A company co-existing with the environment

A company that researches ways to safeguard the natural beauty of our planet.
A company whose mission is to keep our environment green to protect future dreams.
A company that co-exists with nature, recognizing that the environment is the most valuable asset.
KC Cottrell is preparing for the future with a firm commitment to the environment.
A leading global company with environmental technology

KC Cottrell has been a world leader in environmental technology for over 40 years. At a time when the term, environment industry, had yet to enter the vernacular, an electrical engineer’s curiosity for electrostatic precipitators and his determination to localize technology led to the launch of KC Cottrell.

The company has consistently been at the forefront of preserving the environment. As foremost environmental specialist in Korea, KC Cottrell offers total solutions related to the environment, ranging from plant facilities to services. With 40 years of unrivalled know-how, KC Cottrell is expanding its reach to keep the environment clean in every corner of the globe.
Nov. 1979
Founded Korea Cottrell Co., Ltd.

Jul. 1983
Contract signed with Korea Electric Power Company for Borongyo thermal power plant ESP/Electrostatic Precipitator

Jul. 1990
Contract signed with Taiwan Power Company for Taihwa thermal power plants ESP in Taiwan

Jun. 1992
Contract signed with Taiwan Power Company for Shinwu thermal power plant ESP in Taiwan

Nov. 1994
Listed on the Korean Stock Exchange

Apr. 1996
Contract signed with Korea Electric Power Corporation for Dangjin thermal power plant FGD/Pulverized Coal Combustion

Jul. 1997
Contract signed with POSCO for Gwangyang steel works blast furnace ESP

Feb. 1998
Contract signed with HI (Hyundai-Kia Motors) Heavy Industry Co., Ltd. for Nippon Steel Co., Ltd. Kamato power plant ESP in Japan

Aug. 1999
First commercialized PPDP (Pulse-corona induced plasma chemical process)

Apr. 2000
Contract signed with Korea District Heating Corporation for Chungju district heating plant FGD

Aug. 2000
Contract signed for Shijiazhuang thermal power plant ESP in China

Nov. 2000
Contract signed for Motoha thermal power plant ESP in China

Dec. 2000
Contract signed with Taiwan Power Company for Taichung thermal power plant ESP in Taiwan

May, 2002
Contract signed with Korea Southern Power Co., Ltd. for Yeongnam thermal power plant Osmotic Fuel conversion

Jun. 2002
Contract signed with Korea Southern Power Co., Ltd. for Samhunjeo thermal power plant FGD

Jan. 2003
Contract signed with Microsoft for Yeongju plant kiln (ESP/electrostatic bag filters)

Mar. 2003
Contract signed with The Toke Carbon Product Co., Ltd. for FGD in Thailand

Jun. 2003
Contract signed with Korea East-West Power Co., Ltd. for Dangjin thermal power plant AHS/Air Handling System

Apr. 2004
Acquired AIMI (Air Pressure Valve) and ISPower Boiler STAIRP

Nov. 2004
Contract signed with Korea Western Power Co., Ltd. for Taejon thermal power plant ESP

May, 2005
Contract signed with POSCO for Gwangyang Steel Works Sinter Plant FGD (Flue Gas Cleaning System)

Jan. 2006
Contact signed with Korea Middok Power Co., Ltd. for Borongyo thermal power plant ESP and AHS

May, 2006
Contract signed with Korea South East Power Co., Ltd. for Hating thermal power plant FGD

Sep. 2006
Acquired SES (Special Equipment License) certification for manufacturing Pressure Vessel in China

Nov. 2006
Contract signed with Korea South East Power Co., Ltd. for Yeongjujeon 1MWs solar power system

Mar. 2007
Contract signed with Formosa Heavy Industries Corp. for Formosa Plastics Corp. UE Thermal power plant GS/Gas Suspension Absorber) in Taiwan, USA

Apr. 2008
Changed company name to KC Cottrell Co., Ltd.

