

KC GreenHoldings   
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# Global Green Environment Company

2013 KC Green Holdings Sustainability Report

# About this report

## 2013 KC Green Holdings Sustainability Report

This report is the second of its kind published following the 2012 report by KC Green Holdings. KC Green Holdings will publish the sustainability report every year to communicate with various stakeholders and continue to share sustainable management activities and performances.

## Period and Scope

The reporting period of this report is for the 2012 fiscal year (January 1, 2012 – December 31, 2012) and in order to enhance the understanding of readers and stakeholders, information for the recent three years (2010-2012) is presented for major performances. The scope of the report includes the economic, social and environmental performances of all manufacturing plants and business areas of KC Green Holdings, KC Cottrell and all other subsidiaries. When there is a difference in the scope of report, it is separately clarified in the contents of each report.

## Standard

This report was drafted based on the GRI (Global Reporting Initiative) G3.1 guideline. All of the financial terms, standards and information mentioned in this report are in accordance with the IFRS (international financial reporting standards) and the currency is presented in US Dollars (USD).

## Assurance

This report was reviewed by a third party expert to improve the reliability of the data and contents reported herein.

## Additional Information

This report is published in Korean and English languages and the Korean or English version PDF files can be downloaded at KC Green Holdings homepage. Please use the questionnaires found at the end of the report or contact us for questions or comments.

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# KC Green Holdings 2013 Sustainability Report

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## CEO Message



Our growth,  
Green growth,  
& Sustainable future  
of global society!

We would like to express our deepest gratitude to  
all of the stakeholders who showed their continued  
support to KC Green Holdings over the last year.

### The second 'Sustainability Report' highlighting our performance in 2012 is published.

In 2012, KC Green Holdings published its first sustainability report, covering the prior year 2011, to make internal assessments of corporate social responsibilities and sustainable management as well as to determine our bearings for the future. Based on this, we are creating an improved synergy between our traditional environmental businesses and our new green businesses, striving not only for sustainable management, but also for social responsibility as an environmental / green industry-oriented holding company.

### We achieved continuous growth despite uncertainties in the global economy.

Despite the difficult business environment due to the unstable global economy and drop in demand, KC Green Holdings and its subsidiaries achieved improved revenue and operating profits compared to the previous year. We believe that this was possible through strategic and sound management that utilized subsidiaries in the four fields of environmental engineering, environmental services, environmental manufacturing and the renewable energy sector. We will continue to reach out in new markets by sharing and spreading our tangible and intangible assets among the KC Network companies. We will also continue to explore new business opportunities responding to new demands from changing external environments. Furthermore, we will make continuous reviews of risk factors and of sustainability by analyzing changes in the global business environment, such as the full-fledged distribution of shale gas that has recently and actively been developed. These reviews will determine how such changes will affect both the energy businesses in general as well as the businesses of KC Green Holdings specifically as we prepare for the future.

### A Leader in the environmental industry responding to global warming and climate change

Global warming, due to the continuous use of fossil fuels, is now changing the world's climate system. If left neglected, global warming is highly likely to accelerate climate change and destabilize the future of Earth. The environmental engineering sector focuses on design and engineering of systems that control atmospheric pollution from fossil fuels. Based on an increasing concern about air pollution and the future of humanity, it is highly probable that demand for green business will grow in various sectors. To respond to such global demands for environmental solutions, KC Green Holdings is continuously striving to develop new technologies as well as improving existing technologies. In particular, heavy R&D investment is being made to improve the operational efficiency of existing dust collectors, FGD and De-NOx systems in terms of

lowering emission levels and optimizing energy consumption. This is KC's commitment to our clients as they respond to global warming and climate changes. In addition, we are developing renewable energy businesses focusing on Photo Voltaic Power Generation alongside with R&D for Distributed Power Generation Systems which will make it possible to use renewable energy more efficiently. The Busan-Shinho Solar Power Generator, completed in late 2012, is the world largest PV power station (20MW) installed in a single plant. This plant showed another environment-friendly way of construction by installing PV panels on the roofs and shades of existing buildings and storage areas.

### We will continue to keep our attention focused on important energy issues in the global community.

Electric Power is an essential energy resource for industrial activities and worldwide economic growth. Many experts predict that the recent energy shortages will be a world-wide concern in the near future and many countries are exploring economically and environmentally feasible solutions for stable energy sources. Under the current circumstances, KC Green Holdings will pursue strategic responses to meet these demands based on our experience and technologies for the industrial waste incineration and waste-to-energy businesses. Moreover, KC Green Holdings will also expand beyond its RDF (Refuse Derived Fuel) business to other energy supply businesses such as the use of biomass for Combined Heat and Power (CHP).

### We have set a vision and a mission for sustainable management for the balanced growth of economy, environment and society.

In order to fulfill its corporate responsibilities, KC Green Holdings has set an objective for sustainable management, and established a new vision with a mission to instill this vision into our management activities. To ensure that we are able to meet our objectives and produce results, we will configure strategies to pursue and execute among our business sectors. We will set management objectives with all of our subsidiaries and reflect those objectives into the performance indices to lead daily activities towards meeting the objectives. Internally, we will build a team which will review sustainable management and monitor our activities and progress towards objectives. At the same time, externally, we will develop various communication channels with our diverse stakeholders and actively listen to their opinions on sustainable management.

### We ask for the participation and interest of our honored stakeholders.

KC Green Holdings, as a holding company in the green and environmental industries, aims not only at contributing to the sustainability of humanity and the world, but also to strive to fulfill its social and ethical responsibilities. In addition, we will systematically manage the performance of our corporate activities and share the results with our stakeholders. This second sustainability report is the outcome of such intent, and we hope that you are happy to see this. We will make improvements where needed in the sustainability report every year and make it a mirror in which the overall management activities of KC Green Holdings can be reflected. We would like to ask all of our stakeholders to continue to show their interest and their support.

Thank you.

August, 2013  
KC Green Holdings CEO  
Lee, Tae Young



# KC Green Holdings 2012 Highlights

## Busan-Shinho Solar Power Generation Plant Construction (20MW)

Busan-Shinho Solar Power Generation Plant was constructed by KC Cottrell and KC Solar Energy. The construction began in July and was completed and tested in December after six month site erection. The PV panels were installed at the parking lot, Assembled-car holding area and on the roof of the Renault Samsung Motors Busan factory.

Busan-Shinho Solar Power Generation Plant is the world-largest (20MW) solar power plant among the plants utilizing existing buildings. The plant reduces 13,000 tons of CO<sub>2</sub> per year with the effect of planting a 1,800ha forest. In addition, it plays significant role in supplying reliable energy to the 7,500 households in nearby Myeongji New City.



## Selected by Ministry of Environment as a Leading Environmental Company

KC Cottrell's business performance and technological excellence as well as its competency in global environmental markets was recognized and thus selected as a leading environmental company by the Korea Environmental Industry and Technology Institute. Total 82 companies applied for selection process as leading environmental companies, in which only ten companies were selected in 8:1 competition. We received a certificate at the Excellent Environmental Company Awards Ceremony hosted by the Ministry of Environment on July 26th, and will receive various benefits such as funding and consulting.



## First Export of Glass Bubble Frits

KC Glass & Materials began production of Glass Bubble Frits, a new energy conserving material, in July and made its first export in August. Exports to the US began on August 21st. The Glass Bubble Frits exported are to go through final production process and to be used for light-weight filling materials such as construction sealants, artificial wood and plastics for automobiles. Based on the production experience of this advanced material, KC Glass & Materials will strive to evolve one step further.

## Knowledge Management System, K-ONE Opened

KC Cottrell officially launched K-ONE, the Knowledge Management System, in July and held the 'K-ONE Grand Open' ceremony on July 20th. K-ONE is nurturing knowledge management culture in KC Cottrell, accumulates knowledge and shares with all employees to strengthen core capacities of employees and to improve engineering & production efficiency.



## Acquisition of Environmental Management System ISO 14001

In order to execute systematic environment management, KC Green Holdings is working on acquiring environmental management system certifications enacted by ISO (International Standards Organization). By having each of the subsidiaries acquire ISO 14001, KC Green Holdings aims at continuous environmental improvement activities and systematic environmental management. KC Honam Environment received ISO 14001 certification in 2012, and thus ten subsidiaries including KC Cottrell (including manufacturing plant), Lodge Cottrell, KC Enviro Services, and KC Glass & Materials have received ISO 14001 certifications.

## Order for Samcheok Green Power Electric Dust Collector Units 1 and 2

In October, KC Cottrell won an order for the Samcheok Green Power Units 1 and 2 dust collectors worth 48 MM USD from Korea Southern Power Company. Samcheok Green Power dust collector project involves dust collectors in the world's first 1,000MW CFBC (Circulating Fluidized Bed Combustion) boiler. CFBC boilers, which are receiving more attention as an environment-friendly equipment with high energy efficiency and low CO<sub>2</sub> emissions, do not require desulfurization system. This project will give KC Cottrell a reference of dust collector for the world largest CFBC boiler and will also provide solid market reputation.



## Construction of World's First and Largest Dry CO<sub>2</sub> Capture Plant

KC Cottrell began construction of the world's first and largest 10MW Dry CO<sub>2</sub> capture plant at the Hadong Thermal Power Station for its post-combustion dry CO<sub>2</sub> capturing technology. Especially, KC Cottrell's system design is recognized as innovative technology which will make a breakthrough in the carbon capture and storage (CCS) sector.



## Execution of 5S Movement

In 2012, KC Cottrell is continuing the 5S Movement which began in November 2011. The 5S Movement is a management innovation movement to improve productivity and reduce costs. Currently, eleven designated 5S-Sectors are being exercised every month and reports are made to the operation committee.



## Achieved Quintuple Period of No-Accident Target (1,590 days)

KC Glass & Materials achieved quintuple period of no-accident target (1,590 days) in July. In 2012, KC Glass & Materials held nine safety training sessions and a regular safety instruction audit on November 12th and 13th. Safe management is being emphasized not only in KC Glass & Materials, but all subsidiaries. KC Cottrell, KC Enviro Services, and other subsidiaries conduct safety training and regular safety training audits.

## Acquisition of Safety and Health Management System Certification (KOSHA18001)

KC Hanmi Environment acquired KOSHA 18001, a safety and health management system certification of KOSHA in November. Thus, KC Cottrell (head office and Anseong plant), KC Glass & Materials, Clestra Hauserman and KC Hanmi Environment are now KOSHA 18001 certified. In addition, KC Cottrell (head office and Anseong plant) and KC Enviro Services are also certified for OHSAS 18001.





Introduction of Company

Overview

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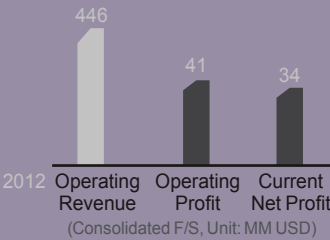
Status of Company

KC Green Holdings is a holding company focusing green and environmental industries, administering over thirty subsidiaries in the four business sectors: environmental engineering, environmental services, environmental manufacturing, and renewable energy. KC Green Holdings was listed on the Korean Stock Exchange on November 5, 1994. On January 1, 2010, it was converted to a holdings company by separating the environmental engineering sector and investment sector. KC Green Holdings develops new businesses and conducts marketing, business coordination and mediation, as well as evaluation and audits of management performances to promote qualitative and quantitative expansion of the company and autonomous management of subsidiaries.

Since its establishment in 1973, it has led innovative environmental technologies in the domestic Air Pollution Control and Environmental Service businesses and has grown into Korea’s top environmental company that provides technical solutions and services in various environmental sectors such as air pollution control, water treatment, renewable energy, recycling of various industrial wastes, and environmental consulting. Subsidiaries of KC Green Holdings such as KC Cottrell and Lodge Cottrell are being operated as environmental companies in different parts of the world including Korea, UK, USA, China, Vietnam, India and Taiwan. We will continue to make utmost efforts in technological development and pioneering the market to make KC Green Holdings into a Global Green Environmental Company with ‘People and Technology that Protects the Global Environment’.

Company Overview

Company Name	KC Green Holdings Co., Ltd.
Date of Foundation	November 27, 1973
CEO	Lee, Tae Young
Head Office	151 Yanghwa-Ro, Mapo-Gu, Seoul, Republic of Korea
Major Businesses	Holding company specializing in environmental & green businesses
Credit Rating	A- (NICE Credit Information Services as of December 2012)



Mission and Vision

Mission

We are committed:

To embrace talented people with positive thinking;  
To expand and explore Green / Environmental Business opportunities  
Through development and growth of our employees and therefore  
To contribute to the sustainable growth of the global society.

Our growth, Green growth & Sustainable future of global society...!

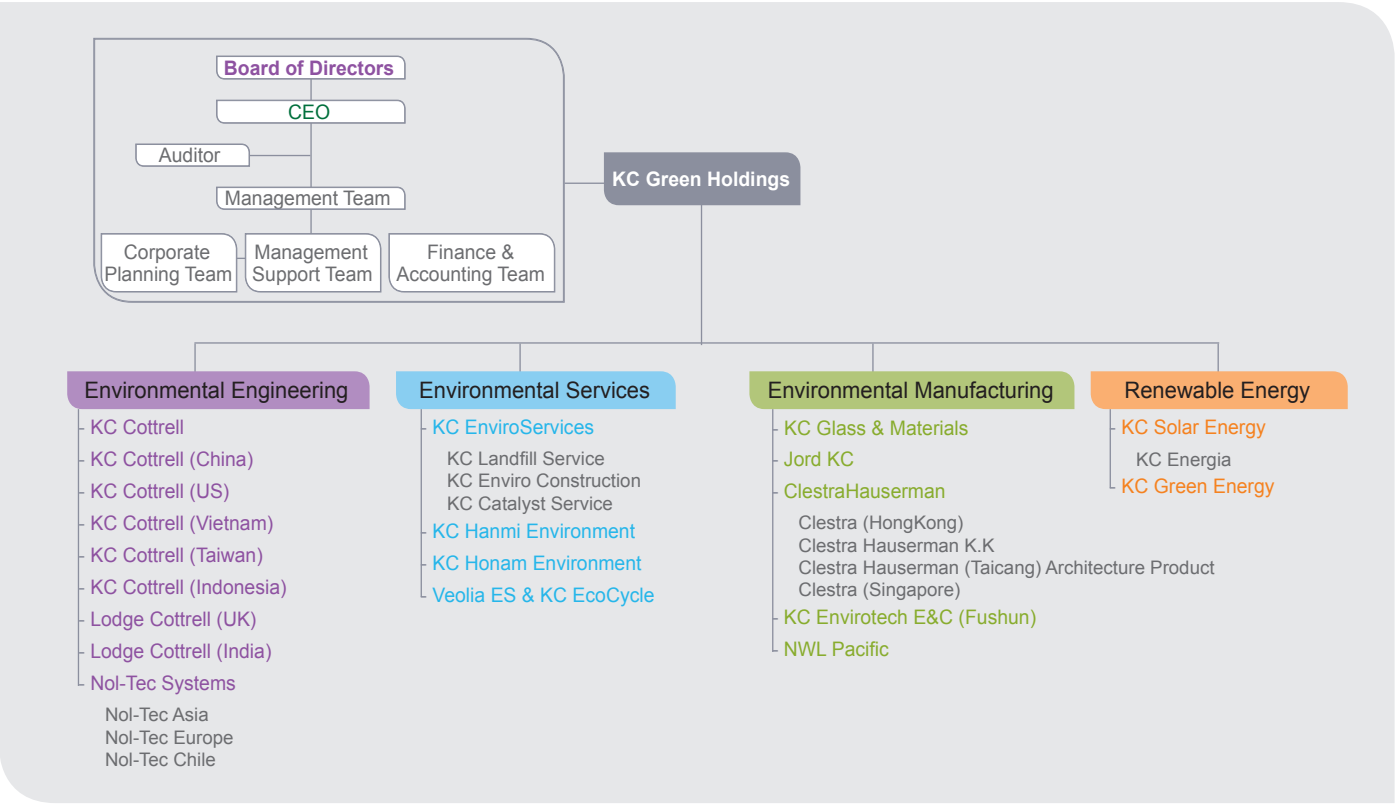
Vision

KC Green Holdings, as a holding company in the Green / Environmental business area, is committed to promote synergies among KC Network companies. Based on our solid APC business, we strive to explore synergies with Eco-friendly Green Business and Renewable Energy Business. Our target is to achieve USD 1 Billion revenue from our green business portfolio by 2023, and to build a transparent and solid business group in the Green / Environmental Business Area.

We will continue to grow to be a leading company in the Global Green Business with open communication, leadership by everyone, and mutual respect. To achieve our goal, we share effectively technologies and resources among KC Network companies, explore new business opportunities in diverse markets and build close horizontal communication channels among our global entities.

Organization

KC Green Holdings,organized with management team, planning team, support team, and finance team, administers its over thirty (30) environmental / green businesses in four business sectors.



# History



- 1990 Changed name to Korea-Cottrell  
Established branch in Taiwan  
Received Taiwan Talin / Hsinta ESP order
- 1993 Awarded at the 1st ChosunIlbo Environment AWARDS (environmental science technology sector)
- 1994 Became the first environmental company to be listed on the Korean Stock Exchange
- 1995 Completed construction of head office building  
Received Dangjin Fire Plant FGD order

**1990**

- Mr. Lee, Tae Young appointed as CEO
- Established KC Enviro Services
- Received China Shijiazhuang Fire Plant ESP order

**2000**

- Established KC Landfill Service
- Established Jord KC

**2003**

**1996**

- 1996 Acquired ISO9001 certification
- 1998 Received Nippon Steel Corporation Kamaishi Power Plant ESP order  
Transferred Factory to Ansung
- 1999 Awarded Korea's Silver Medal of Industry award

**2002**

- Established KC Cottrell (China)



- Acquired Lodge Cottrell (UK)
- Received order for POSCO Gwangyang Steel sinter exhaust gascleaning system
- Established KC Solar Energy
- Established KC Envirotech E&C(Fushun)

**2005**



The view of KC Glass & Materials

- Received order for Formosa Texas GSA FGD
- Acquired KC Glass & Materials
- Acquired KC Enviro Construction
- Acquired ISO 14001 certification
- Selected as company that contributed in the development of outstanding capital goods

**2007**

**2006**

- Established Veolia ES & KC EcoCycle
- Established KC Cottrell (US)
- Awarded Minister of Environment Award

KC GreenHoldings  KC Cottrell 

- Split company to a holding company of KC Green Holdings and the environmental company of KC Cottrell
- Entered wind power business as JV with Invall (KC Green Energy)
- Acquired Nol-Tec Systems
- Selected as Korean Hidden Champion fostering industry company (Export-Import Bank of Korea)
- POSCO World Best World First product development agreement

**2010**

- Acquired KC Hanmi Environment
- Changed name to KC Cottrell
- Acquired KC Energia

**2008**

**2009**

- Established KC Cottrell (Vietnam)
- Established Lodge Cottrell (India)
- Established KC Green Energy
- Acquired shares of NWL Pacific



- Established KC Cottrell (Taiwan)
- Opened KC Cottrell (Indonesia) Branch Office
- KC Cottrell selected as leading environmental company by Korea Environmental Industry & Technology Institute
- KC Solar Energy and KC Cottrell constructed 20MW Busan-Shinho Solar Power Generation Plant
- KC Honam Environment certified ISO 14001 (environmental management system)
- KC Glass & Materials completed production line for Glass Bubble Frits
- Introduced the knowledge management system, K-ONE
- Published Sustainability Report

**2012**

**2011**

- Acquired KC Honam Environment
- KC Cottrell acquired Korea Solar Holding Company
- Established Busan-Shinho Solar Power Generation



# Global KC Green Holdings

Holding Company	
KC Green Holdings	<div><div>- Holding company specializing in environmental and green industries</div><div>- Developing new businesses, marketing, business mediation, management performance evaluation and auditing</div><div><div><div></div></div>151 Yanghwa-Ro, Mapo-Gu, Seoul</div><div>Tel +82 2 320 6114 / www.kcgreenholdings.com</div></div>

Environmental Engineering Sector	
KC Cottrell	<div><div>- Design, Manufacturing and Installation of dust collection systems, flue gas desulfurization systems, NOx removal systems, De-Dioxin systems and etc.</div><div>- Design, Manufacturing and Installation of ash handling systems, environmental equipment and environmental industry machinery</div><div>- Technical consulting services and new &amp; renewable energy businesses</div><div>- Transport and Treatment of sewage and industrial wastes</div></div>
	<div><div><div><div></div></div>151 Yanghwa-ro, Mapo-gu, Seoul</div><div>Tel +82 2 320 6114 / www.kc-cottrell.com</div></div>
KC Cottrell (China)	<div><div>2 Anseong Plant : 253 SeowoonsHINGI-gil, Seowoon-myeon, Anseong, Gyeonggi-do</div><div>Tel +82 31 674 9660</div></div>
	<div><div>4 No.9576 Donghuancheng Rd., Changchun Economy &amp; Development Zone, Changchun City, Jilin Province, 130033, P.R.China</div><div>Tel +86 431 8587 7500 / www.cckc.com.cn</div></div> <div><div>4 Beijing Office : Unit 12A05, Kunsha Center 12/FL, No.16 Xingyuanli Road Chaoyang Dist Beijing, 100027, P.R. China</div><div>Tel +86 10 8460 8738</div></div>
KC Cottrell (US)	<div><div>6 Houston HQ : 2319 Timberloch Place, suite E, The Woodlands, TX 77380, USA</div><div>Tel +1 281 465 9498 / www.lodgecottrell.us</div></div>
	<div><div>6 NJ Office : 8 Bartles Corner Road, Suite 204, Flemington, New Jersey 08822</div><div>Tel +1 908 923 0700</div></div>
KC Cottrell (Vietnam)	<div><div>7 Fl. 3rd. SIMCO Building 28 Pham Hung Street Tu Liem district, Hanoi, Vietnam</div><div>Tel +84 3 3768 9904~5 / www.kc-cottrell.com.vn</div></div>
KC Cottrell (Taiwan)	<div><div>1 14F-5, No 77, Sec1, Xintai 5th Rd, Xizhi Dist, New Taipei City 221, Taiwan</div><div>Tel +886 2 2698 8300</div></div>
KC Cottrell (Indonesia)	<div><div>9 Patra Jasa Building 10th Floor Suite 1023 Jl.Gatot Subroto Kav. 32-34, Jakarta 12950 Indonesia</div></div>
KC Cottrell (Kazakhstan)	<div><div>10 Office 2, Sector 4A, Business Center "Nurly Tau" Al-Farabi Str. Almaty City, Republic of Kazakhstan.</div><div>Tel +7 705 731 8583</div></div>
Lodge Cottrell	<div><div>- Design, Manufacturing and Installation of dust collection systems, flue gas desulfurization systems, NOx removal systems, De-Dioxin systems and etc.</div><div>- Design, Manufacturing and Installation of ash handling systems and environmental industry machinery</div><div>- Technical Consulting and Maintenance Services for Pollution Control Facilities</div></div>
Lodge Cottrell (UK)	<div><div>11 Trinity Point East Halesowen B63 3HY United Kingdom</div><div>Tel +44 121 504 9200 / www.lodgecottrell.com</div></div>

