

Putting a price on carbon emissions.

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PUTTING A PRICE ON CARBON

Carbon pricing refers to a variety of methods that charge polluters for the damage their emissions cause to the surrounding environment. These costs can include damage to crops, health care costs from heat waves and droughts, loss of property due to flooding and sea level rise, and the aftermath of wildfires.



A price on carbon shifts the burden for the damage back to those responsible for it, and more importantly, those who are capable of mitigating it. Economists, governments, and businesses have acknowledged the fundamental role of carbon pricing in the transition to a zero carbon economy.

TYPES OF CARBON PRICING

Carbon pricing systems fall into two broad categories: voluntary and compliance. Voluntary carbon offset programs allow a firm to offset carbon to achieve internal objectives. Compliance offset programs are enforced by a governing body and are required in order to operate within a given region or industry. There are five methods currently being implemented to limit or trade carbon emissions.

A **carbon tax** refers to a fixed cost per ton of carbon, usually levied by the government either state or federal. While a carbon tax fixes the price of carbon, it leaves the final emissions volume unlimited. Each company is given the choice to pollute and accept the extra expense or reduce their footprint. Depending on the aggregate decision, the total carbon emitted under a carbon tax regime could be unchanged or greater than an unregulated landscape.

An **emissions trading system (ETS)** sets a cap on carbon emissions across a particular industry or region. This cap is denoted in tons of carbon (or GHG) emissions per year and allocated equally across all companies for free. Once the cap is in place, companies are given the option to reduce their emissions below their allotment and sell the additional carbon to their competitors. An ETS system creates supply and demand for carbon emissions, allowing a free market to dictate the price per ton. As a result, the price of carbon is not fixed but the overall emissions are. This also presents opportunities for the securitization of carbon, particularly on the futures markets. These opportunities available to investors will be described more in depth in another section.

An **offset mechanism** involves investment in a project (or project portfolio) that is actively reducing emissions. These projects perform functions like collecting livestock emissions for biomass fuel usage or conserving forest land. These projects generate carbon credits according to a specific accounting protocol and can sell those credits to polluting firms. An offset mechanism is one of the best methods for encouraging investment into green technology and sustainable innovation, but like a carbon tax does not cap the aggregate pollution within a given region or industry.

Results-based climate finance (RCBF) provides firms with capital/financing when they achieve a pre-agreed set of climate-related results. These results are often tied to the reduction of emissions or the development of specific low-emission technologies. Providers of RCBF include the World Bank's [Carbon Initiative for Development \(Ci-Dev\)](#) and [Transformative Carbon Asset Facility \(TCAF\)](#).

Internal carbon pricing is a metric used to influence investment decisions within a company. When a firm is considering a course of action, leadership and advisors will incorporate the cost of emissions into projected profitability and efficacy of a given project. Over 1,300 companies reported to the CDP that they are currently using an internal carbon price or plan to do so in the next two years. The carbon prices reported are highly variable, ranging from \$0.01/tCO₂e to \$909/tCO₂e. Internal carbon prices are most commonly used to manage the sustainability risks of a company.

CURRENT PROGRAMS

The three largest carbon reduction programs in place are the EU, CCA, and RGGI cap-and-trade systems. These programs only cover about 20% of the total carbon emissions of the United States and the European Union, but mark a starting point for carbon trading and government involvement in emission control.

EU ETS

The EU Emissions Trading System operates across all EU countries plus Iceland and Norway. EU ETS covers about 40% of the EU's GHG emissions, particularly in the power and airline sectors.

