Offsetting in the Korea Emission Trading Scheme

Presentation for: ICAP & PMI Asia and Pacific ETS Training Course

2023/10
Ecoeye in the K-ETS

Project Development
Development, finance and operation of carbon reduction projects

Market Analytics
Analysis reports

Monitoring & Reporting
M&R services for emissions statements

Asset Management & Brokerage
Trading and brokerage

Committee / Organization Members
Policy recommendations, feedback, opinions

End Users

Companies
- Steel
- Power
- Petrochemicals
- Oil
- Cement

Government
220 offset projects were developed and promoted, including domestic carbon development, CDM/PoAs, KETS offset projects, Korea voluntary emissions reduction (KVER)

$100 million carbon finance
South Korea: Domestic Condition (1)

Total GHG Emission (2021, estimate)

616 million tons (591mt)

- Export-oriented economic structure (36% of GDP)
- Manufacturing sector accounts for more than 40% of energy-intensive industry
- 80-85% of national emissions come from the energy sector
- Primary energy mix is composed of 42% oil, 24% coal, 18% gas
- Electricity comes from coal (36%), gas (28%), and nuclear (26%)
- Lack of natural resources

**Domestic Condition**

<table>
<thead>
<tr>
<th>Company</th>
<th>GHG Emissions (tCO2e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>POSCO</td>
<td>70.1 million</td>
</tr>
<tr>
<td>Korea South-East Power</td>
<td>35.3 million</td>
</tr>
<tr>
<td>Korea Southern Power</td>
<td>35.3 million</td>
</tr>
<tr>
<td>Korea Midland Power</td>
<td>31.8 million</td>
</tr>
<tr>
<td>Korea Western Power</td>
<td>30.1 million</td>
</tr>
<tr>
<td>Korea East-West Power</td>
<td>29.1 million</td>
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* Based on August 2022 emissions statements

Ref: ECOEYE
South Korea: Domestic Condition (2)

### 2030 NDC Target

<table>
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<tr>
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<th>2018 (in mt)</th>
<th>2030 (in mt)</th>
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<tbody>
<tr>
<td><strong>Total Emissions</strong></td>
<td>727.6</td>
<td>436.6</td>
</tr>
<tr>
<td><strong>Reduction</strong></td>
<td>-</td>
<td>-291</td>
</tr>
<tr>
<td><strong>Sector reductions</strong></td>
<td>-215.6</td>
<td></td>
</tr>
<tr>
<td><strong>International Offsets</strong></td>
<td>-37.5</td>
<td></td>
</tr>
<tr>
<td><strong>Carbon Absorption/CCUS</strong></td>
<td>-37.9</td>
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</tbody>
</table>

**Ref:** National Emission Allocation Plan

### Sectoral Reduction Targets (in mt)

- **Power**: 123.7
- **Industry**: 29.8
- **Building**: 17.1
- **Transpo**: 37.1
- **Waste**: 8

**ETS as the main reduction tool**

20 million tons from Article 6.4ERs (incl. CDM-transitioned projects)

**Ref:** 2050 Carbon Neutrality and Green Growth Basic Plan

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**Article 6.2 ITMOs**

**Article 6.4ERs**
Offsets in the K-ETS (1)

- **Article Flexibility Measures:**
  - Allowance banking, allowance borrowing, **international** offset credits (2016)

- **Article K-ETS products:**
  - **Korean Allowance Unit (KAU):** Allowances allocated to compliance companies
  - **Korean Credit Unit (KCU):** Credits converted from overseas reduction projects
  - **Korean Offset Credit (KOC):** Offset credits from reduction projects certified and acknowledged by the Korean government
## Offsets in the K-ETS (2)

### Offset Credit Rules

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<tbody>
<tr>
<td><strong>Limit</strong></td>
<td>10%</td>
<td>10% (5% domestic, 5% international)</td>
<td>5%, regardless of type</td>
</tr>
<tr>
<td><strong>Vintage</strong></td>
<td>2010 (April~)</td>
<td>2016 (June~)</td>
<td>Pre-2023 CERs can be issued as i-KOCs</td>
</tr>
<tr>
<td><strong>Mechanism</strong></td>
<td>Domestic offset credits only</td>
<td>CDM</td>
<td>Post-2020 6.4ER can be issued as i-KOCs</td>
</tr>
<tr>
<td><strong>Product</strong></td>
<td></td>
<td>i-KOC issuance based on CER submission</td>
<td>Article 6.2 ITMOs also possible to be issued as i-KOCs</td>
</tr>
<tr>
<td><strong>Registry</strong></td>
<td></td>
<td></td>
<td>Korea Offset Registry</td>
</tr>
<tr>
<td><strong>Special Condition</strong></td>
<td>Direct implementation by a Korean entity from the point of project registration</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Validity</strong></td>
<td>Unlimited</td>
<td>Unlimited</td>
<td>2 years (2020)→ 5 years (2023)</td>
</tr>
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</table>
Offsets in the K-ETS (3)

Eligible Methodologies

Domestic Offsets
- 81 domestic methodologies
- 769 projects
- Issued date: mid-2010
- Project types: equipment replacement, fuel conversion, solar, heat pump, HFC recovery & recycling, geothermal, LED lighting, biogas generation

International Offsets
- 211 CDM methodologies
- 269 projects
- Issued date: mid-2016
- Project types: PV bundle, solar, cook stoves, clean energy equipment, gas leakage prevention, clean water supply, hydro
Major demand comes from the power sector: 5% maximum offsets equivalent to 10 million tons annually, industry demand also reaches around 10 million tons (half from the steel sector)
Offsets Demand

KRW 35,913

Phase 1

Phase 2

Phase 3

KOC Data (2015-2023)

- More than half of issued offsets in the K-ETS have been used for compliance
- 16.5 million tons available as of 2023
Article Reached a peak of KRW 40,800 in early 2020, crashed to KRW 10,000 in 2023