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# Internal Carbon Pricing as a Strategic Tool for Corporate Decarbonisation

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### **SYNOPSIS**

Against the backdrop of global efforts to combat climate change, an increasing number of companies have proactively adopted internal carbon pricing (ICP), incorporating the costs of carbon emissions into their business decisions. By translating environmental externalities into internal costs or decision-making parameters, ICP not only encourages corporate emission reductions but also enhances their readiness for future carbon policies. This policy brief examines the ICP implementation experience of three industry-leading companies, Microsoft (information technology), BHP (mining and metals), and Société Générale (banking), with a focus on the background, key components, and outcomes of their ICP utilisation. Additionally, it discusses the ICP adoption in the Singapore context.

### **KEY POINTS**

- ICP has become an effective management tool for companies to drive decarbonisation and respond to climate-related risks. However, the specific forms and focal points of implementation vary considerably depending on corporate strategies.
- Three companies, Microsoft, BHP and Société Générale, present the successful implementation of ICP and its positive impacts on corporate decarbonisation performance, including carbon emission reductions and an increase in investments in renewable energy and other innovative climate technologies.
- The proliferation of corporate net-zero pledges, combined with Singapore's carbon tax and climate reporting policies, may increase the adoption of ICP by Singaporean firms.

### **INTRODUCTION**

ESI Policy Brief No. 55, released in July 2022, concluded that the adoption of internal carbon pricing (ICP) would continue to increase due to companies' growing interest in climate change and the expansion of mandatory carbon pricing schemes based on a review of historical trends in the use of ICP. As expected, ICP is becoming a critical tool for companies in pursuing their decarbonisation and climaterelated risk management objectives. However, many companies still do not use ICP and face challenges in determining the right price and gaining support from key decision-makers. Against this backdrop, this Policy Brief explains why and how companies utilise ICP and how ICP contributes to reductions in the companies' greenhouse gas emissions by examining three notable cases: Microsoft's internal fee, BHP's shadow pricing, and Société Générale's internal fee.

# ANALYSIS

## Microsoft: Internal Fee

As one of the world's largest information technology companies, Microsoft has been working to reduce carbon emissions since 2009 and pledged to achieve carbon-negative emissions by 2030. During its early efforts to abate carbon emissions, it realised relying solely on traditional environmental indicators was insufficient to ensure that individual departments begin meaningful practices for reducing their carbon emissions. Thus, Microsoft decided to directly convert carbon emissions into financial costs reflected in each department's profit and loss statements by introducing an internal carbon fee in 2012.



The internal fee mechanism involves charging each business unit within the company a fixed cost per unit of carbon emitted. Microsoft calculates carbon fees by dividing the costs of the environmental initiatives portfolio by projected annual carbon emissions across all business units, yielding a per metric tonne of carbon dioxide equivalent (tCO<sub>2</sub>e) charge. The costs of environmental initiatives encompass all expenditures and investments associated with carbon reductions and removals, such as the purchase of renewable energy certificates and carbon offset credits. The company initially imposed a USD  $5-10/tCO_2e$  charge on Scope 1, Scope 2, and business air travelrelated Scope 3 emissions. Then, the base fee doubled to USD 15/tCO<sub>2</sub>e in 2019 to reinforce financial accountability for emission reductions across all business units. In July 2020, Microsoft expanded the ICP coverage to include all Scope 3 emissions, requiring each division to account financially for its entire value chain's carbon footprint. Notably, the internal fee for Scope 3 business air travel emissions rose to USD 100/tCO<sub>2</sub>e in the fiscal year 2022-23, reflecting the costs of more advanced mitigation solutions in the aviation sector, such as sustainable aviation fuels (SAF).

Through the ICP mechanism, Microsoft has effectively internalised the external costs associated with carbon emissions and generated significant revenues that facilitate the company's net-zero journey. Collected fees flow into a dedicated carbon fund for sustainability projects and emission-reduction initiatives. Microsoft utilises this fund to invest in renewable energy and energy efficiency projects, promote electronic waste recycling, procure carbon offsets and credits. and innovative carbon removal support technologies. According to Microsoft 2024 Environmental Sustainability Report, the company achieved a 6.3% reduction in Scope 1 and 2 emissions compared to the 2020 baseline, increased its contracted portfolio of renewable energy assets to over 19.8 gigawatts (GW), and procured more than 5 MtCO<sub>2</sub>e. Furthermore, it invested USD 761 million in innovative climate technologies, including direct air capture and SAF. The use of proceeds is overseen by a climate committee comprising senior executives from various business groups. The committee assesses the alignment between the use of funds and the

company's carbon-negative targets and its performance in reducing emissions.

