희망서울
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Join ecomileage and Live Green!

SEOUL METROPOLITAN GOVERNMENT

For more information, please contact the Dasan Call Center (TEL: 02-120) or Seoul City's Climate Change & Air Quality Management Division (TEL: 02-2133-3599).

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What is Eco-Mileage?

The planet Earth is in dire peril due to global warming, which is caused by the concentration of greenhouse gases in its atmosphere. However, one solution is close to hand. You can start by helping reduce energy consumption, which accounts for 91% of Seoul's greenhouse gas emissions. The Eco-Mileage program of Seoul Metropolitan Government will help you practice energy saving and make the Earth a happier place.

Eco-Mileage is...

A program designed to engage Seoul citizens in energy conservation initiatives by giving them incentives when they voluntarily save electricity, water, LNG gas and district heating in their homes and businesses.

ecomileage

"Eco-Mileage" is a system of accumulating eco-friendly points (mileage).

Why do we need it?

Global warming is a great challenge facing all of us!

For 100 years from 1908 to 2007, the average temperature of the Earth rose by 0.74°C and that of Korea by 1.5°C. During the same period, the average temperature of Seoul jumped by 2.4°C, triple the earth's average.

Greenhouse gases are the main culprit of global warming - and Korea is the world's 9th biggest emitter.

As of 2009, Korea emitted 564 million tCO_2e of GHG, of which 8.7% (49 million tCO_2e) came from Seoul. Unlike in other cities, 94% of greenhouse gas emissions in Seoul are generated by residential and commercial buildings and cars. Therefore, the best way to cut emissions in Seoul is to save energy in our homes and workplaces.

Join Eco-Mileage and begin energy saving!

In order for Eco-Mileage members to save energy and have fun, Seoul Metropolitan Government works with energy suppliers to provide personal cumulative energy statistics.

How can I join?

Any Seoul citizen can join right now.

Online sign-up

You can become an Eco-Mileage member by signing up at the website (http://ecomileage.seoul.go.kr).

- **Choose between individual membership and organizational membership, and indicate the client serial number printed on your energy bill.**

Energy use monitoring

Eco-Mileage members can monitor their energy consumption data anytime on the website and receive regular analytical feedback on their consumption pattern.

For more info

Please call the Dasan Call Center at 02-120 or visit a community service center or district office in your neighborhood.

What benefits will I enjoy from Eco-Mileage?

Save energy and get incentives!

If you succeed in reducing your energy consumption by more than 10% compared to the average for the previous two years, you will be eligible for incentives equivalent to 50,000 Korean Won (Up to 100,000 KRW per year).

Incentives for homes

LED lamps, traditional market vouchers, T-money card recharging coupons, Eco-Mileage Card points, apartment maintenance fee, etc.

50,000 Points
(Equiv. to KRW 50,000)

Incentives for organizations

Financing for retrofitting project, in/outdoor greening

※ For organizational members, a different set of criteria (e.g. energy saving performance, project outcome, etc.) is applied.

What is Eco-Mileage Card?

A must-have item for smart and green consumers! Eco-Mileage Card

The Eco-Mileage Card is a new concept of eco-friendly credit card for Eco-Mileage members. Cardholders can earn mileage not only by saving energy, but also by buying green products, using public transportation and shopping at partner businesses with the Eco-Mileage credit card. The earned mileage can be used as cash.

Eco-Mileage Credit Card

Eco-Mileage Check (Debit) Card

※ Available since January 2011, the card is issued as a "Eco-Mileage Green Card" for Seoul citizens and as a "Green Card" in other regions under the same terms and benefits, in order to expand the Eco-Mileage Card to the whole country.

Eco-Mileage Green Card

Green Card

What benefits will I enjoy from the Eco-Mileage Card?

The more you save, the more fun you will have!
The benefits get bigger the more you use the card.

If you succeed in reducing your energy consumption by over 10% compared to the average for the previous two years, you will receive over 50,000 mileage points (Up to 100,000 points per year). Also, 1~10% of each purchase will be saved as points whenever you take the bus or subway or buy green products.

(1 mileage point = 1 Korean Won)

 **Energy conservation**	■ 100,000 points for saving of over 10%
 **Public transportation**	■ 10% of public transportation cost saved as points
 **Green product purchase**	■ 1~5% of green product purchases saved as points
 **How to use points**	■ Convert into cash. ■ Use as cash at partner shops. ■ Pay your mobile communication bill. ■ Pay your apartment maintenance fee.

