SparkChange

Physical Carbon EUA ETC (CO2)

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sparkchange

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An investor's guide to Physical Carbon Allowances (EUAs)

Carbon markets exist to fight climate change

CO_2 emissions are heating up the planet to catastrophic effect with far-reaching commercial and humanitarian consequences. In the last 3 years, the average annual costs related to climate change in the US alone exceeded $150bn.[1] 7m people die annually due to emissions and climate-related disasters such as droughts, wildfires, and flooding.[2]

For illustrative purposes only.

Despite the urgent need to solve one of the greatest challenges of our time, the gap is widening between climate ambition and reality. In order to achieve a 1.5 °C warming scenario in line with science-based targets to mitigate warming effects, the world must reduce emissions by 57% (compared to 2005 levels) by 2030.[3] In contrast, the Paris Agreement has so far pledged less than 2% in emission reductions.[4]

To address this global challenge, corporations and citizens have voluntarily supported emission reductions through offset markets. This practice is commonly best understood as planting trees to compensate for emissions elsewhere. While some offsets can play a role in mitigating global warming, much of this activity is unregulated, leading to mixed quality, with an EU report stating that 85% of offset projects fail to deliver the environmental impact claimed.[5]

Removing existing carbon dioxide from the air will be necessary to meet climate goals but cutting emissions (so they do not enter the atmosphere in the first place) should be the highest priority. In response, many governments have created regulated carbon markets that are designed to 'cap' pollution and force down emissions over time. This goes a step further than most offset schemes, which compensate for existing emissions but do not stop emissions from occurring.

How do regulated carbon markets work?

Under a 'Cap-and-Trade' system, polluters must obtain Carbon Emission Allowances from regulators – each allowance permits them to emit 1 tonne of CO_2.

These allowances are issued by the regulator and sold via auctions or handed out for free. Energy Suppliers and Industrial firms such as Cement and Steel producers are examples of companies that must comply with this regulation.

Polluters are given a choice: they can either reduce emissions or compete to buy more allowances.

To aid decarbonisation and the transition to net zero, the supply of allowances is

[1] $152.2bn according to NOAA
[2] WHO
[3] UNEP Gap Report 2020
[4] UNEP Gap Report 2020
[5] 85% of offsets failed to reduce emissions according to EU study

'capped'. This cap is reduced every year in order to drive down emissions. Fewer and fewer allowances means that their scarcity value increases, driving up the carbon price. In turn, a rising carbon price incentivises polluters to invest in emission reduction technologies as they become more economical than buying carbon allowances.

The EU Emissions Trading System: a large, reformed market with positive outlook

Founded in 2008 as the EU's main tool to achieve decarbonisation, the EU Emissions Trading System (ETS) is the world's largest carbon market.[6] More than 13,000 entities are covered by the system, comprising over 40% of the EU's emissions.[7]

In its early stages, the ETS suffered from teething problems that included periods of significant volatility and low prices. In order to address these challenges and improve overall stability, the Market Stability Reserve (MSR) was introduced as part of reforms in 2015. Since the full formulation of the MSR in 2017, confidence in the market has significantly improved and the carbon price has increased 270%.[8]

The outlook for the future of the ETS is positive, with the EU already tightening its 2030 target.

- In July 2021, the 'Fit for 55' legislative package was issued to reduce supply significantly and expand scope of the ETS to shipping
- The technological "quick wins" have already occurred; further emission reductions now require higher prices

European Carbon Allowances (EUAs) as an asset class

Market characteristics [9]

Year operational	Covered entities	Market size (2020)	Daily traded volume
2008	~13,100	€201bn	~€2bn

Strong return profile [10]

Returns	YTD	1 yr	3 yr	5 yr	Since 2013
Annual Returns	84%	115%	128%	171%	125%
StdDev annualised	41%	43%	49%	49%	54%
Sharpe Ratio	1.66	1.51	0.44	0.77	0.11

Low correlation to other asset classes [11]

10yr US Treasuries	MSCI World	WTI	S&P GSCI	MSCI US REIT
0.10	0.32	0.21	0.30	0.26

Please note that all performance figures are showing net data.

What's driving investor interest in the EUA carbon market?

