Carbon Pricing: CDP Disclosure Best Practice

CDP Climate Change Questionnaire

Contents

Version

Version	Revision date	Revision summary
1.0	April 5, 2018	First published version
2.0	March 8, 2019	Minor updates for 2019, including: • Updated statistical information • Added a list of current emissions trading schemes (see C11.1b) • Added a list of current tax systems (see C11.1c)
2.1	April 7, 2020	Updated C11.1b and C11.1c question text and list of current ETS's and carbon tax systems to align with the 2020 CDP climate change questionnaire.
2.2	January 7, 2021	Updated lists of implemented ETS and carbon tax systems, and other minor revisions
3.0	January 21, 2022	Updated lists of implemented ETS and carbon tax systems, edits to align with updated TCFD recommendations, and other minor revisions
4.0	January 17, 2023	Updated lists of implemented ETS and carbon tax systems, edits to reflect changes to questions in the 2023 CDP questionnaire, and other minor revisions

Context

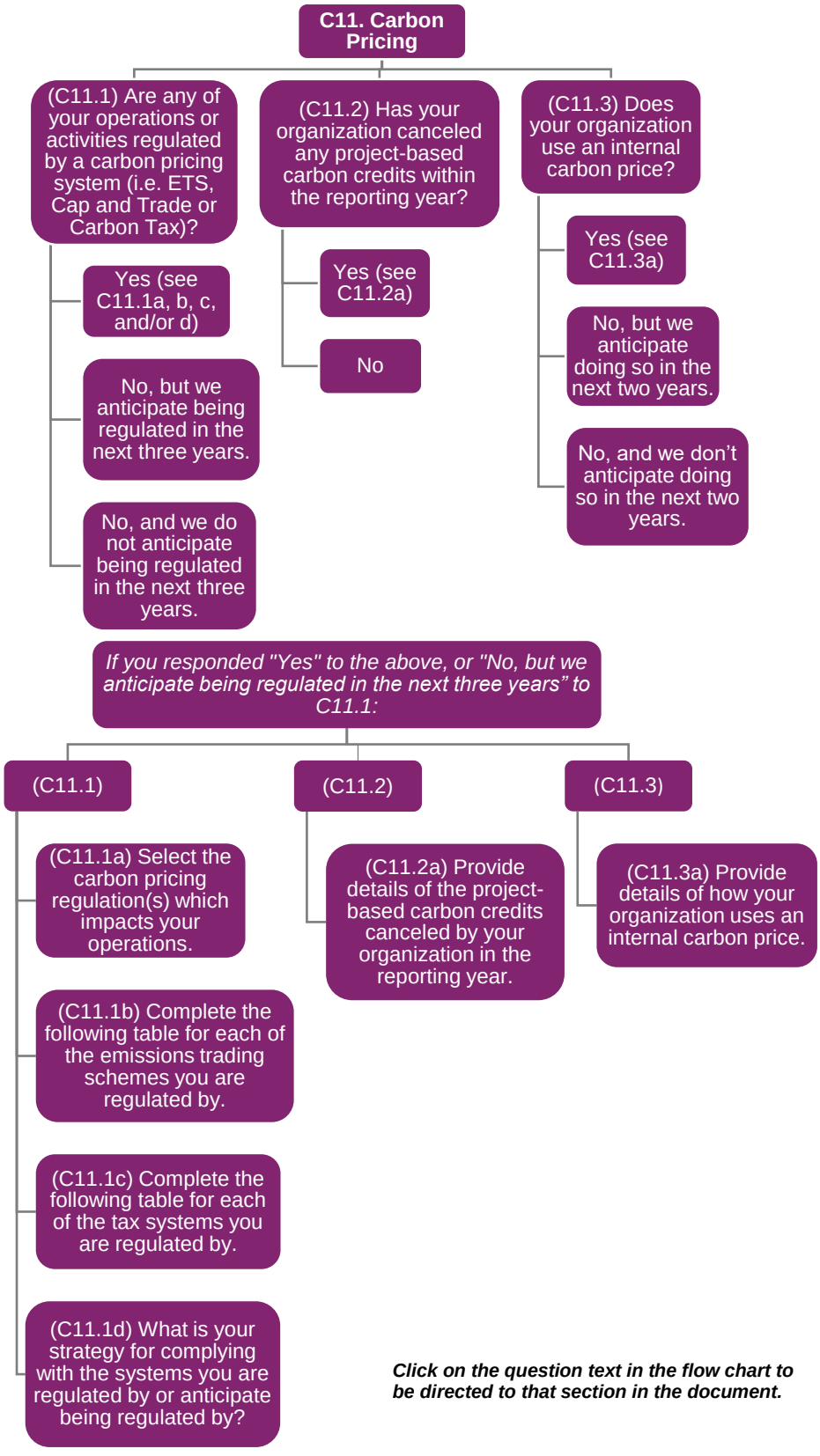
Carbon pricing is moving up the agenda for investors as a material risk that companies must assess, disclose, and manage. This is also the message in the recommendations published by the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD). A model developed by Schroders estimates that "almost half of listed global companies would face a rise or fall of more than 20% in earnings if carbon prices rose to $100 a tonne."

Companies across various regions and sectors have identified internal carbon pricing – "a monetary value on GHG emissions an organization uses internally to guide its decision-making process"[1] – as a useful approach to assessing and managing carbon-related risks and opportunities that may arise from the transition to a low-carbon economy. In 2022, over 3600 companies disclosed to CDP that they use an internal carbon price or anticipate doing so in the next two years.

For many organizations, the most significant consequences of climate-related risks will emerge over time, and their magnitude is uncertain. Assigning a monetary value to the cost of carbon emissions helps companies monitor and adapt their strategies and financial planning to real-time and potential future shifts in the external market. As shifting regulatory and market dynamics influence the present and future cost of carbon, investors are demanding more consistent disclosure around a company's approach to embedding this potential risk within their business decisions.

Since 2018, CDP climate change questionnaire has had a module dedicated to carbon pricing – requesting companies to disclose their exposure to regulations that put a price on carbon and the company's risk management strategy against such regulations. For companies applying an internal carbon price for other reasons, there is also space to disclose these. This technical note provides additional guidance for companies to understand and effectively respond to CDP's carbon pricing questions (C11.1, C11.2, and C11.3).