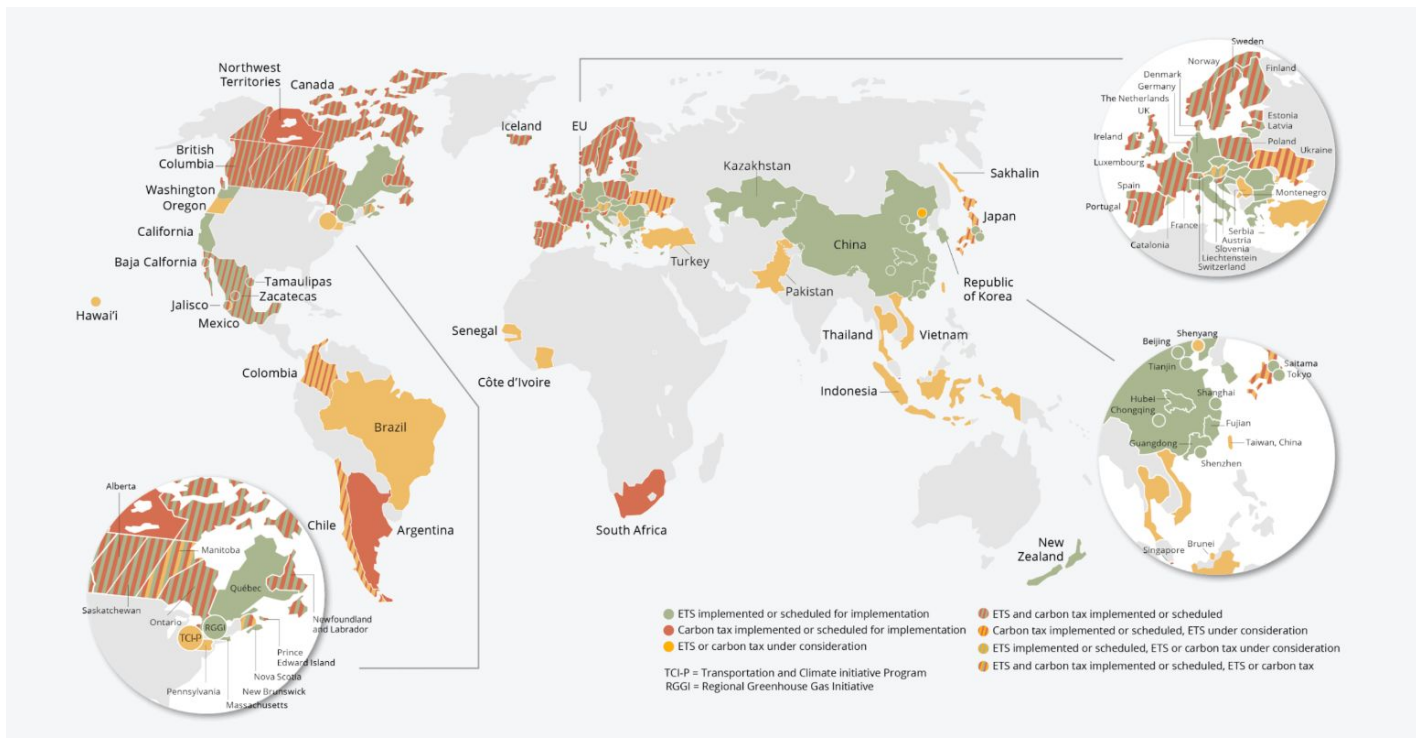
CCA

The California Carbon Allowance caps emissions throughout California. Fewer allowances are issued each year, creating economic incentive to reduce emissions year-over-year.

RGGI

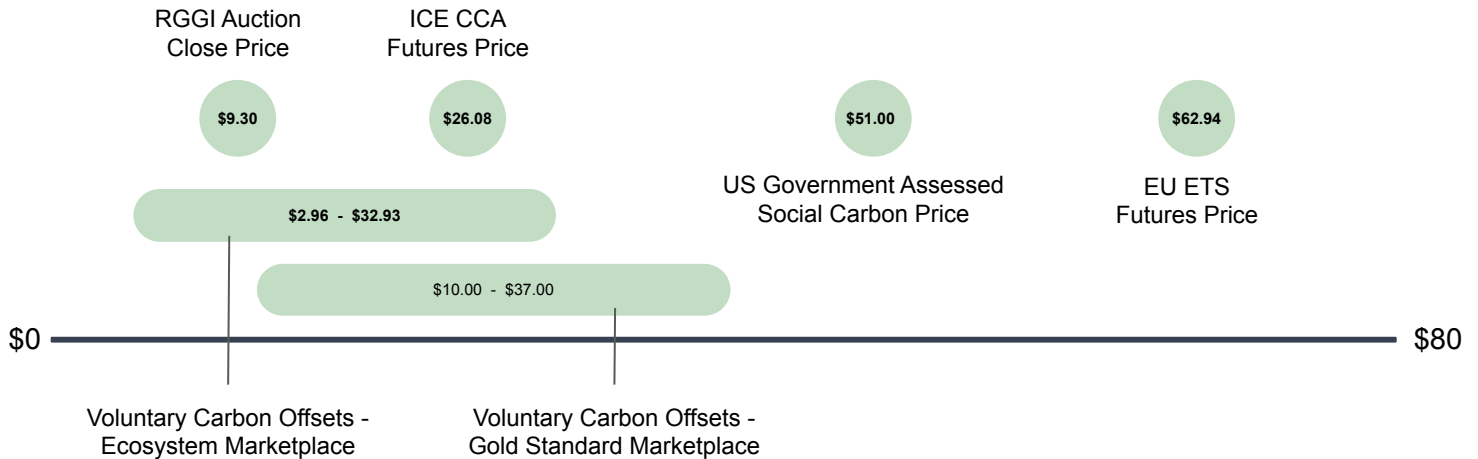
The Regional Greenhouse Gas Initiative is a cooperative, market-based effort among 11 New England states to cap and reduce emissions from the power sector. This is the first cap-and-invest regional initiative in the United States.

