Domestic Emissions Trading Scheme in Korea

May 2012
KEMCO Overview

**History**
- **1980** Establishment of KEMCO
- **2003** Foundation of the New & Renewable Energy Center (affiliated)
- **2005** Opening of the Korea GHG Reduction Registry Office and the CDM Certification Office designated by the United Nations

**Organizations**
4 Headquarters, 1 Renewable Center, 12 Regional Branches (Staff: 477 persons)

**Budgets**
(2012) 1,333 million USD (Operating budget $78 million, subsidy and loans $1,255 million)

**Major Activities**

**Energy Efficiency and Saving**
- Implementing Sectoral EE Programs (Industry, Buildings, Transport)
- Market Transformation for Energy Efficiency (Labeling and Certificates)
- Financial Supports (ESCO, Loan), Educations and Public Campaigns

**New and Renewable Energy**
- Deployment of Green Buildings and Homes
- Certification of New & Renewable Energy Systems
- Financial Supports (Subsidy, Loan), Public Obligation, RPS, FIT, etc.

**Climate Change Response**
- GHG & Energy Target Management Programs
- Registration and Certification of Voluntary GHG Reductions (KCER*)
- Certification for CDM Projects

* KCER : Korea Certified Emission Reductions
Contents

I  Climate Change and Energy Situations
II Target Management Scheme
III Emission Trading Scheme
Climate Change and Energy Situations
Energy-related GHG Emissions

Energy related GHG emissions took up 84.7% of the national total emissions.

Annual average emission increments in energy sector (1990-2007)

Since 1990, GHG emissions have increased at the rate of annual 4.6%.

Emission Share (2007)

- Energy Sector Total: 4.6%
- Power Gen. (Transformation): 9.9%
- Industry: 3.9%
- Transport: 5.2%
- Building: -1.0%
- Public & Others: -2.5%

Emissions by Gas-type

- CO2: 89.5%
- CH4: 3.9%
- N2O: 1.9%
- HFCs: 1.2%
- SF6: 0.5%
- PFCs: 0.5%

< Gross (2007) : 620MtCO2 >
Energy-intensive industries such as, petrochemical, iron and steel have been driving the increase of total energy consumption.
Korea’s Green Growth Policy

- **Low-carbon, green growth**: A National Vision for the Next 60 Years

| Three Objectives | 1. Green Society: Implementing low-carbon and high energy efficiency  
| | 2. Green Economy: Promotion green technology and industry  
| | 3. Green Korea: Global leader promoting green growth |

- Korean gov’t has implementing **5-year action plan for green growth**.
  - Investment plan for green growth (’09~’13): 86 billion USD (2% of GDP)
  - Expectations: Inducing value production of 165 billion USD and creating more than 1.5 million new jobs.

- **Framework Act on Low Carbon Green Growth** was promulgated.
  - The Act took effect on April 14, 2010, and posed a priority over all relevant laws regarding Green Growth.
  - Key provisions in the ACT consist of 7 chapters and 64 articles.
    - (**Article 40, 41**) Set up a basic plan for climate change mitigation and sustainable energy development
    - (**Article 42**) Implementing mandatory target management of GHG emission and energy use for the heavy emitters above designated criteria
The government announced national GHG reduction target to cut 30% from the BAU baseline by 2020 that is described by the Ordinance of Green Growth Act. Considering the current emission status, the national target is so ambitious that all the stakeholders should seek their best way.
Target Management Scheme
Target Mgmt. Scheme Overview

- Major policy instrument to meet the mid-term GHG reduction target
  - Set emission caps on large emitters and oblige them to meet their targets

- TMS started in 2012 and covers 58% of total national GHG emission
  - Designated 471 companies as controlled entities in 2011
  - Target mgmt. scheme is expected to cover about 60% of national emissions.
Target Mgmt. Scheme Procedures

