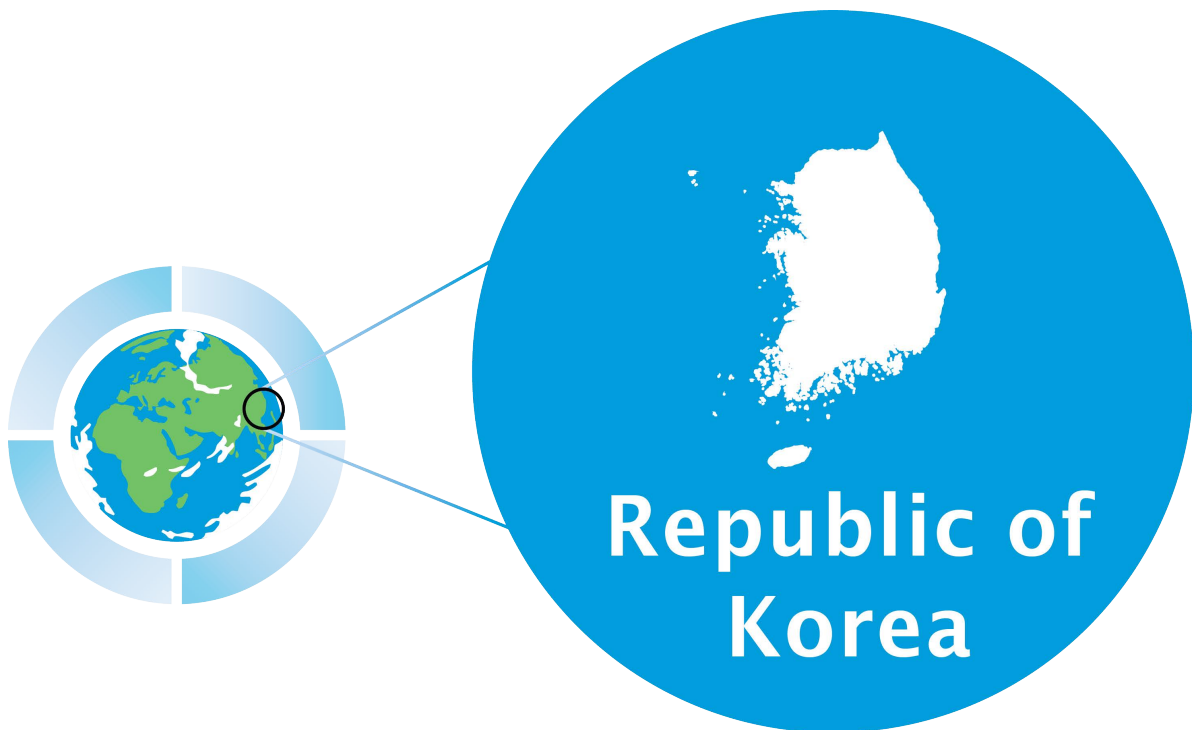




REPUBLIC OF KOREA: AN EMISSIONS TRADING CASE STUDY



Republic of Korea

The World's Carbon Markets: A Case Study Guide to Emissions Trading

Last Updated: June 2015

First compliance period (2015-2017)	
Target	By 2020: Unconditional, voluntary target of -30% below business as usual (BAU): 543 million tCO _{2e} .
Cap	573 million tCO _{2e} in 2015
Greenhouse Gases covered	Carbon Dioxide (CO ₂), Methane (CH ₄), Nitrous Oxide (N ₂ O), Hydrofluorocarbons (HFC), Perfluorocarbons (PFC), and Sulfur hexafluoride (SF ₆)
Number of Entities Covered	525 business entities
Sectors Covered	23 sub-sectors from steel, cement, petro-chemistry, refinery, power,
Threshold	Company >125,000 tCO ₂ /year,
% Total emissions covered	66%
Compliance tools & Flexibility Mechanisms	Offsets, free allowances, banking, borrowing (not across phases)

Table 1: Program Overview

Brief History & Key Dates

Year	Event
2009	Republic of Korea pledged to reduce GHG emissions by 30% relative to the country's projected levels by 2020
2010	Framework Act on Low Carbon Green Growth enacted
2011	BAU level emissions announced
2012	Act on the Allocation and Trading of Greenhouse Gas Emission Permits (ETS Act) enacted
2014	National Emission Allowance Allocation Plan announced
2015	GHG emissions trading market opened