※ For more information, visit www.ecomoney.co.kr.

What do our neighbors do to save energy?

By joining Eco-Mileage, you can kill two birds with one stone: save on your energy bill by reducing your consumption of electricity, water, gas and heating, and receive generous incentives on top of that!

Homes

60,000 homes that have succeeded in reducing their energy consumption by over 10% have received incentives such as green products.

Lee Mija
(Suyu 1-dong, Gangbuk-gu)

Saved

- Electricity: 292 kWh
- Gas: 195.5 m^3
- Water: 13 m^3

"I marked my energy use on the calendar every day, and eventually found myself using less and less energy without even realizing it. Also, I ran the washing machine only when it was fully loaded, and removed unnecessary food from my refrigerator. Three months later, I found out that I had saved 202,000 won (about US$ 202) in total from my utility bills, including electricity, gas and water bills."

Goh Gwangsook
(Yeonhee-dong, Seodaemun-gu)

Saved

- Electricity: 375.5 kWh
- Gas: 21 m^3
- Water: 74 m^3

"I made a habit of turning off and unplugging computers when not using them. Also, I used multi-outlet power strips to reduce carbon dioxide emissions, and filled the sink with the amount of water I needed instead of letting the water run constantly. I didn't think it was a big deal, but I was able to cut 363.7 tons of CO_2 in 6 months."

Yang Junseon

(Dunchon-dong, Gangdong-gu)

Saved

- Electricity: 16 kWh
- Gas: 281 m^3
- Water: 6 m^3

"I began by encouraging my family to finish taking a shower within 10 minutes. And I kept the heating at 18°C, which was 2°C cooler than usual. My family complained a lot at first, but we gradually got used to it. To my surprise, these simple changes led to a saving of 16 KWh of electricity, 281 m^3 of gas, and 6 m^3 of water over a 6-month period. We have cut 70,000 won from our gas bill alone."

Organizations

Seoul Metropolitan Government selected 90 organizations (20 schools, 30 apartment complexes and 40 commercial buildings) which topped the list in reducing greenhouse gas emissions and provided them with subsidies for green space creation and building retrofitting.

Geonyoung Apartment
(Munjeong-dong, Songpa-gu)

Saved

- Electricity: 654.25 kWh
- Overall energy reduction: 30~40%

"We reduced our energy consumption by 31% by replacing old elevators with energy-efficient ones, and cut 45% by installing a cogeneration plant in the apartment. Residents ride bicycles in their daily life, and we plan to replace street lamps in the town with energy-efficient LED lamps."

Jowon Elementary School
(Jowon-dong, Gwanak-gu)

Saved

- Electricity: 48,145 kWh
- Gas: 6,168 m^3
- CO_2 reduction: 35 tons

"We offer energy experiment classes for students and emphasize the importance of daily energy-saving actions, such as turning off the lights when leaving the classroom, or not turning on the lights on the window side during the daytime, installing energy-saving multi-outlet power strips, and saving water in washrooms. We also minimized energy loss and reduced energy consumption by 34.5% by replacing old boilers with highly efficient ones."

Seoil Middle School
(Seocho4-dong, Seocho-gu)

Saved

- Electricity: 129,866 kWh
- CO_2 reduction: 50 tons

"We designated one student per class who is interested in greenhouse gas reduction as a "green guardian" to lead energy-saving activities such as turning off the lights, air conditioners or heaters before leaving the classroom, and unplugging electronic devices when not in use. It seems that these green guardians have motivated their friends. Now, all our students turn off the lights whenever they see them on in empty classrooms or hallways."

SK Telecom Suyu Office
(Mia 3-dong, Gangbuk-gu)

Reduced

CO_2: 446.5 tons (16.6 %)

"Due to the nature of our business, we have to use a lot of electronic machines. So we replaced some highly-energy-consuming devices, such as coolers, with energy-efficient ones. We keep the indoor temperature in summer over 26°C and put a campaign sticker on each and every power switch to encourage employees to turn off unused devices."

Seoul City Gas
(Yeomchang-dong, Gangseo-gu)

Saved

- Electricity: 50,629 kWh
- Gas: 112 m^3
- Water: 241 m^3

"We encourage our employees to change their habits in the office. All employees are encouraged to join the 'no-tie' campaign, turn off their computers when leaving the office, use personal cups instead of disposables, and print on the back of used paper.

