# WORLD CARBON FUND

*Generating Absolute Returns from Global Carbon Markets*

**Q2 2021**

CARBON CAP

Capping and Reducing Emissions

# Contents

# Executive Summary

Carbon Cap is a London-based environmental investment company managing a unique fund investing globally into liquid and regulated carbon markets

The World Carbon Fund targets absolute returns with a low correlation to traditional and alternative asset classes combined with a direct impact on climate change

Carbon and other environmental markets provide multiple opportunities to generate positive returns that are uncorrelated to other asset classes and traded more than $300 billion in 2020

Carbon Cap has assembled an experienced management and investment team with deep expertise in carbon pricing, carbon trading, fund management and alpha generating strategies

Carbon Cap has an impressive advisory board and a number of high quality shareholders including the holding company of a Swiss private bank

# Our Team

## Management and Investment Team

**Michael Azlen CAIA**, CEO and Co-Portfolio Manager

**Edward Bratton**, Co-Portfolio Manager

**Colin Hodges CA**, Chief Operating Officer

**Alex Child MSc**, Carbon Markets Research Manager

**Weiying Wang**, Trader & Quantitative Analyst

## Strategic Advisory Board

**Neil Eckert**, Founder and Chairman Incubex LLC

**Professor Sam Fankhauser**, Professor, Smith School - University of Oxford

**Dr. Mike Berners-Lee**, CEO Small World Consulting and Professor, Lancaster University

**Robert Jenkins** Professor & Public Policy Advocate

**James Cameron**, Senior Advisor, Pollination Group

*Carbon Cap's mission is to raise awareness of climate change and provide solutions directly related to capping and reducing carbon emissions*

## Carbon Markets and The World Carbon Fund

Cap and Trade Emissions Trading Systems (ETS) are widely regarded as being successful at reducing carbon dioxide emissions and, reflecting this, are now spreading to multiple countries around the world

These markets place a cap on total emissions but allow participants to trade carbon thereby setting a market price. The major carbon markets are large and liquid and traded in excess of $300 billion in 2020*

Carbon Cap has conducted proprietary research into carbon as an asset class and has found carbon to have generated significant positive returns combined with low correlations to other asset classes

Our outlook for carbon prices over the next decade is very positive however carbon markets can exhibit high volatility driven by a range of “market based” and “policy based” factors

High volatility and unique pricing factors create opportunities to add value from both active risk management and multiple alpha generation strategies

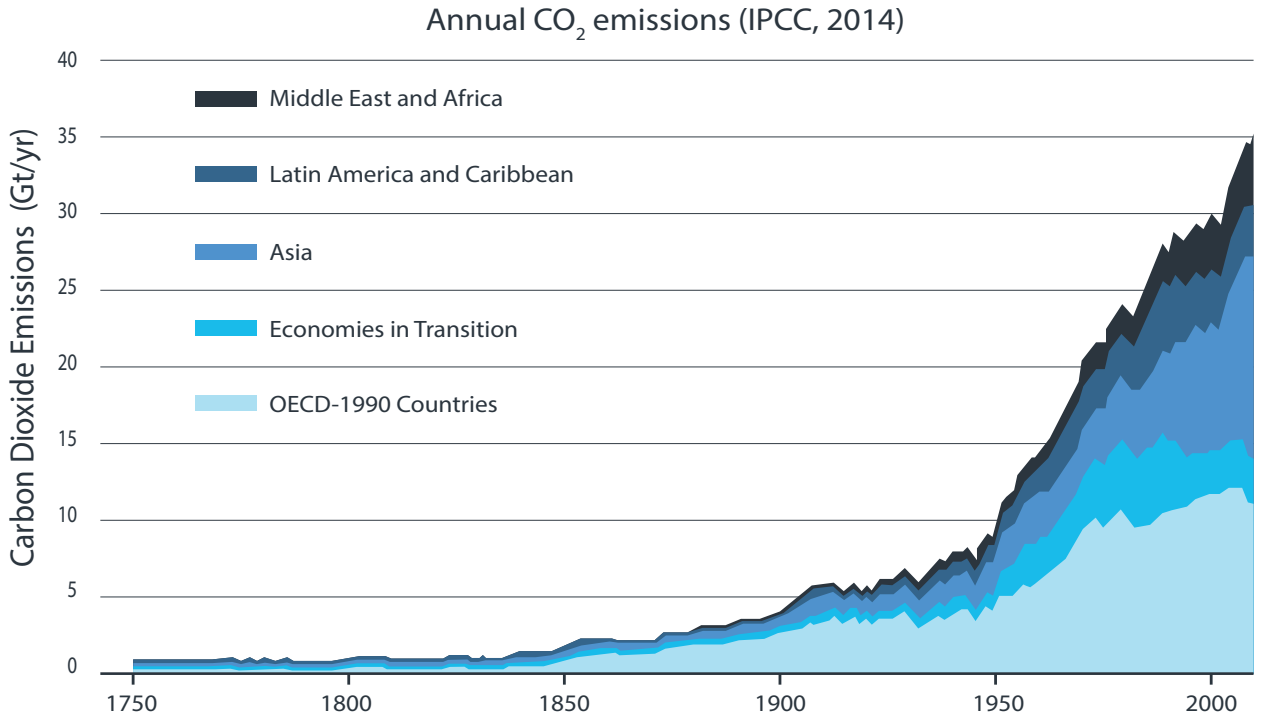
*"Emissions Trading Systems combine the best elements of environmentalism and the free market to effect real impact on climate change at the lowest cost"*

*Source: Carbon Cap

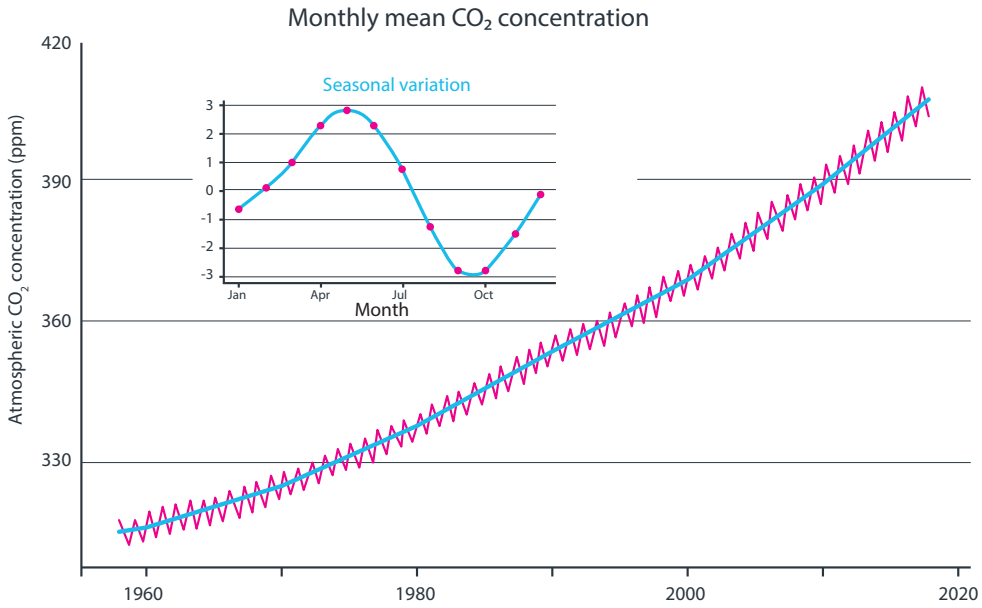
# Climate Change

*We are emitting 110 million tonnes of manmade global pollution into the atmosphere every 24 hours*

