

# World Carbon Fund

*Frequently Asked Questions*

Carbon Cap Management LLP  
Capping and Reducing Emissions



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## Frequently Asked Questions

### What Is the investment thesis of the World Carbon Fund?

If climate change is going to be successfully tackled and the Paris Agreement targets met, the price of carbon needs to rise substantially from today's levels. As such, the outlook for carbon prices over the next decade is very positive however carbon markets can exhibit high volatility driven by a range of "market" and "policy" factors.

Most equity/bond portfolios have exposure to hard-to-understand and underestimated climate change-related risks. Carbon exposure may be negatively correlated to these risks. Carbon markets are dominated by industrials and energy companies seeking to manage their carbon exposure providing alpha opportunities. High volatility and unique pricing factors create opportunities to add value from proprietary research and risk management. The combination of a favourable political tailwind, high volatility, low correlation and plentiful alpha sources, lends itself well to an actively managed absolute return approach

### What is the investment strategy of the World Carbon Fund?

The World Carbon Fund invests across multiple carbon markets. The investment objective is absolute returns with a low correlation to other asset classes. The Fund is actively managed and deploys two complementary strategies: "Core Long" and "Alpha Strategies". The "Core Long" strategy seeks to generate returns from a rising carbon price combined with disciplined risk management. The "Alpha Strategies" seeks to generate returns from arbitrage and relative value strategies deployed across physical carbon, futures and options.

### Who manages the World Carbon Fund?

Carbon Cap Management LLP is the investment advisor to the fund and Nigel Felgate acts as the portfolio manager. Nigel has over 20 years of cross commodity proprietary trading experience in European energy and carbon markets. Mr. Felgate has traded in the EU carbon market since its launch in 2005 and has traded in the energy/carbon complex for BNP, Morgan Stanley, Merrill Lynch and JP Morgan. Mr. Felgate has significant trading expertise and has developed proprietary alpha trading strategies and sophisticated risk management techniques. He holds a PhD from the University of Southampton. Nigel is supported by other members of the team including Michael Azlen, CEO who has more than 25 years of experience in investment management spanning proprietary trading, hedge funds and multi-asset investing. At his previous firm, he had oversight of more than \$700 million in assets across all asset classes including equities, bonds, commodities and hedge funds. Mr. Azlen holds an MSc in Leadership & Strategy from

London Business School and has completed the "Climate Change: Economics & Governance" course at the LSE Grantham Institute on Climate Change.

### What are "compliance" carbon markets and why have they been established?

Compliance carbon markets have been established by governments to address climate change by providing a market mechanism to reduce carbon emissions. "Cap and Trade" Emissions Trading Systems (ETS) require companies to factor the cost of carbon into their production costs and have been successful at achieving meaningful reductions in emissions at low cost. The total amount of carbon allowances in each market is "capped" and the cap is reduced annually, guaranteeing emissions reductions. To cover their annual emissions, polluting entities must submit allowances which are either purchased at auction (or in the market) or received through allocation. Compliance is mandatory, and each entity is tightly monitored and audited, including penalties for non-compliance.