Lodge Cottrell (India)	<div><div>12 Suite No. 502-504, 5th Floor, Tower B, Spazedge Bldg, Sector 47, Sohna Rd, Gurgaon, Haryana - 122002, India</div><div>Tel + 91-124-487-4818</div></div>
Lodge Cottrell (India) Engineering Center	<div><div>12 4th Floor, Ashram Bldg, GN/34/2, Sector 5, Salt Lake, Kolkata, West Bengal -700091, India</div><div>Tel : +91-33-4015-8209</div></div>
Nol-Tec Systems	<div><div>- Design, Manufacturing and Installation of Pneumatic Conveying system compound /loading system</div><div>- Design, Manufacturing and Installation of Dry SOx Removal, Mercury Removal and Ash Handling Systems</div><div>14 425 Apollo Drive Lino Lakes, MN 55014, USA</div><div>Tel +1 651 780 8600 / www.nol-tec.com</div></div>
Nol-Tec Europe	<div><div>15 Via Milano 20064 Gorgonzola (MI), Italy.</div></div>
Nol-Tec Asia	<div><div>15 No.10. Admiralty Street #02-14 Northlink Building Singapore 757695</div></div>
Nol-Tec Chile	<div><div>16 Avenida 11 de Septiembre 1881 Oficina 1910, Comuna Providencia, Ciudad Santiago. Chile</div></div>

Renewable Energy Sector	
KC Solar Energy	<div><div>- Solar power Project Solution Provider</div><div>- Solar power business development and operation, solar power system design, construction and O&amp;M services</div><div>1 253 SeowoonsHINGI-gil, Seowoon-myeon, Anseong, Gyeonggi-do</div><div>Tel +82 2 320 6123</div></div>
	<div><div>- Solar power generator construction, production of solar cells, hybrid inverters and EV chargers, and electrical construction</div><div>2 191 Donggyo-ro, Mapo-gu, Seoul</div><div>Tel +82 2 2613 6779 / www.kc-energia.com</div></div>
KC Energia	<div><div>- Solar power generator construction, production of solar cells, hybrid inverters and EV chargers, and electrical construction</div><div>2 191 Donggyo-ro, Mapo-gu, Seoul</div><div>Tel +82 2 2613 6779 / www.kc-energia.com</div></div>
KC Green Energy	<div><div>- New &amp; renewable energy business, design, construction, business consulting, and R&amp;D (independent power systems)</div></div>
	<div><div>6 4th Floor, 151 Yanghwa-ro, Mapo-gu, Seoul</div><div>Tel +82 2 320 6296</div></div>

Environmental Services Sector	
KC Enviro Services	<div><div>- Treatment of wastes (incineration), waste heat (steam) supply, regeneration of waste catalysts, stabilization for landfill smells</div><div>1 Yeosu National Industrial Complex, 310-73 Jindallae-gil, Yeosu, Jeonnam</div><div>Tel +82 61 685 4148 / www.kc-enviro.com</div></div>
KC Landfill Service	<div><div>- Final treatment of wastes (landfill)</div><div>2 Office : Metro Plaza 607, 3706 Byeongjeom-ro, Hwaseong, Gyeonggi-do</div><div>Site : 17-25 Chilgok-ri, Songsan-myeon, Hwaseong, Gyeonggi-do</div><div>Tel +82 31 267 3400 / www.kc-enviro.com</div></div>
KC Enviro Construction	<div><div>- Collect, transport and treatment of construction wastes, dismantling of asbestos, sand production, manufacturing wastes for recycling</div><div>- Specialized construction business (scaffold, structure dismantling / civil works)</div><div>4 Head Office : 36 Jocho 4-gil, Gunsan, Jeollabuk-do / Tel +82 63 452 9201</div><div>Yeosu Branch : 310-75 Jindallae-gil, Yeosu, Jeollanam-do</div><div>Tel +82 61 682 0188 / www.kc-enviro.com</div></div>
	<div><div>- SCR waste catalyst regeneration</div><div>4 Unit 12A05, Kunsha Center 12/FL, No.16 Xingyuanli Road Chaoyang Dist Beijing, 100027, P.R. China</div><div>Tel +86 10 8460 8738</div></div>
KC Hanmi Environment	<div><div>- Treatment of wastes (incineration), sewage treatment, waste oil treatment</div><div>6 103 Jayumuyeok 6-gil, Hoewon-gu, Masan, Changwon, Gyeongnam</div><div>Tel +82 55 251 7272 / www.kc-enviro.com</div></div>
KC Honam Environment	<div><div>- Collection, transportation and treatment (incineration) of wastes, treatment of construction wastes</div><div>- Supply recovered heat and steam, production and sales of recycled aggregates</div><div>6 77-9 Yangma-ro, Deokjin-gu, Jeonju, Jeollabuk-do</div><div>Tel +82 63 212 5261 / www.kc-enviro.com</div></div>
	<div><div>- Treatment of wastes</div><div>- Collection of flammable wastes (waste plastic, vinyl, paper) and production of solid fuels (Fluff RDF, RPF)</div><div>7 88 Ilshin-Ro Ganam-Myeon, Yeoju-Gun, Gyeonggi-Do</div><div>Tel +82 31 884 4007 / www.kc-enviro.com</div></div>
Veolia ES & KC Ecocycle	

Environmental Manufacturing Sector	
KC Glass & Materials	<div><div>- Production and sales of glass bottles, production and sales of Glass Bubble Frits, technical consulting for glass, roof-type solar power generation</div><div>1 1150 Seongjin-ro, Ipgang-myeon, Seobuk-gu, Cheonan, Chungcheongnam-do</div><div>Tel +82 41 585 9901 / www.kcglass.co.kr</div></div>
Jord KC	<div><div>- Air Cooled Heat Exchange / ACC / heat exchanger and other mechanical equipment manufacturing</div><div>2 Suite 609, 28 Hwangsaewool-ro, Bundang-gu, Seongnam, Gyeonggi-do</div><div>Tel +82 31 786 0873 / www.jord.com.au</div></div>
Clestra Hauserman	<div><div>- Portable partitions, ceiling materials, clean room business, office interior business</div><div>6 KTCU Building 9th Floor, 50 Yeoinaru-ro, Yeongdeungpo-gu, Seoul</div><div>Tel +82 2 784 6274 / www.clestra.com</div></div>
Clestra (HongKong)	<div><div>4 11/F The Hennessy, 256 Hennessy Road, Wanchai, Hong Kong</div><div>Tel +85 2 2506 1681 / www.clestra.com</div></div>
Clestra Hauserman K.K	<div><div>6 Harajuku Miwa B/D 3-53-3 Sendagaya, Shibuyaku Tokyo 151 JAPAN</div><div>Tel +81 3 3423 4681 / www.clestra.com</div></div>
Hauserman (Taicang) Architectural Product	<div><div>6 No. 8 South Xingye Road, Taicang Economic Development Area Jiangsu Province, China 215400</div><div>Tel +86 512 5363 2828 / www.clestra.com</div></div>
Clestra (Singapore)	<div><div>7 No.1 Boon Tat Street - #02-03 Singapore 069611</div><div>Tel : +65 6836 2563 / Fax: +65 6256 9590</div></div>
KC Envirotech E&C (Fushun)	<div><div>- Manufacturing and Installation of dust collection systems, flue gas desulfurization systems, NOx removal systems, De-Dioxin systems and etc.</div><div>- Manufacturing of steel structures and Silo &amp; Storage Tanks</div><div>8 ChuagXin Second Road, Fushun City, Liaoning Province, China</div><div>Tel +86 413 265 5507</div></div>
NWL Pacific	<div><div>- Production and sales of Transformer-Rectifier and power device for plasma that supplies power to Electrostatic Precipitators</div><div>8 253 SeowoonsHINGI-gil, Seowoon-myeon, Anseong, Gyeonggi-do</div><div>Tel +82 31 672 6240 / www.nwlpacific.co.kr</div></div>

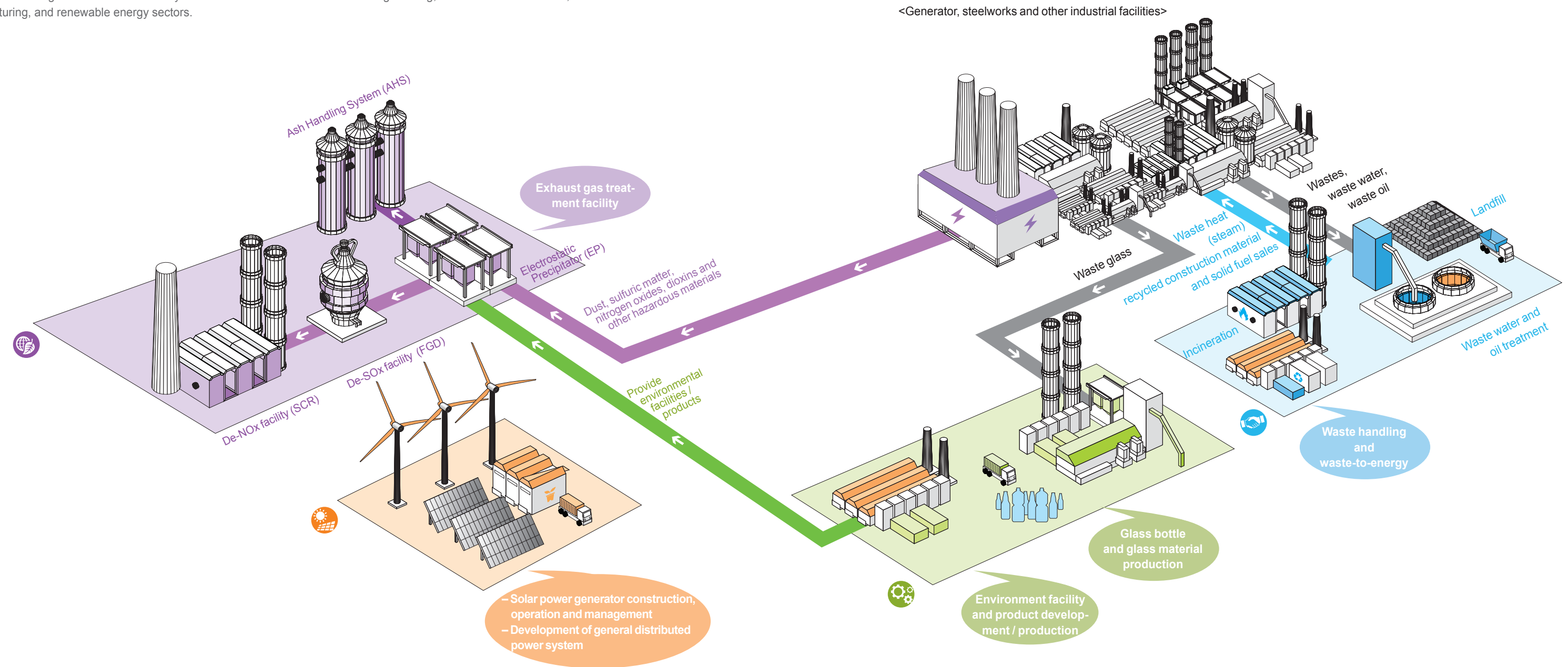
(Unit: MM USD)

No	Country	Project Sales
1	Korea	230.1
2	Saudi Arabia	40.6
3	India	32.1
4	Kazakhstan	11.5
5	Indonesia	11.3
6	Turkey	11.1
7	Taiwan	10.8
8	Vietnam	13.2
9	China	4.2
10	Thailand	2.2
11	Morocco	1.9
12	Philippines	1.3
13	Dubai	1.2
14	Australia	0.9
15	Brazil	0.8
16	Malaysia	0.7
17	Iraq	0.5
18	Algeria	0.4
19	Nigeria	0.4
20	Peru	0.3
21	Japan	0.2
22	USA	58.2
23	England	11.9
24	Other Countries*	0.7

\* Myanmar, Oman, Bahrain, Pakistan, Bolivia, Singapore, Chile, Barbados, Netherlands

# Major Businesses

KC Green Holdings oversees about thirty subsidiaries in the environmental engineering, environmental services, environmental manufacturing, and renewable energy sectors.



## Environmental Engineering

The environmental engineering business sector provides high quality environmental facilities based on accumulated technologies and experiences in order to sustainably manage and preserve pleasant environments and protect the health of humanity from environmental pollutants. Especially with the global interest and demands on more stringent control over air and water pollution, we are designing a future to contribute in the development of the environmental industry through close cooperation with KC Network companies around the world. The environmental engineering sector is continuously striving to make a clean environment for the world we live in.



## Renewable Energy

With the Kyoto Protocol, countries around the world are focusing on investing stable energy supplies amidst stricter greenhouse gas reduction responsibilities and the continuing high oil prices. Renewable energy is the focal point of attention as a solution of environmental issues and as a new source of energy. In its efforts to meet this business environment change, the renewable energy sector is concentrating on technology R&D that can utilize environment-friendly energy resources.



## Environmental Manufacturing

The environmental manufacturing sector is working on developing technologies and manufacturing products for environmental protection together with KC Network companies. In addition, by listening to the demands of customers and the market, it is solidifying cooperation with KC Network companies in order to become a key player in the environmental manufacturing sector that realizes high levels of satisfaction. The environmental manufacturing sector does not simply make and sell products, but continuously strives to contribute in improving the health of society and people, as well as in constructing a pollution-free society.



## Environmental Services

Wastes are mostly treated by landfill or incineration, while some are recycled. However, it not only costs a lot, but it can also cause secondary environmental pollution in the soil, water or air during the treatment process. Thus, Environmental services sector is focusing on safe and lawful treatment of wastes, as well as turning wastes into valuable resources through recovering heat to steam energy, using waste discharges as fuel, and recycling waste catalysts. We are exercising environmental management through continuous comprehensive environmental management systems in order to pass on an unpolluted environment to our future generations.

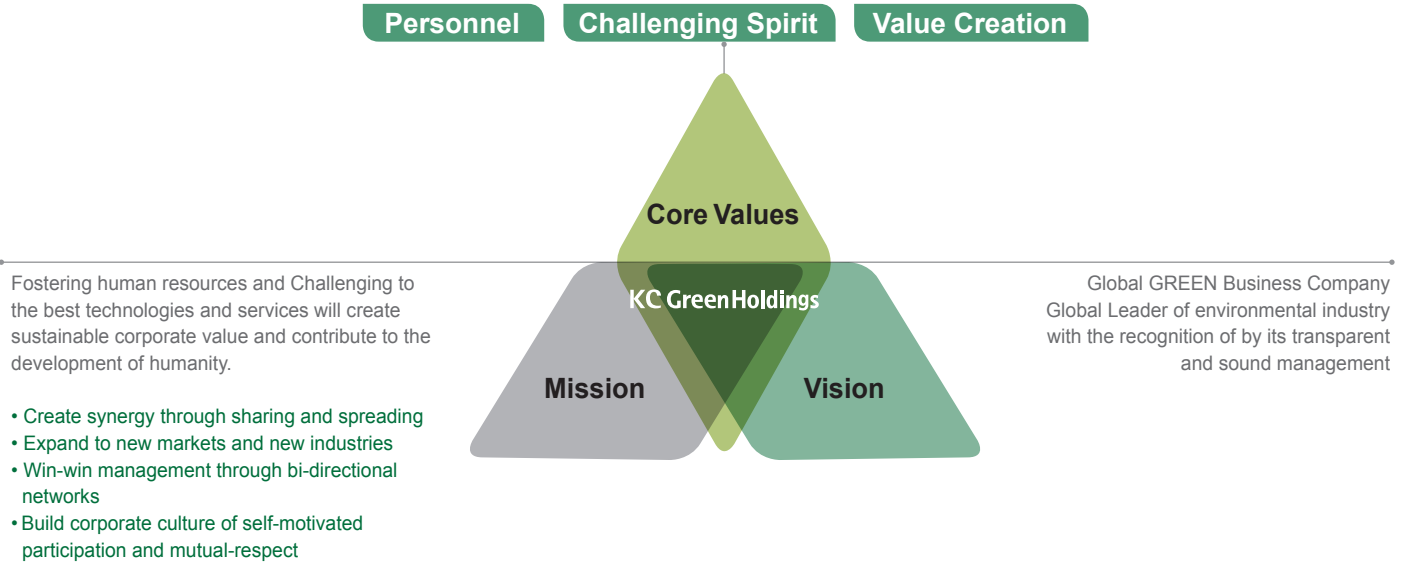


# KC Green Holdings Sustainability

15 Sustainable Management / 16 Stakeholder Communication / 17 Ethical Management / 18 Governance / 19 Risk Management



## Sustainable Management



7 Main Issues of Sustainable Management						
Economic		Environmental		Social		
Value Creation	Innovative Management	Environment-friendly Business	Environmental Pollution Management	Mutual Growth	Fostering Personnel	Social Contribution
<ul style="list-style-type: none"><li>• Management performance / Product Quality Guarantee</li><li>• New businesses</li><li>• Governance</li></ul>	<ul style="list-style-type: none"><li>• R&amp;D</li><li>• Innovation activities</li><li>• Risk management</li><li>• Knowledge management</li></ul>	<ul style="list-style-type: none"><li>• Environmental management system</li><li>• Environmental technologies</li><li>• Use of sustainable resources</li><li>• Renewable energy</li></ul>	<ul style="list-style-type: none"><li>• Pollution prevention</li></ul>	<ul style="list-style-type: none"><li>• Win-win cooperation</li><li>• Fair competition</li><li>• Ethical management</li><li>• Product responsibility</li><li>• Customer happiness</li><li>• Participation of stakeholders</li></ul>	<ul style="list-style-type: none"><li>• Family-friendly management</li><li>• Employee health and safety</li><li>• Training / Education</li></ul>	<ul style="list-style-type: none"><li>• CSR</li><li>• Social contribution activities</li></ul>

2013 Sustainable Management Goals

- Develop / apply communication methods with stakeholders
- Establish long-term CSR program execution plan
- Efforts to increase awareness of sustainable management
- Convey vision and mission to all subsidiaries and set sustainable management goals and tasks


Business Group Goals			
Environmental Engineering	Environmental Services	Environmental Manufacturing	Renewable Energy
<ul style="list-style-type: none"><li>• Develop and manufacture environmental air pollution control facilities for sustainable global environment</li><li>• Expand Waste-to-Energy Business</li></ul>	Waste and sewage treatment system which restores nature in safe and clean manner	Develop and manufacture high efficiency and high performance environmental equipment	Develop environment-friendly renewable energy for the future environment

# Stakeholder Communication

KC Green Holdings communicates with various stakeholders in Korea and in overseas. Major stakeholders are shareholders, client companies, partners, employees, the community, environment and government. KC Green Holdings has constructed various communication channels per stakeholder as a window for communication in order to listen to the opinions of stakeholders and to identify their needs. We will comprehensively analyze the opinions of inside and outside stakeholders and reflect them in the sustainable management of KC Green Holdings.


## Stakeholder Communication Channel

### Client Companies




- Regular Notification of Quarterly and Term Audit Report
- Customer Satisfaction Census
  - KC Cottrell, quarterly customer satisfaction census
  - Lodge Cottrell (UK)
- Workshop (conducted by each subsidiary)
  - KC Glass & Materials, quarterly client company quality management workshop
  - KC Cottrell (Vietnam), KC Honam Environment
- Joint R&D with Client Companies (KC Cottrell)
  - Technical agreement with POSCO, Joint technological development with Alantum, CCS development with KEPCO and its 5 subsidiaries (West, Central, Southeast, South and Southwest)
- Pre & Post services (system diagnosis and maintenance services)
- Business inspection meeting and visitations (Nol-Tec Systems)
- KC Newsletter
- Brochure
- Sustainability Report
- SNS –Facebook (Clestra Hauserman)

### Employees




- Workshop (conducted by each subsidiary)
  - Executive workshop, working-level workshop
  - Regular report per 4 business sectors
  - Business division workshop
- Monthly meeting / Regular executive meeting / team leader & group leader meeting
- Quarterly and term management seminar
- Quarterly meeting (KC Enviro Services, Nol-Tec Systems)
- Year-end seminar (KC Cottrell (China))
- Labor-management meeting
- KC Newsletter
- Knowledge management system – Suggestion management, Forum discussion (KC Cottrell, all year round)
- Operation of suggestion system and awards (Lodge Cottrell (India))
- Sports day and Outings per business division or subsidiary
- In-company online bulletin board
- In-company club activities
- Employee training per subsidiary (safety, fire prevention, work training, etc)

### Partners




- Partner meeting
  - Clestra Hauserman, quarterly construction quality meeting
  - KC Glass & Materials, quality improvement meeting (regular)
  - Lodge Cottrell (UK), Product design forum
  - Jord KC, regular meeting (minimum twice a month)
- Mutual growth workshop (KC Glass & Materials, minimum once a year)
- Technical session (Environmental engineering sector, annual)
- Sports event with partner companies and sponsor partner companies' events (Environmental services sector)
- Training program (Nol-Tec Systems, education session 'lunch and learn')
- K-ONE GCoP (Global Community of Practice) (KC Cottrell, year-round)

### Shareholders




- KC Green Holdings corporate board meeting
- Management announcement (year-round)
  - Homepage
- Business report (Quarterly, half-year)
- Performance announcement (year-round)

### Government



- Participate in government-sponsored institute activities
  - Environmental Industry Association, etc
- Participate in meetings and seminars
  - Convey opinions such as presenting direction for national strategies
- Suggestions related to softening of regulations
  - Cheonan City Hall (KC Glass & Materials)
- Participate in technological forum for improving Ministry of Environment's waste management program (KC Hanmi Environment, monthly)

### Environment



- Environment and Climate Committee
- Environment exhibition and expo (year-round)
- Community environment-improvement activities (KC Glass & Materials, waste glass collection activities)

# Ethical Management

KC Green Holdings enacted the Ethical Management Code of Conduct in July 2011 and is striving to create transparent corporate culture. The code of conduct is distributed to all KC Network companies and enterprise-wide ethics training is scheduled so that all members can be fully aware and exercise the contents of ethical management.

Ethical management is being exercised by each subsidiary in day to day operations. For instance, KC Glass & Materials announced its ethical management policies at a workshop with partner companies and is listening to the difficulties from them. Also, Lodge Cottrell (India) encourages partner companies to draft consent forms and confidentiality agreements related to ethical management in its efforts to exercise ethical management from the early stage of projects.

## Ethical Management Implementation Status

Business Sector	Subsidiary	Training Name	Hours (sessions)	No. of participants
Environmental engineering sector	KC Cottrell (US)	Employee Handbook, Sections 4.01 and 4.02 Behavior Guidelines	4(2)	12
Environmental services sector	KC Hanmi Environment	Business transparency with stakeholders Respect company's property rights	2(2)	42
Environmental manufacturing sector	KC Glass & Materials	Sexual harassment prevention training and training on prohibiting discrimination against the disabled	3(3)	124

## Code of Conduct : Ethical Management

### 1. Observance of law, ethics and company policies

- 1) KC Green Holdings shall respect fundamental values of principles and observe international standards and laws in order to be a reliable and respectable company.
- 2) Respect human dignity.
- 3) Ensure fair competition within the boundary of law.
- 4) Maintain and manage accurate accounting and records.
- 5) Do not be politically involved and during political activities, abide by the law.

### 2. Maintain clean and fair corporate culture

- 1) Bribes and inappropriate contributions among stakeholders are forbidden.
- 2) Company funds shall be executed in a transparent manner according to principles.
- 3) Respect and protect the property rights of the company and others.
- 4) Maintain cooperative business relationships focusing on mutual growth.
- 5) Establish a healthy and sound organizational atmosphere.

### 3. Respect customers, stockholders and employees

- 1) Place utmost priority on management activities that give true value to customers.
- 2) Pursue management to bring profits to shareholders.
- 3) Strive to give opportunities of self-development for all the employees of the organization.

### 4. Environment and people centered management

- 1) Value sustainable and environment-friendly management.
- 2) Put the first priority on the safety and health of humanity based on the management philosophy of Respect for Human.



# Governance

## Board of Directors

The board of directors of KC Green Holdings is made up of five members – three (3) inside directors, one (1) outside director and one (1) auditor. The board of directors has the authority as the top decision-making organization and directors execute their duties based on the company bylaws according to commercial laws. The directors are appointed at the general shareholders meeting and the salary ceiling of the board of directors is determined at the general shareholders meeting as well.

