	8.00%	12.00%	7.50%	15.00%	12.00%	32.20%	31.10%
Target Operating Margin	30.00%	14.00%	36.00%	45.00%	40.00%	40.00%	13.07%
Cost of Capital	8.84%	8.60%	8.64%	9.23%	8.83%	8.84%	9.17%
Value per share	\$138.14	\$155.72	\$176.79	\$355.88	\$445.10	\$436.34	\$183.75
Price per share	\$145.00	\$169.15	\$188.00	\$405.49	\$456.08	\$680.00	\$185.07
% Under or Over Valued	4.97%	8.62%	6.34%	13.94%	2.47%	55.84%	0.72%
Internal Rate of Return	8.41%	7.85%	7.89%	8.06%	8.53%	7.18%	9.16%
Full Valuation (Excel)	<a href="#">Link</a>	<a href="#">Link</a>	<a href="#">Link</a>	<a href="#">Link</a>	<a href="#">Link</a>	<a href="#">Link</a>	<a href="#">Link</a>

*\* NVidia and Tesla were valued as the sum of the valuations of their different businesses. The growth and margins reported are for the consolidated company.*



# EXPLODIERENDE INVESTITIONEN\*

Capital expenditures for hyperscale cloud providers outpacing integrated oil majors



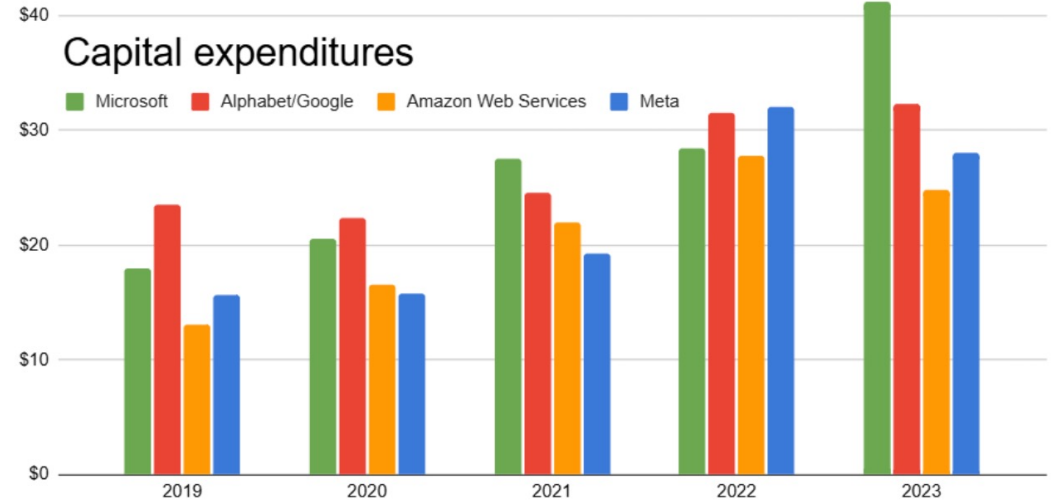
Sources: FactSet and Wells Fargo Investment Institute. Based on calendar year data; 2024 and 2025 data represent consensus estimates from FactSet. \*Four largest global integrated oil majors by market capitalization (BP p.l.c, Chevron Corporation, Exxon Mobil Corporation, Royal Dutch Shell Plc). \*\*Four largest cloud infrastructure companies by market capitalization (Alphabet Inc., Amazon.com, Inc., Meta Platforms Inc, Microsoft Corporation). Forecasts and targets are based on certain assumptions and on views of market and economic conditions which are subject to change.

# \$40MIA Q1 2024



Source: Company reports and SEC filings. In billions per fiscal quarter.

GEEKWIRE

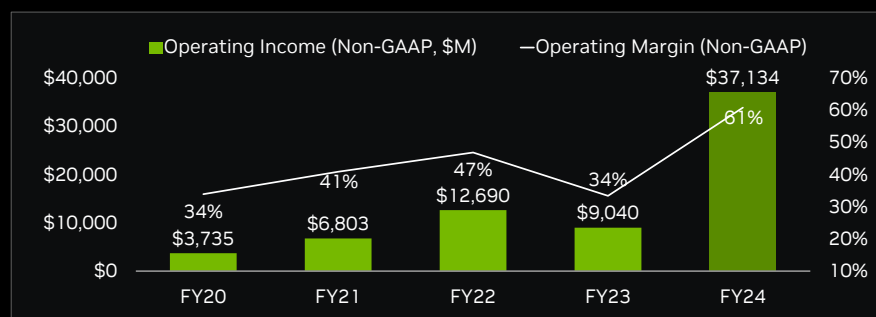
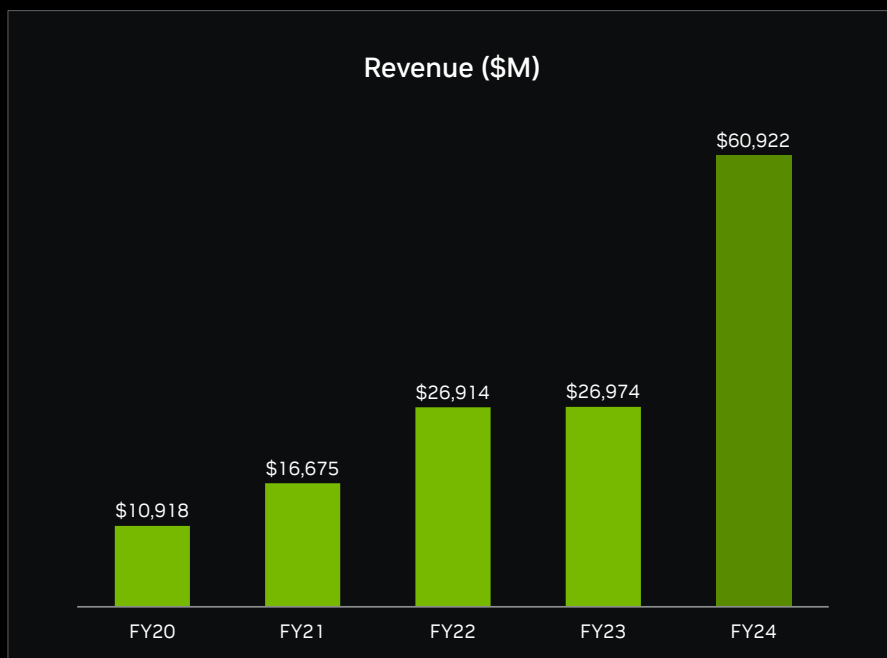


Source: Company reports and SEC filings. In billions per calendar year.

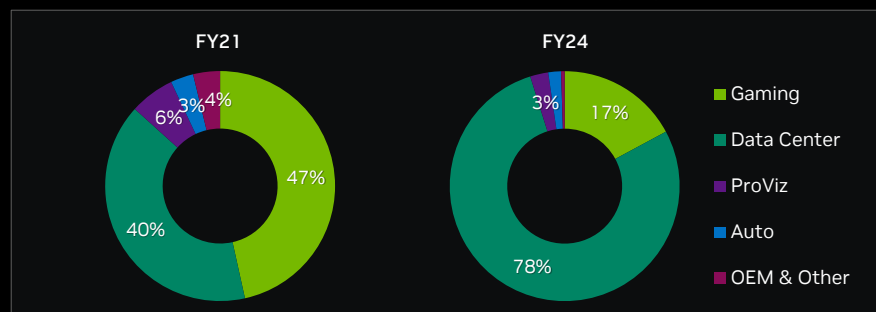
GEEKWIRE

# NVIDIA EINMALIGE WACHSTUMSKURVE

## Driving Strong & Profitable Growth



Fiscal year ends in January. Refer to Appendix for reconciliation of Non-GAAP measures. Operating margins rounded to the nearest percent.



# SCHNEIDER ELECTRIC EIN EU CHAMPION

**Electrical & Automation technologies are converging with Software & Sustainability as enablers for rapid acceleration**

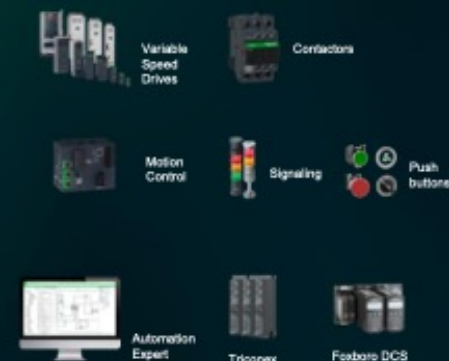
## Energy Management



## Software & Sustainability



## Industrial Automation



## DATA CENTERS



## BUILDINGS



## INDUSTRY

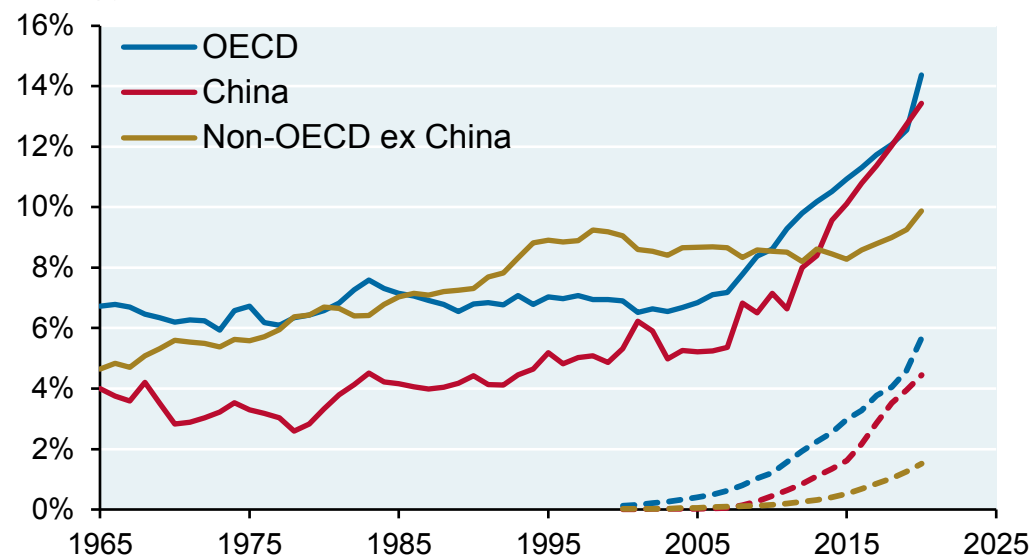


## INFRASTRUCTURE



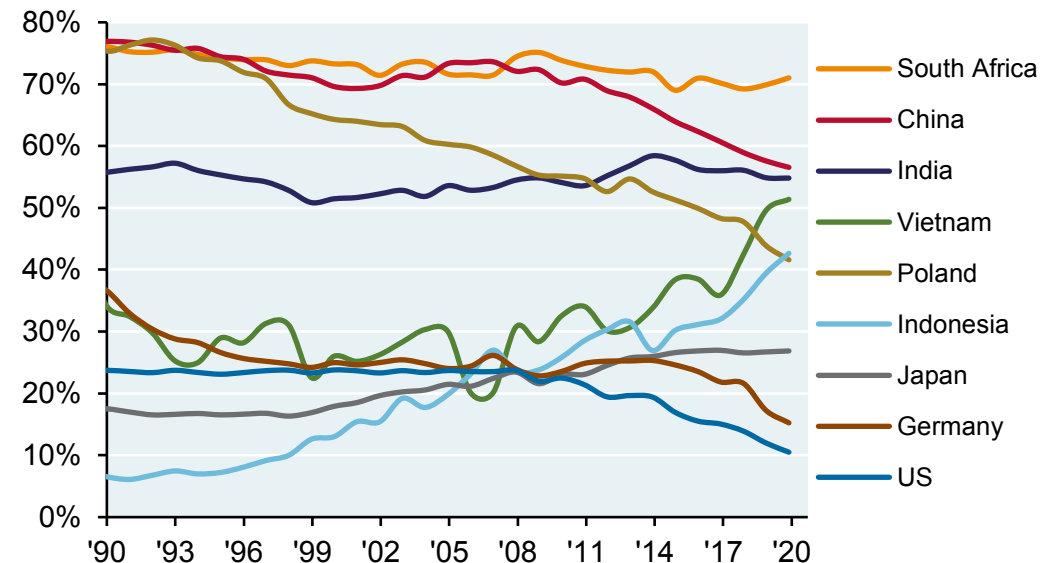
# % ANTEIL AN PRIMÄRENERGIE

**Wind, solar, hydro and other renewables share of primary energy**, Percent, with dotted line for wind/solar only



Source: BP Statistical Review of World Energy, JPMAM. 2021.

**Coal share of primary energy consumption**  
Percent



Source: BP Statistical Review of World Energy, JPMAM. 2021.

# AKTUELLER STAND ELEKTRIFIZIERUNG EU, US, CHINA\*

Electrification is a major pillar of the energy transition. You decarbonize electricity and at the same time you electrify as much as you can.

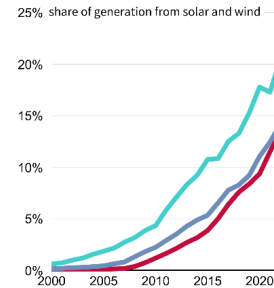
If we consider electricity as a share of final consumption, Europe and the United States have flatlined at just over 20% for over a decade while China has grown to 27%, increasing electricity as a share of final consumption at a rate of nearly 1 percentage point a year.

Electrification has three main sub-stories within it — transport, industry, and buildings. We look first at the story in total and then by sector. Data from the IEA's World energy balances (W) database. This has the great advantage of being comprehensive, although the data is only available until 2021 so we cannot yet see the detailed impact of Putin's war in Europe and the IRA in the United States.

