

# FUTURE-PROOF SUPPLY CHAINS USING INTERNAL CARBON PRICING

## Briefing note for procurement and supply chain professionals

London, January 2020

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As companies' supply chains become longer and more complex, they will be increasingly susceptible to global and local risks. Climate-related risks have dominated the World Economic Forum's Global Risk Perception Survey for the past years,<sup>I</sup> and are starting to disrupt business operations and supply chains in a range of different industry sectors. Some organisations are acting on these risks by **greening** their operations and reducing their greenhouse gas (GHG) emissions. However, many still struggle to get their suppliers to do the same despite carbon emissions in supply chains accounting for 5 times the direct emissions of a company.<sup>II</sup>

Procurement and supply chain management therefore has a crucial role in future-proofing organisations in the low-carbon transition. However, efforts to tackle emissions are often constrained by short-term key performance indicators as cost reduction remains the top priority for procurement leaders.<sup>III</sup> Internal carbon pricing (ICP) can overcome this barrier by integrating climate-related risks and opportunities in financial-decision making.

### SOURCING COST INCREASE

Governments are ramping up climate policy, making it more expensive to emit carbon that could translate to higher sourcing costs.

The Coca-Cola Company, a global beverage company, is increasing the amount of recycled materials in its plastic bottles in part due to the risk of higher packaging costs from GHG regulation, although weak recycling infrastructure and poor recycling data quality are barriers.<sup>IV</sup>

### SUPPLY CHAIN DISRUPTION

Unprepared suppliers will have to bear the increasing cost of climate change, which could lead to them having to scale down production or even face bankruptcy.

The food service retailer McDonald's and its suppliers are working with farmers to lower their carbon footprint through optimizing resources and thereby improving their economic viability, and are improving their insight in farming systems to identify further reduction opportunities.<sup>V</sup>

### REPUTATION LOSS

Consumers and investors are putting pressure on companies to source their materials in a more sustainable manner or lose their custom.

Unilever, a global consumer goods company, wants to source all its agricultural material sustainably to meet consumer preferences, but is behind on target due to its lack of scale with certain crops to achieve change and insufficient insights in its supply chain.<sup>VI</sup>

### FOREGONE REVENUE

Sales of sustainable products have shown to grow 5 times faster than conventional products,<sup>VII</sup> but a shortage of sustainable material can hinder this growth.

The car manufacturer Audi has partnered with the aluminium producer Hydro to have sustainable aluminium in their cars and is training more suppliers to reduce their CO<sub>2</sub> emissions, so they can offer CO<sub>2</sub>-neutral mobility to its customers.<sup>VIII</sup>

## TACKLING SUPPLY CHAIN ISSUES WITH INTERNAL CARBON PRICING

### What is Internal Carbon Pricing (ICP)?

ICP helps organisations manage their risks and better plan for the future by attaching a notional "carbon cost" to investment and procurement decisions. This cost is calculated by multiplying the volume of GHG emissions in tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e) with a price per unit emitted that the organisation chooses (e.g. US\$/tCO<sub>2</sub>e). The resulting monetary value can then be included in decisions as a financial metric.

### Why do companies generally use ICP?

- Determine exposure to future costs arising from climate regulations and form strategies to mitigate these costs
- Build resilience against climate-related financial risks in line with the recommendations from the Financial Stability Board's Task Force for Climate-related Financial Disclosures (FSB-TCFD)
- Demonstrate climate leadership and implement emission reductions targets (e.g. Science Based Targets) to contribute a fair share to achieving the Paris Agreement
- Discover market opportunities and develop new products to capitalise on the low-carbon transition

### Who is using ICP?

So far, about 1,300 companies, including more than 100 Fortune Global 500 companies with collective annual revenues of about US\$7 trillion, disclosed that they use ICP or plan to do so within two years.

Source: CDP, *Carbon Pricing Connect*, 2017.

I World Economic Forum, *The Global Risks Report 2019*, January 2019.

II CDP, *Global Supply Chain Report 2019*, February 2019.

III 70% of respondents of Deloitte, *The Deloitte Global Chief Procurement Officer Survey 2019*, October 2019.

IV The Coca-Cola Company, *2018 Business & Sustainability Report*, 2018.

V McDonald's, *Climate Action*, 2019.

VI Unilever, *Sustainable Sourcing*, 2019.

VII NYU Stern Center for Sustainable Business and IRI, *CSB Sustainable Market Share Index™*, March 2019.

VIII Audi, *Audi and Hydro: joint commitment to sustainable aluminium*, July 2019.

