

## GHG emissions and carbon markets

The increase in greenhouse gas (GHG) concentration, which includes CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, CFCs, HFCs, PFCs, SF<sub>6</sub>, resulting primarily from the combustion of fossil fuels and the emission of methane gas and industrial gases) is causing global climate change, including the phenomenon of global warming.

Concerned about the climate problems caused by the excessive concentration of GHG in the atmosphere, 190 countries, meeting in the 1992 Rio Convention, adopted the United Nations Framework Convention on Climate Change ([UNFCCC](#)). Since then, various initiatives have been developed internationally to promote the reduction of GHG emissions.

This process gained momentum after the adoption of the UNFCCC Kyoto Protocol in 1997, which set binding targets for reducing GHG emissions among industrialized countries (the so-called Annex 1 countries). At the same time, the Kyoto Protocol has also created so-called Flexibility Mechanisms, which include the Clean Development Mechanism ([CDM](#)) and the Joint Implementation (JI), which allow the creation of credits to reduce carbon emissions through projects in developing countries and those in Annex 1, respectively.

To meet the targets set by Kyoto, the European Community has established a cap & trade system to control the emissions of its industrial sector. The European Emissions Trading Scheme ([EU ETS](#)), which began in 2005, expanded rapidly and in 2011 this market handled a total of EUR 120 billion in shares traded. According to the rules of this system, participating industries can, in order to achieve their emission reduction goals, buy and sell quotas among them, and still purchase credits from emission reduction projects. The EU ETS represents a major source of international demand for CDM credits. The centre of this market is London, which today has a vast industry of service providers associated with this sector.

Since then, several GHG quota trading systems have also been developed in other parts of the world, such as New Zealand, Australia, Japan, and certain regions or states of North America (including AB32 legislation in California, the Regional Greenhouse Gas Initiative - RGGI in the eastern US, and the Western Climate Initiative in the US and parts of Canada).

China, despite not having GHG reduction targets within the UNFCCC, also developed carbon markets in several provinces, such as the Shanghai Environment and Energy Exchange.

Since the UNFCCC was launched, Brazil has always been one of the main countries involved in international climate negotiations. In the context of Kyoto, Brazil is one of the largest hosts of CDM projects worldwide. More recently, with the approval of the National Policy on Climate Change - PNMC ([Law 12,187](#) of December 29, 2009), Brazil has positioned itself in favour of building a national carbon market based on the establishment of reduction targets for domestic emissions. In 2011 the federal government signed an agreement with the World Bank to include the country in the Partnership for Market Readiness. This World Bank program provides technical and financial support to countries that are interested in building a national carbon market. Given the predominance of emissions generated by land use in the country, Brazil is also studying and developing its national REDD policy (reduction of emissions from deforestation and forest degradation).