

How to get internal carbon pricing right

More and more companies have adopted an internal carbon pricing (ICP) program—or plan to. By setting a price on the carbon use of the organization, companies can better manage transition risk and evaluate business strategies that prepare themselves for a low carbon future. ICP also has near term benefits, including helping manage decarbonization efforts and gauge the carbon impact of new projects. This paper outlines how ICP works and how to go about adopting it.

With pressure from investors, upcoming Security and Exchange Commission carbon reporting rules, and rising expectations of carbon taxes, a growing number of North American based companies are developing internal carbon pricing (ICP) programs. However, North America trails other regions: in a 2021 survey, the CDP, a nonprofit carbon reporting organization, about 25 percent of North American companies had ICP programs in place or planned to have them within two years. That compares with 39 percent in Europe and 39 percent in Asia.¹

ICP enables companies to make decarbonization a company-wide effort through internal carbon fees and incorporating carbon pricing data as an input to other financial evaluative measures. Setting up an ICP program, however, can be a complex undertaking. It requires collecting new kinds of data from all corners of the enterprise and extrapolating carbon emission levels from energy usage in office buildings, factories, trucking fleets, and warehouses. Some companies are also using carbon pricing to help manage Scope 3 emissions (created by supply-chain partners).

In the following pages, we look at the state of play of ICP today—how it is being used and the benefits it is generating—and discuss how companies can design and implement ICP programs that can guide their decarbonization efforts now and be adapted to future needs.

Case study

A global technology firm uses ICP to self-fund renewable energy purchases

Rationale

Use ICP to reach carbon neutrality commitments, and advancing renewable energy goals, and embedding environmental goals in the financial and executive decision-making structures across the organization.

Impact

ICP produced funds to pay for sustainability improvements and purchase more than 28 million megawatt hours (MWh) of green power.

¹ Source: "Putting a Price on Carbon: The state of internal carbon pricing by corporates globally," CDP Report, 2021

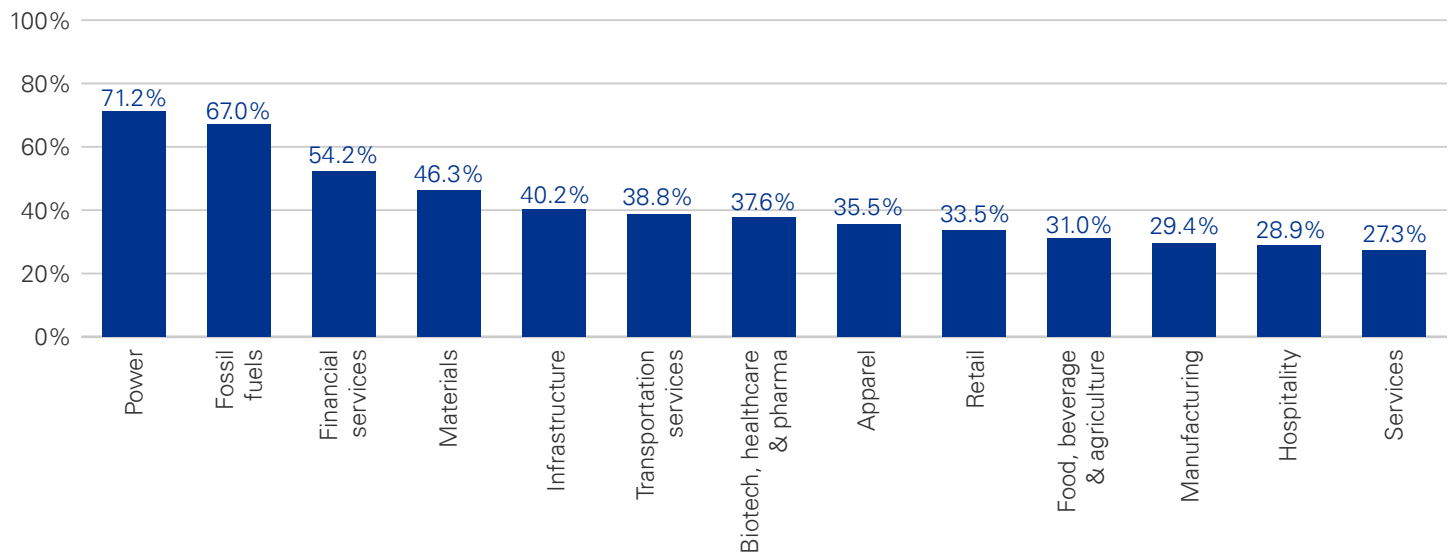
How carbon pricing is used today

ICP is a price used to place a value on the amount of a company's greenhouse gas or carbon dioxide equivalent (CO2e) pollution. Companies that have decarbonization/energy transition strategies may use ICP to better understand the financial impacts of climate risk. The shadow price of the company's CO2e (CO2 per metric