# What benefits can ICP bring to procurement and supply chain management?



**Incorporating climate impacts into financial decisions** – ICP will allow an organisation to factor in existing or future climate costs in their decision making. This could lead to long-term cost savings where buying lower carbon alternatives is cheaper compared to the conventional counterparts when considering durability and operational costs over their lifetime.



**Providing risk insight on carbon cost exposure** – ICP can highlight GHG emissions hotspots within an organisation and across its supply chain. Gaining risk insight will allow better assessment of possibilities to build resilience against these risks throughout the value chain in line with the recommendations from the FSB-TCFD.



**Providing an additional metric to assess suppliers** – ICP can help rank suppliers in terms of sustainability with clear criteria. By translating the carbon footprint of products and materials offered by suppliers into a monetary metric, it can be evaluated in a uniform manner as a financial indicator.



**Making procurement and supply chain management a higher priority** – ICP can help redirect priorities and resources to mitigate climate-related risks. Monetary impacts from pricing carbon can lead to an increased attention from senior management, finance and strategic departments.



**Strengthening brand value with climate leadership** – ICP can help organisations gain a competitive edge in the transition to a low-carbon economy. As consumer preferences are increasingly shifting towards low-carbon products and services, the use of ICP can show consumers that the organisation is taking climate action seriously.



**Discovering new opportunities for low-carbon innovation** – ICP could provide an incentive for suppliers to invest in the development of low-carbon products and materials. Through economies of scale, this could ultimately make low-carbon products and materials cheaper.



**Providing a more accurate estimate of the organisation's carbon footprint** – ICP can increase transparency from suppliers when integrated into supply chain management systems. As GHG emissions now have a monetary value, suppliers are incentivised to provide more accurate estimates of the embedded GHG emissions of their offerings.

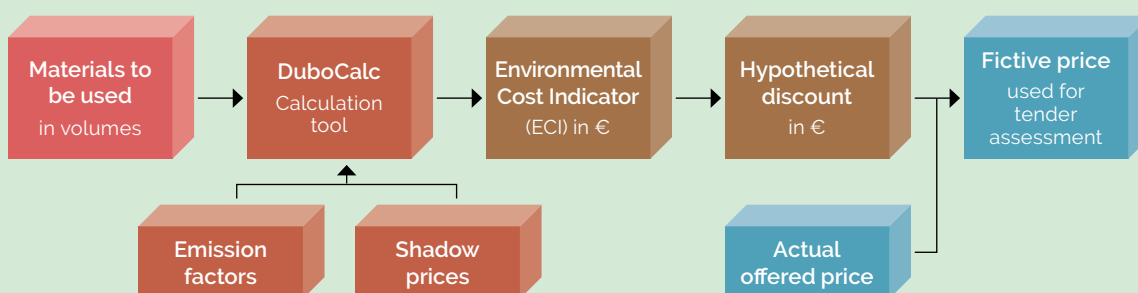


**Enabling knowledge transfer throughout the supply chain** – ICP can help build capacity among suppliers to manage climate-related costs. By engaging and encouraging them to consider their carbon footprint from a financial perspective, this enables them to better consider cost and benefits of reducing their emissions.

## ICP IN PROCUREMENT: PRACTICAL EXPERIENCE FROM THE DUTCH GOVERNMENT

The Dutch government agency Rijkswaterstaat has used a form of ICP since 2010 in the procurement process of large infrastructure projects and the state-owned enterprise ProRail since 2014. Their co-developed calculation tool DuboCalc incorporates the environmental impacts of products and materials used in their tenders' financial decisions in the manner as shown in Figure 1. Suppliers need to first determine the amount of material used in their offer. The tool subsequently monetises the impact of eleven environmental indicators associated with the material, one of which is GHG emissions. By adding the shadow carbon costs to the shadow costs of the other ten environmental indicators, the Environmental Cost Indicator (ECI) is calculated. The ECI determines the hypothetical discount a supplier receives: the higher the ECI, the lower the hypothetical discount. The hypothetical discount is then subtracted from the actual price offered to determine the fictive price for financial assessment. This means offers with a low environmental impact receive a competitive advantage in the assessment. Suppliers are therefore incentivised to innovate in changing their designs to use materials more efficiently or use materials with a lower carbon footprint. As a result, suppliers with offers that had a low environmental impact are often awarded the assignment.

