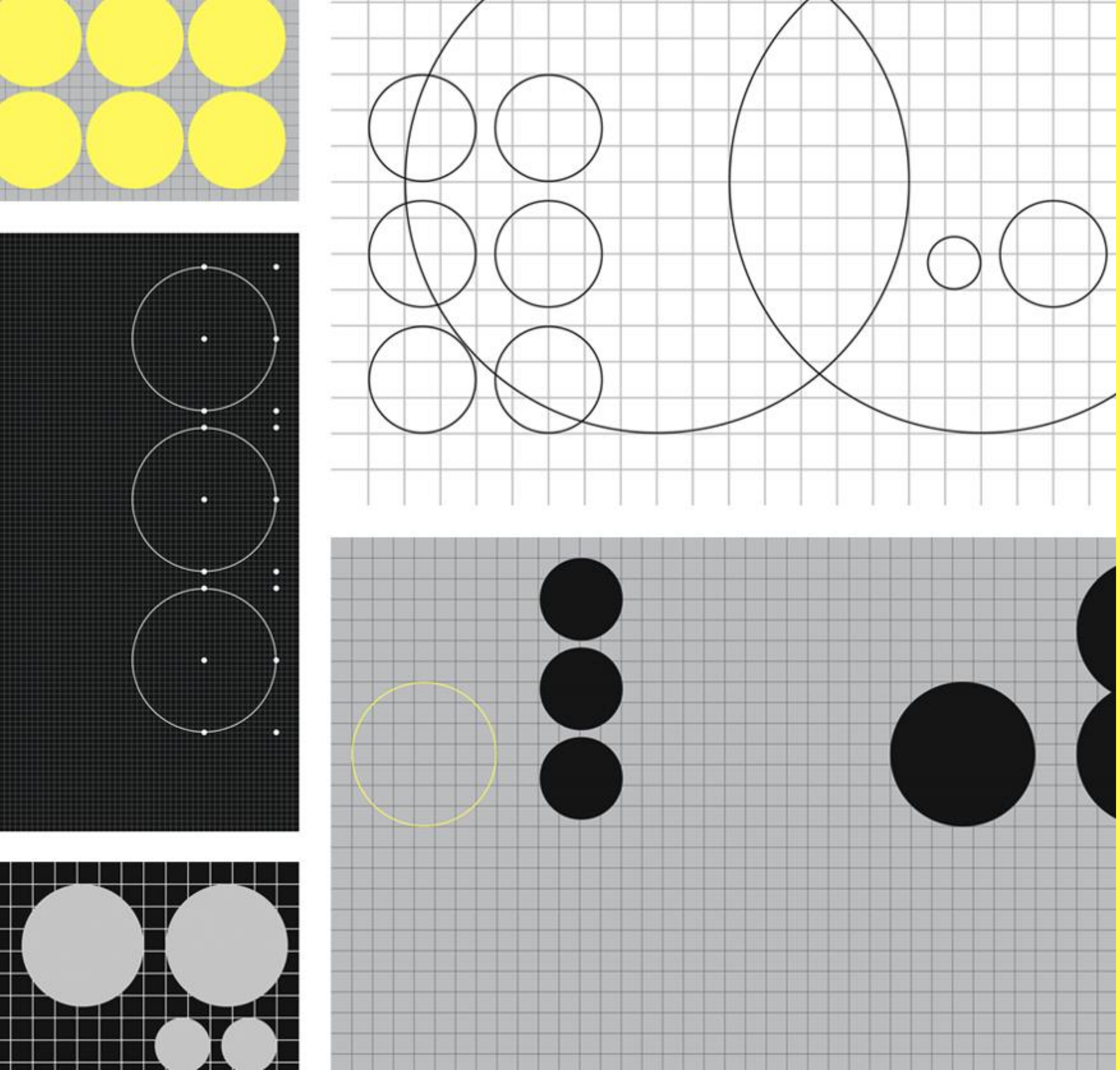

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Net Zero Asset Owner Alliance

Delivering on Net Zero - A global perspective on the role of carbon markets with focus on EU ETS

28th June 2023

For professional investors only

Agenda: Delivering on Net Zero – Role of Carbon Markets

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1. Global Carbon Markets
2. Investment Motivation
3. Investment Conclusion

B. Back-up

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1

Global Carbon Markets

Image: Munich Re

Climate Statement

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“We see a sufficiently high, sector-overarching carbon price (either by means of a tax or an emission trading system) as the preferred, technology-neutral policy instrument to reduce global greenhouse gas emissions to net zero as fast as possible.”

