

Korea Environmental Policy Bulletin

Korea's Policies to Reduce Greenhouse Gas Emissions in Daily Life

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Summary

One of the representative environmental problems these days is climate change. The reduction of the greenhouse gases from the industrial sector is important, however, the non-industrial sectors, such as homes, businesses, and transportation are also important. Understanding this necessity, the Korean government has been staging a movement to reduce greenhouse gases, through the Green Start campaign. The Green Start is driving the implementation of greenhouse gas reduction by the cooperative governance between the government, commerce, and civilian organizations. In 2009, the Korean government reaffirmed their strong will to expand the green life practice, by setting a five-year plan for green growth, in which they emphasized the "Green Revolution of Life". Green life movement in Korea is implemented through the Green Start Movement, promoting green consumption, the Green Transportation Movement, reducing food waste, and making green homes. In order to motivate people to actively participate in the movement, incentives such as the carbon points systems are provided. The government plans to train leaders, construct a cyber center, and legislate necessary laws for green life and organize systems and institutions to support the movement.

I. The Background and Purposes

One of the representative environmental problems facing the humankind is climate change. The climate of earth has been changing due to the accumulation of GHGs (greenhouse gases) emitted by human beings since the industrial revolution. The UNFCCC established a global long-term goal (shared vision) to curb global warming by less than 2°C by the end of this century. Each country is setting a mid-term reduction goal for 2020 as a first step to realize the ultimate goal.

GHG reduction cannot be achieved only by the industrial sector, which, of course, is the main emitter of GHGs; it can be achieved jointly by both the industrial and the non-industrial sectors, such as homes, businesses, and transportation, because saving and efficient use of energy in the non-industrial sector can reduce a substantial amount of GHGs, as the saved energy is often called “the fifth energy”. The daily-life sector could achieve visible results through the cooperation of the government and people, as that area can have more cost-effective measures than the industrial area within a short period of time, without any special technology applied. In case of Korea, GHG reduction by the daily-life sector is very important, as about 32 percent of the nation’s overall GHGs are emitted by homes, businesses, and transportation.

In order to reduce the GHGs from daily-life sources such as homes, businesses, and transportation, improvement of people’s life style is necessary, as it is closely related to the GHG emission. Each and every member of the society needs to be aware that they should take part in

the measures against climate changes; they should also act to curb climate change by starting a new life style. For this, the government should also make policies to encourage people’s voluntary participation. Understanding this necessity, the Korean government has been staging a movement to reduce GHGs, through a campaign such as the Green Start Movement since 2008 and through cooperation with other governmental agencies. The Green Start Movement is driving the implementation of GHG reduction by the cooperative governance between the government, commerce, and civilian organizations. In 2009, the Korean government reaffirmed their strong will to expand the green life practice, by setting a five-year plan for green growth, in which they emphasized the “Green Revolution of Life”. Korean President Lee Myeong-bak, in his speech delivered at the Conference of the Parties to the United Nations Framework Convention on Climate Change held in Copenhagen, also emphasized the “Me First!” attitude focusing on the voluntary implementation of greenhouse reduction. In a radio address to the nation, President Lee also said that green life style is more important than green technology.

A survey with Korean people shows that 88.4 percent of the surveyed people see the necessity of green life, and yet only 36.6 percent are aware of the green-life movement. Individuals’ voluntary implementation of the GHG reduction related to their daily life is essential for the deceleration of the climate change. The following is some of Korea’s major GHG reduction policies related to daily life.

II. Policies to Reduce GHG Emissions in Daily Life

This chapter will describe and discuss major policies that the Korean government has made and actual strategies and practices to implement the policies.

1. Outline of the Promotion Plans for Green Life Practice

Korea's reduction policies for GHGs emissions in daily life are carried out by expanding the practice of green life. The goal of green life practice is the settlement of the low-carbon life style of the 21st century, with a vision to the realization of low-carbon green growth through people's participation. There are three strategies to this end: (1) activating all citizens' green life movements, (2) strengthening the incentives for green life, and (3) constructing a supporting system for green life practice. Figure 1 illustrates the nation's vision, goal, and strategies for the implementation of green life.

