Review and Discussion of Emission Trading Scheme in Korea

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Introduction





Background – Introduction of ETS

- ► Korea's Policy Scheme to Regulate GHGs: Low Carbon Green Growth
 - Framework Act on Low Carbon Green Growth: Comprehensive legislation to fight climate change while promoting new growth engines
 - Introducing the Target Management System for GHG mitigation and energy saving
 - Preparing the Nation-Wide Emission Trading Scheme (ETS) as a Cost-Effective Tool for Addressing Climate Change
 - ✓ Position of Korea: Currently Non-Annex I Party
 - Voluntary Basis of ETS





► Two-Step Approach to Introduction of ETS

- 1st Step: Voluntary Market (2009-)
- Pilot Project to be implemented by local governments with the

voluntary reduction targets

- Participants (the Public Institutes, Industries.

Commercial

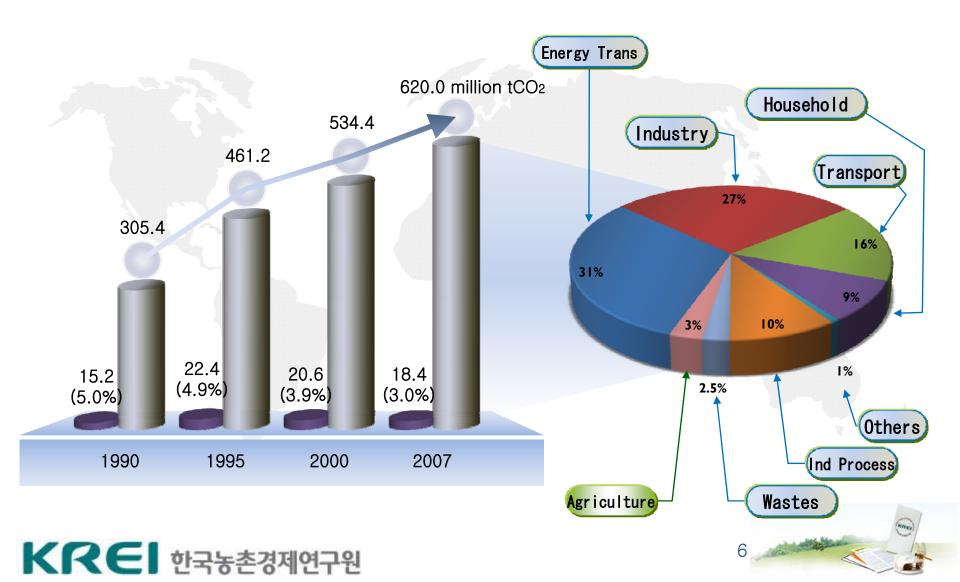
Buildings & Households)

- 2nd Step: Nation-Wide Market (2011-)
 - Transition to the Nation-wide Market
 - Consideration of International Linkages with Other Carbon Market



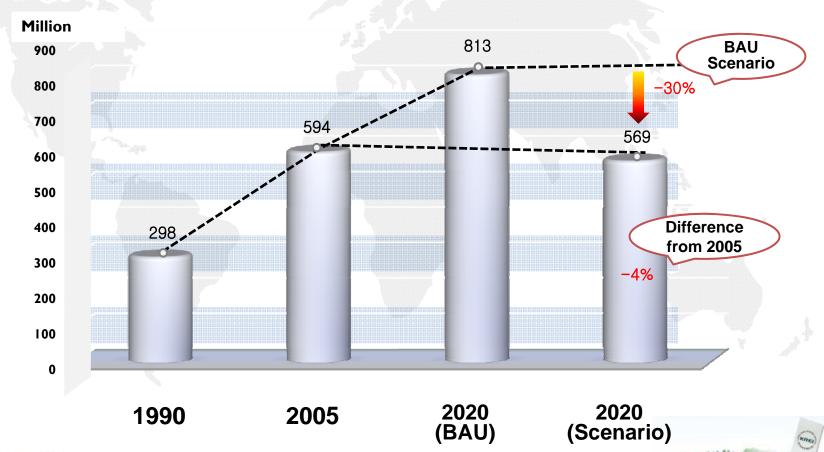


Current Status of GHGs Emission in Korea



Korea' Voluntary Mid-Term Mitigation Target

 30% reduction on BAU projection for 2020 (4% below the 2005 level by 2020)







Review of Emission Trading Scheme (ETS)





Pilot Emission Trading Scheme

- ► Introduction of Pilot ETS (2009)
 - Preparation for smooth transition to internationally-agreed type of ETS

► Two-Track Model of Pilot ETS

- Industry
 - Participation Sectors: Similar to EU-ETS (Combustion, Metal, Mineral, Iron, Refinery, etc)
 - Voluntary Targets, Monitoring and Validation of Reduction by the Govt under the Contract between Ministry of Environment (MOE) and industries
 - → GHGs Management System (GEMS) for business and large buildings

Local Government

- Voluntary Targets through the Contract of MOU between and MOE and local government
- Allocate Reduction Targets to Each Local Government
 - → Regional Emissions Trading System (Ministry of Environment Emission Trading System, MEETS) for local governments and public agencies