Table 2: Key Dates

Since 1990, the Republic of Korea's greenhouse gas (GHG) emissions have increased by 132.9%¹ and, in 2012, amounted to 688.3 million tonnes of carbon dioxide equivalent (tCO_{2e})² excluding LULUCF. In 2012, the majority of CO_{2e} emissions were derived from the energy sector, responsible for 87.2% of national emissions, followed by industrial processes (7.5%) the agriculture (3.2%) and the waste sector (accounted for 2.2%).³

As part of the 2009 Copenhagen Accord, the Republic of Korea pledged to reduce GHG emissions by 30% below its Business as Usual level by 2020, a goal that equates to a 4% reduction below 2005 levels.⁴

A major step towards this goal came in April 2010, when the *Framework Act on Low Carbon Green Growth* (Framework Act) and the Presidential Decree promulgated thereunder came into effect. The three most important features of the Framework Act are that it:

1. sets the national GHG emission target to reduce emissions 30% below Business As Usual (BAU) levels by 2020;
2. establishes *the Greenhouse Gas Target Management System* (TMS), which sets emissions and energy targets for business entities in the industrial, power generation, transportation, building, agriculture, food and waste sectors;⁵ and;
3. provides the legal basis for an Emissions Trading Scheme (ETS).

Unlike the ETS, the TMS does not enable companies to trade credits. Penalties for non-compliance are maximum KRW 10 million (approximately US\$9,100¹) regardless of the level of infraction. Conversely under the ETS, companies are subject to penalties that are proportionate to the volume of GHG emissions exceeding the cap.⁶

In July 2011, the Republic of Korea announced BAU emissions levels it will use as the baseline for reducing emissions, and GHG emission reduction targets for each sector.⁷

The *Act on allocation and trading of greenhouse gas emissions allowances* and the *Enforcement Decree Act* enacted in 2012,⁸ provide the legal foundation for the implementation of the ETS. Then, the *Master Plan for the Emissions Trading Scheme* and the *Phase I National Allowances Allocation plan* were released in 2014 as the bases for the launch of the ETS in January 2015.

¹ 1 USD is approximately 1,101 KRW on May 26, 2015. This exchange rate will be used throughout the document. Source: [Bloomberg](#)

In January 2014, the government released a *Roadmap to achieve the national greenhouse gas reduction target* (the 2014 Roadmap) to strengthen Korea actions to reach the voluntary 2020 emission reduction target.⁹ According to the emission forecast provided by the Ministry of Environment in the 2014 Roadmap, the nation's BAU emissions projection is 776.1 million tCO_{2e} in 2020.¹⁰ The 2014 Roadmap anticipates emission cuts by 2020 coming from the industrial sector, the power generation sector, the building sector, the transportation sector, the public sector, the agricultural and fishery sector and the waste sector (see table 3).¹¹ The Roadmap also suggests measures to be taken to achieve the national emission reduction target, such as introducing the ETS, promoting renewable energy, enhancing vehicle fuel efficiency, technology development and raising public awareness have been implemented.¹²

Sectors	Reductions by 2020 (million tCO _{2e})	2020 target (% below BAU)
Agriculture & Fishery	1.5	5.20%
Building	45	26.90%
Industry	81.3	18.50%
Power	64.9	26.70%
Public Sector	4.5	25%
Transportation	34.2	34.30%
Waste	1.7	12.30%

Table 3: Sectorial emission reduction targets by 2020

Source: Korea Ministry of Environment, 2014. Available at: eng.me.go.kr

On 15 November 2012, the Republic of Korea enacted the *Act on the Allocation and Trading of Greenhouse Gas Emission Permits* (ETS Act), which introduced a national cap-and-trade system that began on 1 January 2015. According to the first draft of the ETS Act released by the Prime Minister's Office in November 2010, the program's first phase was scheduled to begin on 1 January 2013.¹³ However, the country's industrial sector, mainly through a 500+ company group called the Federation of Korean Industries, voiced strong opposition to this plan, arguing that projected increases in production costs could put Korean companies at a disadvantage in international markets,¹⁴ and the ETS was delayed until 2015.

