

eco

Life's good, when it's green

LG's Green Activities for Carbon Footprint of Products



2011. 12. 15

LG Electronics inc.



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I. Green Management

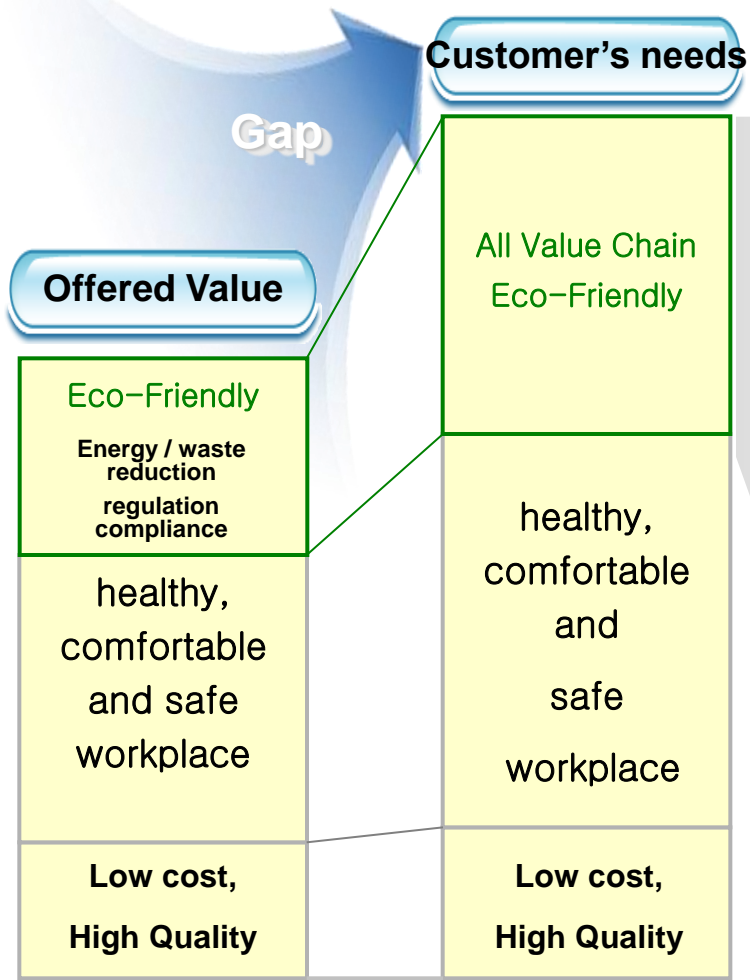
II. Green Vision 2012

III. Carbon management system



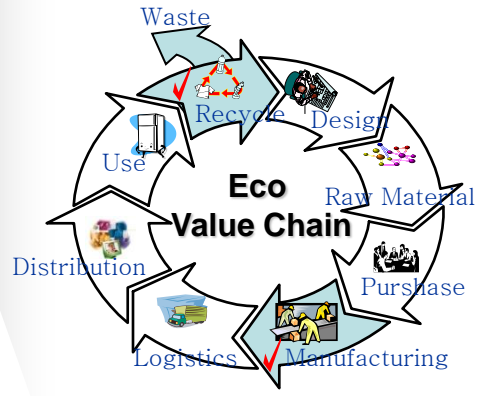
1.1 Background of Green Management -Green Trend-

Customer's Paradigm Shift →



Cost, Performance, Appearance, Quality

+ Energy-efficiency, environment friendly



- **R&D**
 - Eco-Design
 - LCA/DfE
 - Global Regulation
- **Supply / Manufacturing**
 - Eco Materials
 - Green Manufacturing
- **Usage / Disposal**
 - Efficient Energy Use
 - Extended Producer Responsibility
- **Stakeholder**
 - Customer Insight
 - Social Responsibility

HA President's Comment in Oct. 2009

Green Management is not a choice but a necessity



Green Management is currently becoming a Global hot issue. The Business Unit as well, is concentrating its capabilities such as operation of Green TDR for carbon reduction activities in daily lives and not to mention for energy reduction, optimization of products, and development of environment friendly products through Eco-Design.

Our effort for this is no longer a choice but a necessary condition that needs to be secured in competitive power for survival.

I expect that entire organization participate with interest so that environment friendly activities can be attained by covering all value chains and daily lives of products from product design to production, sales and salvaging.

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I. Green Management

II. Green Vision 2012

III. Carbon management system



HA Company
Vision

The most trusted appliance-solution provider,
your life enriched by **ECO-FRIENDLY** innovations

Green Vision

The Best Green Solution Provider, LG Electronics

1

CO2 reduction activities through all employees' participation

2

Low carbon system set-up for the life cycle of product

3

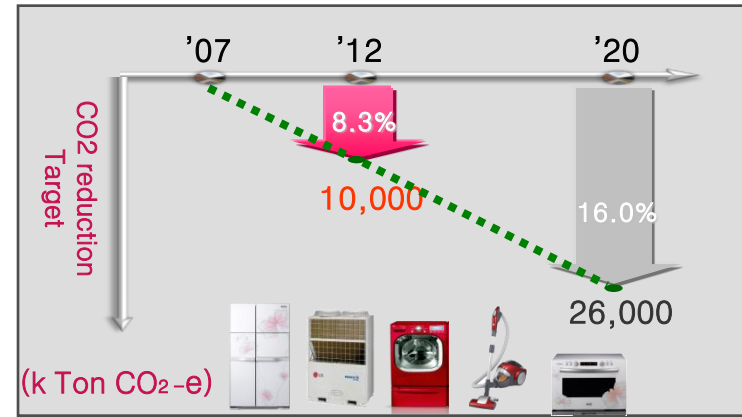
Product Leadership acquisition by Green Product Strategy

