Asset Management
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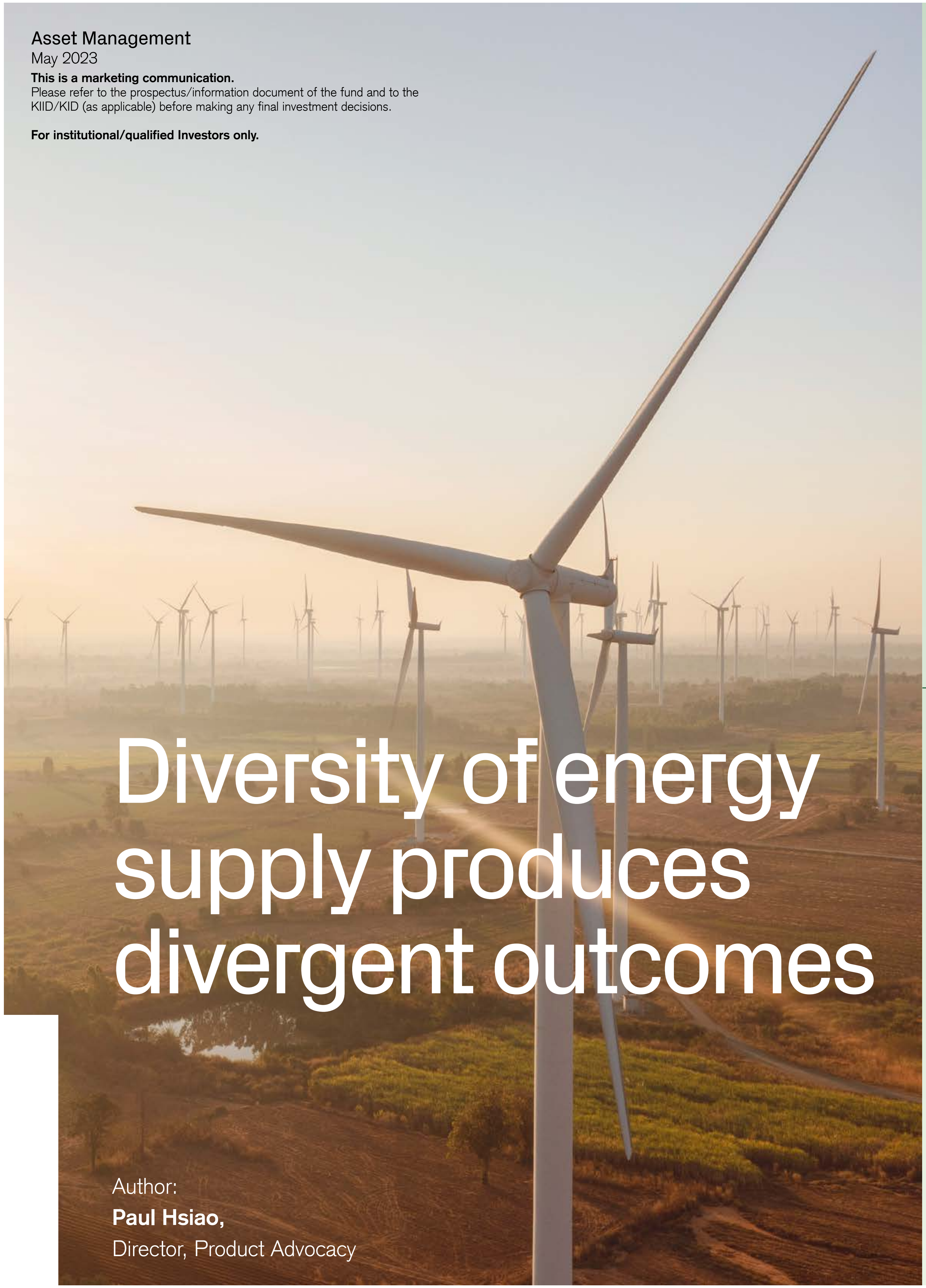

Diversity of energy supply produces divergent outcomes

Author:
Paul Hsiao,
Director, Product Advocacy

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What investors should know

After years of relative stability, energy prices have soared over the last 18 months, challenging policymakers and consumers alike.