**The annual release of CO2 into the atmosphere reached 37 billion tonnes in 2018, a 580% increase since 1950**

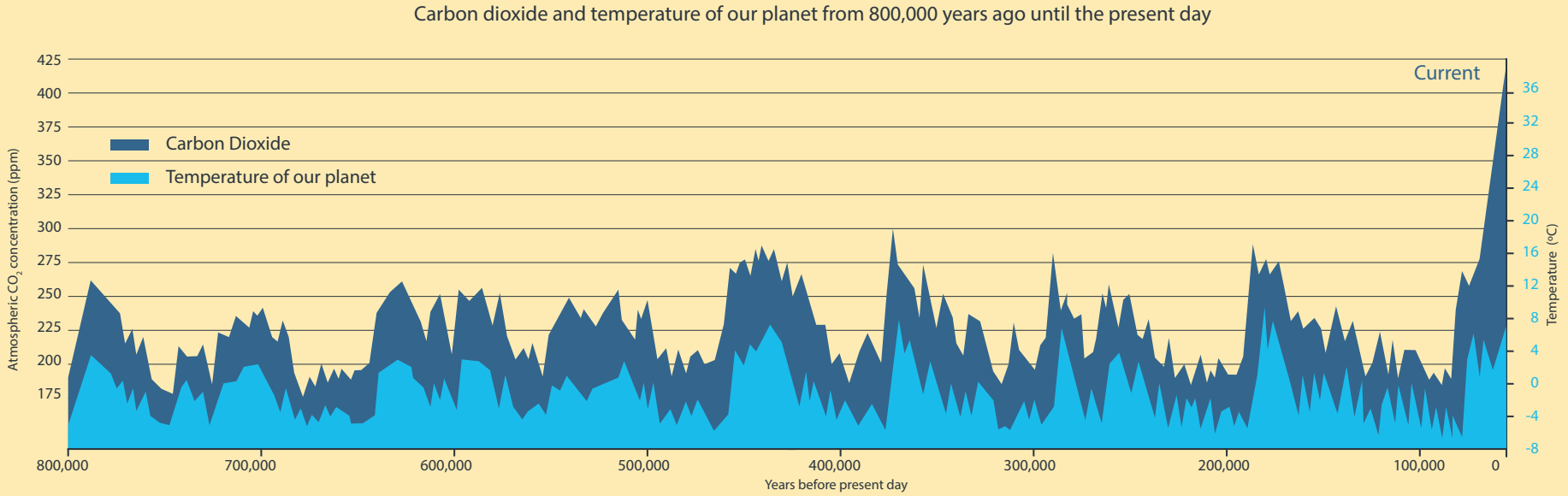



Source: IPCC, 2014.Fifth Assessment Report (AR5): Climate Change 2014




## The atmospheric concentration of $CO_2$ is at its highest level in 800,000 years

- $CO_2$ is a greenhouse gas meaning it traps heat within the earths atmosphere
- Atmospheric $CO_2$ concentration is highly correlated to historic temperature levels
- We are now experiencing an unprecedented rise in $CO_2$ concentration and temperatures due to human activity
- Without significant emissions reductions, the world faces temperature increases of 3 - 4 °C by 2100 with dire consequences



# Climate Change

**Increasingly, the mainstream media is focusing on scientific evidence and extreme weather events**

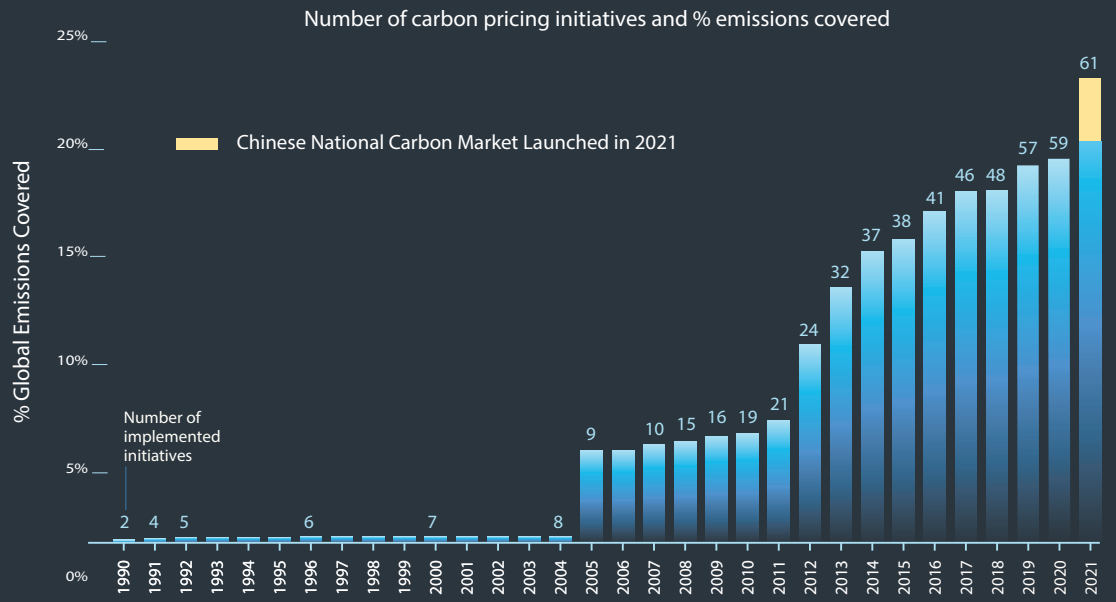
# Carbon Pricing

## Carbon pricing is growing in popularity as a policy instrument to reduce emissions

- There is increasing recognition that emissions must be priced to stimulate a reduction
- Now 61 Carbon pricing initiatives covering 23% of global emissions
- Carbon taxes provide price certainty but no environmental certainty (amount of emissions)
- Cap & Trade provides environmental certainty (emissions cap) and allows the market to establish the price of Carbon

*"Financial markets will only be able to channel resources to activities that reduce greenhouse gas emissions if an economy-wide price on carbon is in place at a level that reflects the true social cost of those emissions."*

US Commodity Futures Trading Commission



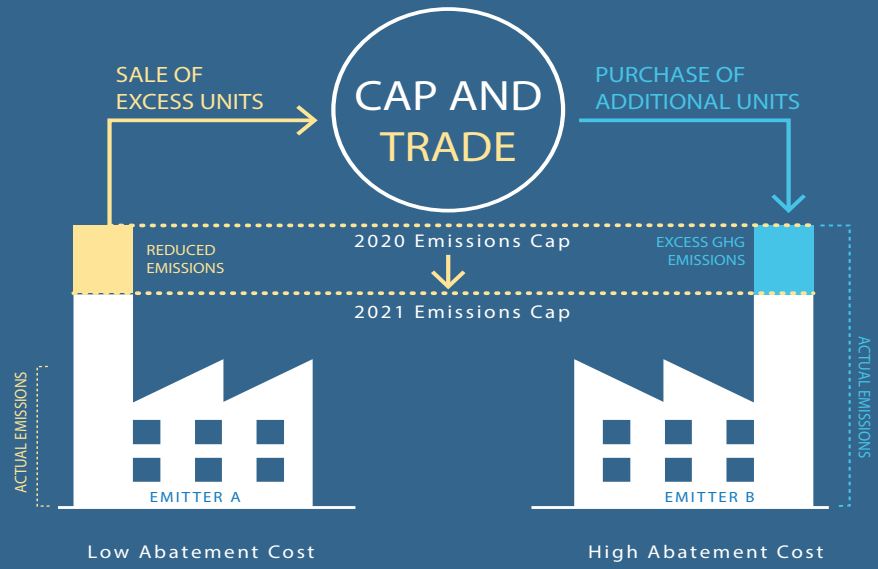
# Emissions Trading Systems Have Been Successful

## Cap and Trade is a "market based" policy that caps and reduces emissions at the lowest cost

- A regulated system with mandatory inclusion for entities with emissions above a threshold
- Participants allocated or auctioned allowance certificates. Each allowance permits the emission of one tonne of $CO_2$
- Total supply of allowances in the country/region is capped and the cap declines annually
- Participants audited annually and must submit allowance certificates matching their emissions
- Participants buy and sell carbon allowances, setting a market price for carbon
- The trading of carbon ensures that emissions reductions occur at the lowest cost
- A liquid market provides the ability to hedge and to monetise low carbon technology