ton) can be used to modify behavior through an internal carbon fee and helps companies understand actual costs of emission reduction projects. Companies across U.S. industry sectors are using ICP or plan to do so (Exhibit 1). Not surprisingly, companies in the energy sector are more likely to have ICP programs.

Exhibit 1: Energy companies are leading in ICP adoption

Share of companies that have ICP or plan to implement ICP within two years



Source: "Putting a Price on Carbon: The state of internal carbon pricing by corporates globally," CDP Report, 2021

Case study

Large agriscience business uses shadow pricing to evaluate capital planning and M&A initiatives

Rationale

Use carbon pricing to account for the cost of carbon in capital planning and M&A

Impact

ICP was integrated into the financial due diligence of M&A targets and large capital investments, allowing the company to estimate the carbon impact.

Case study

Global energy producer uses ICP to identify clean-tech investments

Rationale

Adopted internal carbon pricing as part of its routine economic analysis of new projects and to evaluate investment decisions.

Impact

ICP led to investments in carbon capture technology, natural gas, and biofuels. This reduced direct greenhouse gas emissions from the company's facilities.

Approaches for ICP

1 Shadow pricing

What is it? A shadow price is a monetary value a company assigns to its greenhouse gas emissions on a per ton basis that is typically used to evaluate the potential cost or benefit of different strategies or investments aimed at reducing a company's emissions. No money is transferred with a shadow price.

Why is it important? Failing to include a shadow price when analyzing M&A and capital planning decisions may lead an organization to make decisions related to long-lived or high value M&A activities that would neglect to factor potential costs of reducing pollution – potential costs that may become regulated liabilities as climate policy continues to evolve.

How do you select a price? The implicit carbon price (see box below) of an organization's own decarbonization strategy may serve as a helpful starting point for establishing a company's shadow price. Other methodologies include benchmarking with industry, and analyzing the regulated carbon pricing environments in which a firm operates.

Who uses it? Typically finance, strategy, M&A, or corporate development leaders use a shadow price to help evaluate investment alternatives on a basis that integrates the potential cost of carbon pollution abatement into the analysis.

2 Internal carbon fee or charge

What is it? An internal carbon fee or charge is a fee a company imposes on itself on a per ton basis that can be used to drive decision making at the margin, reduce costs, or align internal culture with broader decarbonization efforts. Fees are usually assessed at the business unit level or based upon specific emissions activities (e.g., electricity demand, jet fuel usage), and can be pooled for use in BU-level or corporate-wide sustainability efforts.

Why is it important? An internal carbon fee is a useful tool to influence decision making across an organization. This approach can also create a useful vehicle for funding the deployment of new low-carbon technologies (e.g. solar panel arrays, EVs, etc.).

How do you select a price? An internal carbon fee can be set based upon the firm's shadow price, implicit price (see box below), or a price that aligns with the abatement cost of an emission activity (i.e. setting the charge for electricity usage equal to an amount that would pay for an equal amount of renewable energy certificates). Companies can also choose to set internal fees equal to an arbitrary value that is politically expedient.

Who uses it? Depending upon the coverage and scope of an internal fee, individual business units, specific emissions activities, or entire organizations could be the users of the internal fee; however, the program itself is usually developed through collaboration from the finance, accounting, sustainability, and operations teams.

Implicit carbon price

The implicit price is calculated based on the cost incurred by a company for implementing its emission reduction measures (e.g., the abatement cost per ton of CO₂e). Typically, calculated after desired emission reductions are achieved. As carbon taxes become more widely used, an implicit cost of carbon can help signal when abatement investments provide better financial outcomes than incurring a carbon tax. ICP can also help companies track their "off balance-sheet" carbon liabilities (e.g., predicting the probability of potential future carbon tax liabilities and incorporating these into financial decision making).