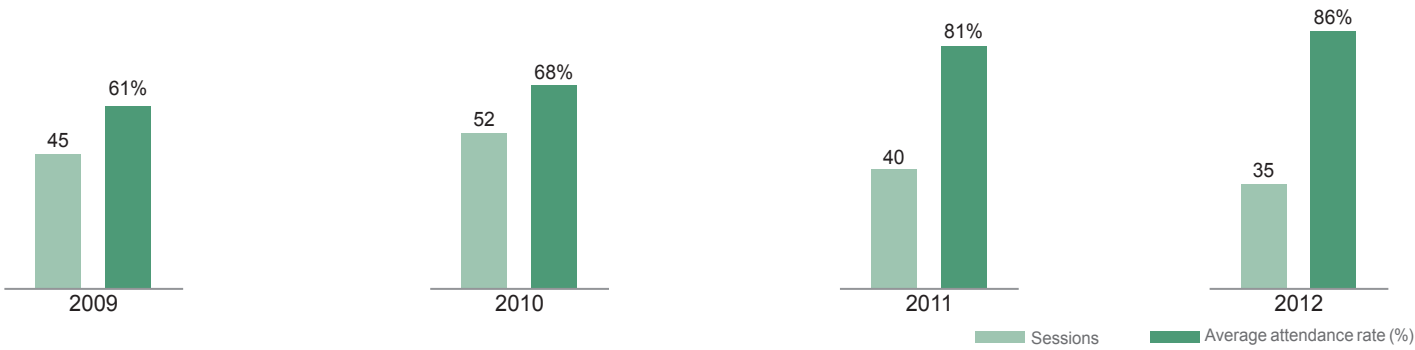
The auditor is in charge of auditing the accounting and operations of the company in order to ensure transparency and lawfulness in management. Appropriate auditing procedures are being applied, such as perusing records and documents for major duties to fulfill auditing operations, thus allowing the auditor to access management information.

In 2012, total of 35 board meetings were held and main topics discussed were on the appointment of the CEO, joint guarantee of loans, and capital investments in other corporations.

## Composition of Board of Directors

Section	Name	Gender	Background	Remark
Inside Director	Lee, Tae Young	Male	CEO of KC Green Holdings CEO of KC Cottrell Simon Fraser University MBA Seoul National University Department of Business Administration	Chair
	Seo, Dong Young	Male	Samsung Electronics ('87 ~ '92) Seoul National University Department of International Economics (Masters) Seoul National University Department of International Economics	Full-time
	Kim, Jeong Wan	Male	CEO of KC Glass & Materials Former executive at KPMG Former director at Korean Air Seoul National University Department of Business Administration (Masters)	Full-time
Outside Director	Lee, Jae Gyeong	Male	Current Professor of Business Administration at Kookmin University Former outside director for Korea Investment & Securities Former outside director at Golden Bridge Mutual Savings Bank	Not full-time (Newly appointed in March 2013)
Auditor	Kim, Jong Ryeol	Male	Current business of energy industries feasibility assessment committee member for the Ministry of Knowledge Economy Current professor at the Hanyang University Graduate School of Engineering Former director of the Hanjin Telecommunications Business Administration Office Formerly worked at Korean Air in Japan Former team leader for financial risk at the Hanjin Group Management Mediation Office Hoseo University of Information management (PhD in business administration) Inha University Business School MBA Chungang University Business Administration Department	Full-time

## Board of Director Meetings Held



# Risk Management

KC Green Holdings categorizes risk types per subsidiary and carries out various risk management activities. Risks can be in different ranges depending on the nature of each business group and some subsidiaries respond to risks from an enterprise-wide perspective such as technology / information, finance, personnel, customers / investors, etc. In addition, some companies have risk management processes and exercise the processes day-to-day operation and others focus more on a proactive prevention processes.

## 4 Stage Risk Management Process



## Safety Management

KC Green Holdings developed its Crisis Response Manuals and is prepared for potential threats such as natural disasters (earthquakes, typhoons, etc), industrial disasters, fires, blackouts and etc. Safety management training is held annually / quarterly / monthly to all employees of subsidiaries, and safety inspections are carried out regularly for subsidiaries with potential risk factors. Also, safety managers are designated to carry out internal and external training and the safety managers examine checklists (fire fighting facility inspection checklist, etc) quarterly. If required, Risk Management Processes are operated on going basis. KC Green Holdings, KC Cottrell and KC Glass & Materials have volunteer firefighters in their work places to respond to risk management.

## Information System Security Management

In order to protect the information system from threats such as DDoS attacks, malignant codes and viruses, KC Network companies have their own management programs to respond to those threats. In order to protect its information system, KC Green Holdings has introduced a DRM (Digital Rights Management) Solution. The DRM Solution is a technology to prevent unwanted leaks of various digital contents and KC Green Holdings applies DRM solution to protect unique expertise and technologies. KC Glass & Materials engages third party to manage the IT system security weekly basis and responds to emergencies via remote management. Also, designated ERP system, E-Count ERP, is covering overall work process. For secure and efficient operation, external training to the IT managers and 1:1 training for individual employees are being implemented.

## Financial Risk Management

Subsidiaries of KC Green Holdings are striving to respond to predictable financial risks such as currency exchange rate risks and interest rate risks. KC Green Holdings operates a risk management committee to systematically and efficiently manage various market risks. The risk management committee\* is made up of four members and acts as an advisor to help CEO make decisions related to financial risks. The main roles of the risk management committee is to review policies and procedures related to currency exchange rates, review monthly hedge ratios, and diagnose exchange rate changes. KC Glass & Materials has designated a financial manager who reports on exchange rates and interest rate changes every day, and gets training and education sessions on Financial Risk Management.

### Risk Management Committee

Chairperson	CFO
Member	Finance Team Leader
	Outside expert recommended by CEO
	Person recommended by the chairperson of risk management committee for case by case

\*KC Green Holdings

# Create Value

21 Economic Performance / 23 Innovative Management

Operation revenue  
**446** MM USD

Knowledge  
Management System,  
**K-ONE**

Credit Rating  
**A-**

## Management Performance

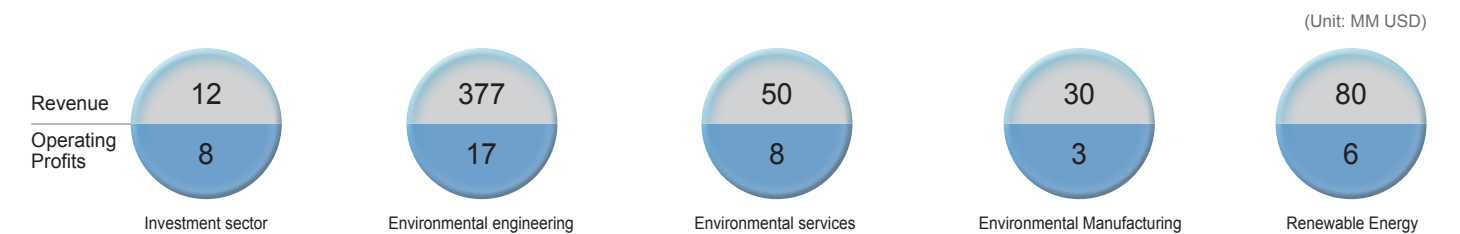
### Creation of Economic Value

Even amidst slow global economic growth following the global economic crisis, KC Green Holdings achieved revenue of 446 MM USD, which is about 13% higher than the 391 MM USD, the target number in 2012. It was possible thanks to the efforts of all the employees who strived to achieve 2012 management goals: 'Rediscover customers and markets', 'Develop effective collaboration system' and 'Enhance competitiveness of technology and personnel'. We understand the global interest on the environment is continuously growing. Thus, KC Green Holdings, as a global market leader in environment / green industry, will enhance its corporate value through various strategies from finding new customers and markets to successfully winning record-breaking orders through technological innovation.



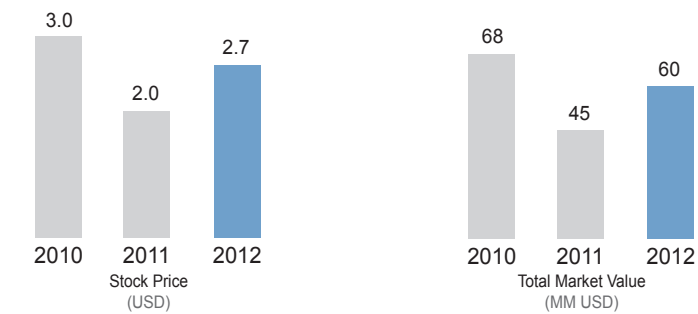
\* There is difference between the operating profits of 2010 and 2011 in 2012 Sustainability Report and those numbers in this report because Corporate Accounting Standard 1001 (revised in September 2012) was applied in advance since 2012.

### 2012 Economic Performance per Business Sector\*

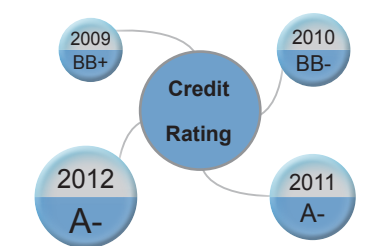


\* The revenue and operating profits are simple summation including transactions between subsidiaries as well.

### Stock Prices



### Credit Rating\*



\*NICE Credit Evaluation Information, as of end of respective years



# Innovative Management

## Creation of Indirect Economic Value

### Client Companies

35page

KC Green Holdings is striving to improve quality through development of competitive technologies in all business sectors and improvement of management systems in order to reduce the costs of client.

### Partner Companies

33page

KC Green Holdings implements mutual growth programs such as technical supports, quality control, and admin supports to partner companies including sub-contractors and sub-suppliers, as well as fair trade program such as better payment terms and conditions to small businesses.

### Employees

33page

KC Green Holdings operates employee career development programs and benefit programs under the philosophy of human-centered management. In addition, with continuous growth of company, we are striving to share the growth with employees through salary raises and bonuses to recruit and maintain talented human resources.

### Community / Environment

42page(Community) / 26page(Environment)

KC Network companies are striving to practice various social contribution activities and to creat jobs for the local communities in order to boost the communities to which the companies belong.

### Shareholders and Investors

KC Green Holdings is striving to improve shareholder / investor values by identifying needs through communication with shareholders and by maximizing corporate values through continuous sales growths and achieving profit targets.

### Government

KC Green Holdings believes active participation in various policies, including the government's environment-related policies plays important role to uplift national competitiveness. KC Green Holdings also fulfills sincere tax responsibilities.

### Distribution of Economic Values

(Unit: MM USD)

	2010 (K-IFRS)	2011 (K-IFRS)	2012 (K-IFRS)
Operating expenses	167.2	251.7	405.1
Wages and benefits	9.9	14.3	17.1
Capital expenses	4.7	4.5	5.3
Taxes and dues	2.6	5.7	11.6
Donations	0.1	0.4	0.3
Distributed economic values	184.5	276.5	439.3

- Operating expenses: Sales prices and sales management expenses  
- Capital expenses: Interest fees and dividends  
- Taxes and dues: Corporate taxes, taxes and dues, residential taxes, special rural tax

## R&D

KC Network companies pursue technology development from a company-wide aspect. Diverse R&D activities are being carried out to differentiate technologies from other competitors. Furthermore, KC Network companies are developing joint R&D projects with clients to identify customer needs proactively and to keep up our technologies to the ever-changing market demands.

R&D center of KC Cottrell is currently running many R&D projects with two (2) major goals: To advance its own technologies in existing fields to create more values and to pioneer new technologies to provide breakthrough in new environmental markets. KC Cottrell set three (3) major focus items last year, 1. Improve fundamental technologies, 2. Enhance conventional technologies in existing business fields, and 3. Explore new business area and applications. In addition, KC Glass & Materials is conducting R&D activities through its R&D process of planning → investigation → analysis → confirmation → evaluation → prototype development → review → production.

### Currently On-Going R&D Projects

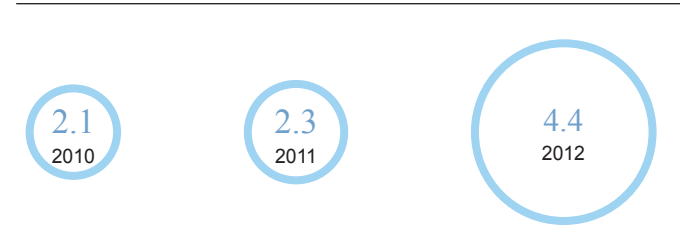
- 10MW Post-combustion dry CO<sub>2</sub> capture technology development (Nov 2010 – Sep 2013)\*
- RHDS catalyst regeneration process technology development (Jul 2011 – Jun 2016)
- In-situ type SCR catalyst regeneration process establishment (Jul 2011 – Jun 2014)\*
- Urban railway indoor air quality improvement technology development (Mar 2009 – Mar 2014)\*
- CO<sub>2</sub> dry absorbent (HAM) development (Jul 2011 – Dec 2013)
- Fe-Mn CO<sub>2</sub> absorption process development (Oct 2011 – Dec 2013)
- Seawater alkalinity concentration process development (Mar 2013 – Aug 2013)
- FGD Design factor Sensitivity test (Mar 2013 – Dec 2013)
- SCR catalyst development using metal foam (Aug 2012 – May 2013)
- Electrochemical Process for Producing Formic Acid from CO<sub>2</sub>
- Quang Binh solar power (KC Cottrell (Vietnam))
- PAC Conveyance using Continuous Transport System Technology (Nol-Tec Systems)
- Project “components” testing and evaluation (Nol-Tec Systems)

### Future R&D Projects

- Pure oxygen combustion process Buffer Project
- Long Bag Filter Test
- Study on feasibility of waste regeneration technology from sintering gas treatment system
- Design, Development and Pilot Scale Field Test of a Modular Hybrid Energy System (June, 2013 ~ May, 2016)
- Advanced materials sector (insulating materials, ceramic, Glass Bubble Frits) (Jan, 2013 – Dec, 2015) (KC Glass & Materials)
- Glass furnace solid fuel combustion system (Jan, 2012 – Dec, 2013) (KC Glass & Materials)
- ESP spare part service (KC Cottrell (Vietnam))
- Landfill, waste treatment (KC Cottrell (Vietnam))
- Fly Ash Conveying Testing–High temperature, low velocity conveying (Nol-Tec Systems)
- Controls R&D (Nol-Tec Systems)
- Formic Acid synthesis research project (KC Cottrell (US))
- Development of CO<sub>2</sub> catalyst process (KC Cottrell (US))
- Simultaneous removal of SOx and NOx using plasma (KC Cottrell (US))

\* These projects were performed by KC Cottrell R&D Center with government contribution of KRW 2.4 bil in 2012.

### R&D Investment



\*Based on cash flow chart (unit: MM USD)

### R&D Employees of subsidiaries

Section	No. of personnel
KC Cottrell (R&D Center)	9
KC Cottrell (US)	2
Nol-Tec Systems	2
KC Cottrell (Taiwan)	1
KC Enviro Construction	2
KC Glass & Materials	11

Patents

	Name of Patent	Patent No.	Reg. Date	Type
1	Deodorizing method and deodorizing device according to saw-tooth wave corona discharge	0191681	Jan 26, 1999	Patent
2	Electrostatic pesticide distribution device and methods	164678	Sep 14, 1998	Patent
3	Electrostatic filter cloth dust-collection method due to corona discharge and its device	0227127	Jul 30, 1999	Patent
4	Plasma ionization gas generating device using streamer corona discharge	0227128	Jul 30, 1999	Patent
5	Air pollutant treatment method and its device using streamer corona discharge	0228835	Aug 12, 1999	Patent
6	Gas discharge forming device using high voltage impulse	0344988	Jul 4, 2002	Patent
7	Hazardous gas purification device of streamer corona discharge inside the reactor using high voltage impulse power	0381499	Apr 10, 2003	Patent
8	High voltage impulse discharger with three pole electrode characteristics with adjustable electrode	0367785	Dec 27, 2002	Patent
9	Dry type cleaning system and dry type cleaning method of sintering exhaust gas	10-0660234	Dec 14, 2006	Patent
10	Single high voltage recognition method high speed electrostatic dust-collection device and its electric dust-collection method	10-0871601	Dec 26, 2008	Patent
11	Ceiling-attached dust collection system and management method using this	10-0960104	May 19, 2010	Patent
12	Single cover structure of dust collector and dust collector equipped with this	987197	Oct 5, 2010	Patent

\*The above patent was first acquired by KC Cottrell, but transferred to KC Green Holdings in the course of company split off.  
\*Patents of affiliates: Attachment, page 67

2012 R&D Performance

Desulfurization	- Taeon Thermal Power Unit 5 & 6 performance improvement research (Oct 2011 ~ Mar 2012) - Dangjin Thermal Power Unit 1 performance diagnosis research (Jul 2012 ~ Dec 2012) - Youngheung Units 1~4 Desulfurization equipment performance improvement (Jun 2012 ~ Dec 2012) - Measurement of pressure drop due to perforated plates and LG (Oct 2011 ~ Dec 2012) - Registration of patent for high-concentration sulfur removal device with multiple chambers (Oct 2011 ~ Mar 2012)
De-NOx	- Completed construction of SCR catalyst activity test device (Jun 2012 - current) - Yeongheung Units 1~4 De-NOx system performance improvement (Jun 2012 ~ Dec 2012)
Dust Removal	- Comparison of rapping force and durability test according to connection methods of discharge electrodes (Apr 2012 ~ May 2012) - Application of patent for Dry dust collector process for pure oxygen combustion (Jul 2012)



Taeon Thermal Power Station Unit 5 & 6 performance improvement research (Oct 2011 – Mar 2012)



Dangjin Thermal Power Station Unit 1 performance diagnosis research (Jul 2012 – Dec 2012)



Youngheung Units 1-4 Desulfurization equipment performance improvement (Jun 2012 – Dec 2012)

Knowledge Management

KC Cottrell launched knowledge management task force in last February 2012 to reinforce the core capacity of employees and to enhance workflow / productivity. After about half year's team efforts, K-ONE\*, the knowledge management system for KC Cottrell was officially launched enterprise-wide scale and 'K-ONE Grand Open' ceremony was held on July 20th 2012. Knowing that KMS is an on-going process, KC Cottrell continuously reminds its employees of importance of KMS and training them with newsletter, regular classes and on-line manuals. Currently, KC Cottrell has structured all the project results by each CoP (Community of Practice) and is fostering culture of knowledge management, sharing and accumulating explicit / implicit knowledge. In the near future, all employees will effectively utilize K-ONE and accumulate the core knowledge, experiences, and data to systematically manage the 40 years of knowhow to upgrade to a better KC Cottrell.

\*'K-ONE' was selected as the name of KC Cottrell's new knowledge management system from naming contest. 'K-ONE' represents KC's aspiration 'To integrate all of the knowledge of employees of KC Network companies into ONE'.

K-ONE (Knowledge Management System)

K-ONE is not constructed simply to store and share knowledge, but it provides various useful functions, such as schedule sharing, proposal, task management, Q&A, comprehensive search engine, etc. This is only possible since K-ONE was designed with the idea that all work related processes, by-products and outcome of work from employees are knowledge. In addition to utilization of internal knowledge, GCoP (Global CoP) is in operation to accumulate knowledge and information through cooperation with outside stakeholders. GCoP made it possible to combine scattered communications (by individual emails) into a streamlined one which can be managed and accumulated into internal knowledge assets. Through KMS, there are currently 102 CoPs in operation in K-ONE and there are 860 accumulated itemized knowledge. In the future, core knowledge shall be selected through evaluations and training shall be done to develop core knowledge further.



K-ONE Main Page

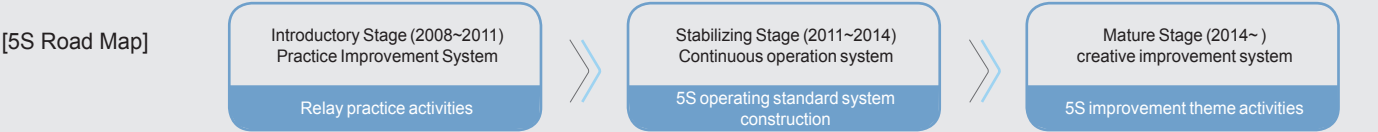
	Productivity Introduction Stage (Jul 2012 – Dec 2013)	Collaboration Development Stage (Jan 2013 – Dec 2015)	Strategy Settling Stage (Jan 2016 - )
Strategy	- Identify status quo of knowledge management and determine core work process per business department - Establish long-term knowledge management development plans	- Refine and improve core knowledge management system (Re-organize the knowledge based on the core capacities)	- Core knowledge – process – performance delivery
Knowledge	- Utilize Knowledge Bank and Maximize accumulation / utilization of knowledge	- Create process-oriented knowledge through collaboration	- Develop solutions for environment-friendly EPC business from the knowledge
Process / Organization	- Proliferate utilization of knowledge management system / work process	- Promote management innovation through active suggestion / collaboration	- Redesign process and knowledge management system based on the experiences from proliferation and collaboration
Culture / System	- Expand knowledge sharing / trust culture	- Spread creative learning culture	- Expand performance-oriented knowledge management culture

KC Cottrell's 5S Activities

KC Cottrell is implementing 5S activities as part of its management innovation movement. The 5S activities is to boost competitiveness through productivity enhancement and quality improvement by streamlining the work processes. All employees are encouraged to participate in 5S activities and to spread positive and creative corporate culture. Upon commencing the 5S Movement in November 2011, the '5S activities operation guideline' was enacted to pursue continuous 5S activities. It has been carried out according to the operation guideline since then. 5S activities are made up of arranging, organizing, cleaning, cleanliness and habituation. Regular inspection and improvement activities are being carried out by areas according to the 5S activity process.



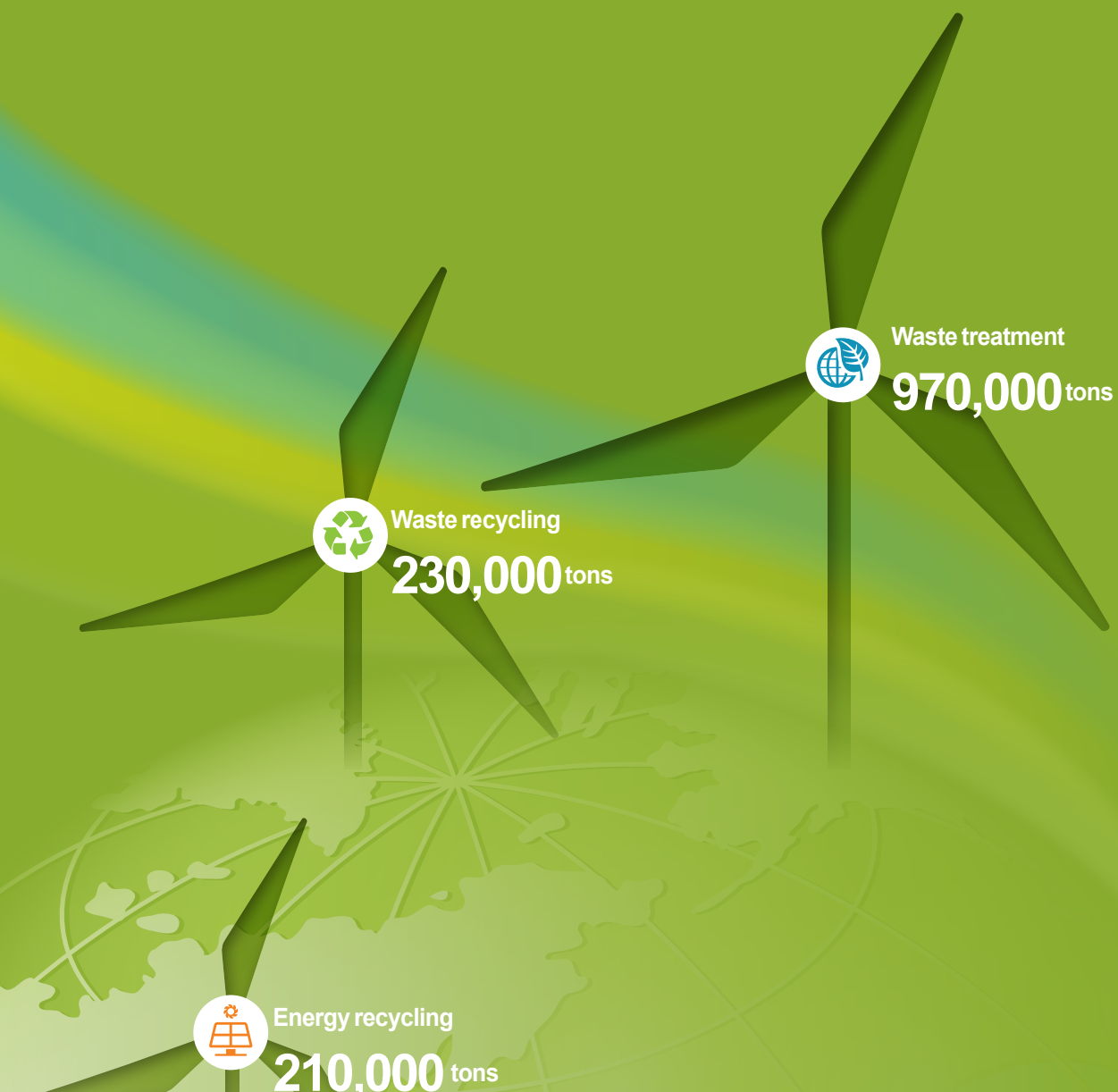
There are currently 11 5S-Sectors and every month 5S activities are being carried out, while also writing up 5S activities report, 5S inspection sheets and 5S improvement plans, which are reported to the operating committee. The operating committee conducts quarterly and year-end assessments of the 5S-Sectors, and the results of the evaluations are shared company-wide, as well as provide incentives to employees / teams depending on the evaluation scores.