Feb. 2008
Contact signed with Mitsubishi Heavy Industries Ltd. for Guacoku power plant No.1-5 Coal Fired Boiler ESP in China

Sep. 2008
Contact signed for Eksibut power plant ESP/FGD in Kazakhstan

Jan. 2009
Contact signed with Taiwan's Power Company for Hongia power plant No.1-2 FGD, ESP, AHS in Taiwan

May 2010
Contact signed with Formosa Heavy Industries, Ltd. for GSAF in Paiton, Philippines

Sep. 2010
Contact signed with Doosan & HiC for Rajpur power plant ESP in India

Oct. 2010
Contact signed with POSCO Engineering for Marak power plant ESP in Indonesia

Mar. 2011
Contact signed with NTPC Ltd. for Badarpur thermal power plant ESP in India

Jun. 2011
Contact signed with Doosan HMC for Rabigh, No.2 power plant ESP/FGD/PULS in Saudi Arabia

Aug. 2011
Contact signed with Doosan HMC for EHV, Vietnam Electric Grid Duong Dong thermal power plant ESP in Vietnam

Sep. 2011
Contact signed with PT Kokatex, Engineering for BF in Kudus, Indonesia

Oct. 2011
Contact signed with SK E&C/Energy SA for FGD/ESP/PULS in Tabarca, Turkey

Nov. 2011
Contact signed with Hyundai Heavy Industries/Panama Canal Authority (ACP) for ESP in Panama

Jun. 2012
Contact signed with Samsung Heavy Industries for Mi skeda Alumina refinery plant ESP, FGD, AHS in Saudi Arabia

Jan. 2012
Contact signed with Samsung Heavy Industries for MI skeda Alumina refinery plant ESP, FGD, AHS in Saudi Arabia

May 2013
Contact signed with POSCO ENG for Krakow waste thermal treatment plant FGD in Poland

May 2014
Contact signed with Maek Dip Nguyen Pte Ltd. for Mega thermal power plant ESP in India

Jul. 2016
Contact signed with Hannut Samsung Motors for 200MW solar power system in Busan, Korea

Nov. 2012
Contact signed with Samsung Southern Power Co., Ltd. for Samchul Green Power (100MW x 2) ESP (One of the largest CFBC boilers in the world)

Dec. 2012
Contact signed with Harveys E&C for Yantai II ESP in Saudi Arabia

Feb. 2013
Contact signed with Korea South-West power plant for Yeongjujeon thermal power plant ESP/FGD in China

Apr. 2013
Contact signed with POSCO ENG for Dalian thermal power plant 1000MW x 3 ESP

May 2013
Contact signed with POSCO ENG for Dalian thermal power plant ESP in India

Apr. 2012
Contact signed with FL Smidth / OPP S.A. for Morrocco Phosphate Flash Dryer No.1 FGD in Morocco

May 2014
Contact signed with POSCO ENG for Dalian ESP in Brazil

Apr. 2012
Contact signed with FL Smidth for CSP station plant ESP in Dalian
Environment, technology, future – KC Cottrell, an environmental leader on the global stage

In order to pass on clear skies to future generations, KC Cottrell has been developing innovative technologies to protect our surrounding environment. Since our inception in 1973, we have led Korea’s environmental industry by establishing ourselves as premier providers of environmental plant facilities and services. We are now reaching out to a wider market and competing against global peers. We established a branch office in Taiwan in 1990 and have ventured into North America and Europe. 2002 saw the establishment of a joint venture in China, a country fast emerging as a major force in the Asian economy. Thus, we are laying the foundation for a new period of growth as the leader of the environmental industry.

With green technology to safeguard tomorrow’s environment, KC Cottrell is striving to reinforce its specialty in the following three areas: environmental systems (e.g. FGD treatment, dust collection and incineration), environmental services (e.g. recycling, environmental incineration and reclamation of wastes), and manufacturing of high-quality industrial facilities based on our diverse experience.