4

Green Partnership with Society and Cooperation Company

About 10 Million ton of CO2 Reduction (equivalent to effect created by planting about 3 billion Pine trees) through CO₂ reduction activities of all employees and development of high efficiency product and productivity optimization by 2012

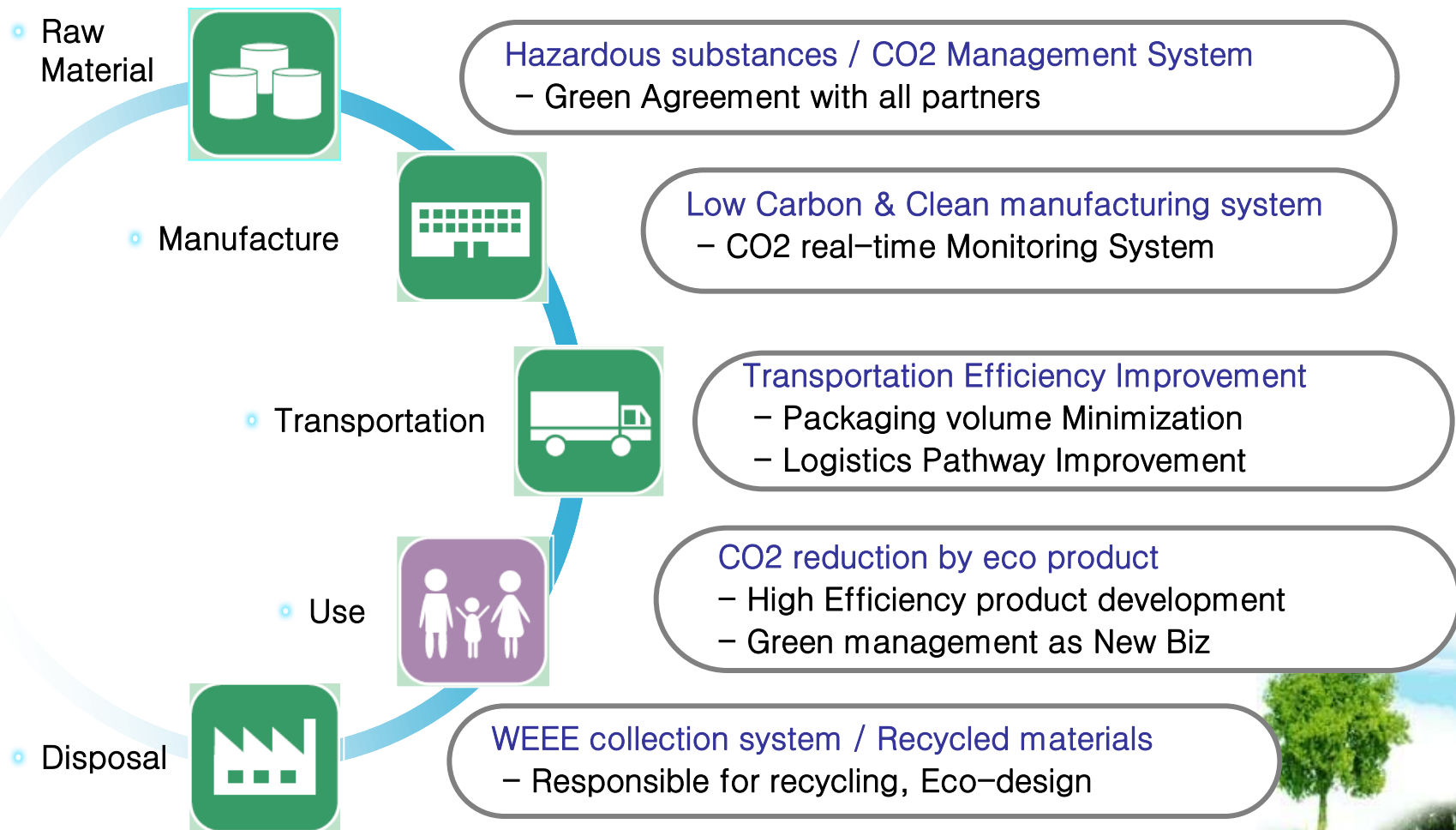
Green Value Chain in Changwon Factory



 10 Million ton CO2 Reduction = 3 billion Pine trees



Global environmental protection and improving the quality of life through a low-carbon system set-up in life cycle of Product



Green Product Line-Up Setting through Green Product 3 Strategies



Considering
Environment
& Human Life

Green
Product
3 Strategies



Energy

- World's Best Energy Efficiency
- 30% improvement



Human

- Alternative of hazardous substances
- Design for Health Care



Resource

- Resource Reduction
- Recycle rate improvement

As a global leader, HA company has environmental and social responsibilities.