Mandatory vs. Voluntary carbon markets

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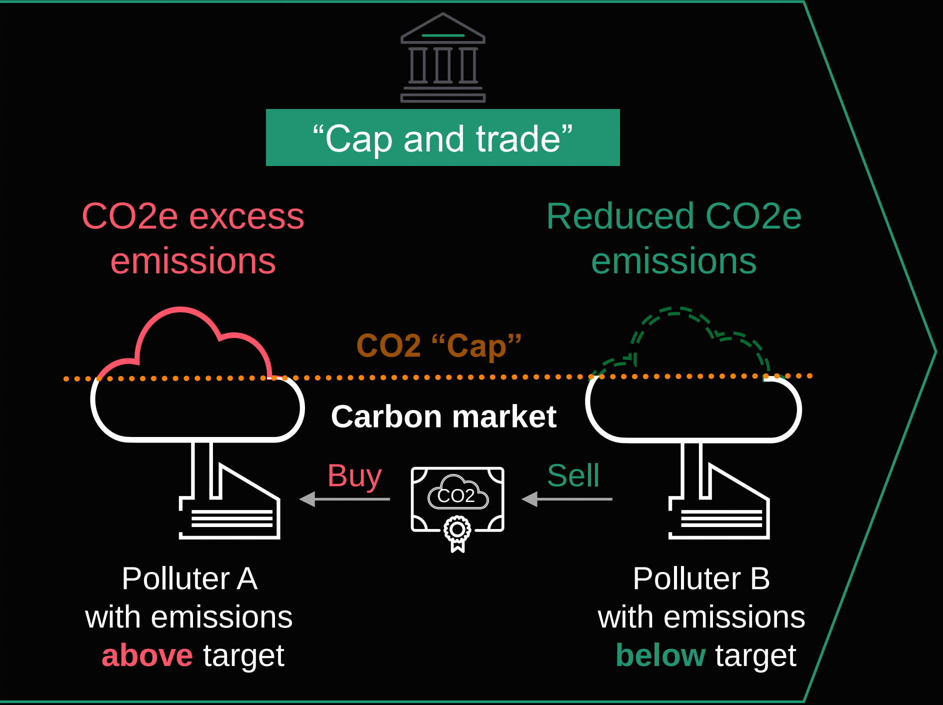
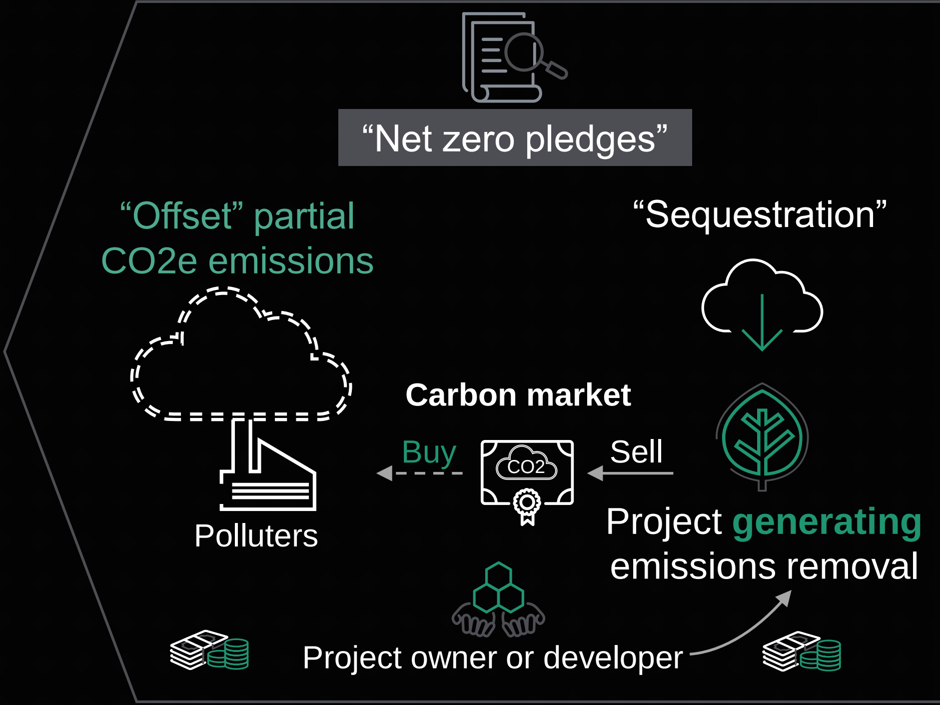
Compliance market (regulated)