In December 2014, just before the ETS began, the Ministry of Environment finalized allocation to 525 companies of approximately 1,598 million tCO_{2e} of Korea Allowance Units (KAUs) for Phase I (2015-17).¹⁵ The GHG emissions trading market opened on 12 January, 2015.¹⁶ Until now, more than 40 companies in the petrochemical industry, non-ferrous metal industry and waste incinerating industry have filed lawsuits against the government, demanding larger allocations.¹⁷

Summary of Key Policy Features

CAP & TARGET: The Republic of Korea has pledged to decrease its emissions 30% relative to 2020 BAU projections. This means that, by 2020, the Republic of Korea will need to emit no more than 543 million tCO_{2e}, which is 233.1 million tCO_{2e} below its BAU level. However, if a different BAU projection, done by the PBL Netherlands Assessment Agency/IIASA is used instead, a 233.1 million tCO_{2e} will be equivalent to only 16% below 2020 BAU level emissions.¹⁸ During Phase I, the cap will decrease from 573 million tCO_{2e} in 2015 to 551 million tCO_{2e} in 2017.

SCOPE & COVERAGE: The Republic of Korea's ETS has **three phases:** Phase I (2015-17), Phase II (2018-20), and Phase III (2021-25).¹⁹ The ETS places emissions caps on **525 of the country's largest emitters**, which together account for roughly two thirds of the country's annual GHG emissions.²⁰ Companies whose annual emissions amount to over 125,000 tCO_{2e} or own facility generating over 25,000 tCO_{2e} on the annual average rate of the years within the Phases are subject to the ETS, and thus required to submit allowances for each tonne of CO_{2e} they produce.²¹

The **point of regulation** is downstream. Entities with emissions below the large-emitter threshold may participate on a voluntary basis. The scheme covers both **direct and indirect emissions**.²² **Gases** regulated by the scheme include CO₂, CH₄, N₂O, HFC, PFC, and SF₆.²³

AUCTIONING/ALLOWANCE DISTRIBUTION: The Republic of Korea's cap is set to decrease over time, while the percentage of auctioned allowances will increase over time.²⁴ During Phase I, 100% of allowances were **freely allocated**.²⁵ In Phase II, 97% of allowances will be freely distributed to participants; in Phase III this will decrease to 90%.²⁶ Subsequently, 3% of allowances will be **auctioned** in Phase II and at least 10% will be auctioned in Phase III. This high percentage of free allocations is intended to ease international trade burdens on industries; companies in sectors that are considered **energy-intensive and trade-exposed (EITE)** will receive 100% of their allowances free of cost in each phase.²⁷

Business sectors are considered EITE if: (1) production cost increase up to 5% or more while trade intensity increases by 10% or more; (2) production costs increases by 30% or more, or (3) trade intensity increases 30% or more.²⁸

Most companies receive allowances based on their past direct and indirect emissions (grandfathering). However, some sectors such as oil refinery, cement and aircraft, receive allowances based on their historical activity data and efficiency of facilities (benchmark).²⁹ All participants must register in order to receive allowances.³⁰

In September 2014, the Republic of Korea announced in its *National Emission Allowance Allocation Plan* that it would allocate more than 1,500 billion KAUs³¹ during Phase I to companies covered by ETS. Additionally, the government has established an allowance reserve with several functions; ³²

- market stabilization by delivering up to 14,316,224 allowances;
- recognition of early action by delivering up to 41,391,911 allowances;
- new entrants or voluntary entrants reserve by delivering up to 33,113,529 allowances

Allowance	2015 (KAU)	2016 (KAU)	2017 (KAU)	Total (KAU) Phase I
Total Number of Allowances	573,460,132	562,183,138	550,906,142	1,686,549,412
Allocated Allowances	543,227,433	532,575,917	521,924,398	1,597,727,748
Reserved Allowances				88,821,664

Table 4: Total number and types of allowances during Phase I

Source: KDB Daewoo Securities, 2014. Available at: kdbdw.com

FLEXIBILITY PROVISIONS: Companies subject to the ETS are allowed to use unlimited banking, limited borrowing, and limited offsets to meet their compliance obligations.

