South Korea

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

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Brief History and Key Dates: Since 1990, Korean emissions have doubled and now slightly exceed Australia's 600 million metric tons, making the country the world's seventh largest greenhouse gas emitter and, according to Bloomberg New Energy Finance, the fastest growing emissions source among the OECD's thirty-four nations.[1, 2] As part of the Copenhagen Accord, South Korea pledged to reduce GHG emissions by 30% relative to the country's projected levels by 2020, a goal that equates to a 4% reduction below 2005 levels. A major step towards this goal came on December 29, 2009, when South Korea passed the *Framework Act on Low Carbon Green Growth*. This legislation builds on Korea's "Green New Deal" stimulus package from January, 2009, as well as the National Strategy for Green Growth that was announced in August 2008 and the Five-Year Plan for Green Growth, which was released in July 2009. On April 6, 2010, the Korean government passed the *Enforcement Decree of the Framework Act on Low Carbon*. The Framework Act takes precedence over all other Acts regarding South Korean low-carbon, green growth, and all amendments to other Acts must align with the Framework Act.[3]

Along with providing the framework for mid- and long-term emission reduction targets, carbon disclosure, carbon labeling, carbon taxation, and the growth of renewable energy use, the Framework Act provides a foundation for a carbon trading system. Under the Framework Act, guidelines for the carbon trading system are broad. Legislation specifies that the government must support the establishment of an emissions trading market and that the taxes on products and services that emit GHGs and have low energy efficiencies should increase gradually.[4]

In April 2011, the South Korean government released its final draft for an emissions trading system, modeled on the EU ETS, that outlines a three-phase program. This program, however, is not limited to a ten-year term of operation. Korea became the first Asian country to pass a national cap-and-trade system when the National Assembly passed this bill on May 2, 2012 almost unanimously. Emissions trading in Korea is scheduled to begin on January 1, 2015. The system was designed to cater towards the opinions of stakeholders and industry, as well as accounting for South Korea's international competitiveness. According to a 2012 Reuters report, a motivation for the passage of cap-and-trade in Korea is to develop green businesses before international competitors and to spur job growth.[5]

Under the original draft of the program released by the Ministry of Environment in November 2010, the program's first phase was scheduled to begin on January 1, 2013. The country's industrial sector, namely a 500+ company group called the Federation of Korean Industries, however, voiced strong opposition to this draft plan due to projected increases in production costs that could lead to competitive disadvantages in international markets.

On July 23, 2012, the Korean government released a draft executive policy directive—which establishes an emissions permit trading system that takes into account the state of the South Korean economy and is modeled after the EU ETS and other systems—called "Laws pertaining to the allowance and trading of greenhouse gas emissions permits." This draft directive facilitated the implementation of this law via a November 2012 Presidential Decree,[6] and it was released after gathering the positions of industry, non-governmental organizations, experts, and other stakeholders,

and drawing consensus between related ministries, among other considerations. The ETS 'Master Plan', which provides the legal basis for the ETS, is due to be released in December 2013, and the Ministry of Strategy and Finance (MOSF) must sign off on the plan. This master plan will be revised every five years and will provide a 10 year plan for the market's operations.[7]

For this case study, a number of facts are drawn from the EDF translation of the "Notice of Draft Executive Policy Directive for Greenhouse Gas Emissions Permit Allowance- and Trading-related Law," and, at the time of writing, the facts from this document were not yet either law or officially drafted law.[8]

Summary of Key Policy Features:

CAP/TARGET: South Korea has pledged to decrease its emissions ***30% relative to BAU by 2020***, which equates to ***4% below 2005 levels***.[9] The country's 2009 emissions were 608 $MtCO_2e$, [10] and the country estimates its 2020 emissions to be 813 $MtCO_2e$. Hence, Korea will need to cut 244 $MtCO_2e$ to reach its 30% target. The cap aims to cut emissions by 236 $MtCO_2e$, or 29%, by 2020 via emissions reductions from the industrial sector (83 $MtCO_2e$), the electricity sector (68.2 $MtCO_2e$), the building sector (48 $MtCO_2e$), and the transportation sector (36.8 $MtCO_2e$).[11]

While South Korea advertises its target as 30% below BAU, according to PBL Netherlands Assessment Agency, the target changes if alternative BAU projections are used (see Figure 1). If the PBL/IIASA BAU is used, instead of the BAU South Korea presented to the UNFCCC, the South Korean target would be 16% below BAU by 2020.[12]