Guided by our vision to lead the global environment industry, KC Cottrell is pursuing a management objective to turn 40 years of know-how into core competitiveness and technology into assets. We are making consistent and bold investments to attract the best global talents and to innovate our systems. As we enter this exciting stage of growth, KC Cottrell will not only stabilize new businesses, but also boost global competitiveness to become a recognized leader of the world environment industry in the 21st century.
Make

Technology that looks 10 years into the future and cares for the next 100 years

With our unique technology for the environment, KC Cottrell is boldly expanding into overseas markets. With our vast experience and know-how in pollution prevention technology, we are a company that also promotes health by removing various pollutants.

While the world worries about today’s environment, KC Cottrell is already drawing up plans for a greener tomorrow.

A company that grows in harmony with our planet, KC Cottrell is poised for a brighter future as a global leader in the environmental industry.
Dust Collection Systems

Making tomorrow’s skies bluer –
KC Cottrell possesses unique technology for dust collection systems

- Dry Type Electrostatic Precipitators
  - Top Rapping
  - Side Rapping
- Wet Type Electrostatic Precipitators
  - Vertical
  - Horizontal
- DeTar Electrostatic Precipitators
- Fabric Filters
  - Pulse Jet Fabric Filter
  - Reverse Air Fabric Filter
- Wet Scrubber & Multi Cyclones
- FGCI(Flue Gas Conditioning) Systems
  - NH3 Injection System
  - SOx Injection System
- e-BF
- Ash Handling Systems

Dust Collection Systems

Customers know they can trust our dust collection systems. With over 40 years of know-how combined with our experience in applying systems to diverse emission sources, we are building up a reputation for excellence in dust collection. By considering cost effectiveness, durability and convenience in the design, manufacturing, purchasing and construction stages, we are striving to provide speedier solutions to customers’ problems. KC Cottrell is working to keep tomorrow’s skies blue.
De-SO\textsubscript{x} Systems

Till the day we see clean rain – a leader of highly efficient desulfurization facilities

- **Wet Process**
  - Wet Limestone-Gypsum Process
  - Wet Magnesium Hydroxide Process
  - Alkali Waste Water Process
  - NaOH Sodium Hydroxide Process

- **Semi-dry Process**
  - GSA (Gas Suspension Absorber System)
  - SDR (Semi Dry Reactor) System

- **Dry Process**
  - NaHCO\textsubscript{3} Process
  - Alkali Powder Injection System

**FGD (Flue Gas Desulfurization) Systems**

Fossil fuels, used in various industrial facilities, produce sulphuric acid (SO\textsubscript{x}) when burned. If the harmful and toxic sulphuric acid is released in the atmosphere, it poses another threat to our lives in the form of secondary pollutants, such as acid rain.

KC Cottrell removes sulphuric acid with a highly efficient FGD system to protect the environment.
De-NOx Systems

Breathing together in a dream world - the best of De-NOx technology is born from rich experience.

- SCR (Selective Catalytic Reduction)
- SNCR (Selective Non Catalytic Reduction)
- Hybrid
- SCR Catalyst Regeneration

De-NOx (NOx reduction) Systems

Interest in air pollutants is growing along with the increasing damage from acid rain and photochemical smog, as shown in the rise in respiratory diseases. We are facing the pressing task of removing nitrous oxide (NOx) and other major air pollutants, such as sulphuric acid, carbon monoxide and chloride. KCI Cottrell has the experience and engineering skills related to various industrial facilities-power plants, combustion plants, steel-making facilities, glass melting furnace and cement manufacturing facilities-to provide diverse systems for eliminating nitrous oxide. In this way, we are help to keeping the air we breathe cleaner.
Ash Handling Systems

Ash Handling System (AHS) refers to the method to collect, convey, store and extract various types of ash residue left over from fossil fuel combustion processes. The most common types of ash include bottom ash, bed ash, fly ash and ash clinkers resulting from the combustion of coal, wood and other solid fuels. Ash handling systems may employ pneumatic ash conveying or mechanical ash conveyors.

