Korea Emissions Trading Scheme

General Information

Summary

Status: ETS in force
Jurisdictions: Republic of Korea

The KETS was launched on 1 January 2015, becoming East Asia’s first nationwide mandatory ETS and the second-largest carbon market after the EU ETS. The ETS covers 610 of the country’s largest emitters, which account for ~70% of national GHG emissions. It covers direct emissions of six Kyoto gases, as well as indirect emissions from electricity consumption. The KETS was designed to play an essential role in meeting Korea’s 2030 NDC target of 37% below BAU emissions.

The first and highest legal base for green growth and implementation of the KETS is the ‘Framework Act on Low Carbon, Green Growth’ (2010). The ‘Act on Allocation and Trading of Greenhouse Gas Emissions Allowances’ (‘Emissions Trading Act’) and its Enforcement Decree were passed in 2012; it stipulates government actions, institutions, and timelines for the KETS. Further details of the KETS were outlined in a Master Plan (January 2014; February 2017) and Allocation Plan (January 2014; February 2017).

The KETS was preceded by a mandatory GHG and Energy Target Management System (TMS) that was launched in 2012 (following a two-year pilot phase started in 2010). The TMS enabled the collection of verified emissions data and training in the MRV process of TMS entities.

Year in Review

2019 saw the implementation of key design changes as specified for the second phase (2018-2020) of the KETS, including (i) an expansion of benchmark-based allocation; (ii) the introduction of 3% auctioning; (iii) new banking rules; and (iv) the restricted use of international credits.

The first regular auction of allowances took place in January 2019. Auction rules were outlined in a guidance document released in March 2018. During 2019, new rules were introduced that reduce the maximum amount of allowances a single entity can purchase at auction. In addition, to enhance liquidity, two market makers were named, specifically the Korea Development Bank and the Industrial Bank of Korea.

2019 furthermore saw the first release of expected reforms for Phase 3, which is set to run from 2021 to 2025. Key changes for the third phase will include (i) a to-be-determined stricter emissions cap; (ii) an increasing share of auctioning (for nonenergy-intensive and trade-exposed (EITE) entities) to at least 10%; and (iii) increasing use of sector-specific benchmarking to 70%.


Overall GHG emissions by sector

<table>
<thead>
<tr>
<th>Sector Name</th>
<th>MtCO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel combustion (including Transport)</td>
<td>615.9</td>
</tr>
<tr>
<td>Industrial processes</td>
<td>56.0</td>
</tr>
<tr>
<td>Agriculture</td>
<td>20.4</td>
</tr>
<tr>
<td>Sector Name</td>
<td>MtCO2e</td>
</tr>
<tr>
<td>-------------</td>
<td>--------</td>
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<tr>
<td>Waste</td>
<td>16.8</td>
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</table>

**Overall GHG reduction target**

**BY 2020:** 30% below BAU (Copenhagen Accord target)

**By 2030:** 37% below BAU (536 MtCO2e), which represents a 22% reduction below 2012 GHG levels (NDC); 38 million international credits* may be used towards achieving this goal (2030 GHG mitigation roadmap)

*This includes international credits through the KETS, as well as alternative options, including LULUCF and other international credits (i.e. Article 6 under the Paris Agreement).

**Carbon Price**

*Current Allowance Price (per t/CO2e): KRW 29,821.54 (USD 25.59) (average secondary market price from KRX in 2019; updated prices available here)*

### ETS Size

<table>
<thead>
<tr>
<th>Emissions covered by the ETS</th>
<th>0.7</th>
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</thead>
<tbody>
<tr>
<td>GHG covered</td>
<td>CO2, CH4, N2O, PFCs, HFCs, SF6</td>
</tr>
</tbody>
</table>
| Sectors covered and thresholds| PHASE ONE (2015-2017): 23 subsectors from the following five sectors: power, industry (e.g., iron and steel, petrochemical, cement, oil refinery, nonferrous metals, paper, textile, machinery, mining, glass, and ceramics), buildings, waste, and transportation (domestic aviation).

PHASE TWO (2018-2020): According to the Allocation Plan, the public and waste sectors are disaggregated such that the KETS covers the following six sectors: heat and power, industry, building, transportation, waste sector, and public. These sectors are disaggregated into 64 subsectors.

PHASE THREE (2021-2025): No changes to sectors and thresholds are currently foreseen for Phase 3.

**INCLUSION THRESHOLDS:** company >125,000 tCO2/year, facility >25,000 tCO2/year

<table>
<thead>
<tr>
<th>Point of regulation</th>
<th>Downstream</th>
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<tr>
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<td>Next to direct emission coverage, the KETS covers indirect emissions from electricity consumption.</td>
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</table>

<table>
<thead>
<tr>
<th>Number of liable entities</th>
<th>610 (2019)</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>No information available yet.</td>
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<table>
<thead>
<tr>
<th>Cap</th>
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<tbody>
<tr>
<td>PHASE ONE (2015-2017): 1,686 MtCO2e, including a reserve of 88MtCO2e for market stabilization measures, early action, and new entrants. 84.5% of reserve was used.</td>
</tr>
</tbody>
</table>

Annual Caps in Phase One
2015: 540 MtCO2e; 2016: 560 MtCO2e; 2017: 567 (including early reduction and additional allowances) MtCO2e.