## Cap and Trade Successes

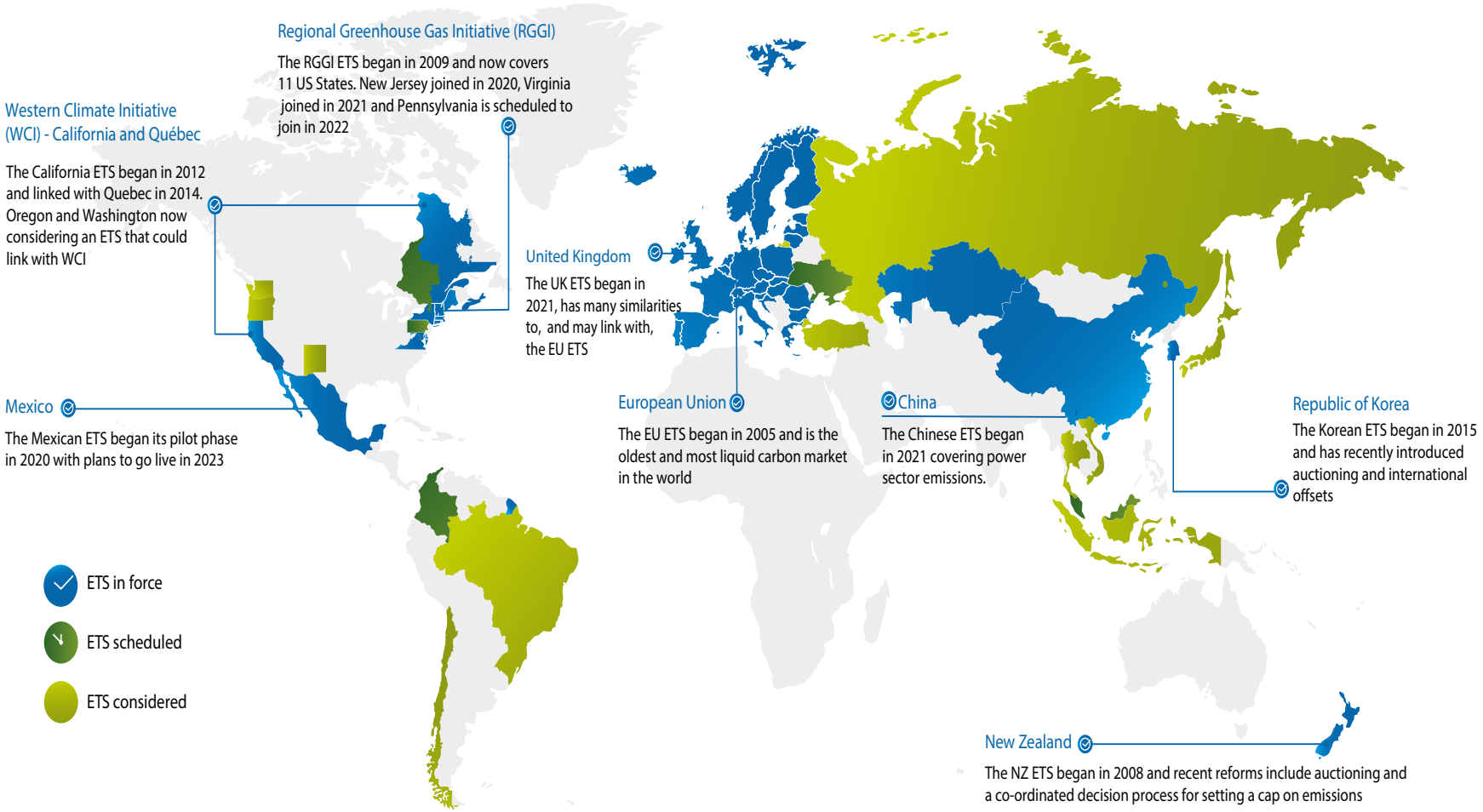
- EU ETS: Emissions -35%; GDP +20% (2005-19)
- USA RGGI: Emissions -50%; GDP +1% (2009-19)
- USA California: Emissions -12%; GDP +33% (2012 – 2019)
- ETS now cover 15% of global emissions
- Carbon auctions have raised more than $100 billion since 2005
- Auction revenues used for energy efficiency/low carbon initiatives




Sources: Eurostat (2019); European Environment Agency (2020); RGGI Inc (2018); Bureau of Economic Analysis (2020); California Air Resources Board (2020); ICAP (2020)

# Emissions Trading is Spreading Globally

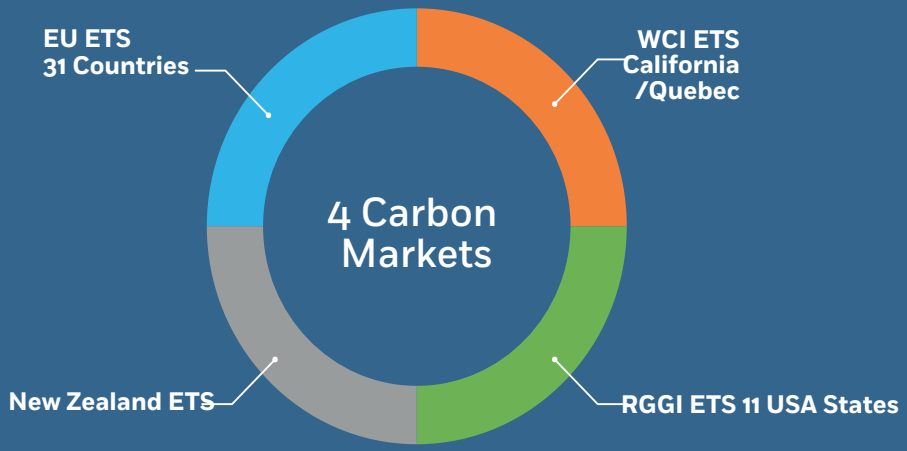
## 13 Emissions Trading Systems in force with 4 scheduled and 12 being considered

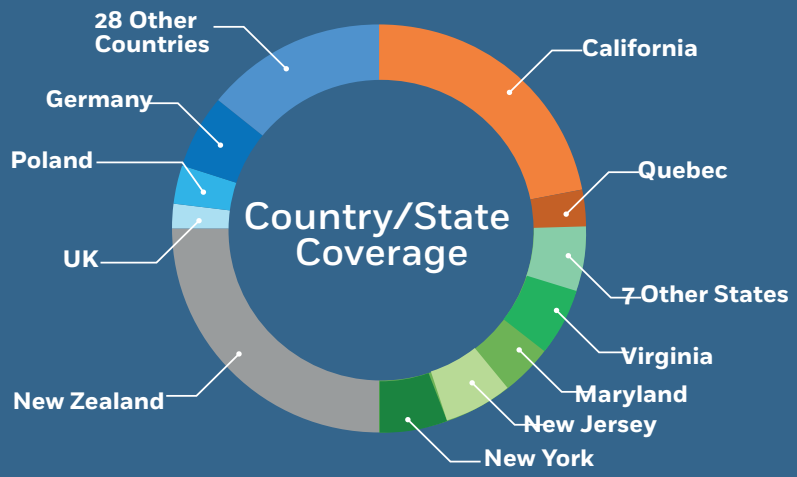


# Research: Carbon Markets

## Carbon Cap's proprietary research into global carbon markets

- Carbon Cap have created a proprietary carbon markets database incorporating data from multiple carbon markets
- The data and analysis forms the basis of Carbon Cap's proprietary carbon markets research which is integrated into the investment process
- The research covers 4 Emissions Trading Systems covering 2.3 billion tonnes of annual emissions
- The four carbon markets traded in excess of $300 billion in 2020 across physical carbon, futures and options



