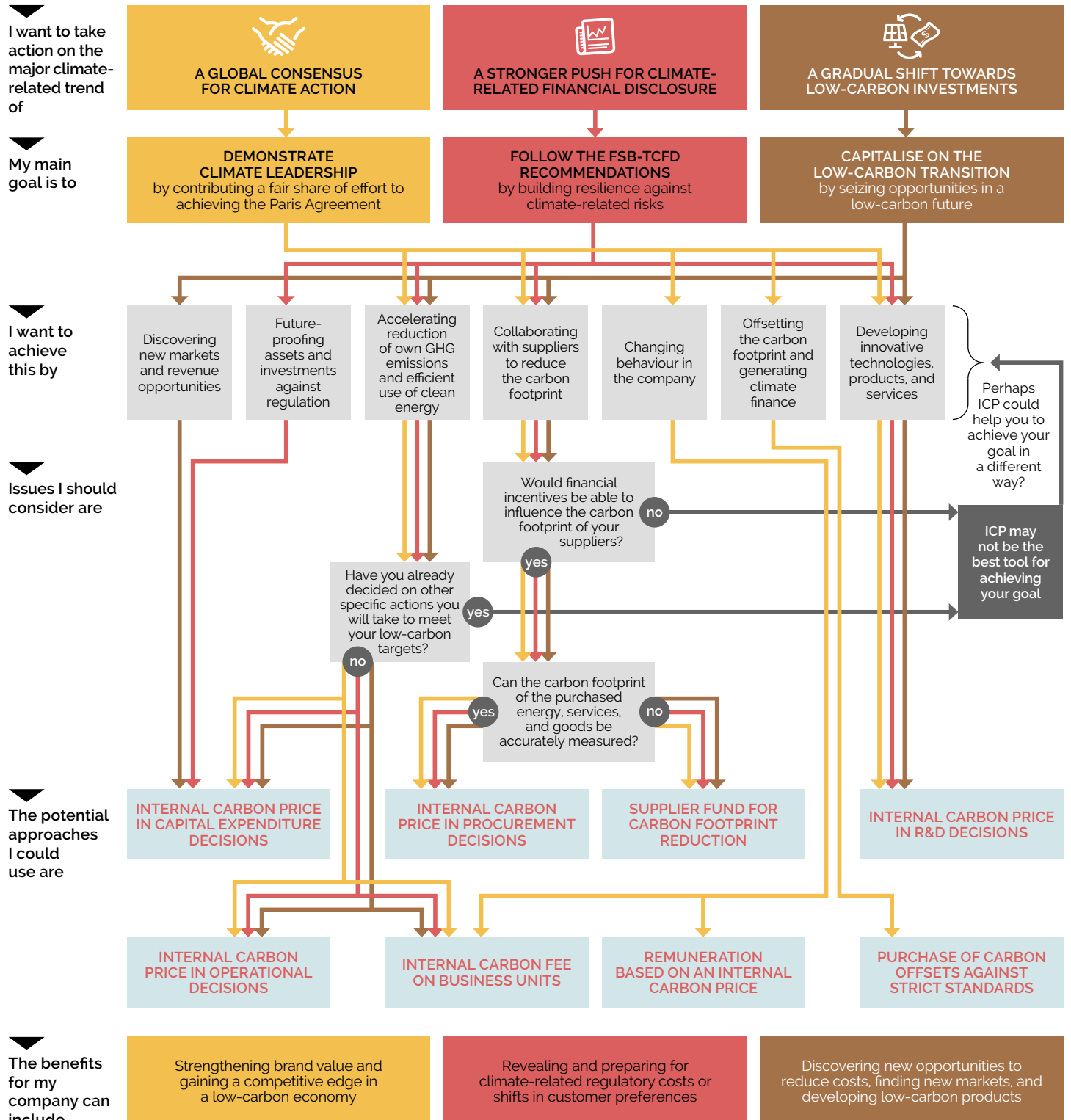


C-SUITE GUIDE TO INTERNAL CARBON PRICING

Toolbox for Creating Corporate Value

Identify the internal carbon pricing (ICP) approaches you could use for your company with the diagram below. Multiple approaches might be suitable. Start with the major climate-related trend you would like to take action on and move down the diagram.



