

Updated October 2023

South Korea Emissions Trading Scheme (ETS)

Years in operation	Phase 1: 2015-17 Phase 2: 2018-20 Phase 3: 2021-25																																								
Overall cap and trajectory	Phase 1 had a cap of 1,704.18 million tCO ₂ e while Phase 2 had a cap of 1,796.13 MtCO ₂ e. Phase 3 has a cap of 2,902 MtCO ₂ e, and 180 Mt in reserves (14 million for market stabilisation, 20 million for market formation, and 146 million for new entrants and other purposes).																																								
Target(s)	To reduce GHG emissions to 40% below 2018 levels by 2030, and to achieve net-zero emissions by 2050.																																								
Emissions reduced to date	<p>South Korea's total national emissions in 2020 was 656.2 MtCO₂e, of which 554.4 Mt were ETS-covered emissions. In 2020, emissions per capita was 12.7 tCO₂e (see table below).</p> <p>Total GHG Emission per Real Gross Domestic Product (GDP)</p> <table><tr><th>Parameter</th><th>1990</th><th>2000</th><th>2010</th><th>2015</th><th>2016</th><th>2017</th><th>2018</th><th>2019</th><th>2020</th></tr><tr><td>GDP (per trillion KRW)</td><td>454.2</td><td>903.6</td><td>1,426.6</td><td>1,658.0</td><td>1,706.9</td><td>1,760.8</td><td>1,812.0</td><td>1,852.7</td><td>1,839.5</td></tr><tr><td>Total Emissions (per million tCO₂e)</td><td>292.1</td><td>502.7</td><td>656.1</td><td>692.6</td><td>693.7</td><td>710.6</td><td>727.0</td><td>701.2</td><td>656.2</td></tr><tr><td>Total Emissions per Capita (tCO₂e/person)</td><td>6.8</td><td>10.7</td><td>13.2</td><td>13.6</td><td>13.5</td><td>13.8</td><td>14.1</td><td>13.5</td><td>12.7</td></tr></table> <p>Ref : GHG Inventory and Research Center (GIR)</p>	Parameter	1990	2000	2010	2015	2016	2017	2018	2019	2020	GDP (per trillion KRW)	454.2	903.6	1,426.6	1,658.0	1,706.9	1,760.8	1,812.0	1,852.7	1,839.5	Total Emissions (per million tCO ₂ e)	292.1	502.7	656.1	692.6	693.7	710.6	727.0	701.2	656.2	Total Emissions per Capita (tCO ₂ e/person)	6.8	10.7	13.2	13.6	13.5	13.8	14.1	13.5	12.7
Parameter	1990	2000	2010	2015	2016	2017	2018	2019	2020																																
GDP (per trillion KRW)	454.2	903.6	1,426.6	1,658.0	1,706.9	1,760.8	1,812.0	1,852.7	1,839.5																																
Total Emissions (per million tCO ₂ e)	292.1	502.7	656.1	692.6	693.7	710.6	727.0	701.2	656.2																																
Total Emissions per Capita (tCO ₂ e/person)	6.8	10.7	13.2	13.6	13.5	13.8	14.1	13.5	12.7																																
Sectors covered	<p>Business entities with annual average GHG emissions of at least 125,000 tCO₂e, and individual facilities with annual average GHG emissions of at least 25,000 tCO₂e.</p> <p>The K-ETS covers the energy, industry, buildings, transportation and public/others sectors.</p>																																								
GHGs covered	<ul style="list-style-type: none">• CO₂• Methane• N₂O• HFCs• PFCs• SF₆• Indirect emissions from electricity consumption																																								



Number of covered entities	736 companies (March 2023)
Allocation method	<p>The K-ETS employs two methods of allocating allowances: grandfathering (GF) and benchmarking (BM). In Phase 3, the GF method is applied to all sub-sectors except for 12 (cement, oil refining, aviation, power generation, energy and industrial complex, district cooling and heating, and waste, steel, petrochemicals, building, pulp and paper, timber).</p> <p>In Phase 3, less than 90% of allowances are freely allocated, with the rest sold at auction. Energy-intensive and trade-exposed (EITE) sectors receive 100% free allocation. EITE eligibility is based on a leakage index*. All local government units, schools, medical institutions, and public transportation operators also qualify for 100% free allocation.</p> <p>*Leakage index = (production cost x trade intensity) > 0.2%</p>
Trading rules	<p>Allowances can be traded via exchange and/or OTC. 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 international offset units, and KOCs and i-KOCs were categorised according to their vintage years from 2021.</p> <p>During Phase 1, trading was strictly between compliance entities while financial institutions acting as market-makers joined in Phase 2. Third-party institutions such as financial firms and brokers joined in Phase 3.</p>
Use of offsets and linking	<p>In Phase 3, the offset limit submission has been reduced to a maximum of 5% of each entity's compliance obligations, regardless of its classification, from 10% in Phase 2.</p> <p>A three-year validity period has been introduced on the issuance and conversion of offset credits in Phase 3.</p> <p>As of 2023, there are 292 registered methodologies (211 for CDM and 81 for domestic).</p>
Other features	<p>Banking is allowed but is limited in number.</p> <p>Market makers are allowed to carry-over up to 6 million allowances unconditionally. Brokerage firms, which are allowed to hold a maximum of 1 MtCO₂e for the whole phase, can bank allowances without limitations.</p> <p>Intra-phase borrowing is also allowed, limited to 15% of an entity's obligation in Phase 3. However, the limit will decrease in accordance with the entity's past borrowing transactions and is calculated using this formula: 15% - (previous year's borrowing rate*50%)</p>
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 go to the Climate Response Fund which will be reinvested to support the country's GHG reduction infrastructure, economy-wide carbon-neutral transition, and subsidise vulnerable groups.