# Green Business

27 Environmental Management System / 28 Environment-friendly Businesses / 30 Environmental Management



## Environmental Management System

### Environmental Management System

KC Green Holdings set a goal to contribute to preservation of the global environment. To achieve this goal, KC Green Holdings is establishing environmental management strategies / policies per subsidiary and acquiring environmental management system certifications (ISO 14001). Some subsidiaries are establishing environmental management visions and strategies integrated with the management strategies. They also have designated organization and action plans for environmental management (ex. KC Glass & Materials - Safety environment quality management team (SEQ) etc).

The environmental management strategies and policies of KC Green Holdings covers from compliance to environmental laws and regulations, design & engineering of environment-friendly systems, communication activities, to regular environmental impact assessment, evaluation and reviews in its environmental management activities. Compliance with environmental laws and regulations is the basic principles of KC Green Holding's environmental management. Overseas operations make great efforts to build the best practice in compliance of environment-related norms of the respective countries. Nol-Tec Systems is working hard to observe health, safety and environmental laws and regulations both within and outside of the company. Furthermore, KC Green Holdings is striving to share environmental information on a regular basis so that all employees can become well versed in the environmental management system. Also, some subsidiaries such as KC Cottrell and KC Honam Environment release their environmental management policies not only to employees, but also outside stakeholders.

### Environmental Management Policies\*

1. KC Green Holdings observes domestic and international health, safety and environmental regulations.
2. KC Green Holdings evaluates all business activities that may affect safety, health and the environment, and comes up with appropriate measures for these.
3. KC Green Holdings establishes safety, health and environmental management goals and improvement plans in order to continuously improve safety, health and environmental performance.
4. KC Green Holdings has all of its members understand and practice the safety, health and environmental management system through systematic training and education.
5. KC Green Holdings regularly analyzes and reviews the operational performance of the safety, health and environmental management system.

\* Some subsidiaries are establishing policies and practicing them to fit their management activities based on the environmental management policies of KC Green Holdings. (Ex. KC Enviro Services, KC Honam Environment)

### Environmental Management Certifications of Subsidiaries

ISO 14001 (environmental management system) certification	10 companies (KC Cottrell (including plant), Lodge Cottrell (UK), KC Enviro Services, KC Landfill Services, KC Enviro Construction, KC Hanmi Environment, KC Honam Environment, KC Glass & Materials, Clestra Hauserman, KC Envirotech E&C (Fushun))
Excellent recycled product GR certification	1 company (KC Glass & Materials)
Green technology certification	1 company (KC Glass & Materials)
Clean workplace certification	1 company (NWL Pacific)
CE (Conformite Europeenne) certification*	1 company (NWL Pacific)

\* European specification conditions related to consumer safety and health, hygiene and environmental protection

### Environment Communication

KC Green Holdings is striving to communicate using various channels in order to share environmental information with both internal and external stakeholders. Particularly KC Cottrell introduced its main environmental technologies and businesses through exhibitions and expositions in 2012; and communicated with domestic and international stakeholders related to the environment. KC Cottrell R&D Center participated in the '5th International Resource Recycling Industry Expo : Re-Tech Expo' and exhibited their services and developments related to the catalyst regeneration technology as an air pollution control company. This expo was held in response to the social & market demands for low-carbon green development and waste-to-resource technology. Furthermore, KC Cottrell participated in the 'Low-Carbon Green Growth Expo 2012' hosted by the Green Growth Committee and Ministry of Environment and sponsored by KEITI and the Korea Economic Daily as one of the 10 leading environmental companies designated by the Ministry of Environment. This event was held on October 30th and 31st at Samseong-dong COEX, where top products and services of top domestic and foreign environmental companies were on display, while various seminars, technology demonstrations and other events were hosted.



5th International Resource Recycling Industry Expo



Low-Carbon Green Growth Expo 2012



## Environment-Friendly Businesses

As a leader of the environmental industry, KC Green Holdings spearheads developing comprehensive environmental management solutions and innovating product and service development to protect the environment. We are committed to develop environment-friendly technologies to reduce effluents and wastes. At the same time, we are to develop reliable renewable energy solutions for stable energy supply in our ceaseless efforts to create a clean future environment.

### Environment-friendly Technologies

#### Green Environment Technology MOU

KC Cottrell and POSCO E&C made an MOU for mutual cooperation to develop green environment technologies in the domestic and international markets. Through this collaboration, two companies will work on jointly developing technologies to upgrade raw material quality, reduce air pollution and wastes, reduce emissions of and utilize CO<sub>2</sub>.

#### Technology Innovation in the Resource Recycling Sector

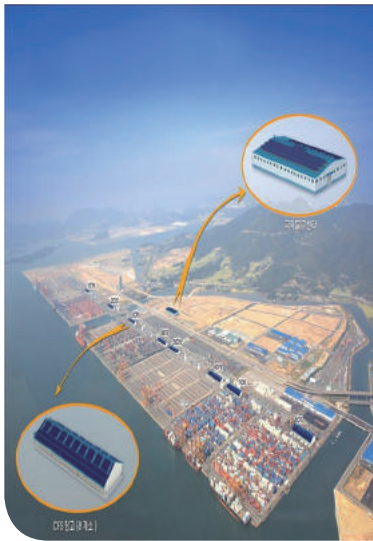
When producing glass bottles, KC Glass & Materials uses waste glass up to 80% to make new glass. KC Glass & Materials was recognized for its green technologies that produce safe and high quality recycled glass bottles and became the first in the container glass industry to receive GR certifications\*. We will continue to strive to lower dependency on natural resources, have a stable supply of materials, and cut production costs through technology innovation in the resource recycling sector.

\* GR (Good Recycled Product) Certification: Government certification for recycled products having good quality through resource recycling green technology development to contribute in low-carbon green growth by encouraging recycling of resources and saving energy

### Renewable Energy-Solar Power Generation Business

Solar power generation projects include the Gwangyang Port Solar Power Plant (2011), Hadong-gun Solar Power Plant (2011), completion of the Incheon CCPP Unit 3 Solar Power Generation Station (2012), and the Busan-Shinho Power Plant (2012). Hadong-gun Solar Power Plant is distinguishable since PV panels were installed in various fashions on public buildings and facilities within Hadong Province and it is expected to have a positive impact on supply of environment-friendly energy to the community. Also, Gwangyang Port Power Plant was the first order for EPC Turn-Key project. It was also the nation's largest roof-type solar power station at 2.3MW rating.

Busan-Shinho Solar Power Plant in which KC Cottrell and KC Solar Energy collaborated is the world's largest (20MW) solar power plant that utilized buildings and reduces 13,000 tons of CO<sub>2</sub> per year with the equivalent effect of planting a 1,800 ha forest. In addition, it plays significant role in that supplying reliable energy to the 7,500 households in the nearby Myeongji New City. After a six-month construction period, it was completed and tested in December, and the PV panels were installed at the parking lot, at assembled-car holding area and on the roof of the plant within the Renault Samsung Motors Busan plant.



Gwangyang Port Solar Power Plant






GM Korea-KC Cottrell, Environment-friendly Solar Power Station Project MOU



Busan-Shinho Solar Power Plant

### Environment-friendly Business Performance

KC Green Holdings treats and recycles wastes, and conserves energy through environment-friendly businesses such as environmental purification, waste recycling and energy recycling through its affiliates.

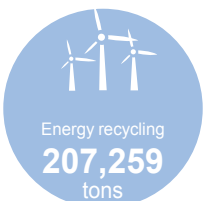
 <p>Treats environmental pollutants <b>974,281</b> tons</p> <p>Environmental purification, construction waste, waste oil, waste water, etc to prevent environmental pollution</p>	Subsidiaries	Section	Contents		Treatment / Production	Unit
	KC Enviro Services	Environmental Restoration	Waste incineration		38,657	Ton
			Bad Odor stabilization		23,100	m³
		Energy Recovery	Waste heat (steam) Recovery		105,361	Ton
			Other (catalyst regeneration)	SCR catalyst regeneration		612
	KC Landfill Services	Other (catalyst regeneration)	Waste landfill		608,559	Ton
	KC Enviro Construction	Other (catalyst regeneration)	Construction waste treatment		61,408	Ton
			Waste incineration		632	Ton
		Waste recycling	Aggregate		45,699	Ton
			Earth and sand		30,040	Ton
Scrap Metals (including nonferrous metals)			232.52	Ton		
Waste plastic			4.74	Ton		
Waste wood (for heating)			100	Ton		
KC Hanmi Environment	Energy Recovery	Waste heat (steam) reuse		46,600	Ton	
		Environmental Restoration	Waste incineration		20,864	Ton
	Waste oil		8,037	Ton		
	Waste water		42,979	Ton		
KC Honam Environment	Environmental Restoration	Waste incineration		18,416	Ton	
		Construction waste treatment		114,537	Ton	
	Energy Recovery	Waste heat (steam) Recovery		52,378	Ton	
		Waste recycling	Construction waste recycling		65,606	Ton
 <p>Waste recycling <b>230,745</b> tons</p> <p>Activities that convert various construction wastes including waste wood, plastic and steel into useful resources</p>	Veolia ES & KC Eco-cycle	Environmental Restoration	Waste treatment		45,222	Ton
		Waste recycling	Turning waste plastic into fuel (RDF, RPF, EPR)		43,501	Ton
	Waste glass recycling		45,527	Ton		
	Waste recycling		Waste mold	7.7	Ton	
			Sales of wastes	Steel	19	Ton
				Vinyl / Plastics	1.3	Ton
		Paper		6.7	Ton	
	KC Glass & Materials	Environmental Restoration	Utilization of underground water of coolant and re-circulation of cooling water		68,000	Ton
			Sewage		14,832	Ton
			General wastes	Waste water treatment sludge	7	Ton
Waste synthetic resin				34	Ton	
Classified wastes		Dust	81	Ton		
		Waste oil	16	Ton		
Energy Recovery		Installation of waste heat boiler	Reduce energy expenses	(Reduction amount: 50,300,000 won)	Ton	
			Reduced greenhouse gases and CO <sub>2</sub>	132	tCO <sub>2</sub>	
		Fuel conversion (B-C oil →LNG): Reduced greenhouse gases and CO <sub>2</sub>		3,100	tCO <sub>2</sub>	
Renewable energy production	Installation of roof-type solar power generator		173,719	kWh		
 <p>Energy recycling <b>207,259</b> tons</p> <p>Reuse waste heat (steam) generated during incineration to conserve energy</p>						



Environmental purification, construction waste, waste oil, waste water, etc to prevent environmental pollution



Activities that convert various construction wastes including waste wood, plastic and steel into useful resources



Reuse waste heat (steam) generated during incineration to conserve energy



# Environmental Pollution Management

## Environmental Management Practices

KC Green Holdings strives to practice efficient energy use, pollution prevention, and minimization of wastes throughout all procedures of purchasing, production and incineration. Lodge Cottrell, Nol-Tec Systems, KC Honam Environment, and Clestra Hauserman have programs to save resources, energy consumption, and minimization of waste as well as recycling & reusing. In particular, KC Glass & Materials improved recycling rate of cullet and recovered waste heat from the glass furnace. KC Glass & Materials was awarded with the Minister of Knowledge Economy Award at the Energy Conservation Conference in November 2012 for its excellence in resource and energy management. Furthermore, KC Glass & Materials installed a TMS (Telemetry Monitoring System) / CEMS (Continuous Emission Monitoring System) at the chimney to have better monitoring and control of atmospheric pollutants in real time. Also, KC Hanmi Environment performed facility revamping project to improve incineration efficiency in May, and to comply with the latest (and most stringent) environment regulation requirements. On top of all these, KC Green Holdings uses only transport vehicles which meet regulations for waste transportation and performs pre-inspections to prevent any environmental issues during the transportation. In office environment, various environment management practices are on-going such as use of recycled paper, turning off office lights during lunch, turning PCs to standby mode after 15 minutes of non-use, use of high efficiency and energy-saving servers, and turning on the air conditioner only when the outside temperature is over 28℃.

\* KC Green Holdings has no history of generating hazardous materials and also no violations against environment-related laws and regulations.

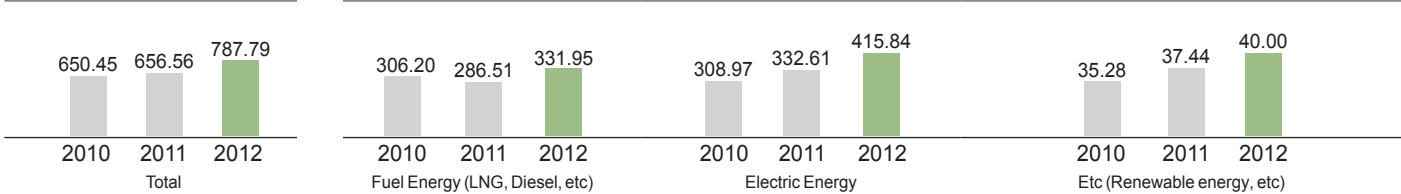
\*\* Some subsidiaries did not make reports due to difficulties of collecting data on energy usage for 2012, but they will be included and reported in next year's report



Before After  
KC Hanmi Environment, incineration facilities and atmosphere prevention facility after Revamping project

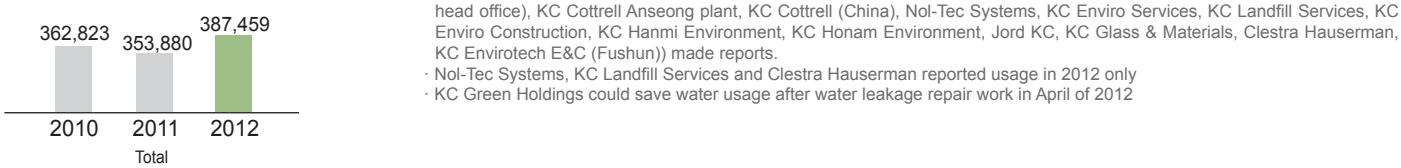
## Environment Management Performance

### Energy Usage



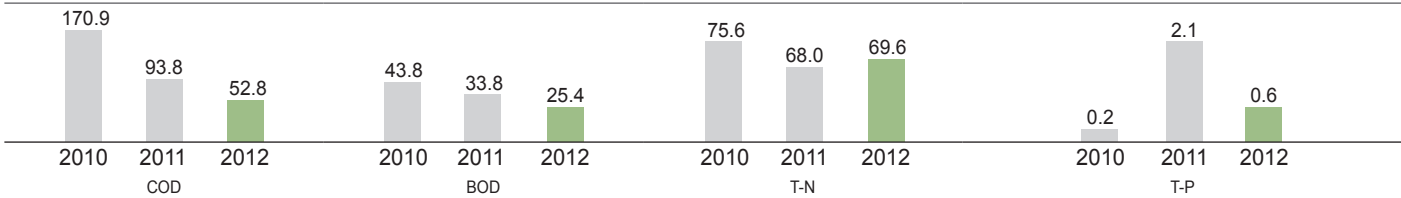
· Only 5 subsidiaries made reports in the previous year, but this year, 13 subsidiaries (KC Green Holdings (same as KC Cottrell head office), KC Cottrell Anseong plant, KC Cottrell (China), Nol-Tec Systems, KC Enviro Services, KC Landfill Services, KC Enviro Construction, KC Honam Environment, Veolia ES & KC EcoCycle, Jord KC, KC Glass & Materials, Clestra Hauserman, KC Envirotech E&C (Fushun)) provided their reports.  
· Nol-Tec Systems and Clestra Hauserman reported usage in 2012 only.

### Water Usage



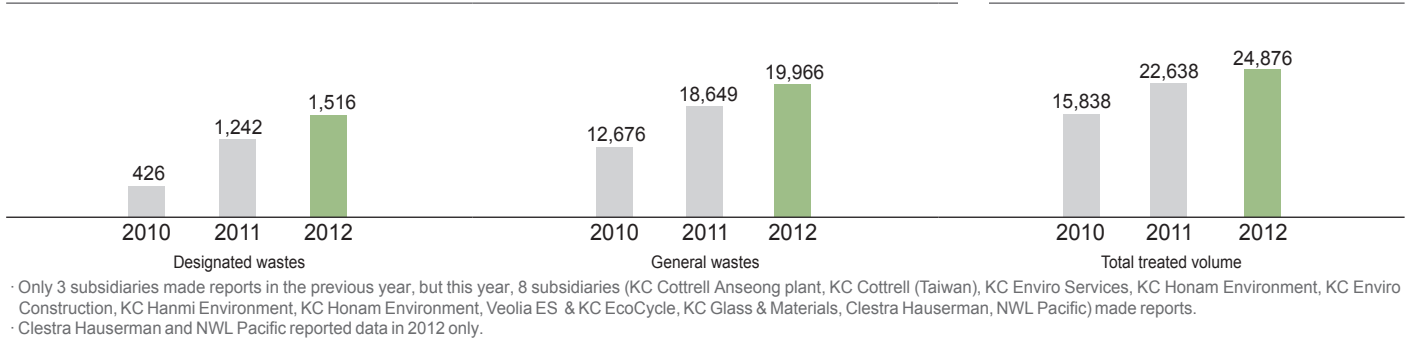
· Only 5 subsidiaries made reports in the previous year, but this year, 13 subsidiaries (KC Green Holdings (same as KC Cottrell head office), KC Cottrell Anseong plant, KC Cottrell (China), Nol-Tec Systems, KC Enviro Services, KC Landfill Services, KC Enviro Construction, KC Hanmi Environment, KC Honam Environment, Jord KC, KC Glass & Materials, Clestra Hauserman, KC Envirotech E&C (Fushun)) made reports.  
· Nol-Tec Systems, KC Landfill Services and Clestra Hauserman reported usage in 2012 only  
· KC Green Holdings could save water usage after water leakage repair work in April of 2012

### Waste Water Effluent in Water Quality



· Only 4 subsidiaries made reports in the previous year, but this year, 5 subsidiaries (KC Cottrell (Anseong plant), KC Enviro Services, KC Hanmi Environment, KC Glass & Materials, Clestra Hauserman) made reports.  
· However, Clestra Hauserman reported data in 2012 only.

### Wastes Generated



### Greenhouse Gas Emissions

(Unit: tCO<sub>2</sub>eq)

Section		2010	2011	2012
Total	Total emissions	76,414	90,372	86,733
	Direct emissions	67,626	81,333	72,410
	Indirect emissions	8,788	9,039	14,323
Environmental Services	Total emissions	47,736	62,719	58,085
	Direct emissions	46,759	61,598	54,087
	Indirect emissions	977	1,121	3,998
Environmental Manufacturing	Total emissions	28,678	27,653	28,648
	Direct emissions	20,867	19,735	18,323
	Indirect emissions	7,811	7,918	10,325

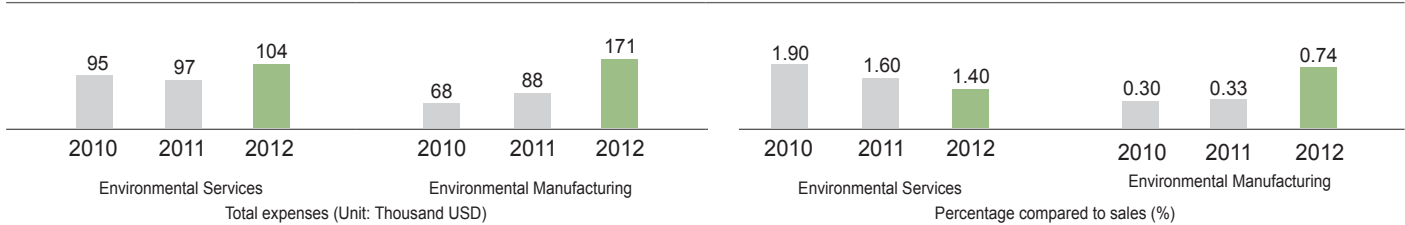
· Only 3 subsidiaries made reports in the previous year, but this year, 4 subsidiaries (KC Enviro Services, KC Hanmi Environment, Veolia ES & KC EcoCycle, KC Glass & Materials) made reports.

### Air Pollutant Emissions

Section		Unit	2010	2011	2012
Environmental Engineering	NOx	ppm	0.0175	0.0167	0.0154
	SOx	ppm	0.0043	0.0040	0.0034
	Particulates	mg/m <sup>3</sup>	57.2	54.9	51.2
Environmental Services	NOx	ppm	71.56	79.07	73.06
	SOx	ppm	7.522	9.095	6.822
	Particulates	ton	4.23	4.65	5.92
Environmental Manufacturing	NOx	ppm	59.7	42.6	41.3
	SOx	ppm	42.3	37.4	34.2
	Particulates	ton	0.80	1.00	2.45

· Only 4 subsidiaries made reports in the previous year, but this year, 7 subsidiaries (KC Cottrell (Taiwan), KC Enviro Construction, KC Hanmi Environment, KC Honam Environment, Veolia ES & KC EcoCycle, KC Glass & Materials, Clestra Hauserman) made reports.  
· Clestra Hauserman reported data in 2012 only.