## Three regions compete over three major clean tech markets

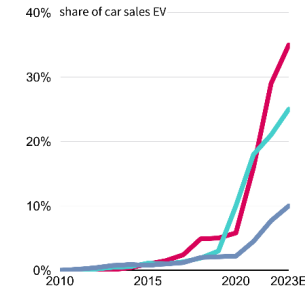
### Renewable power

Europe is leading the United States and China



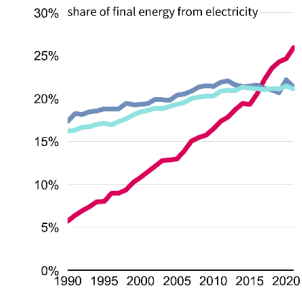
### Electric Vehicles

China is ahead of Europe and the United States



### Electrification

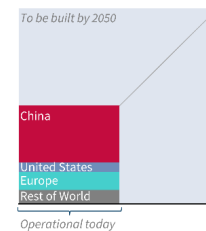
China leapfrogged Europe and the United States



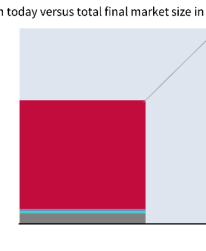
## China dominates production across clean tech markets today, but there is ample growth opportunity for Europe and United States to catch up

### Wind

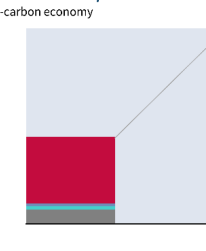
Share of total production capacity by region today versus total final market size in zero-carbon economy



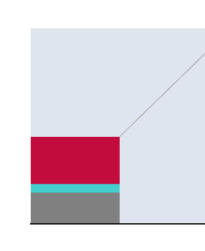
### Solar



### Batteries/EVs



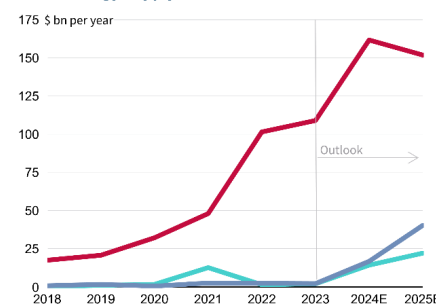
### Other electrification



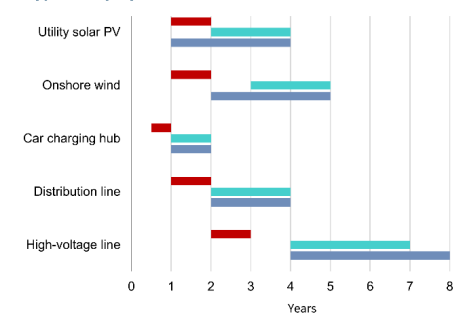
To get back in the game, the United States and Europe will need to pick up the pace of investment...

...and speed up deployment timelines

### Clean energy supply chain investment



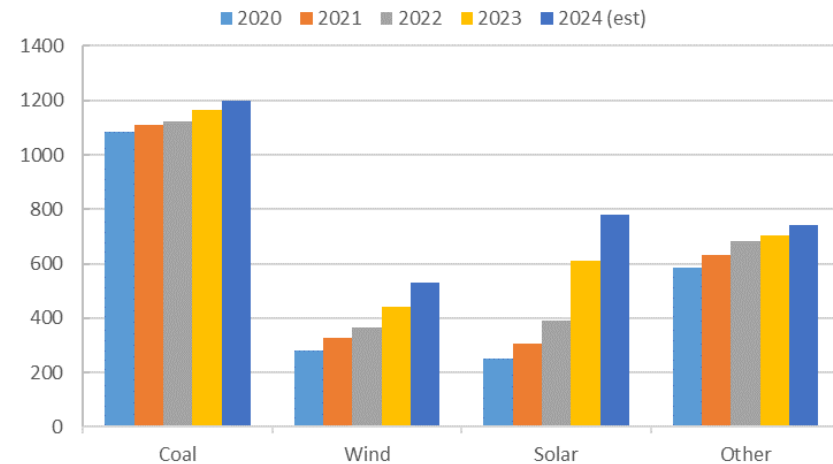
### Typical deployment time



# FALLSTUDIE CHINA

The reality of China's coal addiction and absence of effective electricity markets could hinder progress towards the 2030 target of peaking emissions and the 2060 target of reaching carbon neutrality. This is even as the renewables build-out shows no sign of slowing. According to the China Electricity Council (CEC), China's renewable additions this year, while hefty, will slow from 2023. CEC expects to see a 170 GW increase in solar PV and 90 GW of new wind capacity, alongside 35-40 GW of coal and 30 GW of other thermal, which includes gas and biomass

Figure 3: China installed power capacity, GW



Source: CEC

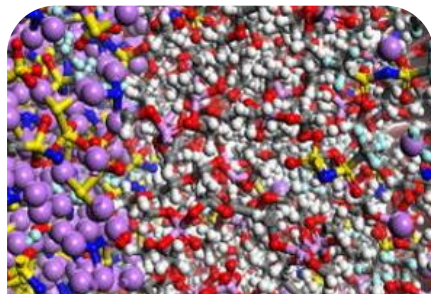
# BATTERIESPEICHER (BESS) AUSBLICK

- Accelerated growth added by supportive policies and regulations. Global annual power capacity additions will grow about six-fold by 2030, reaching >100 GW and \$72 billion in annual investment.
- Market expansion is bringing higher sophistication and specialization through the value chain and diversification of business models and opportunities around BES systems.
- As the share of RE continues to scale globally, transmission capacity and system expect regulations allowing BES market development
- In the BTM segment, net metering and DG feed-in-tariffs schemes continue to transform, aiming at self-supply and driving solar-plus-storage installations.
- **Use of AI and analytics will become a key differentiator among integrators as markets evolve and the prospects for value stacking improves.**





# BESS WERDEN IMMER WICHTIGER



New chemistries entering the market, but lithium dominates



Massive expansion of battery gigafactories



Geopolitics of batteries



Long duration storage opportunities open the door for flow batteries



China rapidly scaling up for vanadium



Storage use cases will continue to increase as the technology develops



Thermal storage



Value of materials & sustainability agenda drives material recovery

# KEINE BATTERIEENGPÄSSE

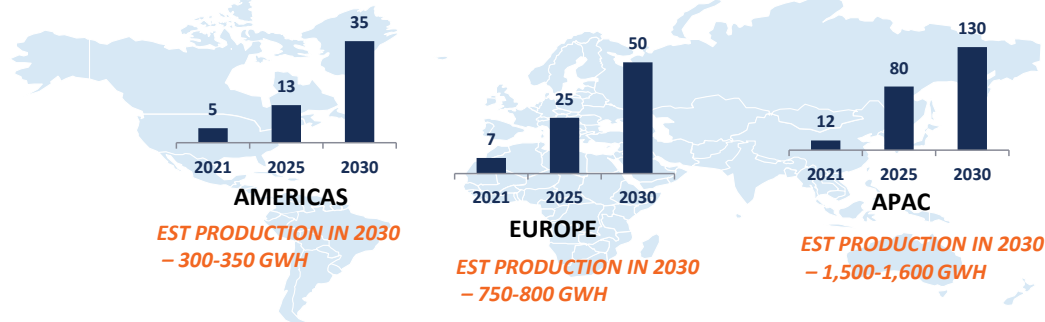
## MASSIVE EXPANSION OF BATTERY GIGAFACTORIES



By 2030, there will be approximately 85 battery manufacturers accounting for 95% of production. 50% of production will come from China

### GIGAFACTORY DEVELOPMENTS, GLOBAL, 2021-2030

#### NUMBER OF GIGAFACTORIES ESTABLISHMENT, GLOBAL, 2021-2030



#### OBSERVATIONS

As of 2022, there were 23 countries producing 251 GWH of battery capacity which will increase to ~35 countries in 2022 with a total estimated production capacity of ~1,500 GWH by 2025.

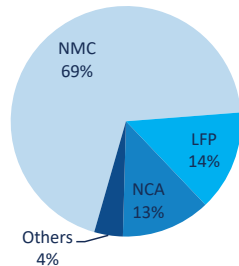
By 2030, China is likely to have 50% of the battery manufacturers out of the total 86.

Over 60% of the battery manufacturers will mainly be start-ups or companies less than 10 years.

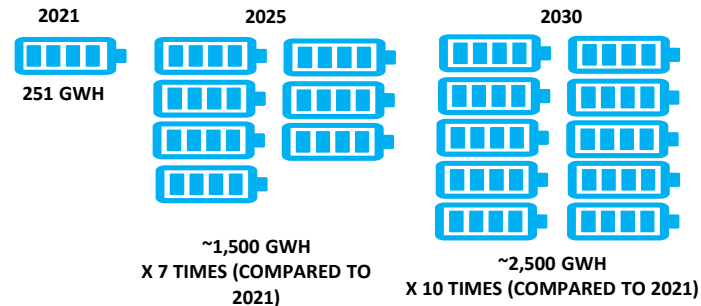
By 2025, approximately 16 plants that have been announced will be ready for production.

A threefold growth is estimated from 2022 to 2030 with 960 GWH production capacity in 2022 going up to 2,639 GWH by 2030.

#### BATTERY CHEMISTRY, 2021



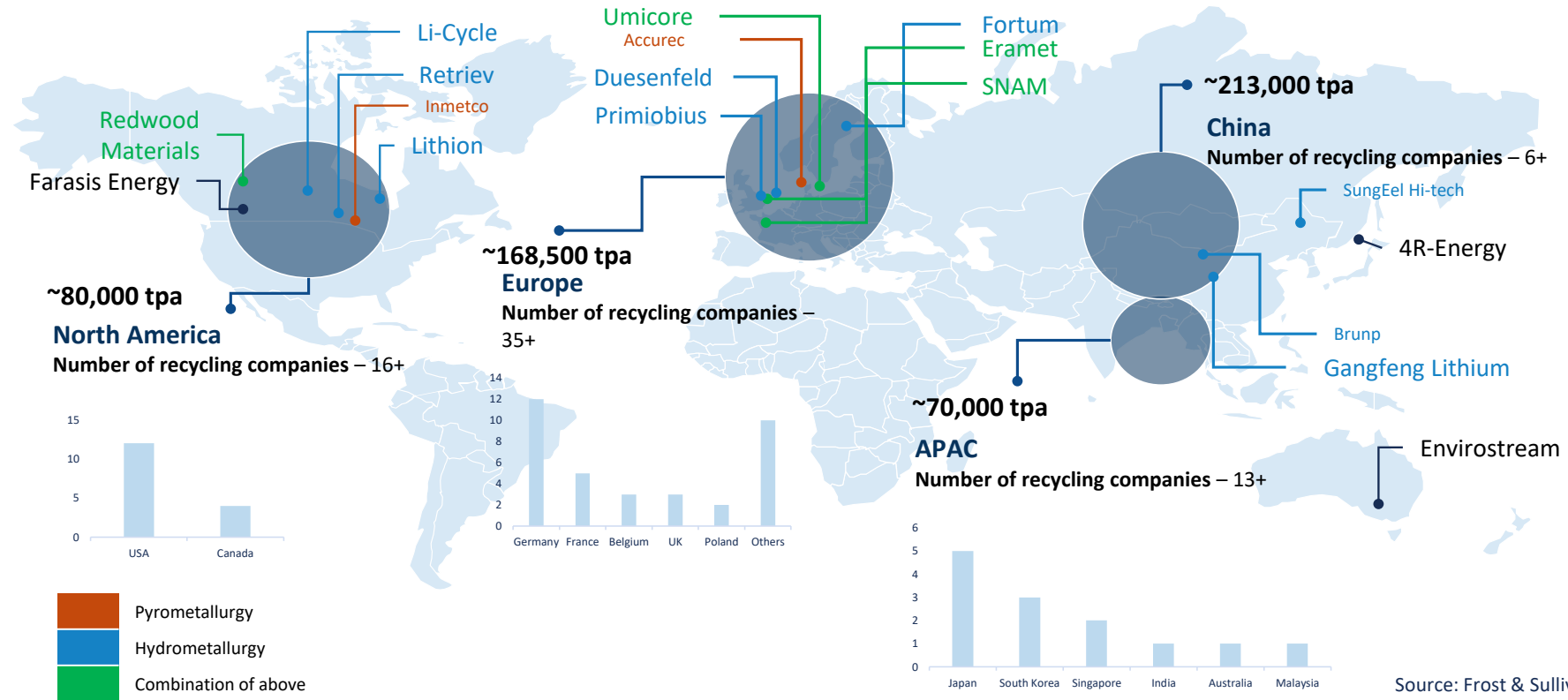
#### ESTIMATED BATTERY PRODUCTION, GLOBAL, 2021-2030



Source: Frost & Sullivan

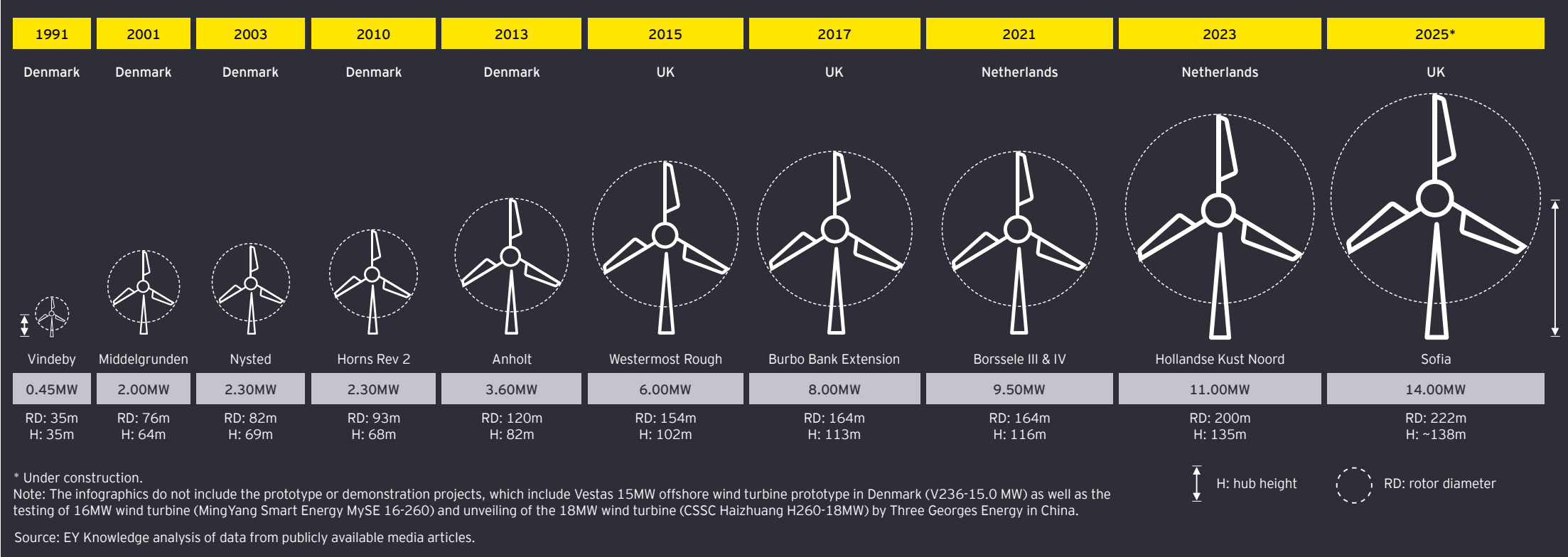
# RECYCLING KAPAZITÄTEN WACHSEN AUCH

 Significant ramp up forecast of battery recycling capacity forecast – China currently dominates in terms of volume, Europe in terms of operational companies