# Research: Carbon Markets

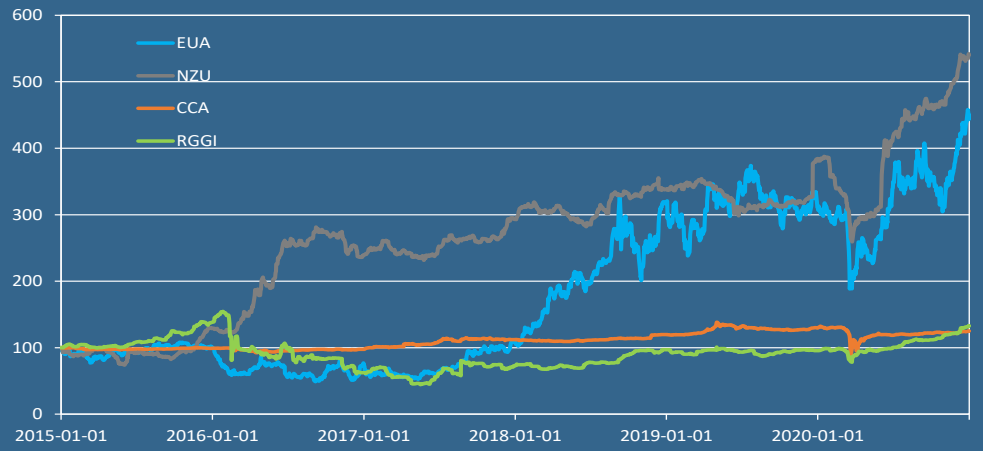
- All four carbon markets have generated positive annualised returns since inception
- However, each carbon market exhibits a unique return, volatility and correlation profile
- Two markets have volatility in excess of 50% highlighting the opportunity for active risk management
- Individual carbon markets are driven by their policy structure and local energy prices

## Carbon markets historical performance statistics

### Carbon markets summary performance (Jan 2013 - Dec 2020)

| Performance Metric (US$ returns) | EUA | NZU | CCA | RGGI |
|---|---|---|---|---|
| Annualised Return | 19.3% | 34.7% | 0.5% | 15.9% |
| Annualised Standard Deviation | 52.8% | 35.0% | 13.3% | 29.1% |
| Sharpe Ratio | 0.37 | 0.99 | 0.03 | 0.55 |

### Carbon markets historical performance (Jan 2015 - Dec 2020)




*Data Nov. 2012 to Dec. 2019 Source Carbon Cap. The information on this page has been selected by Carbon Cap. No guarantee is given as to the accuracy, completeness and reasonableness of this information.

# Research: Carbon Markets

## Carbon has been a powerful diversifier vs other asset classes

- Carbon markets exhibit low correlation to each other and to all major asset classes.
- Other asset classes exhibit a much higher cross correlation
- A positive expected return combined with low correlation make carbon an attractive addition to a diversified portfolio

**Carbon markets exhibit low cross-correlation and low correlation to other asset classes**

| Correlation Matrix | CCA Carbon | RGGI Carbon | NZU Carbon | Global Commodiites | US Reits | Euro Equities | US Equities | Global Equities | Hedge Funds |
|---|---|---|---|---|---|---|---|---|---|
| EU Carbon | 3% | 7% | 8% | 29% | 24% | 31% | 27% | 30% | 29% |
| CCA Carbon | | 23% | 14% | 6% | 19% | 2% | 16% | 16% | 15% |
| RGGI Carbon | | | 9% | 14% | 31% | 17% | 27% | 28% | 23% |
| NZU Carbon | | | | 17% | 20% | 19% | 22% | 25% | 15% |
| Global Commodiites | | | | | 34% | 46% | 43% | 49% | 43% |
| US Reits | | | | | | 55% | 78% | 78% | 49% |
| Euro Equities | | | | | | | 65% | 78% | 56% |
| US Equities | | | | | | | | 97% | 48% |

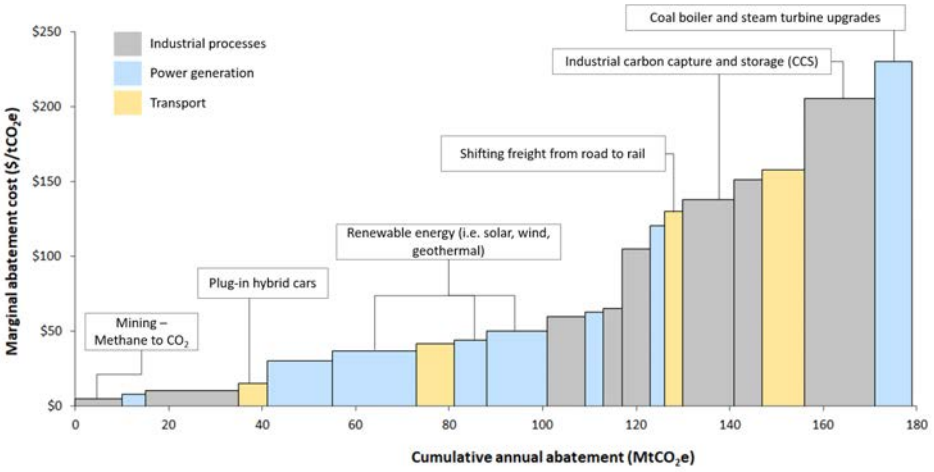
Data & Source: 3 year correlation (Jan 2018 to Dec 2020), Carbon Cap

# Research: Forecasting Carbon Prices

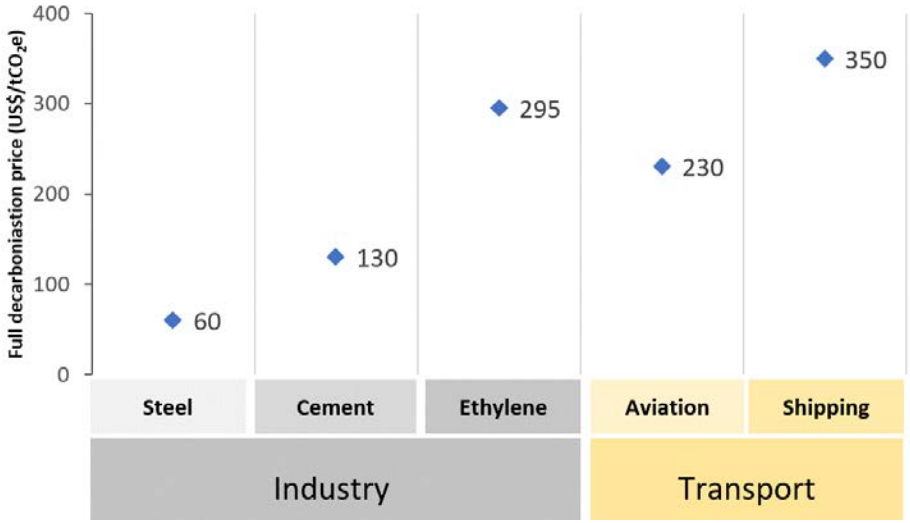
**Abatement costs determine the volume of emissions reduction that various carbon price levels can achieve**

- The costs of reducing emissions (abatement cost) varies across companies and industries
- A liquid carbon price provides a strong incentive to abate
- Companies will reduce emissions up to the point where the carbon price equals their marginal abatement cost
- Full decarbonisation of some industrial sectors will require significantly higher carbon prices

Marginal abatement cost curves (MACCs) illustrate the costs and emissions reduction volumes of individual mitigation measures




Emissions reductions are difficult in some sectors, requiring carbon prices from US \$60-350/$tCO_2e$ for full decarbonisation




Source: Carbon cap based on Reputex (2018) and Energy Transition Commission (2018)

# Research: Forecasting Carbon Prices

**Carbon prices must rise significantly to stimulate alternative or low-emission options**

- Under the Paris Agreement, more than 190 countries agreed to an aspirational temperature threshold of 1.5°C to 2.0°C
- The planet has warmed by 1.1°C already and the remaining 0.9°C can be translated into an "Emissions Budget"
- Combining the MACC and the Emissions Budget allows the calculation of a carbon price consistent with "below 2°C"
- It is estimated that a carbon price of >$100/tonne is needed by 2030 to stay below the Paris 2°C threshold