Offsets

Covered entities can use offsets to meet up to 10% of their surrendering obligation.³³ In Phase I & II only **domestic offsets** are accepted: domestic credits from non ETS sectors and “Korean CERs” coming from emission reduction projects which meet CDM methodologies and are implemented domestically.³⁴ Projects implemented before 14 April 2010 are not eligible to issue KCERs. In Phase III the use of **international offset credits** will be limited to half of the offset limitation.³⁵

The Ministry of Environment may cancel offset credits if double counting has occurred.³⁶ To avoid double counting, the Ministry of Environment requires that KCERs are first cancelled in the CDM registry in order for them to be registered within the domestic Korean Registry.³⁷

The Ministry of Trade, Industry and Energy issue **Korean Voluntary Emission Reductions (KVERs)** to companies that produce emissions reductions that are real and additional. In order to prevent double counting, KVERs cannot be used as offsets in the case where they have been sold to the government.³⁸

Banking and Borrowing

Banking is allowed between years and phases.³⁹ **Borrowing** between phases is forbidden, however allowances can be borrowed between years within each trading phase for up to 10% of emissions.⁴⁰

Other flexibility provisions

Early reductions can be awarded in the form of additional allowances up to 3% of the total emission volume during Phase I of the ETS for emission reductions received prior to ETS implementation.⁴¹

The ETS Act encourages the exploration of linking with other Kyoto Protocol Annex I countries and/or countries with equally ambitious Monitoring, Reporting and Verification (MRV) systems.⁴² There have been no substantial developments regarding linkage thus far.

COST CONTAINMENT & VOLATILITY MANAGEMENT: In addition to the allowance reserve the ETS Act allows the government to intervene in the market in three different situations:⁴³

- price climbs: threefold or more increase from the average price;
- demand climbs: the average price increases two-fold or more and trade volume increases two-fold or more from the average in a one month period; and,
- price crashes: the price decreases 60% or more than the average in a one month period.

In any of these cases, the government will be allowed to pursue any of the following market stabilization measures, subject to review of the Allowance Committee under the Ministry of Strategy and Finance:⁴⁴

- additionally auction allowances from the allowance reserve for that phase (up to 25%);
- set minimum and maximum emissions permit possession limits;
- Increase or limit the amount of banking and borrowing;
- Increase or limit the amount of offset emissions permit submissions; and / or;
- temporarily set price ceilings and floors.

In order to encourage emissions permit trading and to prevent loss of competitiveness, **financial and tax support, assistive monies, and/or other assistance** may be provided to GHG-reduction-related and renewable-energy-related technology development and deployment/supply businesses, among others.⁴⁵

MARKET REGULATION & OVERSIGHT:

Monitoring, reporting & verification system

Since 15 January 2014 the Korea Exchange, is the designated regulatory authority for ETS oversight.⁴⁶ Covered facilities are required to develop an annual **emission inventory**, which must be verified by a third party before being reported to the government.⁴⁷ Once reports are certified, facilities are listed in the **emission allowance register**, established by the government.⁴⁸ Facilities are required to surrender allowances which account for emissions from the previous year.⁴⁹

Non-compliance penalties

The penalty for **non-compliance** with the ETS shall not exceed three times the average market price per unit of tCO_{2e}. The maximum penalty is KRW 100,000 per tCO_{2e},⁵⁰ or approximately US \$91/tCO_{2e}.ⁱⁱ

COMPLEMENTARY & SUPPLEMENTARY MEASURES:

Greenhouse Gas Target Management System (TMS)

Businesses are subject to the TMS if they exceed the following thresholds:⁵¹

- A Company that emits between 50,000 tCO_{2e} or more annually (includes direct and indirect emissions) and consumes over 200TJ of energy annually;
- A Business facility emitting 15,000 tCO_{2e} or more annually and consuming over 80TJ of energy annually. In this case, only that business will be subject to the TMS, as long as the company wide emissions do not exceed 50,000 tCO_{2e}

Companies and business facilities covered by the ETS are exempted from the TMS.⁵²

Renewable energy policy

In the past and present, the government has provided **tax and financial incentives** for specified emissions reduction measures, such as **feed-in tariffs** for renewable energy projects which commenced operation between 2002 and 2011. In 2012, a **renewable portfolio standard** replaced these tariffs; the Republic of Korea's 14 major power generators must produce a set quota of energy from renewable sources, which include wind and solar. As of 2012, the renewable portfolio standard is 2%, which will increase to 10 percent by 2022.⁵³