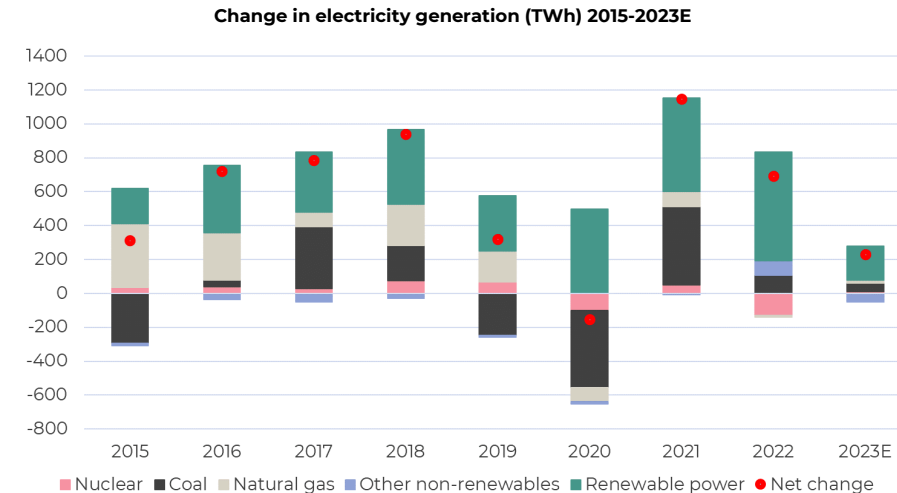
Source: Frost & Sullivan

# MONSTERTURBINEN



# 520 GW NEUE KAPAZITÄTEN IN 2023

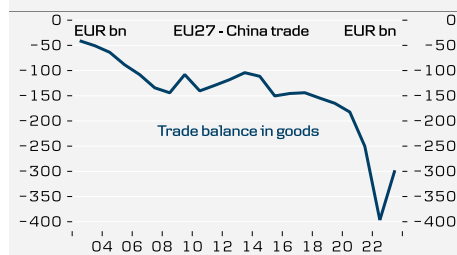
- Around 520 GW of **new renewable generation capacity** was installed in 2023, 100 GW higher than the record installations seen in 2022 and well over double the 194 GW installed pre-COVID in 2019. At around 400 GW, solar represented around three quarters of the new capacity additions. Wind (at around 100 GW) came next, followed by hydropower, then bioenergy.
- Renewable **electricity generation** in 2023 is likely to have increased by around 2.5%, reaching over 9,200 TWh, and outpacing global electricity demand (estimated 1% growth in 2023). Most of the rise in renewable power generation can be attributed to the increase in installed solar and wind capacity. However, the percentage rise in renewable generation in 2023 is significantly lower than in 2022. This can be attributed to hydro power generation being sharply down on 2022, driven by drought conditions in various regions, especially China, offsetting some of the rise in solar and wind generation. Other contributing factors are weather conditions (for example lower average wind speeds in 2023) and the timing of capacity additions.



Sources: IEA; EMBER; Guinness Global Investors, December 2023

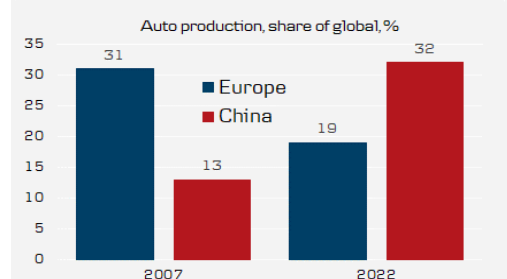
# CHINA'S EXPORTSCHLAGER EV & SOLAR

EU-China trade deficit more than doubled from 2020 to 2022 but declined in 2023



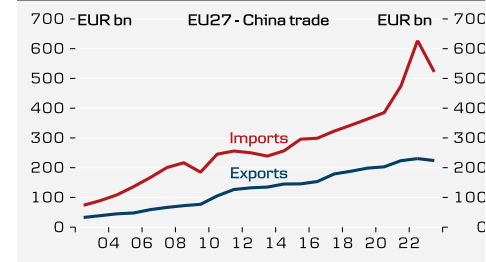
Source: Eurostat, Danske Bank  
Note: 2023 data cover January to November plus forecast for December

China and Europe have switched places as global auto makers



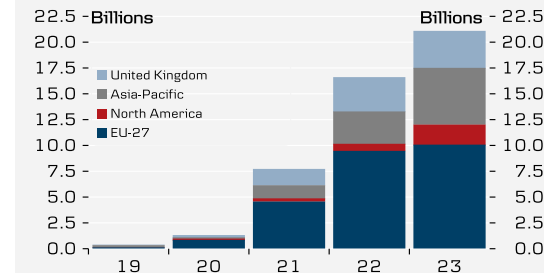
Source: ACEA.auto

Surging imports from China explains the recent rise in the trade deficit



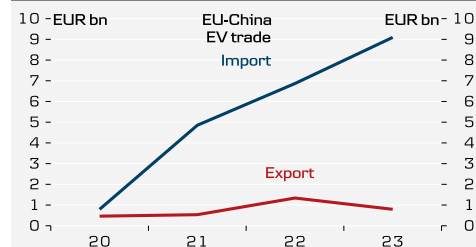
Source: Eurostat, Danske Bank  
Note: 2023 data cover January to November plus forecast for December

EU by far the biggest receiver of Chinese-made EVs



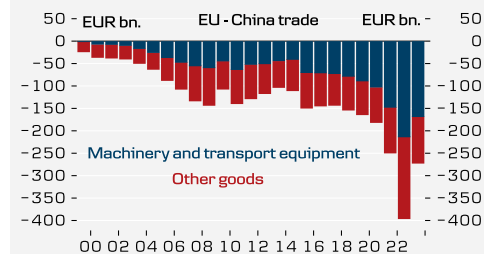
Source: UN Comtrade. Note: 2023 is Jan-Sep

EU imports of Chinese-made EVs skyrocket



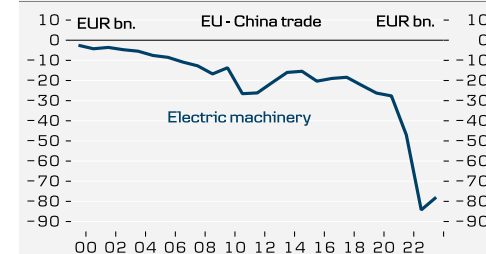
Source: Eurostat. Note: 2023 is Jan-Nov

The trade deficit is especially due to machinery and transport equipment



Source: Eurostat. Note: 2023 is Jan-Nov

Deficit on electrical machinery has tripled since 2020...



Source: Eurostat. Note: 2023 is Jan-Nov

.. mainly due to batteries, semiconductor, and solar panels



Source: Eurostat. Note: 2023 is Jan-Nov

# DAS CHINESISCHE ERFOLGSREZEPT

**China's growth model is characterized by a combination of the invisible hand of markets and a visible and often heavy hand provided by the state to guide and support development. It is close to the 'developmental state' model also seen during the rise of Japan, Singapore, Taiwan, and South Korea, where industrial policy played a key role in developing and upgrading specific industries in their early phases**

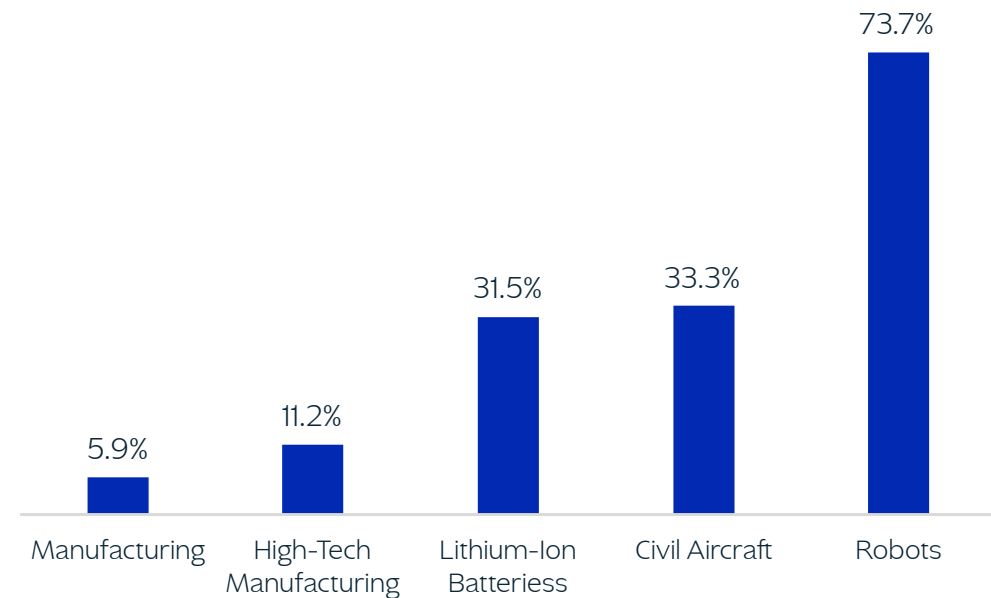
Yet, it is also to some extent inspired by *early American tech development* of products like *microchips*, internet and GPS that came out of defence and space research (DARPA) supported by the state decades ago. Industrial policy in China has been geared towards both catching up in certain technologies (like microchips) and at leap frogging in others by aiming to identify future technologies (like EVs) and put lots of money and R&D behind it.



# HIN ZU HÖHERWERTIGEN PRODUKTEN

- China advances in digitalization and automation.
- Shifts from basic exports to sophisticated products.
- Uses data to enhance efficiency and operations.
- Cost savings as funding source

China Y/y Increases in Production, %

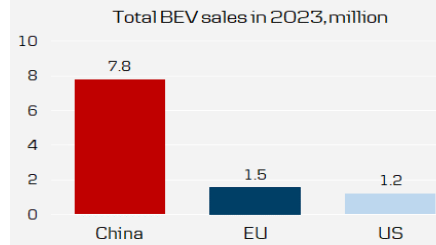


Data as at August 31, 2023. Source: China Development Forum.



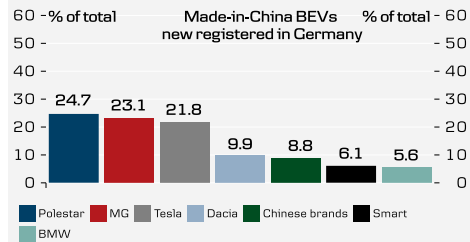
# EUROPA UND US HINKEN NACH

Chinese BEV makers have a strong home market



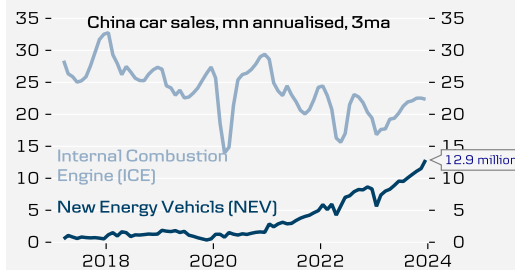
Source: Macrobond Financial, Wards Intelligence, ACEA.

Chinese brands behind 8.8% of Made-in-China BEVs imported in Germany in 2023



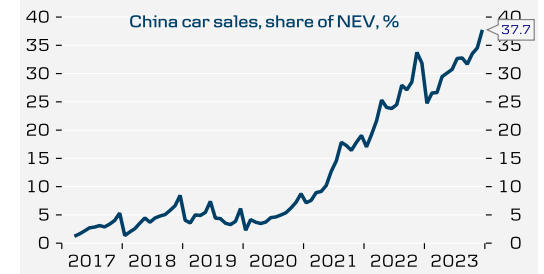
Source: CSIS. Note: Data covers Jan-Jun 2023