Eco exhibition ('00~'11)



Environmental Report



LGE



AC Company

Env. Responsibility
Economic prosperity
Social Responsibility

Green consultant and Partner Green Support



Green Volunteer



Public Support

Environmental preservation

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I. Green Management

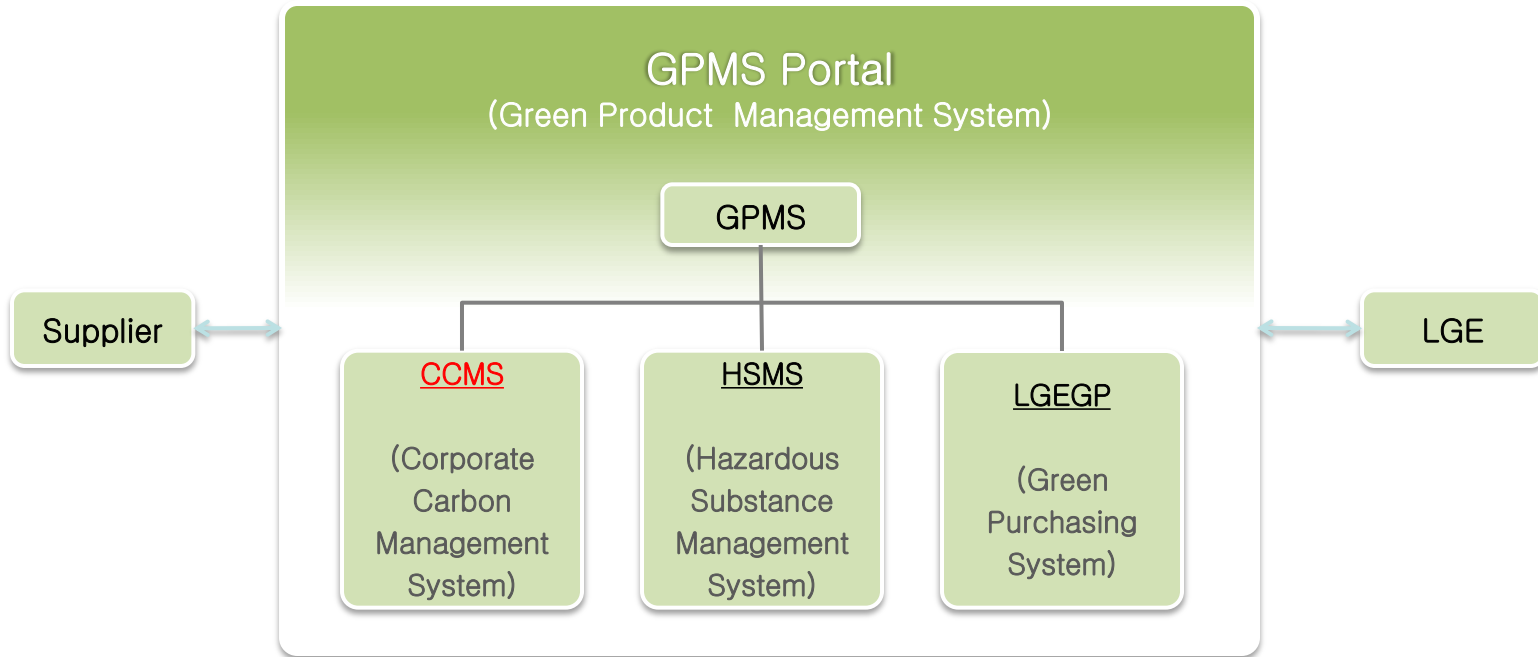
II. Green Vision 2012

III. Carbon management system



3.1 Carbon management IT system

Low carbon system set-up for Carbon Footprint management and Reduction target management



No.	Subject	Name	Date	Hit
1	User Manual(Eng v0.3.1)	012-7	2010-01-06	57
2	User Manual(Eng v0.3)	012-7	2009-12-28	75

◀ CCMS

- CO2 inventory management IT system for Life cycle
- > Carbon Footprint management for the life cycle of product (manufacturing, transportation, Use, disposal)
- > CO2 inventory management for factory
- > Reduction target management for life cycle

3.2 Carbon Footprint Label _ Korean

The First and Maximum Certification for carbon footprint label using Carbon management IT system

KEITI <http://www.edp.or.kr/carbon/main/main.asp>











유효기간	제품	탄소성적표지
2011.6.24~ 2014.6.23	ROBOKING 청소기(VR6172LVM)/ ROBOKING 청소기(VR6171LVM)/ ROBOKING 청소기(VR6170LVM)	 
2011.6.24~ 2014.6.23	Healthcare 정수기 (WQD71RW5R)/ Healthcare 정수기(WQD71RW5)/ Healthcare 정수기(WQD71RW1)	 
2011.6.24~ 2014.6.23	전 자레인지(MW231EE)	 
2011.6.24~ 2014.6.23	전 자레인지(MW231EW)/ 전 자레인지(MW231EK)	 
2011.6.24~ 2014.6.23	식기세척기(D1220MF)	 
2011.6.24~ 2014.6.23	공기청정기(LA-U110DW)	 

취득시기	제품	탄소성적표지
2011.6.24~ 2014.6.23	김치냉장고(R-D416PEHT)	 
2010.7.28~ 2013.7.27	CYKING 청소기(VC6860LHAY)	 
2010.7.28~ 2013.7.27	DIOS 광파스팀오븐(MP929NPS)	 
2010.6.24~ 2013.6.23	DIOS 냉장고(R-T759MHHGP)	 
2009.12.24~ 2012.12.23	세탁기용 모터(WDC246Y01S)	 
2009.11.26~ 2012.11.25	냉장고용 리니어 컴프레서 (FC140NEM)	 
2009.3.17~ 2012.3.16	드럼세탁기 TROMM(FR3228WA)	 