*"We have to be more ambitious when it comes to our 2030 emission reduction target. This should increase to at least 50% by 2030, up from the 40% currently agreed"*

Ursula von der Leyen
President of the
European Commission

Carbon prices consistent with the Paris Agreement

| Carbon Pricing Source | 2030 Carbon Price USD |
|---|---|
| Stern Stiglitz Review[1] | $75.00 |
| IEA Perspectives for the Energy Transition[2] | $120.00 |
| IIASA SSP Scenarios 2 Degrees[3] | $131.00 |
| UK REA Bioenergy Strategy[4] | $125.00 |
| Average | US$ 113.00 |

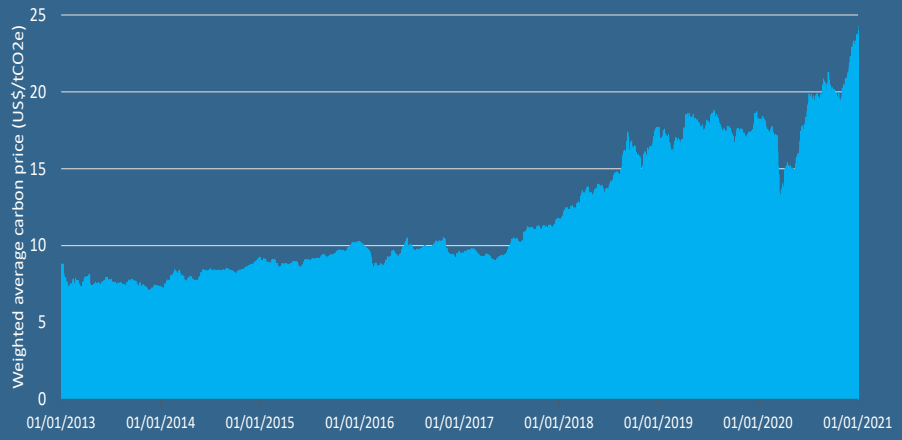
# Research: Forecasting Carbon Prices

## Forecasting carbon asset class returns into the future

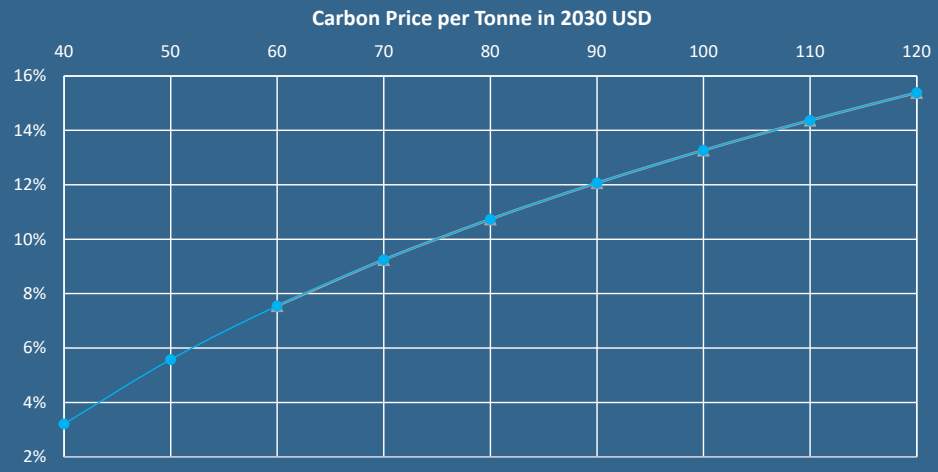
- Carbon prices have increased significantly since 2012 but are still below generally agreed targets
- Based on forecast carbon prices in 2030, we can calculate annualised returns from today's price
- If carbon prices rise to the level needed to meet the Paris Agreement, investor returns would be attractive

## A rising carbon price supports the Paris Agreement while providing attractive returns to investors

**Equally Weighted Carbon Price per Tonne**




**Prospective Annualised Risk Premium to 2030**




Source: Carbon Cap

# World Carbon Fund

**The World Carbon Fund will target absolute returns from active management across environmental markets**

*"Investing into EU carbon is a good way to prepare for a future in which carbon allowances are set to become part of a mainstream investor's portfolio"*

Mark Lewis
Global Head of Sustainability Research
BNP Paribas Asset Management

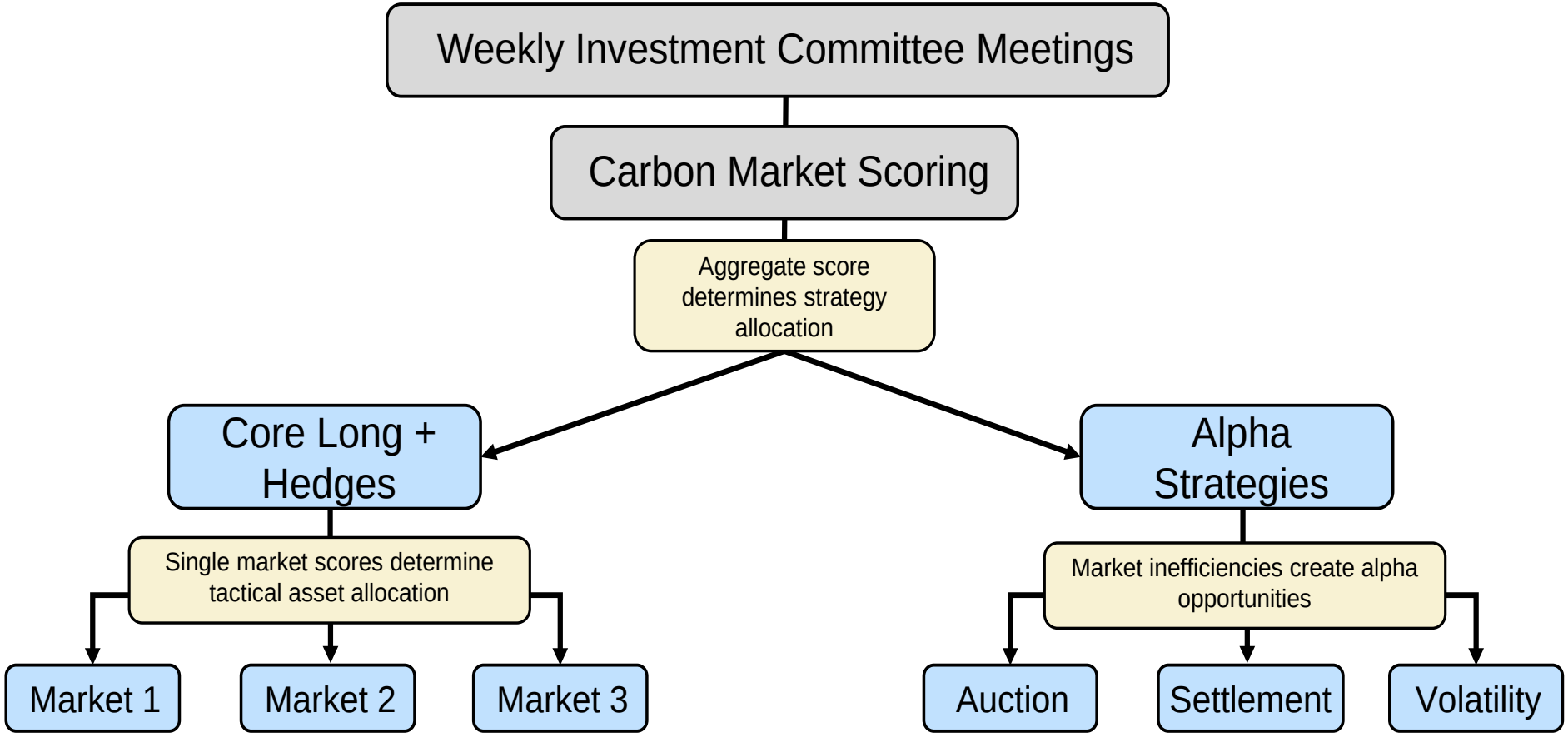
- The World Carbon Fund will invest across multiple carbon and other environmental markets
- The investment objective is to generate absolute returns with a low correlation to other asset classes
- The fund has a risk limit equal to a 2.2% daily Value at Risk (97.5% confidence)
- The fund has an expected volatility of 15% (standard deviation) and deploys its risk budget across two strategies
- The Core Long Strategy will generate returns from a rising carbon price combined with disciplined risk management
- The Alpha Strategies seek to generate returns from arbitrage, trade facilitation and other price neutral strategies