Chinese EV sales have moved steadily higher in 2023



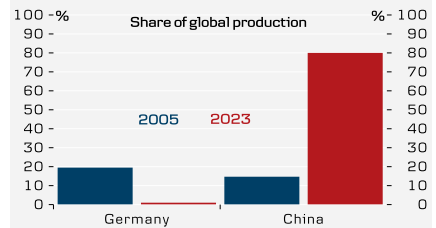
Source: Macrobond Financial, CAAM

Chinese EV sales - share of total



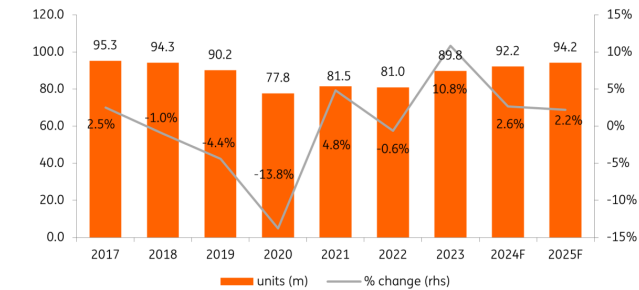
Source: Macrobond Financial,

Share of global solar panel production

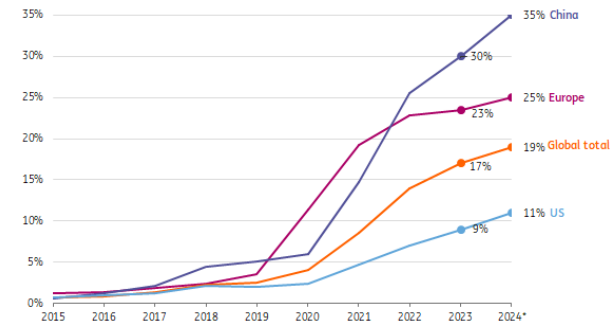


Source: IEA, RTS Corp, Ember Climate

Global car sales growth rate set to slow



Source: Moody's, ING Research



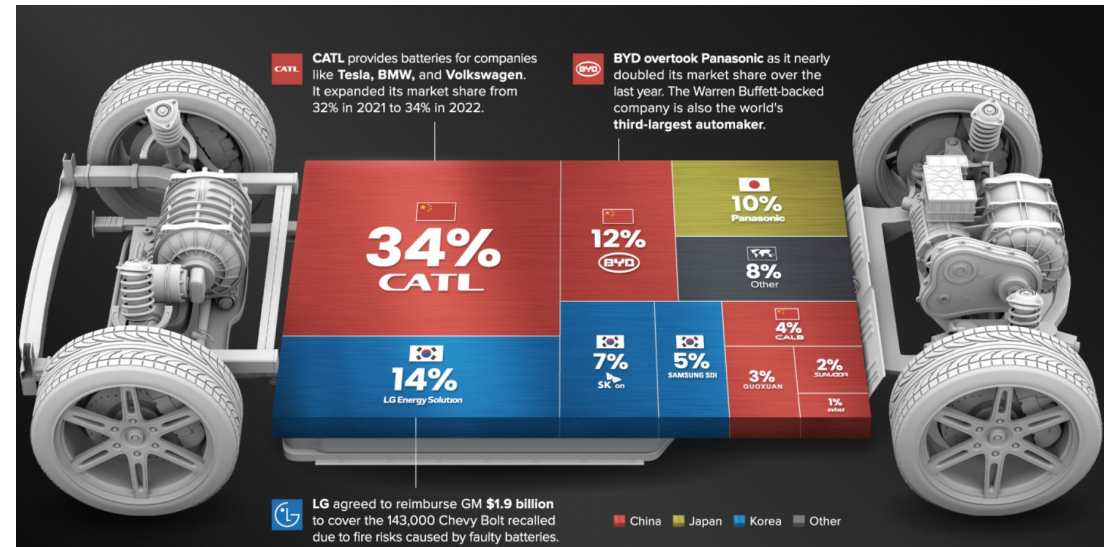
Source: BNEF, ACEA national associations ING Research \*forecast

# BATTERIEKAPAZITÄTEN ZU OPTIMISTISCH?

*The top six battery manufacturers (CATL, BYD, LGES, Samsung SDI, SK On, and Panasonic) are responsible for 85% of electric vehicle battery volumes.*

They are behind just 50% of planned capacity additions out to 2025, with capital expenditure plans typically underpinned by supply arrangements with EV manufacturers. The remaining 50% of additions are expected to be brought online by more indebted and less profitable tier-2 suppliers. A lot of this tier-2 capacity ultimately may not come online, as declining share and poor cashflows lead to funding constraints and sector consolidation.

The last 12 months have also seen legislators wrestle for control over **battery supply chains** to reduce their dependence on Chinese imports. The EU announced its Critical Raw Materials Act and the US released guidance that EVs with Chinese battery components would not be eligible for full IRA tax benefits. With China processing around 75% of the world's lithium and supplying over 50% of battery components globally, we believe it will be extremely challenging to extricate Chinese companies from Western supply chains.



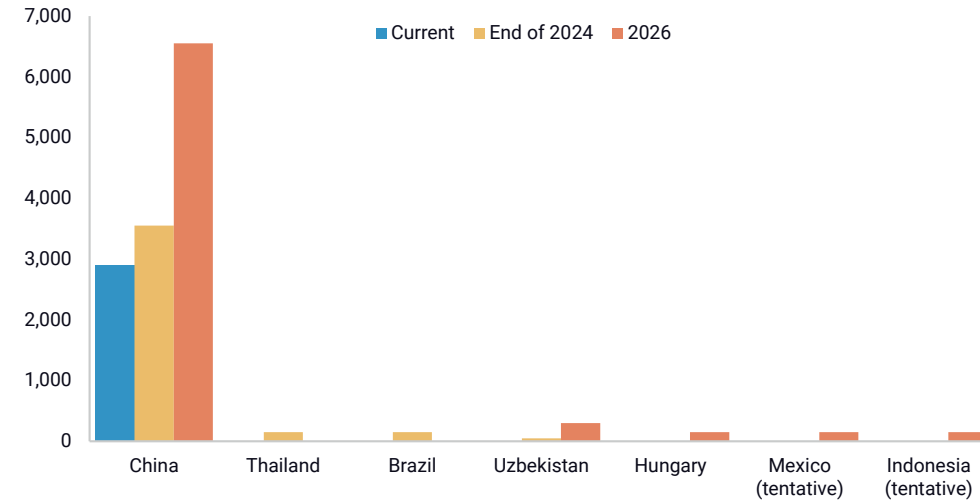
# DIE SCHIFFE SIND SCHON BESTELLT\*

China's EV exports have been hindered by a scarcity of affordable car shipping vessels. In 2023, charter prices for such carriers skyrocketed by 700% compared to 2019.

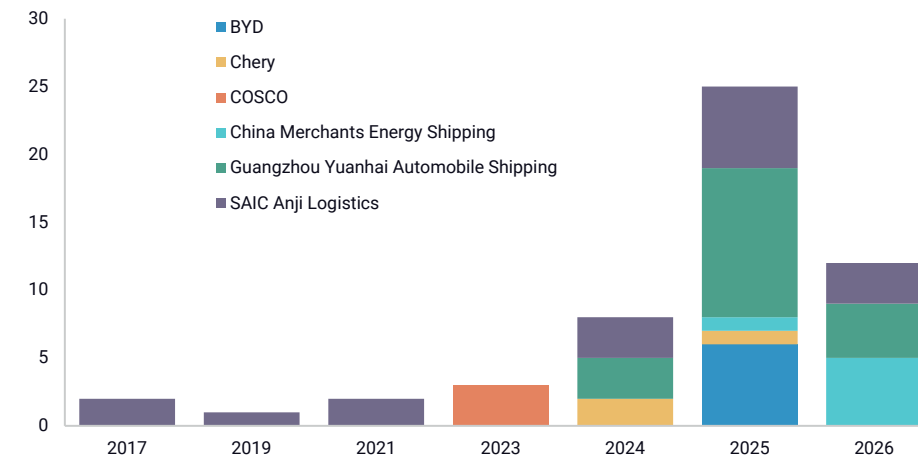
Chinese carmakers and shipping companies have responded by placing orders for numerous new ships. Based on these orders, they will have capacity to ship an estimated 560,000 cars annually to Europe in 2025, based on six trips a year (in 2023 the EU imported 472,000 EVs from China). Capacity could surge to as much as 1.7 million cars in 2026. (50% of EU EV market).

The decision to purchase rather than rent car-carrying ships underscores the long-term goal of Chinese EV producers to export large quantities of cars.

BYD's projected annual NEV production capacity  
Thousands of units



Chinese shipping and EV companies' car carrier orders  
Number of car carriers being delivered per year by purchaser



Source: New-ships.com

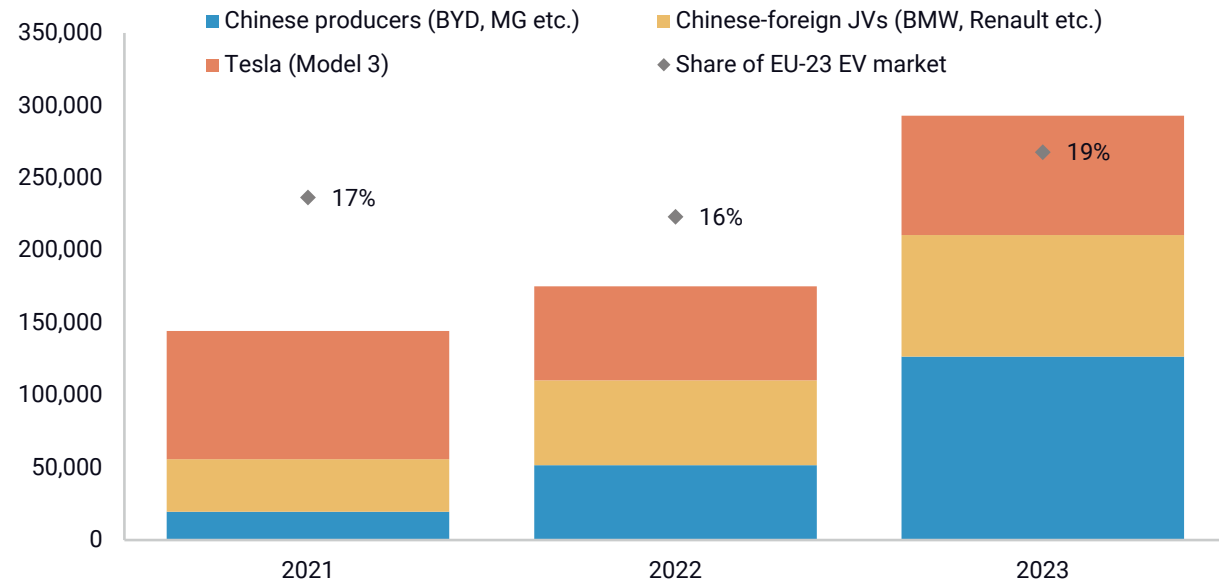
# WIEDERHOLT SICH DIE GESCHICHTE?

The European Commission is likely to impose countervailing duties in the 15-30% range on imports of electric vehicles (EV) from China in the coming months to head off the risk of subsidized cars damaging Europe's auto industry.

Duties in the 40-50% range—arguably even higher for vertically integrated manufacturers like BYD—would probably be necessary to make the European market unattractive for Chinese EV exporters.

As countervailing duties at this level are unlikely, the EU may decide to turn to non-traditional tools including restrictions based on environmental or national security-related factors.

**Made-in-China EV sales and market share in Europe**  
Units sold, market share in percent



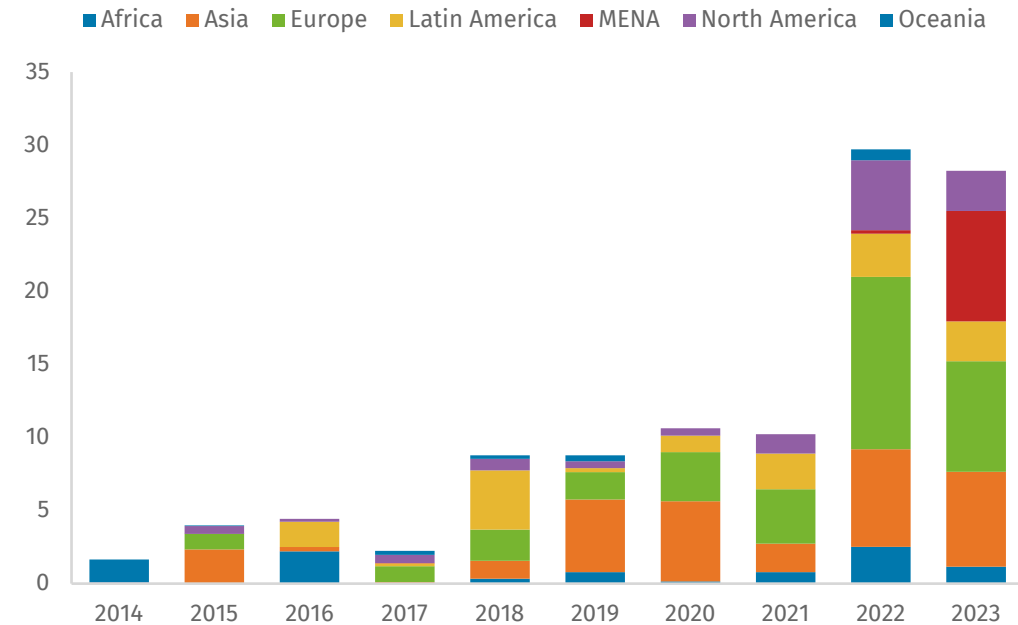
Source: Rhodium Group based on Marklines Data.

Notes: EU-23 includes Austria, Belgium, Bulgaria, Croatia, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, and Sweden.

# KONFRONTATION EU CHINA?

Brussels -“De-risking, not decoupling.” After **the almost 400 billion euro record** in 2022, Brussels sounded the alarm on the trade imbalance with China. The risk reduction strategy inaugurated by the EU has already reversed the trend: Eurostat [data](#) show that in 2023, the trade deficit with Beijing was 291 billion, **27 percent less than the previous year**. In [December](#), during the 24th EU-China Summit, European Commission President Ursula von der Leyen made it clear that with the term de-risking, the EU intends to “**address excessive dependencies and diversify supply chains,**” as even in 2023, China was the EU’s largest partner for EU imports of goods. Member Countries **buy a fifth of the bloc’s non-EU imports** from the Asian giant: more than the United States (13.7 percent), the United Kingdom (7.2 percent), Switzerland (5.5 percent) and Norway (4.7 percent).