[1] Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures, The Taskforce on Climate-related Financial Disclosures, October 2021, page 83.

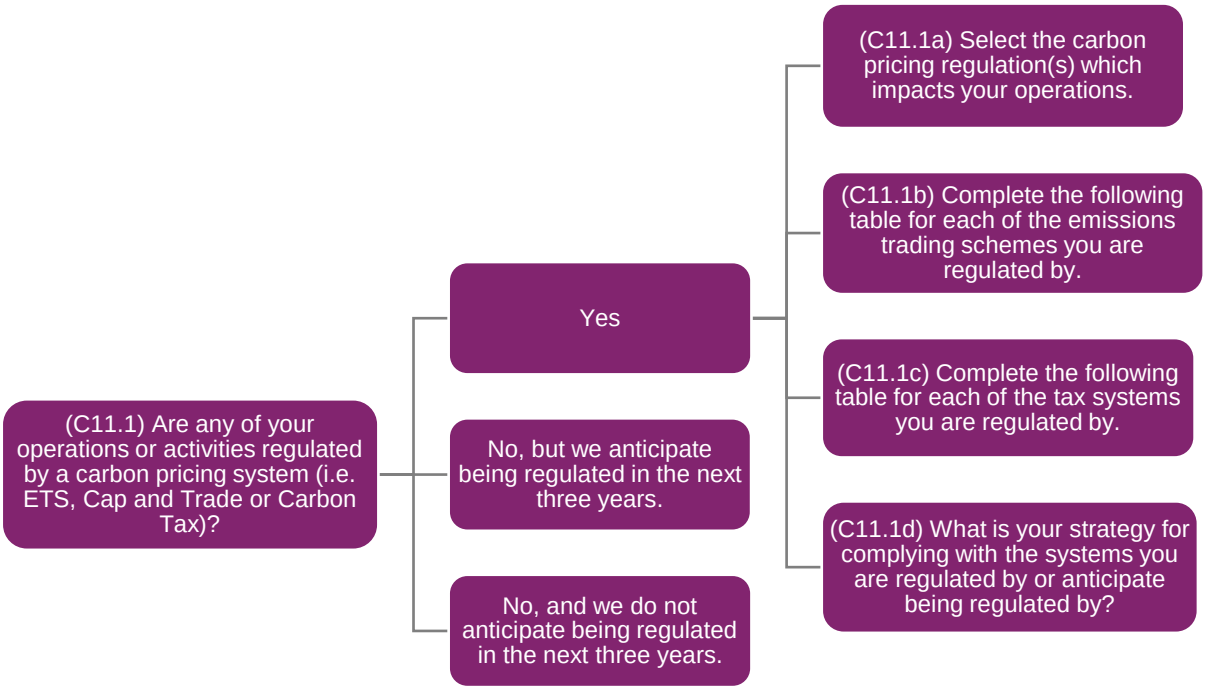


Click on the question text in the flow chart to be directed to that section in the document.

Carbon pricing systems

CDP requests companies subject to mandatory carbon pricing regulations to report so. This question has evolved to include whether companies are currently regulated by a carbon pricing system – including carbon markets or taxation – or whether they expect to be regulated in the future. Companies responding with “yes” will be further prompted to identify the systems they are regulated by and to provide additional details about their exposure to these systems.

This information will enable investors to consistently track and analyze an organization’s current and expected exposure to carbon pricing regulations, and start to quantify their associated costs. CDP aims to encourage unregulated companies to consider potential future exposure.



C11.1 Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap and Trade or Carbon Tax)?

Carbon pricing has emerged as a key policy mechanism to drive greenhouse gas emissions reductions and mitigate the dangerous impacts of climate change. Policies primarily manifest in one of two ways, or in some countries and regions in both ways. An **emissions trading scheme**, also known as a cap and trade system, is a market-based allowance system in which participants can buy and sell a set amount of allowances based on their emissions levels. Low emitters will have allowances left over for sale, which higher emitters can buy to offset their own emissions – operating in a demand and supply scenario. A **carbon tax** attaches a fee to carbon emissions.

As of 2022, carbon pricing policies exist in 47 national jurisdictions and 36 subnational jurisdictions. These initiatives cover 11.86 GtCO2e, representing 23.17% of global GHG emissions[2].

[2] Source: https://carbonpricingdashboard.worldbank.org, accessed 22 November 2022