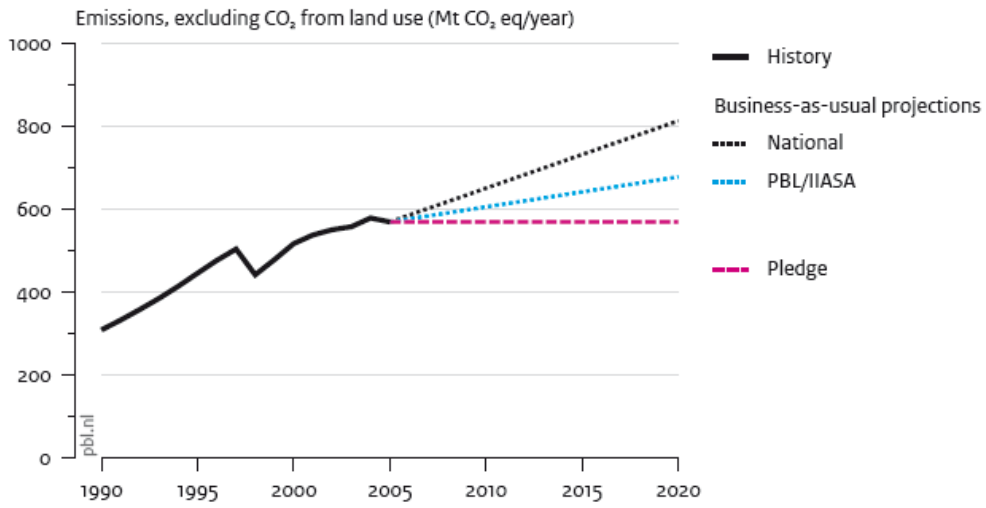

Figure 1—Comparison between BAU GHG emissions and pledges for South Korea, Source: PBL

The government is expected to release a revised 2020 emissions forecast under a Business as Usual (BAU) scenario in 2013, prior to the release of the Master Plan in December 2013. This may alter the level of emissions reductions required to meet Korea's target.[13]

SCOPE/COVERAGE: The Korean ETS has specified the dates for ***three phases***: Phase I (2015-2017), and Phase II (2018-2020), and Phase III (2021-2026).[14] The ETS is scheduled to begin January 1, 2015. Approximately ***490 of the country's largest emitters***,[15] which account for roughly 60 percent of the country's annual GHG emissions,

will receive caps.[16] ETS participants will fall under two categories: voluntary and mandatory. Regarding mandatory participation, capped emitters are determined by ***thresholds***; companies that annually discharge over 125,000 tCO_2e and/or workplaces that annually emit over 25,000 tCO_2e are required to submit allowances for each ton of CO_2e that they produce.[17] The ***point of regulation*** will be downstream, and covered ***gases*** include CO_2, CH_4, N_2O, HFC, PFC, and SF_6.[18] All participants must fill out an application for receiving permits, as well as constructing an annual emissions inventory for the government to monitor.[19]

AUCTIONING/ALLOWANCE DISTRIBUTION: After receiving consultation from various ministries, the Emission Allowances Allocation Committee, established under the Ministry of Strategy and Finance, will draft the South Korean National Allocation Plan. There will be a national cap for emissions, and allowance allocation standards will be phase-, industry-, and sector-specific. Covered facilities must fill out and submit allocation application forms before each phase of the allocation plan, and yearly allocations may be modified within phases. Korea's cap is set to tighten over time, while the percentage of auctioned allowances is to increase over time.[20] During the first phase, 100% of allowances will be ***freely allocated.***[21] Later, up to 97% of allowances will be freely allocated in Phase II, and up to 90% of allowances will be freely allocated in Phase III.[22] As a result, at least 3% of allowances will be ***auctioned*** in Phase II and at least 10% will be auctioned in Phase III. This schedule mirrors the one taken by the EU ETS, in which 0.12% of allowances were auctioned in Phase I and 3.1% in Phase II. 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. Business sectors are considered EITE if they experience: (1) production cost increases over 5% and trade intensity increases over 10%; (2) production cost increases over 30%, or (3) trade intensity increases over 30%.[23]