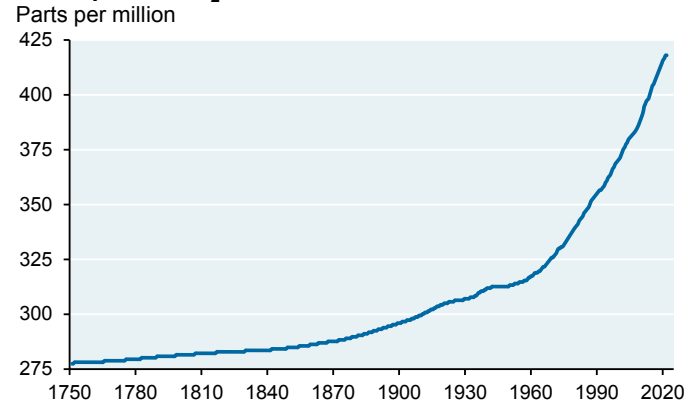
Newly announced Chinese outbound OFDI in USD million by host region  
Billions of USD



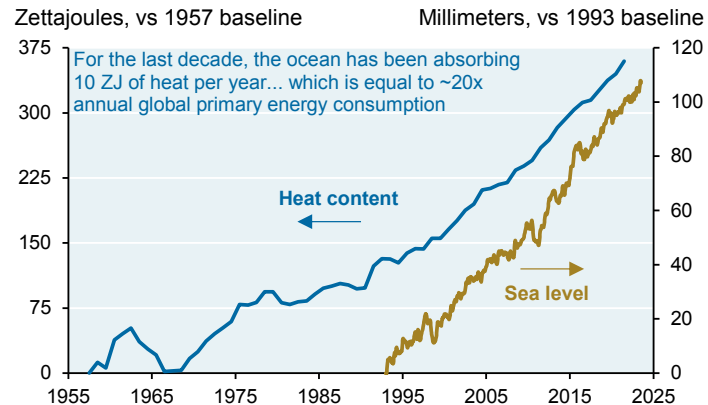
Source: Rhodium Group China Cross-Border Monitor

# SO KANN ES NICHT WEITERGEHEN

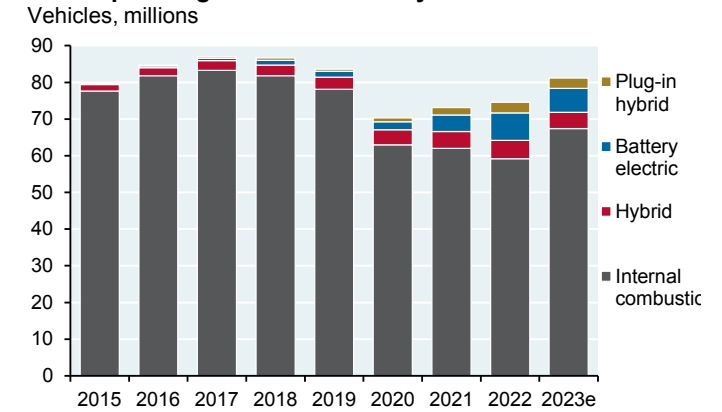
## Atmospheric CO<sub>2</sub> concentrations



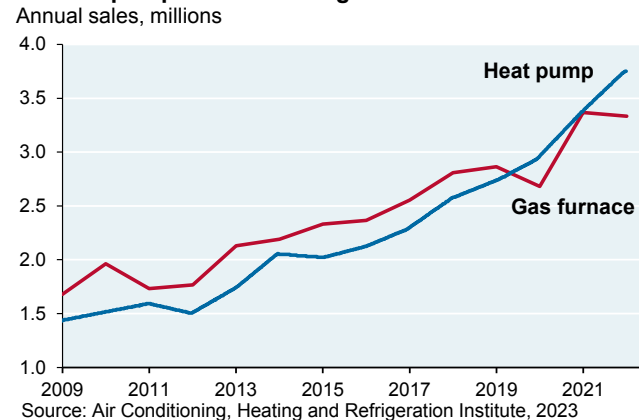
## Ocean heat content and sea level



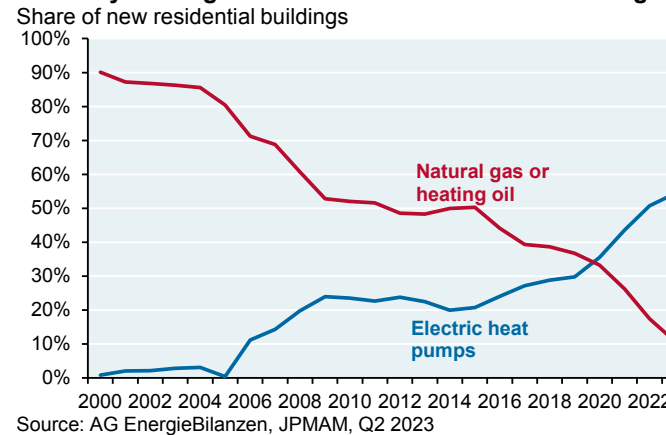
## Global passenger vehicle sales by drivetrain



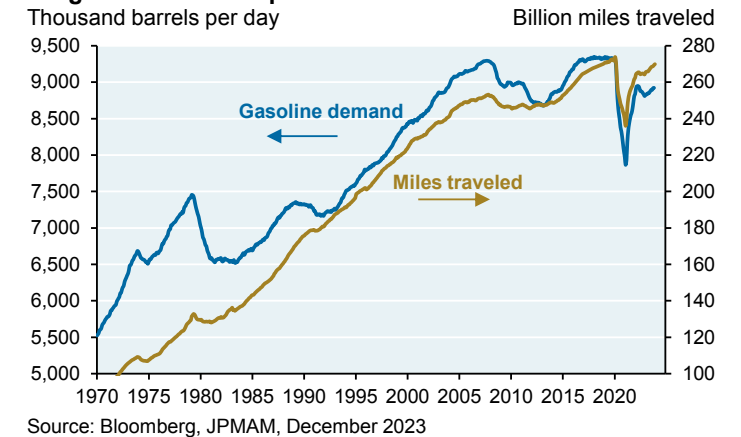
## US heat pump sales exceed gas furnace sales



## Germany heating structure in new residential buildings

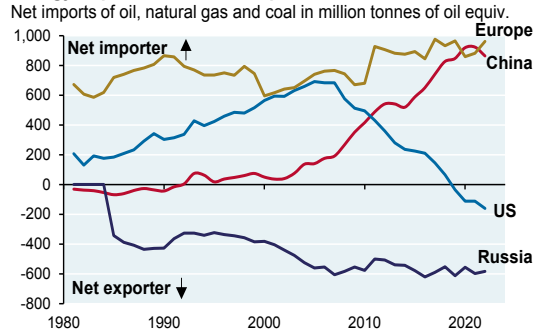


## US gasoline consumption vs vehicles miles traveled



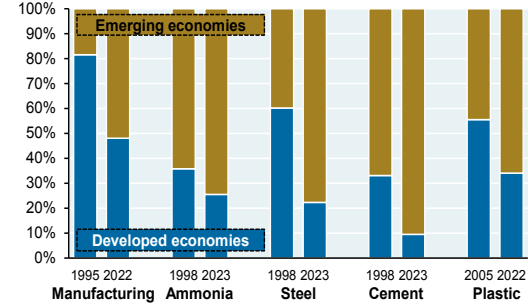
# FOSSILER BRENNSTOFFMARKT

## Energy dependence and independence



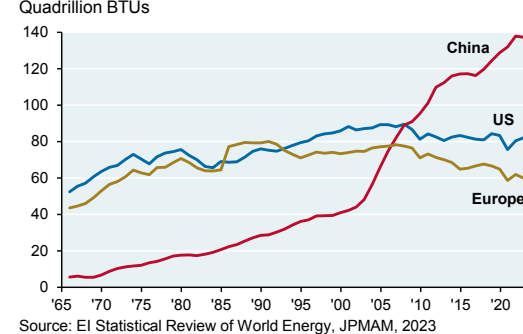
Source: EI Statistical Review of World Energy, JPMAM, 2023

## A shift in energy intensive manufacturing to the emerging world, % of global production



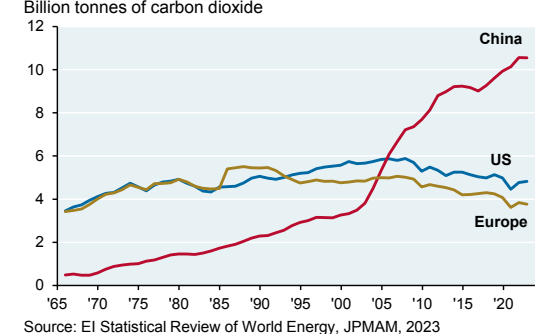
Source: UN DESA, Worldsteel, PlasticsEurope, USGS, JPMAM, 2024

## Fossil fuel consumption



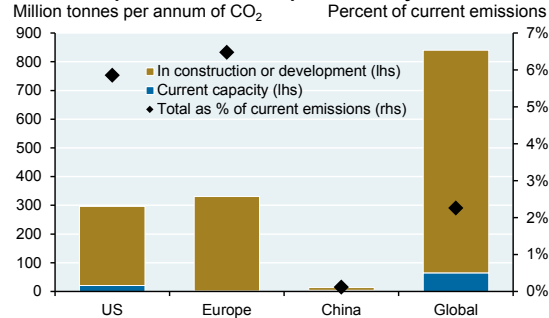
Source: EI Statistical Review of World Energy, JPMAM, 2023

## CO<sub>2</sub> emissions from energy



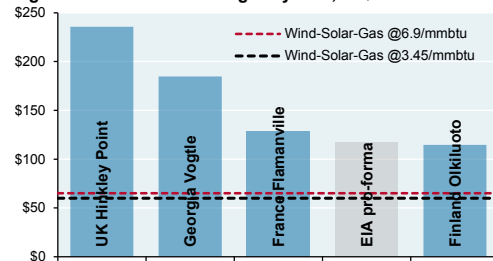
Source: EI Statistical Review of World Energy, JPMAM, 2023

## Current vs planned carbon sequestration by 2030



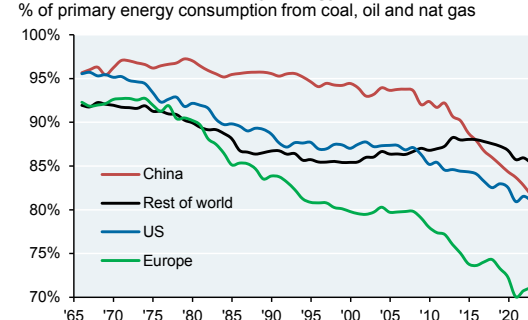
Source: Global CCS Institute, OWID, JPMAM, 2024.

## Levelized cost of 4 specific nuclear plants vs cost of high renewable wind-solar-gas system, US\$ / MWh



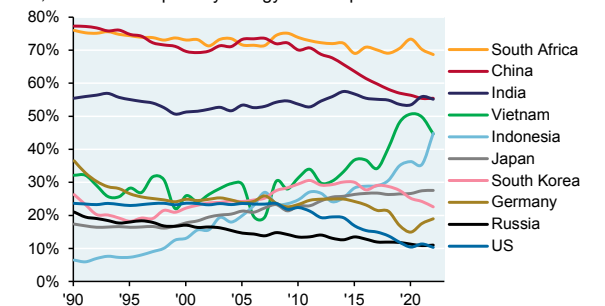
Source: EIA, JPMAM, 2024

## Fossil fuel share of primary energy since 1965



Source: EI Statistical Review of World Energy, JPMAM, 2023

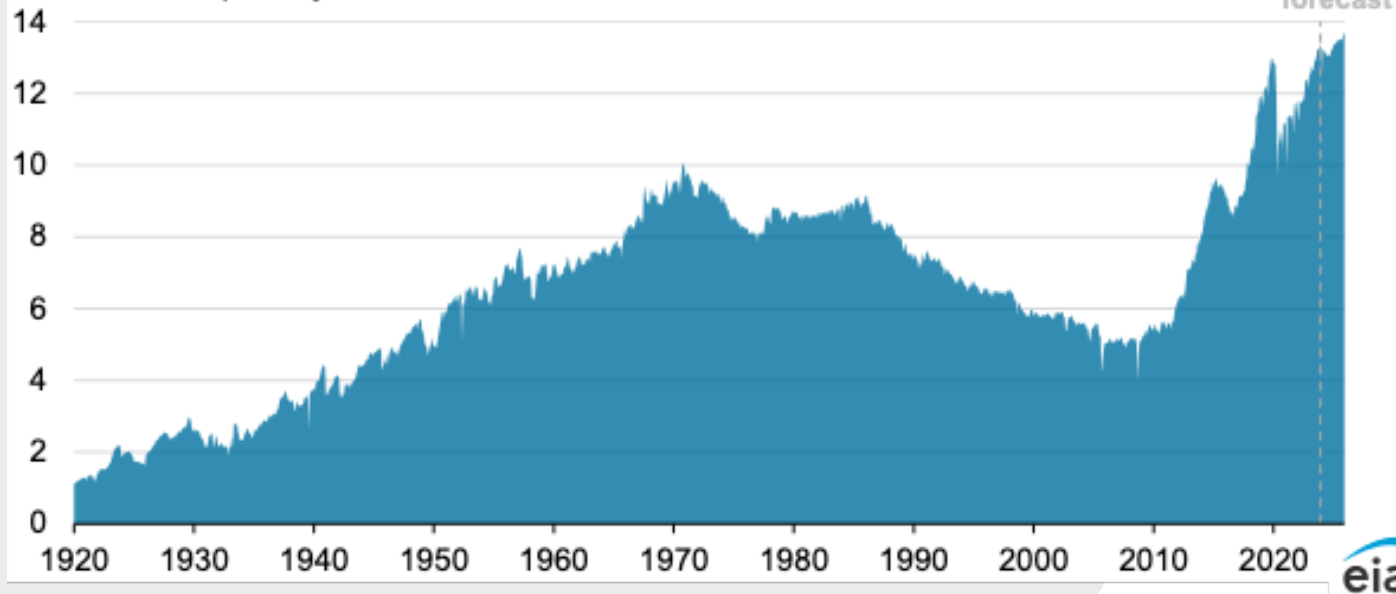
## Top Ten consumers of coal by energy content



Source: EI Statistical Review of World Energy, JPMAM, 2023.

# ENERGIERIESE US

Monthly crude oil production, United States (Jan 1920–Dec 2025)  
million barrels per day



## Oil Production

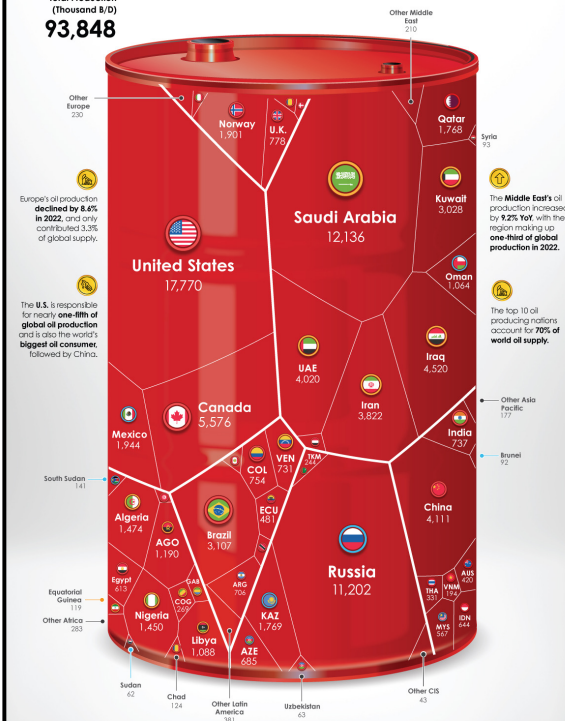
BY COUNTRY IN 2022

In Thousand barrels per day (B/D)

○ OPEC Countries
 ○ Non-OPEC Countries
 ○ OPEC + Countries

Global oil production grew by 3.8 million barrels per day (B/D) between 2021 and 2022, a 4.2% rise led by supply increases from the top 10 oil producing nations.

