SOLUTION TOMORROW

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SAMCHULLY ES

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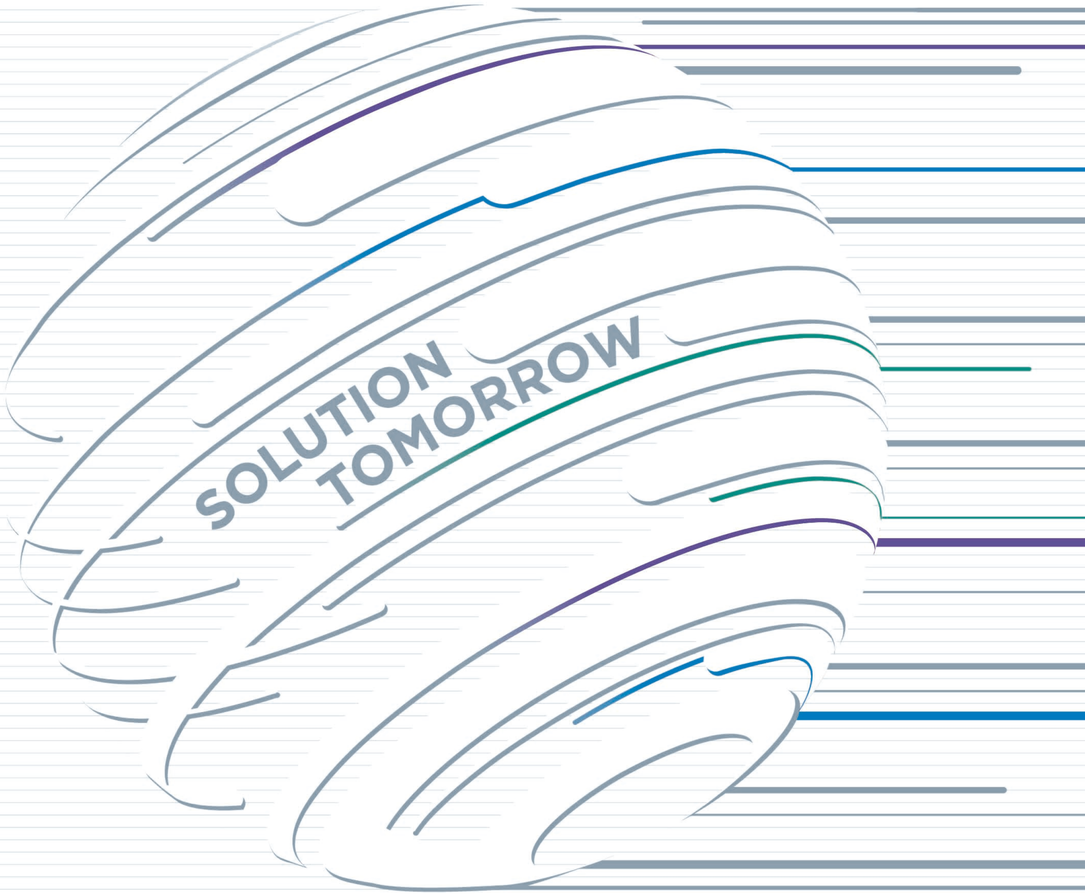

SAMCHULLY ES

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Solution Tomorrow

The world becomes bigger and more complex,
making us use more energy, and
we need to use it more efficiently.

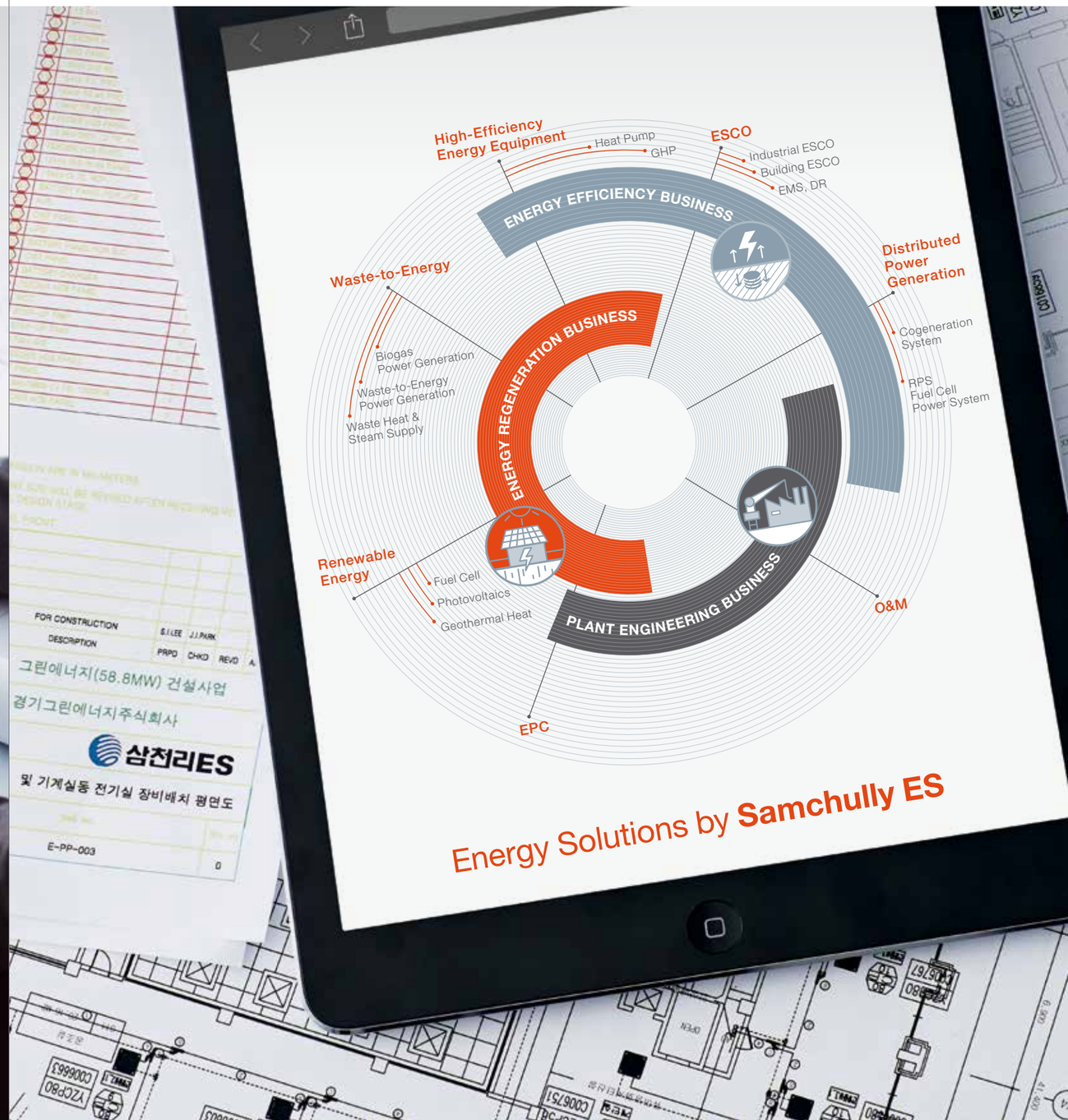
Samchully ES is introducing a new era of
energy savings. We provide energy solutions
that add values to everyone’s future.
We do this by changing energy usage from being
supplier-centered to being consumer-oriented.
We can do this because of our new, enhanced,
and innovative energy efficiency technologies
and our top-flight engineering services.