Entities **have to** source and retire
1 allowance per ton CO2 air pollution



Voluntary carbon credits (private)

Entities **may** purchase and retire
1 carbon certificate to offset 1/tCO2 air pollution



Overview of Voluntary Carbon Markets

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	Global Voluntary Carbon Credits (VCC) Markets
Volume	▪ ~ 0.5bn tCO_2e ▪ ~ 1bn - 2bn EUR
Types	▪ Capture of greenhouse gases: CO_2e sequestration / removal VCCs ▪ Reduction of greenhouse gases: avoidance VCCs
Major Categories	• Renewable Energy– avoidance VCC (~45%) • Forestry & Land Use– avoidance or removal VCC (~20%) • Chemical processes and industrial manufacturing – avoidance (~15%)

Source: World Economic Forum BRIEFING PAPER 2023; World Bank Group Report 2023

Overview of Global Regulated Carbon Markets

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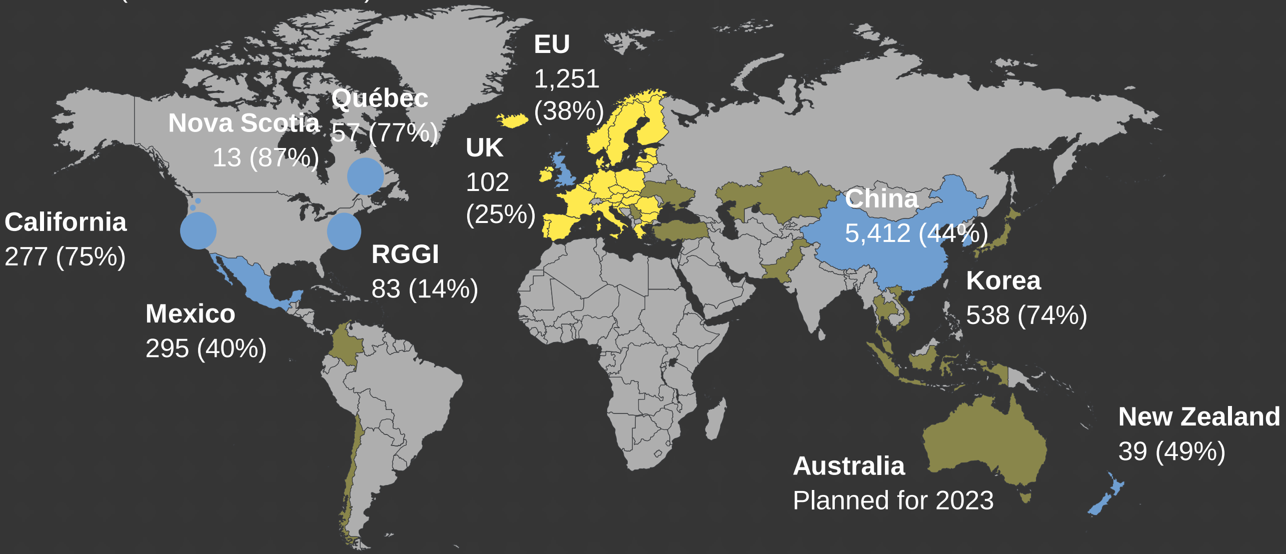
Emissions covered under various ETS around the globe (as of May 2023)

Mt CO2e (% of total emissions)



Markets covered by the EU ETS | Major international markets | Other minor markets

Highlights

- **17% of global GHG emissions** are covered by an ETS
- Major international markets are represented in a total volume traded of **EUR 865 billion** in 2022[1] , or **12.5bn tonnes of CO2e**
- Most of this volume originates from the EU ETS with **87%,** an equivalent of 9.2bn tonnes CO2e
- **Due to the demonstrated effectiveness**[2]. Other nations are working to implement effective cap & trade systems

1) Refinitiv (as of February 2023), ICAP Report (2023); 2) The EU ETS successfully brought down emissions from power generation and energy-intensive industries by 45% since 2005. As of 2021, the EU ETS no longer includes emissions from the UK, only emissions from electricity generators in Northern Ireland are included.
Source: World Bank (as of May 2023), ICAP (as of May 2023), ICAP Status Report 2023