Total Production (Thousand B/D)  
**93,848**



Europe's oil production declined by 8.6% in 2022, and only contributed 3.3% of global supply.

The U.S. is responsible for nearly one-fifth of global oil production and is also the world's biggest oil consumer, followed by China.

The Middle East's oil production increased by 9.2% YoY with the region making up one-third of global production in 2022.

The top 10 oil producing nations account for 70% of world oil supply.

Oil Production by Region (Thousand B/D)

Region	Production (Thousand B/D)
Middle East	30,742
North America	25,290
CIS	14,006
Asia Pacific	7,335
Africa	7,273
South America	6,362
Europe	3,131

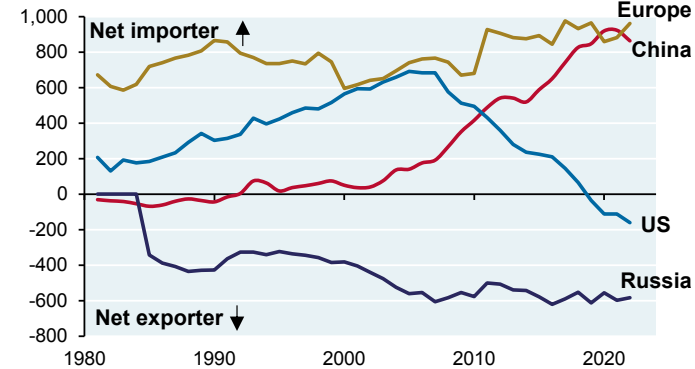
\*Includes crude oil, shale oil, oil sands, condensates that require further refining, and natural gas liquids. Excludes liquid fuels from other sources and oil/shales/kerogen extracted in solid form.  
Source: Energy Institute Statistical Review of World Energy 2023.



# US FRACKING MACHT DEN UNTERSCHIED

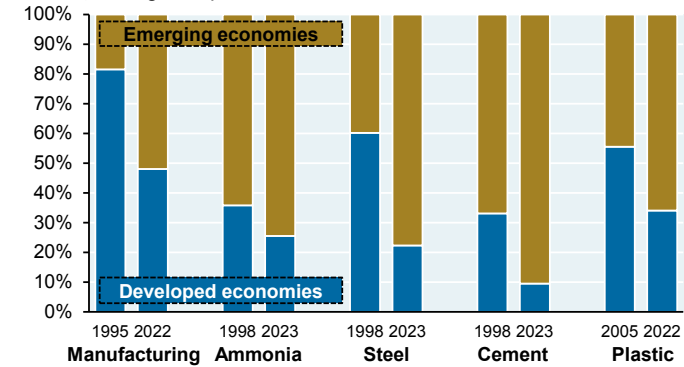
## Energy dependence and independence

Net imports of oil, natural gas and coal in million tonnes of oil equiv.



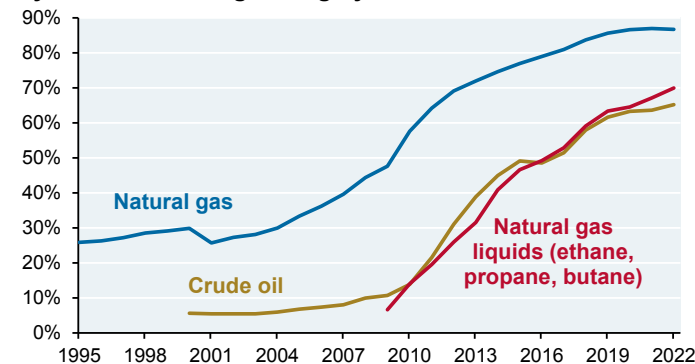
Source: EI Statistical Review of World Energy, JPMAM, 2023

## A shift in energy intensive manufacturing to the emerging world, % of global production



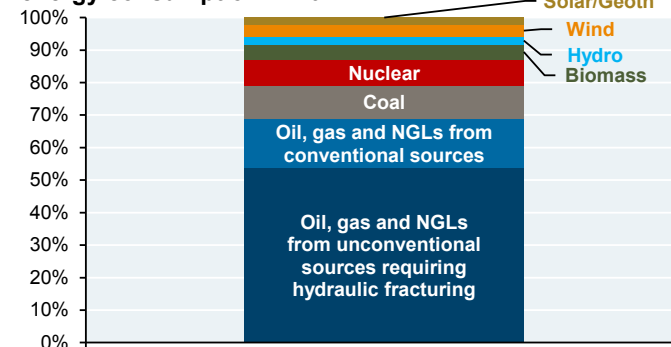
Source: UN DESA, Worldsteel, PlasticsEurope, USGS, JPMAM, 2024

## Percentage of US oil and gas production derived from hydraulic fracturing through year-end 2022



Source: EIA, US Department of Energy, JPMAM, 2022

## Hydraulic fracturing accounted for 53% of all US primary energy consumption in 2022



Source: EIA, BP, Society of Petroleum Engineers, S&P Platts, JPMAM, 2022.

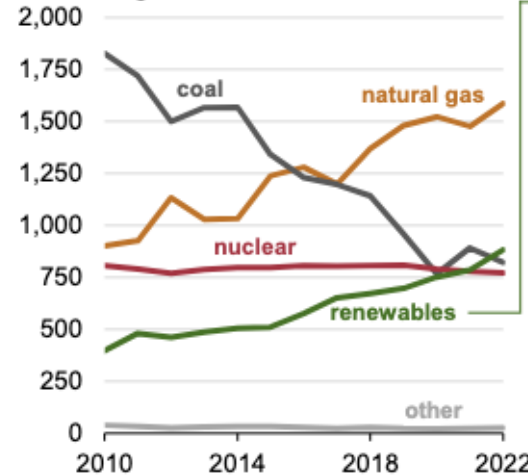
# ERDGAS IST DIE PRIMÄRE ENERGIE

In 2023, about 4,178 billion kilowatthours (kWh) (or about 4.18 trillion kWh) of electricity were generated at utility-scale electricity generation facilities in the United States. About 60% of this electricity generation was from fossil fuels—coal, natural gas, petroleum, and other gases.

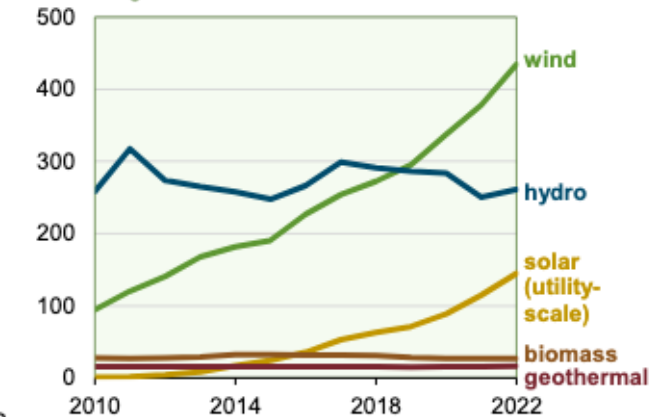
As of January 2024, America has nearly 1.3 million megawatts of generation capacity. **The largest fuel source for this capacity is natural gas (43.9%), followed by coal (16%).** Wind, nuclear, and hydro together account for more than one-third of capacity.

U.S. electric power sector electricity generation (2010–2022)

million megawatthours



detailed renewable sources  
million megawatthours



# ERDÖL NOCH LANGE NICHT AM ENDE

***In 2023, EVs made up more than 10% of global auto sales, from less than 1% in 2012. Yet over the same period, oil demand climbed more than 11% to an all-time-high of over 101 million barrels a day.***

Fossil fuels currently account for over 80% of primary energy consumption, while solar and wind make up just over 5%.

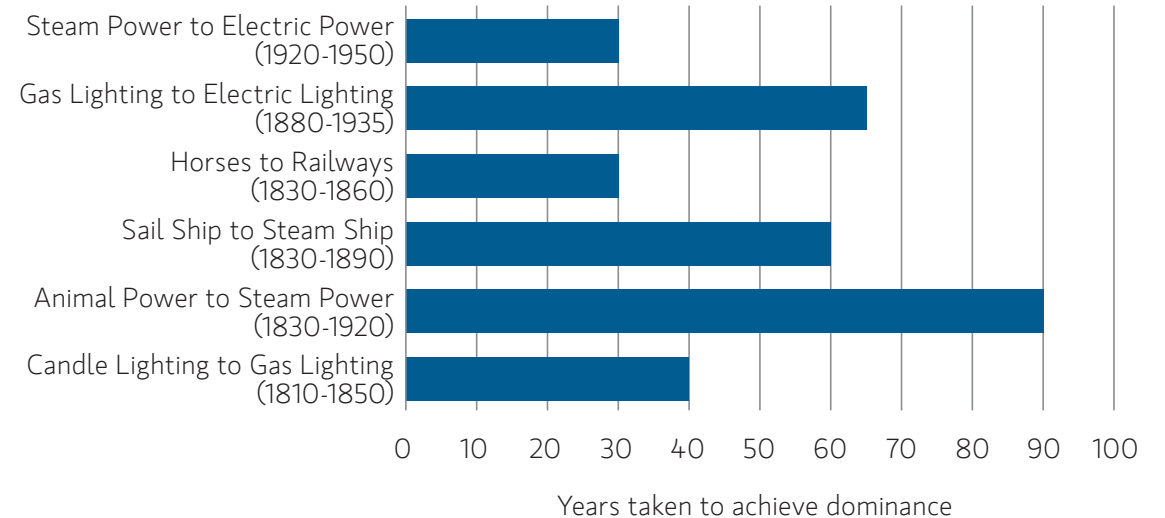
Most of the increase in demand could come from jet fuel and petrochemicals.

Lack of investment could lead to global oil supplies falling below 95 million barrels a day by 2030, creating a potential shortfall

OPEC, which accounts for a third of global crude oil supply, is supplying more than a million fewer barrels to the market compared to 2019 levels. Russia is also lagging 2019 output by a similar amount. The U.S., the world's largest producer

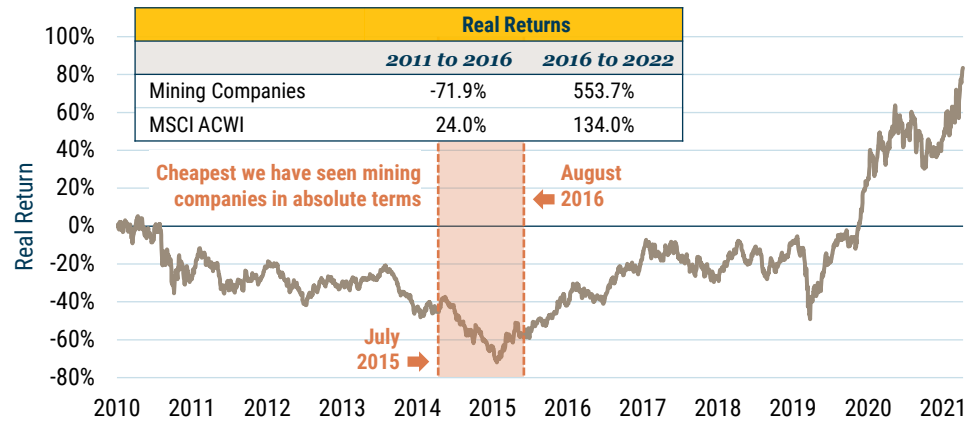
## Past Energy Transitions: Diffusion to Dominance Is a Long Road

*Years for past energy transitions to achieve dominance*



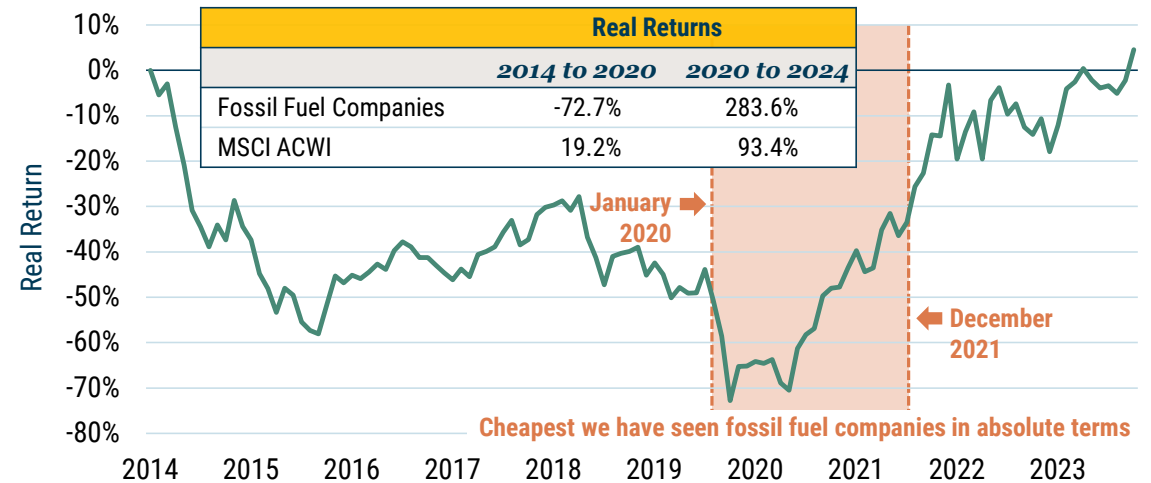
Source: MSIM EME Research, Fouquet.

