



Best Practice: Eco-Mileage System

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CITY: SEOUL

POLICY AREAS: ENVIRONMENT, ENERGY

BEST PRACTICE

The eco-mileage system is a citizen participation program that gives incentives to member households and organizations who voluntarily cut back on electricity, water, or gas use per month by at least 10% compared to the monthly average of the previous two years. Incentives include household environmentally-friendly products, which can be reinvested toward energy conservation, public transportation card replenishment, gift certificates for use in traditional markets, and credit card points.

ISSUE

Necessity of Citizens' Participation in the Reduction Efforts of Greenhouse Gas Emissions

Reducing greenhouse gas is now a global issue. Cities and countries around the world are taking diverse measures to reduce greenhouse gas emissions. For example, there has been a recent increase in research of new and renewable energy sources and the promotion of electric vehicles. The problem with these approaches, however, is that they take a significant amount of time and money.

According to a survey conducted by Korea Energy Management Corporation, households and businesses account for 67% of greenhouse gas emissions in the city of Seoul. The most effective way of reducing emissions is for households and businesses to voluntarily implement energy conservation efforts on a consistent basis.

Obstacles to Citizens' Participation: Inconveniences and Limitations in Energy Conservation

Most Koreans are willing to conserve energy because they know that the country produces little energy. The government has tried to reward people who are committed to reducing greenhouse gas emissions; however, voluntary participation is difficult to attract because it involves long-term inconveniences and commitment.

Even if the government offers citizens some energy conservation incentives, citizens' participation is bound to decrease; once they reach a certain level of energy conservation, citizens realize that they cannot further reduce their energy consumption.

Problems with the Incentive System

The government previously offered incentives to households and organizations that implemented energy conservation measures to reduce greenhouse gas emissions. However, the system had problems. For instance, this system allowed a citizen, who received an incentive once, to continue receiving an incentive whether or not he or she continued energy reduction. This exemplifies the main problem with the incentive system: the City budget was spent on things that did not contribute to the lasting reduction of greenhouse gas emissions. The City of Seoul saw no sustainable reduction of greenhouse gas emissions at that time.

GOALS AND OBJECTIVES

- Collaborative response to climate change through the City government, private enterprises, and citizens;
- Continuous energy reduction through citizens' voluntary participation; and
- A reduction of greenhouse gas emissions of the city (a 40% reduction of the 1990 level by 2030).

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IMPLEMENTATION

Working in Partnership with Companies

For sustainable implementation of the Eco Mileage program, the Seoul Metropolitan Government signed MOUs with large and medium-sized companies, including Samsung Electronics, Hyundai Motors, and LG Chemical, which manufacture high-efficiency appliances or environmentally-friendly products, with the aim of providing environmentally-friendly incentives. These companies offer their products to households that demonstrate outstanding energy conservation.

Companies that signed an agreement with the Seoul Metropolitan Government

No.	Company	No.	Company
1	LG Chemical	9	Nuri Telecom
2	Hyundai Motors	10	Sekwang Electronics
3	Kia Motors Corporation	11	Lock & Lock Co., Ltd.
4	Shinsung E&T Co., Ltd.	12	Hyosung Electric Industrial
5	Daejin DMP Co., Ltd.	13	Samsung Electronics
6	CEST Co., Ltd.	14	KyungDong Navien Co., Ltd.
7	Wellbas	15	Tong Yang Magic
8	JESJTEK	16	Autus, Inc.

Evaluation System based on Accumulated Usage

The City changed the calculation method of energy consumption from “the quantity at a certain point in time” to “the average quantity used during six months,” encouraging continuous energy conservation. For instance, currently the City monitors households’ energy consumption from the past six months and selects households that have saved more than 10% per month compared to the monthly average of the previous two years.

The incentives that the City offers include: household environmentally-friendly products that are reinvested in energy conservation; public transportation card replenishment; gift certificates that can be used in traditional markets; and credit card points. For groups, like those in an apartment complex or a commercial building, the City selects those with excellent records in the reduction of greenhouse gas emissions and grants subsidies in amounts from 5 to 10 million Won (approximately 5 to 10 thousand US Dollars), which can be used to upgrade to high-efficiency facilities.

Issuing Eco Mileage Cards



Eco-Mileage Credit Card



Eco-Mileage Check (Debit) Card

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As the program expanded and member numbers continued to grow, the City introduced the "Eco Mileage Card" system to decrease the program's fiscal burdens.

793,679 Eco Mileage Cards have been issued in Seoul. The City promoted the benefits of the mileage card system to the rest of the country, and as a result, 3,249,252 cards have been issued nationally. The card mileage system benefits citizens remarkably and strengthens their commitment to environmental protection. This is a result of the collaboration of the City administration, a credit card company, financial institutions, manufacturers, and retailers. The system costs the City administration very little while leading to significant change.