Investor takeaways:

- The volatility of energy prices has led to a divergence of outcomes for the world's largest economies.

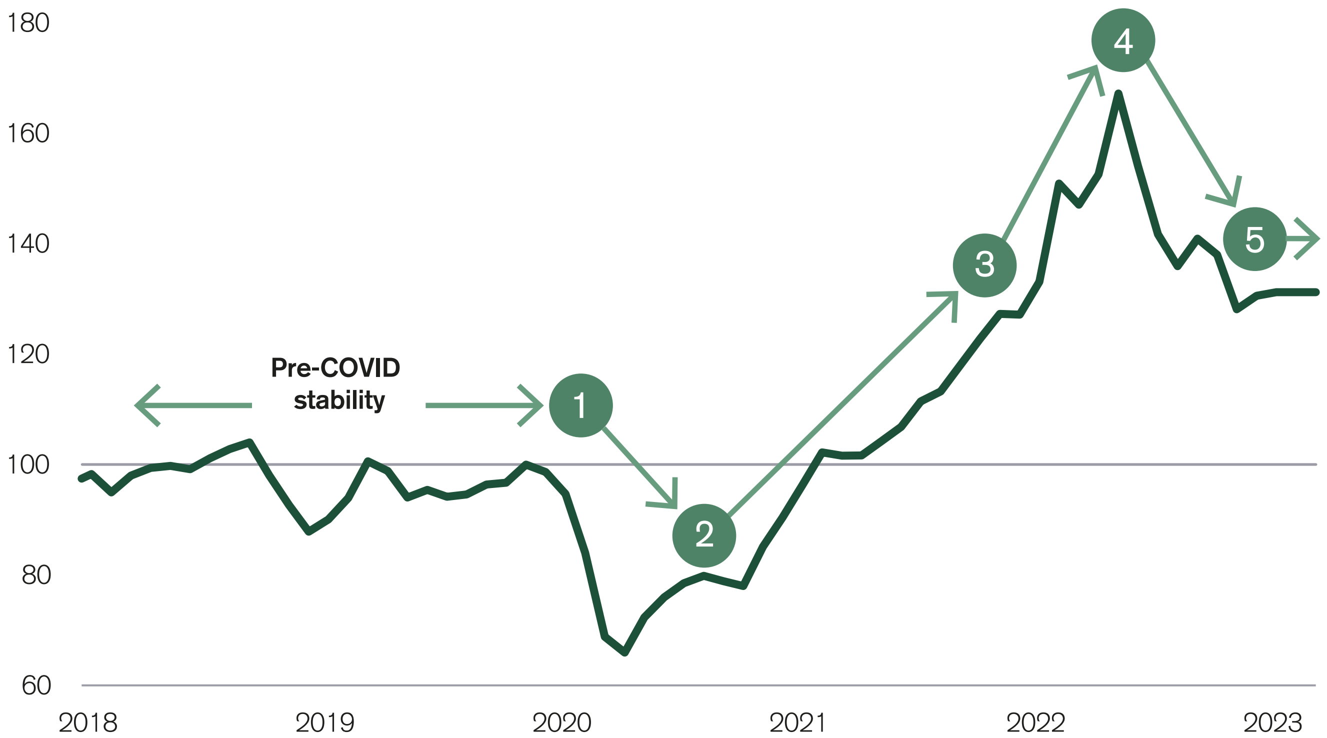
- The current environment has accelerated the sustainability legislative agenda, with governments more motivated than ever to transition away from hydrocarbons.

- In this volatile environment, investors can benefit from thematic, enhanced index and minimum volatility strategies.