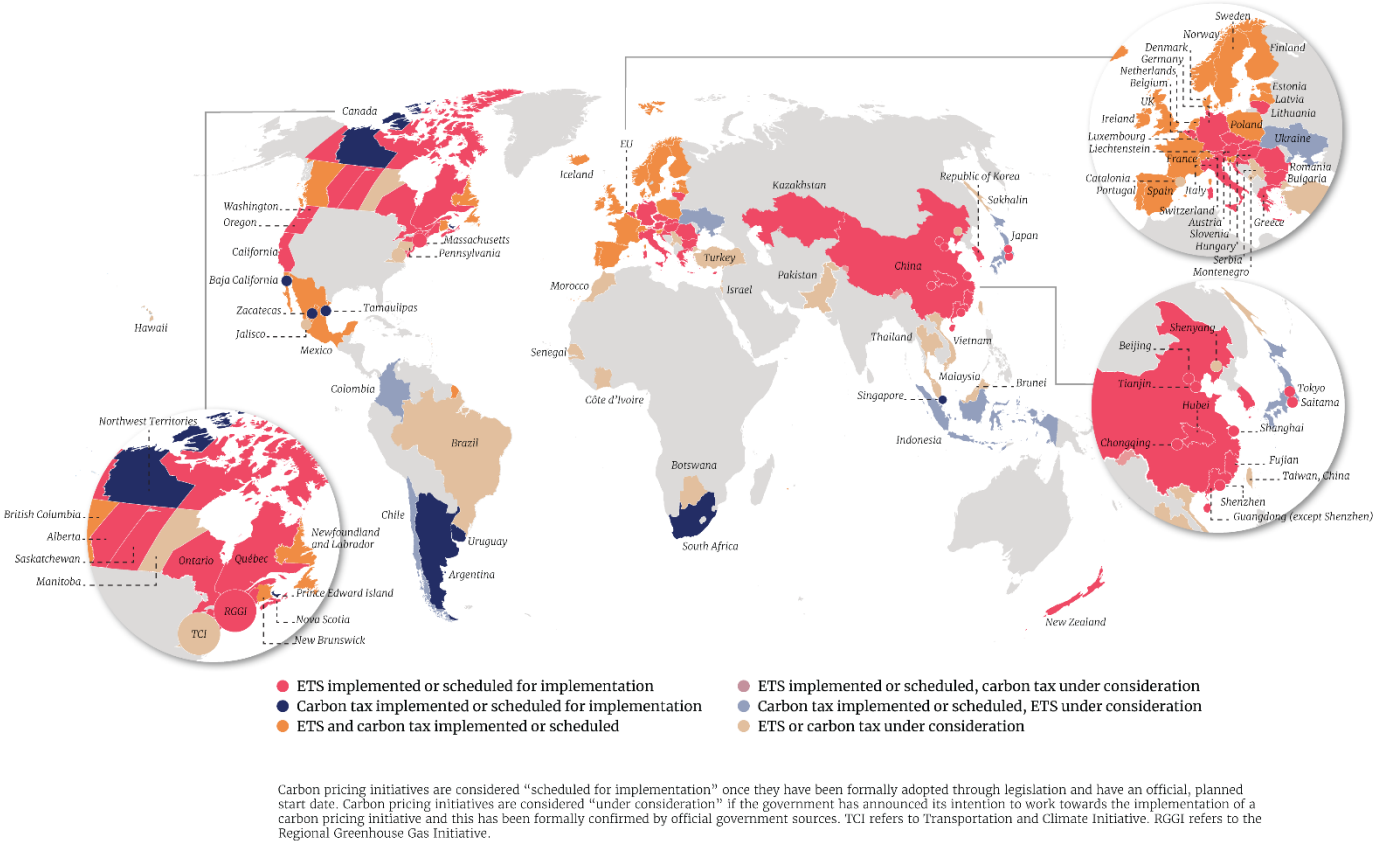


Figure 1. Carbon pricing initiatives implemented, scheduled for implementation and under consideration. The large circles represent cooperation initiatives on carbon pricing between subnational jurisdictions. The small circles represent carbon pricing initiatives in cities. Source: "World Bank. 2022. State and Trends of Carbon Pricing 2022. Washington, DC: World Bank. © World Bank. https://openknowledge.worldbank.org/handle/10986/35620 License: CC BY 3.0 IGO."

As the leading researcher/tracker of global carbon pricing mechanisms, please see the World Bank's Carbon Pricing Dashboard for more detailed information about existing and emerging carbon pricing regulations.

C11.1a Carbon pricing regulations

This question prompts companies to select the carbon pricing regulation(s), ETS and/or tax, that affect their operations. Note that this is not limited to the country in which your company is incorporated and should include all global regulations to which your operations are subject.

This list of carbon pricing regulations is taken from the World Bank's annual publication, the State and Trends of Carbon Pricing and the accompanying Carbon Pricing Dashboard. If you cannot find a system you would like to reference, please select 'Other, please specify' and provide the name and location of the regulation.

C11.1b Emissions trading systems

Companies are prompted to include details of their compliance in each emissions trading system selected in the previous question, such as the percentage of Scope 1 and Scope 2 emissions covered, allowances allocated and/or purchased, facilities ownership status, etc. You can make multiple entries to enter data for individual schemes and/or individual years. Please note that the period for which data is supplied should overlap with the reporting year.

This question requests details of ownership regarding the facilities subject to the scheme identified. Although some emissions trading schemes may apply solely to the operators of facilities, the financial position of facility owners is also affected indirectly by the scheme. This question therefore

applies to both owners and operators of facilities covered by trading schemes. Even if your company does not wholly own facilities, please give the total number of emissions and allowance. You can find an example of an emissions trading scheme below:

> The **European Union ETS (2005)** is currently the largest and most comprehensive ETS in place. It covers medium and large emitters from the most energy-intensive sectors (e.g. power generation, cement) and proposals would expand it to include other industries such as road transport . Allowances are allocated to companies based on National Allocation Plans determined by individual countries. Since 2013 allowances have been centrally coordinated by the European Commission. Companies that emit more than their allocated allowances need to purchase allowances from other companies that wish to sell theirs. As directed above, companies should use question C11.1b to report the allowances that they have been allocated and those that they have needed to purchase in the reporting year.

Below you can find a list of implemented schemes as listed on the World Bank Carbon Pricing Dashboard:

- Alberta TIER
- Australia ERF Safeguard Mechanism
- BC GGIRCA
- Beijing pilot ETS
- California CaT
- Canada federal OBPS
- China national ETS
- Chongqing pilot ETS
- EU ETS
- Fujian pilot ETS
- Germany ETS
- Guangdong pilot ETS
- Hubei pilot ETS
- Kazakhstan ETS
- Korea ETS
- Massachusetts state ETS
- Mexico pilot ETS
- New Brunswick ETS
- New Zealand ETS
- Newfoundland and Labrador PSS
- Nova Scotia CaT
- Ontario EPS – ETS
- Oregon ETS
- Québec CaT
- RGGI
- Saitama ETS
- Saskatchewan OBPS
- Shanghai pilot ETS
- Shenzhen pilot ETS
- Switzerland ETS
- Tianjin pilot ETS
- Tokyo CaT
- UK ETS
- Washington CAR

C11.1c Tax systems

Companies are prompted to include details of their compliance with each tax selected, such as the percentage of emissions covered, total cost paid, etc. While carbon taxes are generally intended to directly charge emitters for the cost of pollution, the policy application of this definition depends on

a system-by-system basis and may affect sectors differently. For example, some policies may tax producers directly; others may attribute the cost to consumers of the processed fossil fuels (i.e. utilities); and others yet may tax users such as in the form of big businesses.