System Configuration

- Emission management program : managing the GHGs emissions for the pilot project participants
- Emission credit management program : managing issuance, transfer, and history of credit

▶ Early Actions

- Industrial Sector: To Allow Banking and Issuance of the Credit for Early Action
- Local Government : To Support Subsidy

National Registry

- Refer to electronic records for recording information on the issue of GHGs emission credits, retention, and transfer
- To reflect the credit transfers between countries, cooperate with International Transaction Log (ITL)





GHG-Energy Target Management System

Overview of the System

- Government imposes the target for GHG emission as well as energy use to designated entities and checks on the achievements of those entities
- Prospected to become the foundation of national GHG management for the future
- GHG volume of controlled entities is about 70% or more of nationwide total emission, and about 90% or over of the emission volume by the industries

▶ Main Contents

- Controlled entities: Any entity whose total GHG emission as well as total energy consumption of workplace for the latest 3 years exceeds the baseline volume of 125,000tCO2 and exceed the baseline volume of 500 terajoules (1 terajoule = 23.88 TOE)





► Tailored Approach for Each Emission Sector

- Large Emitters (mainly industrial facilities) : Target Management System
- Covered emission: 61.3% of national emission
- Covered entities : 470 companies

(Industry/Energy: 374, Building/Transportation: 46, Waste 23,

Agriculture/Livestock: 27)

⇒ Systematic Management of 60% of national emission by regulating 470 entities





< Overall Scheme of Target Management Scheme >







Mandatory Nation-Wide ETS

- Institutional Framework of ETS
 - Law-making body of EMS by Presidential Committee on Green Growth
 - Operation of ETS : drafting an ETS by Ministry of Environment
- ▶ Based on Article 46 "Framework Act on Low Carbon Green Growth" (Act No. 9931, January 14, 2010)
 - Cap and trade system for trading emissions of GHGs by utilizing market functions in order to accomplish the national reduction target of GHGs
 - System for setting a cap on emission of GHGs and for trading emissions and other internationally recognized trading system
 - Method of allocation of the allowable quantity of emission, methods of registration and management, and the establishment and operation of an exchange for implementing the system





< Major Contents of a Bill on ETS >

Items	Major Contents
Objectives	Reducing GHGs, Activation of Domestic CM, Countermeasures for International CM
Participation Objects	Compulsory: more than 25,000 tCO2 Voluntary: some level determined by the President Decree
Planning Period	1 st Period : 2013-2015 2 nd Period: 2016-2020 (after then every 5 years)
Allocation of Emission Credits	1 st Period : free 90% and paid 10% in allocation 2 nd Period: determination by President Decree 3 rd Period : 100% auction
Offset	Effective period of 7 years with extending one more time Effective period of 20 years in forest area as a sink source
Early Reduction Performance	Recognition of early GHGs reduction certified by authorized inspection agency
Institutional Links	UNFCCC and Kyoto Protocol
Penalty	Fine KRW 1million per 1CO ₂ Ton in case of not meeting requirement



<Reference> Economic Effects of ETS

- ► Setting up the scenarios under the reduction commitment level after 2013 based on 5% below 2000 emission levels
 - Using dynamic CGE (computable general equilibrium) model

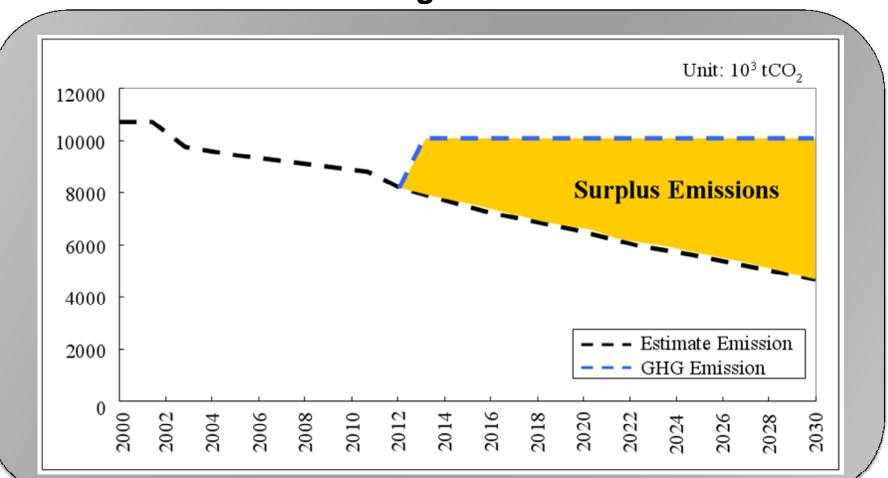
<Emission Reduction Scenarios to Comply with the Post-Kyoto Regime>

Scenario	Contents
Scenario 1	Each industry implements its emission reduction target individually (Reduction cost per ton in each industry)
Scenario 2	All industries meet their reduction targets through ETS
Scenario 3	Non-agricultural sectors (manufacturing, service, and fossil fuel sectors) are allowed for emission trading, while the agricultural sector implements the reduction commitment individually