Several social and market factors are driving growth of the EUA carbon market. These include increasing social pressure on investors to act responsibly, demand for new solutions to integrate climate risk into portfolios, and bullish market

[6] By trading volume (Source: Refinitiv)
[7] Refinitiv
[8] EEX (EUR15.03 on 02.07.18 rising to EUR56.25 on 30.06.21)

[9] Refinitiv: Carbon Markets Year in Review 2020
[10] Based on Bloomberg data as at 1st Sept 2021
[11] Own calculations based on Bloomberg data as of 1st Sept 2021

forecasts in light of tightening emissions regulation.

Price forecasts

As of July 2021, the price of European carbon allowances was €55 per tonne of CO_2. In the same month, new EU legislation proposed a steeper reduction of allowances each year in line with more ambitious 2030 emission reduction goals, reducing supply even further. It also rejected any easing measures to the MSR. Estimates inevitably vary but analysts forecast a price of €86 by 2030 while the EU Commission forecasts a price of €85 by 2030.[12]

In addition, supply may be constrained further as a result of the EU Green Deal as well as the discussion among member states to cancel yet more EUAs in response to coal phase-outs.

These examples highlight how tightening emissions regulation may provide a positive catalyst for the performance of the EU carbon market.

Climate considerations among investors

The urgency surrounding climate change has led to investors across the spectrum seeking to incorporate climate considerations into their portfolios, both from an impact and financial perspective. Incorporating ESG has become a key part of broad investment strategies rather than a niche activity, and has a greater emphasis on opportunity-seeking, in line with the objectives of a transition to a low carbon economy. Examples include, the EU Climate Transition Benchmark (CTB) and Paris Aligned Benchmarks (PAB).

Social pressure

Increasing pressure on investors to act responsibly has already led to over $50tn of assets being publicly committed towards net zero goals.[13] More investors are looking for innovative ways to make good on these commitments and achieve environmental impact, which may lead to increased awareness and exploration of the carbon markets.

Recent eligibility of EUAs

The Paris Aligned Investment Initiative (PAII), which comprises four investor networks globally including the Institutional Investors Group on Climate Change (IIGCC) in Europe, has recently recognised physical carbon allowances as an eligible investment for net zero investing.[14]

However, EUA market access is too complex for many investors

For many investors, accessing the EUA market is challenging. One access route is to buy the EUAs outright. However, this requires a registry account, market access and the handling of a regulated digital commodity, creating a high level of operational complexity. Most real-money investors find the unconventional custody and settlement of EUAs very challenging. Furthermore, EUAs bought directly are not UCITS eligible.

EUA futures-based products (such as ETFs and certificates) exist but are associated with performance drag. This drag (known as “contango”) erodes the value of a futures-based investment over time, at the expense of the investor, and has recently been 50-130bps a year, but can be much higher.[15]

There are also environmental drawbacks to using futures-based products which do not necessarily remove EUAs from the carbon market, and therefore do not

[12] Analysts' forecasts by Carbon Pulse
[13] PwC report: The state of climate tech 2020
[14] PAII Net Zero Investment Framework for Consultation
[15] *Source: EEX settlement prices as 1st Sept 2020: Dec20 futures = €27.75, Dec21 futures = €28.11, or circa 1.30% contango for the year; as at 1st Sept 2021: Dec21 futures = €60.12, Dec22 futures €60.42, or circa 0.50% contango for the year*

prevent polluters from using those EUAs to emit CO_2.

Buying EUAs outright	Buying Futures-backed products
Operationally complex	Incurs roll costs / Performance drag
Unconventional settlement & custody	Does not withhold EUAs from polluters
Not UCITS eligible	Weaker environmental impact claim

SparkChange was founded in 2018 to solve these problems. The company has created the world's first physically-backed EUA investment product that's tradable on stock exchanges. This makes it easy to invest in physical EUAs and maximise the environmental impact of such an investment.

Why invest in Physical Carbon EUAs?

Creates environmental impact via an attractive returns profile

Physical carbon EUAs offer an attractive returns profile (supported by tightening emissions regulation) with low correlations to other asset classes. The price of EUAs has increased 270% in the last three years.