ESG View: Compliance Carbon Market Investing Example EU ETS (1/2)

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Contribute to Reduced ETS Carbon Allowance Supply

- Direct Environmental Characteristic: delay one-ton CO2e emissions by holding one carbon emissions allowance certificates (EU SFDR Art. 8)
- Secondary: add to reduced number of available certificates:
  ~4 years holding one certificate
  = ~ minus 1 certificate in supply (“ EU ETS Budget Impact”)

Contribute to higher carbon emission prices and higher “Low Carbon RoI”

- Cleaner energy: “Clean Dark Spreads” Fuel switching[1]
- Higher “Low Carbon RoI”
  = corporate transition incentive

45%
reduced emissions of the industries covered under the EU ETS (2005-2022)

SCARCITY VALUE
Carbon Budget Supply Mechanism

PRICE INCENTIVE
Carbon Mitigation Market Mechanism

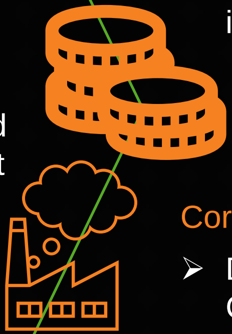
Macro Impact: Delivering EU NDC (EU Green Deal)
+ purpose linked climate and social investment use of EU ETS proceeds (2013-2022 ~EUR 139 bn)[2]

1) Profitability measurement of coal fired power using variable EUR cost of inputs e.g. coal and carbon allowance and the value of TWH electricity output. Dark refers to coal. Clean” refers to internalizing costs of carbon pollution. “Spread” is the cost of fuel relative to the value of the electricity produced. 2) ICAP (2023); ~78% climate/ clean energy investments (European Commission (2021)). Source: Munich Re Investment Partners

ESG View: Compliance Carbon Market Investing Example EU ETS (2/2)

Investor buying physical carbon emissions allowances (EUAs) contributes to

- Mitigation: delay 1/tCO2e through withholding pollution rights from being used
- Reach: Compared to corporate engagement ETS has far broader real economy reach
    - EU ETS covers ~11k compliance entities including non-listed; can't escape if in scope
- Real economy CO2e mitigation incentive: compared to engagement + exclusions, ETS much more direct
    - Carbon markets create immediate P/L incentive – CBAM will prevent carbon leakage
    - Engagement important but time decay on effectiveness; corporate may reverse
    - Exclusions partly push CO2e intensive assets into private market; CoC effect unclear



Transition enabling and decarbonizing corporates benefit

- Higher carbon pollution rights prices make low carbon solutions more competitive (Products, Supply Chain, Production, Energy use…)
- Higher "Low Carbon RoI" creates Green CAPEX / OPEX incentive

Core functioning of Carbon ETS is markets based

- Decentralized: allows for the most economic CO2e-abatement across ETS covered entities
- Reward: entities can sell unused pollution rights for additional income (e.g. Tesla)
- Acceptance: no top-down technology instructions

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Investment Motivation

Image: Munich Re

Investing in Regulated Global Carbon Markets

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	EU ETS	UK ETS	CCA	RGGI	Australia ETS	New Zealand ETS	Korean ETS
Direct Access Physical Carbon Certificates	YES	YES	[YES]	YES	[YES]	[YES]	NO
Synthetic Access Derivatives	YES	YES	YES	YES	[YES]*	[YES]*	[NO]
Market Size Daily Trading Volume (in €)	~ 3,000m	~ 187m	~ 222m	~ 28m	~ 2.2m	~ 11.5m	~ 2.5m
Overall Rating							

* Via Forwards and Swaps; no Futures market; Abbreviations: ETS = Emissions Trading Scheme; CCA = California Carbon Allowance; RGGI: Regional Greenhouse Gas Initiative; Source: Munich Re Investment Partners