Energy price volatility and level higher than pre-COVID

A timeline of energy price stability followed by volatility

CPI: Energy (rebased 1/1/2020=100)



Source BLS, Credit Suisse Asset Management as of 19.04.2023

1. **COVID-19 deflation.** An unprecedented collapse in demand and scramble by energy producers to store supply led to collapse of energy prices.
2. **Recovery.** Energy prices climbed back steadily as demand recovered.
3. **War in Europe.** The war led to a significant disruption in oil and gas supply in a broad commodities squeeze.
4. **Slowdown deflation.** Recession fears and the easing of supply chain stress saw energy prices cool.
5. **Higher for longer?**

In our view, oil prices entering negative territory was one of the most significant market dislocations brought about by the COVID-19 crisis. Barely 18 months later, the price of oil would reach triple digits, hitting its highest levels in nearly a decade. The volatile shifts in energy markets have been a thorn in the side of consumers and policymakers alike, exacerbating the cost-of-living crisis and compelling central banks to march on with growth-restricting rate hikes around the world. But how did prices get here? And where will they go from here? To answer these questions, it is helpful to split the trajectory of energy prices into five distinct phases.

1

Phase 1: COVID-19 deflation.
The sudden, coordinated implementation of lockdowns around the world caused a sharp contraction in demand. On the supply side, producers scrambled to secure appropriate storage. While energy consumption from primary sources such as coal, gas, and oil fell sharply, energy consumption from renewables benefited from a mild uptick in 2020 as some consumers and companies took advantage of wind and solar projects completed in 2019.

2

Phase 2: Recovery.
During the second half of 2020 through 2021, demand steadily recovered as consumers and businesses adjusted and lockdowns eased. Activity in Asia, led by China, also accelerated, supporting the energy price rebound.

3

Phase 3: War.
Amid a fast global recovery, the war in Ukraine sparked another surge in energy prices, particularly for Europe. Gas and coal prices reached their highest levels in decades, while oil prices spiked to over USD 100 per barrel.

4

Phase 4: Deflation.
A coordinated European-policy response to lower Russian gas exports, a milder-than-expected winter, and a general growth slowdown toward the second half of 2022 caused energy prices to cool. IEA member countries also committed to releasing oil from their energy reserves to reduce the stress in energy markets.

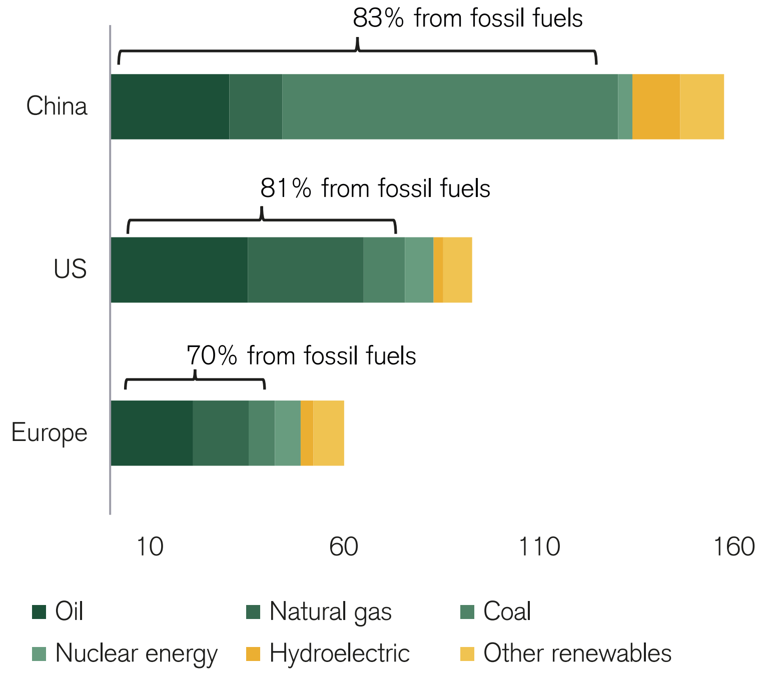
5

Phase 5: Higher for longer?
At present, energy prices remain far higher compared to their pre-COVID levels. Although higher global interest rates have weighed on demand, the ongoing war in Ukraine and the production supply cuts announced by OPEC+, which are estimated to lead to a 2-million-barrel-per-day shortfall by Q4 2023, will likely keep energy prices elevated in the near to medium term.