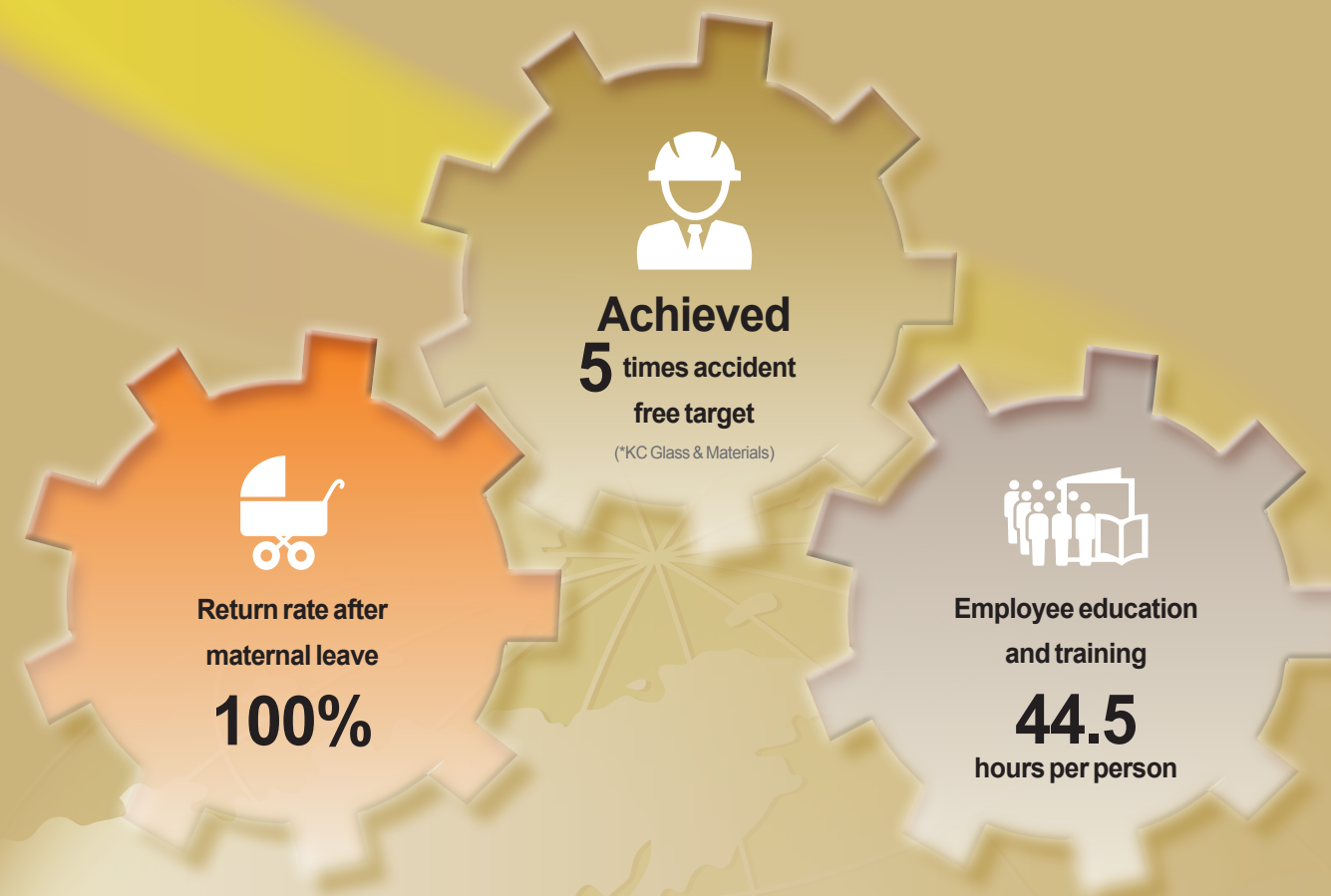
### Environmental Protection Expenses



· 1)2010 average exchange rate: USD 1.00 = KRW 1,156 / decimals rounded off  
· 2)2011 average exchange rate: USD 1.00 = KRW 1,108 / decimals rounded off  
· 3 subsidiaries (KC Hanmi Environment, KC Glass & Materials, Clestra Hauserman) made reports.  
· Clestra Hauserman reported data in 2012 only

# Harmonious relationship

33 Partner Companies / 35 Client Companies / 37 Employees / 42 Community



## Partner Companies

### Mutual Growth

KC Green Holdings operate various activities such as meetings, workshops, and training sessions for the mutual growth between subsidiaries and partners. In addition, subsidiaries such as Clestra Hauserman and KC Glass & Materials hold regular quality meetings to improve the technology and quality of partner companies, while the environmental engineering sector hosts annual technical sessions. Also, KC Network companies are communicating with partners through regular and special meetings. In particular, KC Cottrell is efficiently communicating with partner companies via K-ONE GCoP (Global Community of Practice) and KC Glass & Materials holds mutual growth workshops at least once a year for win-win relationships with vendors / suppliers

In order to strengthen the competitiveness of partners, KC Green Holdings conducts various supporting activities such as training programs, process innovation consulting, technical support and etc. In November 2011, KC Cottrell newly began the management innovation movement called, 5S Movement (25page). The 5S process operation guidelines have been distributed to partners and joint inspection and improvement on designated areas are implemented every month. Partners such as Seojeong Industries, Daehyeon Tech, Deokhyun Industries, DJ, and SH Industries are participating in the 5S activities. In addition, subsidiaries such as KC Cottrell (China) and Jord KC are providing technology supports to their partners. The environmental service sector and environmental manufacturing sector are also sponsoring and / or supporting partner companies events.

### KC Cottrell, Safety Prayer Ceremony

*In times where safety issues are huge social issues, KC Green Holdings has always put safety as its utmost priority.*

#### KC Cottrell, Safety Prayer Ceremony “Resolution to Practice Safety Management with Partners!”

On March, KC Cottrell held a safety prayer ceremony with partner companies to pray for accident free work place. This event was conducted with a recital of the safety and health policies by the KC Cottrell Anseong Plant safety manager, and award ceremony to outstanding partners in safety and health management. Daehyeon Tech who actively participated in the KC Cottrell safety and health activities and set an example through self-improvement activities in 2011 was selected as an outstanding partner in safety and health management. The team leaders of the KC Cottrell Anseong plant and CEOs of partner companies prayed for safety. At the end of the event, all of the employees pledged for an ‘accident-free workplace’, and reconsidered the importance of safety for both employees of KC Cottrell and partner companies.





## Client Companies

KC Green Holdings carries out activities to improve customer satisfaction per subsidiary. They are receiving trust from clients thanks to the top notch quality and technology, as well as timely delivery. KC Green Holdings communicates with clients through technical consulting, maintenance services, joint R&D and customer satisfaction surveys to respond to the demands of customers. We will continue to communicate ceaselessly to achieve customer satisfaction.

### Quality Management and Product Responsibility Activities

KC Green Holdings constructed a quality management system, acquired ISO 9001 certification and got proven its quality improvement and quality responsibility activities. Eleven subsidiaries including KC Cottrell, Lodge Cottrell, KC Enviro Services and KC Glass & Materials acquired ISO 9001 (Quality Management System) certifications in line with KC Green Holdings' goal to have all the subsidiaries certified. KC Glass & Materials is implementing various quality improvement activities such as introducing product packaging room, upgrading inspection equipment, and improving the coating system. Furthermore, KC Glass & Materials took an initiative for product responsibility by subscribing product liability insurance and conducting product safety tests twice a month. Other subsidiaries also run voluntary product responsibility activities such as monthly quality meetings and inspections, product naming, and process management system operations. Until now, there has been no instance of violating laws or regulations in supplying products among KC Network companies.

#### Quality Certification Acquisitions

ISO 9001	[11 Companies] KC Cottrell (including factory), KC Cottrell (China), KC Cottrell (Vietnam), Lodge Cottrell (UK), KC Enviro Services, KC Enviro Construction, KC Glass & Materials, Jord KC(AS / NZS, Australia), Clestra Hauserman, KC Envirotech E&C (Fushun), NWL Pacific
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### Customer Management

#### Technical Consulting and Maintenance Services

Based on the accumulated technologies and knowhow, KC Network companies provide technical services such as consulting, inspection and diagnosis of client's environmental facilities. Technical services come with analysis reports on existing operation and maintenance program and recommendations on overhaul, preventive maintenance schedule to minimize downtime of clients' facility and to maximize clients' competitiveness. Also, KC Green Holdings offers technical development and services that respond 100% to customer requests even after contract awards to build trust for clients. In particular, KC Cottrell is aware that stringent environmental regulations make many companies feel burdened with their old facilities and provides services to revamp / upgrade old environmental facilities up to the latest regulations. Starting with the revamping FGD system at Hadong Thermal Power Plant, KC Cottrell successfully secured all the biddings with 100% success rate and pioneers a new market of 'FGD System Revamping Service'.



Yeongheung Units 1-4 FGD & De-NOx System Performance Improvement

#### Joint R&D with Client Companies

With the technical expertise and experiences from 40 years' services for customer satisfaction, KC Cottrell proposes "Joint R&D projects" to clients for Win-Win relationships for both clients and KC Cottrell. Catalyst regeneration technologies developed together with Dangjin Thermal Power Plant are prime examples. KC Cottrell discovered customers' new needs for waste catalysts treatment and created regeneration business, at the same time, Dangjin Thermal Power Plant was able to reduce a significant amount of cost through catalyst regeneration. In 2012, joint R&D projects were launched to develop new ESP for smelter application with POSCO E&C and to develop Metal Foam Catalyst together with Alantum. In the future, KC Green Holdings' subsidiaries will actively identify customer needs through extensive joint R&D, and develop sustainable businesses from newly identified markets.



Signed on MOU for SCR Catalyst regeneration



Joint technical development agreement ceremony with POSCO

### Fair Trade

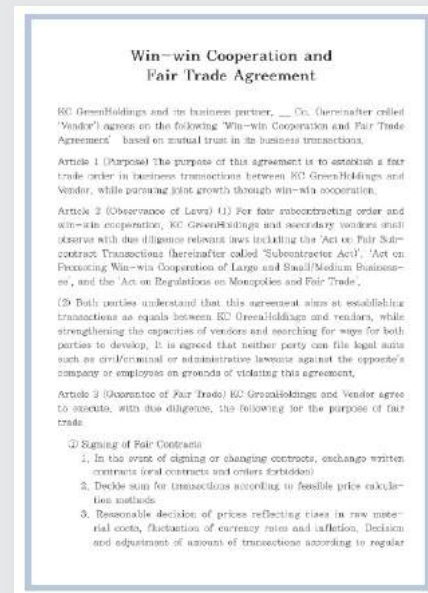
KC Green Holdings follows the standard contract as per the Fair Trade Act. KC Network companies have voluntary programs to ensure fair trade. KC Cottrell has constructed a fair and transparent procurement system using an electronic bidding system. All bidders are ensured to have same opportunities and confidentiality on budget information and bid prices is thoroughly maintained. KC Cottrell (US) sets fair payment periods as part of its plans for win-win management, and also provides fair opportunities for project orders, while voluntarily complying with local purchasing policies. In addition, KC Glass & Materials has converted the payment method into e-payment systems for the purpose of fair trade.

#### Win-win Cooperation and Fair Trade Agreement (Summary)

The purpose of this agreement is to establish a fair trade order in business transactions between KC Green Holdings and Partners, while pursuing mutual growth through win-win cooperation, and it includes the followings.

- Observance of Laws\_ Provide relevant laws for fair trade and win-win cooperation to partners, and observe the laws and conventions diligently
- Guarantee of Fair Trade\_ Release all the relevant policy regarding fair contract, bid award, and operation to all the partners and make utmost efforts to prevent any unfair transactions
- Win-win Cooperation Support\_ Offer various programs (flexible financial support / payment conditions, technical support, quality control, training, management consulting, purchase price adjustment according to the fluctuation of raw materials prices, prohibition of oral / verbal contracts, purchase / sales support, operation of partner support team and, etc.) to enhance partners' competitiveness such as financial soundness, technologies and technical specialties.

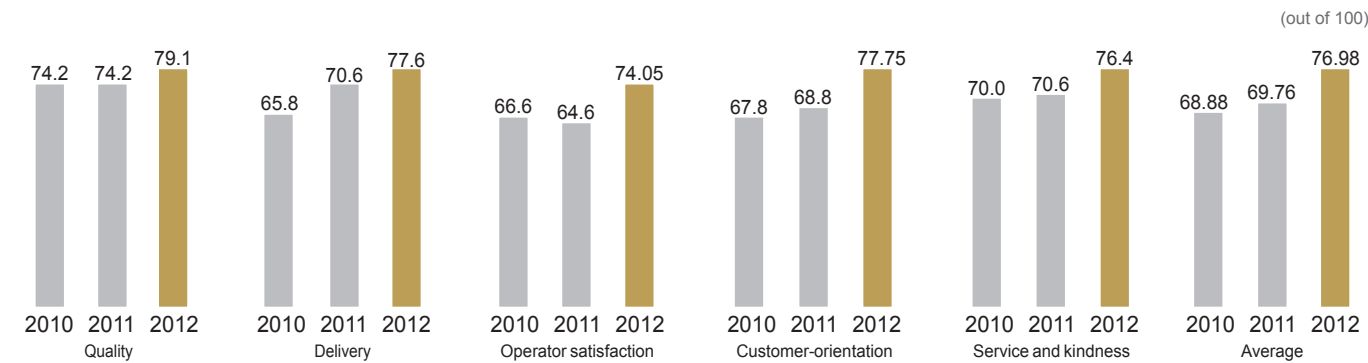
Other codes of conduct shall be observed by mutual parties with mutual efforts. If not stipulated in this agreement, either party will raise issues and shall discuss to mutual agreement.



# Employees

## Customer Satisfaction

KC Cottrell runs quarterly customer satisfaction surveys with major clients to continuously respond to customers' ever-changing needs and expectation. The survey items are in the five areas; quality, on-time delivery, operator satisfaction, customer-orientation, service and kindness in a five point scale. The last three (3) years survey shows that customer satisfaction has been improved and that satisfaction level in product quality was especially the highest among other factors. The operator satisfaction showed relatively low scores, but improved considerably compared to 2011. We will continue to communicate with customers to improve satisfaction levels and respond to customer needs and complaints.



## Building Continuous Customer Relationships - POSCO

**KC Cottrell, Selected as certified self-quality control vendor for four straight years by POSCO**

Among the 400 plus suppliers of POSCO, those who with less than 0.5% quality control issues are selected as candidates for excellent vendors followed by on-site inspections. The selected vendors are then given authority and responsibility to have quality inspections by themselves. KC Cottrell was selected as a certified vendor for four (4) consecutive years and saved inspection standby time. KC Cottrell will strive to have the top level of quality control and build trust with POSCO.

**Awarded as the best supplier of the year by POSCO**

In 2011, KC Cottrell made aggressive investments and technical development in spite of the tough market conditions from European financial crisis and global recessions and achieved progress in quality improvement and cost reduction for clients. In result, KC Cottrell was selected as the best supplier of the year by POSCO on January 5, 2012.

## Personnel Management

KC Green Holdings places 'personnel' as one of its three core values and emphasizes the importance of personnel management. Respect of human rights is the basic principle for personnel management and KC Green Holdings forbids forced labor and child labor, and abides by domestic and foreign norms related to human rights and labor. With fair personnel management system and training programs, KC Network companies are striving to practice sustainable personnel management.

## Recruiting Talented Personnel

As of the end of 2012, a total of 1,128 employees work at KC Green Holdings (including all subsidiaries). 83% (935) of them are full-time employees and 17% (193) are contract / part-time employees. The number of female employees is 146 (13%) only, but the number of females employees is growing every year. In addition, through efforts to employee more local talents in foreign branches such as in India and Vietnam, the local employment rate is also growing. KC Green Holdings does not discriminate people for gender, religion, or social status and prohibits any discrimination in hiring and contracting employee, or in personnel management processes.

## Employee Status

Section		Category	2010	2011	2012
Employee	Total No. of Employees		912	1,036	1,128
	Disabled (%)		0.7	0.9	1.7
	Contract / Part-time		59	52	193
	New Employees		87	168	215
	Average Service Years		-	-	7.28
Retirement / Resignation	Retirement (%)		6.5	6.5	4.4
	Resignation (%)		3.1	4.9	5.1
Female / Childbirth	No. of female employees		114	120	146
	No. of new female employees		12	16	28
	No. of female managers		-	-	36
	No. of persons using maternity leave		3	3	5
	No. of persons using childcare leave		-	-	2
	Return rate after childcare leave (%)		100	100	100

\*(Annual) Resignation Rate=No. of resignations in 2012 / No. of employees as of Dec 2012

## Fair Evaluation and Compensation

KC Green Holdings grants fair opportunities for all employees, regardless of gender or nationality for the goal of sustainable talent development. Evaluation processes for employee performance are transparently disclosed and the evaluations reflect learning performance results to emphasize the development of individual capacities. In compliance with a fair wage system, there are no differences in base salary between male and female employees when they have the same grade. Furthermore, in order to guarantee stable employment, responsible employment guarantee systems are operated.



## Talent Development

KC Green Holdings has enacted education and training regulations to foster global human resources and to support employee capacity and self-development through various educational programs. Each subsidiary has its own employee training system to provide training for all employees such as job training, self-development, internal / external training, seminars, etc. Detailed programs for employee work capacity and career development include overseas workshops and MBA support programs. In January 2012, KC Cottrell held its first overseas workshop to examine the special situations of Vietnam and the market forecast of nearby countries to enhance understanding on Vietnam operation and Vietnamese market. KC Cottrell also operates designated training programs for new and / or local employees in overseas operations. Mentoring programs are available to help new employees quickly adapt to KC Cottrell's corporate culture and to help them enhance their work capacities through communication and collaboration. Training for local employees of overseas operation includes technical training supported by personnels from headquarters and regular technical trainings for 3 to 4 weeks in May and October each year.



KC Cottrell Workshop in Vietnam

### 2012 Employee Training

Category	KC Green Holdings	Environmental Engineering <sup>1)</sup>	Environmental Services <sup>2)</sup>	Environmental Manufacturing <sup>3)</sup>	Renewable Energy <sup>4)</sup>	Total
No. of trainees	29	639	146	361	13	1,188
No. of training sessions	46	418	360	485	20	1,329
No. of training sessions per person	1.6	0.7	2.5	1.3	1.5	1.1
Total training hours	655	8,703.5	2,681	40,546	265	52,850.5
Total training hours per person	22.6	13.6	18.4	112.3	20.4	44.5

- 1) KC Cottrell / KC Cottrell (China) / KC Cottrell (US) / Lodge Cottrell (India) / KC Cottrell (Vietnam) / KC Cottrell (Taiwan) / Nol-Tec Systems  
2) KC Enviro Services / KC Landfill Services / KC Enviro Construction / KC Hanmi Environment / KC Honam Environment / Veolia ES & KC EcoCycle  
3) KC Glass & Materials / Clestra Hauserman / KC Envirotech E&C (Fushun) / NWL Pacific  
4) KC Solar Energy

### KC Cottrell Education System

Section	Training by Position	Work Training		Other Training	Certification Training
	Required courses	Core personnel training	Consigned training	All employees	Electives
Directors	New director and regional manager training	Director Training		Work capacity improvement training Company-wide safety training (4 times) / Sexual harassment prevention training (essential)	
Team Leaders	Team leader training	Subsidiary personnel exchange / attendance in overseas seminar, etc	Engineer required training	KMS(Knowledge Management System)	Language training / Acquisition of work-related certifications (optional)
Senior Employees	New team leader training	Course for acquiring diploma	Manager required training	Mentoring activities	
Managers	Negotiation training		Work capacity improvement training	In-company technical training	
Assistant Managers	Admissions training for new employees				
Staff					

## Safety and Health

### Safety and Health Management System

KC Green Holdings has established safety and health management policies for each subsidiary and complies with the Labor Standard ACT for the safety and health of employees. Major subsidiaries of each business sector including KC Cottrell, KC Enviro Services and KC Glass & Materials have acquired safety and health management system certificates. In November 2012, KC Hanmi Environment has acquired safety and health management system (KOSHA 18001) certification. Furthermore, annual health checkups are provided for all employees for the systematic health management of employees.

### Safety and Health Management System Certifications

OHSAS 18001 (Occupational Safety and Health Management System)	[5 companies] KC Cottrell (including plant), Lodge Cottrell (UK), KC Enviro Services, Jord KC, KC Envirotech E&C (Fushun)
KOSHA 18001 (Korea Occupational Safety and Health Management System)	[4 companies] KC Cottrell (including plant), KC Hanmi Environment, KC Glass & Materials, Clestra Hauserman



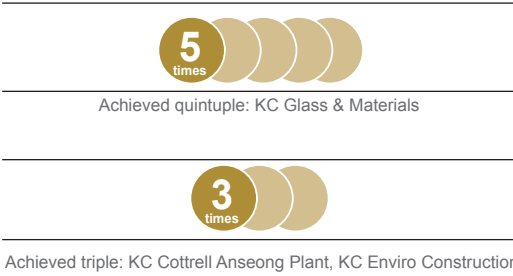
### Safety and Health Management Performance

KC Green Holdings conducts regular safety training for employees of each subsidiary in its efforts to make accident-free, safe companies. KC Cottrell also held a safety prayer ceremony together with partner companies in their hopes of having an accident-free workplace in March (33page). This event was conducted with a recital of the safety and health policies by the KC Cottrell Anseong Plant safety manager, and award ceremony to outstanding partners in safety and health activities, to once again think about the importance of safety for employees of both KC Cottrell partner companies. Such safety efforts are being executed in all KC Network companies, and in particular, through such efforts, KC Glass & Materials has achieved quintuple period of no-accident target (1,590 days) on July 3.

### 2012 Safety Training per Subsidiary

Company	No. of Training Sessions	Trainees	Training Topics
KC Cottrell	14	All employees at head office (overseas department, research center, field, etc depending on the training topics)	Industrial safety and health law, 4M risk evaluation, lab risk evaluation, field inspection, safety management of manager and supervisor
KC Cottrell (China)	1	All employees	Safety management training
KC Glass & Materials	9	PSM representative	PSM training (system, report, facility inspection, screening support, etc)
Hanmi Environment	7	All employees (for safety representative depending on theme)	KOSHA 18001 training (system, certification procedure, status review, internal review, etc), risk assessment guidance
Clestra Hauserman	2	All employees (for safety representative depending on theme)	11 major basic safety rules, KOSHA 18001 training (follow-up review)
KC Enviro Services	1	All employees	11 major basic safety rules
KC Honam Environment	1	Safety representative	Safety inspection training
NWL Pacific	1	Safety representative	Safety inspection training

### No-Accident Targets



### Workplace Safety

Industrial Accident Rate (%)	2010	2011	2012
	0	0.1	0.77

### Industrial Accidents





## Harmony of Work and Life

### Transparent Communication

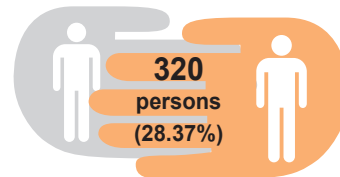
KC Green Holdings had monthly meetings (First Monday Meetings) to share the management objectives so that all employees can establish the strategic business plans of each department. In addition, evaluation of completed projects and further discussion on how to improve project performance are made at the monthly meeting. Occasional lectures and seminars are provided to help employees have smooth communication among other employees and departments, as well as workshops for practice session.

KC Green Holdings provides latest business news of each subsidiary, market information of relevant businesses, and information related to life at work through the KC Newsletter. In addition, through interviews with interns, new employees, workshop participants, and employees working on the field, KC Green Holdings shares news of all employees and is creating a family-like communication culture.

This communication culture unique to KC Green Holdings is the source for its considerable growth amidst tough market competitions, limitations in technology licensing and other changes in the business environment.

### Labor-Management Harmony

Both labor and management at KC Green Holdings are working hard with an open attitude to construct labor management relations with mutual trust and respect. Results of labor-management meetings are reported to all union members and employees through intra-network or e-mails immediately upon coming to agreements in negotiations. Thanks to the efforts for win-win relationships between labor and management, last April, KC Glass & Materials was awarded the 'Stone Pagoda Industrial Medal' for its achievement in labor-management relationship. Also in 2012, salary and collective agreements were signed to improve work environments and uplift the morale of employees. Through this, KC Green Holdings not only continues mutual trust and collaboration between labor and management, but also expects to spread the culture of continuous efforts to improve the quality of life for employees and for mutual-respect as partners.



2012 Labor Union Status

### Welfare and Fellowship Activities

KC Green Holdings is striving to make an attractive workplace where people want to work at through various selective benefit programs. Company runs Paid Time Off to help employees balance life and work and matches 50% contribution for retirement and national pension programs for all employees including contract employees. Furthermore, KC Green Holdings operates a wide range of fellowship activities such as sports days, hiking and KC rooftop parties to help friendship, unity and health of employees. In addition, KC Green Holdings also sponsors environmental camps for the children of the employees.