# World Carbon Fund Investment Process

| Selection and Assessment | | Risk Budget: 2.2% Daily VAR | |
|---|---|---|---|
| **Market Selection** | **Market Assessment** | **Core Long + Hedges** | **Alpha Strategies** |
| **Analyse global environmental markets to determine eligibility based on a range of factors**<br>• **Eligibility based on:**<br>– Market Size (Capitalisation)<br>– Investor Accessibility<br>– Liquidity<br>– Instrument Availability<br>– Policy Risk<br>• **Other factors:**<br>– Country Risk<br>– Legal Risk<br>– Currency Risk | **Assess the outlook for each market using internal and external research resources**<br>• **Market Assessment based on:**<br>– Technical Factors<br>– Support and Resistance<br>– Momentum and Volatility<br>• **Fundamental Factors**<br>– Macro Outlook<br>– Market Structure<br>– Policy Outlook<br>**Informs Risk Budget allocation** | **Core Long positions combined with hedging overlay (max 75% of Risk Budget)**<br>• **Core Long exposure based on**<br>– Market Assessment Scoring<br>– Cross Correlation of Markets<br>– Liquidity<br>• **Hedging overlay based on**<br>– Market Assessment<br>– Market Volatility<br>• **Tactical Allocation Alpha**<br>– Underweight/ Overweight<br>– Protection<br>**Exposure based on Risk Budget** | **Alpha Strategies: non-directional and short term (max 75% of Risk Budget)**<br>• **Short Term Strategies**<br>– Technicals and News Flow<br>– Auction and Settlement<br>– Futures Block Facilitation<br>– Valuable info for Core Long<br>• **Options Strategies**<br>– Volatility and Skew Alpha<br>• **Relative Value Strategies**<br>– Spread and Relative Value<br>– Carry Trade<br>**Exposure based on Risk Budget** |

# World Carbon Fund Investment Process

**Investment Committee meetings determine Strategy allocation and single market allocation**




*These tables are illustrative only. The scores do not reflect the current view of Carbon Cap or the positioning of the World Carbon Fund.

# World Carbon Fund Investment Process

## Qualitative and Quantitative scores generated for each carbon market

- Multiple indicators across 3 categories generate scores for each carbon market
- Quantitative indicators generated systematically whilst qualitative indicators determined at weekly IC meeting
- Single market scores determine tactical asset allocation while aggregate score determines Strategy risk allocation

Single Market Assessment

| Example Indicators | Technicals and Sentiment | Fundamental Valuation | Market Structure & Policy Outlook |
|---|---|---|---|
| Indicator 1 | Momentum/ Reversals | Price forecasts based on supply and demand models | Supply adjustment mechanism |
| Indicator 2 | Option Volatility skew | Energy sector dynamics | Impending regulatory changes |
| Indicator 3 | Implied volatility | Abatement options | Overlapping policies |
| Indicator | .... | .... | ..... |
| Total Indicator Score | 6 | 8 | 7 |

Aggregated Market Assessment

| Indicator Categories | Market 1 | Market 2 | Market 3 |
|---|---|---|---|
| Technicals and Sentiment | 6 | 2 | 1 |
| Fundamental Valuation | 8 | 8 | 7 |
| Market Structure & Policy Outlook | 7 | 5 | 6 |
| Total Market Score | 7 | 6 | 5 |
| Aggregate Score | 6 | | |

# World Carbon Fund Alpha Strategies

## Carbon markets provide significant alpha opportunities

- The majority of carbon trading involves end users seeking to hedge output
- Hedging behaviour creates market inefficiencies and alpha opportunties
- Changes in market sentiment can impact options supply and demand
- Multiple trading strategies deployed across short and medium term horizons

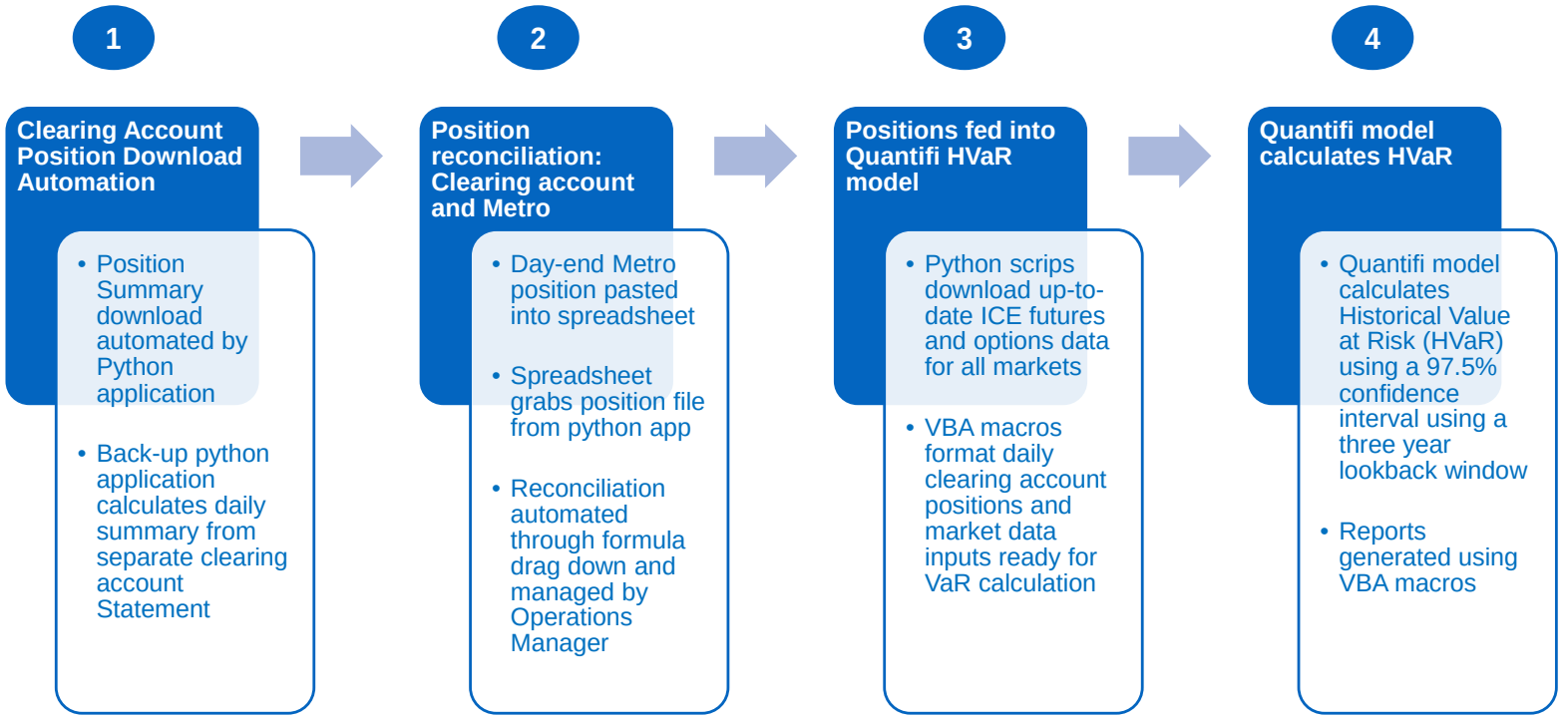
Illustrative European Carbon Alpha Strategies

| Alpha Strategy | Intraday Strategy Description | Trade Time Horizon |
|---|---|---|
| Daily Auction | Auction participation (long or short) | 30 to 90 minutes |
| Daily Settlement | Facilitation of 3rd party orders for a spread (long or short) | 5 to 10 minutes |
| Block Futures | Facilitation of 3rd party orders for a spread (long or short) | 7 to 10 minutes |
| Intraday Trading Position | Short term trades based on technicals and news flow (long or short) | 30 minutes to 4 hours |
| Automated Strategy 1 | Systematic intraday strategy | 30 minutes to 2 hours |
| Automated Strategy 2 | Systematic intraday strategy | 30 minutes to 2 hours |
| | **Medium Term Strategy Description** | |
| Option Implied Volatility | Long or short carbon market implied volatility | 1 to 3 months |
| Option Volitility Skew | Long or short carbon market implied volatility skew (puts vs calls) | 1 to 3 months |