While investors hold the physical allowances, polluters cannot use them, which in turn prevents emissions from occurring (in contrast to the majority of offsets).

EUAs are an asset that create a positive environmental impact and can be re-sold. Investing in physical EUAs can therefore enable investors to achieve both positive environmental impact and financial returns – together at the same time. In contrast, offsets have no resale value once used and (mostly) do not reduce emissions.

Recognised as valid by the Paris Aligned Investment Initiative

EUAs are also recognised as a "valid" way to achieve global net zero emissions targets by the Paris Aligned Investment Initiative, comprising:

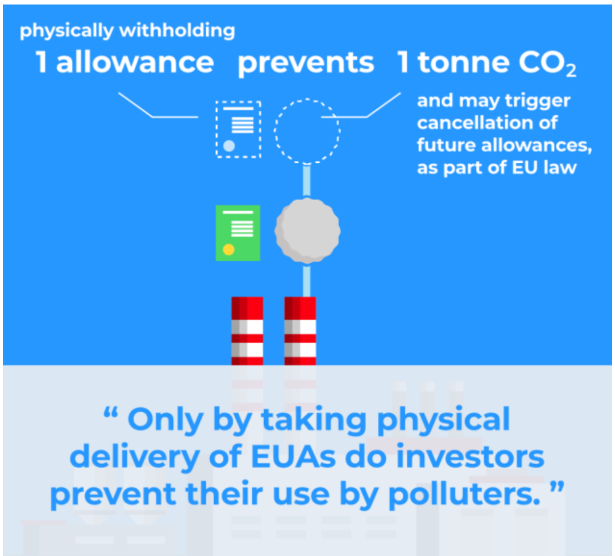
- IIGCC (Europe)
- Ceres (North America)
- Asia Investment Group on Climate Change (Asia)
- Investor Group on Climate Change (Australasia)

IIGCC's Net Zero Investment Framework – launched in March 2021 – provides a blueprint to help investors contribute in tackling climate change and achieving net zero emissions globally by 2050. IIGCC has more than 300 members with over €37tn in assets under management.

Prevents pollution in 3 ways

Buying a physical allowance means investors prevent pollution in 3 ways:

1. While investors hold physical allowances, polluters cannot use them;



2. Under EU law, withholding EUAs triggers **additional allowances** being cancelled in future years, amplifying the effect and locking up more allowances, further reducing supply. When an investor sells their EUAs this effect stops, but is not reversed, and the investor's temporary ownership of EUAs creates permanent emissions reductions;

3. As polluters and investors compete for a reduced supply of EUAs, prices rise until **dirty fossil fuels are too expensive** for industrial firms to continue using. This forces polluters to find cheaper, greener alternatives like carbon sequestration or new ways of producing clean energy.

Comparison of EUAs vs Offsets:

	EUAs	Offsets
Paris-Aligned	✓	✗
Regulated	✓	✗
Reduces net emissions	✓	✗
Impact and returns	✓	✗
Valid net zero instrument[16]	✓	✗
Easy to access	✗	✓
Well-known or familiar	✗	✓

Environmental impact is permanent and quantifiable

Independent studies conclude that withholding 1 EUA for 10 years permanently prevents 0.82 - 1.48 tonnes of emissions.[17]

Positive returns outlook

Tightening emissions regulation may provide a positive catalyst for the performance of the EUA market with analysts forecasting a carbon price of €86 by 2030 and the EU Commission forecasting €85 by 2030.[18]

Investor use cases

Physical carbon allowances enable investors to achieve both positive environmental impact *and* financial returns, at the same time.

Improve Impact
Create genuine environmental impact by withholding allowances from polluters. EUAs are an asset that create a positive environmental impact and can be re-sold; Unlike offsets, which have no resale value once used and (mostly) do not reduce emissions

Possible price appreciation
Since the supply of carbon allowances is diminishing, their scarcity value is increasing, creating potential for an attractive returns profile

Qualify for ESG standards
Combine with equity/fixed income structures to create net zero portfolios or qualify for ESG standards such as CTB/PAB benchmarks

Hedge price risk
Given most portfolios are short the carbon price already, investors can neutralise their exposure to a rising carbon price

[16] According to IIGCC
[17] LSE carbon market model; ICIS research

[18] Analysts' forecasts by Carbon Pulse

Why invest in SparkChange CO2?