# TRENDS BRAUCHEN MANCHMAL ZEIT



Whole period: 1/2011 – 4/2022 | Trough: 1/20/2016 | Source: Bloomberg, GMO

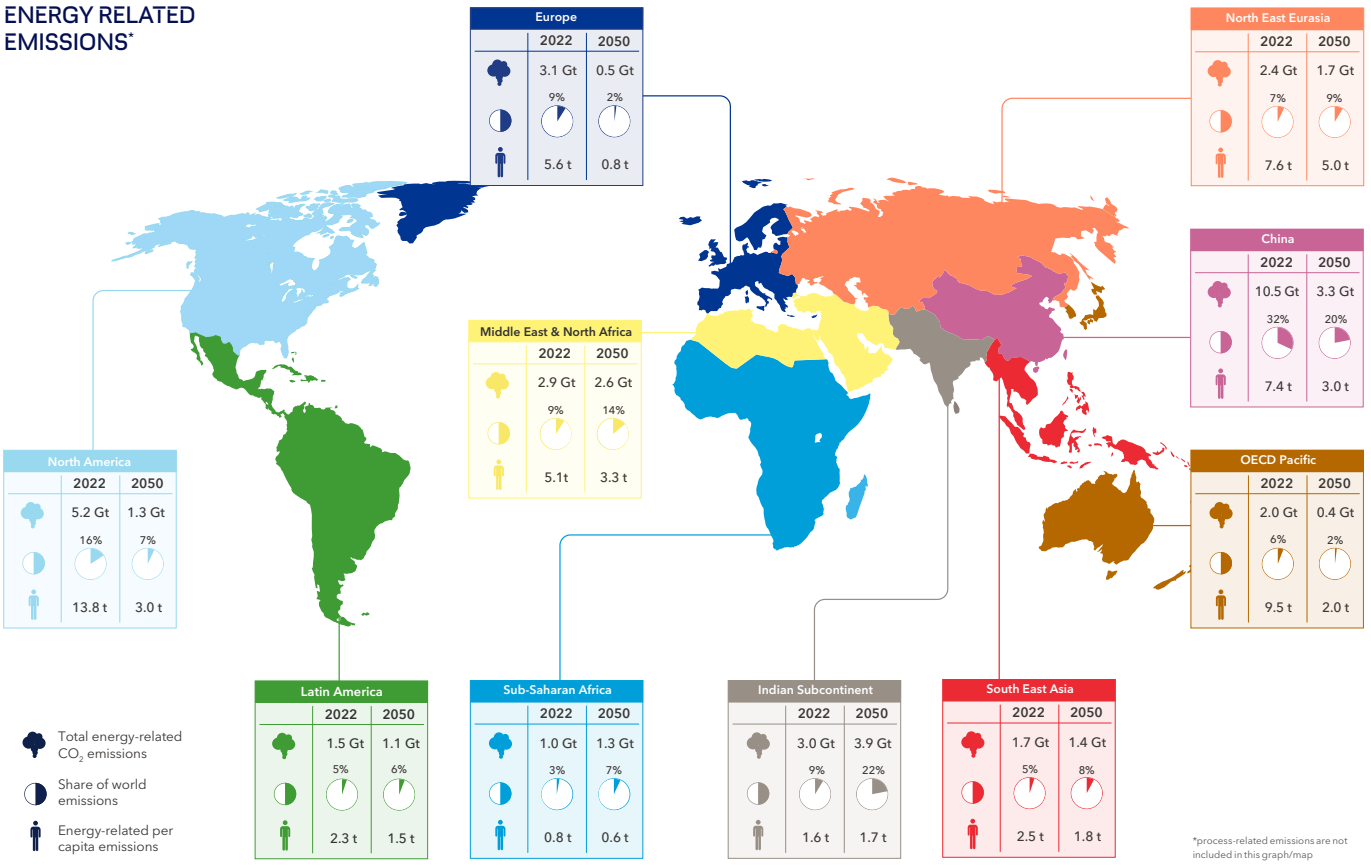
A few years later, the fossil fuel industry endured a similar panic (see Exhibit 5). Falling fossil fuel prices conspired with narratives surrounding electric vehicles and fossil fuel demand evaporation to drive the industry down over 70%. Once again, an industry absolutely critical to the functioning of the global economy bounced back with a vengeance, as fossil fuels have rallied almost 300% and more than tripled the return of the market the last few years.



Whole period: 7/2014–3/2024 | Trough: 3/31/2020 | Source: Bloomberg, GMO

# ÜBERSICHT CO2 AUSSTOß

## ENERGY RELATED EMISSIONS\*





# WAS XI ÜBER DIE WIRTSCHAFT DENKT

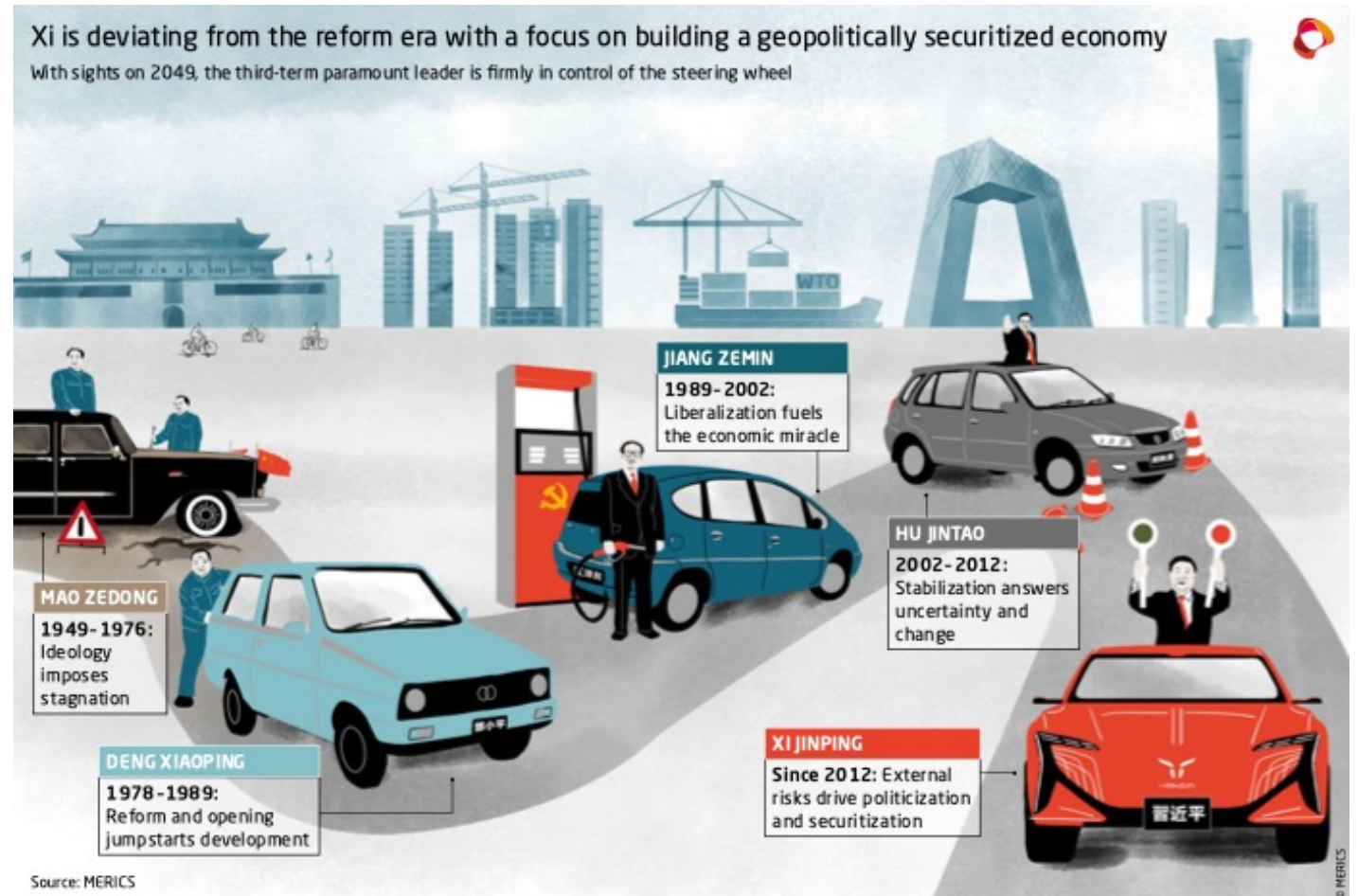
Xi Jinping is expanding the roles of the party and state to guide economic actors towards Beijing's strategic goals.

Economic liberalization as a goal in and of itself is dead. Xi uses market forces as a tool when convenient, as a part of a party-state toolkit.

The leadership has no intention of isolating China. Dual circulation strategy aims to alter China's position in the global economy – remaining open to the global economy while boosting domestic consumption and climbing global value chains.

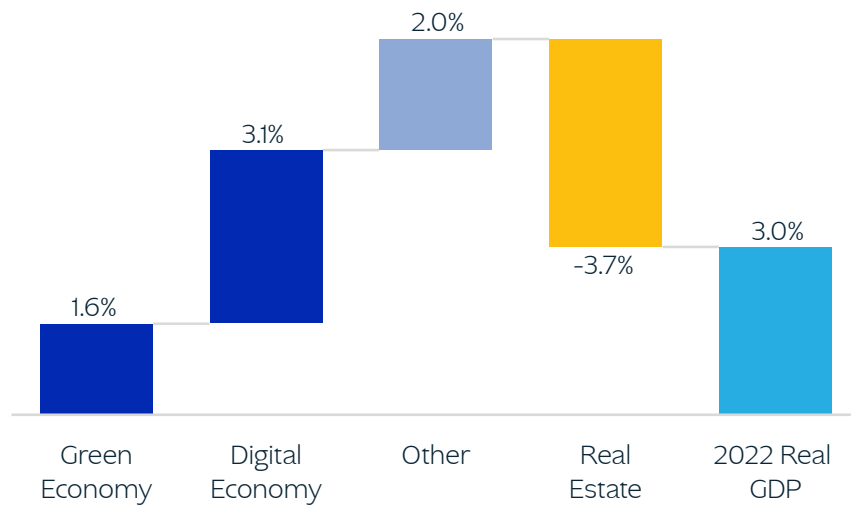
Beijing has begun to heavily emphasize the “New type of all-of-nation system” to close key technology gaps, and economic actors are increasingly playing along.

In Xi's view, the private sector had become detached from national interests and drove up systemic risks in the financial sector, an issue that could only be addressed with more control.

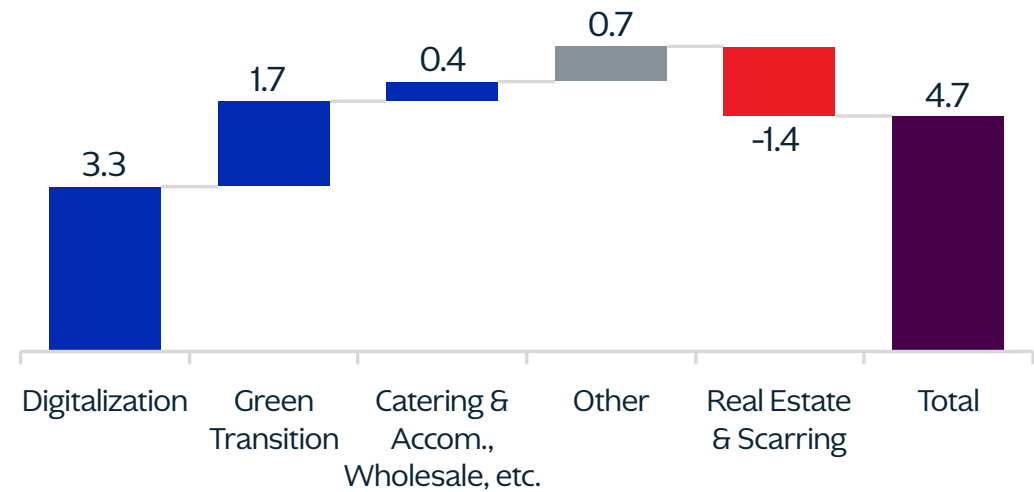


# NEUE WACHSTUMSSTÜTZEN

Breakdown of China GDP Growth, 2022



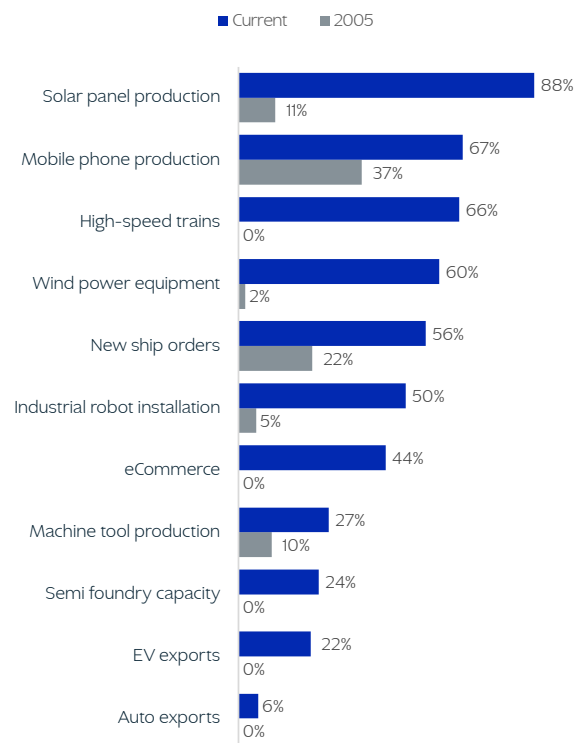
China GDP Breakdown: 2024





# VON BRAUN ZU GRÜN?

China's Global Share, %

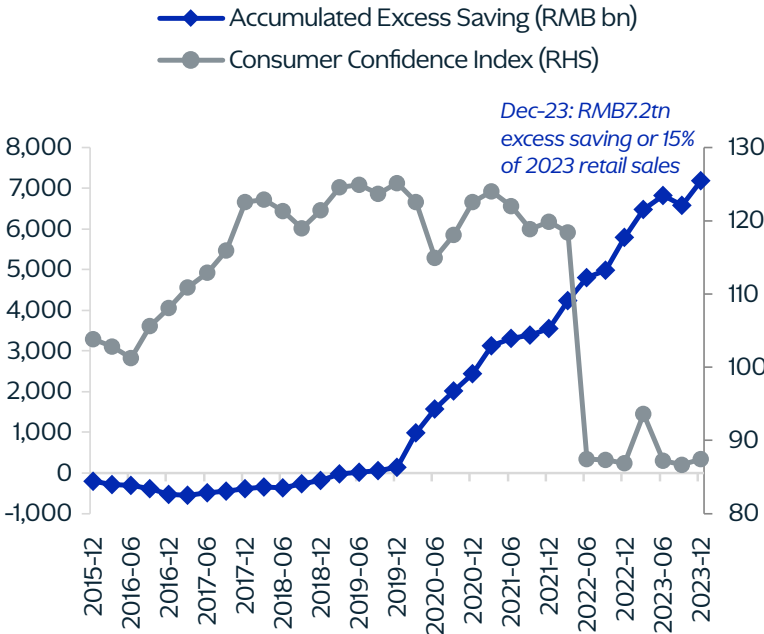


Data at December 31, 2022 or latest available. Source: WIND, Baidu, Forbes, China Today, eeNews Europe, Statistica, World's Top Exports, HQEW, CDM Fund, and China.com.