## BHP: Shadow Pricing

BHP is one of the world's largest mining companies, with operations spanning iron ore, copper, coal, and potash. To address the high emission intensity of the mining industry and associated risks from carbon taxes and emission trading schemes worldwide, BHP has proactively incorporated shadow prices for carbon into the investment decision-making process since 2004. Unlike the internal fee mechanism, shadow pricing does not make actual financial transactions. Instead, it influences the company's investment and strategic decision-making processes bv putting potential future carbon and regulatory costs. BHP mandates the incorporation of shadow carbon prices into key business decisions, including capital expenses, asset evaluations, and operational planning, thus ensuring that high-emission projects face competitive disadvantages under scenarios with potentially elevated carbon prices. This strategy prioritises their investments in lowcarbon technologies and sustainable solutions.

BHP determines the shadow prices based on an analysis of current carbon price levels under mandatory carbon pricing schemes, as well as expected policy changes around the world. In 2022, the company's climate strategy unit projected that carbon prices could range between 0 and USD 175/tCO<sub>2</sub>e by 2030 and increase to USD 10-250/tCO2e by 2050 globally. Consequently, BHP has set its operating shadow price within a range of USD  $0-175/tCO_2e$ . Projects in regions with more stringent carbon regulations are evaluated against higher shadow prices, reflecting the likelihood of stricter carbon constraints in the future. The shadow prices are also applied differently depending on potential costs from indirect emissions and demand changes from downstream. For example, if a project involves substantial electricity consumption, the analysis incorporates the potential impact of rising carbon prices on future electricity costs. Moreover, if global carbon pricing significantly increases operational costs within the steelmaking industry, the demand for iron ore could appear to decline. Consequently, BHP integrates such various carbon cost scenarios

into its day-to-day operations and strategic planning process to mitigate future risks.

Although there is no direct distribution of revenue funds to decarbonisation projects, BHP's shadow pricing has supported the company's mid- and long-term emission reduction targets by optimising its investment portfolio and operational decisions. BHP proactively considers emission reduction measures and costs during the project decision-making stage to minimise potential compliance costs related to future carbon regulations. The company has consistently updated carbon price forecasts for over a decade, enhancing the resilience of its asset portfolio against carbon constraints. Leveraging internal modelling and projecting insights, BHP invested in various renewable energy projects, including renewable energy transitions at its copper mines in Chile (Escondida and Spence), which now operate on 100% renewable energy, and multiple renewable energy contracts for Australia's Nickel West and Olympic Dam mine. It led to BHP's operational emissions in 2023 hitting 32% below the 2020 baseline. BHP's experience demonstrates the efficacy of the shadow pricing approach in managing climate and transition risks and steering significant capital towards low-carbon investments in traditional high-emission sectors.

# Société Générale: Internal Fee

Société Générale is a prominent European financial institution with numerous offices and employees worldwide. Recognising the importance managing operational of emissions, Société Générale initiated a carbon reduction programme from 2014 to 2020 that aimed to reduce per-employee greenhouse gas emissions by 25% and improve the energy performance of the group's buildings by 20% by 2020, compared to 2014 levels. To achieve this target bv incentivising emission reductions across its branches, the bank introduced an internal carbon fee of EUR  $10/tCO_2e$  in 2012. The price was increased to EUR 25/tCO<sub>2</sub>e in late 2021. This increase demonstrates the bank's greater ambition for future emission reductions and its anticipation of rising carbon prices. The internal fee of Société Générale applies to all core business units, functional departments, and branches within the bank. Each unit's carbon emissions

are calculated annually based on energy consumption and various operational activities, such as business travel, paper usage, and waste disposal, from the previous year. The total annual carbon fee determined by multiplying yearly emissions by the established fee rate is deducted directly from the respective unit's budget.