PHASE TWO (2018-2020): 1,796 MtCO2e, including 14 million allowances for market stabilization, five million for market markers, and 134 million for new entrants and other purposes.*

Annual Caps in Phase Two

PHASE THREE (2021-2025): Expected stricter annual caps, the levels of which have yet to be determined.
**Phases & Allocation**

<table>
<thead>
<tr>
<th>Trading period</th>
<th>PHASE ONE: 3 years (2015-2017)</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>PHASE TWO: 3 years (2018-2020)</td>
</tr>
<tr>
<td></td>
<td>PHASE THREE: 5 years (2021-2025)</td>
</tr>
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</table>

**Allocation**

**PHASE ONE (2015-2017):**
- **Free Allocation:** 100% free allocation. Most sectors received free allowances based on the average GHG emissions of the base year (2011-2013). Three sectors (grey clinker, oil refinery, and aviation) were allocated free allowances following benchmarks based on previous activity data from the base year (2011-2013).

  During Phase One, ~5% of total allowances were retained in a reserve for market stabilization measures (14 MtCO2e), early action (41 MtCO2e), and other purposes including new entrants (33 MtCO2e). In addition, unallocated allowances and withdrawn allowances were transferred to the reserve.

**PHASE TWO (2018-2020):**
- **Free Allocation:** 97% of total allowance supply. Toward the end of Phase Two, the share of sector-specific benchmarking is set to reach 50%.

  **Auctioning:** 3% auctioned. Auctioning is determined on the subsector level. These include, among others, entities from the electricity, domestic aviation, wooden product, and metal foundry sectors. Although auctioning was scheduled to start in 2018, it was delayed to the beginning of 2019. In 2019 authorities auctioned a total of 7.95 million allowances.

  Participation in auctions is subject to some limitations. Only companies that do not receive all their allowances for free are eligible to bid, with a list of eligible bidders published by the Ministry of Environment. No one bidder can purchase more than 30% of the allowances of one auction. The auctions are subject to a minimum price that will be set by the following formula:

  "the average price over the previous three months + the average price of last month + the average price over the previous three days/3."

  In 2020, 8.25 million allowances are set to be auctioned.


**PHASE THREE (2021-2025):**
- **Free Allocation:** Less than 90% free allowances. The share of sector-specific benchmarking is to reach 70%.

  **Auctioning:** more than 10%.

  Energy-intensive and trade-exposed (EITE) sectors will receive 100% of their allowances for free in all phases. EITE sectors are defined along the following criteria:

  (1) Additional production cost of >5% and trade intensity of >10%; or
  (2) Additional production cost of >30%; or
  (3) Trade intensity of >30%.
Flexibility

Banking and borrowing

Banking is allowed with some restrictions across phases. From Phase One to Phase Two, banking is limited for each installation to 10% of the annual average allocation and 20,000 Korean Allowance Units (KAU). The amount that exceeds the threshold is deducted from the Phase Two allocation. From Phase Two to Phase Three, banking is limited to the higher of two limits:

1. the net annual amount of allowances sold in Phase Two; and
2. company- and facility-specific limits, of 250,000 KAU and 5,000 KAU respectively.

Borrowing is allowed only within a single trading phase. In 2015, this was limited to 10% of an entity’s obligation. This limit was increased to 20% in 2016 and 2017. In the first compliance year of Phase Two (2018), borrowing was limited to 15% of an entity’s obligation. From 2019, the borrowing limit will be affected by how much an entity has borrowed in the past via the following formula:

\[
\text{Borrowing limit of previous year} \times \left(1 - \frac{\text{“borrowing ratio” in previous year} \times 50\%}{\text{entity’s emission volume}}\right)
\]

Offsets and credits

PHASE ONE (2015-2017)

QUALITATIVE LIMIT: Only domestic credits from external reduction activities implemented by non-ETS entities—and that meet international standards—could be used for compliance in this phase. Domestic CDM credits (CERs), and credits from domestically certified projects (Korean Offset Credits) were allowed. These credits had to be converted to Korean Credit Units (KCUs) of a specified vintage before being used for compliance. Eligible activities included those eligible under the CDM and Carbon Capture and Storage. However, only activities implemented after 14 April 2010 were eligible. As of December 2017, 35 domestic and 211 CDM methodologies had been approved for use under the KETS.

QUANTITATIVE LIMIT: Up to 10% of each entity’s compliance obligation.

PHASE TWO (2018-2020)

QUALITATIVE LIMIT: In Phase Two, trades of CERs generated after 1 June 2016 from international CDM projects developed by domestic companies are allowed. CDM projects operated by Korean companies will be allowed when:

1. at least 20% of the ownership rights, operating rights, or the voting stocks are owned by a Korean company;
2. a Korean company sells or distributes more than 20% of the total project cost; or
3. the projects are funded by a Korean company with a national or regional government operating in a UN-designated Least Developed Country or a low-income economy as classified by the World Bank.