Difference in energy consumption and sources also important

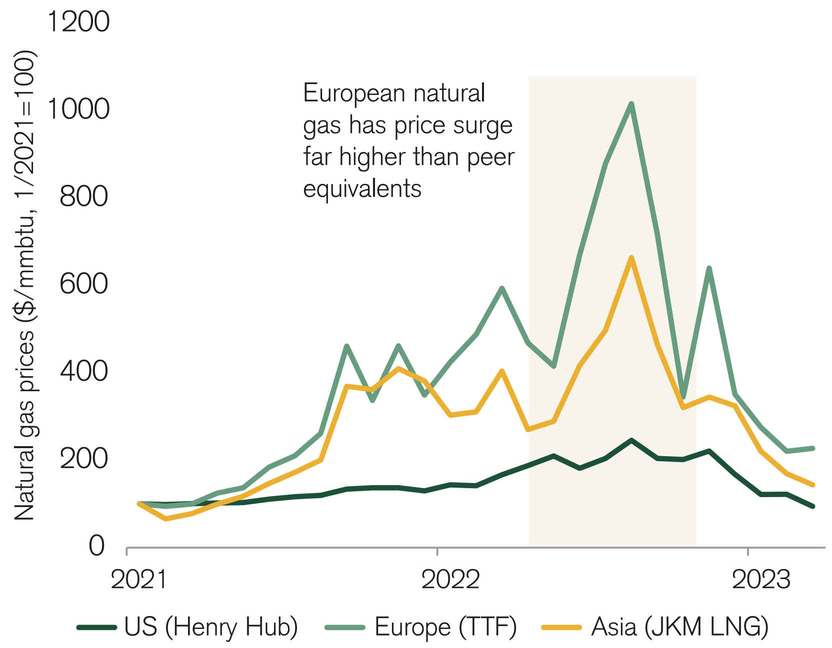
Energy mixes of the largest economies differ …

Primary energy consumption by fuel in 2021, exajoules



… and so do their sticker prices

Natural gas prices in the US, Europe, and Asia

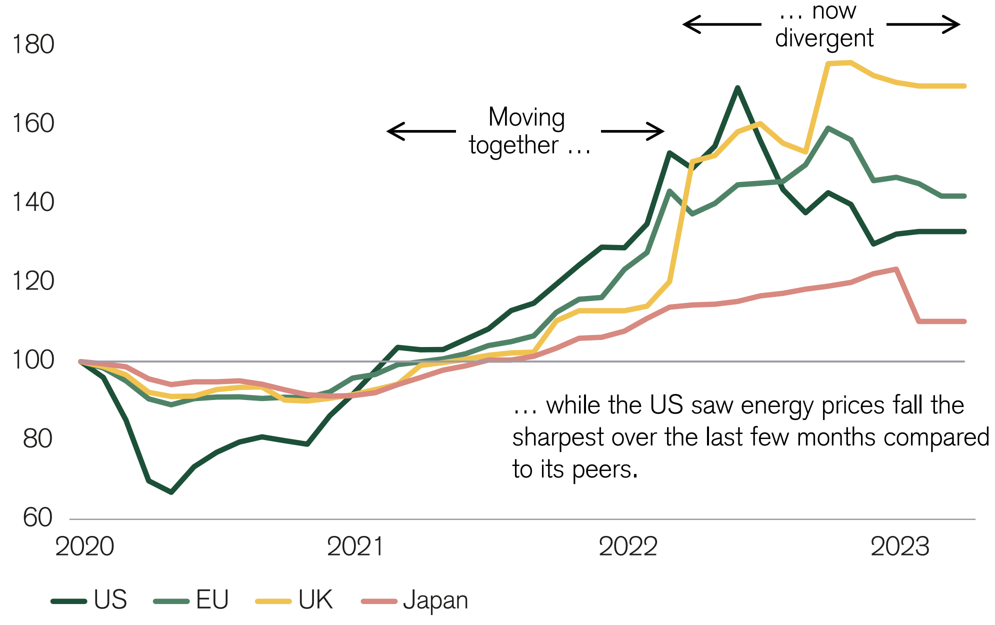


Note: "Henry Hub" refers to the spot price of Natural Gas in the US; "JKM" stands for Japan Korea Marker, the natural gas price in Asia; "TTF" stands for the Title Transfer Facility, which is the main market for gas trading in Europe.
Sources Bloomberg, BP Statistical Review of World Energy, Credit Suisse Asset Management as of 19.04.2023

High energy prices more painful for European consumers …

Consumer energy prices for US, EU, UK, and Japan

CPI: Energy (rebased 1/1/2020=100)



Note: Chinese index-level CPI data unavailable.
Sources BLS (US), Eurostat (EU), ONS (UK), MIC (Japan), Credit Suisse Asset Management as of 19.04.2023

Another complication to add amid the energy price shock is the differentiated impacts felt across the world's largest economies.