Creating Solutions, Changing the Future

A to Z

From energy savings to energy regeneration

Samchully ES provides solutions and services that help its customers reduce their energy costs and change their waste resources into useful energy. Our high-efficiency processes and equipment and state-of-the-art engineering capabilities have made us South Korea's leading player in the areas of energy efficiency and reducing greenhouse gases.



One Stop

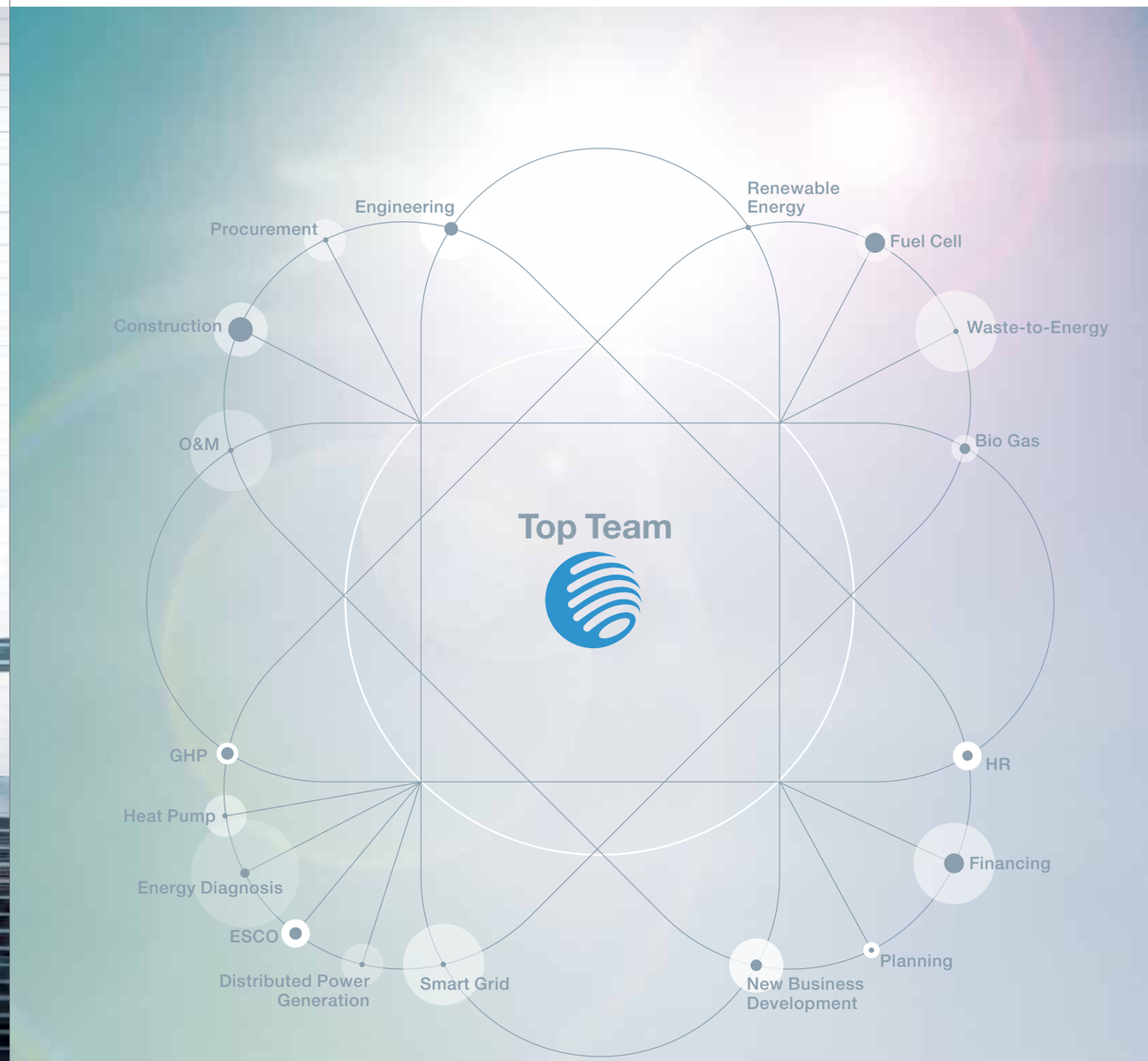
From energy diagnoses to construction and operations

Samchully ES offers custom-designed, tailor-made solutions to its customers. After studying their energy operations and assessing their needs, we provide them with a full range of one-stop solutions and services, ranging from technology proposals and financing to EPC and post- management assistance.