Fuel economy standards

The Republic of Korea has ambitious fuel economy standards for light-duty vehicles. By model year 2020, these standards will represent a 31.1% reduction in GHG emission rates for passenger cars, and a 15.2% reduction for light trucks, compared to 2013 standards.⁵⁴

ⁱⁱ 1 USD is approximately 1,101 KRW on May 26, 2015. Source: [Bloomberg](#)

Sector based emission reduction targets

In addition to the aforementioned strategies, the government have also assigned sectorial targets that will help to effectively achieve the overall emission reduction goal and ensure reduced CO_{2e} from a broad range of industries.

Sector	Estimated reduction compared to 2020 BAU	Methods
Industry	18.2%	develop high efficiency technologies; using alternative fuels; increase GHG recovery and recycling
Power	26.7%	reduce dependency on fossil fuels; expand clean energy sector; implement smart grids and smart meters
Transport	34.3%	increase fuel efficiency; develop high speed rail; increase ration of Biofuels in diesel and gasoline blend
Building	26.9%	strengthening existing building insulation and cooling performance; implementing high efficiency boilers/air-conditioning/lighting/appliances
Waste, agriculture, forestry, fisheries and public sector	17.5%	landfill gas recovery, recycling, combustible waste-energy power generation; improving energy consumption behaviours; implementing energy efficiency improvements in buildings and equipment

Table 5: Estimated emission reductions by sector (relative to 2020 BAU estimations), to be achieved by 2020.

Source: Greenhouse Gas Inventory & Research Centre of Korea, 2015. Available at: gir.go.kr

What Distinguishes this Policy?

UNIQUE ASPECTS

1. The Republic of Korea was the second Asian country, after Kazakhstan, to implement a national economy-wide ETS.
2. The ability to stabilize prices via measures including **early reserve allocations** is relatively unique to the Republic of Korea's ETS.
3. The Korean ETS covers over 400 installations, however 80% of annual allowances are distributed to around 12 conglomerates (chaebol) highlighting the unique and centralised nature of South Korean industry.

CHALLENGES

1. The government has considered **revising** BAU projections in the past, although this has not happened. Since targets are tied to BAU projections, changing those projections could significantly impact the stringency of the ETS caps. The government must abide by its original BAU projects in order to provide clear market signals to industry.

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¹ Korean Greenhouse Gas Inventory and Research Center (2015), First biennial update report of the Republic of Korea, 22 December 2014, Available at: <http://www.gir.go.kr/home/board/read.do?pagerOffset=0&maxPageItems=10&maxIndexPages=10&searchKey=&searchValue=&menuId=36&boardMasterId=2&boardId=27>, p.11

² Korean Greenhouse Gas Inventory and Research Center (2015). National Greenhouse Gas Inventory Report of Korea. Available at <http://www.gir.go.kr/home/board/read.do?pagerOffset=0&maxPageItems=10&maxIndexPages=10&searchKey=&searchValue=&menuId=36&boardId=28&boardMasterId=2&boardCategoryId=>

³ Korean Greenhouse Gas Inventory and Research Center (2015). National Greenhouse Gas Inventory Report of Korea. Available at <http://www.gir.go.kr/home/board/read.do?pagerOffset=0&maxPageItems=10&maxIndexPages=10&searchKey=&searchValue=&menuId=36&boardMasterId=2&boardId=26>

⁴ Ministry of Foreign Affairs and Trade (January 2010). Nationally appropriate mitigation actions of developing country parties. Available at https://unfccc.int/files/meetings/cop_15/copenhagen_accord/application/pdf/koreacphaccord_app2.pdf

⁵ Framework Act on Low Carbon Green Growth (2010), Republic of Korea. English Translation Available at http://elaw.klri.re.kr/kor_service/lawView.do?hseq=24639&lang=ENG

⁶ Framework Act on Low Carbon Green Growth (2010), Republic of Korea. English Translation Available at http://elaw.klri.re.kr/kor_service/lawView.do?hseq=24639&lang=ENG

