Korean ETS Market Review

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Korean ETS General Information

- 3rd biggest national emission trading scheme which started in 2015. Currently under 3rd phase of implementation.
- Covers approximately 73% of national GHG emissions, including indirect (scope 2) emissions

Korea ETS (K-ETS)

- **Cap Setting**: Downstream based on national GHG reduction target
- **Sectoral Coverage**: Power, Industry, Buildings, Waste and Aviation (Domestic)
- **GHG Coverage**: All 6 of the major GHGs covered
- **K-ETS Phase 3 (‘21-’25)**
  - Phase 1 (‘15-’17) and Phase 2 (‘18-’20)
  - Number of Entities: 684 companies
  - Emissions Cap (2022): 589 MtCO₂e
  - Allocation Method: Grandfathering through benchmarking (90%), Auctioning (10%)

K-ETS Yearly Procedures

Trading year starts every July and ends at the end of June the following year.

- **End of March**: MRV Report Submission by designated entities
- **End of May**: Verification by government organization
- **End of June**: Allowance Submission
- **Banking/ Borrowing Application**

*Specific schedules regarding government verification and allowance submissions are run flexibly based on the above default timeline

Market Information

Seasonality trend very strong, generally in alignment with the allowances submission period

Price recovery has been slower compared to other compliance markets after COVID 19 due to the issue of surplus

Source: Carbon-I (2022)

**Average KAU Price (USD*)**

<table>
<thead>
<tr>
<th></th>
<th>Total Trade Volume (tCO₂e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1M</td>
<td>$22.14</td>
</tr>
<tr>
<td>3M</td>
<td>$18.85</td>
</tr>
<tr>
<td>Total</td>
<td>$17.93</td>
</tr>
</tbody>
</table>

*KRW/USD = 1250

Source: Carbon-I (2022)
Market Expansion

• Introduction of market makers in 2019, following addition of securities companies in 2021
• Various new provisions to increase market liquidity will be introduced sequentially until 2024

Market Expansion Timeline

2015
Start of the K-ETS
Only compliance entities could trade the KAUs.

2019
Market Makers introduced
Two national banks designated as market makers by the Ministry of Environment, in order to provide more liquidity in the market. Using the KAU credits lent by the Ministry of Environment, market makers provide liquidity everyday to the KAU market.
• Industrial Bank of Korea (IBK)
• Korea Development Bank (KDB)

May 2021
Market Makers added
3 securities companies added as market makers by the Ministry of Environment.
• Korea Investment & Securities
• Hana Securities
• SK Securities

Dec 2021
Third Party participation allowed
20 financial firms granted access to trading activities for KAUs.
Contract of the 5 market makers renewed until the 2022 year-end.

4Q 2023
Futures product introduced
KAU Futures will be introduced following the stabilization of the KAU spot market.

4Q 2024
Individuals, International Traders Participation Allowed
Participation of individual investors’ and international traders’ trading in the KAU market is expected to be granted, following the introduction of KAU futures.
• Korean ETS trades at spot price for 1.5 hours and at fixed price for 1.5 hours per day, with a ± 10% price range.
• The introduction of financial firms has increased liquidity in the market, but participation of third-party financial firms remains low yet.

General Trading Rules

Trading Hours
- Market operates for 3 hours/day from 09:00AM – 12:00PM.
- Designated entities can trade during any time of the trading hours.
- Market maker financial firms can participate between 10:10AM – 11:30AM.
- Third-party market participants can participate between 10:00AM – 12:00PM.

Pricing
Price ceiling/floor set at ± 10% of the previous closing price

Bidding
Bidding up to 100,000 tCO₂e allowed per bid

Banking Limit
Banking is allowed based on benchmark of the yearly net sales volume of the entity

<table>
<thead>
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<th>Banking Limit under K-ETS Phase 3</th>
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<tbody>
<tr>
<td>‘21 KAUs</td>
</tr>
<tr>
<td>‘22 KAUs</td>
</tr>
<tr>
<td>‘23 KAUs</td>
</tr>
<tr>
<td>‘24 KAUs</td>
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</tbody>
</table>

Financial Firms’ Involvement

Holding Limit
Financial firms have a separate banking limit than the designated entities, in order to serve the purpose of providing liquidity in the market.

<table>
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<th>Banking Limit under K-ETS Phase 3</th>
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</thead>
<tbody>
<tr>
<td>Market Makers</td>
</tr>
<tr>
<td>Third-Party Participants</td>
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</tbody>
</table>

Trade Volume Change
The introduction of market makers seems to have added liquidity to the market.
Nonetheless, the role of third-party participants seems to be minimal in adding liquidity in the market

<table>
<thead>
<tr>
<th>Average Daily Trade Volume (tCO₂e)</th>
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<tbody>
<tr>
<td>~April 2021</td>
</tr>
<tr>
<td>After market maker introduction</td>
</tr>
<tr>
<td>After third-party participation</td>
</tr>
</tbody>
</table>

Source: Carbon-I (2022)
Market Forecast

- More rigorous cap-setting and allocations is expected in the Korean ETS market.
- Market is expected to grow sequentially due to both tightening cap and market expansion policies.

Policy Expectations

- **Net Zero and ETS**
  The Korean government’s net zero commitment in 2020 is expected to tighten the ETS cap. Confusion remains regarding when the revised cap and respective allocation for entities will come into force (within Phase 3 vs. Phase 4).

- **Reformation in Allocation Method**
  The new government has announced its intention to address several issues regarding the allocation method:
  - Increase in percentage of allowances auctioned
  - Increase in percentages allocated based on benchmarking by sector

Market Expectations

- **Increasing Market Liquidity and Finding Proper Carbon Price**
  Diverse market participants will provide liquidity to the market as well as reduce volatility. The Korean government also expects this will help to discover a proper carbon price.

- **Enlarging the Role of Finance**
  The K-ETS will be connected to the Finance industry in various ways so financial firms will play a key role in the market:
  - Trading: financial derivatives
  - Project Finance: carbon finance for emission reduction projects

- **Big Potential for Voluntary Market**
  Both Korean financial firms and compliance entities are interested in the voluntary market, and there is potential for large demands on using voluntary offsets for net zero purposes.

Revised Reduction Path (Net Zero commitment reflected from 2026)

<table>
<thead>
<tr>
<th>Year</th>
<th>Emissions</th>
<th>Reduction Path</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>727.6</td>
<td>24.4% Reduction from '17 Emissions: 574.3MtCO₂e (YoY -1.6%)</td>
<td></td>
</tr>
<tr>
<td>2050</td>
<td>671.0</td>
<td>New Path: 40% Reduction from '18 Emissions: 436.6MtCO₂e (YoY -7.6%)</td>
<td></td>
</tr>
</tbody>
</table>

Source: Carbon-I (2022)
Thank You for Your Attention

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