



Index publication | December 2023

# ICE Carbon Futures Index Family

**Dwijen Gandhi**, Senior Director  
ICE Data Services | ICE Data Indices

**ICE Index hotline:**  
New York: +770.999.4501  
London: +44.203.948.6501  
Email: [ICEIndices@ice.com](mailto:ICEIndices@ice.com)

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 four 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, the Regional Greenhouse Gas Initiative (RGGI), which was established in 2009, and the UK Emissions Trading Scheme (UK ETS), which was created in 2021.

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	UK ETS	WCI	RGGI
<b>2022 cap in number of allowances</b>	1,561M (excluding MSR)	152M	362M (CA+QC)	111M (unadjusted)
<b>Scope (% emissions covered by scheme)</b>	Power sector, industry, aviation (~39%)	Power sector, industry, aviation (~31%)	Power sector, industry, distributed natural gas and fuels (~76%)	Power sector (~10%)
<b>Notional value traded at ICE in 2021</b>	862.7BN EUR	19.7BN GBP	57.8BN USD	3.6BN 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, ICE Regional Greenhouse Gas Initiative Futures, and/or ICE UKA 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
ICE UKA Carbon Futures Index	ICEUKA	ICEUKAT	ICEUKAS	Methodology

## Index launch

April 22, 2020  
ICEUKA: January 31, 2022

## Base date

December 31, 2013  
ICEUKA: May 19, 2021

## Base value

100.00

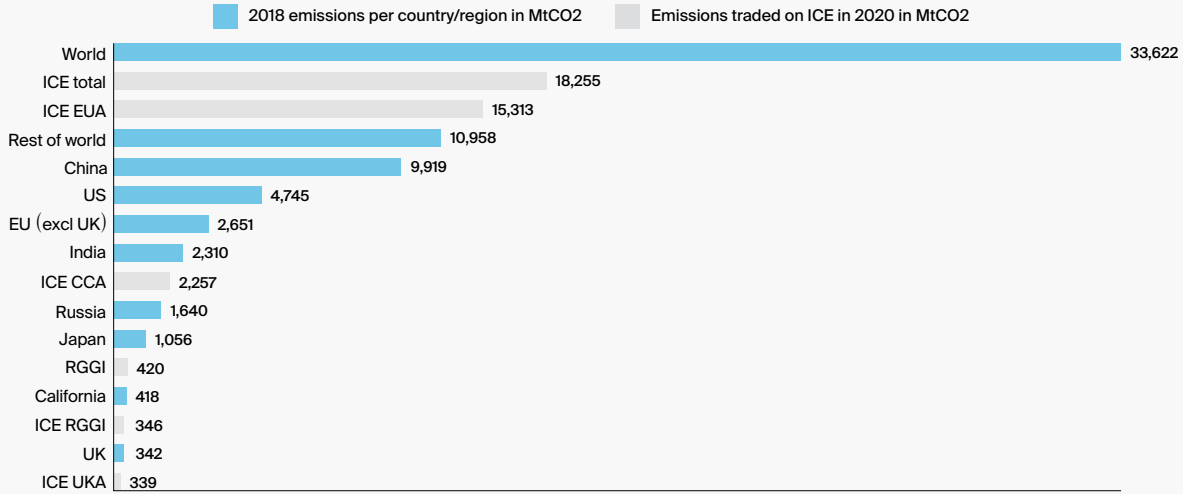
## Index calculation

Real-time values published to the ICE Consolidated Feed from 1:30 a.m. to 7:15 p.m. ET (Selected indices also published to the ICE Data Global Index Feed)

## Index variants

Excess return  
Total return  
Spot return  
Currency variants

### Relative size ICE carbon markets



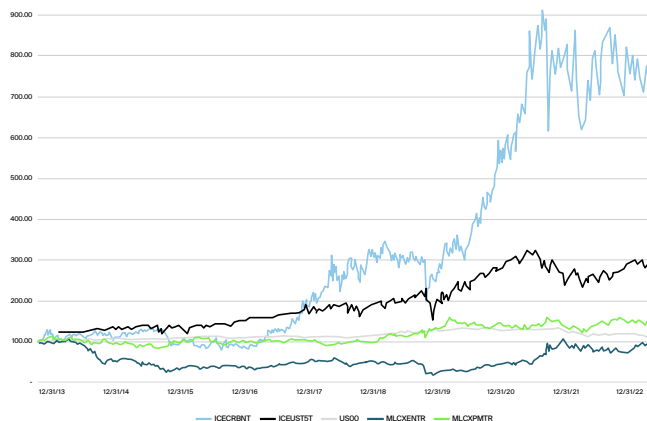
Sources: IEA, California ARB, RGGI, ICE

## Historical performance

### Risk & return

	Ann ret	Ann std dev	Sharpe ratio	Sortino ratio
<b>ICECRBNT</b> ICE Global Carbon Futures Index (TR)	22.60	30.38	0.70	1.00
<b>ICEUST5T</b> ICE U.S. 500 Index (TR)	11.75	17.94	0.59	0.82
<b>US00</b> ICE BofA U.S. Broad Market Index (TR)	1.37	4.42	0.03	0.05
<b>MLCXENTR</b> ICE BofA Commodity index eXtra (ENergy) (TR)	(1.96)	33.67	(0.09)	(0.13)
<b>MLCXPMT</b> ICE BofA Commodity index eXtra (Precious Metals) (TR)	4.27	15.41	0.20	0.28