Top Team

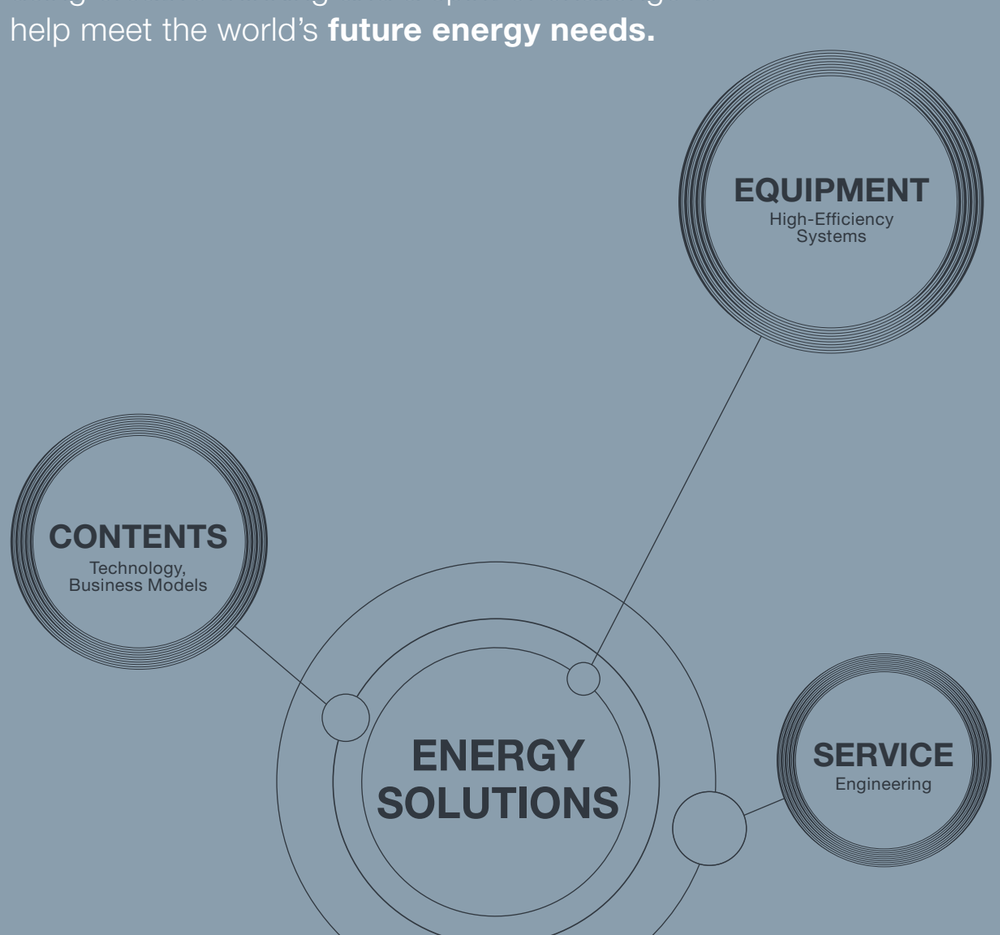
Delivering optimal energy solutions

Samchully ES leads South Korea in developing a wide range of one-stop energy solutions. Our knowledgeable and highly-experienced specialists are renowned for their expertise in creating custom-tailored, customer-oriented energy solutions.



CEO's Message

Energy and the environment are becoming important global issues. In South Korea, energy demand is growing dramatically.
Samchully ES is growing along with it, providing **the country's highest levels of technological, engineering, and service capabilities** to save and regenerate energy. As a member of the Samchully Group, Samchully ES is committed to remaining in the vanguard of the energy industry, using creative thinking and a spirit of challenge to help meet the world's **future energy needs.**



Providing customers with unique and innovative energy solutions

CREATIVE CULTURE

South Korea's energy market is quickly changing from one that is supplier-centered to one that is consumer-oriented. People are demanding that businesses adopt optimized solutions for saving energy, reducing greenhouse gas emissions, and regenerating energy.

Samchully ES entered into the high-efficiency energy equipment business in 2001, with a particular focus on **Energy Efficiency** and **Energy Regeneration**. It is currently exploring the energy solutions market as a new business frontier. We have enjoyed dramatic growth for the past four years by actively responding to ongoing changes in both South Korea's and the world's energy paradigms.

SOLUTION PIONEER

Our **Energy Efficiency Business** helps customers reduce their energy costs. It includes high-efficiency energy equipment, energy saving (ESCO), and distributed power generation.
The Energy Regeneration Business, which is tasked with increasing the efficiency of energy resources through recycling, comprises waste-to-energy and renewable energy solutions.
Samchully ES is committed to raising the level of energy efficiency in South Korea through the discovery and implementation of unique and innovative energy solutions.

