OPINION

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Lessons from Recent NetZero-aligned EU-ETS Reform for K-ETS

As advanced economies keep implementing decarbonization policies even in the face of the energy crisis, the EU has recently reached a provisional agreement on the reform of the emissions trading system (EU-ETS). The reform of the EU-ETS, a key mechanism for carbon neutrality, will have a significant impact on Korea's emissions trading system (K-ETS) which is set to be introduced in 2023. Notably, Korea has revised up the 2030 NDC target to 40% and thus, emission allowances (cap) of the K-ETS are expected to be substantially reduced. Accordingly, there will be a growing need for the market stability reserve (MSR) scheme adopted by the EU as a way of alleviating the supply-demand imbalance. In particular, if reserves are linked to the reduction of supply chain emissions (Scope 3) or indirect emissions reduction activities such as ESG, the MSR scheme would offer strong incentives for the NDC implementation and companies' net zero emissions. On top of that, the introduction of the Carbon Border Adjustment Mechanism (CBAM) in parallel with the ETS is anticipated to transform Korea's allowance policy. This requires a shift in the perspective of industries. They should ensure that revenues from payable allowances are put into blended finance for low-carbon innovative investments, rather than evading the expansion of payable allowances.

Global carbon neutrality and EU-ETS Reform

The global energy crisis is expanding the use of fossil fuel again and some institutional investors are withdrawing their funds owing to greenwashing risks and ambiguity in ESG evaluation, which aggravates market disruption. Regardless of worrying developments, advanced economies such as Europe and the US are institutionalizing their carbon neutrality

* All opinions expressed in this paper represent the author's personal views and thus should not be interpreted as Korea Capital Market Institute's official position.

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policy. Europe is accelerating the legislation of Fit for 55 provisions, while the transition to the low carbon economy is set in motion in the US through the Inflation Reduction Act (IRA). Notably, the IRA of the US focuses on direct intervention measures (tax policy and subsidies) for the transition. On the other hand, Europe has underscored the importance of the EU-ETS based on its long track record of operating the carbon market mechanism. As the European Parliament has recently reached a provisional agreement on the ETS reform, the EU-ETS has emerged as a critical tool for achieving global carbon neutrality.

Among diverse items in the reform, key elements are a stronger association between a carbon neutrality roadmap and the EU-ETS and an overhaul of the ETS microstructure as a way of responding to resultant market structure changes. Also notable is the newly introduced Carbon Border Adjustment Mechanism (CBAM) designed for global scalability of the EU-ETS and wider adoption of carbon neutrality across the globe. More concretely, the reform raises significantly the overall ambition of emissions reduction. It also proposes a steeper annual reduction rate of emission allowances (cap) of 4.2%, instead of the current 2.2% level to ensure that the EU-ETS supports the attainment of the Nationally Determined Contribution (NDC) target. Such a faster reduction rate plays a key role in aligning the NDC target (55% compared to the 1990 level) with the ETS. Second, the market stability reserve (MSR) scheme will be strengthened by the reform, considering that a higher reduction rate inevitably triggers an imbalance in the ETS market. After concluding that the MSR, as well as backloading, has contributed to supply-demand stability, the EU has complemented the ETS by increasing the upper ceiling of allowances. Lastly, the CBAM will be introduced and linked to the EU-ETS. With a stronger NDC target, the CBAM aims to put a price on emissions under a fair carbon pricing system to prevent carbon leakage, irrespective of the country of origin. At the same time, the reform seeks to set the price of carbon based on the ETS market price. This will transform the existing allocation system of the ETS to increase payable allowances for sectors covered by the CBAM and gradually phase out free allowances.

The goal of the EU-ETS reform is to bring the ETS being operated under the lax Kyoto Protocol into line with the Paris Agreement. Korea established the K-ETS in 2015. As a non-signatory to the Kyoto Protocol, it was not subject to NDC-based reduction obligation and scarcely coordinated its NDC target with the K-ETS. Back then, it was complacent with the preemptive introduction of the market-friendly ETS. Now Korea, as a signatory to the Paris

Agreement and one of the advanced countries, should reflect the respective global mission and responsibility in the K-ETS. In this respect, the EU-ETS reform seems to have a significant impact on the K-ETS revision. As the K-ETS improvement plan was announced last November, specific measures should be devised. Against this backdrop, this article intends to explore the major implications of the EU-ETS reform and present relevant improvements.