An ICP program is ultimately a management tool to address a specific goal or objective for the individual company in question. It is not uncommon to see a degree of customization and creativity employed in developing ICP programs so that the tailored approach suits the needs of the business. Therefore, a company may use a combination of different ICP approaches to meet its emission reduction goals, influence emissions throughout the value chain, and make long-term investment decisions.

Whether an organization is implementing a shadow price, an internal carbon fee, or an implicit carbon price there is a great degree of variability in how best to design and implement the dimensions of a carbon price. It's important that leadership focus on designing dimensions that are tailored to the organization and sector in question and align with leadership's planning and climate objectives.

Case study

Professional services firm implements ICP to drive culture change

Rationale

Implemented an internal carbon fee globally to drive organizational awareness around the emissions impact of decisions.

Impact

Internal carbon fee is helping change organizational awareness and align operations to a lower-emissions model. Funds raised through internal carbon fee are used to implement carbon reduction initiatives (e.g., installing solar on corporate properties).



Tangible benefits

Europe’s new CSRD rules and the SEC rules expected this fall will make it likely that almost all companies listed on U.S. or EU exchanges will be required to disclose greenhouse gas emissions and climate risk. These new disclosure rules, combined with the increasing reach and presence of carbon pricing as a policy tool² will make it

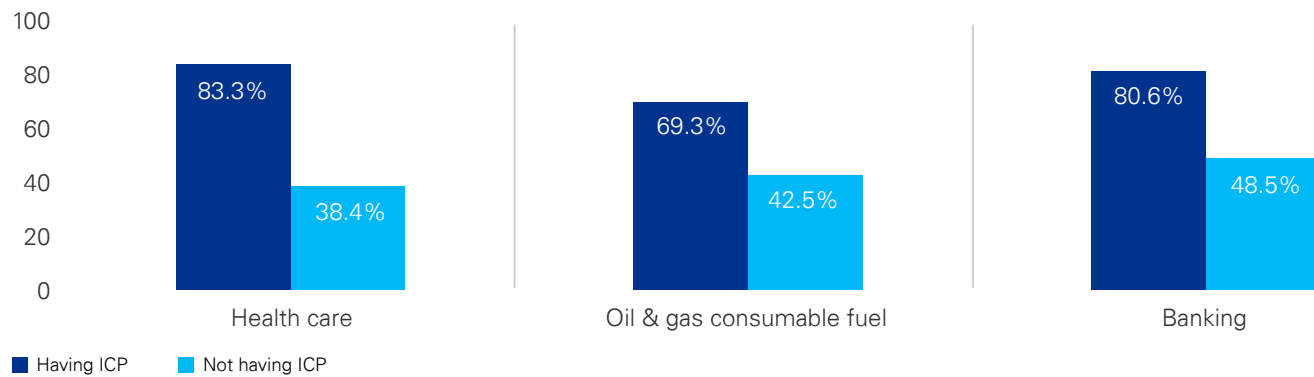
very important for organizations to operationalize their decarbonization goals. Harnessing an internal carbon shadow price, an internal carbon fee, or implicit price can be a powerful tool for helping organizations accomplish these objectives, while potentially saving money. Other benefits of adopting an ICP include:

Risk management	Investment decisions	Procurement strategies	Strategy	Investor relations
Prepares organizations to navigate regulatory environment and quantify impacts of potential regulatory changes	Improves internal decision making in better understanding the impacts of a carbon price on investment decisions (e.g., incorporating ICP into NPV calculations)	Prepares organization to respond to upstream supply chain pressures on scope 3 emissions	Challenges status quo helping to define where operations, strategy, and go-to-market approaches may need to change to better align with a carbon neutral world	Improves management of stakeholder expectations
Provides valuable input and insights into enterprise risk management	Helps identify and seize low carbon opportunities	Supports development of procurement strategies to align suppliers to corporate climate objectives	Input to strategic planning to assess long-term value risk, market opportunities, and evolving business models	Attracts environmentally aware investors and builds reputational brand amongst stakeholders
Tracks changes in carbon pricing markets	Key input into developing cost abatement curves (e.g., at what price of carbon does an abatement investment generate a better financial outcome)	Helps absorb changes to “green-focused” government procurement practices	Evaluate price elasticity of pricing strategies that account for carbon pricing	Demonstrates readiness to address climate change concerns and enhances performance on climate disclosure requirements
Evaluates potential hedging strategies for carbon prices	Generates internal funding for decarbonization investment			Provides investors transparency to potential impacts of carbon pricing
	Helps determine value in M&A			