LG Electronics MC R&D Center
(Gasan-dong, Geumcheon-gu)

Reduced

- CO_2: 166.9 tons (7.7 %)

"We have saved energy by improving inefficient systems. We began by simple actions that don't incur extra cost, for example, reducing waste heating by analyzing the operating hours of the gas boiler."

Live green like this!

At home

Put a thermometer on the wall.

- **Put a thermometer somewhere you can read it easily.**

  The recommended indoor temperature during the winter season is 20°C. By lowering the temperature by 1°C, you can:

  ▶ reduce monthly energy use by 4% and curtail CO_2 emission by 230 kg per year.

  The recommended indoor temperature in the summer season is 26°C. By allowing the indoor temperature to rise by 1°C, you can:

  ▶ save 7.7 kWh of electricity and curtail CO_2 emissions by 3.3 kg per month.

In Winter

Don't forget to check the thermal efficiency of the boiler that you will use throughout the season. Around 500 kcal of energy is needed to heat every 3.3 m^2 of a well-insulated building, while 600 kcal is needed in a building with poor insulation. Do you keep your room too warm simply because you feel chilly? Why not attach a thermometer to the wall and try to keep the temperature at the recommended level? With good home wear that is right for the season, you can prevent energy leakage and cut greenhouse gas emissions.

In Summer

A big difference of over 5°C between the indoor and outdoor temperature may be unhealthy. Using an electric fan together with an air conditioner is better for cooling.

With 18 kWh of electric power needed to turn on one air conditioner, you can use 30 electric fans (60W each).

Pay attention to energy efficiency.

- **Check the efficiency of all appliances and lights at home.**

  High-efficiency products seem more expensive at first, but they are more cost-effective in the long term because they have a longer lifespan and consume less power.

High-efficiency bulbs (Self-ballasted)

Type	1st-grade high-efficiency bulb	1st-grade fluorescent light	1st-grade incandescent bulb
Power consumption	26 kWh	36 kWh	97 kWh

High-efficiency bulbs last 8 times longer and consume 66% less power than incandescent bulbs. By replacing one 1st-grade incandescent bulb (97 kWh) with a high-efficiency bulb, you can save KRW 7,100 from your annual electricity bill and cut CO_2 emissions by 30 kg.

Fluorescent lights and LED

High-efficiency 26mm-32W fluorescent lamps have a longer lifespan and use less energy than ordinary 32mm-40W lamps. By replacing fluorescent lamps at home with highly-efficient ones, you can reduce energy consumption by 20-30%. An even better option is LED lights: the power consumption of LED lights is 1/8 that of incandescent bulbs and 1/3 that of fluorescent lights.

Don't forget!

A high-illumination reflective cover that reflects 90% of lamplight can help save 20-30% on electricity bills.

Refrigerators

Refrigerators are always turned on. One way of reducing the CO_2 emitted by your fridge is not to fill it. 10% more food in the fridge means 3.6% more electricity consumption. By keeping your fridge just 60% full, you can save 7.2 kWh of power and reduce your CO_2 emissions by 3kg per month.

Don't forget!

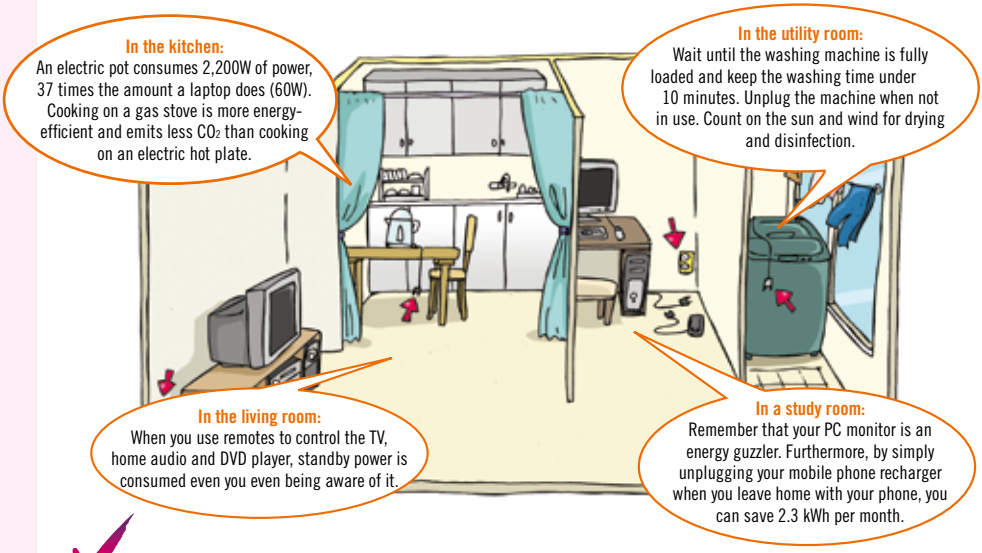
Smart ways to use energy-guzzling fridges