FLEXIBILITY PROVISIONS: To meet the national cap goals, emissions reductions from voluntary ETSs will be included, but it has yet to be determined whether credits from ***voluntary markets*** will be allowed to be bought and traded. The Ministry of Knowledge Economy issues Korean Certified Emissions Reductions (***KCERs***) to uncapped industries that verifiably produce additional emissions reductions, but, at present, these KCERs are not allowed to be traded.[24] ***Offsets will be limited*** to a maximum of 10% of allowance obligations. [25] ***Offsets from international sources*** will be excluded from the first two phases of the Korean ETS, and, post-2020, international units will be allowed to be used to meet up to 10% of an entity's surrender obligations and the volume must not exceed the number of domestic offsets used for each compliance year.[26] Links with the UN offset market, however, have been described as highly uncertain.[27] ***Banking*** is allowed (between years and phases) within one year of the following compliance period. ***Borrowing*** between phases is forbidden, but allowances can be borrowed between years within each trading phase for up to 10% of emissions.[28] To encourage greenhouse gas reduction among businesses under the emissions target management plan prior to ETS implementation, ***early reduction results will be credited***—in the form of additional allowances—up to 3% of total emission volume during Phase I of the ETS. [29]

South Korea has expressed interest in ***linking*** its ETS with other systems, such as the EU ETS, the Australian ETS, and others. The Australian ETS is also on track to begin on January 1, 2015, and formal discussions regarding linkage of the carbon markets, renewable energy policies, and energy efficiency policies between Australia and Korea have already begun.[30] South Korea is open to linking with the EU, but, according to a 2012 Reuters report, linkage with the EU will likely not occur until at least 2018.[31]

COST CONTAINMENT/VOLATILITY MANAGEMENT: South Korea's ETS gives the government the ability to increase the supply of allowances if prices rise too high. Specifically, the government has the power to hold an ***early auction(s)*** for up to 25% of reserve permits in order to contain prices. An ***allowance reserve*** of a yet to be determined amount will be built to both contain prices and distribute to new entrants.[32] In addition, if there is a need to stabilize the market, the Ministry of Environment may: (1) set minimum and maximum emissions permit possession limits; (2) limit the amount of banking and borrowing; (3) limit the amount of offset emissions permit submissions, and (4) set price ceilings and floors, subject to Allowance Committee review.[33]

Three specified cases that would require price stabilization measures are: (1) price climb: greater than threefold increase from the average price; (2) demand climb: the average price increases more than two-fold due to a more than two-fold increase in trade volume from the average in a one month period; and (3) price crash: the price decreases more than 60% of the average in a one month period.[34]

High quantities of freely distributed allowances are aimed to ease costs from the ETS to covered entities. In addition, in order to invigorate emissions permit trading and to prevent loss of business competitiveness due to the introduction of the ETS, ***financial and tax support, assistive monies, and/or other assistance*** may be provided to greenhouse-gas-reduction-related and renewable-energy-related technology development and deployment/supply businesses among others. [35]

MARKET REGULATION AND OVERSIGHT: Facilities capped by the Korean ETS are required to create annual ***emission inventories***, which must be ***verified by a 3rd party*** before being ***reported to the government***. Once the government certifies these submitted reports, facilities are subsequently listed in the ***emission rights register***. The Korean government will construct a register in order to record allocation, trading, and transfer of emission permits. Covered facilities are allowed to submit emissions permits up to the quantity certified by the government registry.[36] The frontrunner to manage future allowance trading is the Korea Exchange, which has been promoting emissions trading and possible derivative products.[37]

According to the International Carbon Action Partnership (December 2012), the Korean ETS ***non-compliance penalty*** will be set at three times the prevailing market price, and the maximum penalty will be KRW 100,000 per ton, or about USD $94/tCO$_2$e.[38]

COMPLEMENTARY AND SUPPLEMENTARY MEASURES: The recently passed South Korean ETS will displace a currently-in-place initiative referred to as the ***Target Management Scheme*** (TMS). TMS was adopted in 2010 as part of the *Framework Act*, and its purpose is to set a target for emissions from private and public entities. Covered sectors include industry (779 facilities/ 239.5 MtCO$_2$e), electricity (137 facilities/ 186.4 MtCO$_2$e), and agriculture (648 facilities/ 16.2 MtCO$_2$e). In total, over 1,500 facilities that annually emit over 440 MtCO$_2$e have emission caps as part of TMS. These emitters account for around 60% of the country's total GHG emissions. The TMS was designed to function as a precursor to the ETS. Unlike the ETS, however, the TMS does not enable companies to trade credits, so the planned ETS is expected to lower compliance costs for companies covered by TMS. At present, country-level targets are broken down to company- and facility-level targets for the country's 470 (there will by 480 in 2013) largest emitters.[39]