Source: Carbon Cap & Bloomberg

# World Carbon Fund Risk Management

## Daily risk reporting comprises 4 steps with significant automation



# Management and Investment Team

**Michael Azlen, CAIA**
**CEO and Portfolio Manager**

25 years investment experience spanning proprietary trading, hedge funds and multi-asset investing. Has completed deep research into climate change and carbon as an asset class. Sloan MSc: Leadership and Strategy, London Business School

**Colin Hodges, CA**
**Chief Operating Officer**

25 years experience in investment management including working with multiple operational and management positions with NatWest Markets in London and Hong Kong. Member of the Institute of Chartered Accountants in England and Wales.

**Edward Bratton**
**Portfolio Manager**

15 years experience in European energy and carbon markets. Significant exposure to proprietary trading of physical and derivatives in emissions markets since Phase I of the EU ETS. Former Gazprom & Merrill Lynch.

**Alex Child, MSc**
**Carbon Markets Research Manager**

Seven years research experience focused on the design and impact of carbon pricing instruments globally. Strong quantitative skills and experience modelling emissions trading and carbon markets. MSc in Economic Development (distinction).

**Weiying Wang, MSc, CAIA**
**Trader & Quantitative Analyst**

Quantitative finance professional with investment experience including 4 years at Deutsche Bank in derivatives pricing. MSc in Finance from London Business School with a concentration in investment management, quantitative finance and machine learning.

**Alexis Pott, MPhil**
**Investor Relations Manager**

15 years' experience in asset raising and investor relations across alternative investments including hedge funds, private equity, socially responsible investments and quantitative systematic trading strategies. Dedicated to building strong investor relationships.

# Why Allocate to 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
- **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
- **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

*"Many equity portfolios have exposure to underestimated and hard-to-understand climate change-related risks. Carbon exposure may be a hedge for some of these risks"*

Robert Jenkins
Board of Governors, CFA Institute,
Former Chairman F&C Asset Management

# Impact on Climate Change

*"The combination of hard and soft environmental impacts combined with monthly liquidity makes the World Carbon Fund unique as a climate change impact fund"*

PRI Principles for Responsible Investment

**A global environmental markets fund with monthly liquidity and direct climate impact**

- **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
- **Reduction of supply** – Carbon allowances held by the World Carbon Fund will not be available to polluting entities
- **Price discovery and liquidity** – The Fund will provide enhanced price discovery and improved liquidity in multiple carbon markets including a commitment to emerging carbon markets
- **Dampen volatility** – As a value investor in carbon markets, the Fund will be a natural buyer during price falls and a seller during price spikes, smoothing market volatility
- **Stakeholder engagement** – Active engagement with policy makers, NGO's and regulators to promote ETS as a robust policy solution
- **Raising awareness**– Educational presentations to raise awareness of climate change and the importance of carbon pricing amongst finance industry professionals
- **PRI Member** - as a PRI Member, Carbon Cap is committed to applying the 6 principles of responsible Investment.

# World Carbon Fund Structure and Terms

- **Investment Adviser:** Carbon Cap Management LLP
- **Co-Portfolio Managers:** Michael Azlen (CAIA) & Edward Bratton
- **Fund Structure:** Qualified Investor Alternative Investment Fund (QIAIF)
- **Fund Domicile:** Ireland
- **Inception Date:** March 2020
- **Minimum Investment:** 1 million in each currency
- **Dealing Frequency:** Monthly Subscriptions & Monthly Redemptions with 30 days notice
- **Institutional Share Class:** 1.5% Management Fee & 15% Performance fee (Euribor hurdle)
- **Share Class Currencies:** EUR, USD and GBP
- **Fund Administrator:** Société Générale S.A
- **Fund Auditor:** Deloitte

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | YTD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **2020** | - | - | 7.92%* | -5.15% | -7.34% | 4.23% | 1.71% | 2.48% | -0.23% | -0.45% | 2.70% | 4.15% | 9.46% |
| **2021** | -11.48% | 6.05% | -0.73% | 4.89% | 2.18% | 10.13% | -1.20% | 6.96% | 18.43% | 5.07% | | | 44.63% |

# Appendix A:
# Strategic Advisors

**Professor Sam Fankhauser: Professor of Climate Economics and Policy at Smith School - University of Oxford**

Dr. Fankhauser is also the Director of the Center for Climate Change Economics and Policy and and a non-executive director of CDC Group, the UK's Development Finance Institution. Sam previously served as Director at the Grantham Research Institute on Climate Change at the LSE for 10 years and served as Deputy Chief Economist at the European Bank for Reconstruction and Development (EBRD). He has also worked at the World Bank, the Global Environment Facility and in the private sector. From 2008 to 2016 he was a member of the UK Committee on Climate Change. His research interests include: the economics of adaptation to climate change; climate finance and the functioning of carbon markets; and climate change policy in the UK.

**Neil Eckert, Founder and Chairman Incubex LLC**

Neil Eckert serves as Chairman of IncubEx and was the co-founder and CEO of Climate Exchange PLC until the sale of the company to the Intercontinental Exchange in July 2010 for approximately £400 million. Climate Exchange PLC owned the Chicago Climate Exchange and the European Climate Exchange which over 90% of carbon traded in the EU. Neil was also previously the Chairman of Trading Emissions PLC, an AIM listed companyhosted and one of the world's leading funds investing in emission reduction permits. Neil founded Brit Insurance Limited in 1995 and remained its CEO until March 2005.

**Dr. Mike Berners-Lee: CEO, Small World Consulting and Professor, Lancaster University**

Mike Berners-Lee combines academic rigour with the practical experience of running a business in climate change. He is a critically acclaimed author of several books on climate change: The Burning Question (with Duncan Clark), The Carbon Footprint of Everything and There is No Planet B. Berners-Lee and his company, Small World Consulting bring together the best in environmental and management learning to help businesses respond to climate change. Mike and his team have pioneered comprehensive supply chain emissions reporting methods for clients such as BT Group, Taylor Wimpey and others. Mike is a professor at Lancaster University in sustainability research.

**Robert Jenkins, Professor & Public Policy Advocate**

Robert Jenkins is a former banker, fund manager and policy maker. He is currently a professor, board director and public policy advocate. Jenkins headed trading and sales for CitiGroup in Dubai, Bahrain, Switzerland and Japan. He then moved to the "buy side" where he led asset management firms in Tokyo, London and New York. Jenkins chaired the UK's Investment Association, was founding chair of the AQR Asset Management Institute at LBS and Chaired the Board of Governors of CFA Institute. He was an early appointee to the Bank of England's Financial Policy Committee. He teaches teaches investment management at LBS. In recognition of his many contributions to the investment profession he was made a Fellow of the Society of Investment Professionals by the CFA Society, UK.

**James Cameron, Senior Advisor, Pollination Group**

James Cameron has been working in Climate Change for more than 25 years and was the founder and chairman of Climate Change Capital which grew to be a thriving business employing 150 people with $1.5 billion under management. James was named Leader of the Year in 2013 at the Business Green Leaders awards and was a member of the Prime Ministers Business Advisory and held positions as both a member of the Green Investment Bank and as an advisor to the European Commission on the creation of the European ETS. In his legal career at Baker & McKenzie, he founded the Climate Change and Clean Energy practice and co-founded the Centre for International Environmental Law (CIEL).