In order to achieve the goal and realize the vision, the government is carrying out some specific plans such as customizing green-life implementation, training core leaders of green

life, providing incentives for green life, and constructing a cyber center for green life.

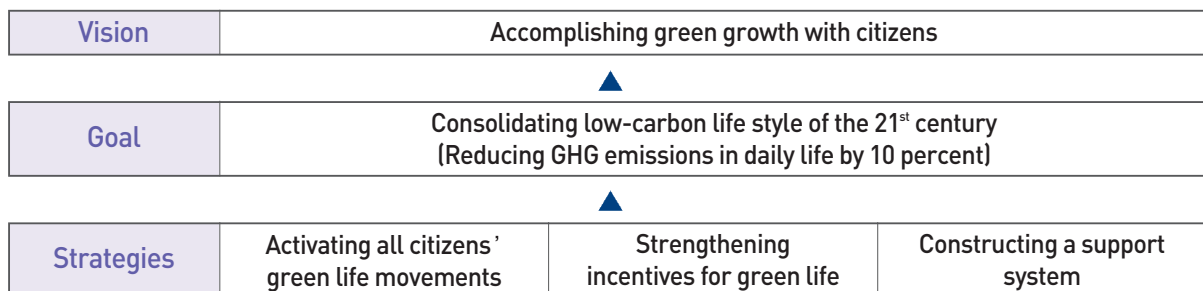
2. Implementing the Green Life Movement

In this section, some specific plans and policies for the promotion and implementation of green life movement will be addressed. More specifically, the Green Start Movement, green consumption, the Green Transportation Movement, reducing food waste, and making green homes will be the topics of the discussion.

2.1 The Green Start Movement

The Ministry of Environment of Korea is spreading the practice of low-carbon green life both through a common green-life movement for all citizens and by customizing it for different social classes and sectors. The Green Start Movement, which started in October, 2008, is a representative movement. It is a nation-wide movement to realize a low-carbon society through reducing GHG emissions in daily life. So far, the

Figure 1: Vision, Goal, and Strategies for Green Life Practice



movement has constructed regional networks and staged a sign-up campaign for the implementation of GHG reduction, as well as raising the people’s awareness about the practice of green life with songs for the Green Start Movement.

The Green Start Movement also customizes the campaign for differential social classes and sectors, by providing guidelines such as “The Wise Green Life”, which contains 80 action guidelines in 10 areas, each area having 8 principles. These guidelines are publicized through mass-communication media such as TV, radio, and online media.

As part of the Green Start Movement, the national and local governments, along with civilian organizations, are organizing several experimental programs of green life and encouraging “one green movement for each network”, as well as writing about green life. They are also staging the so-called “Cool Fashion Movement”, advising people not to wear neckties, inspired by the fact that people feel cooler by 2°C when they do not wear neckties. Furthermore, they provide homes with the “Low-carbon Living Standards”, aiming at the reduction of household GHG emissions by 10 percent by setting living standards for heating, electricity, water, and wastes.

Although the history of the Green Start Movement is not long, it has already made considerable accomplishments. It has become the representative brand of similar movements by

constructing regional networks in 226 local governments as of August, 2010. The networks, which connect ten million people from about 4,200 institutions of civilian and governmental organizations, industries, vocational groups, and media corporations, are providing firm grounds for the implementation of green life through appointing a coordinator for each network, developing and distributing publicity materials, and encouraging one green movement for each network.

The Movement also set a goal to produce “green leaders” who will become the core driving force in respective regions or sectors. According to the plan, 10,000 leaders will be trained by the end of 2010, and 50,000 by the end of 2015. To this end, a manual for the operation and management of green leaders was published and distributed in June, 2010. The weather schools in wide network regions provided training facilities, with which about 7,000 green leaders were trained in the first half of 2010.