### KC Cottrell Employee Children Summer Environmental Camp

On July 24th, KC Cottrell hosted the environmental camp for children of employees during summer school break. This two-day camp was hosted by the Environment and Future Research Center and was held as a KC field trip camp at Anseong and the Yeongheung Thermal Power Plant. Despite the hot weather, the students explored the glass production process of the Anseong plant and the Thermal Power Plant. This experience increases their understanding of the environment and raise their interest in their parents work place, KC Cottrell and KC Network companies.



## KC Family

### KC Family Day

In celebration of 13th anniversary of the labor union on June 8th, 2012, a companywide sports day was hosted by the labor union and support team at the Anseong Neorigul Culture Village. The day kicked off with a commemorative event, and was followed by various programs such as recreational games, jokgu (foot volleyball), volleyball, and others, in its efforts to enhance unity among employees.



### Various Fellowship Activities of Subsidiaries

KC Green Holdings hosts various fellowship activities in each sector starting from each subsidiary to construct a family culture unique to KC Green Holdings. KC Cottrell hosted a Labor Day event and picnic, KC Hanmi Environment hosted a One-heart Hike, KC Glass & Materials held its 41st anniversary picnic, and KC Enviro Services held a sports day for subsidiaries. In particular, KC Cottrell holds Rooftop Parties every year to provide the opportunities for communication among employees. The 2012 Rooftop Party carried out a wide range of programs based on the theme of knowledge management.



KC Cottrell Anseong Plant jokgu (foot volleyball) tournament (April)



KC Hanmi Environment One-heart Hike (April)



KC Enviro Services, 3rd Subsidiary Sports Day (September) – 6 companies (KC Enviro Services, KC Hanmi Environment, KC Enviro Construction / KC Landfill Services, KC Honam Environment, NWL Pacific)



KC Cottrell picnic (November)



KC Glass & Materials 41st Anniversary Picnic (May)



## Community

KC Green Holdings understands that the community is an important stakeholder for combining people and technologies to create a greener, and cleaner environment. In this understanding, KC Green Holdings is participating in various social contribution activities in different parts of the community to fulfill its environmental responsibilities and to do its part in corporate social responsibilities. KC Green Holdings will continue to listen to the voices of the community through various communication channels for the development of the community.

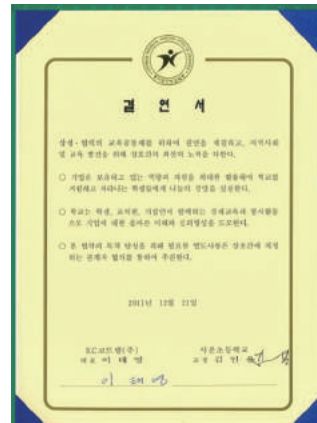
### Talent Development Support Activities

KC Green Holdings exercises support activities for fostering human resources such as scholarships in the community of subsidiaries, internship programs, and school-sisterhood relations. Some subsidiaries including KC Hanmi Environment provide scholarships to children who are the head of their families, while Nol-Tec Systems offer internship programs to students in the community majoring in engineering.

### Sisterhood Relationship

KC Cottrell made sisterhood relations with the Seowoong Elementary School, which is located in Seowoong-myeon, Anseong, to contribute to the development of the community on December 2011. This sisterhood began with a meeting hosted by Anseong City to promote consciousness of education through ties between small schools and companies. As part of the sisterhood relationship activities, Mr. Saravanan of KC Cottrell's production team volunteered to provide English classes to students three times a week for thirty minutes before going to work. We will engage in a wider range of support activities, improve the community's small schools through specialization and improvement of school education conditions, and strive to contribute in fostering human resources in the community.

KC Glass & Materials decided to participate in the 'Hope, Love, Sharing 1:1 Regional Children Center' sisterhood relationship project and donate 888 USD every year from 2013. They also signed an industry-academic cooperation agreement with the Pyeongtaek Meister High School in December 2011, and decided to jointly develop curricula for customized education needed by the company and on-the-job training programs. Through all the efforts to promote information exchange and joint training support, it became possible to strengthen ties with schools in the local communities and find talented human resources as well.



KC Cottrell makes sisterhood relationship with Seowoong Elementary School

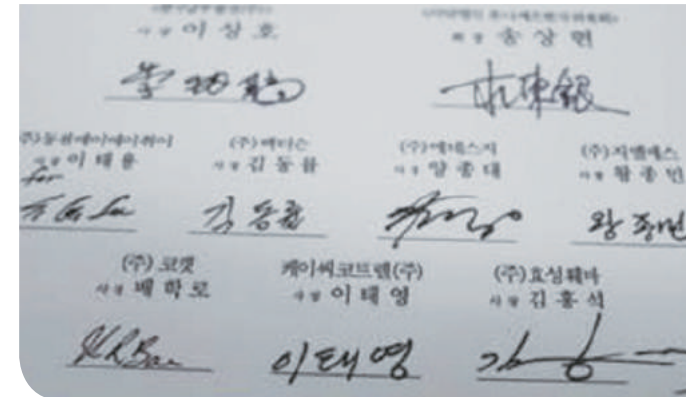


KC Cottrell's English education for sister school



### Sharing / Sponsoring Activities

KC Green Holdings hosts donation and technical support as part of community sharing events per each subsidiary. KC Hanmi Environment and KC Honam Environment provide sponsorship to events in the community such as Residents Day. In particular, KC Glass & Materials sponsors annual World Food Expos, Ipyang Grape Festival, and sports tournaments, and collects and pays waste glass together with local residents for a cleaner community environment. Also, on September 12th, KC Cottrell signed a Love Energy Sharing Agreement with the UNICEF Korea Committee and committed to contribute to the charity through performance sharing. This agreement is valid for about a year and a certain percentage of performance sharing will be contributed to the fund every time new orders from Korea Southern Power are raised. In addition, KC Cottrell also purchased peaches from farms near the Anseong Plant and donated them to nearby nursery centers and welfare centers.



UNICEF Korea Committee, a Love Energy Sharing Agreement



Donation to local nursery and welfare center

### Overseas Volunteer Activities

KC Cottrell (Vietnam) participated in volunteer activities at Hai Ha Elementary School in Vietnam in January. Hai Ha Elementary School, which is located near the site of the thermal power plant that KC Cottrell (Vietnam) won the order for, receives little support from the government and has a poor school environment. Many of the students suffered financial difficulties as well. KC Cottrell (Vietnam), as a member of community, visited Hai Ha School and donated desks and chairs. KC Green Holdings will continue to encourage overseas subsidiaries to enter various social contribution activities for the development and harmony with the community.



Donation of Class Room equipment to Hai Ha Elementary School



# Introduction of Subsidiaries

45 Environmental Engineering Division / 50 Environmental Services Division / 53 Environmental Manufacturing Division / 56 Renewable Energy Division



**Environmental  
Engineering**



**Environmental  
Services**



**Environmental  
Manufacturing**



**Renewable  
Energy**

## Master of Air Pollution Control Technologies for the Future Environment

### Environmental Engineering Division

Today, the world is facing the social and economic tasks related to the 3P's (pollution, population, poverty). In particular, due to the development of science and industries, environmental pollution is highlighted as one of the biggest threats against mankind. The Environment Engineering Division provides high quality environmental facilities based on accumulated technologies and experience in order to sustainably manage and preserve the pleasant environment, while protecting people from such pollution. In order to meet the global interests and demands on air and water pollution control, close cooperation of its global network companies to design the future contributing to the development of the environmental industry, and is continuously racing to make the world we live in greener.



Dangjin Thermal De-SOx De-NOx Facilities



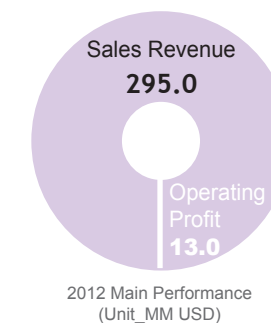
Taean Thermal Electric Dust Collector



Gimhae Myeongdong Purification Plant Solar Power Generator



View of Anseong Plant



### KC Cottrell

**Leader of Global Environment Industry – People and Technology that Protect the Earth's Environment**

CEO : Lee, Tae Young

Founding Date : Nov 27th, 1973 (new corporation by corporate splitting on Jan 1, 2010)

Address : 151 Yanghwa-ro, Mapo-gu, Seoul, Anseong Plant: 253 Seowoonsingi-gil, Seowoon-myeon, Anseong, Gyeonggi-do

Website : [www.kc-cottrell.com](http://www.kc-cottrell.com)

### Leading Environmental Company that Offers Comprehensive Environmental Engineering Services

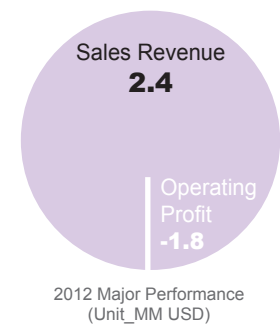
Since its establishment in 1973 with the mission of making an air pollution control plant with our own hands, KC Cottrell has worked on protecting the air quality by removing harmful materials such as dust, sulfuric oxides, nitrogen oxides, and dioxins that are found in exhaust gases from combustion processes using fossil fuels. Not only does it provide technologies to remove air pollutants from flue gases through dust collectors, desulfurization and De-NOx facilities, but it also conducts inspections and diagnoses on existing facilities, and provides 'total solutions' including performance improvement based on its experience as a global leading environmental company.

For the past 40 years, KC Cottrell has pursued business diversification and globalization based on its technologies and experience in supplying major facilities for environmental plants. While expanding its business foothold to the UK, USA, China, Taiwan, Japan, Vietnam, India and Indonesia, it has continuously carried out R&D and developed proprietary technologies through close networks with subsidiaries in its quest to strengthen its competitiveness in the global market. Furthermore, since the corporate reorganization in 2010, it has been concentrating on EPC business sectors using its core capacities and is doing all in its power to solidify its position as a leader in the environmental industry.

### Anseong Plant

The KC Cottrell Anseong Plant produces APC equipment, heat exchanges and industrial equipment, and supplies them to overseas KC Cottrell companies in the UK, China, the USA and Vietnam, as well as to clients both in Korea and overseas. KC Cottrell's Anseong Plant is striving to provide customers the best satisfaction and value through its experience accumulated over a long period of time and its successful delivery performance.





## KC Cottrell (China)

Golden Business of China, Pioneering through superior technologies

CEO : Cha, Sun Geun  
Founding Date : June 20th, 2002  
Address : No.9576 Donghuancheng Rd., Changchun City, Jilin Province, 130033, P.R.China  
Website : [www.cckc.com.cn](http://www.cckc.com.cn)

2012 Main Performance ■ Awarded a SCR retrofit project for Huayang power plant.  
■ Awarded a ESP for Vietnam NS1 project

KC Green Holdings made a joint venture with the Jilin Power Company, investing 50% each, to establish KC Cottrell (China) in order to strategically enter the Chinese market, which is growing into the world's largest environmental market. It was established in 2002 in Changchun, of the northeastern part of China, which is also the nation's largest heavy industries region.

After launching through the ideal union of the two company's technologies and marketing knowhow, KC Cottrell (China) was acquired 100% by KC Green Holdings. The superior technologies of KC Cottrell (China) were recognized and expanded its business capacities to all related industries including power utilities, steel mills, petrochemical, and cement industries. Diverse products from ESP, bag filters, FGD, De-NOx / De-SOx facilities, sewage treatment facilities, to waste incinerator facilities are being supplied to all parts of China in order to contribute to the cleanliness of the atmosphere.

## KC Cottrell (US)

Clean American Continent made through endless technological development

CEO : Mr Richard C. Staehle  
Founding Date : April 12th, 2006  
Address : 2319 Timberloch Place, suite E, The Woodlands, TX 77380, USA  
Website : [www.lodgecottrell.us](http://www.lodgecottrell.us)

2012 Main Performance ■ Awarded Rapper and Microprocessor Rapper Control Upgrade major power plant  
■ Awarded ESP Engineering / Model Study and supply of Perforated Plates  
■ Awarded ESP Engineering and supply of new ESP  
■ ESP Evaluation Studies for 14 ESP's major Utility

KC Cottrell (US) entered the North American environmental facility After-sales market in 2006 and was established in order to take part in the North and South American markets. KC Cottrell (US) has currently made a partnership with the Brazilian STG Group of Brasil Equipamentos Industrials Ltd. and is expanding its sales networks to the Central and South American markets such as in Mexico.

Also, KC Cottrell (US) is a member of the WPCA (Worldwide Pollution Control Association). It is continuously publishing research papers at conferences and in technical journals in the US to maintain its position as a technological leader in electrostatic precipitators and gas treatment facilities.

Furthermore, by utilizing the Ash Resistivity Lab facilities, which is an important research tool for electrostatic precipitators, it is playing an important role in technological support and R&D for KC Network companies. KC Cottrell (US) will lead the environmental facilities markets in the Americas through technological and sales cooperation with the KC Network companies. KC Cottrell (US) entered the North American environmental facility After-sales market in 2006 and was established in order to take part in the North and South American markets. KC Cottrell (US) has currently made a partnership with the Brazilian STG Group of Brasil Equipamentos Industrials Ltd. and is expanding its sales networks to the Central and South American markets such as in Mexico.



## KC Cottrell (Vietnam)

Partner of Vietnam for Environmental Protection Plans

CEO : Oh, In Seok  
Founding Date : November 28th, 2008  
Address : Fl. 3rd. SIMCO Building 28 Pham Hung Street Tu Liem district, Hanoi, Vietnam  
Website : [www.kc-cottrell.com](http://www.kc-cottrell.com)

2012 Main Performance ■ Mong Duong 2 repairing work & additional work for ESP  
■ Binh Son refinery bag filter(supply spare parts)

KC Cottrell (Vietnam) is an environmental facility company that was established for the first time in Vietnam in 2008. It is engaged in EPC (engineering, procurement & construction) base projects within Vietnam, while also providing technical A/S for existing facilities to provide total solutions in relation to the environment.

Moreover, it is striving to provide advanced environmental technologies and environmental pollution prevention facilities that can completely treat atmosphere pollution from pollutants that are generated from industrial facilities in order to protect the environment of Vietnam, which possesses potential for rapid economic growth.

In addition, by conducting volunteer activities for the community, such as scholarship programs, KC Cottrell (Vietnam) is working hard to make a better future and better environment with the community.

## KC Cottrell (Taiwan)

Efforts to Share Clean Air and a Happy Corporate Culture in Taiwan

CEO : Choi, Hee Gyoo  
Founding Date : January 5th, 2012  
Address : 14F-5, No 77, Sec1, Xintai 5th Rd, Xizhi Dist, New Taipei City 221, Taiwan

2012 Main Performance ■ Hsinta Power Station(500MW x 2Units) Maintenance work

KC Cottrell (Taiwan) was recognized for its high level of technology in the atmospheric pollution prevention sector in Taiwan focusing on EPC (engineering, procurement & construction) and Aftermarket technical service support projects since 20 years ago. The branch, which was operated as a liaison office, was later converted into the Taiwan Corporation in January 2012 for more effective business and stable operation in the Taiwanese market.

Its technologies and performance were recognized while delivering electrostatic precipitators, desulfurization facilities and ash treatment facilities to the Hsinta Power Plant in Taiwan since 2008. Through this, KC Cottrell (Taiwan) is looking for ways to enter other Southeast Asian markets through cooperation with KC Cottrell (China) and (Vietnam).

KC Cottrell (Taiwan) is striving to make it a company where the local community wants to work for by ensuring pleasant work environments, reasonable wages, and ethical and human-oriented management.



## Lodge Cottrell (UK)

Changing the world's first technologies into the world's best technologies

CEO : Kim, Sung Jin  
Founding Date : 1913 (Acquired in march 2005)  
Address : Trinity Point East Halesowen B63 3HY United Kingdom  
Website : [www.lodgecottrell.com](http://www.lodgecottrell.com)

2012 Main Performance

- Particulate, De-NOx, and De-SOx for a new UK straw fired power station
- Particulate and De-SOx removal for a fly ash sintering process manufacturing light weight aggregates

After being the first in the world to develop and commercialize the electrostatic precipitator, a core technology for air pollution prevention, in 1913, Lodge Cottrell (UK) became part of KC Green Holdings in March 2005. Starting with designs and installation of electrostatic precipitators, Lodge Cottrell supplied over 4,500 units of environmental equipment across the world for a century and is an environmental company that has led the global air pollution control system market. Lodge Cottrell, which possesses advanced technologies and abundant experience, offers highly efficient hazardous material discharge prevention facilities, as well as maintenance and consulting services at reasonable prices so that client companies can effectively respond to emissions regulations of the government, which is growing stricter.

Based on its unique knowhow, Lodge Cottrell is cooperating with the network companies of KC Green Holdings in order to diligently perform its role as a capable partner for the development of the world and preservation of the environment.



## Lodge Cottrell (India)

We will step up in India, a land of unlimited potentials

CEO : Lee, Tae Jun  
Founding Date : November 19th, 2008  
Address : Suite No. 502-504, 5th Floor, Tower B, Spazedge Bldg, Sector 47, Sohna Rd, Gurgaon, Haryana - 122002, India  
Website : [www.lodgecottrellpvt.com](http://www.lodgecottrellpvt.com)

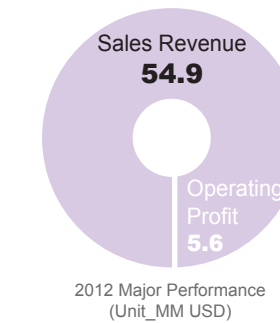
2012 Main Performance

- NTPC Meja project contract ( 2X660 MW )
- NTPC Rihand project contract
- Visag Steel Plant project contract
- Hindustan Copper Limited project contract
- Completed production and delivery for CEO plates used in the NTPC Badarpur project and Visag project at the CE plant

Lodge Cottrell (India) was established in 2008 for the purpose of entering the environmental market in India. Starting with the electrostatic precipitator order for blast furnaces from the IISCO steel mill in India via POSCO E&C, it is continuously delivering environmental facilities to the Indian market.

In accordance to the 11th and 12th Five-Year Development Plans of India, focusing on the steel market in which existing facilities are being expanded or newly constructed by SAIL, TATA, Jindal and POSCO, together with large-scale power markets in which there will be a 180GW increase in generation volume within ten years from 2007, sales activities are being conducted. By integrating the experiences possessed by the company into the unique culture and environment of India, it is striving to become India's top environmental company that creates new values.

In addition, Lodge Cottrell (India) is recruiting outstanding human resources of India to support the global businesses of the KC Network companies, and will act as a bridge between Europe and Asia that can also provide support to the Middle East and South East Asia.



## Nol-Tec Systems

Continuing the legacy of global fame through customized products and services

CEO : Mr. Wayne Johnson  
Founding Date : 1983 (Acquired in August 2010)  
Address : 425 Apollo Drive Lino Lakes, MN 55014, USA  
Website : [www.nol-tec.com](http://www.nol-tec.com)

2012 Main Performance

- Awarded several dry sorbent injection projects to mitigate sulfur dioxide in coal burning power utilities.
- Achieved highest sales revenue in history of Nol-Tec Systems.

Nol-Tec Systems, which is internationally acclaimed for supplying pneumatic material handling systems for particulate materials and small particles in the industrial automation, became part of the KC Green Holdings family in 2010.

In 2005, Nol-Tec Systems developed the 'Sorb-N-Ject' system, which is a dry type desulfurization facility using dry sorbents, to supply them to power plants in the US. By combining with the electrostatic precipitator and bag filter technologies of KC Cottrell (US), it has collaborated to take part in the dry type desulfurization facility, electrostatic precipitator and bag filter markets.

In addition, it established Nol-Tec Europe (Italy) and Nol-Tec Asia (Singapore) to strengthen its sales network in Europe and Asia.

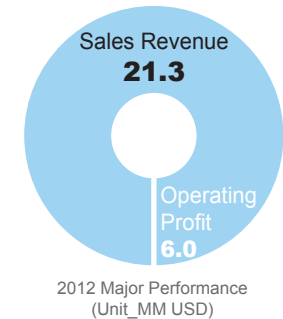
The air transport system platform technologies of Nol-Tec Systems is expected to bring about high synergy effects in the ash treatment facility and dry type desulfurization facility market through the global sales network and technological cooperation of KC Network companies, and it will continue its efforts to lead the North American environmental facilities market through cooperation among the network companies.



## Environmental Management by Constructing a Total Environment Management System

# Environmental Services Division

Wastes are unavoidable byproducts caused by the advancement of industries. They have increased and become more diverse to make it a challenge to treat the wastes in safe and suitable manner. Wastes are treated through landfills or incineration, while some are recycled. It not only costs very much, but it causes secondary environmental pollution such as for the soil, water and air when treating the wastes. The KC Network Environment Services Division is striving to safely and appropriately treat wastes and administer wastes caused in the work place in its effort to construct a total environmental management system in order to pass down an unpolluted environment to our future descendents.



## KC Enviro Services

Technology that protects the beautiful environment and valuable Earth

CEO : Park, Jeong Cheol  
 Founding Date : July 1st, 2000  
 Address : Yeosu National Industrial Complex, 310-73 Jindallae-gil, Yeosu, Jeonnam  
 Tel +82 61 685 4148  
 Website : www.kc-enviro.com

2012 Main Performance

- Achieved 6,676 million won in revenue for incineration sector
- Achieved 1,680 million won in revenue for waste catalyst regeneration sector
- Achieved 188 million won in revenue for foul smell stabilization sector

KC Enviro Services is a total environmental service provider that was founded in July 2000 and it conducts treatment (general, designated) of wastes generated in the industrial sites of the Yeosu National Industrial Complex and in the Yeongnam / Honam regions, while also regenerating waste catalysis and restoring landfills.

### Incineration and Waste Heat Supply Business

Equipped with a fluidized bed thermal incinerator and high-temperature rotating incinerator, it not only treats 98 tons per day, but it supplies the waste heat created by this as a source of energy.

### Waste Catalyst Regeneration and Landfill Restoration Business

The SCR waste catalyst regeneration service adopted the Ex-situ method for the first time in Korea and it removes pollutants that affect the activity of De-NOx catalyst in order to remanufacture them into the likes of new catalysts. In the landfill restoration business, patented technologies for restoring waste landfills are used to procure usability of the land and to remove the smell from the area.

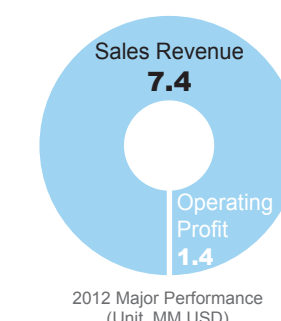
## KC Landfill Service

Environmental Company recognized for thorough adherence of principles and hygienic operations

CEO : Lee, Jae Young  
 Founding Date : April 14th, 2003  
 Address : Office: Metro Plaza 607, 3706 Byeongjeom-ro, Hwaseong, Gyeonggi-do  
 Site: 17-25 Chilgok-ri, Songsan-myeon, Hwaseong, Gyeonggi-do  
 Website : www.kc-enviro.com

KC Landfill Service was established to conduct final treatment of wastes under the slogan of 'safe and complete treatment' in the Seoul Metro region, where the largest amount of industrial wastes are discharged in Korea.

Since the operation of landfill facilities in zone 3 in January 2004, the landfill was expanded two times to fill wastes total volume of 1,194,200m<sup>3</sup>. It has contributed to the treatment of general landfill wastes that occur in the Seoul Metro area and an additional landfill (1,350,000m<sup>3</sup>) was established for zone 4-2. KC Landfill Service stood fast to quality management and worked hard to become a leader in environmental preservation. As a result, it was recognized as an exemplary environmental company from many parties involved including the community. In accordance to its management principle of utmost priority on maintaining safety and adhering to the environmental regulation, it will continue to contribute to industrial activities through economical and safe treatment of industrial wastes.