In addition to TMS, the Ministry of Knowledge Economy has implemented its second ***pilot carbon trading*** system. It covers 172 facilities and 67 companies. The system uses positive monetary incentives, rather than non-compliance costs, to motivate covered entities to meet their targets.[40]

At in the past and present, the government has provided ***tax and financial incentives*** for specified emissions cutting measures, such as supplementary payments, or ***feed-in tariffs***, for renewable energy generated from 2002-2011. In 2012, a 2 percent ***renewable portfolio standard*** replaced these tariffs; South Korea's 13 power generators must produce a set quota of energy from renewable sources, which include wind and solar. By 2022, this renewable portfolio standard will have increased to 10 percent.[41] Finally, Korea's green growth strategy has set energy efficiency standards for appliances and lighting, and allocated KRW $2.5 trillion towards industrial energy efficiency measures.[42]

Korea is also establishing a ***Low Carbon Green Fund***. This fund's purpose is to support R&D of renewable energy, establishment and operation of emission exchange, and emissions reduction facilities. Profits from allowance auctions, emissions exchanges, trading commission, and fund management will combine to raise this fund.[43]

ECONOMIC PROJECTIONS: The According to a May 2012 Reuters report, the Federation of Korean Industries claims that the current Korean ETS, with 95% of allowances allocated freely, will add KRW $4.7 trillion (USD @4.2 billion) to ***production costs***.[44] According to a May (2012) Bloomberg report, the Korea Energy Management Corp estimates this figure to be KRW $5.6 trillion (USD $5 billion).[45] In the past, this cost has been estimated to be as high as KRW $14 trillion (USD $12.43 billion) and projected to reduce annual GDP by 1.5 percent until 2020.[46] According to a Bloomberg New Energy Finance report in May 2013, the costs of compliance will **'likely be high** compared with other cap-and-trade programs around the world'.[47] However, the report also points out that the scheme does not yet have either the cap or target firmly set in place, which may alter projections.[48]

What Distinguishes this Policy?

UNIQUE ASPECTS:

1. South Korea was the ***first Asian country*** to pass a national economy-wide ETS into law, and it is on track to become the second Asian country to implement its national economy-wide ETS. The Kazakhstan ETS began in January 2013.
2. The ability to stabilize prices via ***early reserve auctions*** is relatively unique to South Korea's ETS.
3. A ***company-level threshold*** for receiving a mandatory cap is relatively unique to South Korea. This threshold is 125,000 tCO_2e/year.

CHALLENGES:

1. The BAU projections may be ***revised*** under the Master Plan outlining the law, and the government must clearly define the amount it will reduce from these projections, and the amount of emissions that will be ***subject to the ETS cap***.
2. Korea's ***industrial sector has voiced opposition to the Korean ETS***, so this could hinder ETS progress.

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Disclaimer: The authors encourage readers to please contact them with any corrections, additions, revisions, or any other comments, including any relevant citations. This will be invaluable in strengthening and updating the case studies and ensuring they are as correct and informative as possible.

[1] The Wall Street Journal (May 2012). "South Korea Approves Cap-and-Trade Plan." Available at http://online.wsj.com/article/SB10001424052702303877604577379673881237522.html?mod=googlenews_wsj
[2] 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