Carbon Pricing in Numbers



- » More than half of all countries stated in their intended plans for the Paris Agreement that they are considering the use of carbon pricing. These countries cover about 60% of global greenhouse (GHG) emissions.
- » Over 40 national and 25 subnational jurisdictions are putting a price on carbon—representing almost a quarter of global GHG emissions.¹
- » Almost 1,400 companies—including more than 100 Fortune Global 500 companies with collective annual revenues of about US\$7 trillion—disclosed that they are currently using an internal price on carbon or plan to do so within the next two years.²

¹ World Bank, Ecofys and Vivid Economics, *State and Trends of Carbon Pricing 2017*, November 2017;

² CDP, *Putting a price on carbon – Integrating climate risk into business planning*, October 2017.

The Business Case for Internal Carbon Pricing



ICP is a powerful tool for assessing climate-related risks and opportunities that may arise from the transition to a low-carbon economy. This transition is driven by major trends presented below. ICP allows companies to make informed business decisions by translating this transition into a uniform metric. It links a monetary value to the carbon footprint, allowing companies to include the financial impact of the low-carbon transition in the decision-making process, determine the most effective strategy in changing market environments, and stay ahead of the curve.

Major trends

A global consensus for climate action. The global Paris climate agreement has propelled climate change to the top of the agenda with policymakers, consumers, and investors. In December 2015, world leaders agreed to limit global warming to well below 2°C. This is what scientists deem necessary to prevent dangerous climate change. Almost all countries put forward plans on how they intend to contribute to the ambitions of the Paris Agreement.

A stronger push for climate-related financial disclosure. Companies are facing increasing pressure from shareholders, customers and the international community to assess the compatibility of their business with the low-carbon transition. The Financial Stability Board Task Force on Climate-related Financial Disclosures (FSB-TCFD) recommends that companies disclose their climate-related risks and opportunities in public annual financial filings, including a 2°C or below scenario, as well as how these risks are managed. Already, shareholders have made ExxonMobil, Occidental Petroleum and PPL Corporation assess and disclose how climate-related risks could affect their business.

A gradual shift towards low-carbon investments. Trillions of US\$ in low-carbon investments will be needed each year to set our economies on a low-carbon pathway. This will require capital to shift from carbon-intensive activities to low-carbon activities. The International Energy Agency reported that investments in the oil, gas and coal sector fell by over a quarter in 2016 compared to a year before.³ At the same time, investments in solar power and energy efficiency continue to go up due to declining costs and technology improvements.

Goals ICP can help achieve and benefits ICP can bring

Demonstrate climate leadership by contributing a fair share of effort to achieving the climate change objectives set by the Paris Agreement, strengthening brand value and gaining a competitive edge in a low-carbon economy. ICP enables companies to accelerate GHG emissions reduction throughout the value chain or offset any emissions that cannot be reduced cost-effectively. This also reduces their exposure to climate-related regulations.

Follow the FSB-TCFD recommendations by building resilience against climate-related risks, revealing and preparing for climate-related regulatory costs companies may face or are passed through by suppliers, or a shift in customer preference due to regulations or increased climate awareness. These factors could have an impact on the competitiveness of a company's products and services. ICP enables companies to conduct scenario analyses on the impact of climate-related risks on the financial performance of their business using a single uniform metric and include these risks in their daily decision-making process.

Capitalise on the low-carbon transition by seizing opportunities in a low-carbon future, discovering new opportunities to reduce the energy and carbon costs for the company, suppliers and customers. ICP also allows companies to find new markets for their products and enable the commercial viability of research and development (R&D) in low-carbon products.

³ International Energy Agency, *World Energy Investment 2017*, July 2017.

What ICP Approaches Can Companies Use?

The flowchart presented at the beginning of the guide displays ICP approaches for influencing a company's business decisions. These approaches can apply to different scopes of a company's GHG emissions as described below. The examples below illustrate how ICP approaches can be used in the food industry value chain, but the approaches are also applicable to other sectors.

Symbols of the types of GHG emissions each approach could apply to:

● **Own GHG emissions and from energy consumption**
(scope 1 and 2)

▲ **Embedded GHG emissions from purchased goods and services**
(scope 3 upstream)

▼ **GHG emissions from product use**
(scope 3 downstream and avoided emissions)

INTERNAL CARBON PRICE IN CAPITAL EXPENDITURE DECISIONS

Companies can use ICP to evaluate investment projects on risks of climate-related regulatory costs, the cost savings potential and their commercial viability in new markets as a low-carbon alternative.