3.2 Carbon Footprint Label _ USA

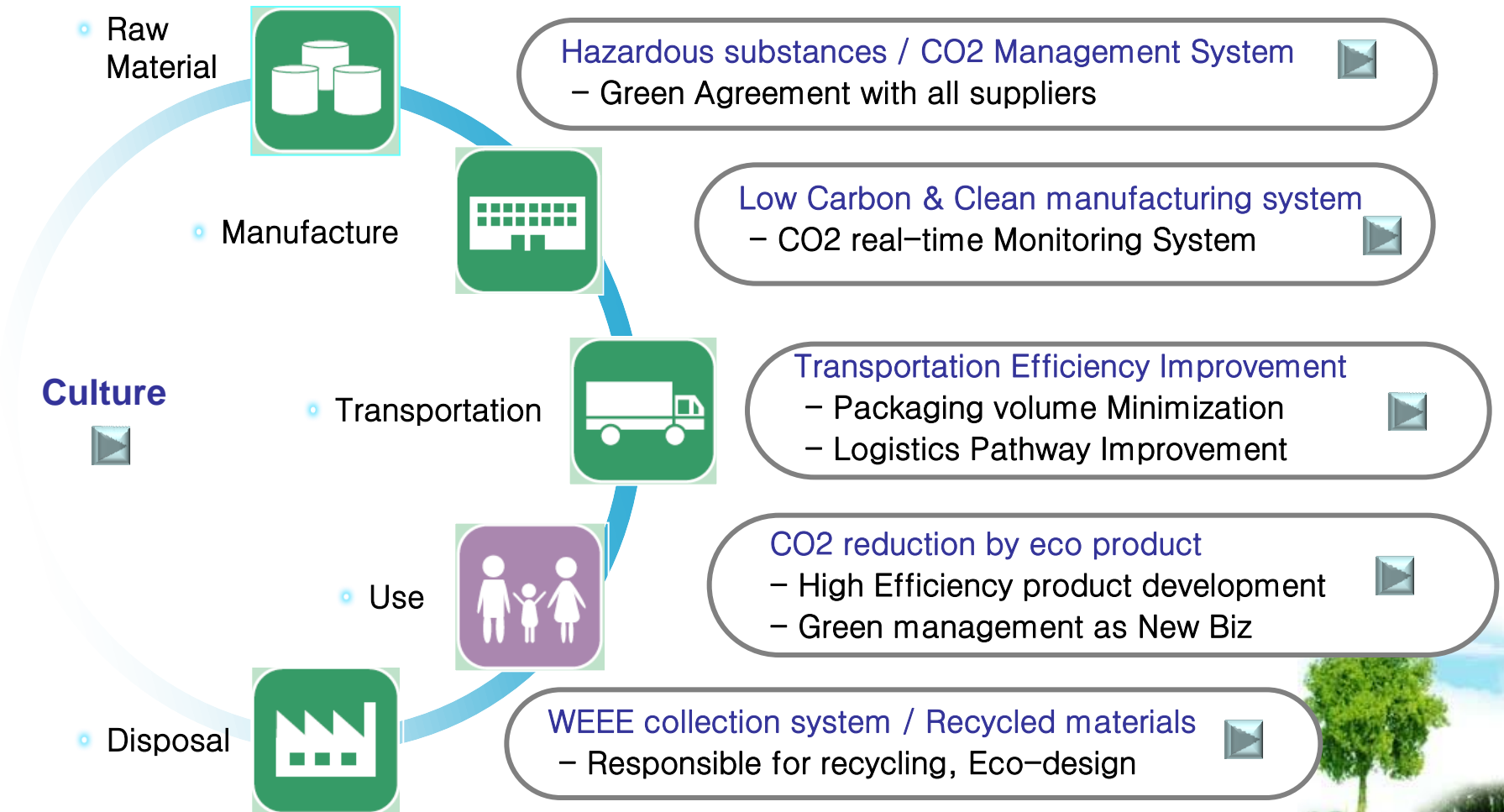
The First and Maximum Certification for carbon footprint label using Carbon management IT system

Carbon Fund
http://carbonfund.org/site/pages/land/carbonfree_product_index_page_2#LG

인증 일자	제품	Carbon Free
June 22, 2011	3 Door Refrigerator (GR-L318LSJP)	 
June 22, 2011	Front Load Washing Machine (LG TROMM WM3875H)	 
June 22, 2011	LED LCD TV (42LV5500-UA)	 
October 22, 2011	Gas Oven (LDG3016ST/LDG3015ST /LDG3015SB/LDG3015SW)	 
October 22, 2011	Vacuum Cleaner (LuV350C)	 