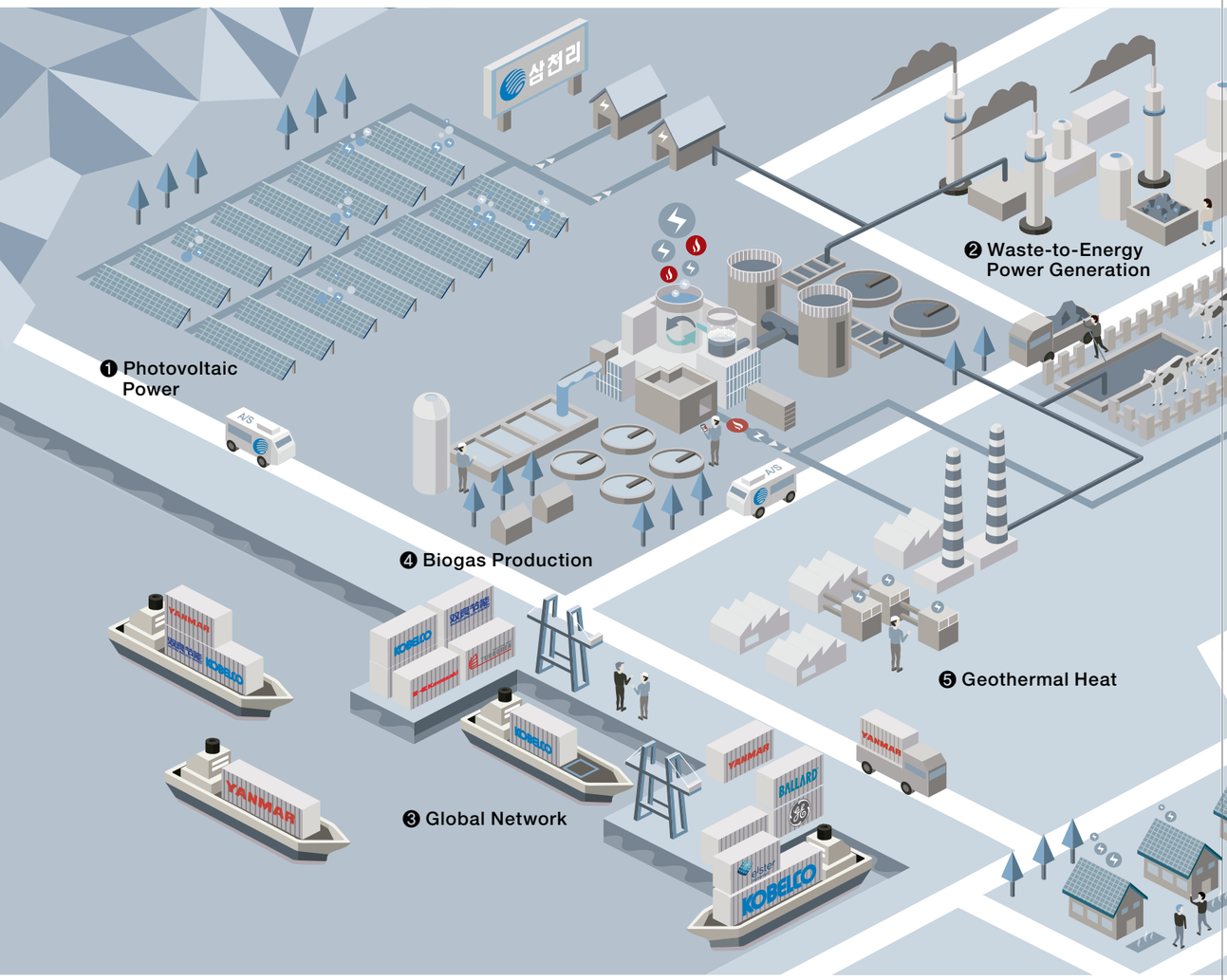
In the same way as a proud chef wants to be judged by the quality of the food he prepares, Samchully ES wants to be valued for its state-of-the-art technologies and engineering-based, custom-tailored solutions.
We do this by finding and following new paths for South Korea's energy business through our commitment to the development of a creative corporate cultuare and carefully focused investments in R&D. Our greatest hope is that one day we might be able to use our creatively and spirit of challenge to discover completely new future sources of energy.

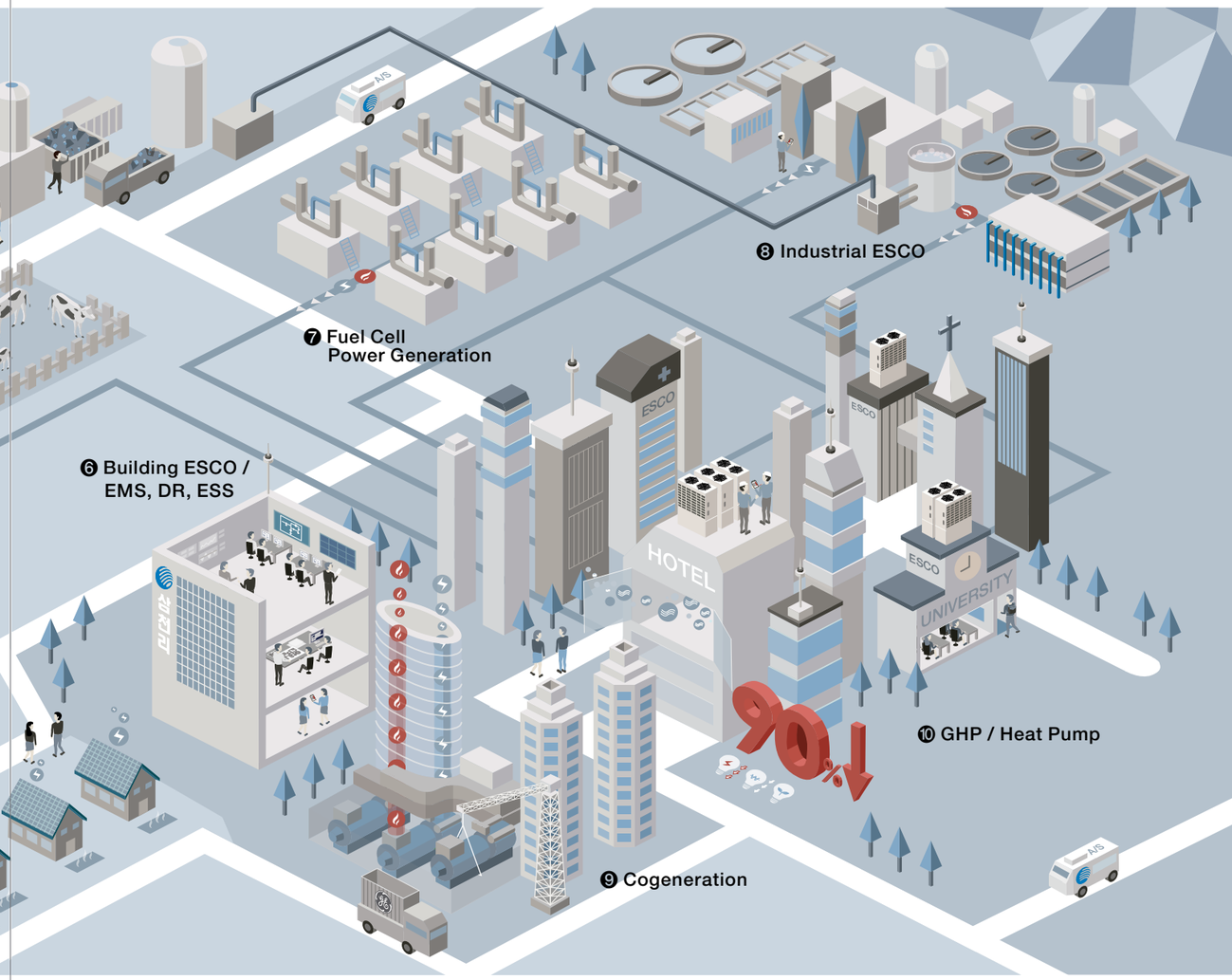
Thank you.