[3] Townshend, Terry, Sam Fankhauser, Adam Matthews, Clement Feger, Jin Liu, and Thais Narciso (April 2011). "GLOBE Climate Legislation Study." GLOBE International. Grantham Research Institute on Climate Change and Environment. Available at http://www.greenbiz.com/sites/default/files/GLOBE-CLIMATE-LEGISLATION-STUDY.pdf
[4] Townshend, Terry, Sam Fankhauser, Adam Matthews, Clement Feger, Jin Liu, and Thais Narciso (April 2011). "GLOBE Climate Legislation Study." GLOBE International. Grantham Research Institute on Climate Change and Environment. Available at http://www.greenbiz.com/sites/default/files/GLOBE-CLIMATE-LEGISLATION-STUDY.pdf
[5] Thomson Reuters Point Carbon (May 2012). "South Korea approves carbon trading scheme." Available at http://www.pointcarbon.com/news/1.1852663
[6] Baker & McKenzie (November 2012). "Korea's Emission Trading Scheme Receives Cabinet Approval." Available at http://www.bakermckenzie.com/ALEnvironmentalKoreaETSNov12/
[7] Bloomberg New Energy Finance (May 2013), *South Korea's Emissions Trading Scheme: White Paper,* Available at: http://about.bnef.com/white-papers/south-koreas-emissions-trading-scheme/
[8] Based on EDF translation of the "Notice of Draft Executive Policy Directive for Greenhouse Gas Emissions Permit Allowance- and Trading-related Law." 2012.
[9] Sterk, Wolfgang and Florian Mersmann (August 2011). "Domestic Emission Trading Systems in Developing Countries—State of Play and Future Prospects." Wuppertal Institue for Climate, Environment, and Energy. JIKO Policy Paper 2/2011. Available at http://www.jiko-bmu.de/files/basisinformationen/application/pdf/pp-ets-developing-countries.pdf
[10] International Carbon Action Partnership (December 2012). "Interactive ETS Map." Available at http://icapcarbonaction.com/index.php?option=com_wrapper&view=wrapper&Itemid=147
[11] Sterk, Wolfgang and Florian Mersmann (August 2011). "Domestic Emission Trading Systems in Developing Countries—State of Play and Future Prospects." Wuppertal Institue for Climate, Environment, and Energy. JIKO Policy Paper 2/2011. Available at http://www.jiko-bmu.de/files/basisinformationen/application/pdf/pp-ets-developing-countries.pdf
[12] 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
[13]Bloomberg New Energy Finance (May 2013), *South Korea's Emissions Trading Scheme: White Paper,* Available at: http://about.bnef.com/white-papers/south-koreas-emissions-trading-scheme/
[14] Based on EDF translation of the "Notice of Draft Executive Policy Directive for Greenhouse Gas Emissions Permit Allowance- and Trading-related Law." 2012.
[15] Baker & McKenzie (November 26, 2012). "Korea's emissions trading scheme receives cabinet approval."
[16] Thomson Reuters Point Carbon (May 2012). "South Korea approves carbon trading scheme." Available at http://www.pointcarbon.com/news/1.1852663
[17] The Wall Street Journal (May 2012). "South Korea Approves Cap-and-Trade Plan." Available at http://online.wsj.com/article/SB10001424052702303877604577379673881237522.html?mod=googlenews_wsj
[18] International Carbon Action Partnership (December 2012). "Interactive ETS Map." Available at http://icapcarbonaction.com/index.php?option=com_wrapper&view=wrapper&Itemid=147
[19] Presidential Committee on Green Growth (PCGG). (2011). Contents of the draft bill of "Act on Emissions Trading Scheme" of Korea. Republic of Korea. (2010). Framework Act on Low Carbon and Green Growth. Republic of Korea.
[20] Presidential Committee on Green Growth (PCGG). (2011). Contents of the draft bill of "Act on Emissions Trading Scheme" of Korea. Republic of Korea. (2010). Framework Act on Low Carbon and Green Growth. Republic of Korea.
[21] 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.
[22] International Carbon Action Partnership (December 2012). "Interactive ETS Map." Available at http://icapcarbonaction.com/index.php?option=com_wrapper&view=wrapper&Itemid=147
[23] Based on EDF translation of the "Notice of Draft Executive Policy Directive for Greenhouse Gas Emissions Permit Allowance- and Trading-related Law." 2012.
[24] Sterk, Wolfgang and Florian Mersmann (August 2011). "Domestic Emission Trading Systems in Developing Countries—State of Play and Future Prospects." Wuppertal Institue for Climate, Environment, and Energy. JIKO Policy Paper 2/2011. Available at http://www.jiko-bmu.de/files/basisinformationen/application/pdf/pp-ets-developing-countries.pdf
