15th annual IEA-IETA-EPRI workshop, 29-30 September, Paris

Emissions Trading Scheme in Korea

29 September 2015

Ministry of Environment
Republic of Korea
1. Overview of Korea’s GHG emissions

Energy & Industrial Process – key sectors for GHG emissions

GHG emissions by sector (2012)

- Energy: 87%
- Industrial Process: 7%
- Agriculture: 3%
- Waste: 2%

Facts on Korea’s energy consumption

- World’s 10th largest energy consumer
- 97% of energy is imported from abroad
- Energy import accounts for 29% of Korea’s total import volume
2. Recent landmark on GHG mitigation

- Enacted the ‘Low Carbon Green Growth Act’
  * provisions for ETS

- Designed the Target management scheme (TMS)
  * Implementation in 2012

- Sectoral Targets set for 2020

- Emission Trading Legislation & the Presidential Decree passed

- TMS implemented

- ETS Basic Plan established (Jan)

- NAP established (Sep)

- ETS implemented (2015.1.1)

(30% from BAU)
3. The national target (2009)

Estimated that such ambition could imply some 233MT CO2e reduction in 2020 from the business-as-usual scenario.

<table>
<thead>
<tr>
<th>Year</th>
<th>Emissions (Mt CO2e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>298</td>
</tr>
<tr>
<td>2005</td>
<td>594</td>
</tr>
<tr>
<td>2020</td>
<td>776</td>
</tr>
<tr>
<td>Target</td>
<td>543</td>
</tr>
</tbody>
</table>

30% reduction (233 MT CO2e)

unit: Mt CO2e

INDC submitted (‘15.6.30)
Target – reducing GHG emissions by 37% below BAU by 2030
4. ETS (Key processes and legal plans)

**Basic Plan**
- 10 year plan
- Every 5 years
- Ministry of Strategy and Finance
- Policy direction for ETS, BAU forecast, economic impact assessment, etc.

**Allocation Plan**
- Every phase (3~5 yrs)
- Ministry of Environment
- ETS cap, Cap for each sector, Allocation methodology,
- Reviewed by the Allocation Committee
4. ETS (Scheme design)

- Average emission of 3 years prior to the implementation phase
  - *Entity criteria 125,000t CO$_{2e}$, Installation criteria 25,000t CO$_{2e}$*

- Voluntary participating entities

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**Coverage**

**Implementation phases & free allocation**

**Phase I**
- 2015~2017
- 100% free allocation

**Phase II**
- 2018~2020
- 97% free allocation

**Phase III**
- 2021~2025
- Less than 90% free allocation

100% free allocation for EITE entities

- > 5% of production cost intensity + > 10% of trade-exposed intensity
- > 30% of production cost intensity
- > 30% of trade-exposed intensity

* Emissions-Intensive and Trade-Exposed
1,687 million KAUs (Korean Allowance Unit) from 2015 to 2017
- approx. 1,598 million KAUs were allocated to entities before Phase I starting (Dec 2014)
- 89 million KAUs were reserved in National Reserve for Market Stabilization, Early Action, and Others (additional allocation)

100% free allocation
- Grandfathering, based on historic emissions for electricity, steel, chemical and others (total 20 sub-sectors)
- Benchmarking, based on productivity for refinery, cement and domestic flight
### Emissions Cap and Pre-allocation

**Unit**: Thousand KAU (Korean Allowance Unit)

<table>
<thead>
<tr>
<th>Sector</th>
<th>Sub-sector</th>
<th>Implementation Year</th>
<th>Cap during the phase</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2015</td>
<td>2016</td>
</tr>
<tr>
<td>Cap</td>
<td></td>
<td>573,460</td>
<td>562,183</td>
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<tr>
<td>Reserve</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Pre-allocation</td>
<td></td>
<td>543,227</td>
<td>532,576</td>
</tr>
</tbody>
</table>
4. ETS (National Allocation Plan, Sep 2014)

**Target Sector and Industry**

- **23 sub-sectors in 5 sectors** based on sub-sector classification under Target Management System and under the national reduction targets
- Sub-sector of target entities are designated in alignment with sub-sector designated under Target Management System

**Type of Sub-sectors**

<table>
<thead>
<tr>
<th>Sector</th>
<th>Conversion</th>
<th>Public-Waste</th>
<th>Building</th>
<th>Transport</th>
<th>Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sub-sector</td>
<td>Power generation-energy</td>
<td>Water supply</td>
<td>Waste</td>
<td>Building Communications</td>
<td>Aviation</td>
</tr>
<tr>
<td>Total(23)</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>Cement</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>Steel</td>
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<td>Non-ferrous</td>
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<td>Metal</td>
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<td></td>
<td>Machinery</td>
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<td>Semiconductor</td>
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<td></td>
<td>Display</td>
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<td></td>
<td></td>
<td>Electric/electronic</td>
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<td></td>
<td>Automobile</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Shipbuilding</td>
</tr>
</tbody>
</table>

526 entities (’15.9)
Banking & Borrowing

• Banking is allowed to the next implementation year within the same phase or the 1st year of the next phase
• Borrowing is allowed from the next implementation year (max of 10% of total necessary allowances for submission)

Offsets

• Max of 10% of total necessary allowances for submission
• International offset credits are allowed from Phase III (50% of total offset credits)

Early Action

• Max of 3% of total cap (only for Phase I)
4. ETS (Adjustment, cancelation & fine)

Adjustments

- Adjustments in allocation of allowances is possible when:
  - there is a change in the Allocation Plan;
  - there is request from entities for additional allowances allocation due to unexpected expansion or merge acquisition and change in operation

Cancellation

- Cancellation of allowances is possible when:
  - there is a closure;
  - delay in operation of over 3 month; or
  - suspension of operation of 1 year

Fine for non-compliance

- Up to 3 times the average market price
- Max of 100 thousand KRW (US$ 91)/tCO2e
4. ETS (Issues and experience)

Experts and NGOs
• Legislation
  - act now
  - momentum for green growth

• NAP
  - act now
  - momentum for low-carbon & creative economy
  - cap too high to boost technology investment

Industry
• Legislation
  - wait for international agreement and act later
  - negative effects on national economy

• NAP
  - wait for international agreement and Act later
  - negative effects on national economy
  - cap too low

• Tens of public hearings, dozens of stakeholder meetings....
4. ETS (Issues and experience)

<K-ETS Council>

General Committee
(economic/civic group, media, experts, local/central government)

Subcommittee on market
(experts on trade/offset)

Subcommittee on industry
(industrial associations from 23 sub-sectors)

<Subgroup 1> <Subgroup 2> <Subgroup 3> <Subgroup 4> <Subgroup 5> <Subgroup 6> <Subgroup 7> <Subgroup 8>

Since March 2015, quarterly

Main issues in K-ETS

Technical issues on market, offsets and industries in general

Practical issues for each entity

Feedback
4. ETS (Current Status and Future)

**Trading**
- KAU (Korean Allowance Unit)
- KCU (Korean Credit Unit)
- KOC (Korean Offset Credit)

Korea Exchange (http://ets.krx.co.kr)

OTC (outside KRX)

Approx. 1.9MT (approx. 16M US$)

**Investors**
- Only ETS-regulated entities can trade KAU and KCU (~’20)
- Foreign investors can participate K-ETS market according to an international agreement

No limitation on KOC trading

**Linking the market**
- Endeavor to link domestic emissions allowances markets with international carbon markets in accordance with the UNFCCC and relevant protocols

International Market Mechanism?
Common MRV system (IAF)?
International offsets after 2020?

- International Accreditation Forum
Thank you!