LIFE COASE

Workshop on the role of carbon markets in reaching carbon neutrality

17 - 21 June 2023

12:15-13:00 | Session 1: Chinese National ETS Model

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Title: China's national ETS price outlook: long-term forecast and policy scenarios

Abstract: As the world's largest carbon emitter, China faces immense pressure to reduce CO2 emissions. To address climate change and promote the transition to a low-carbon economy, the Chinese government has actively promoted its 30/60 carbon neutrality plan, which represents two crucial goals set to address climate change through a series of policies and measures aimed at transitioning the domestic economy towards a green, low-carbon path. Specifically, the Chinese government has pledged to peak carbon emissions by 2030, and aims to achieve carbon neutrality by 2060. To achieve this, China has learned a lot from the EU ETS, and started the construction of its own carbon emission trading system. Since 2013, China has successively launched carbon trading markets in seven pilot areas, which have made some progress in terms of trading mechanisms, allowance distribution, and market supervision. In 2021, China announced the official launch of its national carbon market, with the power sector being the first to be included in the initial phase. The market is expected to gradually expand to include seven key industries such as petrochemicals, chemicals, building materials, iron and steel, non-ferrous metals, and pulp and paper by 2030. The Chinese Carbon Emission Trading System (CN ETS) has been continuously developing since its establishment. In 2023, the system included emissions of 500 million tons, mainly covering the power sector, which accounts for 40% of China's total emissions. The allowance determination of China's ETS adopts a combination of bottom-up and top-down methods, with 100% allowances allocated to regulated enterprises through free allocation. And the controlled entities have a two-year compliance period compared to EU ETS's annual compliance cycle. Moreover, the trading products are only limited to spot allowances compared with the European ETS, which also includes futures and other derivatives in addition to spot trading. In terms of offset policies, China allows the use of China Certified Emission Reductions (CCER) to offset 5% of emissions, while Europe has not accepted voluntary emission reductions for offsets since 2021. In terms of market participants, the Chinese ETS is mainly participated in by regulated enterprises (all of them are power plants for now), while the EU ETS also includes investment institutions and individual investors. Due to these differences, the Chinese carbon market currently presents characteristics such as lack of trading entities, lukewarm trading volume, smaller price fluctuations, and lower carbon prices. In this paper, we use an economic equilibrium model, focusing on the supply and demand, and most importantly, the balance of China's carbon market, to determine the price trend of the CN ETS. The market balance method is grounded in the principles of microeconomics, where price is determined by the intersection of supply and demand curves. In the context of the CN ETS, the supply of emission allowances is typically regulated

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by the government (and allocated for free), while demand is driven by the need for compliance and the cost of alternative abatement measures. By making long-term forecasts of carbon emissions from key industries, the timing of expansion of the carbon market, and the amount of carbon market allowance allocation, we were able to gain insights into the annual changes in the carbon market allowance balance, and thus derive a reasonable carbon allowance price curve.

Webpage and programme here.