[25] Based on EDF translation of the "Notice of Draft Executive Policy Directive for Greenhouse Gas Emissions Permit Allowance- and Trading-related Law." 2012.
[26] Baker & McKenzie (November 26, 2012). "Korea's emissions trading scheme receives cabinet approval."
[27] 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
[28] International Carbon Action Partnership (December 2012). "Interactive ETS Map." Available at http://icapcarbonaction.com/index.php?option=com_wrapper&view=wrapper&Itemid=147
[29] Based on EDF translation of the "Notice of Draft Executive Policy Directive for Greenhouse Gas Emissions Permit Allowance- and Trading-related Law." 2012.
[30] Carbon Finance (May 2012). "Australia, South Korea to talk links." Available at http://www.carbon-financeonline.com/content/news/australia-south-korea-to-talk-links.html
[31] Thomson Reuters Point Carbon (May 2012). "South Korea approves carbon trading scheme." Available at http://www.pointcarbon.com/news/1.1852663
[32] Presidential Committee on Green Growth (PCGG). (2011). Contents of the draft bill of "Act on Emissions Trading Scheme" of Korea. Republic of Korea. (2010). Framework Act on Low Carbon and Green Growth. Republic of Korea.
[33] Based on EDF translation of the "Notice of Draft Executive Policy Directive for Greenhouse Gas Emissions Permit Allowance- and Trading-related Law." 2012.
[34] Based on EDF translation of the "Notice of Draft Executive Policy Directive for Greenhouse Gas Emissions Permit Allowance- and Trading-related Law." 2012.
[35] Based on EDF translation of the "Notice of Draft Executive Policy Directive for Greenhouse Gas Emissions Permit Allowance- and Trading-related Law." 2012.
[36] Presidential Committee on Green Growth (PCGG). (2011). Contents of the draft bill of "Act on Emissions Trading Scheme" of Korea. Republic of Korea. (2010). Framework Act on Low Carbon and Green Growth. Republic of Korea.
[37] Young, Tom (April 2011). "The ultimate guide to South Korea's cap-and-trade scheme." Business Green. Available at http://www.businessgreen.com/bg/analysis/2044996/ultimate-guide-south-koreas-cap-trade-scheme
[38] International Carbon Action Partnership (December 2012). "Interactive ETS Map." Available at http://icapcarbonaction.com/index.php?option=com_wrapper&view=wrapper&Itemid=147
[39] Sterk, Wolfgang and Florian Mersmann (August 2011). "Domestic Emission Trading Systems in Developing Countries—State of Play and Future Prospects." Wuppertal Institue for Climate, Environment, and Energy. JIKO Policy Paper 2/2011. Available at http://www.jiko-bmu.de/files/basisinformationen/application/pdf/pp-ets-developing-countries.pdf
[40] Sterk, Wolfgang and Florian Mersmann (August 2011). "Domestic Emission Trading Systems in Developing Countries—State of Play and Future Prospects." Wuppertal Institue for Climate, Environment, and Energy. JIKO Policy Paper 2/2011. Available at http://www.jiko-bmu.de/files/basisinformationen/application/pdf/pp-ets-developing-countries.pdf
[41] 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
[42]Bloomberg New Energy Finance (May 2013), *South Korea's Emissions Trading Scheme: White Paper,* Available at: http://about.bnef.com/white-papers/south-koreas-emissions-trading-scheme/
[43] Presidential Committee on Green Growth (PCGG). (2011). Contents of the draft bill of "Act on Emissions Trading Scheme" of Korea. Republic of Korea. (2010). Framework Act on Low Carbon and Green Growth. Republic of Korea.
[44] Thomson Reuters Point Carbon (May 2012). "South Korea approves carbon trading scheme." Available at http://www.pointcarbon.com/news/1.1852663
[45] 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
[46] Young, Tom (April 2011). "The ultimate guide to South Korea's cap-and-trade scheme." Business Green. Available at http://www.businessgreen.com/bg/analysis/2044996/ultimate-guide-south-koreas-cap-trade-scheme
[47] Bloomberg New Energy Finance (May 2013), *South Korea's Emissions Trading Scheme: White Paper,* Available at: http://about.bnef.com/white-papers/south-koreas-emissions-trading-scheme/

[48] Bloomberg New Energy Finance (May 2013), *South Korea's Emissions Trading Scheme: White Paper,* Available at: http://about.bnef.com/white-papers/south-koreas-emissions-trading-scheme/