



ICE Carbon Futures Index Family

This is the era of Carbonomics - attributing a value to the externality of pollution. Investor demand and climate neutrality goals are shaping the latest 'energy transition' which involves a long-term shift in the energy mix to a net-zero-carbon economy.

Carbon pricing is no longer the sole domain of companies exposed to mandatory carbon cap & trade programs. Every company across the globe must now integrate carbon pricing into their business models to measure assets and liabilities.

Access to an accurate, transparent, and market-based carbon price is therefore integral to benchmarking carbon pricing assumptions, allocating capital and transferring risk.

Carbon markets allow compliance entities to meet regulatory obligations and manage their exposure to carbon pricing. Carbon has become a liquid and investable asset class providing a hedging tool for "transition risk" and anchor price for voluntary markets, boosting ESG ratings as well as hedging against inflation risk and generating higher uncorrelated absolute returns.

The ICE Carbon Futures Indices are derived from ICE's quoted carbon markets which account for ~95% of global exchange traded volumes - sitting at the top of the fair value hierarchy and providing the most precise measure of value.

Underlying constituents

The ICE Carbon Futures Index Family is made up of pricing from the three most actively traded carbon markets in the world: the European Union Emissions Trading Scheme (EU ETS), which started in 2005, the Western Climate Initiative (California Cap and Trade program), which started in 2013, and the regional Greenhouse Gas Initiative (RGGI), which was established in 2009.

Together these markets represent some of the largest regional economies in the world, and the secondary futures market for those programs predominantly trade on ICE's futures markets.

| | EU ETS | WCI | RGGI |
|--|---|--|---------------------|
| 2021 cap in number of allowances | 1,610M (excluding MSR) | 375M (CA+QC) | 119.8M (unadjusted) |
| Scope (% emissions covered by scheme) | Power sector, industry, aviation (~45%) | Power sector, industry, distributed natural gas and fuels (~85%) | Power sector (~19%) |
| Notional value traded at ICE in 2020 | 308BN EUR | 30BN USD | 1.5BN USD |

Key information

The ICE Global Carbon Futures Indices measure the performance of a long-only basket of ICE EUA Futures, ICE California Carbon Allowance Futures Contracts, and/or ICE Regional Greenhouse Gas Initiative Futures Contracts.

The indices are available for use by passive products such as ETFs and index funds, as performance benchmarks for actively managed funds, and as market indicators for carbon pricing.

Index universe

| Index Name | Excess Return | Total Return | Spot Return | Rules |
|---------------------------------|---------------|--------------|-------------|-----------------------------|
| ICE Global Carbon Futures Index | ICECRBN | ICECRBNT | ICECRBNS | Methodology |
| ICE EUA Carbon Futures Index | ICEEUA | ICEEUAT | ICEEUAS | Methodology |
| ICE CCA Carbon Futures Index | ICECCA | ICECCAT | ICECCAS | Methodology |
| ICE RGGI Carbon Futures Index | ICERGGI | ICERGGIT | ICERGGIS | Methodology |

Index launch

April 22, 2020

*Prior performance (12/31/2013 to 04/21/2020) is based upon back-tested index calculations.

Base date

December 31, 2013

Base value

100.00

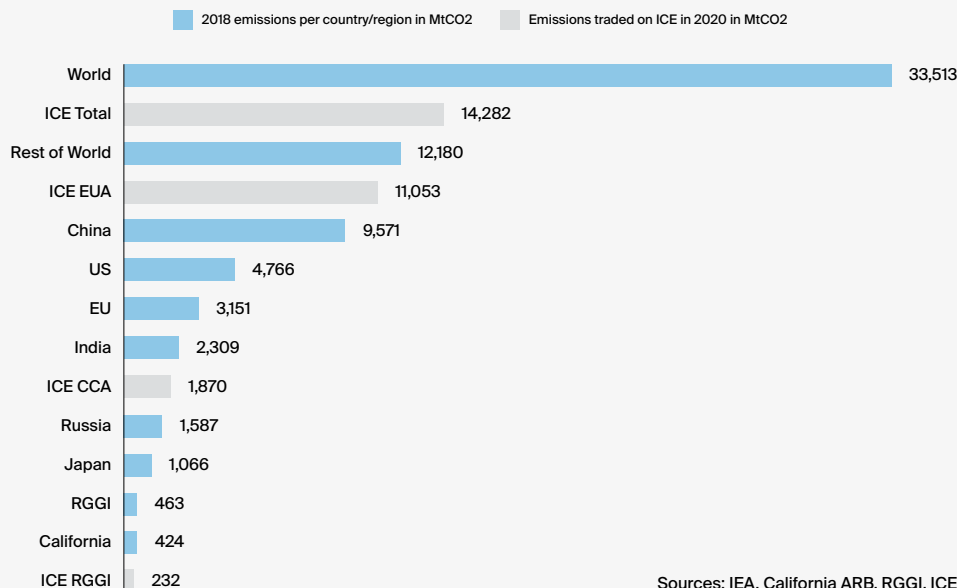
Index calculation

Real-time values published to the ICE Consolidated Feed from 1:30 AM to 7:15 PM ET