Chee Woong Hyun, President and CEO
Creative Energy Officer

What We Do

Samchully ES is South Korea's leader
in the field of energy efficiency solutions.





❶ Photovoltaic Power

We provide O&M services for a 2MW photovoltaic power plant that we built in the city of Hampyeong in Jeollanam-do province. We are using it as a base to expand our growing operations in the field of photovoltaic energy.

❷ Waste-to-Energy Power Generation

We produce high-value-added solid-refuse fuels (SRF) by recycling combustible wastes and lignocellulosic biomass. In addition, we have entered into the cogeneration business, using SRF as a fuel source.

❸ Global Network

We supply a wide array of high-efficiency energy-savings equipment and services in collaboration with leading global energy solutions providers.

❹ Biogas Production

We produce biogas using organic waste and highly-concentrated industrial waste- water. It is then used by municipal gas companies, as a fuel for cars, and at power generation facilities.

❺ Geothermal Heat

This new and innovative source of renewable energy helps our customers reduce their energy costs. All they need to do is install one or more of our industry-leading geothermal heat pumps.

❻ Building ESCO / EMS, DR, ESS

We also carry out ESCO and ICT Energy ESCO (EMS, DR, ESS) projects. Besides reducing our customers' energy costs dramatically, they produce a warm and pleasant living and working environment by analyzing and controlling our customers' patterns of energy use.

❼ Fuel Cell Power Generation

Our fuel cell projects produce heat and electricity through a chemical reaction between hydrogen and oxygen. We are steadily expanding our operations in this area, based on our globally-recognized fuel cell EPC experience and expertise.

❽ Industrial ESCO

We produce water for locally-based heat providers through the recovery of industrial waste heat. This is increasing the energy efficiency levels of the country's industrial and power generation facilities while adding to the prosperity of local communities.

❾ Cogeneration

Our optimized EPC solutions are based on the experience and expertise that we have gained in the area of cogeneration systems. They make dramatic contributions to improving our customers' living and work environments, while helping them to achieve energy independence.

❿ GHP / Heat Pump

We supply a full range of GHPs and heat pumps in partnership with leading global energy equipment providers. They boast the largest capacity and highest level of efficiency in the industry.

Energy Efficiency Business

Using our technological expertise and
a broad network of global partners to deliver
optimized energy solutions

High-Efficiency Energy Equipment

ESCO

Distributed Power Generation

HIGH-EFFICIENCY ENERGY EQUIPMENT

GHP GAS ENGINE-DRIVEN HEAT PUMP

Boasting the industry's largest capacity, greatest number of models, and highest level of efficiency (APF*)

The term GHP refers to heat pump-operated air conditioning systems. Since they are powered by gas engines that don't use electricity, they boast low running costs, reduced CO_2 emissions, and eliminate the need for expensive electricity supply upgrades.

***APF** (Annual Performance Factor): This term refers to the amount of thermal energy supplied by a heat pump system compared to the amount of electricity that would be required to operate the same system for a year.

MAJOR PROJECTS

Seoul National University
172 Outdoor Units / 1,390 Indoor Units

Korea University
67 Outdoor Units / 694 Indoor Units

Dankook University
293 Outdoor Units / 2,646 Indoor Units

Keimyung University
417 Outdoor Units / 3,362 Indoor Units

Changwon Exhibition Convention Center
117 Outdoor Units / 922 Indoor Units

Centum City, Busan
49 Outdoor Units / Air Handling Units

Nest Hotel, Incheon
76 Outdoor Units / 510 Indoor Units

Glad Yeouido Hotel
58 Outdoor Units / 370 Indoor Units

Myongji St. Mary's Hospltal
28 Outdoor Units / 241 Indoor Units

Myungsung Church
68 Outdoor Units / 124 Indoor Units

Hanam City Hall
38 Outdoor Units / 295 Indoor Units

Hwaseong Dac
28 Outdoor Units / Air Handling Units

Mega Mart
108 Outdoor Units / 161 Indoor Units

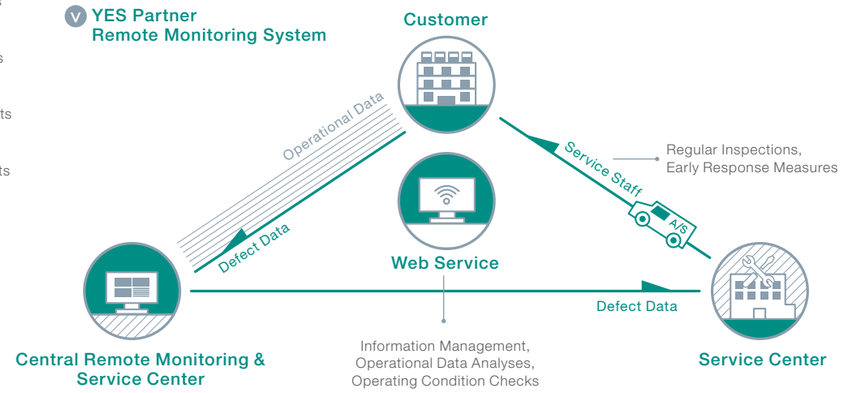
Samchully ES has been supplying its GHP systems to the domestic market since 2001 through an exclusive partnership with Yanmar of Japan. In addition to its 85kW products, which boast the industry's largest air cooling capacity, we also sell a full range of Yanmar's 45-85 kW products. We have become the South Korean leader in the field of energy-saving equipment by winning high-efficiency energy-using appliance certifications for each device. They can reduce electrical consumption by up to 90%.

