

CARBON PRICING PATHWAYS

EXECUTIVE SUMMARY

WE NEED A STRATEGIC CONVERSATION ABOUT CARBON PRICING.

Business and investors are calling for robust policies that place a price on CO₂ emissions to drive investment in low carbon solutions. A growing list of governments are taking notice and have enacted systems or plan to do so. Yet, conversation among business, investors and governments often gets stuck. A gulf exists between a general discussion about the obvious – “we agree that a price on carbon is important” – and a detailed, technical discussion about the intricacies and scale of policies.

Carbon pricing policy is complex. There are dynamic interactions between international agreements and national law, between regulation and industry-led action, between carbon taxes and cap-and-trade systems, between explicit and implicit carbon prices. Setting future prices becomes even more difficult given ambiguity about government commitments to cutting emissions and market uncertainties about how long policies will last.

Why do price levels matter? Policymakers need to know the prices at which technologies will shift. Many countries are currently trying to understand price levels needed to encourage the switch from coal- to gas-generated electricity. Business need to allocate resources and capital in line with future carbon prices. Investors need to assess portfolio risks, including the risk of stranded assets, in a fast-changing climate policy landscape. It makes sense to prepare to better navigate changing seas.

The **Carbon Pricing Pathways Toolkit** is meant to facilitate important conversations about the nature of carbon pricing and the development of price levels. We need well-designed policies and well-informed business and investment decisions to achieve a sustainable, profitable, low carbon future. The ‘right’ conversation about carbon pricing can help to ensure the global economy thrives while limiting global warming to 2°C of pre-industrial levels, by promoting:

- Widespread adoption of effective carbon pricing policies
- Carbon price levels to transform economies with large-scale decarbonization
- Converging carbon price levels over time to ensure open markets

Now is the time to engage more decision-makers in this strategic conversation.

CARBON PRICING PATHWAYS TOOLKIT

The Carbon Pricing Pathways Toolkit offers a framework to discuss effective carbon pricing, with concepts to help the global economy navigate the complex waters and uncharted routes to decarbonization.

FINDING AN ENTRY-POINT INTO A COMPLEX PROBLEM

The Toolkit approaches the complexities of the global economy by considering two ‘dilemmas’:

- **Global actions vs. sovereign and sub-sovereign actions**

Carbon pricing policies typically reflect the actions of national and regional governments. In some instances, voluntary steps may be also taken by business, investors and private sectors. It is essential that these policies and actions interact positively with international efforts on a range of issues including trade, development and of course, climate change.

- **Explicit carbon pricing vs. policies that implicitly price carbon**

This Toolkit describes explicit carbon pricing instruments only, such as cap-and-trade systems and carbon taxes. However, it is important to acknowledge that carbon pricing policies alone are insufficient and need complementary policies. Some parts of the economy will not be motivated by carbon prices but may respond to energy efficiency or product performance standards. Others might require a carbon price so high that it is politically unviable, in which case strategic investments in technology research and development may be preferable.

CARBON PRICING BANDS

Carbon Pricing Bands provide a common language to talk about pricing levels, focusing on how price affects economic behavior and vice versa.

- SUBSIDIES:** Fossil fuel subsidies lower the actual cost of carbon, and make low carbon technologies relatively more expensive. This negative price on carbon is one way that governments boost fossil fuel consumption and render low carbon alternatives economically less viable.
- INTRODUCTORY:** Prices up to \$20. Most systems begin in this band, enabling businesses to adapt. Governments give clarity about future policy direction and start to collect revenue. This band is useful, but systems that languish here may not cut emissions enough over time.
- OPERATIONAL:** Price range \$20 to \$50. In this band, carbon prices start to drive economic transformation, enabling structural changes like a wholesale switch from coal- to gas-generated electricity. Carbon taxes and cap-and-trade systems start to generate significant income.
- TRANSFORMATIONAL:** Price range \$50 to \$80. Schemes in this band have secured a low carbon future beyond coal. They carry forward successes from the operational band. For example, renewables are likely to be the most attractive investment, replacing gas, and capital flows will prompt low carbon technological breakthroughs.
- TARGETED:** Prices above \$80. In limited circumstances, this band may support specific policy objectives such as eliminating certain fuel sources.