² Source: World Bank Carbon Pricing Dashboard

Exhibit 2: Average of ESG scores across three industries compared with ICP adoption

There is a correlation between organizations that use internal carbon pricing and higher ESG scores. This trend likely speaks to relative maturity of climate and ESG programs at organizations that utilize ICP, versus ICP as a driver of ESG score performance.



Source: Refinitiv ESG Scores 2022

Case study

Consumer products company uses ICP to finance supply chain emission reduction efforts

Rationale

The company wanted to use carbon fees for an internal fund to support investments in greenhouse gas reduction.

Impact

“Capital” from ICP-based fees is being used to support carbon-reduction projects of supply chain partners.

Getting started

Companies should start by asking when, how, and who. Is the company ready for ICP—is there a compelling reason to initiate carbon pricing now? Could ICP help the company capture value by accelerating decarbonization (e.g., reducing energy costs)? To determine whether the organization is ready for ICP, start by answering these questions:

- How will new climate regulation and compliance requirements impact our company financially?
- How do the economics of CO₂e pollution abatement options change with fluctuations in the cost of carbon?
- Can some decarbonize costs be passed through in price adjustments?
- How does our cost to decarbonize differ than my competitors?
- How does a decarbonization support strategy and increase our advantages?
- How could we influence suppliers to help drive down our Scope 3 emissions?
- How will our customers view our carbon footprint?

If you are ready to start, the next step is to determine who will be responsible for designing, implementing, and running ICP. While the CFO organization typically leads, it is important that finance coordinates with other key functions in the organization, including strategy, sustainability, and enterprise risk, to get the greatest impact out of ICP.

How to get started? Here are recommended steps:

1 Define the vision/objective for implementing an ICP strategy

- Is the goal to reduce emission? Incentivize behavior? Prepare for upcoming regulations? Or inform capital planning strategy?
- Define how you want to use the information for business decisions
- Define your coverage based on how and where you want to reduce emissions and customize to your organizational context and data
- Recognize that it is a journey and price, coverage, and impact will evolve over time

2 Understand how regulated pricing could impact your organization

- Map out existing and pending carbon pricing regulations to understand countries/regions that have carbon pricing programs in place (e.g., cap-and-trade or carbon tax), relevant industries covered and future price expectations
- Conduct scenario analysis to understand probability of incurring a regulated carbon tax in the near-term and longer-term

3 Estimate an internal price

- Once the vision for the ICP has been defined, determine the best approach and methodology to select an ICP price, drawing from:
- External research on the marginal abatement cost (MAC) of decarbonization initiatives aligned with a company's activities
- Peer benchmarking of how your organization's industry is implementing internal carbon pricing
- Calculate your Marginal Abatement Cost Curve (MACC) across all known emissions reduction opportunities
- Assess future carbon pricing scenarios
- Select and apply a carbon price to meet your decarbonization objectives

4 Conduct pilot

- Conduct a financial analysis to assess how an ICP might inform capital planning decisions (shadow price) or raise funding for sustainability initiatives (internal fee)
- Perform a pilot on a select department/ region/ product to assess impact of implementation
- Based on lessons from the pilot, consider ways to optimize pricing and refine the implementation model

5 Develop a long-term pricing roadmap

- Assess the organizational impact of implementing an ICP strategy
- Develop an engagement and communication strategy
- Roll-out carbon price across the business
- Continually monitor and refine the process



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Contact us



Mark Golovcsenko

Partner, ESG Advisory

212-954-2373

mgolovcsenko@kpmg.com



Thomas Choquette

Director, Finance Transformation

202-533-3000

tchoquette@kpmg.com



Matthew Roling

Director, ESG Advisory

312-665-1000

mroling@kpmg.com



Brian Mace

Managing Director, Finance Transformation

267-256-1806

bmace@kpmg.com

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