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CLIMATE CHALLENGES
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CARBON MARKET BUSINESS BRIEF

KOREA

KOREA ETS AT A GLANCE

Years in operation	Phase 1: 2015-17 Phase 2: 2018-20 Phase 3: 2021-25
Overall cap & trajectory	Phase 1 had a cap of 1,689.9 million tCO2e Phase 2 has a cap of 1,777 million tCO2e, including a 134 million reserve for new entrants and other purposes, and separate reserves for market makers (5 million) and market stabilisation (14 million) The cap for Phase 3 is yet to be determined.
Target(s)	To reduce GHG emissions to 37% below BAU by 2030, to 536 million tCO2e
Emissions Reduced to date	National GHG emissions per unit of GDP in 2017 was 455.7 tCO2e/billion Korean won, a 0.7% decrease from 2016, according to 2019 data from the Bank of Korea (see table).

Total GHG Emission per Real Gross Domestic Product (GDP)

Parameter	1990	1995	2000	2005	2010	2015	2016	2017
GDP (per trillion KRW)	419.5	628.4	820.8	1,034.3	1,265.3	1,466.8	1,509.8	1,556.0
Total Emission (per million TCO2e)	292.2	435.9	503.1	561.8	657.6	692.3	692.6	709.1
Total Emission per GDP (TCO2e/billion KRW)	696.5	693.6	612.9	543.1	519.7	472.0	458.7	455.7
Emission Change Rate per GDP(%)	-	-1.5	-1.7	-3.0	3.3	-2.6	-2.8	-0.7

Ref : Bank of Korea, 2019

Between the K-ETS start in 2015 and 2017, the emissions intensity dropped 3.5%.

Sectors covered	Business entities with annual average GHG emissions of 125,000 tCO2e or more, and individual facilities with annual average GHG emissions of 25,000 tCO2e or more are subject to caps under the K-ETS. Phase 1 covered the energy, industry, buildings, transportation and public services sectors. Phase 2 covers seven sectors (energy conversion, industry, building, transportation, waste, and public services). At present, the same categorisation applies to Phase 3.
GHGs covered	The K-ETS covers direct emissions of six greenhouse gases—carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulphur hexafluoride —and indirect emissions from electricity consumption
# of covered entities	639 entities in Phase 2

Allocation method	The K-ETS employs two methods of allocating allowances: grandfathering (GF) and benchmarking. For Phase 1, the GF method was applied to all sub-sectors except for cement, oil refining, and aviation. For Phase 2, the GF method is applied to all sub-sectors except for seven (the three from Phase 1 plus power generation, energy complex, industrial complex, and waste). Sector-specific benchmarking, currently at 40%, will be expanded to 70% or higher during Phase 3. Most sectors received free allowances in Phase 1. This was gradually reduced to 97% in Phase 2 and auctioning (3%) was introduced. Auctioned allowances can be bought by sectors that are not 100% freely allocated. Initially, a bidding limit of 30% had been set but was reduced to 15% to prevent hoarding (bidding of more than 15% with a max limit of 30% is allowed on special market conditions). In Phase 3, less than 90% of allowances will be freely allocated, with for-auction allowances rising to more than 10%. Energy-intensive and trade-exposed (EITE) sectors will receive 100% free allocation. In addition, the free allocation standard for industry has been changed so that all local government units, schools, medical institutions, and public transportation operators will qualify for 100% free allocation.
Trading rules	Allowances can be traded via the Exchange and/or over-the-counter. Tradable allowances are Korea Allowance Unit (KAU), Korea Credit Unit (KCU), and Korea Offset Credit (KOC). i-KCUs and i-KOCs were added in 2019 for distinction of incoming international offset units. During Phase 1, trading was strictly between compliance entities while financial institutions acting as market-makers (Korea Development Bank and Industrial Bank of Korea) joined in Phase 2.
Use of offsets and linking	In Phase 1, offset credits were limited to domestic CDM credits and other credits from domestically certified projects. Use of overseas offset credits is allowed in Phase 2, subject to other criteria, but not in Phase 3. Offsets can be submitted for up to 10% of an entity's compliance obligation (with a maximum of 5% from overseas reduction projects). As of 2018, there are 252 registered methodologies (211 for CDM and 41 for domestic).
Other features	Banking is allowed with some restrictions. In the last compliance year of Phase 1, banking was limited to 10% of the annual allocations plus 20,000 tonnes. In Phase 2, banking is limited to two options: either the annual net amount of allowances sold, or an entity's emission-specific limits, whichever is higher. Emission-specific limits according to allowance vintage are as follows: a. KAU18: 75,000 tonnes (big emitters) or 15,000 tonnes (small emitters) b. KAU19: 50,000 or 10,000 c. KAU20: 25,000 or 5,000 Intra-phase borrowing is also allowed, limited to 10% of an entity's obligation in Phase 1 (20% in 2016 and 2017) and 15% of an entity's obligation in Phase 2. However, the limit will decrease in accordance to an entity's past borrowing transactions and is calculated using this formula: 15% - (previous year's borrowing rate * 50%) The K-ETS has 14 million allowances in a market stabilisation reserve.
Penalties for non-compliance	The penalty for non-compliance shall not exceed three times the average market price of the given compliance year or KRW 100,000 per tonne
Use of revenues	The revenue from auctions will be reinvested to support small- and mid-sized companies.