SparkChange CO2 is the world's **first physically-backed EUA investment product** that's **tradable on stock exchanges.** This makes physical EUAs easily investable.

For every SparkChange CO2 ETC unit, a carbon allowance is purchased and made unavailable, creating scarcity. This forces emitters to compete for fewer allowances at a higher price, incentivising the switch to carbon abatement technology.

The purchasing, holding and divestment of SparkChange CO2 creates a **positive environmental impact**.

According to independent studies, holding 1 European carbon allowance for 10 years would create 0.82-1.48 tonnes of permanent emissions reductions. As the structure underlying CO2.L holds physical Carbon Emission Allowances, it has the same positive environmental impact as an investor would have if they held physical EUAs themselves directly.

Other allowance-based products use derivatives (futures) which are higher risk, more expensive for investors and do not offer the genuine environmental impact that EUAs provide.

Summary

- SparkChange was founded in 2018 to solve the problem of poor access to physical carbon allowances
- The company has created the world's first physically-backed EUA investment product that's tradable on stock exchanges. This makes it easy to invest in physical EUAs
- Physical EUAs offer both quantifiable environmental impact and price return
- EUAs have risen more than 270% in the last 3 years on the back of market reforms, a more ambitious 2030 emissions reduction target and increasing investor interest in this asset class [19]
- EUAs recognized as a 'valid' way to achieve global net zero emissions targets by the Paris Aligned Investment Initiative
- The purchase, holding and divestment of SparkChange CO2 produces a positive environmental impact
- SparkChange CO2 can be used to qualify for ESG benchmarks
- SparkChange CO2 can be used to hedge carbon price risk

Welcome to SparkChange: Setting a new standard in carbon investing

[19] EEX (€15.03 on 02.07.18 rising to €56.25 on 30.06.21)

About SparkChange

SparkChange is a provider of specialist carbon investment products and data, enabling investors to achieve both financial returns and positive environmental impact.

The company was established by experts in environmental products and capital markets technologies to set a new standard in carbon investing.

Our mission is to revolutionise access to carbon. More investors with access means a bigger impact on the environment. That doesn't just change a world of investing. It can change the future of our planet.

About HANetf

HANetf is an independent ETF specialist founded by two of Europe's leading ETF pioneers, Hector McNeil and Nik Bienkowski, to challenge conventional approaches to ETF product development and create distinctive opportunities for investors.

HANetf's UCITS ETF range is the result of close collaboration with leading asset managers that leveraged HANetf's full-service white-label ETF platform to simplify the setup, launch and distribution of their investment ideas.

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- to any legal entity which is a qualified investor as defined in the Prospectus Regulation; 11
- to fewer than 150 natural or legal persons (other than qualified investors as defined in the Prospectus Regulation), subject to obtaining the prior consent of the relevant Dealer or Dealers nominated by the Issuer for any such offer; or
- in any other circumstances falling within Articles 1(3), 1(4) and/or 3(2)(b) of the Prospectus Regulation (as may be locally implemented), provided that no such offer of Products shall require the Issuer to publish a prospectus pursuant to Article 3 of the Prospectus Regulation or supplement a prospectus pursuant to Article 23 of the Prospectus Regulation.

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2. HANetf ETC Securities plc, a public limited company incorporated in Ireland, issuing:

i) the precious metals ETCs under the terms in the Base Prospectus approved by both the Central Bank of Ireland ("CBI"), the UK Financial Conduct Authority ("FCA") and the final terms of the relevant precious metals series ("ETC Securities Documentation"); and

ii) the carbon securities ETCs under the terms in the Base Prospectus approved by the FCA and the final terms of the relevant carbon allowance ("FCA ETC Securities Documentation").

Investors should read the latest versions of the ETC Securities Documentation and the FCA ETC Securities Documentation before investing and should refer to the section of the Base Prospectuses entitled 'Risk Factors' for further details of risks associated with an investment in the ETCs. Any decision to invest should be based on the information contained in the ETC Securities Documentation and the FCA ETC Securities Documentation.

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