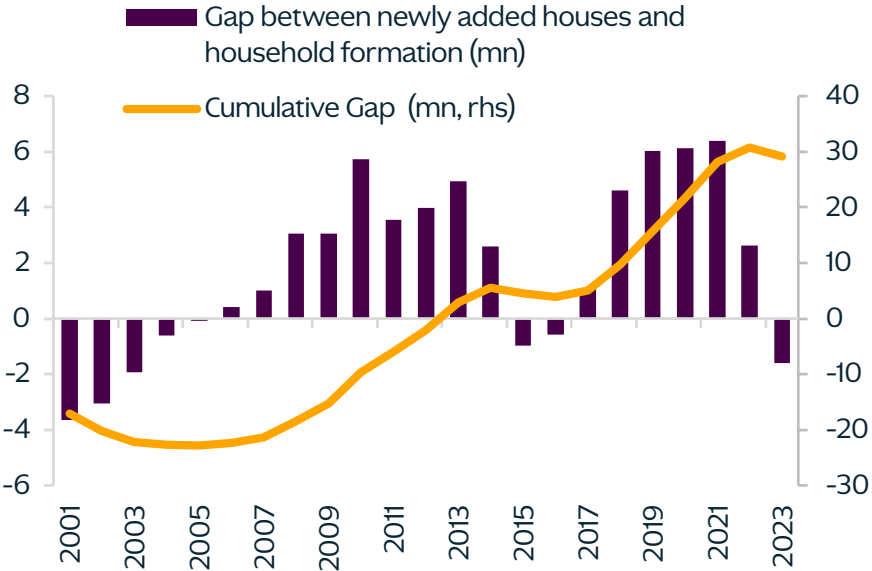
# SPARSAMERE KONSUMENTEN

China's Consumer Confidence vs. Excess Saving



Data as at December 31, 2023. Source: China National Bureau of Statistics, Haver Analytics, KKR Global Macro & Asset Allocation analysis.

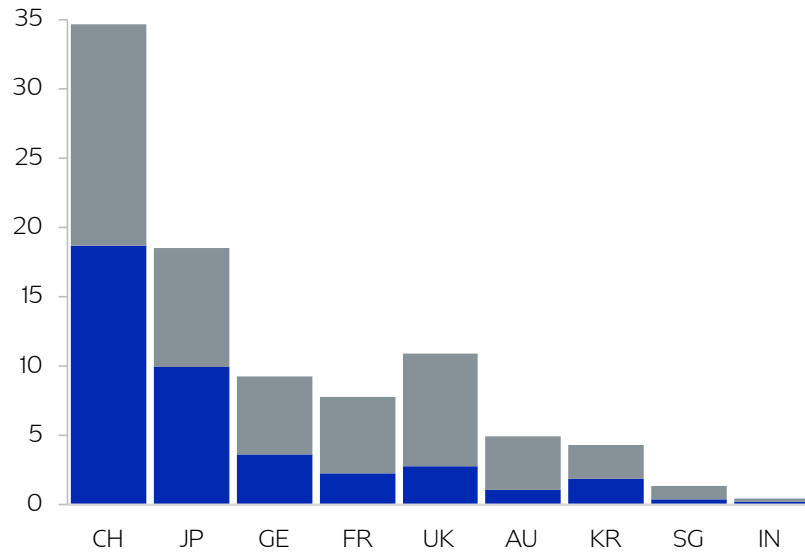
Accumulative Gap of Households New Formation and Net New Starts In Urban Areas



Data as at December 31, 2023. Source: Haver Analytics, KKR Global Macro & Asset Allocation analysis.

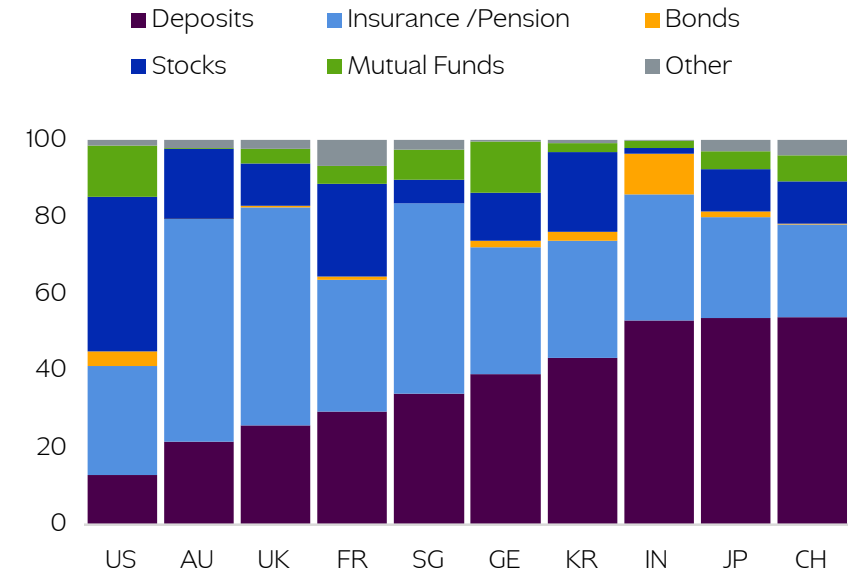
# EIN BLICK AUF PRIVATES VERMÖGEN

Household Financial Assets, US\$ Trillions



China's 24% Insurance/Pension includes 11.6% Insurance + 12.5% Financial Management products. Data as at December 31, 2021.  
 Source: Wind, Cabinet Office of Japan, India Ministry of Statistics and Program Implementation, OECD, Department of Statistics Singapore, Australian Bureau of Statistics, Federal Reserve Board, Haver Analytics.

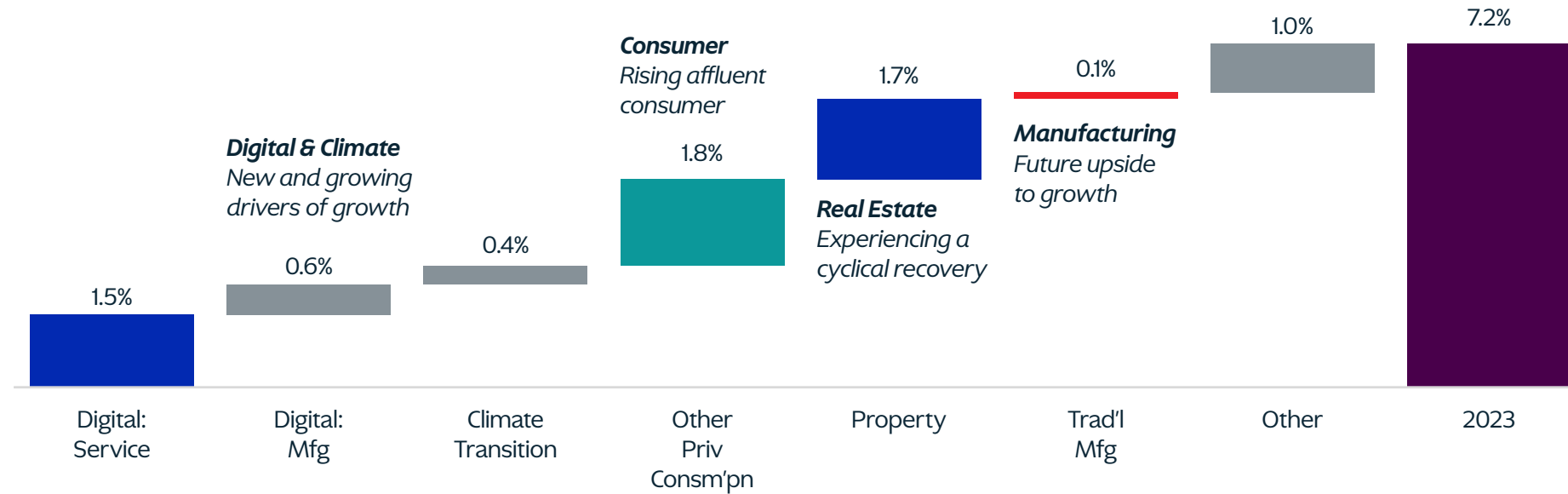
Household Financial Assets, 2021



China's 24% Insurance/Pension includes 11.6% Insurance + 12.5% Financial Management products. Data as at December 31, 2021.  
 Source: Wind, Cabinet Office of Japan, India Ministry of Statistics and Program Implementation, OECD, Department of Statistics Singapore, Australian Bureau of Statistics, Federal Reserve Board, Haver Analytics.

# AUSBALANCIERTES WACHSTUM?

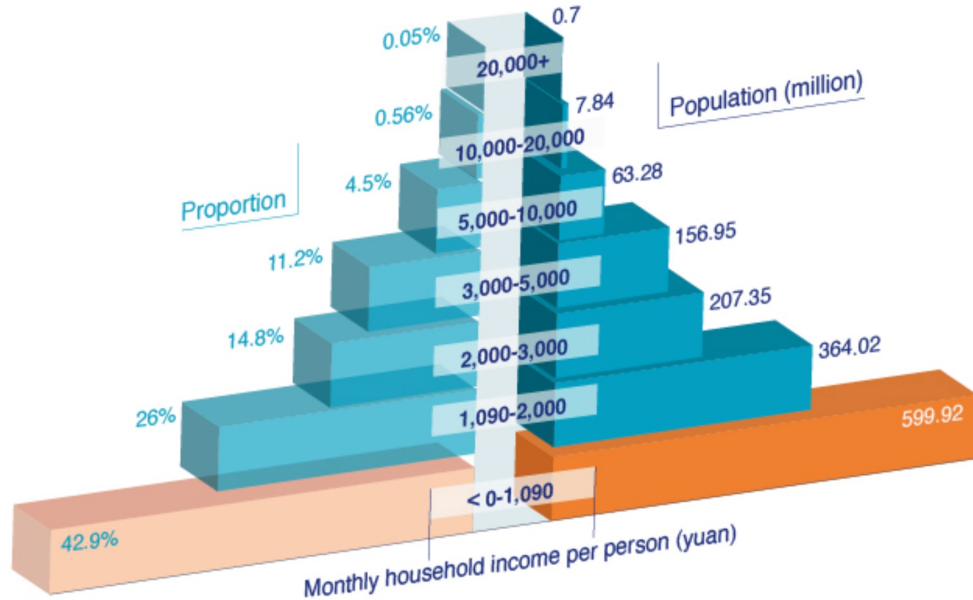
India FY 2023: Real GDP Breakdown, %



Note: Digital economy is estimated based on "India's Trillion-Dollar Digital Opportunity" from India Ministry of Electronics and Information Technology. Climate transition is estimated based on IEA estimations. Other private consumption is private consumption on service excluding digital as goods consumption is included in manufacturing. Property includes construction and real estate. Traditional manufacturing excludes digital and climate transition manufacturing. Data as at March 31, 2023. Source: India Central Statistics Office, Reserve Bank of India, India Ministry of Electronics and Information Technology, IEA, KKR Global Macro & Asset Allocation analysis.

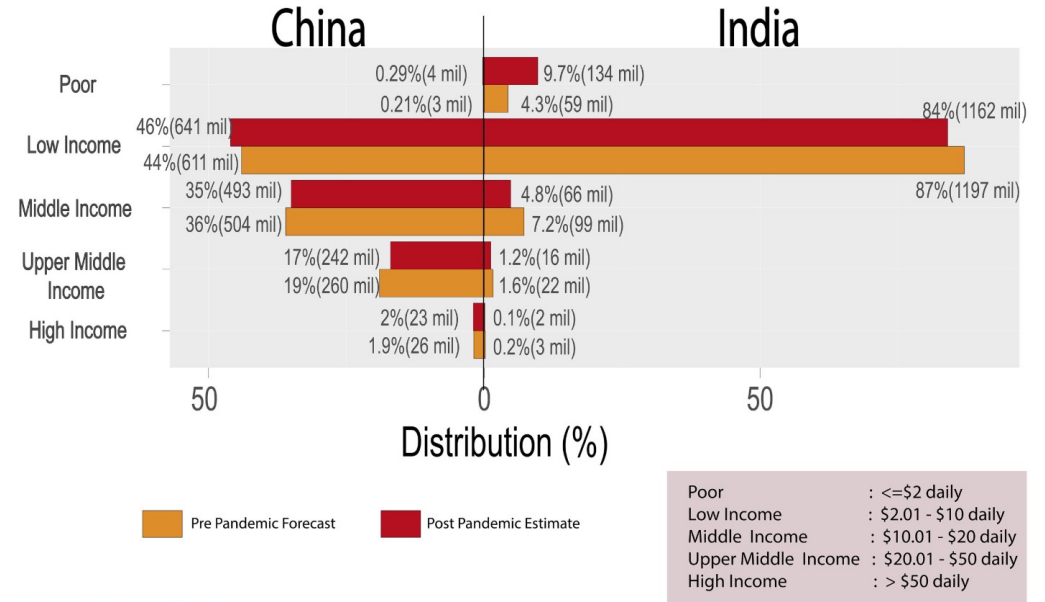
# BEVÖLKERUNG UND EINKOMMEN

## How Large Is China's Low Income Population?



Note: data for 2019  
Sources: China Institute for Income Distribution of Beijing Normal University, National Bureau of Statistics

Caixin



CEA Centre for Economic Data & Analysis

Source: Pew Research Center's analysis based on World Bank's PovcalNet database

Poor : ≤\$2 daily  
Low Income : \$2.01 - \$10 daily  
Middle Income : \$10.01 - \$20 daily  
Upper Middle Income : \$20.01 - \$50 daily  
High Income : > \$50 daily

