

TalkingPoints

Internal Carbon Pricing: Stress Testing Business for Climate Change Risk



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Average carbon prices could increase more than sevenfold to USD 120 per metric ton by 2030, as regulations are introduced to achieve the Paris Agreement goal to limit global warming to 2°C.¹ Leading companies are using internal carbon prices to gain insight into how globally diverse operations could be affected by taxes and emissions trading—and identify opportunities to capitalize on the low-carbon transition.

What is an internal carbon price?

An internal carbon price is a monetary value assigned to greenhouse gas emissions as a means of accounting for the future costs of climate change regulation or a company's climate action ambitions. Some companies apply them at a regional level to evaluate investment decisions, new product development, and growth strategies. Others have targeted their internal carbon prices at a level that will drive energy efficiency and investment, or to raise internal funds for investment in climate change initiatives. However the price is set, an internal carbon price can help businesses mitigate risk, hedge against future energy price increases, and better align with business opportunities in the transition to a low-carbon economy.

What are the benefits of internal carbon pricing?

Many companies already disclose carbon emissions from their operations and purchased electricity, as well as value chain emissions from supplies of raw materials or use of products. Some also commit to science-based carbon targets aimed at reducing emissions in line with 2°C climate change scenarios. By integrating internal carbon pricing into investment decisions and new product design, companies can get ahead of carbon emission regulations and adapt to business in a low-carbon world, showing leadership to policy makers, investors, and customers.

Already, nearly 1,000 companies² say they use an internal carbon price or plan to do so in the next two years. Companies that have already adopted an internal carbon price include Microsoft, Unilever, Swire, Mahindra, and Acciona.

¹ IEA and IRENA (2017); Trucost Analysis.

² CDP, <https://www.cdp.net/en/campaigns/commit-to-action/price-on-carbon>.

For instance, Acciona's internal carbon price has helped implement efficiency measures and direct investment in low-carbon innovation and renewable energy. It also led the company to introduce science-based carbon reduction

targets. Acciona's CEO, Jose Manuel Entrecanales Domecq, says carbon pricing is "an outstanding tool to boost decarbonization and support the transition to a zero-carbon economy."³

Implementing an internal carbon price for major projects has led Unilever to pilot the reduction of capital expenditure budgets by an amount determined by the business's carbon emissions. The budget reductions are being used to create an internal "clean-tech" fund⁴ to finance carbon-reducing investment at its sites.

How do you design an internal carbon pricing strategy?

Trucost recommends that companies align their internal carbon pricing strategy with the Paris Agreement goal of limiting climate change to less than 2°C. Despite uncertainty over the policies required to get there, the goal itself—defined and supported by climate science—remains clear and reflects the long-term ambition of the 195 countries that signed the agreement.