The Movement has promoted and sponsored a variety of events and campaigns to materialize concrete results through the governance of the government and citizens. Among them are an annual call for ideas of green life implementation and support for wide networks since 2009, weekly national events on climate changes, the “Green Sports” campaign for the GHG emissions reduction in the area of sports, the campaign for

Figure 2: The Experiential Program of the Green Start Movement



green vacation travels, the campaign for green holiday festivals, and periodic meetings of the Green Start Movement at the national level.

Publicity is also an important part of the Green Start Movement. Special feature articles and films of the press, broadcast publicity through entertainment programs, and public message announcements on mass-communication media are some of the efforts to raise the people's awareness and understanding. Constructing homepages and providing incentives with "carbon points" are also examples of the supporting efforts. The results of such efforts are 1.25 million people signing up to pledge the practice of GHG emissions reduction.

The Green Start Movement will continue to drive the implementation efforts for different seasons, social classes, and sectors, with the help of networks and green leaders at the core of the movement. More specifically, the government will secure regional education centers (e.g., the climate change experience center, publicity center, etc.), develop customized educational materials and programs with educational specialists, and develop customized application materials for green life (such as SNS and mobile phone applications). These efforts will raise the people's awareness and expedite the spread of green life.

2.2 Promoting Green Consumption

Green consumption is one of the most important factors for the reduction of GHG emissions in daily life. Green consumption, in a broad sense, has two aspects: (1) the "produce less" aspect and (2) the "consume less" aspect. What follows will describe how these two aspects are manifested in Korea.

First, for the "produce less" aspect, the government has introduced a "green product" certification system. The government is going to attach "carbon labels" on 500 domestic products by the year 2012. Incentives are given to green

products, such as hybrid cars, which will benefit from tax exemption or deduction by up to 3.1 million won (roughly equivalent to US\$2,800) for a car. The so-called "green stores" will be certified, and incentives will be given to the buyers of the products that do not come in wrapping or container boxes. For example, buyers of such shampoo, hair rinse, and detergents have been receiving green mileage since 2008. Products such as shaving razors have started to give green mileage from 2009. Low-carbon product buyers will also receive points. Guidelines for the green store certification are being written and pilot tested with some sampled stores.

Second, for the "consume less" aspect, the Ministry of Environment is staging a campaign to reduce disposable single-use products and encourage recycling. They provided public institutions with action principles and are urging more and more large discount stores not to use disposable single-use plastic bags to deliver goods to customers.

2.3 The Green Transportation Movement

GHGs emitted by transportation vehicles take as much as 16.9 percent of the overall GHGs emitted from non-industrial sectors, which is not negligible to the government. The Ministry of Environment approaches this problem from three directions: (1) environment-friendly driving, (2) bicycle riding, and (3) using public transportation and walking, which is often jokingly dubbed "BMW", to stand for Buses, Metro (i.e., Metropolitan Subway System), and Walking.

Environment-friendly driving (a.k.a. ecodriving) is encouraged through various events and activities as part of the Green Transportation Movement. For example, Ten Commandments for Environment-friendly Driving are publicized; the best ecodriver is selected and awarded; a collection of model cases of ecodriving is published; and the Green Transportation Week is

set apart. Furthermore, some driving education sites are designated as the “Ecodriving Education Center,” where ecodriving simulators are provided for the public to experience them, and on-going education is offered. Reformation of driver license tests and pre-requisite training in environment-friendly driving are also introduced.

Bicycle riding is also encouraged with many incentives and facilities. Companies and/or workplaces with most bicycle commuters are awarded with prizes. Unmanned free bicycle rental systems are increasingly introduced into central government offices and public institutions. Special tour programs such as “Ecological Sightseeing on Bicycle” are offered, and “Maps for Bike Tours” are distributed. Cities are being transformed into “Bicycle-friendly Cities” that set up bicycle racks near bus stops and subway stations for public transportation commuters.

Use of public transportation and walking are also facilitated and encouraged. The same transportation fare cards are compatible with all public transportation means throughout the country. Special zones exclusively for public transportation are being increased. “No Car Day” has been enforced throughout the country since 2009. Designating Pedestrians First Zones, Certifying obstacle-free living environments, and declaring Pedestrians’ Day are also part of the movement.