Examples of carbon taxes

The British Columbia Revenue-Neutral Carbon Tax (2008) is one of two regional carbon taxes in the world (the other being in Alberta, also in Canada). The policy applies to all sectors in aims of nudging business towards more energy efficient, and thus more cost efficient, operations. Tax revenue is recycled back to payers in the form of other reductions or returns. Fossil fuel producers and importers are liable for a monthly payment of the tax.

Japan's Tax for Climate Change Mitigation (2012) applies to all sectors and even with some exemptions captures almost 70% of the country's GHG emissions. The tax aims to fairly distribute the cost of fossil fuel usage and incentivize the transition to a low-carbon economy. Costs are incurred by the fossil fuel producers, expected to pay the tax on a bimonthly basis. The carbon tax is revenue neutral. Revenue generated with this tax is directed to supplement renewable energy projects and to enhance energy-saving measures.

The UK's Carbon Price Floor (2013)
sets a price minimum carbon price for UK power generators, above what they may need to pay under the UK ETS. The price floor is comprised of the price of emissions allowances and a variable Carbon Price Support (CPS) rate, set so that emitters in the power sector pay at least the minimum carbon price

Below you can find a list of implemented taxes as listed on the World Bank Carbon Pricing Dashboard:

- Argentina carbon tax
- Baja California carbon tax
- BC carbon tax
- Canada federal fuel charge
- Chile carbon tax
- Colombia carbon tax
- Denmark carbon tax
- Estonia carbon tax
- Finland carbon tax
- France carbon tax
- Iceland carbon tax
- Ireland carbon tax
- Japan carbon tax
- Latvia carbon tax
- Liechtenstein carbon tax
- Luxembourg carbon tax
- Mexico carbon tax
- Netherlands carbon tax
- New Brunswick carbon tax
- Newfoundland and Labrador carbon tax
- Northwest Territories carbon tax
- Norway carbon tax
- Poland carbon tax
- Portugal carbon tax
- Prince Edward Island carbon tax
- Singapore carbon tax
- Slovenia carbon tax
- South Africa carbon tax

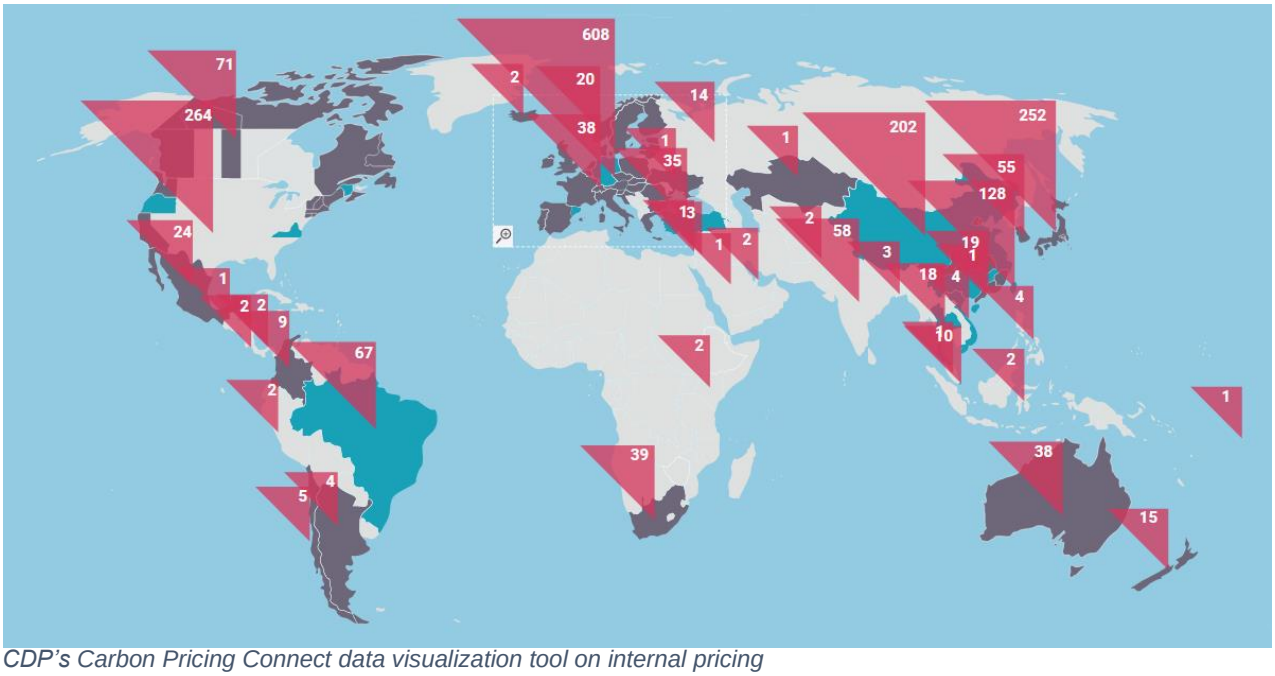
- Spain carbon tax
- Sweden carbon tax
- Switzerland carbon tax
- Tamaulipas carbon tax
- UK Carbon Price Support
- Ukraine carbon tax
- Uruguay CO2 tax
- Zacatecas carbon tax

C11.1d Compliance strategies

This question prompts companies to consider their long-term strategies against climate change. Some of the options for compliance include emissions reductions strategies, efficiency upgrades, and purchases of allowances and/or carbon credits. Depending on how long your company has been regulated by a carbon pricing system, efficiency upgrades may not provide the amount of reductions necessary to comply with regulations. If that is the case for your company, then you are also encouraged to detail your company's long-term compliance and regulatory risk management strategy – including the specific metric(s) or mechanism(s) used – for example, a dedicated carbon risk management team or the use of an internal carbon price. If you use an internal carbon price, please make note of this here and provide specific details in question C11.3a.