Implications for Korea: Considerations for K-ETS cap adjustment

The current K-ETS cap was set based on the 2018 NDC, instead of the new NDC for 2021 (40% reduction by 2030). Korea has cut emissions by 4.7% compared to the cap for the second phase (from 2018 through 2020). But as long as the current cap level remains effective, the new NDC should not be achieved by 2030 as the NDC-based reduction target has been sharply raised. In light of the developments, the Korean government plans to reset the cap in 2023. With respect to resetting, the following two aspects should be taken into account.

First, the existing system should be improved to address a policy lag. Even if the cap is adjusted in 2023, it remains uncertain whether the NDC is achieved by 2030 because when the new cap is imposed is still undecided and 2030 is not far off. Given the ambiguity in global regulations, there is a need for a system that immediately reflects NDC changes in the K-ETS cap to minimize policy lags. The fundamental solution is the alteration of national governance with regard to greenhouse gas emissions. This means the authority to determine the establishment of the NDC target and the ETS cap adjustment is granted to a single organization, as is the case with the EU. As such authority is exercised solely by the European Commission, relevant measures are systematically implemented and thus, policy lags are short-lived. For this reason, the EU announced the cap adjustment plan in July 2021, ten months after the NDC-based reduction plan was presented in September 2020. Likewise, Korea could empower the Carbon Neutral Green Growth Committee to exercise the authority to curtail policy lags and enhance market predictability.[1)] This could fix the policy gap between the NDC target released in end-2021 and the ETS cap yet to be confirmed. The 720 million-ton emissions for 2018 should be reduced by 290 million tons to 430 million tons to meet the NDC target. This means that any delay in the cap reduction could call into question Korea's capability to carry out its plans.

1) In Korea, relevant authorities are separated pursuant to respective laws and regulations. The Carbon Neutral Green Growth Committee is responsible for the NDC while the Allowance Allocation Committee exercises its authority over the cap reduction rate.

Second, the cap reduction rate should be set above the NDC reduction rate. As for the EU, the NDC reduction stands at 55% compared to the 1990 level while the ETS aims to cut down the cap by 61% compared to the 2005 level. This translates into a 1.98% NDC reduction and a 4.2% reduction of the EST cap per year by 2030. The difference in reduction rates probably stems from a low coverage of the ETS. Although the ETS is a key tool for the NDC implementation, the EU-ETS covers only 41% of the entire greenhouse gas emissions. As with the EU-ETS, K-ETS also plays a key role in achieving the NDC target. The EST coverage for any country hardly reaches 100%, and the K-ETS is no exception with the 73% coverage. Furthermore, Korea has no policy means to induce or force companies not covered by the ETS to cut back on emissions. In this light, it seems reasonable for countries to maintain the cap reduction rate above NDC reduction.

Still, a sudden rise in the reduction rate can hardly be accepted by industries as it pushes up emission reduction costs. Hence, a steeper reduction rate ought to be accompanied by greater incentives for companies. In this respect, this article suggests aligning companies' indirect emissions reduction outside their operations with a rise in the reduction rate of the cap. As the Task Force on Climate-Related Financial Disclosures (TCFD) is widely adopted, indirect emissions reduction by companies is also growing in importance. Accordingly, if the incentive system is introduced to link support for reduction activities of supply chain companies to the ETS market reserve scheme, it could raise industries' acceptance of a higher reduction rate of the cap.[2] In short, the incentive system is designed to apply a cap reduction rate, higher than the NDC reduction rate, to a company covered by the ETS and the company is given allowances in exchange for its support for emissions reduction of supply chain companies. This reward mechanism can improve the NDC implementation rate at the national level while encouraging companies to conduct indirect emissions reduction by pursuing ESG activities and mutual growth with small business entities.

Implications for Korea: Reform of market stability facilities for mitigating supply-demand imbalance

The increase in the reduction rate of the cap based on the NDC can give rise to a prolonged

2) Since Korea has a manufacturing industry-centered structure, many small business entities not subject to the K-ETS seem to be linked to the companies covered by the ETS through value chains (production/raw materials/distribution).

imbalance between supply and demand in emissions trading markets. When the marginal cost of investment in emissions reduction declines at a slower pace, a higher reduction rate of the cap based on the NDC drives up demand for carbon credits. How the upward pressure on demand for credits can be realized depends on the supply-demand structure. In the EU-ETS with an oversupply of carbon credits, the possibility of excessive supply is low. Since the introduction of backloading and the MSR scheme, the EU-ETS has been less susceptible to an oversupply. But the EU governments have still reserved a large amount of carbon credits (150 million tons for 2020) for supply-demand control. Even with this measure in place, the EU has added the MSR improvement plan through quantity adjustment to the reform, aiming for expanding the MSR quantity and extending the supply limit on the reserves in consideration of shocks from the NDC and paving the ground for supplying reserves in preparation for an exceptional surge in the price of credits.