Using ICP in this way could strengthen the business case for investments in e.g.:

- Projects that reduce steam or electricity consumption
- ▲ Acquiring companies that make bio-based packaging material
- ▼ Production lines that process animal fat waste and used cooking oil into biodiesel

INTERNAL CARBON PRICE IN PROCUREMENT DECISIONS

Companies can use ICP to assess their supplier contracts on climate-related cost pass-through risks and the cost savings potential of using material that requires less energy in the production process.

Using ICP in this way could support the case to purchase e.g.:

- Potatoes with a lower moisture content, which require less heat during the drying process
- ▲ Sugar produced using renewable heat or electricity instead of energy from fossil fuels

SUPPLIER FUND FOR CARBON FOOTPRINT REDUCTION

Companies can use ICP to design a fund for supporting suppliers taking measures to manage climate-related risks and seize cost savings opportunities, strengthening the climate resilience of their supply chain. This fund could be filled with revenues from an internal carbon fee approach.

Using ICP in this way could determine the size of the fund or support given to suppliers, and cooperate with other companies to support a whole sector by establishing e.g.:

- ▲ A global fund to improve the climate resilience of coffee farmers
- ▲ A fund to target methane emissions in the dairy supply chain

INTERNAL CARBON PRICE IN R&D DECISIONS

Companies can use ICP to evaluate R&D proposals on risks of climate-related regulatory costs, the cost savings potential and their commercial viability in a low-carbon future.

Using ICP in this way could support the decision whether to invest in the R&D of e.g.:

- Advanced evaporation technologies that use less energy
- ▲ Bio-based bottles from biomass waste materials
- ▼ Technology to increase the shelf-life of milk without refrigeration

INTERNAL CARBON PRICE IN OPERATIONAL DECISIONS

Companies can use ICP to reveal hidden climate-related costs and opportunities in their operations.

Using ICP in this way could strengthen the business case for introducing e.g.:

- Efficiency measures in food processing operations to reduce energy costs
- ▲ Low-carbon packaging materials to reduce upstream exposure to carbon costs
- ▼ Improved warehouse management to reduce costs in food distribution logistics

INTERNAL CARBON FEE ON BUSINESS UNITS

Companies can use ICP to internally charge or reward business units for their carbon footprint with an actual fee, thereby directly affecting their profit and loss accounts. The fee revenues can be used to support various initiatives in reducing the carbon footprint.

Using ICP in this way could influence decisions of business units to e.g.:

- Find solutions to save energy in the short-term through improved production planning
- ▲ Purchase office supplies with a lower carbon footprint
- ▼ Choose a different mode of freight transport for goods

REMUNERATION BASED ON AN INTERNAL CARBON PRICE

Companies can use ICP to provide employees with a financial incentive to make decisions that contribute to reducing their carbon footprint.

Using ICP in this way could stimulate low-carbon behaviour and decision-making through e.g.:

- Linking managers' bonus payments to the energy consumption of their business units
- ▲ Charging or rewarding employees based on the mode of transport taken for business travel or commuting

PURCHASE OF CARBON OFFSETS AGAINST STRICT STANDARDS

Companies can use ICP to determine the budget to reserve for purchasing carbon credits to offset their carbon footprint. Companies can purchase offsets from an overall company budget or charge this to each business unit based on their carbon footprint.

Using ICP in this way could allow the company to determine and set aside funds for offsetting e.g.:

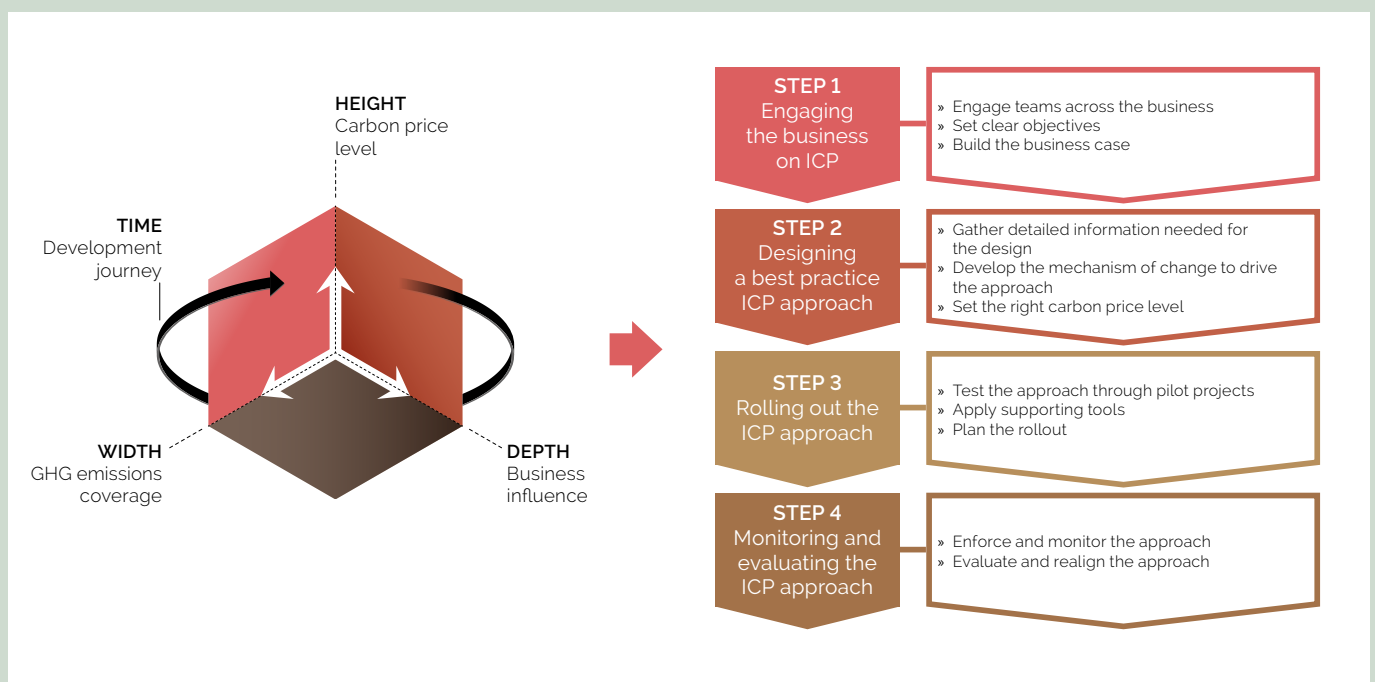
- Energy-related emissions
- ▲ The carbon footprint from supplying farms
- ▼ GHG emissions from the distribution of products

How Can Companies Design and Implement a Best Practice ICP Approach?



Ecofys, The Generation Foundation, and CDP have developed a 4D framework for ICP to support the development of best practice approaches. **A best practice ICP approach should contribute to a journey of bringing a company’s business strategy in line with the transition to a low-carbon economy.** To maximise the impact on business decisions, allowing companies to mitigate their climate-related risks and find opportunities to grow business, a best practice approach should find the optimal combination between the four dimensions of ICP:

- » **Height:** Price level per unit of GHG emitted (e.g. US\$/tCO₂) that the company uses in business decisions, rising to a carbon price capable of changing decisions in line with the ICP objectives
- » **Width:** GHG emissions covered throughout the company’s value chain, growing to cover the GHG emission hotspots in the value chain that can be influenced
- » **Depth:** Level of influence on the company’s business decisions and value chain partners, increasing the influence to materially affect these business decisions
- » **Time:** Development of the first three dimensions over time, regularly evaluating and realigning the approach to bring the company’s business strategy in line with a low-carbon economy



Experience has shown that company best practices for implementing ICP are dynamic and iterative. The approach should be kept simple at the start and be applied in a learning-by-doing manner to embed it into the daily decision-making process. Strong board-level support and internal buy-in are important factors for success.

The step diagram above shows the main steps for designing and implementing a best practice ICP. For detailed practical insights and illustrative examples from leaders in the food industry, see “Ecofys, The Generation Foundation and CDP, *How-To Guide to Corporate Internal Carbon Pricing*, December 2017.”

About this Guide

This C-suite guide on best practice approaches to ICP was prepared collaboratively between Ecofys, The Generation Foundation, and CDP (formerly Carbon Disclosure Project). This guide is part of the Carbon Pricing Unlocked research partnership between Ecofys and The Generation Foundation. The research extends over three years from 2016 to 2019 and tackles carbon pricing from a new angle—exploring how carbon pricing can facilitate global economic

growth. The partnership aims to deliver quantified insights into the role carbon pricing can play in a 1.5°C future. Ecofys is one of the pioneers in carbon pricing, and has worked on the topic for nearly two decades. The Generation Foundation is the advocacy initiative of Generation Investment Management LLP, which was co-founded by Al Gore and David Blood in 2004 and works on the decoupling of prosperity from resource-intensive growth.