Major Developments

See Figure 1 on page 6.

The Framework Act on Carbon Neutrality and Green Growth for Coping with Climate Crisis, also known as 'Carbon Neutrality Act', was passed by the National Assembly in August 2021 took effect on March 2022. Consequently, the Carbon Neutral Green Growth Committee which will be responsible for strategising and deliberating on national carbon neutral and green growth plans was established. At the same time, the Ministry of Environment launched the ETS Council and was put in-charge of deliberating possible ETS reforms and the future direction of a carbon-neutrality-aligned ETS.

The Yoon Administration's transition committee announced in March 2023 110 major national tasks that set the energy and carbon neutrality vision and goals of the administration. These tasks were officially unveiled in the '2050 Carbon Neutrality and Green Growth Basic Plan', including detailed sectoral policy targets and measures. The nation is sticking to its 2030 NDC target of 40% reduction compared to 2018 levels, with the biggest reduction targets given to the energy conversion, transportation, and building sectors.

The government also made several improvements to existing regulations, such as for allowance allocation and certification of GHG reductions, giving additional incentives for ETS-covered companies to reflect their emission reduction performance. With the country's target of utilising 37.5 Mt of international credits to reach the 2030 NDC, interest from different agencies and the private sector has grown, leading to the establishment of several ministry-level bodies such as the International Carbon Reduction Council and MOTIE's consultation body to discuss and

promote GHG emission reduction projects. Accordingly, the government amended a part of the project certification regulations and introduced a new set of guidelines for the assessment and approval of overseas reduction projects and purchase of international credits, as response to the growth in the number of participants doing external reduction businesses.

After formalising the energy roadmap, the new administration released the 10th Basic Plan for Electricity Supply and Demand, which sets a target of 21.6% of renewables by 2030, and seeks to increase the generation amount of nuclear energy facilities to 32.40% and LNG to 22.9% by 2030.

On December 2022, two additional market makers (KB Securities, Shinhan Securities) joined the market while the government increased the holding limits of the third-party participants to 6 Mt for market makers and 1 Mt for securities firms.

In early 2023, the government set in motion the changes to the compliance cycle – uniting the three important schedules that directly affect market trading. The new annual compliance deadline was officially changed to the end of August, with the deadline for banking and borrowing applications also set at the same time.

The government also announced changes to the carryover restrictions in September 2023 in a bid to stabilise market prices and validity extension for offset credits to encourage investments. The government is set to make decisions on the introduction of consignment transactions by the end of 2023 and the participation of financial institutions and individuals by 2024 and 2025, respectively.



Market Commentary

See Figure 2 on page 5.

2021 Compliance Year

(August 2021 – August 2022)

KAU20 and KAU21 prices delinked by the end of the 2020 compliance year, with the index KAU21 price starting fresh at KRW 24,000 from KAU20's last trading price of KRW 22,500. significantly rising month-on-month reaching its highest price of KRW 36,000 by the end of 2021 and maintained above the KRW 30,000 until February 2022. Demand started falling by the start of Q2 2022 as entities realised there was an allowance oversupply and the effect of the negative economic growth forecasts after the Russia-Ukraine war and high gas prices. KAU21 broke three historic support levels before stumbling to its lowest of KRW 13,350 and ended the compliance year at KRW 19,500.

2022 Compliance Year

(August 2022 – August 2023)

Early delinking happened between KAU21 and KAU22 prices, as the government implemented a regulation wherein the next vintage allowance no longer needs to link with the benchmark prices on certain instances. KAU22 shot up to KRW 27,900 as soon as it became indexed, reaching a yearly high of KRW 29,000 in the Q3 of 2022 marked by a volatile market environment. As the market entered the last quarter of 2022, an accelerated price drop took KAU22 prices from KRW 21,000 in October to a

low of KRW 12,800 in December, brought by the sustained selling in the market to offset risks.