## KC Enviro Construction

From Sorting to Recycling, New Environment Technologies that Construct the Future

CEO : Chae, Su Baek  
 Founding Date : January 1997 (Acquisition: Oct 1st, 2007)  
 Address : 36 Jochon 4-gil, Gunsan, Jeollabuk-do  
 Website : www.kc-enviro.com

KC Enviro Construction specializes in waste treatment in the construction sector such as dismantling scaffolds and structures, and collection, transportation and treatment of construction wastes.

In order to promote recycling, the government enacted the 'Act on Promoting Recycling of Construction Wastes' on January 1, 2005 and made the basis for national environmental preservation through appropriate treatment of construction wastes and turning them into high value resources. In order to meet national efforts for recycling resources, KC Junglim Environment was established in 2007, and its name was changed to the current KC Enviro Construction in 2011.

KC Enviro Construction has conducted ceaseless R&D to recreate construction wastes into useful resources and has now created proprietary knowhow and systems such as new production technology of recycled aggregates with uniform size. It is a leader in recycling of construction wastes with waste treatment facilities and performs environmental treatment of construction wastes, production of recycled aggregate and separation of foreign particles with its new state-of-the-art facilities.

## KC Hanmi Environment

Less Wastes, Better Environment in Gyeongnam

CEO : Lee, Gang Wook  
 Founding Date : May 30th, 1992  
 Address : 103 Jayumuyeok 6-gil, Masanhoewon-gu, Changwon, Gyeongnam  
 Website : www.kc-enviro.com

2012 Main Performance

- Sales: 8,337 MM KRW
- Incinerator Unit 1 waste heat boiler installation and environmental improvement construction completed (July 2012)
- KOSHA 18001 certification acquired

KC Hanmi Environment was established in 1992 with the goal of treating designated wastes that occurred in plants in the Gyeongnam region. It is currently located in sector 2 of the Masan Free Trade Zone and it is a company that specializes in industrial wastes with one-stop service systems for collecting, transporting and treating wastes (general, designated), sewage and waste oil.

Under its slogan of "Clean Environments Make Beautiful Lives" it is equipped with the latest incineration facilities, water-soluble cutting fluid treatment facilities and advanced sewage treatment facilities. Thus, it can safely treat wastes and sewage that are generated in various industrial processes and construction sites. It has incineration facilities (100 tons/day, Stoker type) and sewage treatment facilities (200 m<sup>3</sup>/day, evaporation, concentration & bio treatment), and it treats fluid, solid wastes and sewage focusing mainly on clients in the Changwon Industrial Complex.

It aims at taking the lead in creating a cleaner and clearer environment by building the largest sales network in the south including Yeosu, Masan and Yangsan, together with KC Enviro Services.



## KC Honam Environment

Meeting our Mission as a Protector of the Environment for Clean Nature

CEO : Lee, Jae Young  
Founding Date : Feb 20th, 1984 (Acquired on October 4, 2011)  
Address : 77-9 Yangma-ro, Deokjin-gu, Jeonju, Jeollabuk-do  
Website : www.kc-enviro.com

2012 Main Performance

- Revenue of 6.1 Bil KRW
- Improvement of the operation of incinerator and other facilities
- Activities in local Police Development Committee and Jeonju Provincial Police Administration School Violence Prevention Sub-committee
- ISO 14001 environmental management system certification / cyclic aggregate quality certification

KC Honam Environment's main line of business is treatment (crushing / grinding) of construction waste (300 t/h) and waste collection, transportation and intermediate treatment (incineration) of general and designated wastes (62.4t/day).

Based on its mission as a protector of the environment and responsible corporate activities, KC Honam Environment is striving to preserve a clean environment for both present and future generations. In order to take a leading position in the environmental industry, which will become a core industry that determines the success of 21st century economies, we will continuously engage in R&D and facility investments based on our 20 years of knowhow and highly capable human resources. In addition, we will focus on developing recycling technologies to construct a resource-circulating society, which is the highest value for environmental preservation, and do our best to realize the values of love for human, nature and the environment, to make the world in order with nature.



## Veolia ES & KC EcoCycle

Waste Plastic Cycling with the World Best

CEO : Gustavo Enrigue Migue Tafernaberry  
Founding Date : Dec 13th, 2006  
Address : 88 Ilshin-Ro Ganam-Myeon, Yeoj-Gun, Gyeonggi-Do  
Website : www.kc-enviro.com

2012 Main Performance

- Achieved sales of 1,366 million won in the waste treatment sector
- Achieved sales of 2,058 million won in the solid fuel manufacturing sector

Veolia ES & KC Ecocycle is a joint venture between the French Veolia Water Korea and KC Green Holdings to specialize in turning industrial wastes into solid fuels as a waste treatment facility.

It collects combustible wastes such as plastics, vinyl or paper wastes at work or homes. The collected wastes are crushed, sorted and molded into solid fuels (Fluff RDF, RPF).

It has procured competitiveness through specialized technology development and is working on developing into a company that shares the government's green growth industry policies.

A bold step to the world, only possible because we are united

## Environmental Manufacturing Division

In the pursuit of advancement of the economy and industry, environmental pollution is an unavoidable byproduct. On this, KC Network's Manufacturing Services Division is working hard on production technology development and manufacturing for the protection of the environment together with many reputable domestic and overseas companies. By listening to customers and market demands, the KC Manufacturing Services (KCMS) Division will strengthen cooperation among KC Network companies to become a top player in the environmental manufacturing sector to offer the highest levels of satisfaction. Rather than simply making and selling products, KCMS Division will construct a society of coexistence with customers and construct a society that improves national health and eradicates air pollution.



## KC Glass & Materials

Reliable Glass Bottles, Nature-friendly Glass Bottles

CEO : Kim, Jeong Wan  
Founding Date : June 9th, 1971 (Acquired on Sep 3, 2007)  
Address : 1150 Sungjin-ro, Ipjang-myeon, Seobuk-gu, Cheonan, Chungcheongnam-do  
Website : www.kcglass.co.kr

2012 Main Performance

- Began production of energy-saving new material (Glass Bubble Frits) (July)
- Awarded 'Stone Pagoda Industrial Medal' as excellent labor-management harmony company
- Acquired good recycled and regenerated product GR certification for the first time in the glass bottle industry (January 12)
- Participated in energy management system project (Aug 1 – Dec 31)
- Minimization of pollutants through real-time air pollutant transmission and management according to chimney remote monitoring system (TMS) installation
- Awarded 'Minister of Knowledge Economy Award' for contributions to conserving resources and energy such as heightening waste glass recycle rates and reusing waste heat from melting furnaces
- Reduction of greenhouse gases through conversion to clean fuel (Apr 1)
- Participation in carbon emissions trading system project (Aug 1 – Dec 31)
- Achieved quintuple no-accident target period (1,590 days) (Jul 3)

KC Glass & Materials, established in 1971, provides high quality glass container products and services based on its accumulated experience and technologies equipped with high-speed automated glass bottle manufacturing facilities, and strives to win the trust of customers. Especially KC Glass & Materials promotes use of waste glass that are 100% recyclable, and achieves its low-carbon footprint operation to create a clean environment.

It is leading the domestic glass bottle industry based on the best production facilities, accumulated experience and technologies. It also pioneers producing Glass Bubble Frits, which is an energy-saving advanced glass material, to global companies since July 2012.

In addition, it is working on customer satisfaction through ceaseless quality improvements such as acquisition of ISO 9001, ISO 14001 and KOSHA 18001 certifications, and it is evolving into a technology-innovation environment-friendly company through excellent recycled and regenerated product GR certification and INNO-BIZ certification and green technology certifications.





## Jord KC

Distributing air cooled heat exchangers to the world for over 30 years

CEO : Park, Ki Suh

Founding Date : December 17th, 2003

Address : Suite 609, 28 Hwangsaewool-ro, Bundang-gu, Seongnam, Gyeonggi-do

2012 Main Performance

- Contract for Byeolnae Group Energy Construction Project for Hanjin Heavy Industries
- Hyundai Oilbank Air Condenser
- Contract for Daewoo Construction SADARA PROJECT

In order to further strengthen its position as an environmental equipment company, this company was jointly established between Australia's Jord International Pty Ltd. and KC Green Holdings. Jord International Pty Ltd. is an Australian company that has distributed air cooled heat exchangers used in various industrial plants and power generation facilities all over the world for over 30 years.

The knowhow of KC Green Holdings, which has designed, manufactured and distributed various mechanical facilities such as dust collector facilities and ash collection facilities, and Jord International Pty Ltd.'s heat exchanger that integrates advanced technologies have combined to create synergy effects.

Jord KC provides competitive prices, quality and services for specifications demanded by customers, and will continue to grow by maximizing core capacities that can enhance the efficiency of devices that use energy.

## Clestra Hauserman

Customers' 'creative management' space: Pleasant office environment technologies

CEO : Lee, Tae Young / Xavier Pierre Guy Ngjar

Founding Date : March 27th, 1985(Acquired in May 12th, 1997)

Address : KTCU Building 9th Floor, 50 Yeoinaru-ro, Yeongdeungpo-gu, Seoul

Website : www.clestra.com

2012 Main Performance

- MBC Sangam Partition and Cladding Construction
- Contract for National Assembly Council Partition Construction
- Samsung SDS concentrated air conditioning booth (55 EA) installation

In order to protect the global atmospheric environment and establish a pleasant office environment, this company was jointly established by Windhurst and KC Green Holdings. Shares were acquired since 1997 and currently, 50% of the share is possessed by KC Green Holdings.

Clestra Hauserman, which was established in the US in 1913 and has offered various functions and beauties for steel movable partitions, ceiling materials, clean rooms, and interior for offices and buildings, has become a multi-national company by acquiring and establishing corporations in Hong Kong, Japan, China and Singapore.

By managing Asia and Oceania as one market to maintain smooth exchange of human resources and goods, it has firmly established its position as a leading company.

Furthermore, by additionally establishing a new plant in Taicang, China in 2010, it established a cornerstone for not only the Chinese market, but also as a second plant for Asia.

By creating flexibility of space and providing fast and effective products and services fitting to the customers' environment, it is designing the future together with customers.



## KC Envirotech E&C (Fushun)

A New Wind in the Chinese Environmental Market through Innovative Products and Low Costs

CEO :Yan Lun Jie

Founding Date : July 22nd, 2005

Address : ChuagXin Second Road, Fushun City, Liaoning Province, China

KC Envirotech E&C (Fushun) is a Chinese corporation established jointly by KC Green Holdings and the Chinese Handsome Construction Company in order to establish a global production hub and step into the massive environmental market of China.

Based on the world-class technologies of KC Green Holdings and KC Envirotech E&C Fushun and their experience in various projects, air pollution prevention facilities, various steel structures, and steel segments of diverse dimensions are being manufacture, produced, and supplied. Furthermore, it is striving to make innovative products of the highest quality at the lowest costs and create services that can satisfy customers.

## NWL Pacific

World-class Technologies for Electric Devices Used for Electrostatic Precipitator

CEO : Kim, Jung Han

Founding Date : May 12th, 1998

Address : 253 Seowoonshingi-gil, Seowoon-myeon, Anseong, Gyeonggi-do

Website : www.nwlpacific.com

NWL Pacific specializes in the production and sales of rectifier-type transformers and plasma power devices that supply power to electric dust collectors. It was established as a joint venture with the US-based NWL Company, which is a world-class company that specializes in power devices for electric dust collectors with an 80 years old history, in 1998. Based on its high technological prowess, it offers high qualities from the product design to its manufacturing and installation.

NWL Pacific delivers products to companies involved in major plant projects in Korea such as Samcheonpo, Yeongdong, Yeosu, Boryeong, Taeon Thermal Power Generator and POSCO, being recognized for its technological capacities. Furthermore, it is trusted and has been recognized for its technology, and thus participated in the 'Korea West Power Co., Ltd. Joint Development Program' to continuously pursue productivity innovation activities. Through endless research and efforts, we will do our best in performance and quality and strive to become a company that is trusted and gives value to customers through progressive technologies and diverse services.

Ceaseless Efforts for Development of Renewable Energy that is Considerate of the Future Environment

Renewable Energy Division

With the Kyoto Protocol going into effect causing pressure to reduce greenhouse gas emissions, and the continuously soaring oil prices, countries are concentrating on procuring a stable source of energy. Thus, KC Green Holding's Renewable Energy Division is focusing on R&D of technologies that can be used as environment friendly energy sources. Based on the accumulated knowhow of the environmental industry and specialized manpower, it is developing environment friendly, and competitive technologies in order to take lead of the future growth industries.



### KC Solar Energy

Sunlight on Abandoned Land

CEO : Lee, Tae Young  
Founding Date : May, 2005  
Address : 151 Yanghwa-ro, Mapo-gu, Seoul  
Website : www.kcgreenholdings.com

2012 Main Performance

- Completed construction of 20MW solar power generator at the Renault-Samsung Busan plant (Dec 24)
- Completed construction of 200kW solar power generator at the Korea Southern Power Company New Incheon Thermal Power Plant (Sep 19)
- Completed construction of 300kW solar power generator at the Korea East-West Power Company Dangjin Thermal Power Plant (Dec 31)

KC Solar Energy was established in 2005 with the goal to join the solar power generation business that will be a big part of clean energy production and is assertively participating in 'Low Carbon Green Growth through Green Technologies and Clean Energy', which is a new paradigm for national development.

Starting with the construction and operation of a solar power plant on a landfill area of 16,000m<sup>2</sup> in Hwaseong, Gyeonggi Province in 2006, it is producing an annual 1,230MWh of clean energy, while also working on a number of other solar power projects.

Using the thermal generation operation knowhow, starting with the Busan-Shinho solar power generator maintenance service (20 years) that was agreed upon in 2012, we are planning to enhance customer profits through more stable operation and higher generation efficiency of the generators in our plans to expand O&M businesses where we can all win.

O&M businesses are services in which the completed solar power generator is consigned for operation and maintenance. Once domestic and foreign solar power generator constructions increase, it is expected to become a new profit creation model.

The large-scale solar power generation system focuses on maximizing the investment profits of the owner through optimization of design, construction, operation and maintenance as the turnkey supplier across all sections. In the future, based on the multi-dimensional expertise of the solar power generation division, it will develop into a company specializing in the domestic solar power sector from the review phase of business feasibility to the efficient construction of the solar power plants.



### KC Energia

Rediscovery of Roofs that Illuminate the Future with Light

CEO : Yoon, Jin A  
Founding Date : February 15th, 2007(Acquired : January, 2009)  
Address : 191 Donggyo-ro, Mapo-gu, Seoul  
Website : www.kc-energia.com

KC Energia began as an agent for Uni-solar Korea and is a company that not only supplies solar power modules, but also implements project development, consulting, and project turnkey construction.

It specializes in the roof solar power panels for the Gwangyang Steel Mill of POSCO, as well as RPS (Renewable Portfolio Standards), public sectors and private sectors for other building and roof solar power system installation. Furthermore, by working on low-interest loan support of the US EXIM Bank, it provides solar power generation system and solutions that maximize customer profits. Since 2010, it also began the power system project related to the smart grid project and has entered the smart grid market of the US and Europe.

By entering the renewable energy business, which will play a pivotal part in the future green energy industry, KC Energia will become more than a solar power company, but an environment-friendly company that considers the future and the environment.



### KC Green Energy

Hope to Humanity and the World through Development of New Energy

CEO : Kang, Tae Il  
Founding Date : March 16th, 2009  
Address : 4th Floor, 151 Yanghwa-ro, Mapo-gu, Seoul

In order to expand business fields into the renewable energy sector for KC Invall Green Energy, which was a joint venture between KC Green Holdings and INVALL of Spain for wind power business development, KC Green Holdings acquired 100% of shares in 2012 and changed the company name to KC Green Energy.

Its goal is to carry out various renewable energy projects by expanding its business fields to renewable energy project designs, construction, R&D, consulting, and independent power system research.

It hopes to become a company that assists in reaching the government's environment-friendly objective such as the 2012 renewable portfolio standard (RPS) and companies with facilities of 500MW or more that will be required to supply 2% of total generation with renewable energy by next year, and 10% by 2022. Furthermore, it will continuously focus on research and market development so that it can position itself as a powerhouse in the domestic renewable energy market, which is expected to be worth 4.1 trillion won in 2012 and 54 trillion won by 2022.



# Appendix

59 Financial Information / 62 Review Opinion of Third Party / 63 GRI Index / 66 Registered Associations and Awards / 68 Reader's Questionnaires



## Financial Information

### Independent Auditors' Report

We have audited the accompanying consolidated statements of financial position of KC Green Holdings Co., Ltd and its subsidiaries(the "Group") as of December 31, 2012, 2011 and 2010 and the related consolidated statements of comprehensive income for the years then ended. Management is responsible for the preparation and fair presentation of these financial statements in accordance with Korean International Financial Reporting Standards. Our responsibility is to express an opinion on these financial statements based on out audit. We did not audit the consolidated financial statements of Nol-Tec Systems, Inc. and 5 other subsidiaries as of December 31, 2012 and for the year then ended. The consolidated financial statements of these subsidiaries reflect total assets constituting 13.4% of consolidated total assets and operating income constituting 24.1% of consolidated operating income before elimination of intercompany transactions as of December 31, 2012 and for the year then ended. Those consolidated financial statements were audited by other auditors whose report has been furnished to us, and our report is based solely on the report of other auditors.

The consolidated statements of financial position of the Group as of December 31, 2010, and the related consolidated statements of comprehensive income for the year then ended were audited by other auditors, whose report thereon dated March 31, 2011 expressed an unqualified opinion. Those consolidated financial are presented fairly in conformity with accounting principles generally accepted in the Republic of Korea, and the Korean IFRS adjustments to the consolidated financial statements are not included. The accompanying comparative consolidated financial statements in accordance with Korean IFRS have been excluded from the scope of audit for expressing our audit opinion.

We conducted our audit in accordance with auditing standards generally accepted in the Republic of Korea. Those Standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the consolidated financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

In our opinion, the accompanying consolidated financial statements referred to above, present fairly, in all material respects, the financial position of the Group as of December 31, 2012, 2011 and 2010 and its financial performance for the years then ended in accordance with Korean International Financial Reporting Standards.

*Charm Accounting Corporation*

Charm Accounting Corporation  
March 11, 2013  
Seoul, Korea

Consolidated Statement of Financial Position

FY 2012 12/31/2012 Current  
FY 2011 12/31/2011 Current

(All amounts in Millions Korean WON unless otherwise stated)

	2012	2011
ASSETS		
Property, plant and equipment-net	152,787	157,546
Investment in real estate	3,344	7,082
Intangible assets	34,542	35,717
Deferred tax assets	8,321	7,283
Derivative financial assets	857	66
Investments in associates	15,085	9,818
Other non-current financial assets	7,751	7,016
Other non-current non-financial assets	1,267	950
Total non-current assets	223,954	225,478
Inventories	10,648	12,042
Account receivables - net	103,099	54,798
Due from customers for contract work	52,223	26,795
Other current receivables	25,283	14,168
Other current financial assets	10,020	9,389
Current tax assets	69	385
Current derivative financial assets	4,069	969
Cash and cash equivalents	55,940	72,799
Total current assets	261,351	191,345
Total assets	485,305	416,823
EQUITY		
Issued capital	11,217	11,218
Capital surplus	(939)	(921)
Paid-in capital in excess of par value	45,847	45,847
Treasury stock	(3,837)	-
Gain from disposition of treasury stock	10	-
Other reserves	4,829	5,918
Retained earnings	74,672	53,166
Equity attributable to owners of the parent	131,799	115,228
Non-controlling interests	60,424	50,613
Total equity	192,223	165,841
LIABILITIES		
Other non-current provisions	18,695	15,634
Long-term borrowing	47,308	49,745
Other non-current financial liabilities	3,691	5,844
Post-employment benefit obligations	6,764	6,501
Derivative financial liabilities	99	1,212
Deferred tax liabilities	5,277	4,870
Total non-current liabilities	81,834	83,806
Other current provisions	557	234
Account payables	77,510	43,362
Other current liabilities	41,622	35,373
Advance from customers	40,989	39,453
Current tax liabilities	7,539	4,361
Derivative financial liabilities	324	748
Short-term borrowings	38,582	35,059
Current portion of long-term liabilities	3,950	8,185
Other non-current financial liabilities	175	401
Total current liabilities	211,248	167,176
Total liabilities	293,082	250,982
Total equity and liabilities	485,305	416,823

Consolidated Statement of Comprehensive Income

FY 2012 From 01/01/2012 To 12/31/2012  
FY 2011 From 01/01/2011 To 12/31/2011

(All amounts in Millions Korean WON unless otherwise stated)

	2012	2011
Operating income		
Operating income	502,630	320,437
Operating expenses	456,139	297,118
Cost of sales	414,647	264,590
Selling, general and administrative expenses	41,492	32,528
Profit from operations	46,491	23,319
Other income	14,122	9,650
Other expenses	(7,425)	(5,842)
Financial income	1,228	1,133
Financial costs	(4,407)	(3,877)
Profit before income tax	50,009	24,383
Income tax expense	11,695	5,112
Profit for the year	38,314	19,271
Other comprehensive income (loss), net of tax		
Foreign currency translation differences	(2,039)	(519)
Actuarial gain or loss on defined benefits plans	(599)	(1,059)
Equity changes in equity method investee	(308)	366
Net change in fair value of financial assets	86	5
Net change in fair value of interest swap	199	(229)
Total other comprehensive income (loss)	(2,661)	(1,436)
Total consolidated comprehensive income	35,653	17,835
Profit attributable to:		
Owners of the parent	23,706	9,817
Non-controlling interests	14,608	9,454
Profit for the year	38,314	19,271
Total comprehensive income attributable to:		
Owners of the parent	22,156	9,491
Non-controlling interests	13,497	8,344
Total comprehensive income for the year	35,653	17,835
Earnings per share (in Korean Won)		
Basic	1,057	438
Diluted	1,057	438



# Review Opinion of Third Party

# GRI G3.1 Index

● Reported ● Partially Reported ○ Not Reported N/A Not Applicable

To the ‘KC Green Holdings’ Board of Directors

As an independent body, I was requested to review the ‘2013 KC Green Holdings Sustainability Report (hereinafter referred to as ‘Report’)' and so I am submitting the following expert review opinion.

## Purpose of Review

The purpose of this review opinion is to check whether there are major errors or biases for the information and claims related to sustainable management as revealed through the report by KC Green Holdings (hereinafter referred to as KCGH), and to analyze what kind of efforts are necessary to improve the quality of the report.

## Criteria

Review of this report was conducted taking into reference the verification criteria of the AA1000 Assurance Standard (2008) .

## Review and Opinion

My review opinions based on the data and documents provided by KCGH are as follows.

○ **Inclusivity: Does KCGH comply with the principle of including stakeholders for responsible and strategic responses in pursuing sustainable management?**

My opinion is that in pursuing sustainable management, KCGH recognizes the importance of stakeholder engagement and has displayed the will to include stakeholders by means such as reinforcing communication channels with them compared to the previous year. However, I would like to recommend continuous monitoring of the demands and interests of stakeholders from the communication process, and regular reporting in more detail how such demands are being reflected in corporate management.

○ **Materiality: Does this report the most important information for stakeholders in the economic, social and environmental sectors?**

Like the report in the previous year, my opinion is that KCGH included the most important information for stakeholders. In particular, the performance of sustainable management is explained throughout different sectors such as Sustainable Management, Creating Value, Green Business, and Harmonious Relationship, and it is judged that the report reveals important performance information needed for stakeholders to make proper judgments and decisions. I would like to recommend that in the future, thresholds for selecting major issues which will identify the needs of stakeholders be established. This will help KCGH to find major issues suitable to KCGH every year, while also constructing a reporting system that can make reports for in accordance with the major issues. In addition, I would like to recommend that in the selection process of major issues should reach

out beyond the legal framework of the corporation, and include the entire value chain including the supply chain of the company.