- **BOTTOM ASH SYSTEM**
  - Bottom Ash Hopper System
  - Submerged Drag Chain Conveyor System
  - Dry Ash Extraction Conveyor System
  - Ash Water & Slurry System

- **PYRITES HANDLING SYSTEM**
  - Hydraulics System Utilizing Hydro-injectors
  - Mechanical System Utilizing Conveyors

- **FLY ASH SYSTEM**
  - Positive Pressurized Conveying System
    - Lean(Dilute) Phase System
    - Medium Phase System
    - Dense Phase System
  - Negative Pressurized Conveying System
  - Combustion System
  - Economizer & Air Preheater Ash Handling System

- **Ash Disposal System**
  - Ash Slurry Pump System
  - HCS (High Concentration Slurry Disposal) System

- **ASH STORAGE SILO SYSTEM**
  - Ash Dry Unloading System
  - Ash Wet Unloading System
Waste & Biomass To Energy Systems

Providing clean and proven technologies are our future dreams for the environmental energy.

- Fluidized Bed combustion system (PYROFLUID®)
- Rotary Kiln type
- Rotary Kiln type + Stoker type

Waste & Biomass To Energy Systems
Waste disposal is becoming a threatening problem to the natural environment. To protect the environment from the hazardous waste, efficient and reliable incineration systems are the only feasible solution. KC Cottrell’s product line covers a wide range of combustion systems ranging from Fluidized Bed combustion type to rotary Kiln type for both solid and fluid wastes such as sludge, waste-oils, waste-oil materials, waste-paint, waste-plastic, as well as municipal wastes and biomass. Waste & biomass to energy systems can be designed and supplied as per customer requirement.
Determining the future of the environment industry.
Diversified and specialized factories and reflect industrial trends.

Industrial Machinery

- Dampers
  - Leaver Damper
  - Stack Isolation Damper
  - Gullotine Damper
  - Radial Valve Damper
  - Diverter Damper
  - PopPet Damper
  - Water Damper
- Expansion Joints
- Pressure Vessels

By drawing upon its experience and technology in pollution prevention, KC Cottrell designs and manufactures industrial machinery such as dampers to control gas flow, expansion joints and pressure vessels. We offer customers the latest technology and machinery needed for power plants, steel works, cement plants, petrochemical factories, semiconductor processing and incinerators. KC Cottrell has built up a diverse and specialized system to effectively respond to the constantly changing and developing environmental industry. We are doing our part for a cleaner and brighter environment.
Air Cooled Heat Exchangers

KC Cottrell’s air cooled heat exchanger (ACHE) systems are indispensable features at various industrial facilities, including petrochemical, oil refining and power plants. The use of air as a cooling medium eliminates the problems of erosion and water supply associated with water-cooled heat exchangers. Furthermore, it is an eco-friendly method that addresses the problem of warming seawater that results when seawater is used. In particular, our ACHEs are ideal for regions like the Middle East where there is a drastic shortage of industrial water. KC Cottrell is helping to save resources and the environment with its unique way of thinking.
Solar Power Systems

- Home PV systems design and construction
- Turn-key system supply for large-scale commercial PV projects
- Project development and operation of large-scale commercial PV projects
- BIPV (Building Integrated Photovoltaic System) development

Solar Power Systems

From small-scale generators for the home to MW-level systems for industrial use, KC Cottrell has been maximizing customer profits with its differentiated planning, building, and operating management capabilities. Turning natural resources into energy is an important business for global environmental specialist KC Cottrell, as it not only functions as an alternative energy source but also prevents pollution.
Technical Services

One step closer to the customers need
Consumer satisfactory program with high technology and know-how

Technical Services
Using our experience in clean air technology gained over 3 decades, KC Cottrell is able to provide a wide range of technical services to the power, steel, cement and many other industries, both within Korea and overseas. KC Cottrell will carry out a comprehensive analysis of the process efficiency, operating parameters and equipment condition. Based on this diagnosis we will carry out works to optimize the process efficiency, operability and long term reliability. KC Cottrell also provides routine process checks and maintenance as well as machine part exchanges.