**FIGURE 1 Schematic overview of how ICP is used in procurement decisions by Rijkswaterstaat and ProRail**

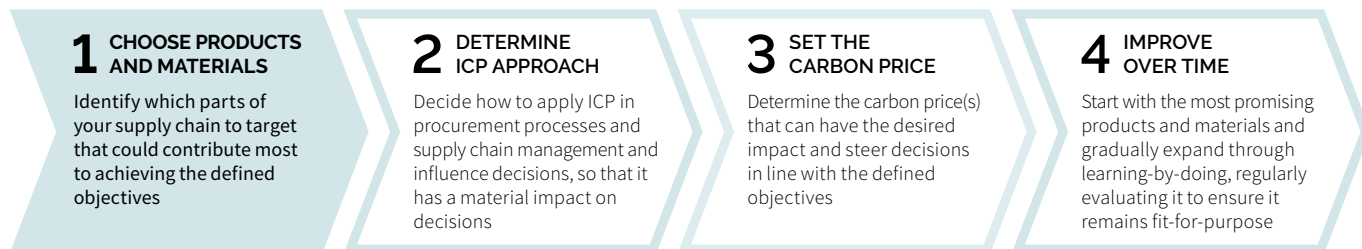


Source: DuboCalc, *What is DuboCalc?*, accessed 1 March 2019 at <https://www.dubocalc.nl/en/what-is-dubocalc/>.

# How can organisations implement ICP in procurement and supply chain management? (1)

**Set clear objectives and communicate the benefits before developing an ICP programme:** ICP is a means to an end—for it to be successful, the objectives of implementing ICP need to be determined before developing a programme. Identifying the benefits that resonate most strongly with internal

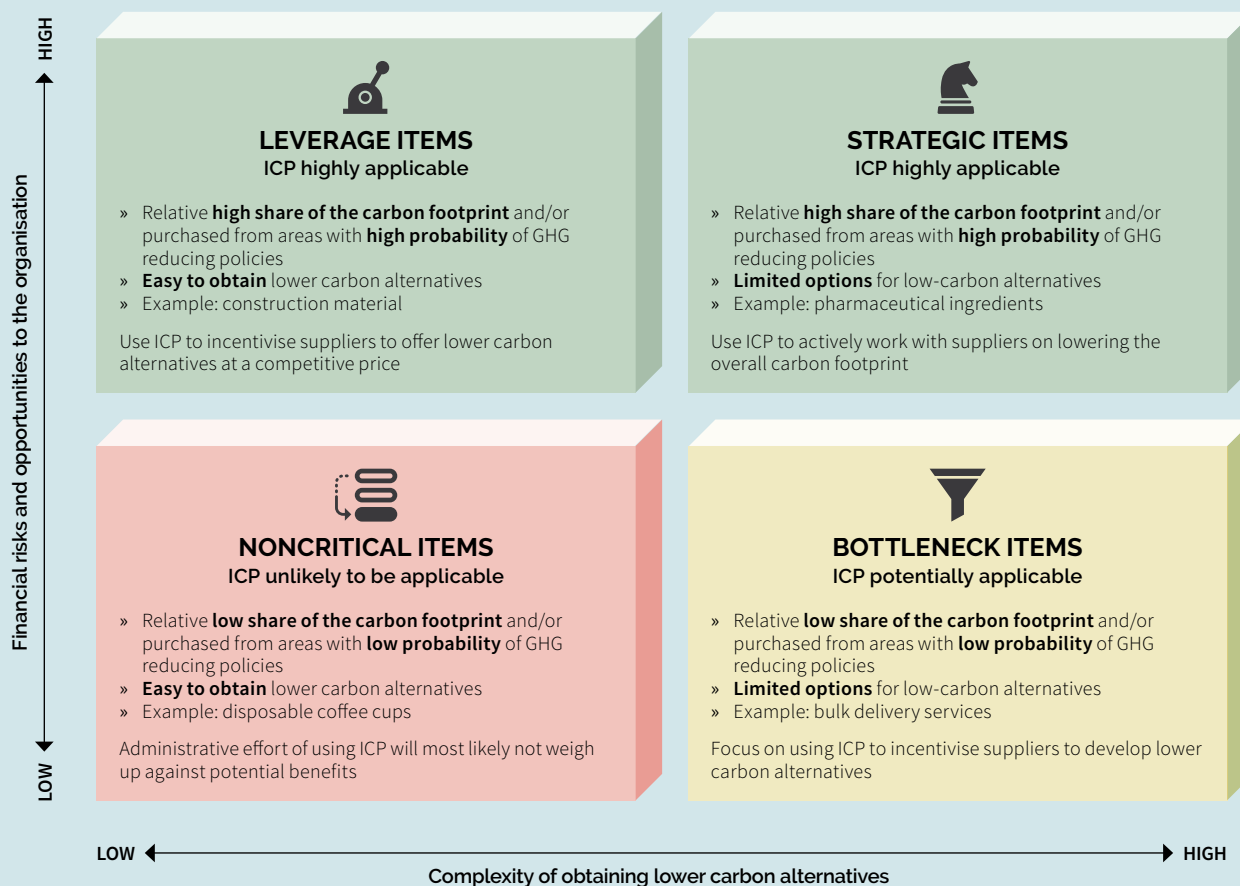
stakeholders and with suppliers will help secure their buy-in. Once it is clear what the organisation wants to achieve with its ICP programme, these can be translated into a detailed design that enables the desired benefits to be achieved through four key stages.