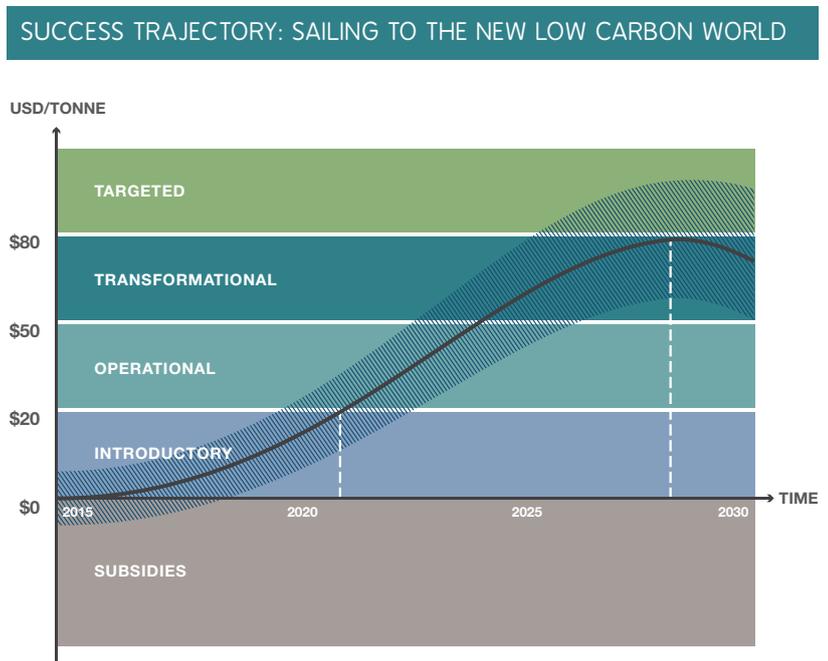


CARBON PRICING TRAJECTORIES AND NARRATIVES

Carbon Pricing Trajectories, each with a corresponding **Carbon Pricing Narrative**, are imagined futures offered to stimulate discussion about this complex question. In the Toolkit's first trajectory and narrative, the world succeeds in making the transition to a low carbon economy. The others explore alternative futures in which the global economy does not manage that transition. The future is unknowable, so clearly these trajectories and narratives are not predictive and only portray the possible impacts of today's decisions and actions. Nor are they prescriptive, as no policy recommendations are intended.

SAILING TO THE NEW LOW CARBON WORLD

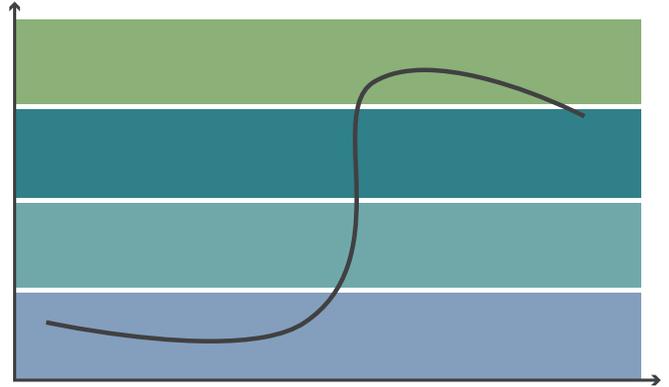
Global temperatures remain within 2°C of pre-industrial levels: Business, investors and governments successfully navigate the complex waters of climate policy, guided by domestic policies and global agreements. Globally, carbon pricing is a popular policy choice; mature schemes quickly reach price levels needed to drive fuel switching, and effective mechanisms are introduced to drive price convergence. Carbon pricing sits within a package of complementary policies, which work together to deliver a low carbon economy.



SAILING INTO THE CLIFF

Delayed action means global temperatures rise by 3°C or more: Global agreements are strong, but few effective national carbon pricing policies emerge. Greenhouse gas emissions diminish slowly, until catastrophic weather events trigger a radical course-correction, with carbon prices soaring worldwide. Unprepared, the world economy is crippled. Emissions do quickly drop, but the carbon budget is already breached. The accompanying trajectory shows sustained low carbon prices, which suddenly rise above the transformational level.