Index variants

Excess return
Total return
Spot return

Relative Size ICE Carbon Markets



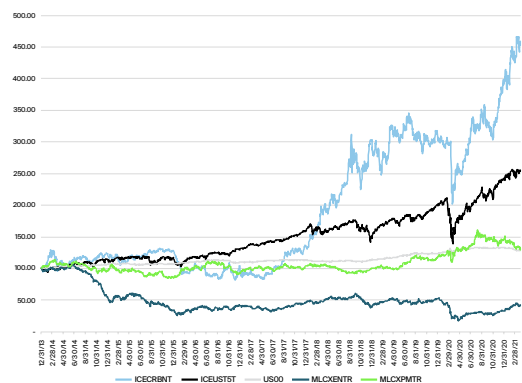
Sources: IEA, California ARB, RGGI, ICE

Historical performance

Annualized Return & Risk Statistics

| | Ann Ret | Ann Std Dev | Sharpe Ratio | Sortino Ratio |
|---|---------|-------------|--------------|---------------|
| ICECRBNT ICE Global Carbon Futures Index (TR) | 23.36 | 29.58 | 0.76 | 1.09 |
| ICEUST5T ICE U.S. 500 Index (TR) | 13.82 | 17.75 | 0.73 | 1.01 |
| US00 ICE BofA U.S. Broad Market Index (TR) | 3.51 | 3.42 | 0.80 | 1.10 |
| MLCXENTR ICE BofA Commodity index eXtra (Energy) (TR) | -11.51 | 33.51 | -0.37 | -0.50 |
| MLCXPMTTR ICE BofA Commodity index eXtra (Precious Metals) (TR) | 3.94 | 15.57 | 0.20 | 0.29 |

The ICE Global Carbon Futures Index has produced a higher return than indices representing U.S. equities, U.S. bonds, energy futures and precious metals futures. While it has a standard deviation (volatility) that is second highest to traditional energy, it still compares favorably to these other asset classes on the basis of risk/return metrics such as the Sharpe and Sortino Ratios.



The ICECRBNT has had an annualized return of 23.36% from 12/13/13 to 03/31/21, as compared to 13.82% for the ICEUST5T, 3.51% for the US00, -11.51% for the MLCXENTR and 3.94% for the MLCXPMTTR.

Index weighting

ICECRBN: Weights of EUA, CCA and RGGI contracts based on the total dollar volume of the current year expiry [current year vintage] December contract for the six-month period ending five business days prior to the first business day of September each year, subject to a cap of 60% for EUA and floor of 10% for RGGI

Roll methodology

The indices undertake their roll and rebalancing simultaneously over the three months of September, October, and November each year:

| Roll Period Month | Roll-In Contract | Roll-Out Contract |
|-------------------|------------------|-------------------|
| September | 33.33% | 66.67% |
| October | 66.67% | 33.33% |
| November | 100.00% | 0.00% |

| Rebalancing Month | Contract Rebalancing Weight Changes (EUA, CCA, EGGI) |
|-------------------|--|
| September | One-third of the difference between the sum of the current weights for the Roll in and Roll Out Contracts and the rebalancing Contract Weights |
| October | One-half of the remaining difference |
| November | 100% of the remaining difference |

Correlation Matrix

| | ICECRBNT | ICEUST5T | US00 | MLCXENTR | MLCXPMTTR |
|-----------|----------|----------|--------|----------|-----------|
| ICECRBNT | 1.00 | | | | |
| ICEUST5T | 0.19 | 1.00 | | | |
| US00 | (0.01) | (0.25) | 1.00 | | |
| MLCXENTR | 0.23 | 0.38 | (0.16) | 1.00 | |
| MLCXPMTTR | 0.07 | 0.01 | 0.32 | 0.09 | 1.00 |

The ICE Global Carbon Futures Index is uncorrelated to other major asset classes such as equities, fixed income, energy and precious metals.

Annual Returns

| YEAR | ICECRBNT | ICEUST5T | US00 | MLCXENTR | MLCXPMTTR |
|------|----------|----------|--------|----------|-----------|
| 2014 | 23.18 | 13.75 | 6.30 | (45.42) | (4.28) |
| 2015 | 3.49 | 1.60 | 0.63 | (37.52) | (11.08) |
| 2016 | (18.70) | 12.09 | 2.64 | 23.20 | 8.62 |
| 2017 | 31.65 | 22.26 | 3.63 | 11.30 | 12.20 |
| 2018 | 121.27 | (4.48) | 0.11 | (16.04) | (3.57) |
| 2019 | 0.75 | 31.92 | 8.93 | 32.14 | 17.73 |
| 2020 | 29.39 | 21.65 | 7.59 | (35.34) | 24.29 |
| 2021 | 16.49 | 5.29 | (3.58) | 22.84 | (9.60) |

The ICE Global Carbon Futures Index has had only one negative return year in 2016. Four of the last seven years have had returns of over 20%.

Performance Over Various Time Horizons

| | 1 Month | QTD | 1 Quarter | YTD | 1 Year | 3 Year | 5 Year | Since 12/31/2013 |
|-----------|---------|-------|-----------|---------|---------|---------|--------|------------------|
| ICECRBNT | 10.72 | 19.37 | 19.37 | 29.14 | 29.14 | 42.10 | 25.18 | 21.53 |
| ICEUST5T | 4.05 | 12.75 | 12.75 | 21.47 | 21.47 | 15.22 | 15.94 | 13.46 |
| US00 | 0.11 | 0.60 | 0.60 | 7.53 | 7.53 | 5.44 | 4.51 | 4.20 |
| MLCXENTR | 7.13 | 16.49 | 16.49 | (35.12) | (35.12) | (10.43) | (0.33) | (14.39) |
| MLCXPMTTR | 7.50 | 0.84 | 0.84 | 24.09 | 24.09 | 12.10 | 11.41 | 5.57 |

The ICE Global Carbon Futures Index has consistently outperformed other major asset classes over various time horizons.

The ICE Global Carbon Futures Index launched on 04/22/2020. Prior performance (12/31/2013 to 04/21/2020) is based upon backtested index calculations.

The ICE U.S. 500 Index launched on 10/24/2018. Prior performance (12/31/2013 to 10/23/2018) is based upon backtested index calculations.

Dates: 12/31/2013 to 03/31/2021.



Source: ICE Data Indices, LLC.

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