The market tried to rebound in the first quarter of 2023, with prices ranging from KRW 11,900 to KRW 16,000 but the lasting worries on a poor economy and oversupply brought the market to KRW 11,250 by April. Due to continuous price decline, the government postponed the May and June allowance auctions to reduce supply.

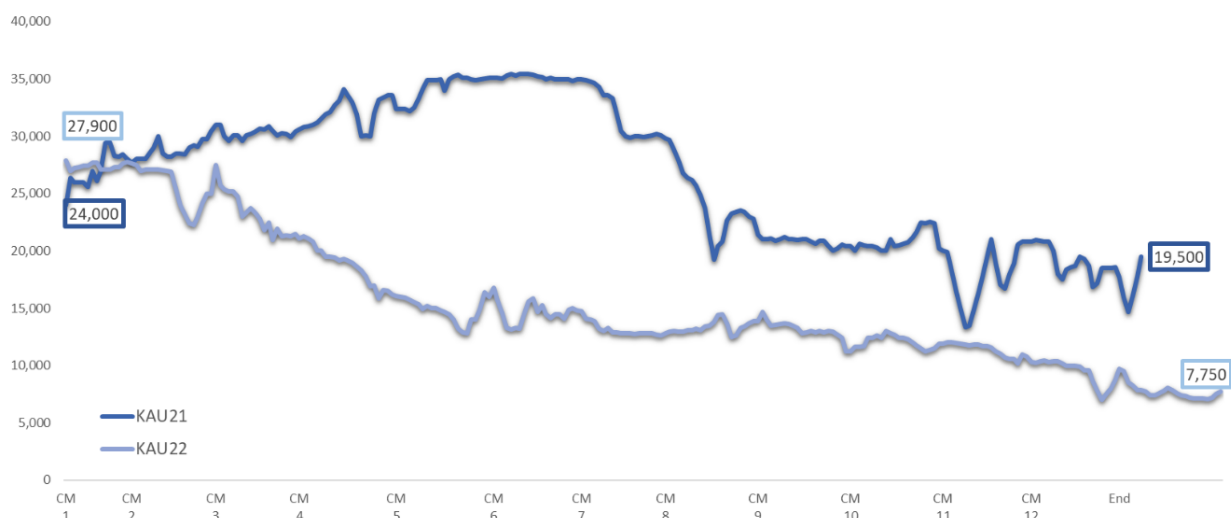
Prices stabilised at KRW 11,000 between April to June as the market awaits the final certified emissions statements. By July, the strongest psychological support price of KRW 10,000 was ultimately broken causing a sharp crash to KRW 7,020 (lowest intraday trade of KRW 6,320). The government then decided to implement the market stabilisation measures and set a floor price of KRW 7,020 for five days between 26 July and 2 August. KAU22 prices traded at the KRW 7,000 level in August before ending the 2022 compliance year at KRW 7,750 on 31 August.

KAU23 Allowance Prices

KAU23 started trading in earnest from 1 September 2023, after the delisting of KAU22 units and becoming the benchmark allowance. The change in the carryover and offset standards is expected to have a positive effect on the price of allowances. However, the decrease in emissions from the conversion/power sector due to the expansion in nuclear energy generation in 2023 is expected to limit rapid price increases in the future.



Figure 2. KAU21 – KAU22 Price Tren



Useful Links

[Ministry of Environment](#)
[Carbon Neutrality Commission](#)
[Korea Exchange](#)
[Greenhouse Gas Inventory and Research Center](#)
[Ecoeye International](#)
[International Carbon Action Partnership](#)

[National Greenhouse Gas Inventory \(1990-2020\)](#) (Korean)
[Phase 3 Basic Plan](#) (Korean)
[Phase 3 Allocation Plan](#) (Korean)

References

[Republic of Korea's Enhanced Update of 1st Nationally Determined Contribution](#) (English)
[Framework Act on Carbon Neutrality and Green Growth for Coping with Climate Crisis](#) (English)
[Enforcement Decree of the Framework Act on Carbon Neutrality and Green Growth for Coping with Climate Crisis](#) (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)

Authors

Andrea Bonzanni
 International Policy Director, IETA
bonzanni@ieta.org

Björn Fondén
 International Policy Advisor, IETA
fonden@ieta.org



Maureen Lee
 Market Researcher, Ecoeye
mlee@ecoeye.com



MAKING NET ZERO POSSIBLE

Figure 1. KAU Developments (2015 – 2Q 2023)