MAJOR DEVELOPMENTS

The start of Phase 2 saw the introduction of auctions, market-makers and tightened banking rules. For 2020, the government will sell 8.25 million tonnes of KAU19 and KAU20 allowances.

A market formation reserve with 5 million tonnes of allowances began in June 2019 with two financial institutions—Korea Development Bank (KDB) and Industrial Bank of Korea (IBK)—acting as market makers.

Several national master plans have also been updated. The Third Green Growth Five-Year Plan (2019-23) was finalised in mid-2019 and provides additional policy support and initiatives to complement the 2030 GHG Reduction Roadmap. The Second Master Plan for Climate Change Response (2020-40), focused on national strategies, directions and goals for GHG reduction and climate adaptation, was confirmed on October 2019 and is set to be implemented in 2020.

In terms of the K-ETS international offset use, the government committed its support to assist in the transition of government-approved CDM projects into the Paris Agreement's Sustainable Development Mechanism. In addition, the government has given its go-signal for approved offset CDM projects to be eligible for KCU conversion and trade until Phase 3.

In December 2019, the Korea Exchange listed i-KCU and i-KOC as a way to separately manage incoming international carbon offset credits.

MARKET COMMENTARY

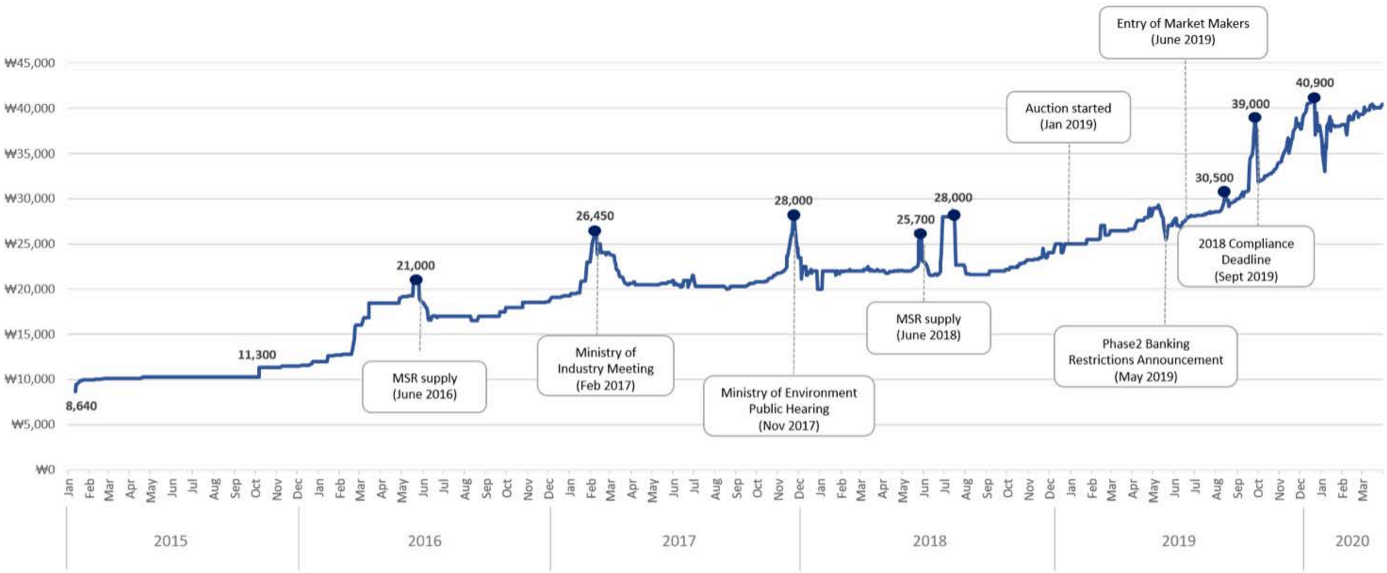

FIGURE 1
KAU Price

The Korean market has seen a nearly five-fold increase in allowance prices since 2015, when it started at KRW 8,640. Based on historical patterns, trade and supply appear to be concentrated ahead of the compliance deadline. Price volatility is also prominent during this period when aggressive buying from small emitters tend to push prices upwards.

The proportion of OTC deals started to rise in Phase 2 as companies negotiate large-scale transactions. Long companies, on the other hand, try to retain as much allowances to prepare for tighter caps and future price increases. From late 2018 to the early half of 2019, the supply shortage together with uncertainty caused price overheating.