Designation of Controlled Entities

<table>
<thead>
<tr>
<th>Item/Coverage</th>
<th>Till 2011. 12. 31</th>
<th>From 2012. 1. 1</th>
<th>From 2014. 1. 1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Entity base</td>
<td>Installation</td>
<td>Entity base</td>
</tr>
<tr>
<td>Emission(tCO₂)</td>
<td>125,000</td>
<td>25,000</td>
<td>87,500</td>
</tr>
<tr>
<td>Energy(TJ)</td>
<td>500</td>
<td>100</td>
<td>350</td>
</tr>
</tbody>
</table>

Setting targets

- Keep consistency with the national mid-term target
- Based on average of last 3 years emission records, through negotiation between the government and controlled entities

Implementation Plans

- Implementation plans submitted by Dec. 30th and government’s review each year

Performance Evaluation

- GHG MRV, 3 rd Party verification
- Penalty, improvement orders and fines on non-compliance
Emission Trading Scheme
## Emission Trading Scheme History

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct. 2010</td>
<td>Draft law proposed by Presidential committee on Green Growth</td>
</tr>
<tr>
<td>Nov. 2010</td>
<td>Public hearings and meetings with industrial groups and NGOs</td>
</tr>
<tr>
<td>Apr. 2011</td>
<td>Approved by Special Committee on Climate issues</td>
</tr>
<tr>
<td>May. 2012</td>
<td>Approved by legislative &amp; judiciary committee of National Assembly</td>
</tr>
<tr>
<td></td>
<td>Passed with Bipartisan Support in the plenary session of National Assembly</td>
</tr>
</tbody>
</table>
Start Date & Duration of Phases

- 1\textsuperscript{st} phase starting on Jan. 1\textsuperscript{st} 2015
- 1\textsuperscript{st} & 2\textsuperscript{nd} phases with 3 years, 3\textsuperscript{rd} phase lasting for 5 years

Procedure

- Basic planning -> Allocation plan -> Designation of controlled entities -> Allocation of Permits -> MRV -> Submission of Permits

Allocation of Emission Permits

- Over 95% free allocation during 1st and 2nd phase
- Future allocation determined by Presidential Decree
- 100% free allocation to trade-exposed carbon-intensive sectors
Participants of ETS
- Installation: emitting over 25,000tCO2/year or entities over 125,000tCO2/year
- Voluntary participants via opt-in procedure

Measures for Market Stability and Dynamic Efficiency
- Government reserve, additional issuance of permits
- Banking within and between commitment periods
- Borrowing only within commitment periods

Penalty
- Up to 3 times of average market price in the previous year
- No more than KRW 100,000 ($83 worth)tCO2-eq/year
Offset (Domestic/International)

- Limited use of offset credits meeting international standards
- Linking with international carbon market via international agreements

Transaction Infrastructure

- Designation or establish a Trading Platform
- Registry for unit accounting, trading and emission inventory
- Strict MRV system adapted from TMS infrastructure

Financial Support & Tax Credits

- Support for vulnerable businesses to competitive disadvantage
- Financial incentives and tax advantage for green technologies
Drafting Presidential Decree on ETS

- Detailed allocation methodology
- Rules for offsets and early action credits
- Definition of trade-exposed carbon-intensive sectors
- Allocation committee, Trading authority, Registry
- Emergency measures

Public consultation and communication with stakeholders

Promulgation of Presidential Decree by Nov. 2012
# Target Management Scheme (TMS) vs ETS