2.4 Reducing Food Waste

Food waste is continuously increasing in Korea, as a consequence of the rapidly changing social structure in which the growth rate of households (19%) is greater than that of population (3%). The increase of food waste is more directly attributable to the growing number of people eating out as a result of increased income and enhanced awareness of well-being. At the current rate of increase, the food waste is projected to

amount to 17,000 tons in 2012. In order to cope with this problem, the Ministry of Environment, collaborating with other related governmental ministries and departments, has taken a series of actions with new plans and measures. These measures are listed below:

- 1997: Promulgating laws to ban direct burial of food waste to be effective in 2005
- 2005: Enforcing the laws banning direct burial of food waste; Launching separate disposal of food waste from other kinds of waste
- 2006: Comprehensive measures for the dietary culture reformation and food waste reduction
- 2007: Comprehensive measures for inland burial of food waste and generation of energy from biogases.

These efforts, however, did not produce satisfactory results. Therefore, a new strategy was developed to customize the countermeasures for differential sources of food waste, along with encouraging the implementation of green life and cultural changes at the civilian level. The recent approach aims at preventing excessive food waste from being generated, rather than managing it after it is produced. More specifically, the government introduced the Garbage-quantity-based Charge System which, in principle, requires people to pay more for more food waste they generate. In practice, the system makes people pay for their food waste in one of the following three ways: (1) government-authorized plastic bags, (2) chips or stickers, and (3) RFID tags. A brief explanation about these three methods follows. Tools for these three methods are shown in Figure 3.

- (1) Government-authorized plastic bags: People should dispose of their food waste in plastic bags that are specially designed and sold in

grocery stores. The bags are distinctively colored, and come in different sizes for different prices.

(2) Chips or stickers: The municipal or district government distributes food-waste bins to households. Every time when a household disposes of food waste, they should stick a chip or sticker on the bin. When the garbage collectors empty the bins, they remove the chip or sticker. The bin will not be emptied if there is no chip or sticker attached. The chip or sticker can be purchased at grocery stores.

(3) RFID (Radio Frequency Identification) tags: The municipal or district government prepares specially designed food-waste bins that have a magnetic card reader. Each household is given a magnetic card that contains information about that particular household. When the household people dispose of their food waste, they touch the bin with their card so that the bin can read the information about the household. The weight of the waste is measured. Monthly data for the individual household will be the basis for charging fees to the household.

Although (1) and (2) above did have some impact at first, people became accustomed to spending extra money for the bags and stickers. Thus, as time went on, the impact of these

methods gradually waned, as the cost was not so sensitive to the amount of the waste. However, the RFID system appears to work well, as evidenced in the City of Jeonju, where the new system was adopted as a test case. The city adopted the RFID system and monitored the garbage disposal and treatment through wireless radio. The food-waste treatment cost born by the citizens was only 31 percent of that of the national average. Therefore, this new method is likely to be spread to the entire nation.

This approach also intensifies publicity and education to induce changes in people's life-style, along with the introduction of food-sharing culture.

2.5 Making Green Homes

Another area where green life takes on a significant meaning is people's homes, as those are where people spend their time more than anywhere else. In addition to people's voluntary and conscious efforts to save energy (e.g., turning off the lights, taking showers rather than hot bath, etc.), some physical and mechanical improvement of home appliances can also contribute to energy saving and eventually to the reduction of GHG emissions. For example, LED light bulbs, water-saving gadgetry, and other energy-efficient appliances can replace the

Figure 3: Tools for collecting food waste



existing ones, with the financial subsidiary from the central and local governments, each of which bearing one-third of the total cost. Then these homes will be accredited as “green homes” and will be given carbon points.

3. Strengthening Incentives for Green Life

In order to motivate people to actively participate in the reduction movement of GHG emissions, the government has devised some incentives. The Carbon Points System and prize awarding plans will be introduced here.