- Consumers and businesses in the US are feeling the pain of higher energy costs. Yet as a net exporter of energy, we believe that the US economy is much more insulated from energy shocks compared to those in Europe.
- The EU, on aggregate, imports around 60% of the energy it consumes. A significant amount of this energy comes from Russia, making the EU particularly vulnerable to energy shocks. As a result, European consumers experienced the steepest price increases compared to other large economies.
- Despite a price spike in China that rivaled that of European natural gas, the country's domestic energy consumers were more insulated than their Western counterparts, as there was a price cap in place for thermal coal on long-term contracts with power providers, which limited the pass-through effect on consumers and businesses. In addition, output of domestic coal, an outsized energy source compared to Western usage patterns, grew significantly in 2021 and 2022, easing supply constraints.

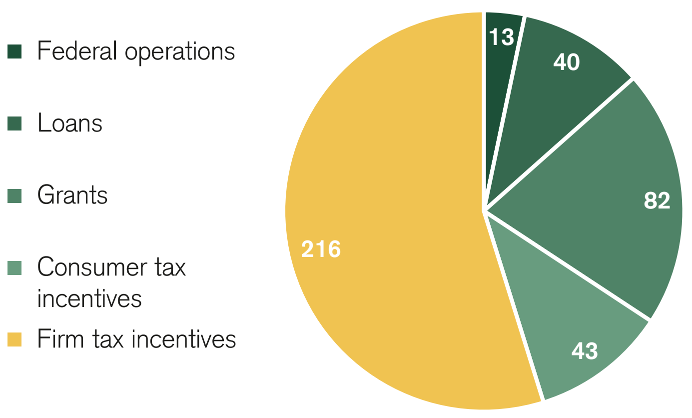
Rising energy costs and concerns about energy security have accelerated sustainability legislation in the US and Europe.

A renewed push for sustainability legislation is the silver lining of volatility in oil prices.

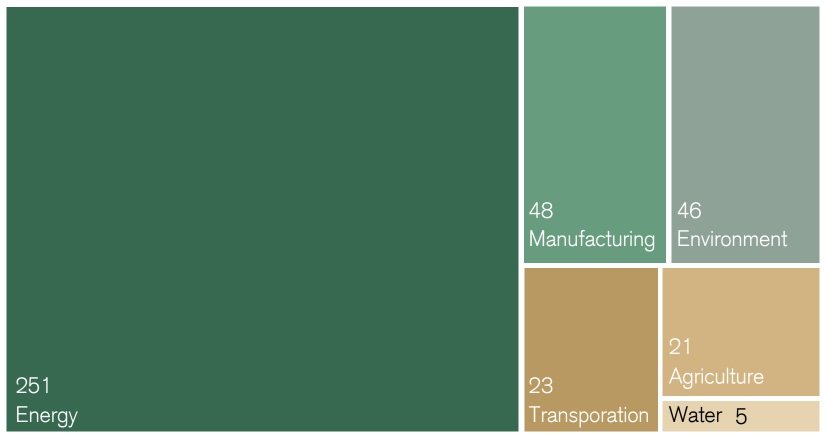
The Inflation Reduction Act is a landmark sustainability bill

with nearly USD 394 bn to be spent over the next decade

IRA broken down by **program …**
(in USD bn)



… and by **theme**
(% total)



Sources Inflation Reduction Act of 2022, H.R. 5376, 117th Congress (2021–22); Credit Suisse Asset Management as of 19.04.2023

In the US, increasing bipartisan concern about inflation and national security has motivated sustainability-related legislation. In 2022, policymakers passed the Inflation Reduction Act (IRA), the third major piece of legislation after the bipartisan infrastructure bill and the CHIPS and Science Act. The IRA is a landmark bill that is considered the single largest sustainability-oriented piece of legislation in US history, promising nearly USD 397 bn in spending and tax incentives over the next decade.