As governments acknowledge the value of carbon control as a risk and damage reduction strategy, more programs are being initiated across the globe. In April, 2021 US President Joe Biden announced a new target for reducing US emissions by 50-52% from 2005 levels: 2030. Carbon control objectives have been echoed in the EU (50% reduction by 2030, carbon-neutral by 2050), and on a global scale (United Nations 2050 carbon neutrality pledge).



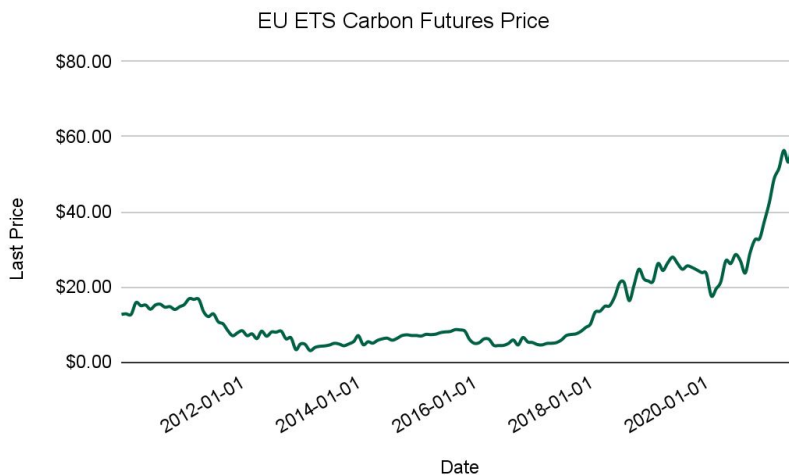
THE PRICE OF CARBON

There is no singular price of carbon, as it varies by program and project. The most commonly utilized prices are those that can be traded, specifically the EU ETS and CCA futures prices. These are the prices that offer opportunities not only to direct participants of the cap-and-trade programs, but also to individual commodity investors.



CARBON PRICE RISK

Carbon price risk is the risk that paying to offset carbon will hurt the company's bottom line. For example, Unilever, Plc emitted 626,600 metric tonnes of CO₂ in 2019 (Bloomberg). Assuming the EU ETS carbon price, this represents a \$39,438,200 financial obligation. For many companies, this barely registers. For Unilever this represents a reduction in earnings per share of 1.5 cents (about -0.6%). The risk is that as more companies begin to compete for the same carbon offset resources the prices will rise accordingly.



This risk has been reinforced by the recent rise in carbon prices across the board, with the EU ETS carbon futures doubling in price between 2020 and 2021.

These prices only represent the market-assigned cost of carbon, they do not consider the exterior costs such as carbon costs being passed on by suppliers, the cost of reduction, changes in revenue due to shifts in market demand, and natural disasters.

CONSIDERATIONS FOR EQUITY INVESTORS AND PORTFOLIO MANAGERS

In aggregate, carbon emissions represent a financial risk that is not often considered when identifying over or undervalued assets. Accordingly, these risks are not priced into even the most liquid capital markets. As with any mispricing, opportunity exists for analysts to identify companies that are outperforming their peers in terms of emissions management and efficiency. Carbon price risk may not tilt the scale in the near-term, but will play a large role in the financial performance of companies in the ten- and fifteen-year time horizons. Adjusting for carbon price risk in a valuation workflow is discussed in the following pages.