Rather than entering into the bank's general funds. revenue collected from the internal fee system is allocated explicitly to employee-led environmental initiatives via the corporatelevel "Environmental Efficiency Award," a redistribution programme competitive established in 2013. Employees across branches and business lines submit carbon reduction project proposals annually, with the most impactful initiatives receiving financial incentives. By doing SO, employees demonstrating exceptional engagement and significant abatement efforts are directly rewarded. This mechanism fostered active employee participation and meaningful investments in sustainability. Since its inception, the award has attracted nearly 950 proposals from across the continents, and more than half of the submitted projects have been implemented. These projects include sustainable information technologies, paperless operations, green building, smart travel management, and waste recycling.

Such heightened environmental awareness participation of employees drove and significant emission reductions. Between 2013 and 2022, the awarded projects collectively prevented more than 50,000 tCO<sub>2</sub>e of emissions. In 2020 and 2021 alone, the awardwinning initiatives and projects collectively achieved approximately 22,000 tCO2e of emission reduction, generating cost savings of EUR 17.8 million. As a result, Société Générale met its emission reduction and energy performance targets one year ahead of schedule. Subsequently, the bank increased its ambition in 2021, committing to a 50% reduction in scope 1 and 2 emissions and office-related scope 3 emissions from the 2019 baseline by 2030. Société Générale's ICP case suggests that thoughtfully designed and implemented internal incentives can transform carbon pricing pressures into workable motivation, fostering a green corporate culture with extensive engagement.

#### ICP Adoption in the Singapore Context

ICP mechanisms not only enable companies to achieve effective emission reduction targets but also enhance their competitive advantage in climate risk management and strategic positioning. Despite these benefits, it seems that many companies in Singapore have not vet utilised ICP. Out of 63 companies that responded to the CDP's climate change questionnaire between 2015 and 2022, only seven companies reported that they had adopted ICP. Companies may be reluctant to adopt ICP due to their limited contributions to carbon emissions and lack of capacity. Some companies may believe that climate change policies will not significantly impact their cash flows, as they are not carbon-intensive. Meanwhile, for some companies, utilising ICP may be challenging due to a lack of capacity to assess and address potential climate-related risks. Given that many Singaporean companies are small and medium-sized enterprises (SMEs), the lack of capacity may be a reason for the low adoption rate of ICP in Singapore.

However, it is expected more and more companies in Singapore will adopt ICP. As corporate pledges to achieve net-zero emissions and an even more ambitious target of carbon-negative emissions become more common, companies need to establish solid climate change strategies and seek proactive tools to support them. ICP can be an attractive and useful option. Additionally, given that the number of companies adopting ICP in the financial sector is growing rapidly, many financial institutions and companies based in Singapore will increasingly adopt it as a tool for climate stress testing and evaluation of investment decisions.

In addition, Singapore's policies are also expected to encourage corporate adoption of ICP. First, the increase in carbon tax would accelerate the adoption of ICP. Since a positive correlation between government-led carbon pricing schemes and the adoption of ICP is observed, and companies tend to set internal carbon prices higher than the mandatory carbon prices, the government's plan to increase the carbon tax rate will motivate companies to implement internal carbon pricing. Second, the extension of Singapore's requirement for corporate climate reporting can also accelerate the ICP adoption. All listed companies are mandated to publish their climate reporting, including corporate carbon emissions and climate-related risks and opportunities, starting this year, with the regulated companies to be extended over time. This policy may stimulate companies to demonstrate their climate consciousness and environmental responsibility to stakeholders by utilising ICP in their business operations.

#### CONCLUSION

The experiences of the three companies indicate that effective ICP requires integrating direct and clear economic signals into corporate strategy and culture, efficiently allocating funds, and employing motivational incentives to align environmental objectives with business interests. The market leadership and exemplary practices demonstrated by these early adopters are expected to motivate more companies to embrace proactive climate risk management strategies like ICP, placing greater emphasis on incorporating decarbonisation into business plans.

#### WHAT TO LOOK OUT FOR

- Effectiveness and customisation of ICP implementation in different industries
- Synergies between ICP and external compliance benchmarks
- Impact of global carbon pricing trends on Singapore's ICP adoption

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