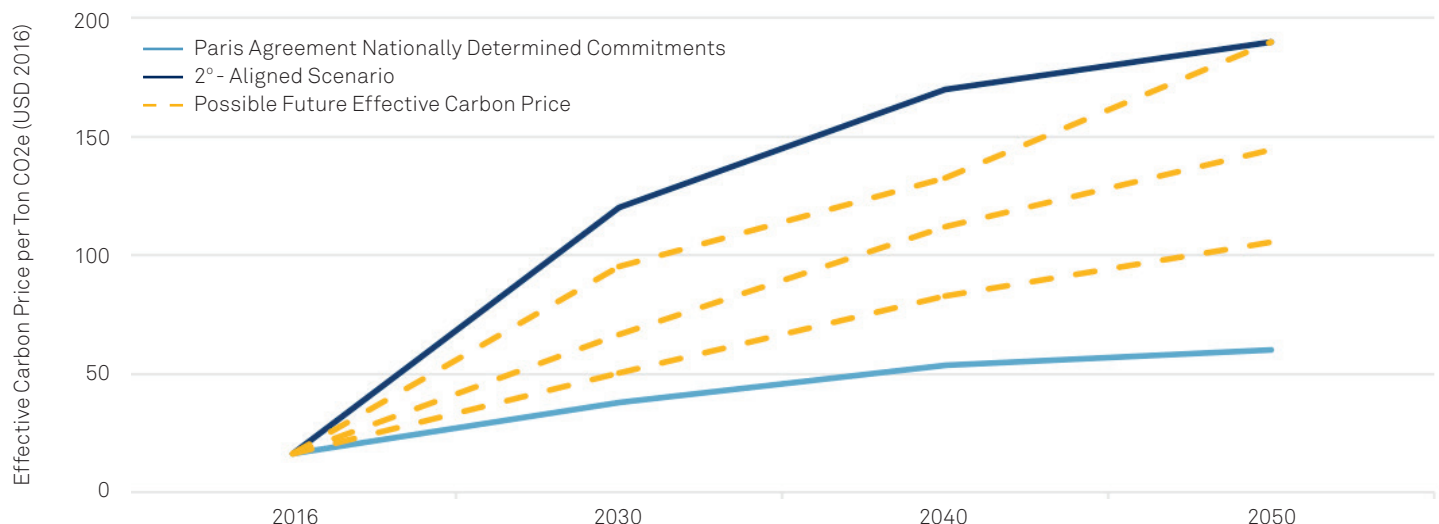
Increasing carbon regulation through carbon taxes, emissions trading schemes, or fossil fuel taxes is expected to feature prominently in the global effort to address climate change in the coming decades, with carbon prices already implemented in 40 countries and 20 cities and regions.⁵ The implication for business is that these regulations are likely to drive up the cost of fossil-fuel-based energy and carbon-intensive raw materials, increasing operating costs and reducing profit margins. In addition, revenue growth may be constrained for companies that

sell energy-intensive products when competitors have low-energy alternatives. Businesses can mitigate this financial risk and enhance their ability to grow by adopting an internal carbon pricing strategy that reflects anticipated medium-term changes in regulation.

The first step in designing an internal carbon pricing strategy is to understand the greenhouse gas emissions profile of the business—what is the total emissions footprint and where in the value chain do the majority of emissions occur—and determine emissions reduction targets. The next step is to set the business objectives for an internal carbon price, such as to mitigate regulatory risk or to raise funds for low-carbon investment, and select a carbon pricing methodology that matches this objective and the company's emissions profile. Lastly, companies should account for uncertainty by stress testing their assumptions using scenario analyses that reflect the likely range of carbon reduction pathways toward the 2°C goal based on different policy implementation rates.

Exhibit 1 presents the forecast effective carbon prices (the cumulative effect of regulations such as carbon taxes and emissions trading schemes) in countries that are part of the Organisation for Economic Co-operation and Development under different climate change policy scenarios. Forecasts range from a threefold increase in regulated carbon prices based on full implementation of the existing Paris Agreement commitments (light blue line) to a sevenfold increase, assuming policies needed to achieve the 2°C goal are implemented (navy line). A range of other possibilities exists between these extremes, as represented by the yellow lines.

Exhibit 1: Carbon Price Scenario Analysis to Meet 2°C Paris Agreement Target



Source: OECD & IEA (2017); Trucost Analysis. Data as of June 2017. Chart is provided for illustrative purposes.

³ Carbon Pricing Leadership Coalition, <http://pubdocs.worldbank.org/en/183521492529539277/WBG-CPLC-2017-Leadership-Report-DIGITAL-Single-Pages.pdf>.

⁴ Ibid.

⁵ The World Bank, <http://www.worldbank.org/en/programs/pricing-carbon>.

Exhibit 2: The Paris Agreement

Essential Elements

The Paris Agreement's central aim is to strengthen the global response to the threat of climate change by keeping the global temperature rise this century well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5°C. Additionally, the agreement aims to strengthen the ability of countries to deal with the impacts of climate change. To reach these ambitious goals, appropriate financial flows, a new technology framework and an enhanced capacity building framework will be put in place, thus supporting action by developing countries and the most vulnerable countries, in line with their own national objectives.⁷

Nationally Determined Contributions

The Paris Agreement requires all parties to put forward their best efforts through nationally determined contributions (NDCs) and to strengthen these efforts in the years ahead. This includes requirements that all parties report regularly on their emissions and on their implementation efforts.⁸

Source: United Nations Framework Convention on Climate Change, http://unfccc.int/paris_agreement/items/9485.php.