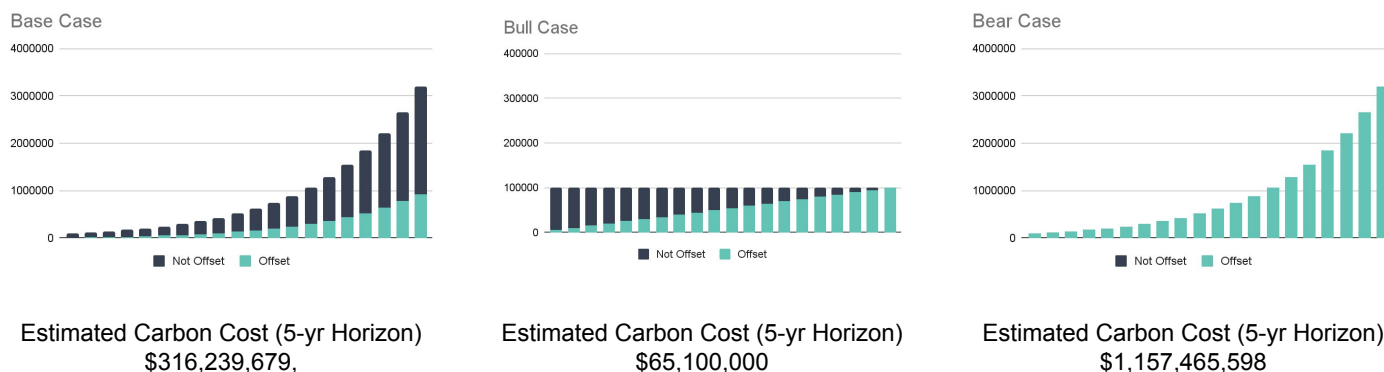
INTEGRATING CARBON RISK INTO VALUATION

There are several ways to integrate carbon price risk into a traditional valuation workflow.

By considering the **income effect**, an analyst can adjust EBITDA, Net Income, EPS, and dividends to reflect the additional cost of offsetting carbon emissions. This method involves several new forecast elements, including the cost of carbon per ton and the company's emissions rate.

In our methodology, we forecast using a base-bull-bear framework. In the base case, we assume the company continues to increase emissions at their five-year average rate while stepping up emissions offsets in line with their stated net-zero target. For the bull case, we assume the company does not increase emissions while increasing offsets in line with their net-zero target. For the bear case, we assume the company increases their carbon emissions at their 5-year average rate while offsetting 100% of the emissions in each year.

We project carbon prices according to the average annualized returns of two broad benchmarks: the ICE Global Carbon Futures Index and the IHS Markit Global Carbon Index. Over the trailing five years these benchmarks have appreciated 47.13% and 50.01% per year, respectively.



An analyst may also consider the firm's **carbon reliance** to understand the difficulties the firm will be faced with as it reduces emissions to achieve compliance and internal objectives. This method involves mapping out the company's supply chain and identifying points of either high emissions or lack of flexibility.

For example, Apple has a long-running engagement with Saudi Basic Industries Corp (SABIC), which supplies Apple with resins, polyester, and metals used in the production of iPhones and other electronics. While Apple directly emits about 50,000 tons of CO₂, SABIC emits 55 million tons of carbon dioxide per year. Offsetting SABIC's emissions would cost upwards of \$3.4 billion, about 22% of the company's annual net income.

Because of Apple's reliance on pollutive suppliers, the true cost of achieving net-zero emissions is much higher than may be represented by market-assigned carbon prices.

Finally, an analyst may consider the **net benefits of under-emitting**. These opportunities are particularly prevalent in cap-and-trade programs where a company that is producing below their allocation can sell their emissions to competitors. This will have a positive impact on the company's financial performance, as well as having the mirror effect on the firm's competitors. This can be included in a competitive moat or competitive positioning analysis. The same analysis can be used to evaluate a firm's efficiency, utilizing ratios such as GHG Emissions per Sales or EBITDA alongside traditional efficiency metrics.

OPPORTUNITIES FOR INVESTORS

The rise of ESG in equity and credit markets provides opportunities for investors to hedge their portfolios against risks like the ones mentioned in this research primer. Information and data related to company emissions are also becoming much more prevalent. This market shift has created a dual mandate for portfolio managers and individual investors: lower the aggregate emissions across an investment portfolio in order to **1) reduce the risk of the portfolio** and **2) improve performance**.

Companies that comfortably navigate the transition to a low- or zero-carbon economy will not only reduce their financial risk in the near-term, they will also achieve greater market share and reinforce their competitive moat. From a portfolio management perspective, these companies present an opportunity for both short-term alpha and enduring outperformance.

HOSKIN CAPITAL'S IMPACT

By identifying companies with low emissions and high emissions efficiency, our research framework not only protects our investors from inherent market risks, it also supports companies that are actively progressing towards a sustainable future. Our clients invest confidently knowing their money is being utilized not just for their own benefit, but for the world as a whole.

If you have any questions about our research methodology, security selection, or portfolio construction processes, don't hesitate to reach out.



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