<table>
<thead>
<tr>
<th>ITEM</th>
<th>TMS</th>
<th>ETS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Target·Method</strong></td>
<td>National Target (30% ↓ from 2020 BAU)</td>
<td>- Target (=emission allocation) setting considering sectoral abatement target</td>
</tr>
<tr>
<td></td>
<td>※ Same target setting in TMS and ETS</td>
<td></td>
</tr>
<tr>
<td><strong>MRV</strong></td>
<td>Same MRV methodology in TMS</td>
<td>※ MRV (Measuring·Reporting·Verifying)</td>
</tr>
<tr>
<td><strong>Control</strong></td>
<td>Command and Control</td>
<td>Market mechanism and Pricing</td>
</tr>
<tr>
<td><strong>Implement/reduction</strong></td>
<td>1yr/ within installation</td>
<td>Multi-year (5yr) / + offset</td>
</tr>
<tr>
<td><strong>Way to meet target</strong></td>
<td>Implementing reduction (1 way to meet target)</td>
<td>Reduction, purchasing, banking, borrowing, offsetting</td>
</tr>
<tr>
<td><strong>Surplus</strong></td>
<td>No incentive (target meeting)</td>
<td>Selling or Banking</td>
</tr>
<tr>
<td><strong>Penalty</strong></td>
<td>Maximum KRW 10,000,000 (fixed)</td>
<td>Up to surplus emission amount</td>
</tr>
</tbody>
</table>
# Target Management Scheme vs ETS

## Legislation history (with public consultation)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Starting</td>
<td>2013.1.1</td>
<td>2015.1.1</td>
<td>2015.1.1</td>
</tr>
<tr>
<td>Double restriction</td>
<td></td>
<td>Exclude TMS when ETS applied</td>
<td>Exclude TMS when ETS applied</td>
</tr>
<tr>
<td>Allowance adjustment</td>
<td></td>
<td>Can apply when unexpected installation increasing occurred</td>
<td>Can apply when production item changed</td>
</tr>
<tr>
<td>Free allowance</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; over 90% 2&lt;sup&gt;nd&lt;/sup&gt; PD decision 3&lt;sup&gt;rd&lt;/sup&gt; 100% auctioning</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; over 95% 2&lt;sup&gt;nd&lt;/sup&gt; PD decision 3&lt;sup&gt;rd&lt;/sup&gt; PD decision</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; over 95% 2&lt;sup&gt;nd&lt;/sup&gt; over 95% 3&lt;sup&gt;rd&lt;/sup&gt; PD decision (Trade-exposed 100%)</td>
</tr>
<tr>
<td>Coverage</td>
<td>TBD in decision of allowances</td>
<td>TBD in designing an allowance plan</td>
<td>TBD in designing an allowance plan</td>
</tr>
<tr>
<td>Market participant</td>
<td>Need 3&lt;sup&gt;rd&lt;/sup&gt; party participation</td>
<td>Restrict 3&lt;sup&gt;rd&lt;/sup&gt; party participation in 3yrs</td>
<td>Restrict 3&lt;sup&gt;rd&lt;/sup&gt; party participation in 6yrs</td>
</tr>
<tr>
<td>Penalty</td>
<td>Up to 5times of market price (Max 1,000usd)</td>
<td>Up to 3times of market price (no maximum)</td>
<td>Up to 3times of market price (max 100usd)</td>
</tr>
<tr>
<td>Financial fine</td>
<td>50,000,000KRW</td>
<td>10,000,000KRW</td>
<td>10,000,000KRW</td>
</tr>
<tr>
<td>Supporting</td>
<td>Support using ETS fund</td>
<td>Financial/taxable support subsidies</td>
<td>Financial/taxable support subsidies</td>
</tr>
<tr>
<td>Banking</td>
<td>No banking</td>
<td>Banking, but not 1&lt;sup&gt;st&lt;/sup&gt;→2&lt;sup&gt;nd&lt;/sup&gt;</td>
<td>Banking</td>
</tr>
</tbody>
</table>
Target Management Scheme vs ETS

TMS vs ETS

< TMS/ ETS Coverae >

2011
TMS Coverage
25,000 CO₂t ↑

2012
TMS Coverage extended
20,000 CO₂t ↑

2014
TMS Coverage extended
15,000 CO₂t ↑

2015
ETS applied
TMS coverage
15,000 CO₂t ↑
Voluntary Participants
"Save energy, Save earth"

감사합니다

KOREA ENERGY MANAGEMENT CORPORATION