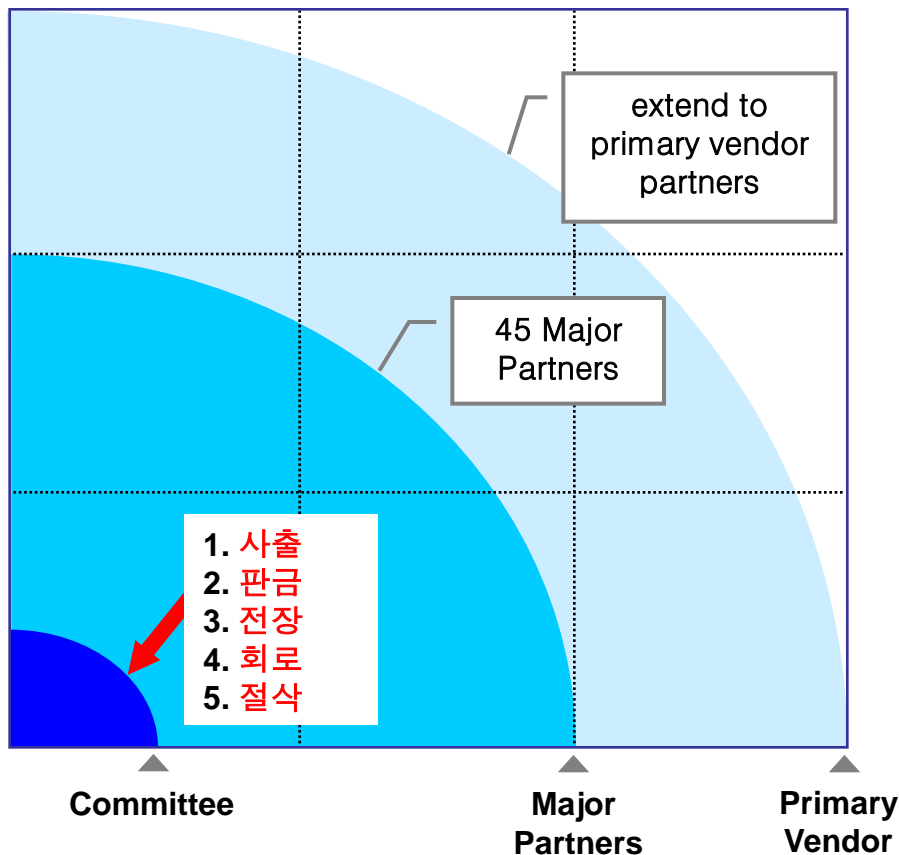
Global environmental protection and improving the quality of life through a low-carbon system set-up in life cycle of Product



3.3.1 Green Partnership with Cooperation Company

Set-up Eco workplace early through Green partnership with all partners

* ECO Vision



The declared three pledges of LGE & Partners

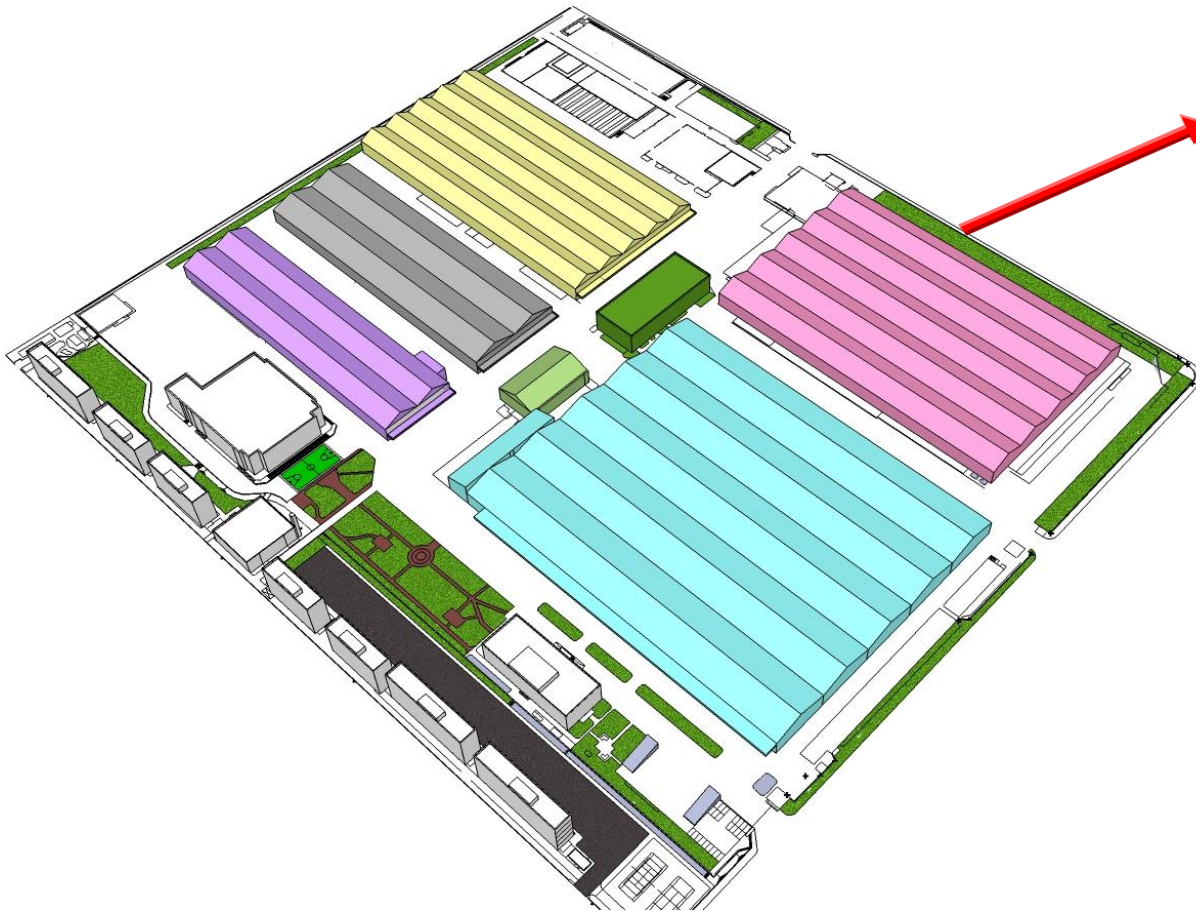
- Parts & products with hazardous substances banned
- CO2 reduction activities for Climate change adaptation
- Joining low-carbon green growth with LGE

Green Partnership Ceremony



3.3.2 Real-time CO₂ monitoring system

Set-up real-time CO₂ Monitoring System through electricity, LNG and water.