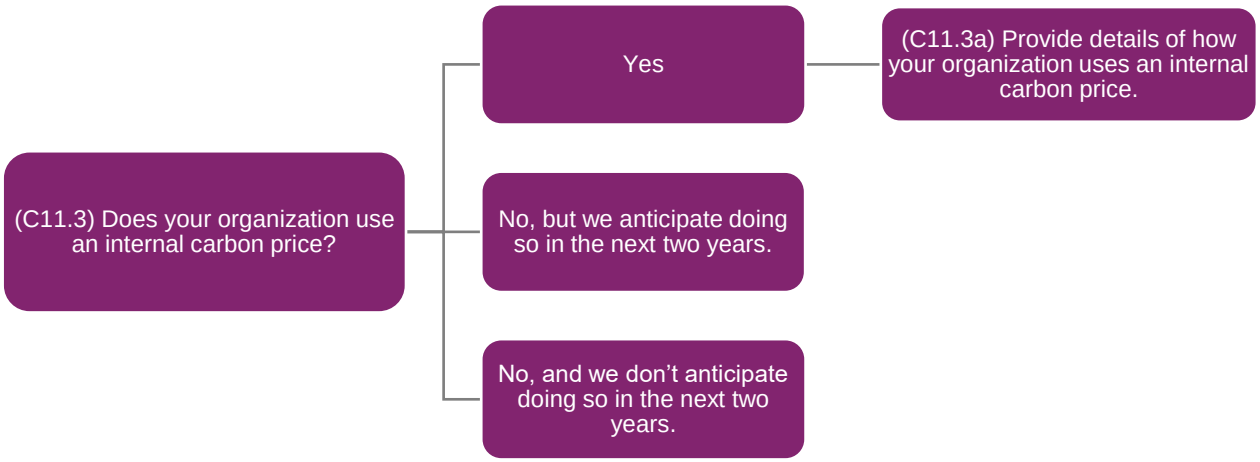
Internal Carbon Price

Since 2013, CDP has been asking companies to disclose their practice of using an internal carbon price – "a monetary value on GHG emissions an organization uses internally to guide its decision-making process in relation to climate change impacts, risks, and opportunities."[3]



CDP's Carbon Pricing Connect data visualization tool on internal pricing

To assess the quality of a company's internal carbon pricing approach, investors need to understand why and how internal carbon pricing is used as a tool to assess and manage carbon-related risks and opportunities within a business's operations, supply chain, and investments. This information, previously requested via an open text box, is now requested via a table format to standardize best practice disclosure in line with the TCFD recommendations related to carbon pricing. Increasing the quality and consistency of disclosure around this tool is critical for investors assessing a company's risk management strategy.



[3] Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures, The Taskforce on Climate-related Financial Disclosures, October 2021, page 83.

C11.3 Does your organization use an internal carbon price?

Over the past few years, CDP has been tracking a steady increase in the number of companies embedding an internal carbon price into their business strategies. From 150 global companies in 2014, the number has steadily grown to over 3600 companies in 2022 disclosing that they use an internal carbon price or are planning to do so within the next two years.

This growth is steady across all sectors and regions – largely driven by the parallel development of regulations that directly or indirectly price carbon and the increasing pressure from shareholders and customers for companies to adequately manage their climate-related risks.

Internal carbon pricing has emerged as a multifaceted tool that supports companies in assessing climate-related risks and opportunities. By attributing a monetary value to these risks and translating them into a uniform metric, financial decision makers within a company are enabled to make the low-carbon transition an integral part of business strategy.

For more information, please reference the following documents:

- How-To Guide to Corporate Internal Carbon Pricing: Four dimensions to best practice approaches, Ecofys, The Generation Foundation and CDP, 2017.
- Putting a price on carbon: Integrating climate risk into business planning, CDP, October 2017.
- Putting a price on carbon: A handbook for Indian companies 2.0, CDP, October 2017.
- Putting a price on carbon: The state of internal carbon pricing by corporates globally, CDP, April 2021
- CDP's Carbon Pricing web page
- CDP's global data visualization tool on internal carbon pricing, Carbon Pricing Connect

C11.3a How your company uses internal carbon pricing

Objective

In many cases, companies report multiple objectives for their internal carbon price – particularly as internal and external developments occur that require a readjustment of the pricing approach to maximize its effectiveness. The table below shows the three common purposes for implementing internal carbon pricing and the associated objectives/outcomes.

Applying internal carbon pricing

Purpose	Potential objectives/outcomes
Tool to assess and manage carbon-related risks	◥ Assess risk exposure; ◥ Inform strategic response & future-proof assets and investments against regulatory risk (ETS, carbon tax, or implicit carbon pricing policy), including investment in new technologies or energy efficiency to decrease costs; ◥ Demonstrate management of risk to shareholders.
Tool to identify carbon-related opportunities	◥ Reveal cost-cutting and resiliency investment opportunities throughout value chain in the transition to a low-carbon economy; ◥ Change employee and supplier behavior; ◥ Discover new market and revenue opportunities; ◥ Influence R&D investment decisions.
Transition tool	◥ Align investment strategy with 2-degree scenario and align business with the Paris Agreement; ◥ Accelerate reduction of GHG emissions and drive investment in energy efficiency initiatives, renewable energy procurement, and R&D of low-carbon products/services; ◥ Generate revenue to re-invest in low-carbon activities.

GHG scope coverage

Each company has both a unique GHG emissions profile and a unique decision-making process. These factors combined determine the degree of influence that individual business units have over GHG emissions spread throughout the value chain. Examples of how different GHG emissions relate to different types of business decisions are provided in the table below.