⁷ Korean Greenhouse Gas Inventory and Research Center, Ministry of Environment, Ministry of Knowledge Economy, Ministry of Land, Transport and Maritime Affairs, Ministry of Food, Agriculture, Forestry and Fisheries, Ministry of Strategy and Finance and Presidential Committee on Green Growth (July 2011), "2020 Roadmap for the Implementation of a Low Carbon Green Growth Society - Sectoral, Industrial and Annual Greenhouse Gas Emissions Targets Confirmed" Available at http://www.mltm.go.kr/USR/NEWS/m_71/dtl.jsp?id=95068515

⁸ Korean Greenhouse Gas Inventory and Research Center (2015), First biennial update report of the Republic of Korea, 22 December 2014, Available at: <http://www.gir.go.kr/home/board/read.do?pagerOffset=0&maxPageItems=10&maxIndexPages=10&searchKey=&searchValue=&menuId=36&boardMasterId=2&boardId=27>, p.13

⁹ Korean Greenhouse Gas Inventory and Research Center (2015), First biennial update report of the Republic of Korea, 22 December 2014, Available at: <http://www.gir.go.kr/home/board/read.do?pagerOffset=0&maxPageItems=10&maxIndexPages=10&searchKey=&searchValue=&menuId=36&boardMasterId=2&boardId=27>, p.8

¹⁰ Korean Ministry of Environment (January 2014). "National GHG Emissions Reduction Target Roadmap" Available at <http://me.go.kr/home/web/board/read.do?boardMasterId=39&boardId=341045&menuId=290>

¹¹ Korean Ministry of Environment (January 2014). "National GHG Emissions Reduction Target Roadmap" Available at <http://me.go.kr/home/web/board/read.do?boardMasterId=39&boardId=341045&menuId=290>

¹² Korean Ministry of Environment (January 2014). "National GHG Emissions Reduction Target Roadmap" Available at <http://me.go.kr/home/web/board/read.do?boardMasterId=39&boardId=341045&menuId=290>

¹³ Shin & Kim (November 2010). "Legal Update: Draft Act on the Allocation and Trading of Greenhouse Gas Emission Permits announced." Available at http://www.shinkim.com/upload_files/newsletter/environment_kr1011.html

¹⁴ Federation of Korean Industries et al. (February 2012). "Industry Opinion on Draft Act on the Allocation and Trading of Greenhouse Gas Emission Permits."