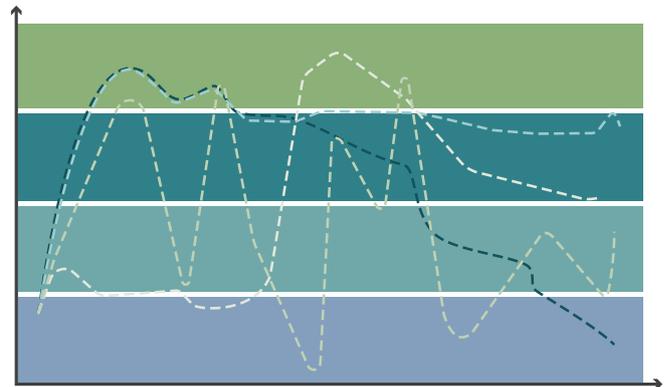
ALTERNATIVE TRAJECTORY: SAILING INTO THE CLIFF



STORMY WATERS

Confusing policy signals and fractured action means this, too, is a 3°C world: Many national carbon pricing schemes emerge, but operate haphazardly, out of sync with other domestic policies and global climate change agreements. Price convergence is unachievable. Just a handful of sectors effectively drive down CO₂ emissions. Carbon prices follow a chaotic trajectory, reflecting changing (and collapsing) political will, as well as business and investor confidence. Decarbonization of the global economy is too slow.

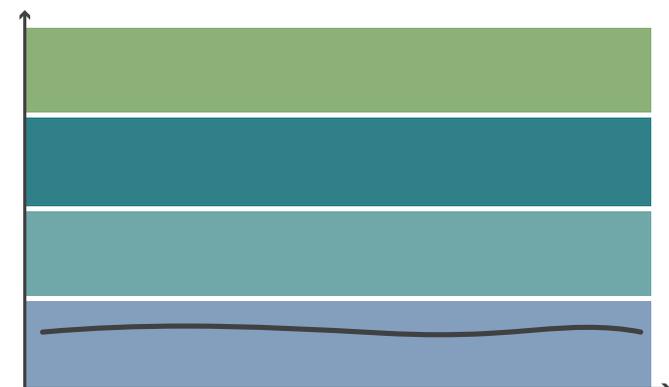
ALTERNATIVE TRAJECTORY: STORMY WATERS



RUNNING AGROUND

In the face of limited national ambition and an underwhelming global agreement on climate change, carbon prices languish in a 4°C world: As an issue, climate change promptly recedes to the background; coal consumption accelerates to support development priorities. Significant economic damage and social upheaval demonstrates what it means to remain in a carbon-intensive world.

ALTERNATIVE TRAJECTORY: RUNNING AGROUND





SUCCESSFULLY NAVIGATING THIS VOYAGE STARTS BY ENHANCING OUR ABILITY TO MAKE INFORMED DECISIONS TODAY.

BUILDING THE TOOLKIT

The Toolkit is the work of CDP and the We Mean Business Coalition. It emerged through engagement with the vast body of knowledge on carbon pricing and related subjects, and after working with an expert group of policy, investment, business and civil society leaders. This group's input was invaluable. However, this Toolkit, and any discrepancies within it, are the responsibility of the authors alone.

Some notes on the development of the Toolkit:

- Its conceptual framework is a 'systems dynamic' for carbon pricing. This framework facilitated a thorough examination of the two dilemmas described on the facing page.
- Futures techniques (strategic dilemmas, scenario thinking, three horizons) helped to explore the range of possible 'system futures' and to define plausible pathways that could deliver both success and failure.
- The notion of 'adaptive pathways' is central to the Toolkit's trajectories and narratives. They describe ways in which individual economies might act and react. They do not predict or prescribe the exact course of action. They should be used as navigational markers to guide exploration of the pathway to a low carbon future.

Excellent materials are available that contain expert guidance on policy design and implementation, and on related issues such as low carbon solutions and new technologies. The Toolkit draws extensively on this knowledge, a selection of which is outlined for reference.

USING THE TOOLKIT

Effective carbon pricing is a key policy instrument to ensure global temperatures do not rise more than 2°C. Successfully navigating this voyage starts by enhancing our ability to make informed decisions today. Crucially, we need to be more skillful in our discussion about the future of carbon pricing, which not only focuses on what is achievable but also on what is needed.

We encourage all to engage with the concepts or 'tools' offered the Carbon Pricing Pathways Toolkit.

Please use them. Discuss them. Critique them.

Please bring them to your stakeholders.

Please help improve them by sharing your experiences, insights and questions.

It is in this spirit that this Toolkit is offered as open source materials, which will be further developed and improved, iteratively.

CONTACT

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