In terms of market structure, the K-ETS varies widely from the EU-ETS. Under the K-ETS, the cap on carbon credits went up during the first and second phases and there were few strong incentives for credit trading owing to less strict reduction restrictions. Although improvements such as market makers and liquidity suppliers are put in place in the third phase, lack of trading and liquidity and the resultant market structure where suppliers gain the upper hand have persisted. Under Korea's market structure, the increase in the reduction rate of the cap is likely to intensify the excessive supply of carbon credits. This raises the need for overhauling market stability facilities to alleviate imbalance.

As for market stability facilities, Korea mainly uses intervention in market prices, instead of quantity adjustment. If credit prices go beyond a certain range, the Korean government sets the highest and lowest prices for credits to stabilize the market. But such price intervention has its limitations in stabilizing the market if the supply-demand imbalance stems from structural, long-term discrepancy. As a steeper increase in the reduction rate of the cap causes the structural imbalance between supply and demand, intervention in quantity such as the EU's MSR scheme, rather than intervention in prices, can be more effective in market stabilization. But it is worth considering how the EU's MSR scheme should be aligned with discretionary market stability facilities such as the function of market makers and liquidity providers which have been adopted for price discovery and supply-demand control.

Another consideration for the introduction of the EU's MSR is how the government secures reserves. Reserves can be secured by raising the reduction rate of the cap based on the NDC and cutting down allowances for companies. However, this could not be an alternative solution as it intensifies excessive supply. A more viable option is to allow companies to turn indirect emissions reduction into reserves in the EST in the form of carbon offset credits. As mentioned above, this is the incentive system that involves monetary incentives for indirect emissions reduction by companies and also serves as the link between the regulated ETS market and companies' voluntary reduction of indirect emissions. In particular, if indirect emissions reduction focuses on a company's supply chain, carbon neutrality activities including ESG and mutual growth with small business entities could be facilitated by means of the MSR scheme.

Implications for Korea: Need for a fundamental shift in allowance policy in preparation for the CBAM

The increase in the reduction rate of the cap and market stability facilities are measures aimed at enhancing the internal efficiency of the EU-ETS in line with carbon neutrality. On the other hand, the goal of the CBAM adoption is to expand the ETS to avoid carbon leakage. If the CBAM is introduced, carbon prices on par with those imposed on EU companies would be equally applied to products imported into the EU. Since the CBAM regarded as carbon trade sanctions will be linked to the ETS, the ETS should be overhauled with a focus on the allowance system.

As part of the ETS reform, the EU announced a roadmap for phasing out free allowances for high-carbon sectors covered by the CBAM (steel, aluminum, cement, fertilizers, energy production, and hydrogen). Under the CBAM, the EU will impose a levy equivalent to free allowances on importers. If this happens, it would be able to impose carbon prices for a good cause while gaining practical benefits of growing revenues. On the surface, the CBAM is designed to avoid carbon leakage but it practically seeks to boost revenues. Fortunately, Korea could be designated as a country where companies can offset emissions with carbon prices paid within the country because it has operated the ETS since 2015. In response to carbon trade sanctions, Korea needs to revise its allowance system. As it is impossible to be exempted from carbon prices, what matters regarding the CBAM is whether carbon prices should be paid domestically or to the EU. As for sectors assigned with free allowances including steel,

aluminum, cement, and fertilizers, it is worth considering applying payable allowances to them based on the CBAM schedule, given the volume of exports to the EU. Some sectors may be allocated with payable allowances even though they meet the criteria for free allowances in terms of incurred costs and trade intensity. In this case, it is necessary to restructure the climate response fund to ensure that revenues from such sectors' payable allowances will be reinvested in the low-carbon policy fund for the sectors. This suggests that with the introduction of the CBAM, the K-ETS should reform its payable allocation policy. Hence, industries need to induce carbon prices paid by companies to flow back to low-carbon innovation investments with a high possibility of failure, rather than delaying the adoption of payable allowances.