3.1 Providing Incentives: The Carbon Points System

The first incentive system is called the Carbon Points System. As the name indicates, people will receive points from the government in proportion to the energy and resources saved at home or business places. First, the average of electricity and water consumption during the past two years is calculated to make it the reference point. Then, any amount of electricity or water saved afterward will be compared to the set criterion, and points will be given in proportion to the saving. The criterion will be reset every three years, based on the average consumption of those three years.

Points collected this way can be used for

obtaining tickets or vouchers to use public facilities. They can be used to purchase certain goods (with coupons), to receive a priority admission into some educational programs, or to entitle them to receive a Good Citizen Award. Local governments could also offer some special incentives of their own. Table 1 shows the roles of the three organizations operating this system.

The Ministry of Environment is going to develop indices of GHG emissions and measures of assessing the amount of emissions. They are going to gradually apply the Carbon Points System to regional heating, transportation, and other types of waste.

3.2 Awarding Prizes to Outstanding Green Life Practices

Another way of motivating people to participate in green life is acknowledging and complimenting on best practices of green life. While the Carbon Points System motivates people with materialistic rewards, this method enhances people’s pride and ego, although materialistic rewards are also given in some cases. For example, for each area of homes, consumption, transportation, and education, outstanding cases of green life are collected and published in book forms, and exemplary individuals are dedicated in the Hall of Fame for Green Life.

At the National Convention of Green Start

Table 1: The Roles of the Three Organizations Operating the Carbon Points System

Ministry of Environment	Environment Management Corporation	Local Government
<ul style="list-style-type: none"> - Overall management of the system - Providing operational guidelines and establishing the system - Securing and allocating the budget 	<ul style="list-style-type: none"> - System development - Overall control of the program - Educating local governments and supporting operational skills 	<ul style="list-style-type: none"> - Publicizing the system - Recruiting and managing participants - Operating the program - Devising incentives

Movement and at the Green Korea 2010, contests for outstanding cases are held, and winners are awarded with prizes. Such contests and prize conferring are encouraged even at civilian groups' events, so that people can be motivated as much as possible.

4. Constructing a Support System for Green Life Practice

A movement, however good its intension may be, cannot be successful if it is not well supported by the system and administration. This section describes how the government plans to support the movement and keep the momentum. As will be seen below, the government plans to train leaders, construct a cyber center, and legislate necessary laws, and organize systems and institutions.

4.1 Training Core Leaders for Green Life

Like in any activities, projects, programs or movements, individual efforts can be maximized when there is cooperation from others or when they are orchestrated and coordinated by some leaders. In order to spread and activate the green life movement more efficiently and effectively, the government decided to train 50,000 prospective leaders of green life movement.

The training is done both in universities and in other civilian institutions. At the university level, the government will turn university campuses into "Green Campuses" and "Green Schools", to urge them to implement green life and to support colleges and graduate schools related to green technology and green industry.

For the education of green life, eight Natural Environment Training Institutes of Korea are functioning as the main training centers, where lectures (by the Green Life Publicity Group lecturers) and experiential programs are provided.

In 2009, as many as 10,000 students and adults received relevant education at these training institutes. In 2010, the Central Officials Training Institute joined in the effort, to educate public officials and regional opinion leaders. The military also joined in this movement, to spread the green lifestyle among military units and to train youngsters to become leaders of green life movement when they return home after the military service is over.

4.2 Constructing a Cyber Center for Green Life

In this era of information and communication technology, it is imperative to utilize the Internet to provide information, education, and communication channels to educate and maintain contacts among people. The Korean government set up the homepage of the Green Start Movement as the cyber communication center for green life. The cyber center offers a variety of playing and learning opportunities, publishes e-books on children's stories about green life, and provides various kinds of information and motivating activities and contents. The center, with the cooperation of some major online portal services, also receives pledges from people to participate in the green movement, provides support to the education of green life leaders, and assists individuals and homes in assessing GHG emissions by utilizing carbon footprint gauges. By August, 2010, the center had received pledges from 1.25 million people.