- Inspection and Diagnosis
- System Efficiency Improvements
- Maintenance and Repair Service Contract
- FGD & ESP Engineering Consulting
A company planning for the future environment

KC Cottrell is working to raise the level of Korea’s environmental industry to global standards. We are fully aware that the environment represents not only a precious resource, but also a major responsibility. We are constantly searching for better ways to protect the world we live in.

KC Cottrell is growing into an important axis of the worldwide environmental industry with its global network, unique environmental technologies and know-how.

A leader in the environmental industry.

The tireless efforts of global talents drive KC Cottrell.

Our dream of preserving our environment requires KC Cottrell.
Over the years, KC Cottrell's research and development programs have served to strengthen existing product technologies and to lead the company into new fields.
RHDS catalyst regeneration

Domestic refineries produce about 23,000 tons of used desulfurization catalysts as waste every year. Most of the waste catalysts are then collected for metals or calcined, and the re-processed products are exported abroad. However, catalyst regeneration technology can feed the waste catalyst back into the reaction process and reduce such unnecessary inefficiencies.

Ambient Air Control (ESP in Subway Tunnels)

High efficiency ESPs are being developed for underground public transit with the aim of reducing particulate matter in subway tunnels to 30% below the allowable standard.
Mission

To provide the best environmental technology and services, promote self-improvement and growth, and contribute to the next generation’s sustainable future.

Vision

Continue to evolve as a global leader in Air Pollution Control by 2013. To have the most extensive geographic coverage, relying on independent but closely networked local operations. To efficiently share resources (technology, experience, human resources) throughout KC companies, overcoming cultural barriers through open communications, leadership by everyone, and respect for each other.

Value

People  We believe in people’s potential for growth, goodwill and determination to fulfill their role as global citizens. Our people honor integrity and take responsibility for their own work. We respect each other, regardless of age, gender, and cultural backgrounds. We believe in the power of teamwork based on this respect for each other.

Value Creation  We believe that the company can exist only so long as it can continue to deliver value to our customers and shareholders. We create value through our knowledge, our experience from thousands of projects, development of new technology, and creativity in engineering, production, procurement and construction. We appreciate the importance of all stakeholders such as our suppliers and subcontractors who are our partners in this value-creation process.

Challenge  We constantly extend our limits, trying out new technologies, projects and markets. There are always even more things to try than those that have been accomplished. We renew ourselves and grow through challenges, with risk management in place. We believe that we can build a better tomorrow through our efforts today.

Air Pollution Control (APC)
- KC Cottrell China Co., Ltd.
- KC Cottrell Taiwan Co., Ltd.
- KC Cottrell Inc.
- KC Cottrell Vietnam Co., Ltd.
- KC Cottrell Kazakhstan Co., Ltd.
- KC Air Filtertech Co., Ltd.
- PT. KC Cottrell Indonesia
- Lodge Cottrell Ltd.
- Lodge Cottrell India Pvt. Ltd.
- NOL-TEC Systems, Inc.
- NOL-TEC Korea Co., Ltd.

Environmental Services
- Industrial Waste Treatment
- KC EnviroServices Co., Ltd.
- KC Landfill Service Co., Ltd.
- KC Hanni Environment Co., Ltd.
- KC Enviro Construction Co., Ltd.
- Material Recycling
  - KC Glass & Materials Co., Ltd.
  - KC Honam Environment Co., Ltd.
  - Veolia ES & KC EcoCycle Co., Ltd.

Manufacturing Services
- KC Envirotech E&C (Fushun) Co., Ltd.
- Jord KC Co., Ltd.
- Ciestra Hauserman Ltd.

New & Renewable Energy
- KC Solar Energy Co., Ltd.
- KC Energia Co., Llc
- KC Green Energy Co., Ltd
- Busan-Shinho Solar Power Generation Co., Ltd.
KC Cottrell has the technologies to protect nature and our planet.

We are committed to the philosophy that our future lies with the environment. To keep our earth clean for future generations, we will further devote ourselves to researching new environmental technologies. Our focus is on finding ways to better preserve the environment as opposed to improving the bottom line. Look for KC Cottrell as it expands its overseas presence. We’ll be keeping the skies blue for another millennium.