We will continue to launch new products to help meet the energy reduction targets of our many satisfied customers. These will include the GHP Chiller, GHP-AHU, and GHP-ERV systems. We are committed to being a trustworthy and reliable partner for our customers, providing them with fast and efficient after-sales advice and assistance based on our nationwide network of service professionals.

GHP PRODUCT LINEUP

- GHP Parallel Operation
- GHP Chiller
- GHP-AHU
- GHP-ERV System

V YES Partner Remote Monitoring System



GHP SUPPLY RESULTS

7,000 outdoor units

As of the end of 2014, Samchully ES had recorded total sales of 7,000 outdoor GHP units, giving us a 30% share of the South Korean market.

OUR NUMBER ONE GLOBAL PARTNER

YANMAR

Samchully ES has been supplying high-efficiency gas cooling and heating systems in South Korea through a partnership with Yanmar of Japan since 2001.

> Seoul National University
172 Outdoor Units / 1,390 Indoor Units

Samchully ES is helping to raise the energy efficiency of many South Korean educational institutions and commercial facilities. Our product lineup boasts the industry's largest cooling capacity, as well as its highest level of energy efficiency.

> Yes Partner

Yes Partner is the name of our nationwide repair and maintenance service. We are currently servicing 1,334 GHP units across the country.

❶ **Maintenance:** make regular visits to analyze equipment functionality.

❷ **After-Sales Service:** speedy responses and free repairs to deal with equipment problems or failures.

❸ **Remote Monitoring:** analyze equipment functionality in real time; establish on-site maintenance schedules.

❹ **Optional Services:** cleaning of outdoor and indoor units and heat exchangers, emergency responses, etc.

HIGH-EFFICIENCY ENERGY EQUIPMENT

Heat Pumps - Waste Heat Recovery Heat Pump

The ultimate energy-saving solution

Supplying both hot and cold water and steam by recovering low-temperature waste heat from commercial buildings and industrial processes

MAJOR PROJECTS

Jw Pharmaceutical
Steam Heat Pump (8 Bars)

Kangwon Land
Hot Water Heat Pump (50°C)

Kt Wonju Branch
Hot Water Heat Pump (70°C)

Skc Suwon Factory
Steam Compressor (4 Bars)

Lg Chem Yeosu Complex
Steam Heat Pump (1 Bar)

Samchully ES provides its customers with a wide array of heat pumps through exclusive partnerships with Kobelco and Shuangliang Eco-Energy. Both of these companies boast world-leading technologies in the area of waste heat recovery.

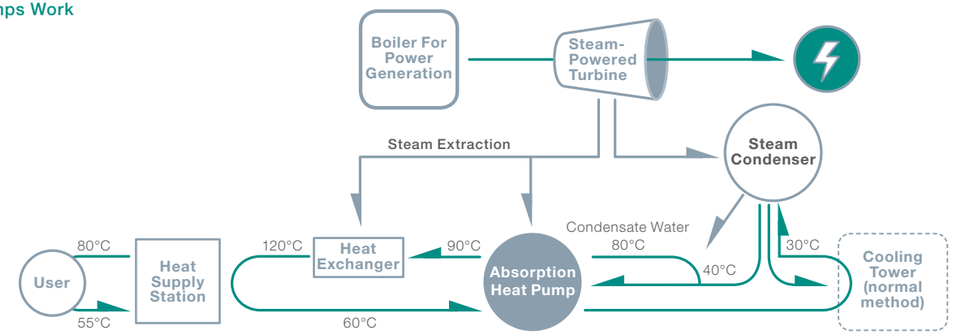
Our electrically-powered, high-efficiency HEM series of hot-water heat pumps (HEMII, HEMII-HR, HEM-HR90) are capable of producing hot water to a maximum of 120°C, while our high-performance SGH steam heat pumps (SGH120, SGH165) can produce 8 bars of steam with maximum temperatures ranging from 120 to 175°C. They do this by recovering waste heat at temperatures of from 50°C to 100°C. We also supply high-efficiency absorption heat pump systems that can produce water at over 90°C or steam at 6 bars.

Many environmentally-conscious industries are taking steps to minimize their levels of energy consumption and reduce the environmental impact of their operations. Samchully ES assists them in these endeavors through a wide range of solutions and its industry-leading, one-stop control, repair, and maintenance services.

HEAT PUMP SOLUTIONS

- **Kobelco Electric Heat Pumps:** Provide hot water to a maximum of 120°C, steam up to 8 bars, and MVR
- **Shuangliang Absorption Heat Pumps:** Produce hot water up to 120°C and steam up to 6 bars

How Heat Pumps Work



ENERGY SAVING EFFECT

50%

Our lineup of heat pumps helps users reduce their energy costs by up to 50% compared to gas absorption heat pumps. This is the world's highest level of efficiency.

CO_2 REDUCTION EFFECT

70%

Our high-temperature water heat pumps boast the nation's highest levels of efficiency. They can also reduce CO_2 emissions by up to 70%--the highest in South Korea, meeting the needs of customers that are looking for eco-friendly energy consumption solutions.

JW Pharmaceutical
8 Bar Steam Heat Pump

This steam heat pump supplies high-efficiency heat using low-temperature industrial waste heat. It can reduce operating costs by 44% and lower greenhouse gas emissions by 67% compared to normal gas boilers.