- A capacity of 40-50 liters per person is enough.
- 10 less seconds with the door open: 0.5 kWh less power consumption (0.2 kg less CO_2) per month.
- Regular cleaning of the cooling coil: 2.5 kWh less power consumption (1 kg less CO_2) per month
- Placing the fridge in a well-ventilated area: 3.8 kWh less power consumption (1.6 kg less CO_2) per month.
- Adjusting the temperature setting from "strong" to "middle": 5.1 kWh less power consumption (2.2 kg less CO_2) per month

Remember to unplug devices.

- **Use appliances wisely.**

  Unused appliances still consume power as long as they are plugged in. Choose a multi-outlet power strip with individual power switches to prevent the hassle of unplugging each device.



Check water usage.

- **How much CO_2 is emitted by using tap water?**

  CO_2 emission (g) = water usage (m^3) × 0.587 (※ 1 m^3 of water = 1,000 liters)

- **Finish your shower 1 minute earlier and you emit 7g less CO_2!**

  The entire cost of energy invested in producing municipal tap water is included in your water bill. By consuming tap water, you consume that much electricity and emit that much CO_2. Check how much tap water you use. Remember that every time you use the washing machine, 88g of CO_2 is emitted.

Don't forget!

- **When gardening or watering plants**: Use rinse water instead of tap water. Put enough water at once in order to decelerate evaporation.
- **In bathroom**: Choose a water-saving tap and showerhead.

Opt for healthy mobility.

- **Choose your means of transportation wisely.**

  Don't give up the right to choose your preferred means of transportation, even though there is often no other way but to drive in the city. Transportation accounts for as much as one quarter of all CO_2 emissions.

If you ride a bike for 10 km		If you drive 10 km
20 minutes	**Duration**	4 minutes (if driving at 40km/h in a downtown area)
210 Kcal (if your bike weighs 15kg)	**Energy consumption**	8,000 kcal (if your car weighs 1,450 kg)
Your muscles	**Energy source**	1 liter of gasoline
A minimal amount of methane included in your sweat	**Air pollution**	CO_2 emission (2,000 cc); CO, CH_4, NO_2 and other GHG emissions (200 cckg)

Don't forget!

- A 25km journey via car, bus or subway incurs an average of 4,874 kg, 0.39 kg, and 0.0096 kg of CO_2 emissions per person, respectively (according to the "Environment Special" broadcast on June 18, 2008 by KBS).

Shop wisely to save the earth.

- **Buy local and healthy products.**

  By doing so, you can significantly cut energy consumption by transportation that incurs greenhouse gas emissions. You can also help vitalize your neighbors' livelihood.

- **Be a vegetarian, be an environmentalist.**

  Livestock breeding generates 24 times more greenhouse gas emission than vegetable production (January 2008, The New York Times). Why don't we set one day a week at home as a "vegetarian day"?

What is wise shopping?

Whatever you buy, whether a fridge or a piece of fruit, You are the decision maker who chooses what to buy for you and your family. As well as checking the quality, safety and price of the products you are about to buy, you should also check where, how and by whom they are made. This is an effective way of wise shopping to save the earth.

※ Source: Korea NGO's Energy Network, "7 Habits My Family Can Pick Up to Reduce CO_2 by 10%", etc.

At work

Work with Energy Service Companies (ESCOs).

- **Energy Service Companies (ESCOs)** invest in your place in energy-saving installations.

  ESCOs recover their initial investment from the saved utility bill. After the payback period, the amount saved on each utility bill is yours.

- Visit the website of Korean Association for ESCOs for more information.
  Korean Association for ESCOs: http://www.esco.or.kr

Keep the indoor temperature under 20°C.