In Europe, renewables already constitute a large share of energy consumption. Around 30% of Europe's power came from renewables in 2021, compared to 19% for China and 17% for the US. Nonetheless, popular demand for renewable energy sources and an intensified sprint to transition away from imported hydrocarbons have also prompted the EU to present several key initiatives over the past few years. In 2021, the EU Commission released the Fit for 55 package, which updates legislation to meet the 55% reduction of emissions from 1990 levels. Perhaps more pertinently, the European Commission presented the REPowerEU plan, a strategic response to diversify energy sources, reduce fossil-fuel energy consumption, and invest in domestic clean energy production. The plan earmarks an estimated EUR 210 bn in additional investment through 2027, with nearly half of that dedicated to renewables and hydrogen infrastructure. This year, the European Commission also presented the Green Deal Industrial Plan, rivaling the US Inflation Reduction Act. It streamlines regulation and access to financing to help meet the goals of Fit for 55 and REPowerEU.

The range of outcomes for CO_2 transmissions is wide

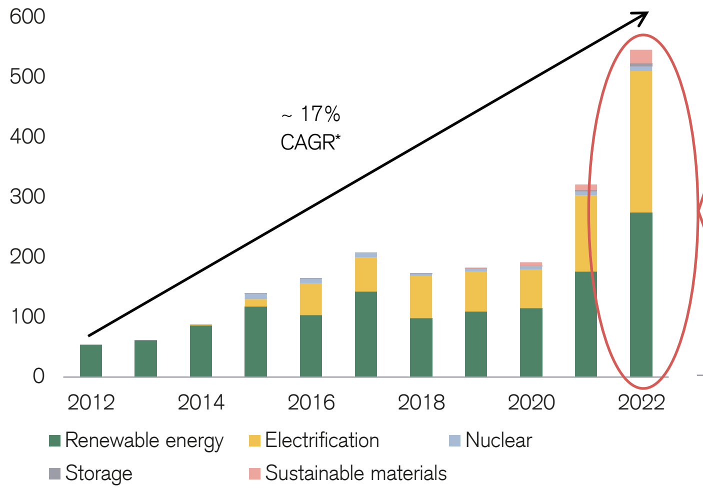
and China is leading energy transition spending

Perhaps surprisingly to many investors, China is playing a leading role in sustainable energy investment, and rightly so, as the world's largest consumer of energy. The Asian economic giant is currently the largest consumer of energy, with more than 80% of it coming from fossil fuels, while also being the largest investor when it comes to transitioning to sustainable energy. According to BloombergNEF, China invested nearly USD 550 bn in energy transition spending in 2022. To put this sum in context, the spending represents a tenfold increase from its 2012 levels and far exceeds the amount spent by Europe and the United States.

Nonetheless, the Chinese government promises even more aggressive steps in its green legislation. At the 2023 "Two Sessions" economic planning committee meetings, Chinese policymakers renewed efforts to tackle pollution and fossil-fuel consumption, forecasting peak carbon emissions by 2030 and carbon neutrality by 2060, while intensifying efforts to finalize legislation requiring mandatory corporate environmental disclosure.

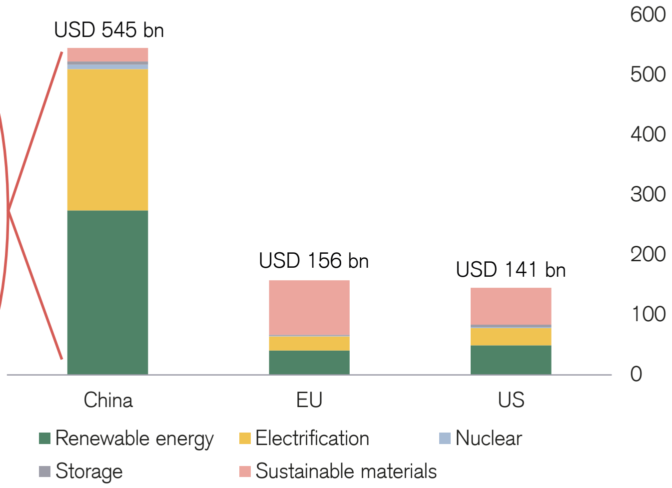
China's energy transition spending has surged …