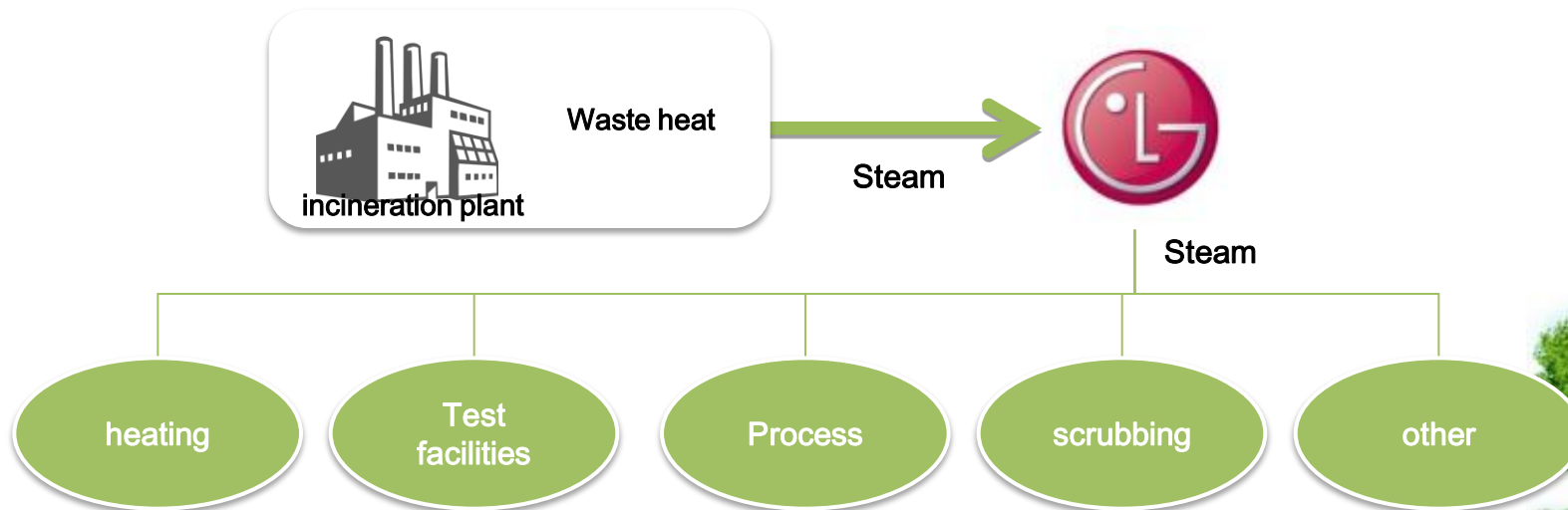


전력 사용량	KWh
CO ₂ 발생량	Kg CO ₂
나무 수	그루
가스 사용량	Nm ³

Electricity	KWh
CO ₂	Kg CO ₂
Tree	그루
LNG	Nm ³

3.3.2 Waste heat use from incineration plant

Fuel savings of 2.6 billion won and CO2 reduction of 9,020 tons annually through waste heat use



3.3.2 LED, Day lighting and Solar Energy

Using Day lighting, high efficiency LED lighting and Solar Energy (made by LG) for CO₂ reduction



▲ LED Lighting



▲ Day Lighting



▲ Solar Energy



▲ LED Flat Lightings





The Realization of green distribution and the achievement of green competitiveness

Continuous CO₂ reduction through the execution of 12 main challenges

Set-up low-emission transport system

- 1 Eco drive promotion
- 2 LNG vehicle
- 3 Change the Eco tires
- 4 Modal Shift promotion
- 5 Improvement of pallet collection process

Improve energy management

- 6 Energy data management
- 7 Improvement of forklift efficiency
- 8 Replacement of lightings in distribution center

Set-up a culture of green distribution

- 9 Spread of green distribution awareness
- 10 Eco certification system promotion
- 11 Management of green distribution index
- 12 Eco-Delivery Option

	Introduction (2009)	Diffusion (2010 ~ 2011)	Settlement (2012 ~)
Promotion scope	Introduction at domestic transportation	Complete domestic transportation / Introduction of export shipping	Complete export shipping
Main Activities	Build up the foundation of green distribution and Set-up performance management system	Finish 12 main challenges	Continuous improvement activities for green distribution

3.5 Carbon Footprint label Certification

Eco Product image improvement through Certification by Korean Ministry of Environment (Certification for key components and main products)



3.6 Eco Design Guide_ 3R(reduce, recycle, reuse)

Realization of eco design considered 3R through improvement of design ability



Design for Disassembly

Simple assembling Guide

분해성 향상 설계 방법	Difficult disassembly	Easy disassembly
쉽게 분해되고 재지그 쉽고, 교체 가능한 접착부품 사용		
제외부품 수를 줄임		
제외부품은 표준화된 걸 크기를 사용		
제외부품을 분해하기 위한 충분한 공간 확보		
분해 공구는 되도록 단순한 공구 사용		
조립방법을 단순화하고 지침.		