Support for Citizens through a Two-Way Information Channel

Along with the provision of incentives, the Eco Mileage program promotes two-way communication with citizens. The Eco Mileage website posts citizens' energy conservation tips and experts' advice. It also informs citizens of new City programs, like the Energy Clinic that pays free visits to households or buildings to offer energy diagnosis service.

Resident Centers Helping the Disadvantaged to Participate

The City has arranged for those who have no computers at home or cannot operate them well to visit a resident center and become members. In addition to in-charge officials, a temporary student worker at each center will help them apply for the membership online.

COST

Annual Budget			(Unit: KRW)
2010	2011	2012	2013
2,532,000,000	3,126,160,000	3,096,272,000	3,656,269,000

2013 Budgeting		(Unit: KRW)
Total		3,656,269,000
Management of affairs		131,728,000
Cost of Operation		53,705,000
Incentive		2,841,336,000
Current Subsidies		625,000,000

The municipal government's budget has been kept to a minimum. As the Eco Mileage system has been benchmarked by almost all the local governments and implemented across the country, the profits generated from the system are then controlled by the central government. The private companies' earnings by issuing the Eco Mileage Card are being donated to and managed by the Ministry of Environment, and the ministry subsidizes the City government with 3.5 billion KRW annually. Even with minimal municipal input, the system can now run sustainably.

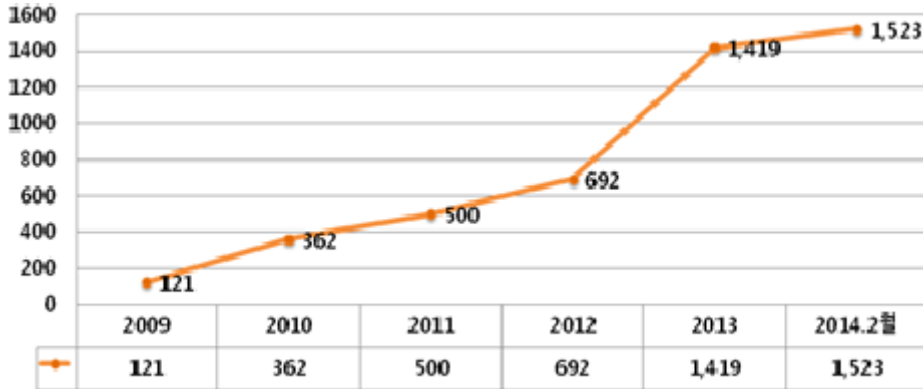
RESULTS AND EVALUATION

Seoul Citizens' Positive Participation

After four years (2009-2013), the membership sharply increased to 1,480,000 households, 1,605 schools, 1,996 multi-unit housing complexes, 3,563 public institutions, and 31,543 commercial and general purpose buildings.

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The total number of members (Unit: 1000)



Retrenchment of Energy and Reduction of CO² Emission

- During 2013, members have voluntarily reduced 153,375 tons of oil equivalent in electricity, water, and city gas. They have also reduced 297,565 tons in CO² emissions during the same period. In terms of eco-rights and energy cost reduction, the above figure is equivalent to the monetary gains of 166 million US dollars. The achievement was possible because the City had changed the calculation method of energy consumption, as previously described.
- The proportion of buildings that have reduced energy consumption has continued to increase from 38.4% in 2010, to 50% in 2011, and to 56.5% in 2012.
- The energy conservation degree has also intensified, from 1.0% in 2010, to 2.1% in 2011, and to 2.9% in 2012.

TIMELINE

2008	April	<ul style="list-style-type: none"> - The Climate & Environment Headquarters of the City administration formed a task force team. With the assistance of Korea Electric Power Corporation officials, five city gas companies including Seoul City Gas Co., Ltd., and the Waterworks Authority, the administration set up a system and developed a software program to receive consumers' energy consumption information. - The City established the procedures for the implementation of the Eco Mileage system, along with the energy consumption quantity management system, under the leadership of the City's Director of Climate & Environment Headquarters.
	October	-The municipal government executed an MOU with the same organizations laying the groundwork for the implementation of the system.
	December	-The City received approval from the National Intelligence Service about the security of the Eco Mileage System, ensuring that the system would not encroach on citizens' privacy.
2009	February	<ul style="list-style-type: none"> -A pilot Eco Mileage system was implemented in 25 districts. Cash rewards were given according to the amount of reduced carbon emissions. -There were 12 advisory council meetings with experts and 8 meetings with district officials to gather feedback.
	September	<ul style="list-style-type: none"> -The system was officially launched. -The cash rewards were replaced with environment-friendly goods and facilities. -The requirements were changed such that only members of the Eco Mileage System who made a significant reduction in greenhouse gas emissions received incentives.