- ¹⁵ Korean Ministry of Environment (December 2014). "Ministry of Environment, Confirms GHG Emission Allowances for 525 Companies" Available at <http://www.me.go.kr/home/web/board/read.do?pagerOffset=150&maxPageItems=10&maxIndexPages=10&searchKey=&searchValue=&menuId=286&orgCd=&boardId=464220&boardMasterId=1&boardCategoryId=39&decorator=>
- ¹⁶ Korean Ministry of Environment (December 2014). "January 12, 2015 confirmed as ETS Market Open Date" Available at <http://www.me.go.kr/home/web/board/read.do?pagerOffset=130&maxPageItems=10&maxIndexPages=10&searchKey=&searchValue=&menuId=286&orgCd=&boardId=466370&boardMasterId=1&boardCategoryId=39&decorator=>
- ¹⁷ Park, Minwoo (March 2015). "GHG Emission Allowance Market, "Zero Transactions" for 51 Days... No Transactions and Only Litigations?" Donga Ilbo. Available at <http://news.donga.com/3/all/20150310/70049918/1>
- ¹⁸ den Elzen, Michel, Mark Roelfsema, Andries Hof, Hannes Bottcher, and Giacoo Grassi (2012). "Analysing the emission gap between pledged emission reductions under the Cancun Agreements and the 2°C climate target." PBL Netherlands Environmental Assessment Agency (PBL). Available at <http://www.sustainableguernsey.info/blog/wp-content/uploads/2012/05/2012-M04-290412-pbl-2012-analysing-the-emission-gap-between-pledged-emission-reductions-500114021.pdf>
- ¹⁹ Act on the Allocation and Trading of Greenhouse Gas Emission Permits (2012), Republic of Korea. English translation available at http://elaw.klri.re.kr/kor_service/lawView.do?hseq=24561&lang=ENG
- ²⁰ Korean Ministry of Environment (December 2014). "Emission Allowances for 525 Businesses Confirmed." Available at <http://www.me.go.kr/home/web/board/read.do?pagerOffset=0&maxPageItems=10&maxIndexPages=10&searchKey=titleOrContent&searchValue=&menuId=286&orgCd=&condition.toDate=2014-12-05&condition.fromDate=2014-12-02&boardId=464220&boardMasterId=1&boardCategoryId=&decorator=>
- ²¹ Act on the Allocation and Trading of Greenhouse Gas Emission Permits (2012), Republic of Korea. English translation available at http://elaw.klri.re.kr/kor_service/lawView.do?hseq=24561&lang=ENG
- ²³ Act on the Allocation and Trading of Greenhouse Gas Emission Permits (2012), Republic of Korea. English translation available at http://elaw.klri.re.kr/kor_service/lawView.do?hseq=24561&lang=ENG
- ²⁴ Act on the Allocation and Trading of Greenhouse Gas Emission Permits (2012), Republic of Korea. English translation available at http://elaw.klri.re.kr/kor_service/lawView.do?hseq=24561&lang=ENG
- ²⁵ 100% free allocation does not mean that companies subject to the scheme are allowed to emit unlimited volumes of greenhouse gases, but rather that companies will be exempt from burdening the cost of securing their allocated volume of emissions in Phase I.
- ²⁶ Presidential Decree to the Act on the Allocation and Trading of Greenhouse Gas Emission Permits (2012), Republic of Korea. English Translation Available at http://elaw.klri.re.kr/kor_service/lawView.do?hseq=27386&lang=ENG
- ²⁷ Act on the Allocation and Trading of Greenhouse Gas Emission Permits (2012), Republic of Korea. English translation available at http://elaw.klri.re.kr/kor_service/lawView.do?hseq=24561&lang=ENG
- ²⁸ Presidential Decree to the Act on the Allocation and Trading of Greenhouse Gas Emission Permits (2012), Republic of Korea. English Translation Available at http://elaw.klri.re.kr/kor_service/lawView.do?hseq=27386&lang=ENG
- ²⁹ Korean Greenhouse Gas Inventory and Research Center (2015). First biennial update report of the Republic of Korea, 22 December 2014. Available at: <http://www.gir.go.kr/home/board/read.do?pagerOffset=0&maxPageItems=10&maxIndexPages=10&searchKey=&searchValue=&menuId=36&boardMasterId=2&boardId=27>, p.43
- ³⁰ Act on the Allocation and Trading of Greenhouse Gas Emission Permits (2012), Republic of Korea. English translation available at http://elaw.klri.re.kr/kor_service/lawView.do?hseq=24561&lang=ENG
- ³¹ Korean Ministry of Environment (September 2014). National Emission Allowance Allocation Plan for Phase I (2015~2017), Republic of Korea. Available at <http://me.go.kr/home/web/board/read.do?pagerOffset=0&maxPageItems=10&maxIndexPages=10&searchKey=&searchValue=&menuId=10292&orgCd=&boardId=380940&boardMasterId=649&boardCategoryId=&decorator=>
- ³² Korean Ministry of Environment (September 2014). National Emission Allowance Allocation Plan for Phase I (2015~2017), Republic of Korea. Available at <http://me.go.kr/home/web/board/read.do?pagerOffset=0&maxPageItems=10&maxIndexPages=10&searchKey=&searchValue=&menuId=10292&orgCd=&boardId=380940&boardMasterId=649&boardCategoryId=&decorator=>