(Energy transition spending in USD bn)



…dwarfing spending by the US and EU

(2022 energy transition spending in USD bn)

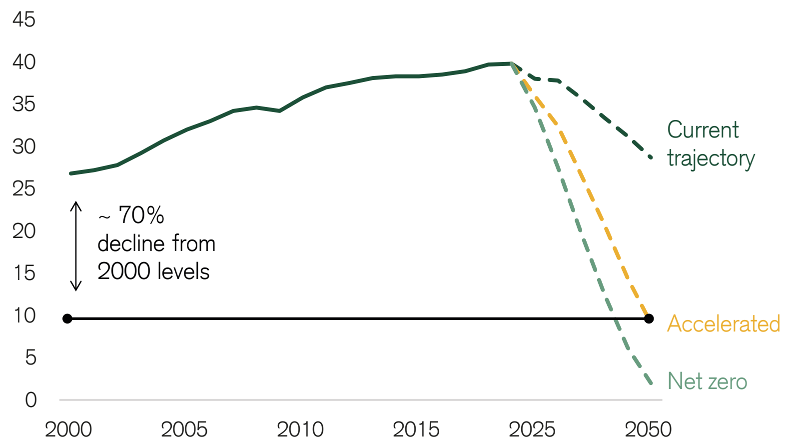


* CAGR: compound annual growth rate
Sources Bloomberg NEF; Credit Suisse Asset Management as of 19.04.2023

The range of outcomes for CO_2 transmissions is wide and further aggressive legislation may be needed to achieve "net zero"

Estimated carbon emissions under different scenarios

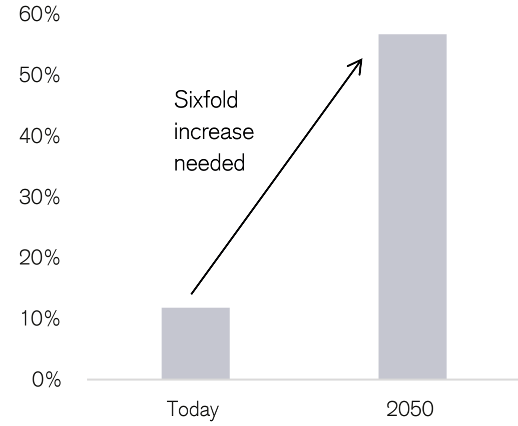
(Gt of CO_2e)



Note: Forecasts are from BP.
Sources BP Energy Outlook 2023; Credit Suisse Asset Management as of 19.04.2023

Renewables need to be more widely adopted

(% renewable usage of total in "Accelerated" scenario)



Although the recent acceleration of sustainability legislation is encouraging, more needs to be done. According to British Petroleum's 2023 Energy Outlook, energy consumption from renewables needs to jump to 60% by 2050 – a sixfold leap from today's levels – to be consistent with the Paris Agreement accords, and must increase even more to reach "net zero." Even with a modest fall in energy consumption, it is a massive shift in energy production and a generational opportunity for companies and investors.

What investors should know

Divergence in energy prices amid accelerated public sustainability efforts is a megatrend that is unlikely to fade anytime soon. Investors should look for funds dedicated to identifying attractively valued companies that are poised to benefit from this megatrend. Additionally, investor portfolios may benefit from higher energy prices more directly, either through commodity-related strategies that provide exposure to these markets as part of a broad index-based approach or via lower-volatility, low-correlation commodity absolute return funds.

Suggested focus funds

- CS (Lux) Energy Evolution Equity Fund
- CS (Lux) Environmental Impact Equity Fund
- CSIF (Lux) Equity China Total Market ESG Blue

General risks:
- Potential loss: Investors may lose part or all of their invested amount.
- Market risk: Market conditions can trigger fluctuations in total returns.
- Liquidity risk: Some investments may entail liquidity risk.
- Foreign currency risk: The fund's total e can be adversely affected by exchange rate fluctuations.

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