Auctioning of allowances were introduced in January 2019 while market-makers entered in June 2019. The market-makers supply about 200,000 tonnes of allowances per month and, with their entry, the pattern of stagnant trade post compliance seen in Phase 1 disappeared. After the end of the banking and borrowing application in September 2019, additional demand from short companies pushed the price to a peak of KRW 40,900 in December 2019.

Meanwhile, prices for Korea Offset Credits (KOCs) stay at the same level of the KAUs, while Korea Credit Units (KCUs) have not seen any trades since Phase 2 started and is holding steady around KRW 31,000.

At the time of writing in early May 2020, market prices continue to hover around the KRW 40,000 levels and are expected to increase in the near-term, but a softening is inevitable given the country's decreasing emissions and the economic fallout from COVID-19. This correction will be evident after the 2019 compliance deadline.

The K-ETS is a compliance-driven market and most trades focus on the allowance of the current compliance year. However, with the planned introduction of additional market derivatives in the future, it is expected that market activity will become more liquid and robust.

USEFUL LINKS

Ministry of Environment

Korea Exchange

Greenhouse Gas Inventory and Research Center

International Carbon Action Partnership

REFERENCES

Framework Act on Low Carbon, Green Growth (English)

Enforcement Decree of the Framework Act on Low Carbon, Green Growth (English)

Enforcement Decree of the Act on the Allocation and Trading of Greenhouse Gas Emission Permits (Korean)

Act on the Allocation and Trading of Greenhouse Gas Emission Permits (Korean)

2030 Greenhouse Gas Reduction Roadmap (Korean)

Phase 2 Basic Plan (Korean)

Phase 2 Allocation Plan (Korean)

Phase 3 Basic Plan (Korean)

2019 National GHG Inventory Report

AUTHORS

Stefano De Clara
Director, International Policy, IETA
declara@ieta.org

Maureen Lee
Market Analyst, Ecoeye
mlee@ecoeye.com