4.3 Legislating Green Life Laws, and Setting up Organizations and Assessment Systems

Legislating necessary laws for green life and setting up appropriate organizations and assessment systems is an indispensable part in making the green

life movement a success. The government addressed this issue by legislating the Basic Act on Low Carbon, Green Growth on January 13, 2010. One of the principles in the Act is that the government will encourage civilians to take initiatives by maximizing the market function. Thus, a driving organization involving both government officials and civilian experts was planned. The Green Start network was designated as the center for the nation's campaign to

be participated in by various civilian groups and organizations. As of August, 2010, 226 local governments have set up networks, with over 4,000 organizations and groups participating, and 6 more regional governments are constructing the networks. In order to facilitate communication and cooperation between the government and civilians, the Presidential Committee on Green Growth has been being operated since October, 2009.

III. Expected Results and Conclusion

This paper reviewed Korea's policies for and practices of reduction of GHGs emitted from people's everyday life. As people's everyday life spans over a wide range of activities, it is not easy to pin down every aspect of life. In this paper, policies addressing three major areas of people's life were introduced and discussed: homes, businesses, and transportation. Reduction of GHG emissions related to these three aspects of human life was the main purpose of policy making and movement, which are represented by the Green Start Movement. Some expected results will be discussed, and a conclusion will be drawn.

1. Expected Results

What effects will these policies, movements, and campaigns yield? At least three major effects are expected: (1) saving resources and money, (2) healthy life in a more pleasant and safer environment, and (3) people's raised awareness of the importance of green life. A brief discussion of these effects follows.

1.1 Saving Resources and Money

One of the most visible and tangible effects of

the movement will be saving resources and money. For example, if the food waste can be successfully reduced through the implementation of various measures, especially through the wide spread of the RFID system, it is projected that, by the year 2012, food waste will be reduced by 20 percent a year, from 17,000 tons to 14,000 tons a year; then as much as 5 trillion won (roughly equivalent to 4.44 billion US dollars at the current exchange rate) a year will be saved. Other resources will also be saved, such as electricity, water, and trees, to name a few. Saving these resources is directly related to saving money.

1.2 Healthy Life in a More Pleasant and Safer Environment

Another positive result will be people enjoying healthy life in a more pleasant and safer environment. For one thing, food waste is one of the major culprits of land and water pollution, not mentioning its odor that pollutes the air. Therefore, if it can be successfully reduced, it will substantially improve the land and water quality, which will help people's health. People will also breathe cleaner air.

A more direct impact can be felt in people's health; if more and more people opt to ride bike

or walk instead of driving cars, their physical health will certainly improve. Besides, fewer cars in the street mean less exhaust gas, which in turn means better respiratory health. Cleaner air free of smog will make cities more pleasant to live in.

1.3 People's Raised Awareness

Probably the most significant effect of the green life movement will be people's raised awareness of the importance of green life. After all, it is people, not the system, that make any movement truly successful with a lasting effect. If each and every citizen is always conscious of energy, resources, and environment, they will act accordingly to save them and not to produce environmentally hazardous substance. This raised awareness will be a greater asset than anything else for a greener society.

2. Conclusion

Global climate change was one of the main issues that was behind the government's and civilians' movement to reduce waste and GHG emissions. As has been discussed so far, the Green Start Movement is now going to be in full swing in Korea. It is hoped that the Movement will

be continued, expanded, and, most importantly, effective.

Fights against climate change cannot be won within a year or two. However, it is not an insurmountable problem. With well-thought-out policies, efficient and effective implementation of the strategies, and undaunted determination of the people, Korea can make a big change. If our efforts turn out to be a success, this will become a model case for the rest of the world fighting for a similar problem. Then Korea can become a leader in the global community by setting standards for the green life and green growth, especially in the non-industrial sector.

More importantly, as mentioned above, the success of the movement can result in a better environment, healthier life, and people's raised awareness of the environment. The people's awareness of the environmental issues can have a positive spill-over effect. That is, as people become conscious of the environment and natural resources, they will naturally become more conscious of other human beings, too. This will instill a spirit of understanding and tolerance into people's minds, and they will learn to honor peaceful coexistence of different peoples, societies, and cultures.

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