Regulated entities must convert CDM credits (CERs) to KCUs for them to be used for compliance.

QUANTITATIVE LIMIT: Up to 10% of each entity’s compliance obligation (of which up to 5% can be international offset credits).

PHASE THREE (2021-2025): Offsets will continue to be allowed in limited fashion. Further rules and conditions have yet to be released.

Market Stability Provisions

Auction Reserve Price: Regular auctions and auctions for market stability are subject to an auction reserve price set by the following formula:

\[
\text{the average price over the previous three months} + \text{the average price of last month} + \text{the average price over the previous three days}/3.
\]

Allocation Committee: An Allocation Committee is in place to implement market stabilization measures in particular cases:

1. the market allowance price of six consecutive months is at least three times higher than the average price of the two previous years;
2. the market allowance price of the last month is at least twice the average price of the two previous years and the average trading volume of the last month is at least twice the volume of the same month of the two previous years;
(3) the average market allowance price of a given month is smaller than 40% of the average price of the two previous years. In 2015 and 2016, the price threshold is KRW 10,000 (USD 9.09); or

(4) it is difficult to trade allowances due to the imbalance of supply or demand.

The stabilization measures may include:

(1) additional allocation from the reserve (up to 25%);
(2) establishment of an allowance retention limit: minimum (70%) or maximum (150%) of the allowance of the compliance year;
(3) an increase or decrease of the borrowing limit;
(4) an increase or decrease of the offsets limit; and
(5) temporary setup of a price ceiling or price floor.

In 2016, the Allocation Committee doubled the borrowing limit to 20% and an additional 0.9 million allowances were auctioned at a reserve price of KRW 16,200 (USD 13.96) of which less than a third of allowances were sold. In 2018, the Allocation Committee made an additional 5.5 million allowances available from the stability reserve in an attempt to ease the market in the lead-up to the 2017 compliance deadline.

On 10 June 2019, the Korea Development Bank and the Industrial Bank of Korea were officially designated as market makers. These institutions can draw on a government-held reserve of five million allowances in a bid to increase liquidity in the market. Both banks, along with the Korean Export-Import Bank, have been allowed to trade in the market.

Phase Three is likely to see an expansion of the market maker system.

Compliance

<table>
<thead>
<tr>
<th>Compliance Period</th>
<th>One year</th>
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<tbody>
<tr>
<td>Monitoring, Reporting, Verification (MRV)</td>
<td>REPORTING FREQUENCY: Annual reporting of emissions must be submitted within three months from the end of a given compliance year (by the end of March).</td>
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<td>VERIFICATION: Emissions must be verified by a third-party verifier.</td>
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<tr>
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<td>OTHER: Emissions reports are reviewed and certified by the Certification Committee of the Ministry of Environment (MOE) within five months from the end of a given compliance year (by the end of May).</td>
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<td>If the liable entity fails to report emissions correctly, the report will be disqualified.</td>
</tr>
<tr>
<td>Enforcement</td>
<td>The penalty shall not exceed three times the average market price of allowances of the given compliance year or KRW 100,000 (USD 85.8)/tonne.</td>
</tr>
</tbody>
</table>

Linking

| Links with other Systems | No linkage is currently considered. |

Other Information

| Institutions involved | In 2016, overall responsibility for the KETS moved from the MOE to the Ministry of Economy and Finance (MOEF). On 1 January 2018, responsibility was transferred back to the MOE, while the MOEF still chairs the Allocation Committee; Korea Exchange (Trading Platform); Greenhouse Gas Inventory and Research Center (Registry and technical support). |
| Evaluation / ETS review | No standardized evaluation process has been developed to date, but an analysis of the economic impact of the KETS is ongoing for the current phase.*  
  
  *The method/modelling of the ongoing study is not yet open to the public. |
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<tr>
<td>Revenue</td>
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</table>
  
  **Since beginning of program:** USD 199.4 million*  
  
  **Collected in 2019:** USD 199.4 million  
  
  * The regular auction schedule began in 2019. Allowances were also auctioned in 2016 and 2018 by the Allocation Committee from the reserve for market stability measures. Revenues from these auctions totalled USD 99.6 million and are not included in the total auction revenue figure above.  
  
  The government has put forward possible options for the use of the revenues—such as supporting mitigation equipment projects, innovation, and technology development of ETS-covered entities. Specific rules on the use of revenues are yet to be decided. |
| Implementing Legislation |  
  
  **Framework Act on Low Carbon, Green Growth**  
  
  **Enforcement Decree of the Act on the Allocation and Trading of Greenhouse Gas Emissions Allowances**  
  
  **Act on the Allocation and Trading of Greenhouse Gas Emissions Allowances**  
  
  **First Master Plan for 2015-2024**  
  
  **Second Master Plan for 2017-2026**  
  
  **First Allocation Plan**  
  
  **Second Allocation Plan** |
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