



Carbon Pricing: One Piece of the Climate Puzzle

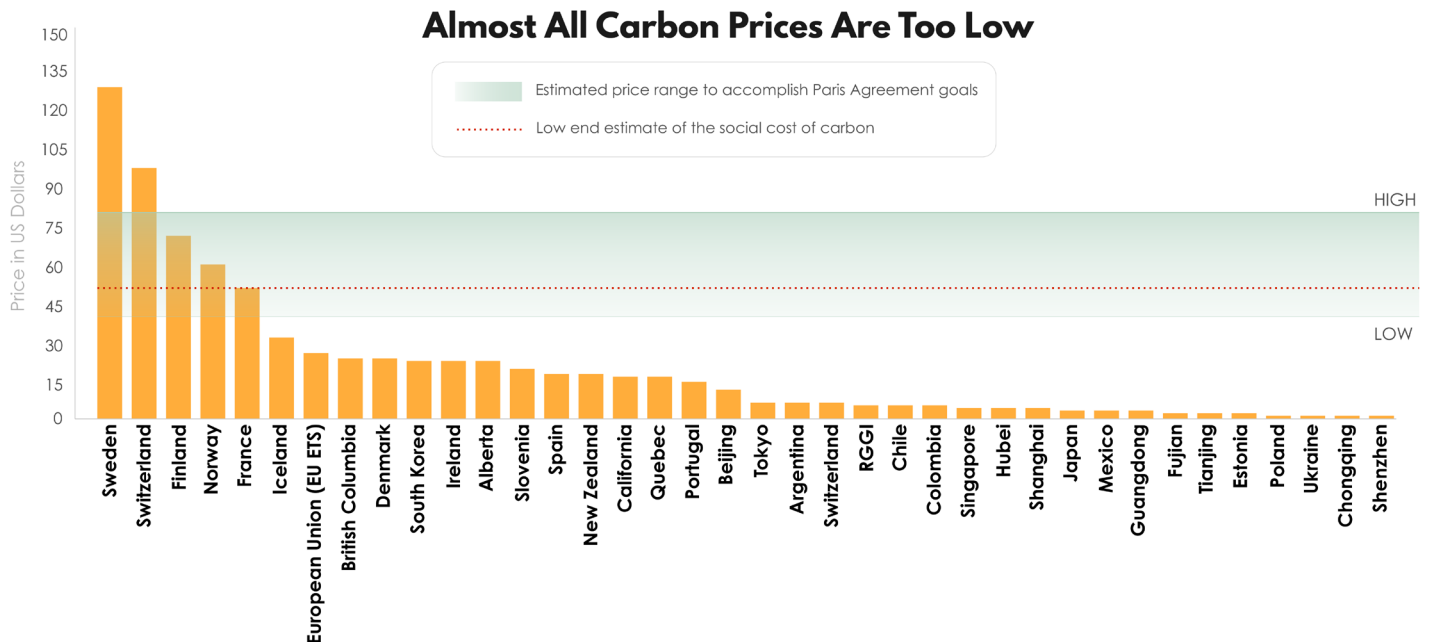
Executive Summary | By Andrés Prieto and Lindsey Walter

Carbon pricing is a crucial part of the climate puzzle. But the severity of the climate crisis requires a complete set of strong, innovative clean energy policies to get us to zero by 2050. We must implement policies now that incentivize and invest in clean energy in order to build support for more comprehensive and ambitious climate policies, like carbon pricing, in the future.

15 years of carbon pricing in 40 countries and 20 subnational governments (states, provinces, and cities) reveal four crucial observations that can help us improve carbon pricing policies and show that we need additional, complementary policies to address the climate crisis.

Observation 1 → Nearly all carbon prices are too low to drive the ambitious decarbonization proponents have sought

The vast majority of today’s carbon prices are underperforming. If voters won’t allow the carbon prices we truly need, then the mechanisms won’t hit the mark.



Source: World Bank Group. "State and Trends of Carbon Pricing 2019." Open Knowledge Repository, Washington, DC: World Bank, 6 June 2019, <https://openknowledge.worldbank.org/handle/10986/31755>.

Figure 1: The price of carbon in different carbon pricing mechanisms implemented across the world. Only five fully internalize the low estimate of the social cost of carbon, \$50 per ton of CO₂e.

Observation 2 → Existing economic and regulatory conditions often prevent carbon pricing from excelling in practice

The optimal carbon price requires: 1) well-functioning, competitive markets, 2) governments with quality emissions data for all major polluters, 3) access to low-carbon substitutes, and 4) no pre-existing taxes or climate policies that create policy redundancy or market distortions. In reality, we often have low-quality emissions data, a lack of scalable and affordable alternatives for carbon-heavy activities, and already complex regulatory environments.

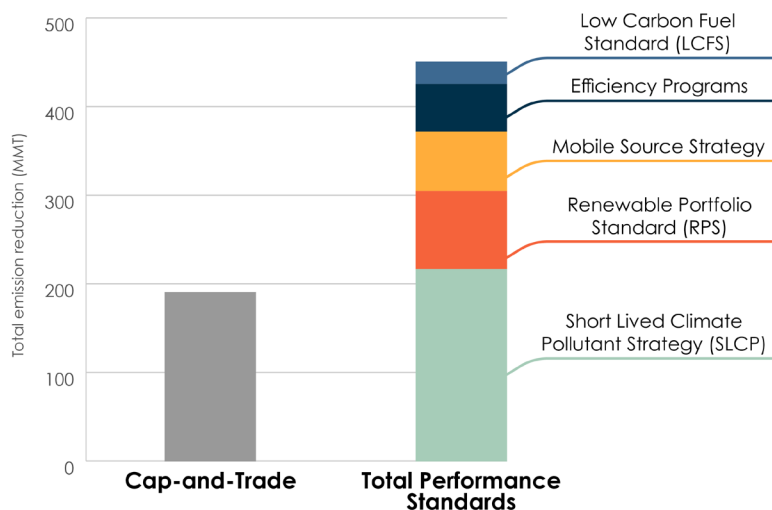
Observation 3 → Some carbon prices are not delivering the price certainty that investors need

Carbon prices have been too volatile (and oil and gas too cheap) to help convince investors to take a risk on projects with longer payback periods. Carbon price volatility is most severe in cap-and-trade systems, where fluctuations in economic activity can cause large, unanticipated drops in the price of carbon. For example, the European Union Emissions Trading System started at ~24 Euros then dropped substantially to as low as ~5 Euros, taking until 2019 to recover.

Observation 4 → Carbon pricing requires complementary policies to address hard-to-decarbonize sectors

The majority of emissions reductions from carbon prices are happening in the power sector. Studies show that this will remain true not only for today's relatively low carbon prices, but also if there were more ambitious federal carbon prices. We must decarbonize every single sector of the economy by 2050, which will require more than a carbon price alone.

Total Projected Emissions Reductions by 2020 by Climate Policy in California



Source: "California Cap and Trade." Center for Climate and Energy Solutions, 16 Mar. 2018, www.c2es.org/content/california-cap-and-trade/.

Other Policies Are Driving Deeper Emissions Cuts

Over the past 15 years, performance standards have often resulted in more emissions reductions than carbon prices. Such policies like clean energy and energy efficiency standards have proven to be more politically popular and effective at preventing the deployment of new fossil fuel assets. For example, although the California cap-and-trade program is the backbone of their climate policy mix, it still produces smaller emissions reductions than the performance standard policies intended to complement it.

Figure 4: Total projected emissions reductions of different climate policies in California. Performance standards are driving a little over two-thirds of total emission reductions through 2019.