Materials and structural alterations for recycling rate improvement

NO	연락처(담당자)	요청사항	반응(결과)	필요 조건/비고
1				
2				
3				

Design for Recycling

Plastics material mark (ISO 11469)

Product Standardization

An example of mark

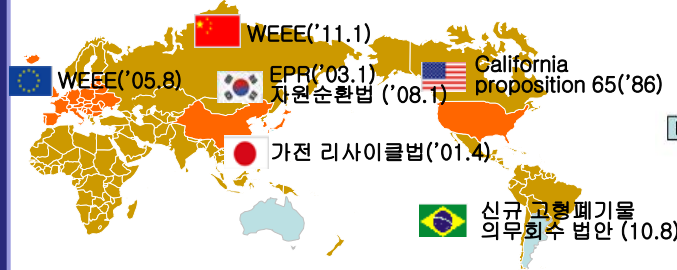
Using recycled plastics



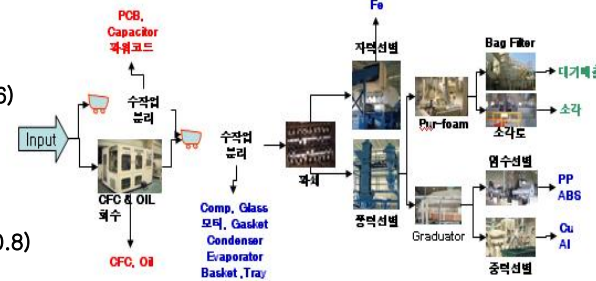
Improvement of eco design ability

Recycling Laws and Recycle Process

Global Recycle Regulation



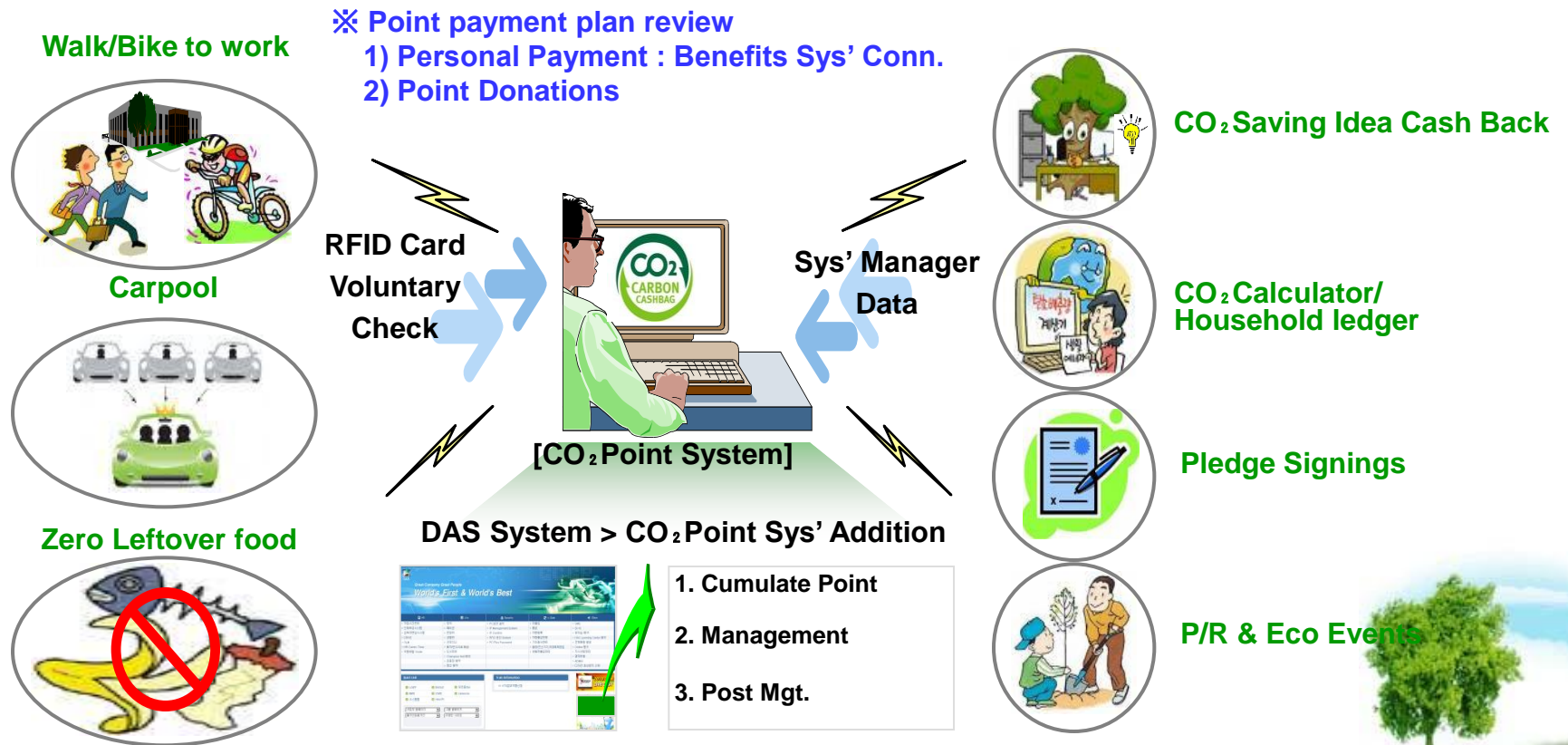
Recycle process



3.7 CO₂ Point System Implementation

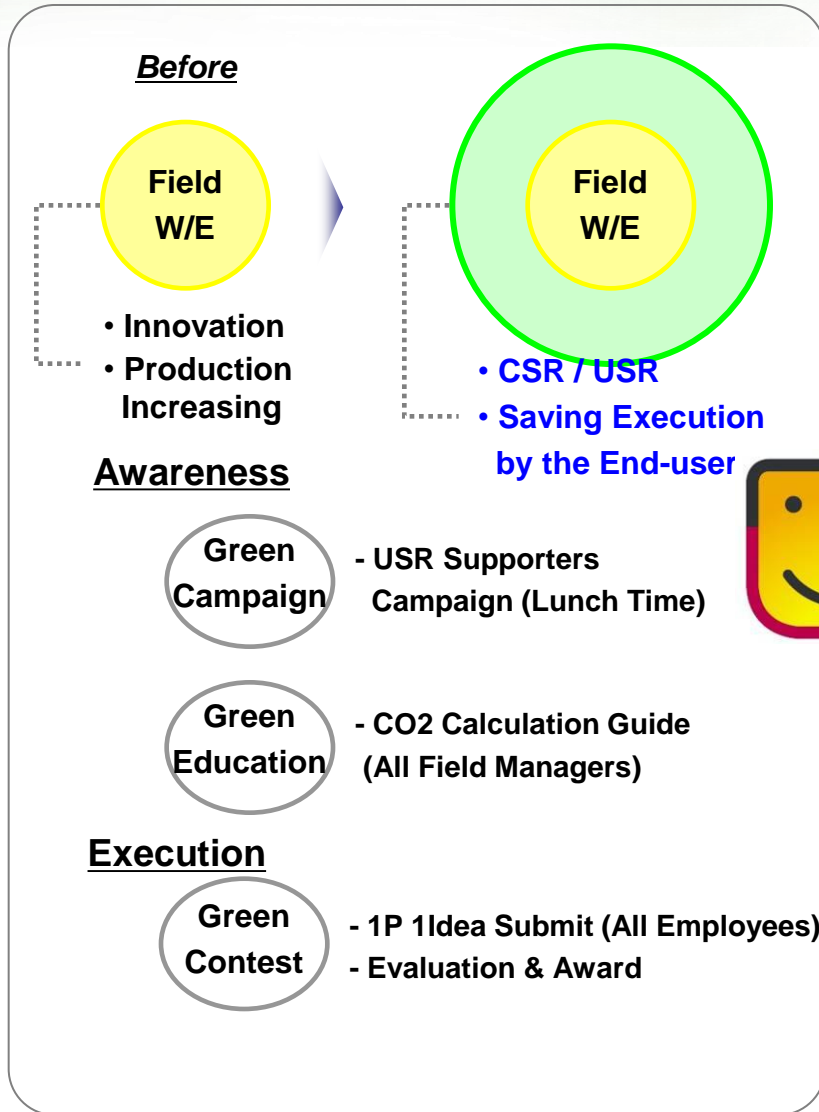
- ❖ Purpose: Incentive in accordance with improvement & eco-friendly Mind↑ and execution ↑
- ❖ Method : ① Eco-friendly activities based on RFID Card check (Bike, Walk, Carpool /Janban Zero)
 ② Cumulative points participating in accordance with Green Activities
 (Idea Suggestion ,CO₂ Calculator/Household, Appointment Signing, planting of trees, etc.)

❖ System Concept



