

**Climate policy and carbon pricing:  
an analysis of the emission trading scheme (ETS) feasibility in Brazil**

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## **1. Overview**

With the pressure on governments to urgently "decarbonise" the global economy, decision makers and politicians have turned to market solutions aiming to reduce the carbon intensity of the economy. One alternative is the development of a carbon market that is a solution designed to optimize capital allocation in the context of a world with carbon constraints, putting a price on it and letting the market function efficiently.

Some carbon markets are currently operating in different countries and they have contributed to the implementation of projects aimed at reducing GHG emissions in the most diverse sectors, as well as helping to make these gases to become economics assets, not environmental liabilities anymore. Numerous national and regional low-carbon initiatives, including voluntary market mechanisms, have gained and are gaining momentum in developed countries and developing economies in recent years.

More recently, the Paris Agreement was drawn up at the 21st Conference of the Parties (COP 21) in Paris, in late 2015. Each country presented its own target to reduce pollutant emissions based on their national plans called intended Nationally Determined Contributions (iNDCs). Brazilian iNDC includes a 37% reduction in GHG emissions by 2025 (equivalent to the emission of 1,346 million t CO<sub>2</sub>e), and 43% by 2030 (equivalent to the emission of 1,208 million t CO<sub>2</sub>e), based on the levels recorded in 2005.

One issue, however, becomes relevant when analyzing the carbon pricing instruments possibly used to reach the Brazilian iNDC. As stated in iNDC's own document, "Brazil reserves its position regarding the possibility of using any market mechanisms that may be established under the Paris Agreement". That is, it can be concluded that it is not yet clear how the Brazilian climate policy will be shaped in terms of mechanisms and economic instruments for carbon pricing in order to reach the goals assumed.

## **2. Methodology**

This paper has the following two approaches. First, through an extensive literature review, it attempts to fill gaps in the literature by showing how different carbon markets – working in the emission trade scheme (ETS) – function depending on the local, regional or national market structure. Secondly, after concluding that each specific region has its own carbon market based on its market structure, it will be analyzed the Brazilian case.

There will be discussed the main national projects in terms of carbon pricing and cap-and-trade that, in general, use input-output matrix or Computable General Equilibrium (CGE) models. All these models start from the basic microeconomic assumption of

competitive markets that must be questioned after deeply analyzing the Brazilian market structure, especially in some sectors.

### **3. Expected results**

When analyzing the Brazilian market structure, however, it is verified that such assumptions often do not occur in practice, for example, when considering the existence of monopolies and/or oligopolies in the steel industry and refining. In this sense, this article seeks to take a step back to question: would it be efficient to implement a cap-and-trade mechanism in the Brazilian economy aiming at the reduction of GHG emissions and attainment of the goals proposed in the iNDC? If not, which instrument(s) would make sense given the dynamics of the country's market structures?

### **4. Conclusions: Lessons learned and implications**

Key issues, however, should be analyzed when designing the scope of a carbon market, such as setting the GHG reduction target, program coverage, and how certificates are allocated. As a result, the different institutional arrangements present different results on the distributional impacts of the costs and benefits generated by this instrument mechanism.

Furthermore, when designing the national climate policy in terms of carbon pricing, it must be analyzed how is the country's market structure, It will directly impact in the adoption of a carbon market, a carbon tax or an hybrid model. Such discussion must happen, especially considering that Brazil is still analyzing the best post-2020 carbon pricing policy. This way, we expect to be able to offer policy recommendations for designing an efficient Brazilian policy of carbon pricing.