### What other types of carbon markets exist?

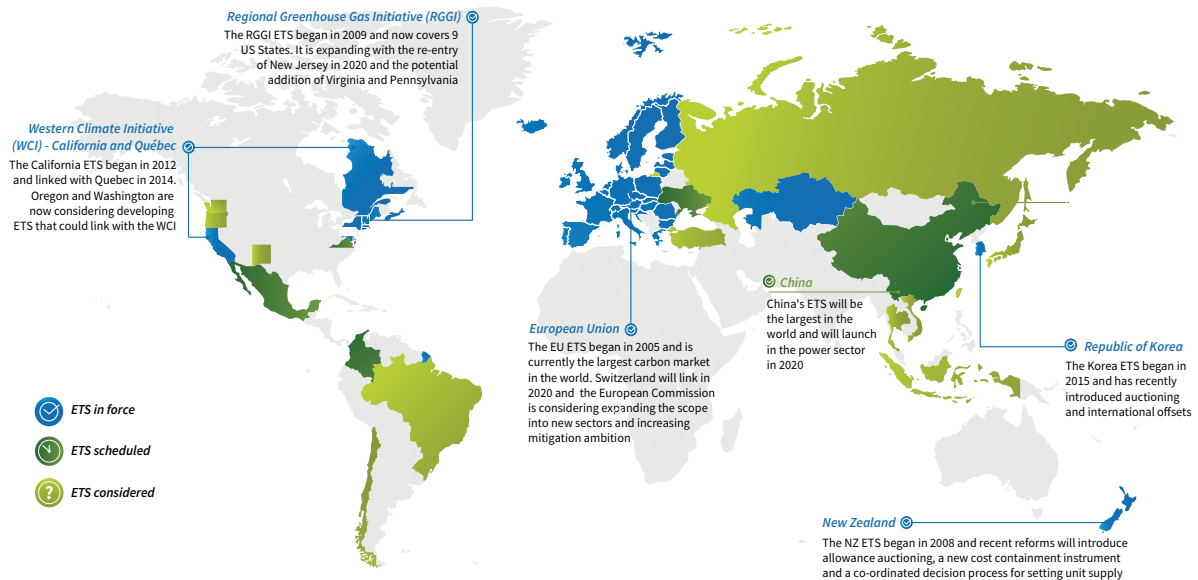
There are three generic types of carbon markets, summarised in the table below. The most well-known market is the "voluntary" carbon market. This is the market for carbon "offsets" that individuals and companies use to offset their carbon footprint. In this market, project developers create a project that reduces carbon emissions which receives third-party verification of achieved emission reductions. The carbon "offsets" are then sold by the developer to a wholesaler who sells them on to either a retailer or directly to the end purchaser. The sector is lightly regulated, and there is limited liquidity and no major secondary market. The entire market is small in size at about \$200-\$300 million per year compared to the compliance carbon markets which trade approximately \$250 billion per year. International carbon markets are mechanisms to transfer emissions reductions from projects across countries. These markets aim to increase the cost-effectiveness of achieving global emissions reductions, as the marginal cost of abatement may be lower for some regions and sectors. The first mechanisms under international carbon markets were those implemented by the Kyoto Protocol such as the Clean Development Mechanism (CDM) and the Joint Implementation (JI) mechanism. These markets have stagnated since CDM prices collapsed in 2012. Article 6 of the Paris Agreement aims to reignite progress on international carbon markets through implementing new implementation frameworks. However, the rules for these frameworks still need to be finalised under the UN Conference of Parties (COP) process and there remain barriers to completion. The World Carbon Fund only invests into the Compliance markets which are large, liquid and highly regulated.