- By wearing many layers of thinner clothing instead of just one shirt, you can lower your heating temperature setting by anywhere from 4 to 6°C, for example from 24°C to 20°C.
- Lowering your heating temperature by 1°C or 2°C translates as a 4~6% or 10% energy saving, respectively.
- Winter season indoor temperature guidelines in other countries

US	Britain	France	Japan
Under 18.3°C	Under 19°C	Under 19°C	Under 20°C

Turn off the heater during lunchtime and one hour before you leave the office.

- The effect of heating and cooling remains for about one hour after you turn the machine off.

Turn off the lights next to the window.

- Daylight comes in from the window side. Install **separate switches** for window-side lights or adopt an **automatic dimming system** whereby lights go out automatically according to the level of illumination.

Keep lighting devices and reflectors clean.

- By **cleaning reflective covers** on lamps and fluorescent lights, you can prevent the illumination level from dropping and therefore save energy.
- Put high-illumination reflectors on your lamps and you can save up to 30% on your electricity bill.

Replace lamps in underground parking lots, hallways and stairways with highly efficient ones.

- The lights should always be on in underground parking lots. Street lamps and the lights in the hallways and the lights in the hallways and stairs of apartments are also often kept turned on. Replace those lights with **high-efficiency lights** to save energy.

In ** apartment, residents worked with an ESCO company to replace 2,800 lamps in their parking lots and hallways with highly efficient ones, and successfully saved KRW 2 million on their electricity bill, or one third of the total.

Choose highly efficient lights and electric devices.

- Replace mercury lamps for outdoor lighting with brighter and more efficient **high-pressure sodium lamps** or LED lamps.
- Replace ventilators and pumps in the building with ones that have a higher energy efficiency grade to cut electricity consumption by 10-20%.
- It is often found that new cooling water pumps or ventilator motors in a building have actually more than enough capacity. Choose motors with the right capacity you need for the building in order to save energy.
- Put power-saving devices onto the motors to control the amount of power input according to the power load.

Name an energy manager.

- Designate an energy manager for each room or for each floor of the building and have him/her take responsibility for maintaining the right indoor temperature and for turning off the lights.

Set elevators to stop only on even- or odd-numbered floors above the 4th floor.

- Take the stairs when travelling fewer than three floors and don't push the close button so as to reduce elevator use.
- If an elevator is set to stop only on even- or odd-numbered floors, its energy consumption for stopping and departure drops by an average of 5.8% compared with when it is set to stop on all floors.

Put a light sensor on the escalators.

- An escalator equipped with a **light sensor** is operated only when somebody steps on it. Put a light sensor on the escalators of your building and make them smart enough to stop consuming energy when nobody is on them.

Choose certified high-efficiency centrifugal chillers.

- **High-efficiency centrifugal chillers** help you save cooling energy.

Use waste-heat-recovering ventilators.

- **Ventilators with a function for recovering waste heat** from discharged indoor air help you save energy for air conditioning and heating.
- Such ventilators recover 75%~93% of waste heat from ventilation, significantly reducing the need for high-capacity chillers and boilers.
- Equipping a 330m^2 building with waste-heat-recovering ventilators will save KRW 1.18 million from its annual electricity bill.

Put an automatic cleaner on your chillers.

- A permanent **automatic cleaning function** prevents the corrosion of pipes and boosts cooling efficiency, which eventually leads to energy conservation and a reduction of maintenance costs, for instance, chemical treatment for descaling.

Clean your boilers.

- Soot generated by burning oil or coal and scale contained in ash and water stick to the boiler as time goes by, impeding heat delivery and lowering the efficiency of the boiler significantly.
- Make sure to keep the boiler free from corrosion during the summer season, and **clean the boiler before and after the main seasons of usage, i.e., clean it in spring and fall.**

Adopt double-pane glass windows.

- Windows and doors are the biggest gateways for heat in buildings and houses. Winds coming in and going out from niches lead to considerable heat loss.
- Adopt insulating windows with a good level of sealing.
- Attach vinyl film to single-pane glass windows to obtain the effect of double-pane glass.
- Hang various layers of curtains onto windows to prevent heat from escaping.

Install air curtains on the entrance to a building.

- When the heating or cooling is on, you can save a large amount of power by preventing indoor air from escaping outside.

Improve building insulation.

- Poor insulation of walls and roofs causes significant energy loss.

Expand the use of new and renewable energy sources.

- Take advantage of a variety of new and renewable energy solutions, such as rooftop solar cells and geothermal installation.

※ Source: Korea NGO's Energy Network, "7 Habits My Family Can Pick Up to Reduce CO_2 by 10%", etc.

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