Our Shuangliang partner boasts absorption chiller technologies that are unequalled in the world.
It designs, manufactures, and supplies direct-fired hot and cold water dispensers, absorption medium-temperature water freezers, double-effect steam freezers, and industrial-strength absorption heat pumps.

The manufacturing capacity of its absorption hot and cold water dispensers ranges from 99 to 3,300RT.

ESCO

Industrial ESCO

The first step in improving the efficiency level of industrial processes

Reducing industrial energy costs and lowering the environmental impact of their operations

MAJOR PROJECTS

INDUSTRIAL ESCO

Unused Energy Esco Project For The Banwol Dyeing Complex
Waste Heat Recovery
Absorption Heat Pump

Heat Pump Installation Project For Jw Pharmaceutical
Water-Source Steam Heat Pump

Industrial ESCO project for S-Power Combined Cycle Power Plant
Surplus Heat Recovery

Samchully ES's ESCO service provides a wide range of solutions, including energy diagnoses, investment advice, facilities installation, and post-management, for use in buildings and by industries and power generation plants. It reduces their energy costs and environmental impacts by enhancing the efficiency of their energy equipment and processes. We specialize in calculating the efficiency of our customers' energy consumption processes and suggesting optimal improvements so they can enjoy even greater energy savings.

The South Korean government has now made the implementation of energy use diagnoses mandatory as a means of enhancing the efficiency of high-energy-consumption businesses. In response to this situation, Samchully ES is formulating plans for expanding its range of industrial ESCO solutions. This will be done by producing upgrades to our custom-tailored business models and offering a full range of high-performance, high-efficiency energy solutions.

MAJOR SOLUTIONS

- Waste heat recovery heat pumps
- Organic rankine cycle (ORC) systems
- High-pressure steam energy recovery and differential-pressure power generation systems

Surplus Heat Supply ESCO Project, S-Power Combined Cycle Power Plant

Medium-temperature water is produced for local heating providers by recovering surplus heat from power generation plants. This streamlines the amount of energy used by power generation and integrated energy service facilities. It also adds to the revenue base of each facility.

ESCO Project, Banwol Dyeing Complex

The goal of this project was to use an absorption heat pump to recover heat from dyeing waste water that had formerly been dumped at the Complex and recycle it for use in local heating. It has resulted in reduced heat production costs, a cleaner atmospheric environment, and lowered levels of greenhouse gases.

Building ESCO

Energy solutions that make dramatic additions to the value of buildings

Adding to the value of our customers' assets by minimizing energy losses in their buildings

MAJOR PROJECTS

BUILDING ESCO

ESCO Project, Hanyang University's ERICA Campus

ESCO Project for Air Conditioning and Heating Replacement, Daejin University

ESCO Project, Hyemin General Hospital

ESCO Project, Sarang General Hospital

Building Energy Management System (BEMS) Project, Samchully Energy Research Institute in Osan

Samchully ES's Building ESCO Service offers customers optimized energy solutions by analyzing the energy consumption patterns in their buildings. This helps them to enhance the efficiency of their energy use. They can also lower their initial investment costs by taking advantage of energy-saving loans offered by the South Korean government.

Going forward, Samchully ES will continue to expand its market dominance in the high-potential South Korean energy efficiency market. This will be done by focusing on such services as installing high-efficiency lighting, replacing old boilers, and participating in cogeneration and insulation retrofitting projects for industrial and other buildings.

MAJOR SOLUTIONS

- HVAC
- Retrofitting buildings
- Adding to the energy efficiency of buildings

BEMS Project, Samchully Energy Research Institute

ICT Energy ESCO

Energy solutions for the "smart" era

Building intelligent grid systems for sustainable, green growth through consumer-centered energy solutions

Our ICT Energy ESCO service reduces energy consumption by combining information communication technology with industrial and building energy management software and high-efficiency energy equipment. Energy consumption is lowered by analyzing current energy demand and forecasting future needs. These calculations are made by utilizing "big data" that have been obtained through the real-time measurement of a user's energy consumption patterns and use.

The service has a very high potential for expansion in South Korea, since the country is experiencing extremely high growth in its energy needs every year. Samchully ES's smart ICT

ICT-BASED ENERGY SOLUTIONS

- Electricity demand response (DR)
- EMS (BEMS, FEMS)
- ESS convergence solutions

Energy ESCO solutions reduce the energy costs of buildings and industries. In addition, we are also constantly refining our systems to create new values for our customers.

DISTRIBUTED POWER GENERATION

Cogeneration System

Boasting South Korea's leading engineering and construction performances

Offering eco-friendly, high-efficiency, energy-saving systems in the fields of cogeneration and waste heat recovery

MAJOR PROJECTS

NATURAL GAS

GS Jongno Tower
1,435kW X 1 Unit

Lotte Mall's Suwon Store
541kW X 1 Unit

Suwon Aekyung Station Development
1,435kW X 2 Units

D-Cube City, Sindorim, Seoul
3,018kW X 3 Units

BIOGAS

Biogas Cogeneration System, Seonam Water Recycling Center
1,413kW X 2 Units / 3,026kW X 1 Unit

Biogas Cogeneration Project, Jeonju Paper
1,426kW X 2 Units

Bucheon Sewage Treatment Plant
1,415kW X 2 Units

Ansan Sewage Treatment Plant
631kW X 1 Unit

Mungyeong Sewage Treatment Plant
200kW X 1 Unit

Asan Sewage Treatment Plant
200kW X 1 Unit

This cogeneration system offers users a powerful combination of eco-friendliness, energy savings, and reduced energy consumption and CO_2 levels. As South Korea's acknowledged specialist in the field of EPC for distributed power generation projects, Samchully ES provides a wide range of solutions, ranging from energy load analyses and engineering to procurement, construction, trial operations, and operations & maintenance (O&M).