Market Elements	Compliance carbon markets	International carbon markets	Voluntary carbon markets
Description	<ul style="list-style-type: none"> <li>Mandatory participation for large emitters</li> <li>Some allow limited amount of international (CDM) credits</li> </ul>	<ul style="list-style-type: none"> <li>The Clean Development Mechanism (CDM) was the first under the Kyoto Protocol</li> <li>Emissions reductions transferred across countries</li> </ul>	<ul style="list-style-type: none"> <li>Independent markets for non-regulated entities to voluntarily reduce emissions</li> <li>Variety of industry-created standards</li> </ul>
Current Status	<ul style="list-style-type: none"> <li>Covers 8% of global emissions, growing to 14% with the launch of the China ETS in 2020</li> </ul>	<ul style="list-style-type: none"> <li>Large market, currently stagnating</li> <li>Article 6 of the Paris Agreement aims to reignite international markets</li> </ul>	<ul style="list-style-type: none"> <li>Mainly used for corporate social responsibility (CSR) activities</li> <li>Attractive for small projects</li> </ul>
Regulation	<ul style="list-style-type: none"> <li>Highly regulated, robust monitoring, reporting and verification (MRV)</li> </ul>	<ul style="list-style-type: none"> <li>UN recognised accounting methodologies, such as Gold Standard (GS) accounting</li> </ul>	<ul style="list-style-type: none"> <li>Low to no regulation, different accounting methodologies with varying degrees of rigour</li> </ul>
Liquidity	<ul style="list-style-type: none"> <li>Highly liquid</li> <li>In 2018 alone almost US\$ 200 billion traded in the WCI, RGGI, and EU ETS</li> </ul>	<ul style="list-style-type: none"> <li>Medium liquidity</li> <li>Average of US\$ 14 billion traded per year since 2006</li> </ul>	<ul style="list-style-type: none"> <li>Low liquidity</li> <li>In 2018, US\$ 102 million traded</li> </ul>
Carbon prices	<ul style="list-style-type: none"> <li>Range from US\$ 5.7/tCO<sub>2</sub>e to US\$ 31.5 /tCO<sub>2</sub>e</li> </ul>	<ul style="list-style-type: none"> <li>Range from US\$ 0.2/tCO<sub>2</sub>e to US\$ 0.4/tCO<sub>2</sub>e</li> </ul>	<ul style="list-style-type: none"> <li>Range from US\$ 0.1/tCO<sub>2</sub>e to over \$70/tCO<sub>2</sub>e</li> </ul>

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Eight Emissions Trading Systems in force with four more scheduled and another nine being considered (ICAP)



I have heard that some carbon offset schemes have been frauds, with investors losing money

Unfortunately, some voluntary carbon offset schemes have either failed financially or raised money from companies and individuals and then never completed the project to generate the carbon offsets. Some unscrupulous operators sold fictitious carbon offsets to individuals by suggesting that they would make substantial gains as the price of carbon rose. Almost all of these situations took place in the lightly regulated and illiquid voluntary carbon market and this is one of the reasons why the World Carbon Fund focuses its investments only on the highly regulated and liquid compliance carbon markets.

What research has been conducted into the compliance carbon markets?

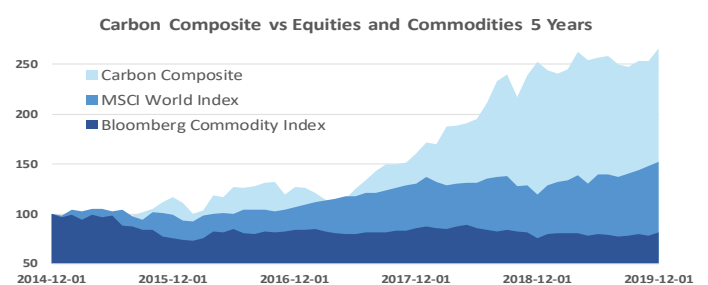
Carbon Cap has created a proprietary database of carbon prices covering the largest and most liquid compliance carbon markets and has combined these markets into a "Carbon Composite" time series. This data and analysis forms the basis of a research paper to be published in a financial journal in 2020. The Carbon Composite has generated strong annualized returns over the past 7 years, substantially outperforming equities and other asset classes. Carbon as an "asset class" has exhibited higher volatility than the equity market but very low correlations to traditional asset classes making it a potentially attractive addition to a diversified portfolio. Carbon markets have a complex set of return and risk drivers and our research indicates that active management combined with robust risk management will be an important value-added element for investors.

Compliance carbon markets have daily liquidity making them suitable for a strategy that employs both active hedging and alpha seeking trading strategies.

What has been the historical performance of the compliance carbon markets vs other assets?

Annualised Returns as of December 2019	Carbon Composite	Global Equities	Global Bonds	Global 60:40
3 Years	27.8%	12.6%	4.3%	9.4%
Since Inception (7yrs)	22.1%	10.8%	3.6%	8.0%
Annualised Volatility as of December 2019	Carbon Composite	Global Equities	Global Bonds	Global 60:40
Since Inception (7yrs)	19.7%	10.8%	2.6%	6.5%

Calculations by Carbon Cap



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### What are the main markets and instruments that will be invested in by the Fund?