GHG emissions	Examples of relevant decisions
Scope 1	Investment and production decisions
Scope 2	Energy purchasing decisions
Scope 3 (upstream)	Materials sourcing and procurement decisions
Scope 3 (downstream)	R&D decisions for innovative products for the current/future market

Capital expenditure decisions
"In 2015, the Group joined the World Bank's Carbon Pricing Leadership Coalition and concomitantly made the decision to introduce its own internal carbon price. Starting in April 2016, an internal shadow price set at 50€/ton was effectively introduced in ROI analyses for all projects requiring major capital expenditure, such as production capacity increases, boiler upgrades and logistics operations. In this way, each project sponsor can compare the payback calculated with a carbon market price (currently zero in most regions) with the payback calculated with the projected carbon price over the lifetime of the equipment purchased today. The final aim is to direct investments towards low carbon solutions. Practically, this will also help to prepare activities in zones where no carbon market price exists by practicing carbon pricing and taking potential future costs into account in their investment decision. As the internal price was set out higher than current market prices in Europe and China, it is also challenging in these zones."
Michelin
France, Consumer Discretionary

Operational decisions
"We consider Scope 1, 2 and 3 emissions, and have both internal and externally published reduction goals. We use our aligned and committed reduction goals to drive strategy and action, not an actual carbon charge such as an internal carbon tax. For use in internal decision making and risk analysis, we place an economic value on carbon emissions to help frame the challenges and opportunities in monetary, more broadly understood terms than simply tons of emissions. This includes considering the impact on our operations and our supply chain. Quantifying these added costs, in the event that a price is put on carbon in regions around the world where a current price or trading scheme is not in place, provides additional insight into our business decisions. We bracket this analysis, on the low end at $10/metric ton and a high of $60/metric ton."
Owens Corning
USA, Industrials

R&D decisions
"The Group uses two levels of prices. The first one, 30€ per ton, is applied to the most substantial investments such as the construction of a new plant or energy-related projects on existing plants. This tool has already had tangible decision-making effects. For example, gas was chosen in place of coal to power a new plant in a developing country. Without this high internal price of carbon, coal would have been chosen. The other internal price of carbon is much higher (100€ per ton) and is used to guide R&D budgets with a long-term orientation (further than 2030). The internal carbon price is a decision support tool for industrial investment and R&D to prioritize and manage actions to reduce CO_2 emissions and achieve our goals. It is part of the Group's risk management strategy to anticipate the effects of carbon regulations. The internal carbon price covers scope 1, scope 2 and scope 3 CO_2 emissions of the Group."
Saint-Gobain
France, **Industrials**

Business application

An internal carbon pricing mechanism can be integrated into a company's business decision-making process in a variety of ways. Each company has a unique application approach based on multiple factors, such as a company's internal corporate governance structure, emissions profile, position in the value chain, and intended objective(s). In fact, some companies deploy multiple mechanisms within their organization to achieve distinctly different outcomes.

Assessing a company's pricing approach involves understanding how the tool is **applied to business decisions**, and the **level of influence** it has on the decision-making process (i.e. to what degree does a company enforce the use of the price).

Commonly disclosed operational applications include: capital expenditure decisions, operational decisions, procurement decisions, product and R&D decisions, and remuneration decisions.

Degrees of influence can range significantly – from including the internal carbon price in cost calculations as a passive indicator, to imposing it as a passing criterion in project decisions. The examples below demonstrate some of the different applications of an internal carbon pricing mechanism and the associated level of influence on day-to-day business decisions (see also the following section on types of internal carbon pricing mechanisms).

Collected fees used for climate action or rewarding low-carbon decisions
Passing criterion in business decisions
Embedded in overall costs calculations as a financial indicator
Included qualitatively in the decision-making process
Tracking compliance prices without directly affecting business decisions

Types of internal carbon pricing mechanisms

Popular 'types' of internal carbon pricing approaches have emerged in recent years and are commonly referenced in corporate disclosure. Definitions of the main types are outlined below with illustrative examples of approaches to application.[4]

Over 60% of companies responding to the CDP questionnaire in 2022 utilize a **shadow price** – attaching a hypothetical cost of carbon to each ton of CO_2e – as a tool to reveal hidden risks and opportunities throughout its operations and supply chain and to support strategic decision-making related to future capital investments.

> "Alberta's Climate Leadership Plan (which came into effect January 1, 2017) announced an escalating carbon levy beginning at $20/ton. [While] as an upstream oil and gas producer, 7G is exempt from this carbon levy until 2023…adopting a **shadow price** of carbon that reflects the escalating levy into project economics is critical to forward planning and investments. 7G recognizes that its operations will be in a carbon-taxable position (either provincially or federally) in the mid-term. Consequently, capital planning and strategies for market integration (vertical and horizontal) consider the potential implications of carbon taxes/levies across the company's markets."
> **Seven Generations**
> **Canada, Energy**

> "Viña Concha y Toro views this internal price of carbon as a key strategic element, a practice that will make all of our business units aware of the impact we have and how we can help fight climate change. We also hope to help them understand how climate change can affect our own business. Naturally, we expect this internal carbon price to stimulate innovation in our products and processes, driving competition and stimulating investment in low carbon technologies. Internally, this carbon pricing works as a **fund**."
> **Viña Concha y Toro**
> **Chile, Consumer Staples**

Internal fee mechanisms take this approach a step further by charging responsible business units for their carbon emissions. These programs frequently reinvest the collected revenue back into clean technologies and other activities that help transition the entire company to low-carbon activities. **Internal trading** takes this model a step further, allowing the business units within a company to trade their allocated carbon credits based on respective emissions.

Some companies with emissions reduction or renewable energy targets calculate their '**implicit carbon price**' by dividing the cost of abatement/procurement by the tons of CO_2e abated. This calculation helps quantify the capital investments required to meet climate-related targets and is frequently used as a benchmark for implementing a more strategic internal carbon price. Some companies report using **carbon offsets or credits** to lower their emissions or meet carbon neutrality goals, a majority of which also report the cost of purchasing these offsets as their internal carbon price. However, the focus has been on driving down emissions within the company itself.