- EU ETS, UK ETS and RGGI well investable

Performance Carbon Markets

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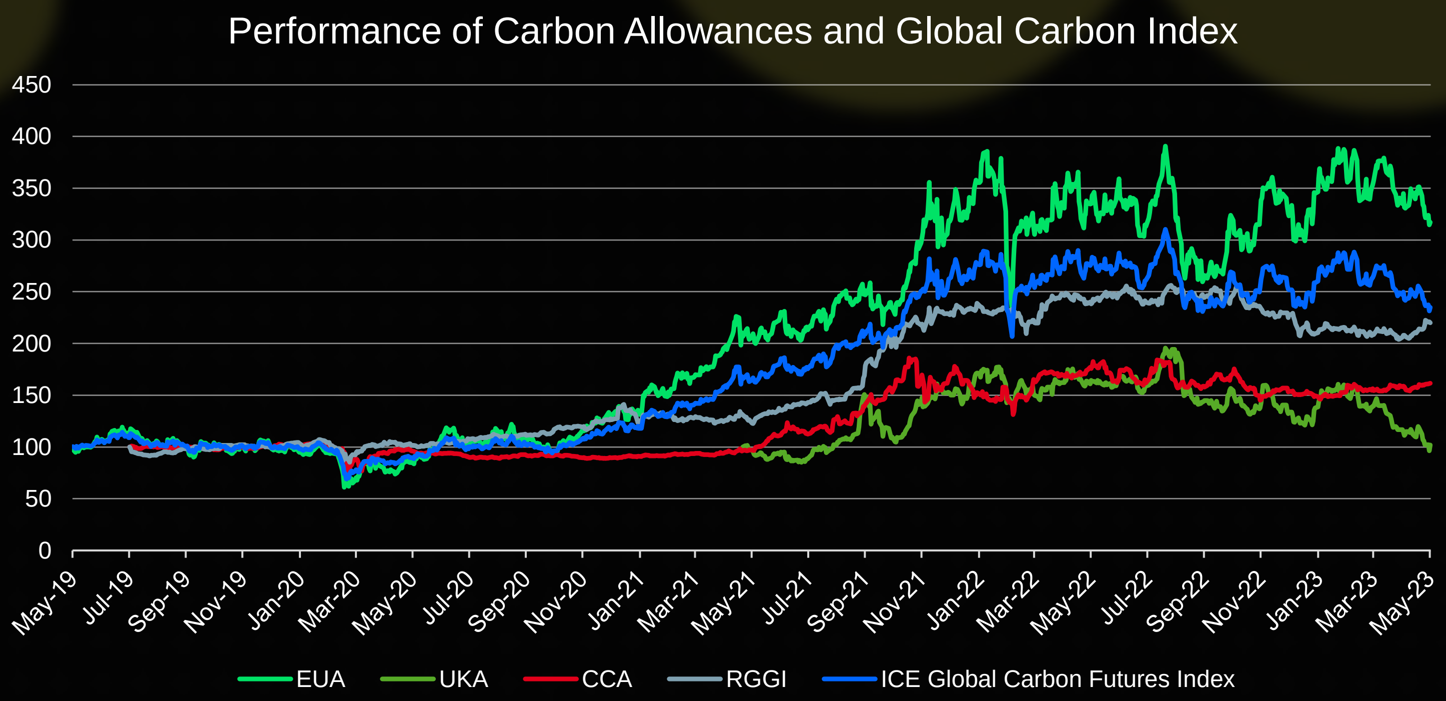

- EUAs best performing
- CCAs worst performing

Note: Time series for returns range from 31/05/2019 to 31/05/2023; Indexed on 100 and the time series for all instruments in Euro currency; Past performance is not indicative of future returns
Source: Munich Re Investment Partners; Bloomberg (2023)