How does internal carbon pricing help companies meet the expectations of financial markets?

The Financial Stability Board's Task Force on Climate-related Financial Disclosures⁶ recommends that companies conduct forward-looking assessments on the potential business, strategic, and financial implications of climate change and disclose the results in annual reports and accounts. In particular, it calls for companies to conduct scenario analyses to stress test their businesses against different carbon-reduction pathways that emerge as countries introduce regulations designed to achieve the Paris Agreement's 2°C goal. Internal carbon pricing can provide quantitative data to support these modelling exercises.

Disclosing the results enables investors to understand in financial terms the risks and opportunities that can affect shareholder value and informs investment decisions. Companies stand to benefit by accessing finance aimed at those seeking to develop low-carbon, resource-efficient business models. New investments focused on renewable energy generation and technology were USD 241.6 billion in 2016,⁷ and the total value of green bonds offered to raise funds to support projects that have positive environmental benefits was valued at USD 81 billion in 2016.⁸

There is clear shift away from businesses with environmentally harmful business activities. The amount of assets under management that investors have committed to divest from fossil-fuel companies⁹ stood at USD 5.45 trillion as of June 2017. Over 700 institutions and 58,000 individuals worldwide have committed to divesting from fossil fuels, motivated by both ethical and financial concerns.

Exhibit 3: Key Carbon Pricing Policies

- The European Union is clear on its intention to maintain its Emissions Trading System (ETS) as the centrepiece of EU climate policy.
- The People's Republic of China announced its plans for a national ETS to start in 2017.
- Since January 2015, the California and Québec markets have been linked, and the two have held 12 joint carbon auctions to date. Ontario has signalled its intent to join this carbon market "club" and Manitoba, Washington, and Oregon are also exploring the feasibility of joining.
- Korea launched a national ETS in 2015, becoming the first nation-wide trading programme in Asia.
- Japan is pursuing a set of bilateral trading links through its Joint Crediting Mechanism.⁹
- Source: Environmental Defense Fund and The International Emissions Trading Association (2016).

Source: Environmental Defense Fund and The International Emissions Trading Association (2016).

⁶ <https://www.fsb-tcfd.org/publications/recommendations-report/>.

⁷ Frankfurt School of Finance & Management, <http://fs-unep-centre.org/sites/default/files/publications/globaltrendsrenewableenergyinvestment2017.pdf>.

⁸ Climate Bonds Initiative, <https://www.climatebonds.net/>.

⁹ Fossil Free, <https://gofossilfree.org/commitments/>.

What action could companies take?

Companies with multinational operations and diverse activities may want to work toward implementing an internal carbon price strategy and use these insights to understand what future carbon regulation scenarios could mean for cash flow, operating margins, and profits in different regions, highlighting those most at risk. Companies could then conduct more detailed analyses of carbon risks in those countries to build a business case for action.

Once companies have developed an understanding of the implications of carbon pricing across activities, regions, and projects, they may consider ways to reduce exposure to the risk of increasing carbon costs and identify opportunities to adopt more sustainable products and business models, renewable energy, and green technologies.

Sustainability managers can use the insights provided by internal carbon pricing to build a business case for action, bringing together teams from finance, regulatory affairs, and facilities management. Recommended actions include:

- Stress testing the overall business model and individual business activities for exposure to increasing carbon costs;
- Incorporating the internal carbon price in project pay-back calculations to make the case for capital investments in renewable energy or energy efficiency projects;
- Analyzing how sales of energy-intensive products could be constrained and where new energy-efficient products can create competitive opportunities;
- Disclosing the use of an internal carbon price to investors to demonstrate effective governance and management of climate risks; and
- Engaging with customers on prioritizing energy efficiency improvements or low-carbon infrastructure project design.

⁶ <https://www.fsb-tcfd.org/publications/recommendations-report/>.

⁷ Frankfurt School of Finance & Management, <http://fs-unep-centre.org/sites/default/files/publications/globaltrendsrenewableenergyinvestment2017.pdf>.

⁸ Climate Bonds Initiative, <https://www.climatebonds.net/>.

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