The number and size of compliance markets continues to expand. Based on Carbon Cap’s research, only a subset of the current ETS markets are suitable for inclusion in the Fund’s investment portfolio. This assessment takes into account market size, liquidity, structural characteristics and accessibility for non-compliance entities. The individual markets display a low level of cross-correlation which will enable the Fund to operate at a significantly reduced level of volatility by investing across multiple markets.

The Fund holds carbon allowances, futures, options contracts and over-the-counter (OTC) forward contracts linked to the underlying carbon markets in addition to cash and near cash instruments. The main markets are the European carbon market, the WCI market (California/Quebec) and the RGGI market (9 states on the east coast of the USA).

### Are the compliance markets large enough to support a Fund and can investors participate?

Not all compliance markets are large enough to support significant investment and Carbon Cap has selected markets with a minimum size and liquidity that supports our Investment strategy. The initial capacity of the Fund is \$750 million - \$1 billion and the Fund’s main markets have a combined market cap of more than \$60 billion and a traded value in 2019 of \$250 billion.

Additional markets such as Korea, China and Mexico will be added when they meet the Fund’s investment criteria which will provide further diversification and additional investment opportunities. Non-compliance entities, including investors, may participate in these markets as they are recognized by regulators and policy makers as valuable participants who provide liquidity and price discovery to the market, as is the case in other traded markets such as equities and commodities. Incorporating these new markets when they are fully up and running could double or triple the Fund capacity over time.

### What are the return and risk drivers in carbon markets?

Carbon markets have been established to reduce emissions. They are designed by policy makers and therefore policy decisions which change or update the rules of the market will affect the price. Some markets have a price cap or price floor and most markets have supply adjustment mechanisms which allow the regulator to change the supply of carbon in the event of market imbalances, acting in some ways like a central bank.

There are also a wide range of other factors which impact carbon prices over the short run such as economic activity (demand for energy, emissions intensity of electricity supply), commodity prices, energy sources, technology developments (wind and solar), and additional policy features such as the rules governing free allowance allocation.

Over the longer term, three main drivers underpin a forward looking risk premium.

- Policy: carbon markets are designed to stimulate emission reductions through higher prices. As the price of carbon rises, it stimulates companies to find low-carbon solutions so policy makers, environmentalists and investors generally agree that they would like to see a higher carbon price
- Structure: carbon supply is reduced each year. This makes carbon unique among commodities since the supply declines yearly by a known amount while demand (linked to economic growth) has the potential to rise
- Increasing awareness: new scientific evidence and the increasing frequency and intensity of extreme weather events are driving increased awareness among policymakers and the public

### If policy risk is the main risk facing investors, how will this risk be managed?

Carbon Cap as the investment advisor, has built proprietary market assessment and risk management tools with the primary aim of managing risk within the Fund. Carbon Cap has established relationships with carbon brokers and specialist research firms to access valuable information that can be used to build a comprehensive understanding of the risk and return drivers in each carbon market. This specialist knowledge and research will be used to actively manage the Fund. Proprietary market assessment tools cover a range of technical, macroeconomic, policy, and other factors.

World Carbon Fund Market Assessment Matrix					
Market	Technical	Macro	Market Structure	Policy Outlook	Risk Assessment
EUA	Neutral	Bullish	Bearish	Neutral	Low
WCI	Bearish	Bullish	Bullish	Bullish	Medium
RGGI	Bullish	Neutral	Neutral	Bullish	Low
NZU	Neutral	Bullish	Neutral	Neutral	High

For illustrative purposes only

### Are there any forecasts in relation to the future price of carbon allowances?

The compliance markets have been established by policy makers to reduce emissions by creating a financial incentive to invest in lower emission technologies. As the price of carbon increases, so does the incentive to switch to new production methods. Economists and environmentalists both calculate that in order to meet the ambitious targets set by the Paris Accord, the carbon price would need to rise significantly from its current level of around \$20 per tonne. Forecasts for 2030 range from \$60 to \$120 per tonne. This backdrop, which is likely to receive increasing support from policy makers, provides an attractive context for investing into these markets. TS by phasing in the use of auctions and today approximately 55% of allowances are issued by way of auction.