Multi-Asset Portfolio View: Return and Diversification benefits of EUAs

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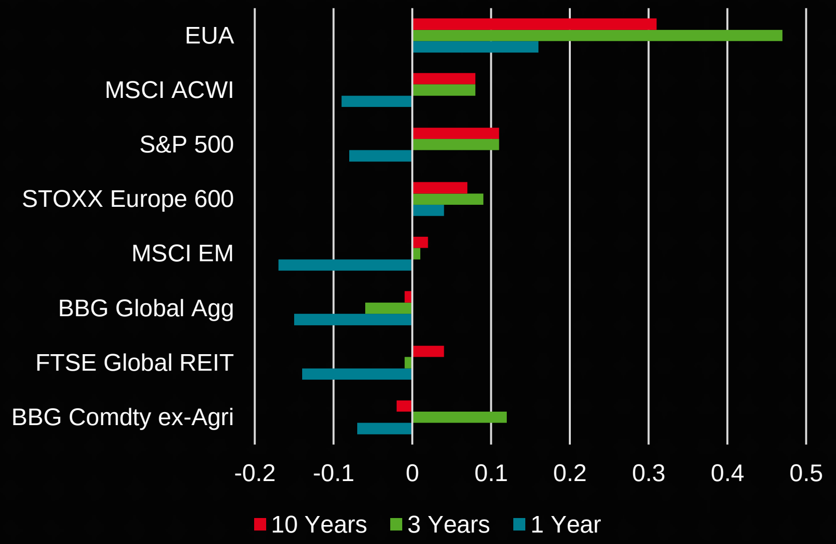
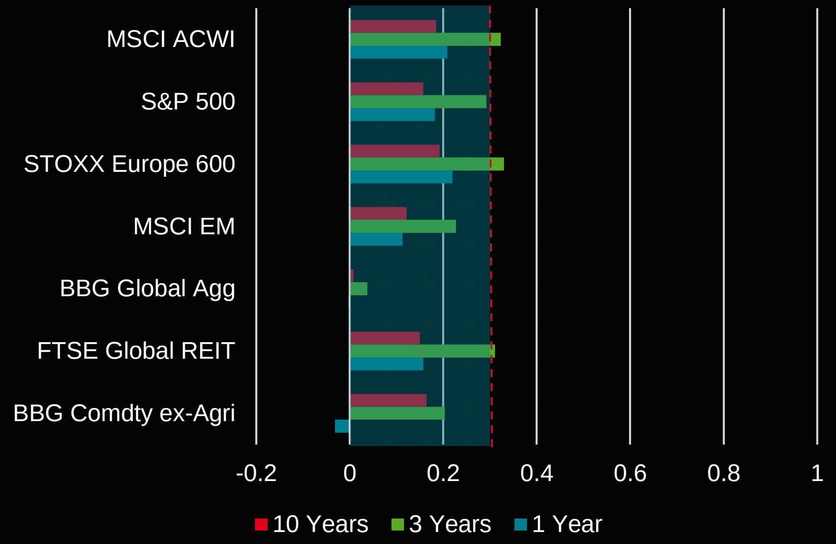
Comparison of average annualized returns



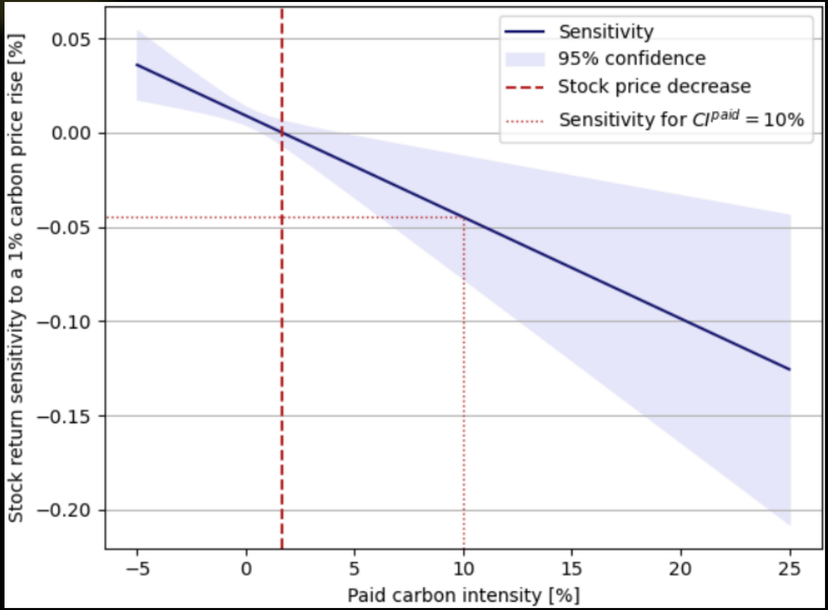
Correlation of typical asset classes with EUAs



- EUAs outperforming major asset classes on 1, 3 and 10 years horizon while showing low correlations

Note: Charts based on total return time series. In addition, the time series are in local currencies based on the assumption that investors hedge currency risks. The time series end on 28/02/2023 and the annual periods based on the assumption of 250 trading days per year. Past performance is not indicative of future returns. Source: Munich Re Investment Partners; Bloomberg

Link between Equity and Carbon Returns



Description: Sensitivity of the stock return to a 1% increase in carbon price as function of the paid carbon intensity of actual paid emission certificates. Firms with an intensity above 1.7% (to the right of the dashed red line) will see their stock price decline if carbon prices increase. A firm with an intensity of 10% will see its stock price drop by 0.04% (dotted red line). Source: Millischer et al. (2023)