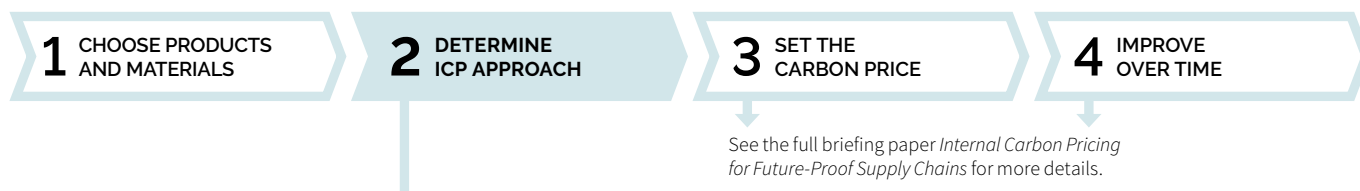
ICP is suitable for many purchases, but not all. It is a financial decision-making tool for organisations to manage their GHG emissions and associated risks and opportunities. The most promising purchased products and/or materials for ICP are therefore ones with a large carbon footprint and where financials play a major role in sourcing decisions. One way of finding out which ones these are could be through an adapted version of the well-established Kraljic Purchasing Portfolio Matrix as shown in Figure 2.

The ICP-adapted Kraljic matrix maps out purchases into four item categories, which helps in formulating specific procurement strategies and management processes for each category. It gives organisations a starting point for choosing the initial scope of the ICP programme based on the GHG emissions profile of the purchased items and the power dynamics between the organisation and its suppliers. Other elements to take into consideration relate to an organisation’s internal culture and priorities and external factors outside the control of an organisation’s value chain such as regulations and public support.

**FIGURE 2** The ICP-adapted Kraljic matrix to help in choosing the scope for the ICP programme



# How can organisations implement ICP in procurement and supply chain management? (2)



After selecting what is in scope of the ICP programme, the next step is **to determine how ICP should influence decisions**. Below are nine different approaches how ICP can be used in procurement and supply chain management. The first two ICP approaches influence internal processes, whereas the last seven affect the selection of and relationship with suppliers. More details on each approach can be found in our full briefing paper.

	Approach	Most suitable for
<b>INTERNAL PROCESS</b>	<b>1</b> ICP to assess risks of price increases from suppliers due to climate policies	Centralised supply chain management
	<b>2</b> ICP as an internal fee to financially incentivise the procurement of low-carbon materials and products	Decentralised procurement decisions
<b>EXTERNAL SUPPLIERS</b>	<b>3</b> Adding a requirement that suppliers need to use ICP to calculate the carbon cost in their offering	Leverage and strategic items
	<b>4</b> ICP as an assessment method to score competitive tenders	Leverage items
	<b>5</b> ICP as an additional price element in the financial assessment of competitive tenders	Leverage items
	<b>6</b> Requiring suppliers to use ICP in their company	Leverage and strategic items
	<b>7</b> ICP to determine the level of financial support for low-carbon projects of suppliers	Strategic items
	<b>8</b> ICP in a form of an emissions trading system throughout the supply chain	Strategic items
	<b>9</b> ICP to determine a premium paid for lower carbon materials and products	Bottleneck items

## About this Briefing Note

This note is a companion to the *Internal Carbon Pricing for Future-Proof Supply Chains* briefing paper and is an extension of two best practice guides to ICP developed by Navigant, The Generation Foundation and CDP in 2017 under the Carbon Pricing Unlocked (CPU) partnership: the *C-suite Guide to Internal Carbon Pricing – Toolbox for Creating Corporate Value* and the *How-to Guide to Corporate Internal Carbon Pricing – Four Dimensions to Best Practice Approaches*. The four steps in this note builds on the four-dimensional framework introduced in that guide to define the width (choose products and materials), depth (determine ICP approach), height (set the carbon price) and time (improve over time) of an ICP programme in a best practice manner.

This note is part of the Carbon Pricing Unlocked research partnership between Navigant 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. Navigant 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 funded by the profits of Generation Investment Management. The goal of the Foundation is to accelerate the transition to a sustainable economic system, one that is aligned with a low-carbon, prosperous, healthy, safe and fair society.

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