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	October	-The City administration set up a two-way website so that citizens could express their opinions while obtaining a variety of energy conservation information from experts.
2010	January	-The administration expanded the Eco Mileage system to embrace green consumption and green transportation. It joined forces with BC Card and implemented an Eco Mileage Card system.
	March	-The administration signed an MOU with 24 manufacturers of high-efficiency environmentally-friendly products, including Samsung Electronics, to supply the manufacturers' goods as Eco Mileage incentives.
	October	-The MOU with KT allowed members to receive online mileage benefits from KT.
	December	-Through an MOU with BC Card, which has 6.5 million subscribers, the Eco Mileage Card began to be issued.
2012	January	-The administration held three advisory council meetings with experts from environmental community groups, colleges, and research institutes to explore the possibility of connecting the Eco Mileage System to its new campaign—reducing energy produced by one nuclear power plant or eliminating the need to build one new nuclear power plant. The results of the meetings were the diversified uses of the Eco Mileage benefits and a variety of events designed aid energy conservationists. The expanded usage of Eco Mileage includes payment of the maintenance charge of apartment buildings or other types of multi-unit housing with the mileage.

LEGISLATION

- **Article 30 of the 『Low Carbon Green Growth Framework Ordinance』** : The legal basis for the incentives as means to promote citizens' active participation.
- **Article 25-2 of 『Climate Change Response Ordinance』**
- **Eco Mileage Promotion Plan (Initiative of Mayor 2009.8.24)**

LESSONS LEARNED

In the process of implementation, the City government met some obstacles and the solutions to those were as follows:

- **Difficulties in establishing an automatic system to identify individuals' carbon emission quantities:** Energy providers were reluctant to share their information in citizens' energy consumption; they saw it as delicate consumer information that should be protected. Therefore a system and program needed to be developed to ease their concerns. Through numerous meetings with Korea Electric Power Corporation and city gas companies, measures were taken to protect personal information. The National Intelligence Service approved the security system that protected individuals' privacy.
- **Conflicts with district offices over Eco-Mileage because of their low participation rate:** 25 district offices refused to implement the mileage system on the grounds that they could not afford the cash grant because of their budgetary restraints. They demanded that the system be changed and that a website be created for each district. As a compromise, incentives would not be provided to all the members. They were to be given only to those who had reduced their energy consumption by more than 10%. Each district office was to have its own website for mileage management. The resources for incentives were to be supplied by 24 companies. In the long term, the mileage program will require little support from the City budget when the Eco Mileage Card system is fully implemented.

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■ **Insufficient citizen awareness of climate change and little voluntary participation:** Voluntary participation showed a lackluster result. Awareness of climate change remained at a low level. To solve the problem, the City administration set up an organization with district offices, schools, civic groups, and enterprises at an early stage and worked diligently to raise citizens' awareness about climate change. The organization toured the city and held 788 education sessions for 72,771 citizens including community leaders, leaders of vocational associations, commercial building managers, environmental studies teachers, apartment maintenance managers, and women's association leaders.

■ **Difficulties in participation for disadvantaged groups:** In order to solve the complaints of seniors and individuals who had no access to computers, the City administration arranged for resident centers throughout the city to establish a system to help these people. A full-time official or a volunteer helps these citizens to navigate the processes and join the Eco Mileage system.

There were limits in citizens' energy conservation efforts and the City administration should play a significant role as a partner and facilitator in the targeting of energy conservation endeavors.

TRANSFERABILITY

The Eco Mileage System is a collaborative network among the City government, a credit card company, banks, manufacturers, and retailers. The credit card company and banks donate 50% of their proceeds. The City uses these funds as the resource for the mileage program. The City government, citizens, and private companies have established a system in which the citizens' mileage benefits and corporations' profits rise together. The system costs the City administration very little while bringing about significant effects.

Replication and Dissemination

- The Eco Mileage System is the first citizen-participating greenhouse gas reduction program implemented by a local government in Korea. The City of Busan and the Gyeonggi and Jeollanam-do Provinces have already benchmarked it.
- In January 2010, the Ministry of Environment designated the Seoul Eco Mileage System as a model for the government-enterprise cooperation in the implementation of environmentally-friendly measures. It is preparing for the dissemination of the system to other municipal and provincial governments in the country. In July 2012, the ministry benchmarked the Seoul Eco Mileage Card System and introduced a card called Green Card for national application.

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