[Abstract] Climate change regulation and its impact on the Korean economy

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Many countries have now introduced national policies and laws on climate change mitigation to address the rising risks. The European Union raised its climate targets significantly in the framework of its "Green Deal". As for the U.S., President-elect Joe Biden comes into office with an ambitious agenda to tackle climate change. China, too, seems to be shifting from laggard to leader in climate policy, with President Xi Jinping's pledge for net-zero emission by 2060.

As a result, the impacts from climate change on the global trade environment are expected to become more widespread and to intensify. The EU plans to propose a carbon border tax to avoid carbon leakage. The U.S. seems to join the EU in aiming for net-zero emissions by 2050. Details of the tax will be worked out in the coming year, but it is anticipated that the two countries might impose at least $75/ton by 2030, as the IMF suggested a carbon border tax of $75/ton by the year 2030 to limit global warming to 2 degrees Celsius. However, China, unlike the aforementioned two countries, seems to impose approximately $35/ton by 2030 considering that President Xi announced carbon neutrality before 2060 - 10 years later than EU's pledge - and IMF pointed out that $35 per ton carbon tax would be particularly effective in reducing emissions in heavy coal users such as China. Under this scenario, the carbon border tax of the EU and the U.S., reaches approximately $30.6/ton, $23.5/ton by 2023 respectively, and then gradually increases to $75/ton by 2030. As for China, the tax reaches $9.1/ton by 2023, and then gradually increases to $35/ton by 2030. Consequently, the carbon border tax of the three countries will cost Korean economy a grand total of nearly KRW 610 billion by 2023 and KRW 1,870 billion by 2030.

Additionally, the automotive industry faces unprecedented challenges and changes. Under EU regulations due in 2021, car manufacturers must ensure average emissions from new cars are below 95g of carbon dioxide per kilometre driven or face huge fines. Furthermore, some countries have announced plans to ban internal combustion engine cars. In other words, the automotive industry is now undergoing massive structural change. Moreover, private and finance sectors have stepped up to take action on climate change. For example, over 280 RE100 companies have made a commitment to go '100% renewable'. Also, investors started to consider climate change related risks and response as company's risk management capabilities.

Under this rapidly changing circumstance, Korean government and companies are, first of all, recommended to decarbonize the electricity grid. Also, an increase in investment in new technology and processes would lead to a reduction in greenhouse gas emissions, and thus, would lessen the anticipated warming. Additionally, the private sector is advised to actively participate in global climate change initiatives for transparent information sharing with investors and stakeholders. Lastly, Korean export companies need to satisfy global leading companies' requirements such as RE100 participation in order to continue business with them.

In consequence, the Korean economy, in the middle of climate change driven changes, now faces both opportunities and challenges. The period of transformation is expected to serve as an innovation momentum towards a low carbon economy.

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