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### Could exposure to carbon markets potentially hedge climate change-related risks within equity and bond portfolios?

Most equity/bond portfolios have exposure to hard-to-understand and underestimated climate change-related risks. Increasing evidence of the impact on equity and bond portfolios is accumulating in academic research papers and many people forecast this will accelerate in the next decade. Carbon prices may be negatively correlated to these risks and their impacts. Carbon markets are dominated by industrials and energy companies seeking to manage their carbon exposure providing alpha generation opportunities for financial investors.

### Is this an impact investment? How will my investment reduce emissions causing climate change?

The World Carbon Fund buys and holds carbon allowances as part of its investment strategy, meaning they will not be available to polluting entities. This supports a strong carbon price signal.

In addition, 20% of Fund performance fees are used to purchase and permanently cancel carbon allowances/offsets delivering an environmental impact for clients. Carbon Cap believes that cancelling high quality carbon allowances/offsets is the closest equivalent to physically removing carbon from the atmosphere.

### Why should I consider an investment into the World Carbon Fund?

- Access to a New Asset Class** – The Fund offers access to carbon as a liquid alternative asset class with attractive return prospects and a low correlation to traditional and alternative asset classes (see figure below)
- Attractive Structural Properties** – Carbon markets reduce the supply of carbon each year, targeting higher prices in order to stimulate emissions reduction
- Risk Management** – Individual carbon markets have exhibited high volatility and this is likely to continue, providing the opportunity to add significant value from market research and active risk management
- Alpha Generation** – Carbon markets are dominated by emitters such as utilities and industrial companies seeking to manage their carbon exposure. This provides opportunities for alpha generation
- Highly Experienced Team** – The Carbon Cap team has deep expertise in carbon markets trading and research coupled with a strong focus on risk management and an expert advisory board
- Direct Climate Impact** – Carbon Cap has committed 20% of performance fees to the purchase and cancellation of carbon allowances/offsets for a direct impact on lowering emissions

### How will the portfolio be managed towards an absolute return target?

The Fund seeks to generate returns from two complementary strategies: “Core Long” and “Alpha Strategies”. The Core Long Strategy seeks to generate returns from a rising carbon price combined with disciplined risk management. The Alpha Strategies seeks to generate returns from arbitrage and relative value strategies deployed across physical carbon, futures and options. The Fund has a 10% VAR risk limit and it is expected to have 15% volatility and low peak-to- trough drawdowns.

Proprietary market assessments will inform the Risk Budget allocation across these two strategies. The market assessments analyse fundamental factors such as market structure, macro outlook, and policy outlook, together with technical factors such as support, resistance, momentum and volatility. Core long positions will be based on market assessments, market cross-correlation, and liquidity limits and will be combined with a hedging overlay determined by market volatility and options pricing. Alpha strategies will be comprised of short-term non-directional strategies based on technicals and news flow, together with options strategies and relative value strategies

### Do all targeted carbon markets trade in USD? If not, do you intend to hedge out unwanted FX exposure?

Carbon and other environmental markets trade in their local domestic currency. It is not the intention of the manager to seek returns from currency exposure and therefore, larger foreign currency exposures will be hedged. As the portfolio becomes more diverse across a range of currencies, the need for currency hedging may decrease over time. Regardless of the extent of currency hedging within the investment portfolio, all currency share classes of the Fund will be hedged into their base currency to provide the local currency returns to investors in that share class.