○ **Responsiveness: Does this report properly respond to the demands and interests of stakeholders?**

I have confirmed that KCGH made its efforts since last year's report from the fact that it additionally broke down its stakeholder group to shareholders, client companies, partners, employees, community, environment and government, while also striving to improve its responsiveness with reinforced communication by each group. Furthermore, the fact that the goals for sustainable management were presented in the ‘KCGH Sustainability Report’ can be seen as a positive factor, and shows that sustainable management has taken root as a core strategy for the KCGH business model. However, I would like to recommend the establishment of detailed response strategies for core issues or tasks of sustainable management be incorporated.

## Considerations for the Future

I would like to give a positive assessment on the will and efforts of KCGH in publishing its second sustainability report. I would like to make the following recommendations for future reports in accordance to changes in the global sustainable management guidelines.

- Performance monitoring and publisizing of a comprehensive strategy for sustainable management
- Reinforce authorities and responsibilities related to sustainable management by the top management and the board of directors
- Improve transparency for the selection process of major issues through communication with stakeholders
- Set quantitative objectives for social and environmental impact by product, and improve performance measurement
- Completeness (consistency of reporting range) and accuracy (standardized measurement index) for common performance indices of subsidiaries (same as last year)
- Develop a unique sustainable management strategy and performance measurement system per subsidiary (same as last year)
- Strengthen the economic, social and environment performance of the report and strengthen non-financial risk management (ethics, social and environment)
- Improve measurements and publicizing of the environmental impact from corporate activities throughout all parts of the value chain.

July 10, 2013

Director of the Institute for Industrial Policy Studies  
Kim, Jae Eun



Category	Index NO.	Contents	Level of application	Page	note
Strategy and Analysis	1.1	Statement from the most senior decision-maker of the organization.	●	2-3	
	1.2	Description of key impacts, risks, and opportunities.	●	2-3	
Corporate Profile	2.1	Name of the organization.	●	6	
	2.2	Primary brands, products, and/or services.	●	10-13	
	2.3	Operational structure of the organization, including main divisions, operating companies, subsidiaries, and joint ventures.	●	7, 10-11	
	2.4	Location of organization's headquarters.	●	6	
	2.5	Number of countries where the organization operates, and names of countries with either major operations or that are specifically relevant to the sustainability issues covered in the report.	●	10-11	
	2.6	Nature of ownership and legal form.	●	6	
	2.7	Markets served (including geographic breakdown, sectors served, and types of customers/beneficiaries).	●	10-11	
	2.8	Scale of the reporting organization.	●	7	
	2.9	Significant changes during the reporting period regarding size, structure, or ownership.	●	4-5, 8-9	
	2.10	Awards received in the reporting period.	●	4-5	
Reporting media variables	3.1	Reporting period (e.g., fiscal/calendar year) for information provided.	●	Cover	
	3.2	Date of most recent previous report (if any).	●	Cover	
	3.3	Reporting cycle (annual, biennial, etc.)	●	Cover	
	3.4	Contact point for questions regarding the report or its contents.	●	Cover	
	3.5	Process for defining report content.	●	Cover	
	3.6	Boundary of the report (e.g., countries, divisions, subsidiaries, leased facilities, joint ventures, suppliers). See GRI Boundary Protocol for further guidance.	●	Cover	
	3.7	State any specific limitations on the scope or boundary of the report (see completeness principle for explanation of scope).	●	Cover	
	3.8	Basis for reporting on joint ventures, subsidiaries, leased facilities, outsourced operations, and other entities that can significantly affect comparability from period to period and/or between organizations.	●	Cover	
	3.9	Data measurement techniques and the bases of calculations, including assumptions and techniques underlying estimations applied to the compilation of the Indicators and other information in the report. Explain any decisions not to apply, or to substantially diverge from, the GRI Indicator Protocols.	●	Cover	
	3.10	Explanation of the effect of any re-statements of information provided in earlier reports, and the reasons for such re-statement (e.g.,mergers/acquisitions, change of base years/periods, nature of business, measurement methods).	●	Cover	
	3.11	Basis for reporting on joint ventures, subsidiaries, leased facilities, outsourced operations, and other entities that can significantly affect comparability from period to period and/or between organizations.	●	Cover	
	3.12	Table identifying the location of the Standard Disclosures in the report.	●	63-65	
	3.13	Policy and current practice with regard to seeking external assurance for the report.	●	62	
Governance, Responsibility, Participation	4.1	Governance structure of the organization, including committees under the highest governance body responsible for specific tasks, such as setting strategy or organizational oversight.	●	18	
	4.2	Indicate whether the Chair of the highest governance body is also an executive officer.	●	18	
	4.3	For organizations that have a unitary board structure, state the number and gender of members of the highest governance body that are independent and/or non-executive members.	●	18	
	4.4	Mechanisms for shareholders and employees to provide recommendations or direction to the highest governance body.	●	16, 18	
	4.5	Linkage between compensation for members of the highest governance body, senior managers, and executives (including departure arrangements), and the organization's performance (including social and environmental performance).	●	18	
	4.6	Processes in place for the highest governance body to ensure conflicts of interest are avoided.	●	18	
	4.7	Process for determining the composition, qualifications, and expertise of the members of the highest governance body and its committees, including any consideration of gender and other indicators of diversity.	●	18	
	4.8	Internally developed statements of mission or values, codes of conduct, and principles relevant to economic, environmental, and social performance and the status of their implementation.	●	17	
	4.9	Procedures of the highest governance body for overseeing the organization's identification and management of economic, environmental, and social performance, including relevant risks and opportunities, and adherence or compliance with internationally agreed standards, codes of conduct, and principles.	●	7, 15	
	4.10	Processes for evaluating the highest governance body's own performance, particularly with respect to economic, environmental, and social performance.	○		
	4.11	Explanation of whether and how the precautionary approach or principle is addressed by the organization.	●	19	
	4.12	Externally developed economic, environmental, and social charters, principles, or other initiatives to which the organization subscribes or endorses.	●	34, 37	
	4.13	Memberships in associations (such as industry associations) and/or national/international advocacy organizations in which the organization: * Has positions in governance bodies; * Participates in projects or committees; * Provides substantive funding beyond routine membership dues; or * Views membership as strategic.	●	66	
	4.14	List of stakeholder groups engaged by the organization.	●	16	
	4.15	Basis for identification and selection of stakeholders with whom to engage.	●	16	
Disclosure of Management Info	4.16	Approaches to stakeholder engagement, including frequency of engagement by type and by stakeholder group.	●	16	
	4.17	Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting.	●	36	
	DMA EC	Economic Sector	●	20-21	
	DMA EN	Environmental sector	●	26-27	
	DMA LA	Labor sector	●	32, 37-40	

1)AA1000AS (Assurance Standard): Sustainable management verification criteria developed by AccountAbility, a non-profit organization related to social responsibility management in England aiming to improve the overall performance and responsibilities of organizations by enhancing the quality of social and ethical accounting, auditing and reporting in 1999. The revised version in 2008 was applied from 2010

● Reported   ● Partially Reported   ○ Not Reported   N/A Not Applicable

Category	Index NO.	Contents	Level of application	Page	note
Disclosure of Management Info	DMA HR	Human rights sector	●	40	
	DMA SO	Social sector	●	42-43	
	DMA PR	Products sector	●	35	
Economy	EC1	Direct economic value generated and distributed, including revenues, operating costs, employee compensation, donations and other community investments, retained earnings, and payments to capital providers and governments.	●	21-22	
	EC2	Financial implications and other risks and opportunities for the organization's activities due to climate change.	●	2-3, 27	
	EC3	Coverage of the organization's defined benefit plan obligations.	●	40	
	EC4	Significant financial assistance received from government.	●	23	
	EC5	Range of ratios of standard entry level wage by gender compared to local minimum wage at significant locations of operation.	●	37	
	EC6	Policy, practices, and proportion of spending on locally-based suppliers at significant locations of operation.	●	34	
	EC7	Procedures for local hiring and proportion of senior management hired from the local community at significant locations of operation.	●	37	
	EC8	Development and impact of infrastructure investments and services provided primarily for public benefit through commercial, in-kind, or pro bono engagement.	●	42-43	
	EC9	Understanding and describing significant indirect economic impacts, including the extent of impacts.	●	22	
Environment	EN1	Materials used by weight or volume.	●	30-31	
	EN2	Percentage of materials used that are recycled input materials.	●	28-29	
	EN3	Direct energy consumption by primary energy source.	●	30	
	EN4	Indirect energy consumption by primary source.	●	30	
	EN5	Energy saved due to conservation and efficiency improvements.	●	28-29	
	EN6	Initiatives to provide energy-efficient or renewable energy based products and services, and reductions in energy requirements as a result of these initiatives.	●	28-29	
	EN7	Initiatives to reduce indirect energy consumption and reductions achieved.	●	30	
	EN8	Total water withdrawal by source.	●	30	
	EN9	Water sources significantly affected by withdrawal of water.	○		N/A
	EN10	Percentage and total volume of water recycled and reused.	●	29-30	
	EN11	Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas.	○		N/A
	EN12	Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas.	○		N/A
	EN13	Habitats protected or restored.	N/A		
	EN14	Strategies, current actions, and future plans for managing impacts on biodiversity.	○		N/A
	EN15	Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk.	N/A		
	EN16	Total direct and indirect greenhouse gas emissions by weight.	●	31	
	EN17	Other relevant indirect greenhouse gas emissions by weight.	○		
	EN18	Initiatives to reduce greenhouse gas emissions and reductions achieved.	●	53	
	EN19	Emissions of ozone-depleting substances by weight.	N/A		
	EN20	NOx, SOx, and other significant air emissions by type and weight.	●	31	
	EN21	Total water discharge by quality and destination.	●	31	
	EN22	Total weight of waste by type and disposal method.	●	31	
	EN23	Total number and volume of significant spills.	●	30	
	EN24	Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally.	N/A		
	EN25	Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the reporting organization's discharges of water and runoff.	○		N/A
	EN26	Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation.	●	28-31	
	EN27	Percentage of products sold and their packaging materials that are reclaimed by category.	●	28-29	
	EN28	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations.	●	30	
	EN29	Significant environmental impacts of transporting products and other goods and materials used for the organization's operations, and transporting members of the workforce.	●	30	
	EN30	Total environmental protection expenditures and investments by type.	●	30	
Labor Performance Index	LA1	Total workforce by employment type, employment contract, and region, broken down by gender.	●	37	
	LA2	Total number and rate of new employee hires and employee turnover by age group, gender, and region.	●	37	
	LA3	Benefits provided to full-time employees that are not provided to temporary or part-time employees, by major operations.	●	38, 40	
	LA4	Return to work and retention rates after parental leave, by gender.	●	40	
	LA5	Percentage of employees covered by collective bargaining agreements.	●	40	
	LA6	Minimum notice period(s) regarding significant operational changes, including whether it is specified in collective agreements.	○		
	LA7	Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs.	●	39	
	LA8	Rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities by region and by gender.	○		

● Reported   ● Partially Reported   ○ Not Reported   N/A Not Applicable

Category	Index NO.	Contents	Level of application	Page	note
Labor Performance Index	LA9	Education, training, counseling, prevention, and risk-control programs in place to assist workforce members, their families, or community members regarding serious diseases.	●	39	
	LA10	Health and safety topics covered in formal agreements with trade unions.	●	38	
	LA11	Average hours of training per year per employee by gender, and by employee category.	●	38	
	LA12	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings.	●	38	
	LA13	Percentage of employees receiving regular performance and career development reviews, by gender.	●	18, 37	
	LA14	Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity.	●	37	
Human Rights Performance Index	LA15	Ratio of basic salary and remuneration of women to men by employee category, by significant locations of operation.	●	37	
	HR1	Percentage and total number of significant investment agreements and contracts that include clauses incorporating human rights concerns, or that have undergone human rights screening.	○		
	HR2	Percentage of significant suppliers, contractors and other business partners that have undergone human rights screening, and actions taken.	○		
	HR3	Total hours of employee training on policies and procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained.	●	17, 38	
	HR4	Total number of incidents of discrimination and corrective actions taken.	●	37	
	HR5	Operations and significant suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated or at significant risk, and actions taken to support these rights.	●	40	
	HR6	Operations and significant suppliers identified as having significant risk for incidents of child labor, and measures taken to contribute to the effective abolition of child labor.	●	37	
	HR7	Operations and significant suppliers identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of all forms of forced or compulsory labor.	●	37	
	HR8	Percentage of security personnel trained in the organization's policies or procedures concerning aspects of human rights that are relevant to operations.	○		
	HR9	Total number of incidents of violations involving rights of indigenous people and actions taken.	●	16	No incidence of infringing rights of native people
Social Performance Index	HR10	Percentage and total number of operations that have been subject to human rights reviews and/or impact assessments.	●	17	
	HR11	"Number of grievances related to human rights filed, addressed and resolved through formal grievance mechanisms."	○		
	SO1	Percentage of operations with implemented local community engagement, impact assessments, and development programs.	●	27, 38	
	SO2	Percentage and total number of business units analyzed for risks related to corruption.	●		No contents related to anti-corruption
	SO3	Percentage of employees trained in organization's anti-corruption policies and procedures.	●	17	
	SO4	Actions taken in response to incidents of corruption.	●	17, 34	
	SO5	Public policy positions and participation in public policy development and lobbying.	●	16, 22	
	SO6	Total value of financial and in-kind contributions to political parties, politicians, and related institutions by country.	N/A		
	SO7	Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes.	●		No case of violation
	SO8	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations.	●		No case of violation
Product Performance Index	SO9	Operations with significant potential or actual negative impacts on local communities.	○		N/A
	SO10	Prevention and mitigation measures implemented in operations with significant potential or actual negative impacts on local communities.	●	17, 22	
	PR1	Life cycle stages in which health and safety impacts of products and services are assessed for improvement, and percentage of significant products and services categories subject to such procedures.	●	35-36	
	PR2	Total number of incidents of non-compliance with regulations and voluntary codes concerning health and safety impacts of products and services during their life cycle, by type of outcomes.	●		No case of violation
	PR3	Type of product and service information required by procedures, and percentage of significant products and services subject to such information requirements.	○		
	PR4	Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling, by type of outcomes.	●		No case of violation
	PR5	Practices related to customer satisfaction, including results of surveys measuring customer satisfaction.	●	36	
	PR6	Programs for adherence to laws, standards, and voluntary codes related to marketing communications, including advertising, promotion, and sponsorship.	○		
	PR7	Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship by type of outcomes.	○		
	PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data.	●		No case of violation
	PR9	Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services.	●	35	



# Registered Associations and Awards

## Registered Associations

Korea Chamber of Commerce and Industry (KC Cottrell)	Korea Carbon Capture and Storage Association (KC Cottrell)
Anseong Chamber of Commerce and Industry (KC Cottrell Anseong Factory)	Business Institute for Sustainable Development (KC Cottrell)
Korea Ozone UV Association (KC Cottrell)	MetroNorth Chamber of Commerce (Nol-Tec Systems)
Korea Environmental Preservation Association (KC Cottrell)	

## Awards

Feb 21, 2012	Awarded Korea Glass Industry Cooperative chairperson's award (KC Glass & Materials)
Apr 30, 2012	2012 Labor Day Government's Stone Pagoda Industrial Medal (KC Glass & Materials)
May 21, 2012	24th Leading Small & Medium Business Contribution Award, SMBA Chairperson Award (KC Glass & Materials)
Jun 5, 2012	Awarded at the Seoul Environmental Awards Green Technology Sector (KC Cottrell)
Oct 11, 2012	RPS (renewable energy supply duty system) Contributor Minister of Knowledge Economy Award (KC Cottrell)
Nov 27, 2012	Chungcheongnam-do 2012 Energy Conservation Promotion Conference, Minister of Knowledge Economy Award (KC Glass & Materials)

## Certifications

KC Cottrell (including plant)	ISO 9001, ISO 14001, OHSAS 18001, KOSHA 18001 SEL(Special Equipment License for China), NB(The National Board of Boiler & Pressure Vessel Inspectors), NB "R", ASME(The American Society of Mechanical Engineers) "U", ASME "U2", ASME "S"
KC Cottrell (China)	ISO 9001
KC Cottrell (Vietnam)	ISO 9001
Lodge Cottrell (UK)	ISO 14001, ISO 9001, OHSAS 18001
KC Enviro Services	ISO 9001, ISO 14001, OHSAS 18001
KC Landfill Service	ISO 14001
KC Enviro Construction	ISO 9001, ISO 14001
KC Hanmi Environment	ISO 14001, KOSHA 18001
KC Honam Environment	ISO 14001, Cyclic aggregate quality certification
KC Glass & Materials	ISO 9001, ISO 14001, KOSHA18001, Excellent recycled and regenerated product GR certification, green technology certification, KS certification
Jord KC	AS/NZS1400,AS/NZS ISO 9001,AS/NZS 4801, OHSAS 18001
Clestra Hauserman	ISO 9001, ISO 14001, KOSHA 18001
KC Envirotech E&C (Fushun)	ISO 9001, ISO 14001, OHSAS 18001
NWL Pacific	ISO 9001, CLEAN workplace, CE certification

- ISO 9001 (quality management system) certification  
- ISO 14001 (quality management system) certification  
- OHSAS 18001 (safety and health management system) certification (Korea Foundation for Quality)  
- KOSHA 18001 (safety and health management system) certification (Korea Occupational Safety and Health Agency)  
- KSI 7001 (green management system) certification (Korea Foundation for Quality)  
- AS/NZS 1400(\* Australian/New Zealand Standard, Heavy-duty alkaline detergents for 'in-place' cleaning in dairy factories)  
- AS/NZS 4801 (Australia OHSAS 18001 certification)  
\* When operating certification systems with the international standard, OHSAS 18001, the name of the standard is sometimes changed for the sake of convenient management by different countries or organizations. (i.e.: Argentina – IRAM 3800, Australia – AS/NZS 4801, etc)

## Patents

	Name of Patent	Patent No.	Reg. Date	Remark
1	Deodorizing method and deodorizing device according to saw-tooth wave corona discharge	0191681	Jan 26, 1999	KC Green Holdings
2	Electrostatic pesticide distribution device and methods	164678	Sep 14, 1998	KC Green Holdings
3	Electrostatic filter cloth dust-collection method due to corona discharge and its device	0227127	Jul 30, 1999	KC Green Holdings
4	Plasma ionization gas generating device using streamer corona discharge	0227128	Jul 30, 1999	KC Green Holdings
5	Air pollutant treatment method and its device using streamer corona discharge	0228835	Aug 12, 1999	KC Green Holdings
6	Gas discharge forming device using high voltage impulse	0344988	Jul 4, 2002	KC Green Holdings
7	Hazardous gas purification device of streamer corona discharge inside the reactor using high voltage impulse power	0381499	Apr 10, 2003	KC Green Holdings
8	High voltage impulse discharger with three pole electrode characteristics with adjustable electrode	0367785	Dec 27, 2002	KC Green Holdings
9	Dry type cleaning system and dry type cleaning method of sintering exhaust gas	10-0660234	Dec 14, 2006	KC Green Holdings
10	Single high voltage recognition method high speed electrostatic dust-collection device and its electric dust-collection method	10-0871601	Dec 26, 2008	KC Green Holdings
11	Ceiling-attached dust collection system and management method using this	10-0960104	May 19, 2010	KC Green Holdings
12	Single cover structure of dust collector and dust collector equipped with this	987197	Oct 5, 2010	KC Green Holdings
13	Wet absorption tower with multiple absorption chambers	1185805	Sep 9, 2012	KC Green Holdings
14	Exhaust gas treating device	-	-	Patent pending
15	Wet absorption tower with multi-layer spray structure	-	-	Patent pending
16	High fluid speed electric dust collector for stabilization of floating particle movement	-	-	Patent pending
17	Wet absorption tower with multiple reaction tank	-	-	Patent pending
18	Electric dust collector for pure oxygen combustion	-	-	Patent pending
19	Combustible gas condensation device with sulfur removal functions	-	-	Patent pending
20	Fluidized Bed Carbon Dioxide Scrubber for Pneumatic Conveying System	13/023,569	Feb 9, 2011	Nol-Tec Systems
21	Pollution Control System with Sorbent Recycling (discontinued due to lack of market demand)	61/551079	Oct 25, 2011	Nol-Tec Systems
22	Material Delivery System for Sorbent Materials or Powders	61/770,207	Mar 2013	Nol-Tec Systems
23	Treating Device by Anaerobic Decomposition of Organic Trash and its Method	0279644	Jul 6, 2007	KC Enviro Services
24	Waste Gas Purification Bio Filter	0371501	Jul 6, 2007	KC Enviro Services
25	Rotation Disk Sorting Device for Trash and Earth and Sand Sorting	0279217	Jul 6, 2007	KC Enviro Services
26	Trash Stabilization Method for Restoration of Landfills	0308814	Jul 6, 2007	KC Enviro Services
27	Glass Bottle Inspection Device	10-0860495	Sep 22, 2008	KC Glass & Materials
28	Exhaust Gas Denitrification Device Temperature Raising System for Environmental Pollution Prevention Facilities and Exhaust Gas Treatment System that Applies This	10-1070777	Sep 29, 2011	KC Glass & Materials
29	Exhaust Gas Treating System	10-1166476	Jul 11, 2012	KC Glass & Materials
30	Coating Method for Glass Container Mold and Surface Coated Mold using This Method	10-1217034	Dec 24, 2012	KC Glass & Materials
31	Assembly Wall Device Panel	10-0242818-0000	Nov 13, 1999	Clestra Hauserman
32	Connected Vertical Partition System	10-0350353-0000	Aug 14, 2002	Clestra Hauserman
33	Single Block Ceiling	10-0242817-0000	Nov 13, 1999	Clestra Hauserman
34	Assembly-type Cabinet Glass Door formed on Light-weight Partition Panel	10-0174354-0000	Nov 4, 1998	Clestra Hauserman
35	Connective Structure for Partition Panel Construction in Preparation against Earthquakes	10-0174353-0000	Nov 4, 1998	Clestra Hauserman
36	Easy to Dismantle and Assembly Partition Panel and Cabinet System using This Panel	10-0174352-0000	Nov 4, 1998	Clestra Hauserman
37	Plastering Panel System in Interior Wall of Building	10-0129430-0000	Nov 8, 1997	Clestra Hauserman

# Reader’s Questionnaire

## We look forward to receiving your valuable input.

In order to publish improved sustainability reports in the future, KC Green Holdings hopes to listen to the valuable inputs from our stakeholders and readers. Please fill in the following and send it to us via mail or fax to the below contact information.

To

KC Green Holdings Corporate Planning Team, 151 Yanghwa-ro, Mapo-gu, Seoul Korea 121-898  
Tel\_ 02-320-6221 Fax\_ 02-320-6100

1. Which of the following is applicable to you?

☐ Employee

☐ Customer

☐ Investor

☐ Shareholder

☐ Vendor

☐ Client (Company)

☐ Government Institute

☐ Civic Organization

☐ Community Member

☐ Press

☐ Academia

☐ Other(\_\_\_\_\_)

2. Through which channel did you learn about this report?

☐ KC Green Holdings homepage

☐ Newspaper/Magazine

☐ Web-surfing

☐ Seminar/Lecture

☐ Other

3. What motivated you to read this report?

☐ To acquire investment info

☐ To judge the company's sustainable management performance

☐ For research and educational purposes

☐ Acquire specific information (specify:\_\_\_\_\_)

4. How do you feel overall about the report?

	Very	Yes	Average	Somewhat	Not at All
Contents are easy to understand	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Report contents are reliable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Design is good	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sustainable management activities can be understood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Satisfied overall with the report	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. Please speak freely on areas that you would like to comment on for future reports.