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# Appendix B: Alpha Generation Strategies

Like any market, the option market can be distorted by supply and demand

1. The MSR* related price uptrend increased demand for calls over puts such that they traded at a volatility premium

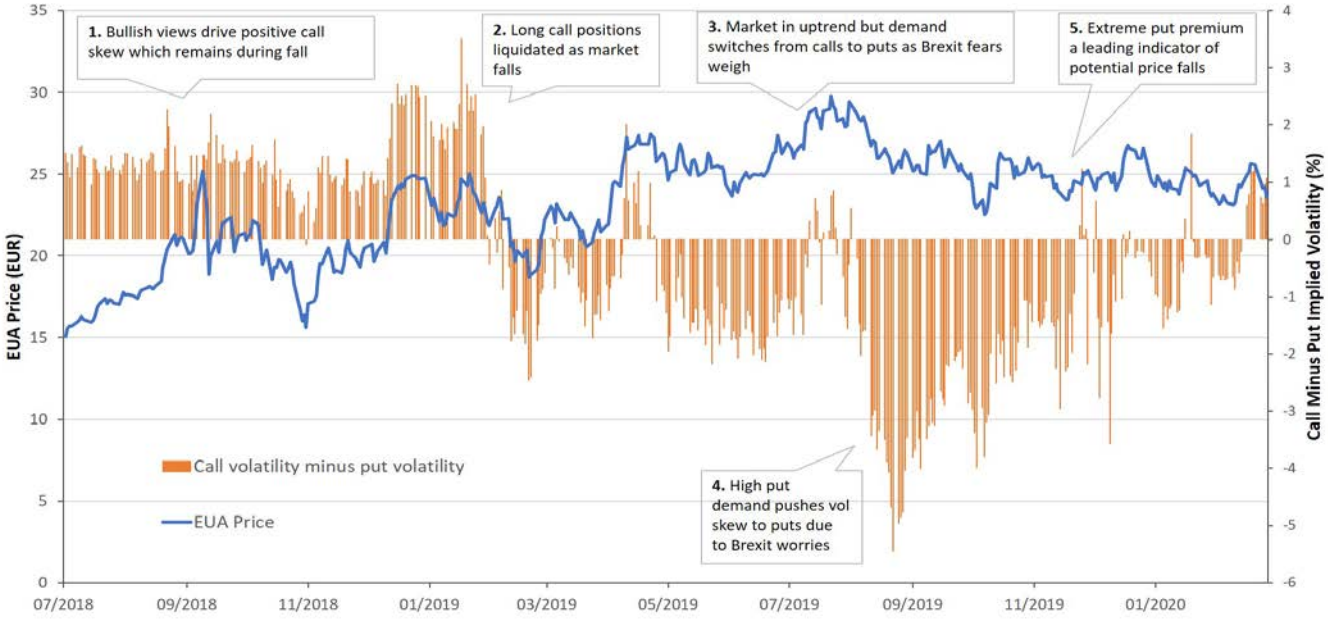
2. Failure of the market to rally further at the start of 2019 caused investors to liquidate positions restoring the call / put balance

3. Fears over Brexit then caused demand for puts to become excessive despite the market still trending up

4. Shifts in skew create the opportunity for alpha generation

## Volatility skew alpha

Call vs Put implied volatility and EUA carbon price




Source: Carbon Cap & Bloomberg

*MSR: Market Stability Reserve policy

# Appendix B: Alpha Generation Strategies

## Deep understanding of policy events can generate directional trading alpha

At the start of 2019, market bearish due to Brexit concerns but Brexit also changed the supply and demand of carbon

1. EU suspends UK carbon supply for 2019
2. British Steel announes $130m hit
3. Law firm Dentons confirms UK entities must deliver 2018 carbon allowances despite no allocation
4. UK delivery deadline extended
5. Carbon hits 10 week high as Brexit concerns wane

Understanding the impact of these events can generate directional trading alpha generation through both options trading and short term position trading

EUA carbon prices and news events (December 2018 to March 2019)

# Appendix C: Core Long + Hedges Theoretical Strategy Example

RGGI prices have been influenced by the wider macro and policy environment and hedging can minimise downside risk and still allow upside participation:

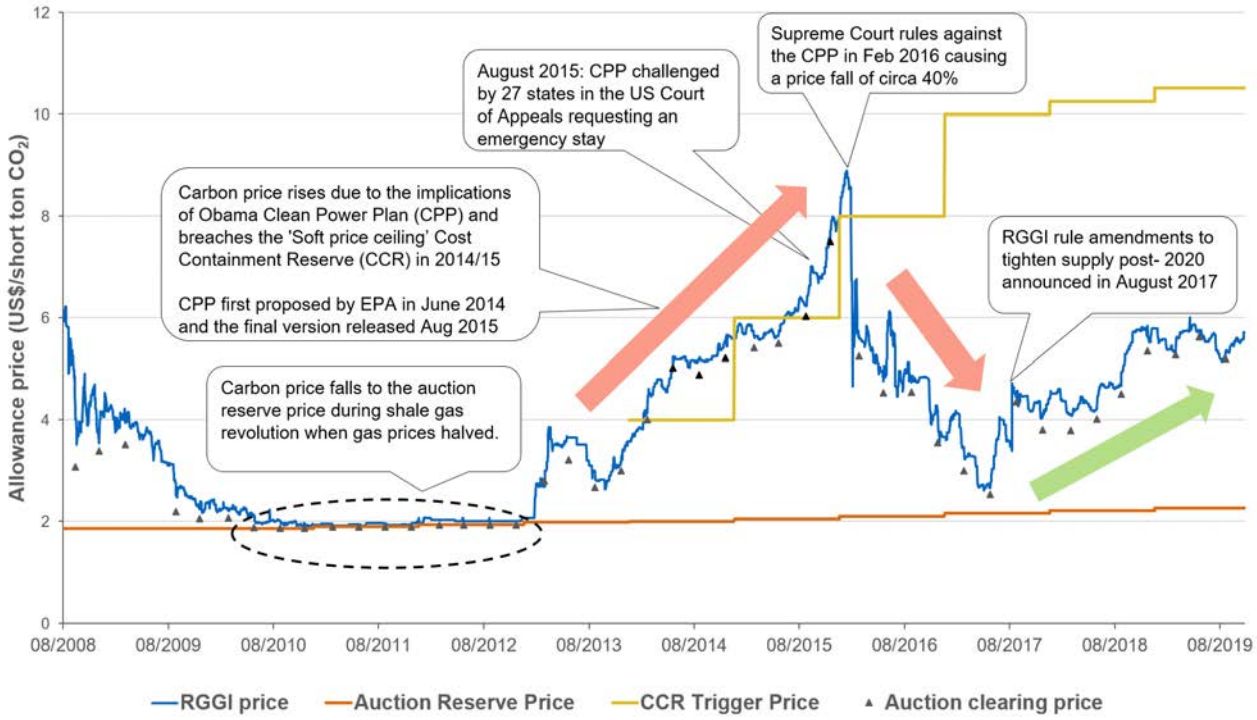
1. On the rally, prices rise through cost containment reserve (CCR)
2. Risks to rally visible from August 2015: buy 2016 $6 put for $0.30
3. Two days after Court ruling, price still $7.50: assume 50% long reduction
4. Price drop of 40% but long reduction and put protection lowers loss to only 12%

**Result**

Assuming RGGI long exposure 1/3rd of core long = 2% fund impact

**Market structure and policy analysis will inform active risk management of the Core Long + Hedges position**

RGGI prices and major influencing events since inception




The trades described above are based on actual prices but are for illustrative purposes only and did not take place. There can be no guarantee that any hedging strategy would achieve the same or similar results



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## Contact Information

Carbon Cap Management LLP, London, UK
T: +44 204 5265 480
E: investorinfo@carbon-cap.com
W: www.carbon-cap.com