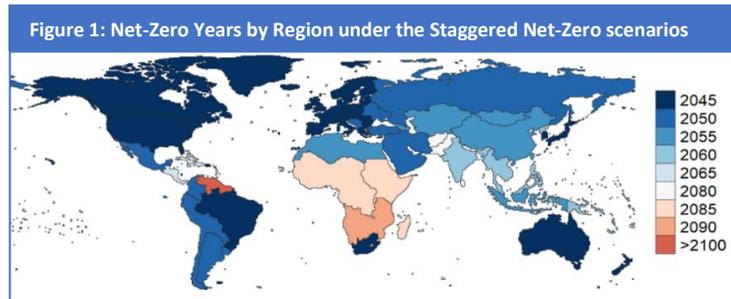


The Potential Role of Article 6 Compatible Carbon Markets in Reaching Net-Zero

Executive Brief

This paper explores the role of Article 6 in pathways to global net-zero CO₂ emissions in four scenarios: two Universal Net-Zero scenarios, where all countries commit to linearly reduce emissions to net-zero in 2050 with either independent or cooperative implementation, and two Staggered Net-Zero scenarios, where lower-income countries set a later date for their net-zero targets based on relative income differences, again with independent or cooperative implementation.

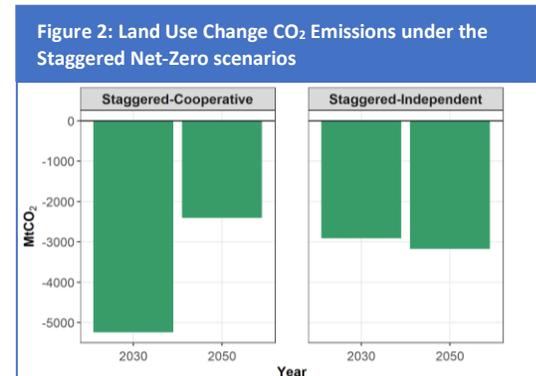
Cooperative implementation through Article 6 compatible carbon markets allows countries to achieve net-zero targets with greater economic efficiency. The market value of financial flows between countries could exceed \$1 trillion¹ per year in 2050 under both scenarios, driven by a sharp rise in global carbon prices over time. In a Universal Net-Zero scenario, the model could only produce viable economic pathways when cooperation and removals were in full use. However, in putting all countries at Net-Zero in 2050, equity concerns arose because some developing regions, such as India and Southeast Asia, emerged as buyers of carbon credits – and some developed countries become sellers.



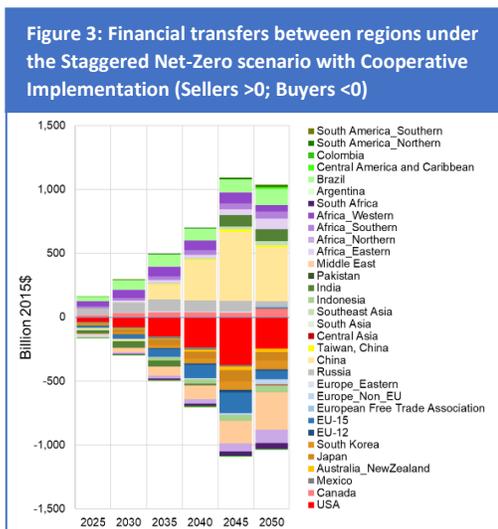
The Staggered Net-Zero scenarios allow flexible timing by relaxing the assumption that all countries reach net-zero simultaneously in 2050. Instead, the achievement of net-zero emissions is brought forward by five years in countries that already have a target and pushed back after 2050 in some developing regions, staggered according to their economic development (**Figure 1**). Doing so would mean that countries responsible for 97% of 2020 emissions would reach net-zero by 2060. While this delay in achieving global net-zero emissions would lead to higher short-term temperature

increases, it is still consistent with the Paris goal of limiting climate change to “well below” 2°C because of the increase in ambition by capable Parties. Moreover, cooperative implementation of Staggered Net-Zero targets could yield significant financial savings, reducing mitigation costs by \$21 trillion between 2020 and 2050.

Article 6 compatible mechanisms could drive an increase in land use and nature-based carbon sinks, such as decreasing deforestation and increasing afforestation and reforestation (**Figure 2**). Land sinks play a prominent role in the near term, whereas carbon sequestration technologies become increasingly important towards 2050.



Article 6 cooperation can also shift capital investment from developed to developing regions (**Figure 3**) where it can achieve more mitigation. In particular, the Staggered Net-Zero scenario with cooperative implementation prompts growth in investment flows to China, India and most of Southeast Asia. Latin America, the Caribbean and most of Africa also become sellers of carbon credits. This shift in financial flows can create ancillary sustainability benefits, such as improved air quality, accelerated renewable energy deployment, and new energy infrastructure.



The physical transfers of carbon credits in the Staggered Net-Zero scenario are similar in scale to the transfers under the Universal Net-Zero scenario in 2030. However, in 2050 the physical trade volumes are 40% higher in the Staggered Net-Zero scenario than in the Universal Net-Zero scenario, because, in the Staggered Net-Zero scenario, there is greater variation in regional emissions, and trade allows for more flexibility and cost effectiveness.

This study shows that Article 6 has important implications for both mitigation and sustainable development under different net-zero timings that address equity concerns. In addition to lowering mitigation costs, Article 6 could shift capital investment toward selling regions, improve local sustainability results, and present incentives for further technological innovation.

¹ All financial values mentioned in this report are in 2015 USD