- Companies regulated under an ETS are exposed to specific carbon price risk, as changes in carbon prices directly or indirectly impact profitability and value
- Recent research highlights a significant negative relationship between carbon price changes and stock returns.[1]
- Carbon Investments can serve as a risk hedging tool to mitigate carbon price risk at the portfolio level

Note: 1) Bolton et al. (2023) and Millischer et al. (2023)
Source: Munich Re Investment Partners (2023)

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3

Investment Conclusion

Image: Munich Re

Investment Conclusion

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- Pricing of emissions through regulated emissions trading schemes (“Carbon”) creates significant real economic carbon mitigation impact
- There is a strong ESG case for investors to invest in compliance carbon markets – carbon markets have more reach and usually more immediate effect on corporates to decarbonize compared to engagement or exclusions – a valuable instrument
- From a performance perspective an allocation in regulated “Carbon” as a newly emerging asset class offers attractive, diversified return opportunities and can contribute to carbon price risk hedging.
- There is a strong investment case to allocate “Carbon” in combination with Climate Transition Listed Equity strategies. Higher carbon prices make climate innovating companies more profitable

Risks

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Significant price drops from the entry point of the investment in EUAs are possible. Losses could be the result of a decrease in EUA price due to various factors. For example, decreased demand of EUAs due to lower economic output, change of energy supply mix, generally reduced energy demand or wide-scale step-ups in decarbonization technology and energy efficiency. Market structural reforms of the ETS may also contribute to losses, or ad-hoc policy interventions such as an increase in supply of free EUA allowances by the ETS market operator. Please note that financial market participants are not the primary addressee of the EU ETS, and any exclusion of their participation is considered a tail risk.

ETS- and Macroeconomic Risks

Demand driven	Decreasing demand of EUAs due to lower economic output (less CO_2), change of energy supply mix, generally reduced energy demand or widescale step-ups in decarbonization technology and energy efficiency
Supply driven	Political interventions such as easing the carbon reduction targets, market structural reforms of the EU ETS e.g., increasing the supply of free EUA allowances allocation to specific industry sectors such as steel

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Appendix

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Transforming climate investment expertise into solutions

Munich Re Group climate expertise and commitment to net zero emissions

Deep expertise in sustainable investments

Climate investment solutions with impact

For us, acting responsibly means creating lasting financial and environmental value

What we do

- We deliver market-driven investment solutions for climate-committed asset owners.
- We balance financial performance and climate impact.
- We capitalise the vast climate know-how of Munich Re and its experts.

Corporate facts

- Member of Net Zero Asset Manager Initiative + UN Principles for Responsible Investing.
- Team of sustainable investment passionate experts.
- 100% owned by Munich Re.
- BaFin regulated investment manager.
- Headquarter: Munich, Germany; Australian branch located in Sydney.

CV Steffen Hörter

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Steffen has 23 years of experience in the investment management industry, thereof 13 years with a focus on sustainable investing.

Steffen joined Munich Re Investment Partners in March 2021. As member of the Executive Board he is responsible for Research and Products. Additionally, he is a member of the Munich Re AG ESG Investment Committee and Member of the Investor Board of TreeTrust, a Munich Re venture that is specialized in afforestation projects.

Prior to Munich Re Investment Partners, Steffen was Global Head of ESG for a global investment management firm. As member of the Expert Group Sustainable Finance he was advising the EU on listed equity climate benchmark standards.

In recent years, Steffen has published several studies on climate integration in strategic asset allocation, equity, fixed income and alternative strategies including carbon as an asset class.

Investment Partners is a specialized investment boutique that delivers market driven solutions for climate committed institutional asset owner. Our objective is to create lasting financial and environmental value, capitalizing the vast climate know-how of Munich Re and its experts.

Dr. Steffen Hörter

Member of the Executive Board

Product specialist

Munich RE

Jonas joined Investment Partners in 2021 as an ESG Investment Analyst to develop and integrate carbon, climate and energy transition aspects into new and existing funds.

He has been working in the asset management industry since 2016.

Most recently, he worked at a global investment management firm as ESG integration and solutions specialist modelling and integrating impact as well as ESG risk-focused investment solutions.

Furthermore, he provided ESG investment advisory to institutional clients. Additionally, he has worked as fixed income derivatives sales analyst at an American multinational investment bank.

Effectively pricing greenhouse gas emissions is an absolutely essential part of delivering the energy transition

Jonas Jebabli

Product Specialist