### Who sits on the Carbon Cap advisory board?

- Professor Sam Fankhauser, Director Grantham Research Institute on Climate Change, LSE
- Dr. Mike Berners-Lee, Author and CEO Small World Consulting and Professor Lancaster University
- Neil Eckert, Founder and Chairman, Incubex LLC and Aggregated Micro Power
- Michael Alen-Buckley, Founder and Executive Chairman, RAB Capital Ltd.
- James Cameron, Founder and Former Chairman, Climate Change Capital

# World Carbon Fund

## Frequently Asked Questions

### The carbon price in the EU collapsed in 2008, could it happen again?

While it is accepted that a global recession may have a negative impact on carbon prices, modern carbon markets have enhanced policy features that provide greater market resilience. During the 2008-09 Recession, EU ETS GDP declined by around 10% and the carbon price declined significantly from a high of EUR 35 to a low of around EUR 10. Policy makers have generally implemented several key policy design improvements that would now reduce the impact of economic downturn on carbon prices and support the robust functioning of the market. The table below summarises the three most significant policy improvements that make modern carbon markets more resilient compared to their 2008 versions.

An experienced team, active management and diversification are also key for Carbon Cap to minimise the impact of an economic downturn on the World Carbon Fund. Though policy design improvements allow markets to more quickly adjust to unexpected technological or demand shock and dampen any long-term impact on the market, markets are of course driven by much more than supply/demand and market rules and mechanisms. Nigel Felgate has been trading carbon for 15 years, through both the boom and the bust in 2008-2009, and by diversifying across multiple markets with an active strategy that incorporates downside risk management, we hope to minimize this risk.

### How is your proposition different from other funds active in this space?

Most other funds that invest into environmental and carbon markets do so only with a portion of their assets with the balance being invested into other commodities such as oil, coal, gas and power as well as other commodities. The World Carbon Fund is unique in that it invests only into carbon markets and has a unique investment strategy aiming to generate absolute returns with an emphasis on risk management. We believe that this will be attractive to investors seeking to gain diversified access to regulated carbon markets. In this respect we believe that the Fund offers a unique investment proposition.

### Will the World Carbon Fund always be net long?

Given the forecasted long term appreciation in the price of carbon it is expected that, over time, the Fund will tend to be long-biased. However, there will be periods where short term market conditions or investment opportunities give rise to net short positions at a Strategy and/or a Fund level. Carbon markets can be volatile and the investment objective of the fund is to generate absolute returns in all market conditions while operating inside specified risk limits.

Policy Feature	Carbon Markets 2008 - 09	Carbon Markets 2020
1. Supply adjustment mechanisms	At the time of the financial crisis, the EU ETS had no supply adjustment mechanism.	The EU's Market Stability Reserve (MSR) is a systematic mechanism that removes auction supply based on how much surplus exists. This is done by reducing the allowance auction volumes and will significantly reduce supply over the coming 4 years. This mechanism is enshrined in EU law and can only be changed over a multi-year period. Similarly, the North American markets have price corridors that adjust supply through time in order to shift prices into target corridors.
2. Impact of low-cost carbon offsets	Early markets allowed the fungibility of a significant amount of low-cost CDM carbon credits from the UN Framework Convention market. This put significant downward pressure on carbon prices, most notably in the NZ ETS	In the EU ETS, as of 2020 only approximately 3% of annual compliance obligations can be met with CDM offsets and this will be zero as of Phase 4 in 2021. In the North American markets, offset usage is strictly quantitatively and qualitatively limited and becomes more stringent in 2021.
3. Free allocation vs Auctioned supply	In 2008, the EU ETS had full free allocation of allowances based on historical emissions (grandfathering). When emissions declined during the recession, excess allowances were sold by many participants. The RGGI carbon market had full auctioning and its price only declined by 5% vs around 70% in the EU market	In the EU ETS, power generators, comprising two-thirds of emissions, are now required to purchase all allowances at auction. They are now also significantly hedged into the future, which locks up a substantial portion of allowance supply. Free allocation to industrial sources is now based on output efficiency benchmarks and is reduced in the event of significant declines in production.

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