> "Our internal price on carbon is dependent on the cost of **RECs and carbon offsets** as well as the cost of managing TD's GHG inventory. Our internal price on carbon has decreased from $10 to $8 since 2010 due to the implementation of energy and carbon reduction initiatives across our business. The price is calculated on an annual basis and charged back to our business groups based on the relative contribution of those groups to our overall carbon emissions…Our total GHG emissions from energy have decreased 25% from 2008, despite having a 23% growth in the space we occupy and more than doubling our revenue."
> **TD Bank Group**
> **Canada, Financials**

Price level and variance

Companies disclose a variety of approaches to determining an internal carbon price level(s) depending on the intended objective for its use as a tool – including the consideration of factors such as geography, time horizon, and business unit. Due to competitiveness concerns, some

[4] Ecofys, The Generation Foundation and CDP, How-to guide to corporate internal carbon pricing—Four dimensions to best practice approaches, Consultation Draft, September 2017.

companies do not disclose the actual price level(s) used; however, investors do seek this information, as well as the methodology used to determine the price. Commonly used methodologies are outlined below:

Common price determination methods[5]

For scenario analysis/assessment of risk and opportunities	For a transition tool that drives decarbonization
Based on price projections from existing or emerging carbon pricing regulations	Based on internal consultation (to determine price level needed to influence business decisions, or accelerate decarbonization)
Based on a benchmark against peers within a sector	Based on technical analyses of investment needed to achieve a specific climate-related objective (MAC curve)

For companies using internal carbon pricing in stress-testing or scenario analysis, it is important to disclose assumptions made about how price(s) would develop over time; the geographic and economic scope of application; whether the price is applied across the entire company or to specific business units or decisions, and whether a uniform or differentiated price is used. This information can help an investor gauge the efficacy of a company's application of the carbon price in terms of meeting its objectives. A framework[6] and set of examples for the common types of pricing are outlined as follows.

1. **Uniform pricing**: a single price that is applied throughout the company independent of geography, business unit, or type of decision.

> "IVL currently uses an internal shadow cost of carbon, primarily at this stage for scenario analysis of potential financial risks to the business from expanding number of cap-and-trade and carbon tax systems globally. IVL currently uses a shadow cost of carbon at $15/ton of CO_2e. Few of our business facilities exist in jurisdictions with external carbon prices, and only three locations have direct carbon compliance costs. However, IVL is aware of a number of new regulations that will impose a cost of carbon and may cover the types of processes and activities of our businesses. As such, we are using a global shadow price to evaluate site level risks."
> **Indorama Ventures PCL**
> **Thailand, Materials**

2. **Differentiated pricing**: a price that varies by region, business unit or type of decision.

> "Vermilion currently considers the reasonable price for carbon in the short term (1-2 years) impacting our Canadian operations to be $30 CAD per tCO_2e. This is based on the commitments made by the government relating to the economy wide tax. In our European operations in the near and long term, we believe that a carbon price of 20-30€ per tCO_2e, which aligns with government assertions relating to a floor on carbon pricing in France, and represents carbon pricing assumptions also reasonable for our Netherlands and German assets. For our Australian operations, though we are not being impacted by carbon taxation, we believe the previously asserted cost of $20AUD per tCO_2e to be reasonable. Based on assertions made by the USA government, we do not believe our operations will be impacted by carbon pricing in the form of taxation, however, we consider $20USD per tCO_2e to be reasonable from a planning perspective."
> **Vermilion Energy, Inc.**
> **Canada, Energy**

[5] Ibid.
[6] Ibid.

3. **Static pricing**: a price that is constant over time.

> "In 2010, DANONE put a price on carbon in its capital expenditures approval process to redirect investments toward lower carbon solutions, clean technologies, renewable energy, any project contributing to cut emissions. In 2016, after a benchmark study and a regulatory watch, DANONE updated its internal price of carbon and decided to set it at a relatively high level, 35€/t to internalize potential future cost of carbon in long term. The return of investments is assessed with the impact of the carbon implication. It enables the management to arbitrate between different options, to choose the most virtuous and efficient ones to achieve the goals of Danone's Climate Policy."
> **DANONE**
> **France, Consumer Staples**

4. **Evolutionary pricing**: a price that develops over time.

> "ACCIONA stays ahead of the creation of new carbon pricing mechanisms and the price increase in existing markets by establishing an internal price for its medium to long term projects. This shadow price drives investments in technology and low carbon production processes so as to mitigate the risk created by the possible inclusion of certain activities of ACCIONA in systems that tax emissions with high prices, such as those estimated by the European Investment Bank or the European Bank for Reconstruction and Development of €36/tCO_2 in 2016, €45/tCO_2 in 2030 and €72/tCO_2 in 2050. The Company uses shadow prices to promote the choice of energy efficient options and clean fuels. For example, the price has been used in the bid for a public tender in Australia which valued actions to minimize GHG emissions."
> **ACCIONA**
> **Spain, Utilities**

Impact and implications

Finally, it is important to monitor and report the impact of an internal carbon pricing mechanism. For companies using the tool to assess and manage carbon-related risks, it is important to report the implications of an internal carbon price on the business. Did it reveal material risk within your business? Has it influenced business strategy or affected investment decisions? If the internal carbon price has not impacted your business in any way, it is equally important to explain why – are there specific challenges associated with your current mechanism? Are carbon-related risks immaterial or already managed?

For companies deliberately implementing an internal carbon price as a tool to achieve a climate-related goal: has there been a tangible impact? Has the tool shifted investments toward energy efficiency measures, low-carbon initiatives, energy purchases, or product offerings?

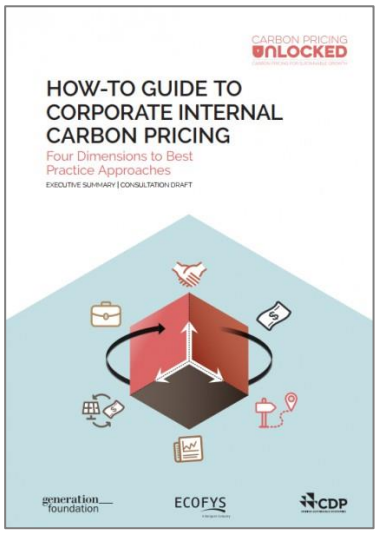
Reflecting on the impact, or lack thereof, it is also important to report any plans to refine or evolve your approach to internal carbon pricing in the future.