- ³³ Presidential Decree to the Act on the Allocation and Trading of Greenhouse Gas Emission Permits (2012), Republic of Korea. English Translation Available at http://elaw.klri.re.kr/kor_service/lawView.do?hseq=27386&lang=ENG
- ³⁴ Korean Ministry of Environment and Korea Environmental Corporation (February 2015). GHG Emissions Trading System Offset Mechanism.
- ³⁵ Presidential Decree to the Act on the Allocation and Trading of Greenhouse Gas Emission Permits (2012), Republic of Korea. English Translation Available at http://elaw.klri.re.kr/kor_service/lawView.do?hseq=27386&lang=ENG
- ³⁶ Korean Ministry of Environment (September 2014). Regulations for Validating Offset Projects and Certifying Emission Reductions, Republic of Korea.
- ³⁷ Korean Ministry of Environment (September 2014). Regulations for Validating Offset Projects and Certifying Emission Reductions, Republic of Korea.
- ³⁸ Korean Ministry of Environment (September 2014). Regulations for Validating Offset Projects and Certifying Emission Reductions, Republic of Korea.
- ³⁹ Act on the Allocation and Trading of Greenhouse Gas Emission Permits (2012), Republic of Korea. English Translation Available at http://elaw.klri.re.kr/kor_service/lawView.do?hseq=27386&lang=ENG
- ⁴⁰ Presidential Decree to the Act on the Allocation and Trading of Greenhouse Gas Emission Permits (2012), Republic of Korea. English Translation Available at http://elaw.klri.re.kr/kor_service/lawView.do?hseq=27386&lang=ENG
- ⁴¹ Presidential Decree to the Act on the Allocation and Trading of Greenhouse Gas Emission Permits (2012), Republic of Korea. English Translation Available at http://elaw.klri.re.kr/kor_service/lawView.do?hseq=27386&lang=ENG
- ⁴² Act on the Allocation and Trading of Greenhouse Gas Emission Permits (2012), Republic of Korea. English Translation Available at http://elaw.klri.re.kr/kor_service/lawView.do?hseq=27386&lang=ENG
- ⁴³ Presidential Decree to the Act on the Allocation and Trading of Greenhouse Gas Emission Permits (2012), Republic of Korea. English Translation Available at http://elaw.klri.re.kr/kor_service/lawView.do?hseq=27386&lang=ENG
- ⁴⁴ Act on the Allocation and Trading of Greenhouse Gas Emission Permits (2012), Republic of Korea. English Translation Available at http://elaw.klri.re.kr/kor_service/lawView.do?hseq=27386&lang=ENG
- ⁴⁵ Act on the Allocation and Trading of Greenhouse Gas Emission Permits (2012), Republic of Korea. English Translation Available at http://elaw.klri.re.kr/kor_service/lawView.do?hseq=27386&lang=ENG
- ⁴⁶ Korean Ministry of Environment (January 2014). "Press Release: Korea Exchange Designated as Greenhouse Gas Emission Allowance Exchange." Republic of Korea. Korean version available at <http://www.me.go.kr/home/web/board/read.do?boardMasterId=1&boardId=338099&menuId=286>
- ⁴⁷ Act on the Allocation and Trading of Greenhouse Gas Emission Permits (2012), Republic of Korea. English Translation Available at http://elaw.klri.re.kr/kor_service/lawView.do?hseq=27386&lang=ENG
- ⁴⁸ Act on the Allocation and Trading of Greenhouse Gas Emission Permits (2012), Republic of Korea. English Translation Available at http://elaw.klri.re.kr/kor_service/lawView.do?hseq=27386&lang=ENG
- ⁴⁹ Act on the Allocation and Trading of Greenhouse Gas Emission Permits (2012), Republic of Korea. English Translation Available at http://elaw.klri.re.kr/kor_service/lawView.do?hseq=27386&lang=ENG
- ⁵⁰ Act on the Allocation and Trading of Greenhouse Gas Emission Permits (2012), Republic of Korea. English Translation Available at http://elaw.klri.re.kr/kor_service/lawView.do?hseq=27386&lang=ENG
- ⁵¹ Presidential Decree to the Framework Act on Low Carbon Green Growth (2011), Republic of Korea. English Translation Available at http://elaw.klri.re.kr/kor_service/lawView.do?hseq=24663&lang=ENG
- ⁵² Act on the Allocation and Trading of Greenhouse Gas Emission Permits (2012), Republic of Korea. English translation available at http://elaw.klri.re.kr/kor_service/lawView.do?hseq=24561&lang=ENG
- ⁵³ Han, Sangim (May 2012). "South Korean Parliament Approves Carbon Trading System." Bloomberg. Available at <http://www.bloomberg.com/news/2012-05-02/south-korean-parliament-approves-carbon-trading-system.html>
- ⁵⁴ South Korea: Light-duty: Fuel Economy and GHG. TransportPolicy.net. Available at http://www.transportpolicy.net/index.php?title=South_Korea:_Light-duty:_Fuel_Economy_and_GHG