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 28.27% from 12/31/13 to 6/30/22, as compared to 11.01% for the ICEUST5T, 1.92% for the US00, -1.18% for the MLCXENTR and 3.65% for the MLCXPMT.

### Index weighting

ICECRBN: Weights of EUA, CCA, RGGI and UKA 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 50% for EUA and floor of 5% for RGGI.

### Roll methodology

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

### UKA inclusion

ICE UKA Futures Contracts were added to the ICECRBN index via an extraordinary rebalancing that took place in January 2022.

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, RGGI, UKA)
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	(0.02)	(0.07)	1.00		
MLCXENTR	0.19	0.31	(0.13)	1.00	
MLCXPMTTR	0.07	0.03	0.32	0.12	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	6.27	(45.42)	(4.28)
2015	3.49	1.60	0.60	(37.52)	(11.08)
2016	(18.70)	12.09	2.61	23.20	8.62
2017	31.65	22.26	3.61	11.30	12.20
2018	121.27	(4.48)	0.06	(16.04)	(3.57)
2019	0.75	31.92	8.88	32.14	17.73
2020	29.39	21.65	7.56	(35.34)	24.29
2021	109.10	27.01	(1.58)	63.02	(4.95)
2022	(8.32)	(19.81)	(13.17)	46.14	(0.18)
2023	(0.44)	21.38	0.48	2.88	8.92

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

## Performance over various time horizons

	1 month	1 quarter	YTD	1 year	3 year	5 year	Since 12/31/2013
ICECRBNT	4.58	(2.20)	(0.44)	3.18	30.10	23.37	22.60
ICEUST5T	7.64	5.01	21.38	15.80	8.77	13.66	11.75
US00	2.89	0.00	0.48	0.34	(4.83)	0.51	1.37
MLCXENTR	(6.27)	(1.99)	2.88	1.17	37.95	13.46	(1.96)
MLCXPMTTR	1.72	3.92	8.92	14.40	2.93	9.67	4.27

The ICE Global Carbon Futures Index has consistently outperformed other major asset classes over longer 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 6/30/2022.



**For more information:** [ice.com/market-data/indices/commodity-indices/carbon-futures](https://ice.com/market-data/indices/commodity-indices/carbon-futures)

This presentation contains information that is confidential and proprietary property and/or trade secret of Intercontinental Exchange, Inc. and/or its affiliates, is not to be published, reproduced, copied, disclosed or used without the express written consent of Intercontinental Exchange, Inc. and/or its affiliates.

This presentation is provided for informational purposes only. The information contained herein is subject to change and does not constitute any form of warranty, representation, or undertaking. Nothing herein should in any way be deemed to alter the legal rights and obligations contained in agreements between Intercontinental Exchange, Inc. and/or any of its affiliates and their respective clients relating to any of the products or services described herein. Nothing herein is intended to constitute legal, tax, accounting, investment or other professional advice.

Intercontinental Exchange, Inc. and its affiliates, makes no warranties whatsoever, either express or implied, as to merchantability, fitness for a particular purpose, or any other matter. Without limiting the foregoing, Intercontinental Exchange, Inc. and its affiliates makes no representation or warranty that any data or information (including but not limited to evaluations) supplied to or by it are complete or free from errors, omissions, or defects.

ICE Data Services refers to a group of products and services offered by certain Intercontinental Exchange, Inc. (NYSE:ICE) companies and is the marketing name used for ICE Data Services, Inc. and its subsidiaries globally, including ICE Data Indices, LLC, ICE Data Pricing & Reference Data, LLC, Interactive Data (Europe) Ltd. and ICE Data Services Australia Pty Ltd. ICE Data Services is also the marketing name used for ICE Data Derivatives, Inc. and its subsidiaries globally and certain other data products and services offered by other affiliates of Intercontinental Exchange, Inc. (NYSE:ICE).

Trademarks of Intercontinental Exchange, Inc. and/or its affiliates include: Intercontinental Exchange, ICE, ICE block design, NYSE, ICE Data Services, ICE Data and New York Stock Exchange. Information regarding additional trademarks and intellectual property rights of Intercontinental Exchange, Inc. and/or its affiliates is located at [ice.com/terms-of-use](https://ice.com/terms-of-use). Other products, services, or company names mentioned herein are the property of, and may be the service mark or trademark of, their respective owners.