"…The impacts of carbon pricing scenarios on the new investment projects proposals are reviewed in light of the specific context of the host country and of its regulatory framework, and inform decision making. The Group has decided to no longer pursue new developments in coal, believing that a carbon price will steadily be established in the world's various regions and that coal-fired power plants will be adversely affected in the future. ENGIE announced in 2016 that it will close/ sell coal assets progressively."
ENGIE
France, Utilities

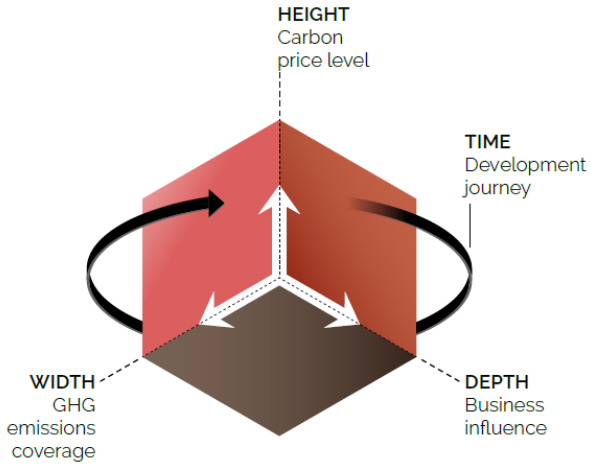
"…We also calculate and consider our carbon exposure in terms of absolute costs incurred on an annual basis and projected out to at least 2020. Where a clear and certain carbon price is present, we incorporate that price and any known and/or planned changes to the carbon price. Where uncertainty exists, we conduct sensitivity analyses to better understand what our exposure and risk are under different carbon pricing and regulatory scenarios. For example, forecasting using a variety of scenarios that span a $30/tonne carbon tax to a $50/tonne carbon tax suggests carbon costs in 2022 will range from $45 million to $80 million for our BC Operations. In Alberta, based on scenarios which include reduction requirements ranging from 12% to 40%, and carbon costs ranging from $15 to $40 per tonne of CO_2e, we estimate that our compliance costs might be $0.5 million-4.5 million/year for our Cardinal River operations. Assessing the same scenarios for our Fort Hills project, compliance costs could range from $1 million-$8 million/year…As details of these policies become more clear, our forecast will be updated to reflect a range of possible carbon costs."
Teck Resources
Canada, Materials

Emerging Best Practice

Internal carbon pricing is a multifaceted tool recommended by the TCFD that can help companies identify and act on the risks and opportunities associated with a low-carbon-transition. However, the full potential of internal carbon pricing is insufficiently embedded in the daily decision-making process of most companies. Based on findings from the Carbon Pricing Unlocked research partnership, Ecofys, a Navigant company, the Generation Foundation and CDP published practical guidance to enable wider use of best practice approaches to internal carbon pricing globally.



The how-to guide provides step-by-step guidance for designing and implementing an internal carbon pricing approach, while a special C-suite version helps board members to identify the most appropriate solution for their company. The guides complement existing research by providing a new four-dimensional framework (4D framework) to approach internal carbon pricing, combined with the latest insights and experiences gathered through interviews with leading companies. Read the full guides for more information.



Four dimensions to design a best practice

The 4D framework was developed to support the implementation of best practice approaches to internal carbon pricing. This framework aims to provide companies with a structure to align their existing approach to best practices or establish their internal carbon pricing approach in a best practice way from the outset, as described in the table below. A best practice internal carbon pricing approach must have clear objectives and find the optimal combination of the four dimensions of internal carbon pricing.

Dimension	ICP Parameter	Best Practice ICP Approach
Height	Price level per unit of GHG emitted (e.g. US$/tCO$_2$) that the company uses in business decisions	Rise to a carbon price capable of changing decisions in line with the ICP objectives
Width	The GHG emissions covered throughout the value chain by the ICP approach	Grow to cover all GHG emissions hotspots in the entire value chain that can be influenced
Depth	The level of influence the ICP approach has on the business decisions of a company and its value chain partners	Become increasingly influential to have a material impact on business decisions
Time	The development of the first three dimensions over time	Be evaluated regularly to bring the company's business strategy in line with a low-carbon economy

Take Action

Join the Coalition and advance the dialogue on carbon pricing, climate risk, and business opportunity

The Carbon Pricing Leadership Coalition (CPLC) brings together leaders across national and subnational governments, the private sector, and civil society with the goal of putting in place effective carbon pricing policies that maintain competitiveness, create jobs, encourage innovation, and deliver meaningful emissions reductions. The Coalition aims to drive action through knowledge sharing, targeted technical analysis, and public-private dialogues that guide successful carbon pricing policy adoption and accelerate implementation. The CPLC formed in the wake of a groundswell of support for carbon pricing at the 2014 United Nations Climate Summit, where 74 countries and more than 1,000 companies expressed support for carbon pricing. The Coalition now consists of over 90 private sector partners, more than 30 strategic partners, and over 25 governments.

The CPLC engages the private sector to advocate for successful carbon pricing by deepening understanding of the business case for carbon pricing, sharing pathways for expanding carbon pricing as a climate change solution, and encouraging, where appropriate, corporate adoption of internal pricing. The work of the Corridors will be shared with the CPLC network – helping spur dialogue, informing policy design, and shaping business strategy as companies aim to measure and manage their climate risk – not to mention unlocking new investment opportunities. For more information on how to get involved, visit www.carbonpricingleadership.org.

CPLC CARBON PRICING LEADERSHIP COALITION

Put a price on carbon

By making this commitment, companies are agreeing to align with the UN Global Compact's Business Leadership Criteria on Carbon Pricing:

- Set an internal carbon price high enough to materially affect investment decisions to drive down greenhouse gas emissions; and benchmark against your peers.
- Publicly advocate the importance of carbon pricing through policy mechanisms that take into account country specific economies and policy contexts; and the Carbon Pricing Leadership Coalition (CPLC).
- Communicate on progress over time on the two criteria above in public corporate reports.

Map the Corridor: a 2-degree reference scenario

In 2017, the Carbon Pricing Leadership Coalition, We Mean Business Coalition, and CDP launched the Carbon Pricing Corridors: an industry-led initiative aimed at defining the carbon prices needed for industry to meet the Paris Agreement. It is being delivered through an ongoing inquiry with a high-level panel drawn from industry, the finance sector, and international experts. Over year, they will shape and create an informed view of the range of carbon-related price signals that are needed to decarbonize electricity generation and heavy industry through the short to medium-term (2020, 2025, 2030).

In the initial report released in May 2017, Carbon Pricing Corridors: The market view, the corridor focuses on the power sector, with the subsequent report expanding to include the chemical sector.