3.7 CO2 reduction activities through cooperation with USR

CO2 reduction activities and improving our green life through cooperation with USR(union social responsibility)



◆ Green Contest in production Line (Organization)



◆ Best Green Execution People (Personal)

2010 1Q Best People

달인 "김형곤 기장"의 친환경 활동 소개 LG Electronics

오전 시간
 기상 및 샤워
 샤워시간 5분 단축
 헤어드라이어 사용
 출근
 자전거 출근

일과 시
 큰면 담배 반
 개인 컵 사용 종이컵 사용
 이면지 사용 A4 용지 사용

점심 시간
 노트북 절전 (시간 절약) → 11gCO₂: 저감
 진반 줄이기 동할 (200g 감소) → 212gCO₂: 저감

TOTAL 하루 2.6kg의 CO₂ 저감
 이는 한 달 동안 약 17그루의 잣나무를 심은 효과

Every Quarter
Green Best People
Selection & P/R

3.7 Green Activities

Improving eco-friendly image of LG through Green Activities



✓ World Day for Water (3.22)

✓ tree-planting day (4.5)

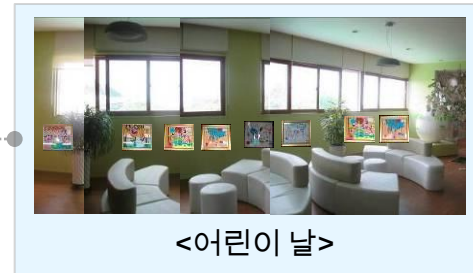
✓ Children's Day (5.5)

✓ World Environmental Day (6.5)

✓ Energy day (8.22)

✓ Resource recycling Day (9.6)

✓ exchange Event (Dec.)



USR
Green Event