Allowable GHG Emissions and Surplus Emissions in Ag-Sector

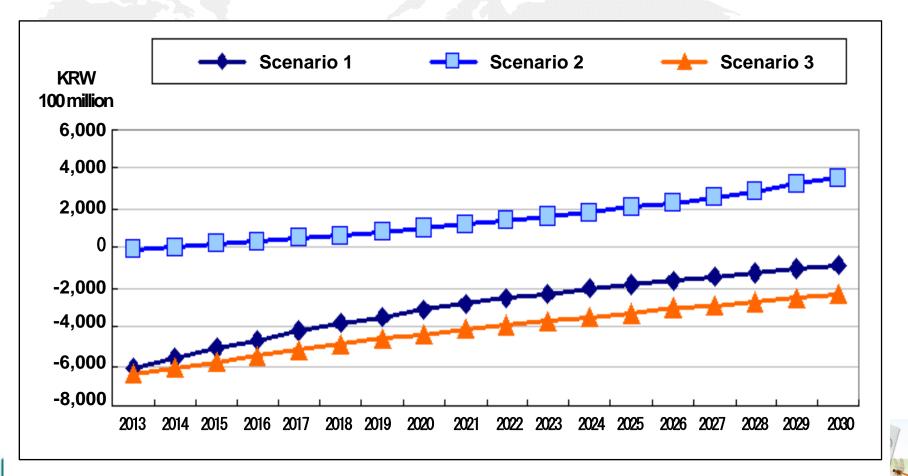






■ Economic Effect of ETS in Agricultural Sector

- Net revenue from ETS by selling surplus emission credit : KRW -9.4 trillion (2013) ⇒ KRW 98 (2020) ⇒ KRW 359.1 (2030)
- ⇒ contribute to the national economy as well as increasing the revenue of the agricultural sector





Prospects of Activating ETS





Prospect for Activating ETS in Korea

- Bracing for EMS, but Delaying for Nation-wide ETS Operation
- Preliminary Announcement on Legislation for "ETS Act" (November 17, 2010)
- Making a recommendation to the Government for delaying ETS implementation by Korea Chamber of Commerce (Dec. 7, 2010)
- Public hearing on ETS by Government and Leading Economic Organizations (December 26, 2010)
- Recently holding "ETS Act" by Regulatory Reform Committee (January 13, 2011)
- ▶ Double Regulation on GHGs Emission
 - Introducing Target Management System in 2012 and ETS in 2013





- ▶ Different Viewpoint on Implementing Mandatory ETS
- Facing Lingering Divisions among Policymakers and Businesses, and the uncertain future of a new global treaty to fight GHGs emissions
- Conflict among Government Ministries and Offices
- Presidential Committee on Green Growth (Pro)
- Ministry of Environment (Pro)
- Ministry of Knowledge Economy (Con)
- Agricultural sector
- Extending opportunities for creating income sources





W Conclusion

- Perspectives in Agricultural Sector





Approach to ETS in Agricultural Sector

- ▶ Step-by-Step Approach : 3 Phases
- Phase I (- 2012): Preparation (In-depth research)
- Phase II (2013-2017) : Utilization
- Phase III (2018-2020): Establishment
- Establishment of Monitoring, Reporting and Verification (MRV) System in GHGs
 - Need for developing highly accurate technologies and techniques for MRV
 - Application of agricultural mitigation technologies





☐ Agricultural GHG mitigation technologies

N₂O Reduction from Agricultural soil and Fertilization Management

Precision agriculture, Cropping system models, Control release fertilizers and pesticides, Biological and chemical methods, Soil conservation practices, Livestock manure utilization, Plant breeding.

Non-CO₂ Emissions Reduction from Manure Management

CH₄: Anaerobic digesters, Specific storage system, Aerobic decomposition of manure N₂O: Reducing nitrogen-based fertilizer applications, using nitrogen inhibitors, improving nitrogen nutrient management, altering crop mix, and reducing nitrogen content of animal feeds

Emissions Reduction from Livestock Enteric Fermentation

Improving the feed-intake efficiency, Altering livestock management practices, Use of intensive grazing, Improving feed and forage management, Best management practices to increase animal reproduction efficiency, Use of growth promotants, etc.

CH₄ Emissions Reduction from Paddy Fields

Changes in water management regime, Use of inorganic fertilizers, Different cultivar selection

CO₂ Emissions Reduction from Fossil Fuel Use

Reduce the use of energy-intensive inputs, Use of energy saving technology for ag-machines





Core Tasks for Implementing ETS in Ag-Sector

- Positive and creative thinking in designing EMS as an economic opportunity (low-cost high-value reduction) for agriculture
- Maximizing opportunities by explicitly rewarding and encouraging agricultural mitigation and carbon sequestration measures
- Fully Rewarding for all verifiable GHGs emission reductions in agricultural sector
- Developing standardized protocols for monitoring and verifying GHGs changes that can be utilized by farmers to facilitate their participation in carbon market







Thanks for your attention!!