GAS COGENERATION SYSTEM

Our natural gas cogeneration system allows companies to save on their energy usage for air conditioning and hot water by reducing the amount of electricity they need to purchase from KEPCO. Achieved by recovering waste heat that has been produced during the power generation process, it can also be used to supply energy in times of emergency. It is especially advantageous for users whose buildings consume high volumes of energy, since it allows them to secure distributed energy resources and allocate their investment budgets more efficiently by replacing costly diesel-fueled emergency power generators.

BIOGAS COGENERATION SYSTEM

Samchully ES's biogas cogeneration system is a state-of-the-art, eco-friendly system that can make a significant contribution to the nation's need for power. It offers a positive response to the central government's policies of emphasizing renewable energy sources by encouraging the development of distributed power generation facilities. Used in combination with technologies developed by natural gas-fueled power generation operations, it contributes dramatically to the health of the environment and the nation's need for energy independence. The system works by using biogas that has been produced from highly concentrated organic matter, such as sewage sludge, livestock manure, food waste, and industrial waste-water, as a fuel for power generation facilities.

ADVANTAGES OF THE SYSTEM

1. **Subsidies**
   Subsidies for engineering for and installation of cogeneration systems
2. **Corporate Tax Credits**
   Significant reductions in their initial investment costs from their corporate income tax levies, pursuant to article 25-2 of the central government's *Special Tax Treatment Control Act*
3. **Energy-Saving Loans**
   Allows users to apply for long-term, low-interest loans
4. **Gas Price Discount Programs**

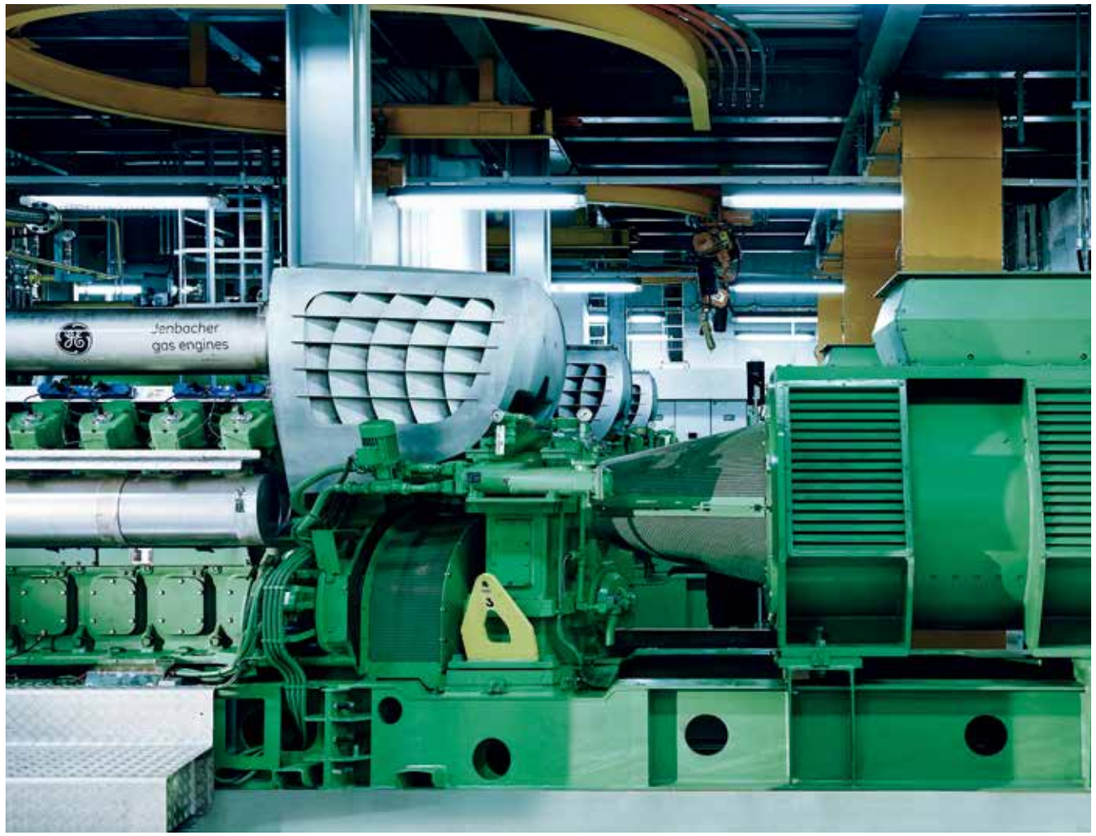
INSTALLED SOUTH KOREA'S LARGEST NUMBER OF COGENERATION SYSTEMS

60 Units 56MW

Samchully ES has installed more cogeneration systems than any other industry player in South Korea. Our record currently stands at sixty units in forty-one locations across the country, supplying a total of 56MW of electricity.

D-Cube City
3,018kW X 3 Units

Samchully ES installed a natural gas cogeneration system at D-CUBE CITY, a multi-purpose cultural complex.



DISTRIBUTED POWER GENERATION

Installation of Cogeneration System

Biogas Cogeneration System, Seonam Water Recycling Center
1,413kW X 2 Units / 3,026kW X 1 Unit

This eco-friendly recycling project holds the record as the world's largest 5.8MW biogas power generation facility. In addition to eliminating the production of 25,000 tons of greenhouse gases annually, it produces enough electricity to provide power to 10,000 households.

Eco-Friendly Waste-Water Treatment and Biogas Cogeneration Project, Jeonju Paper
1,426kW X 2 Units

This state-of-the art cogeneration facility uses biogas produced by the treatment of waste-water generated during the paper-making process as a fuel source.The electricity that has been produced is then sold to the Korea Power Exchange, while waste heat made by the power generation is recycled for use in the paper-making process.

Mungyeong Sewage Treatment Plant
200kW X 1 Unit

This project involves the use of a biogas cogeneration system at the municipal sewage facility in the city of Mungyeong, Gyeongsangnam-do province. In addition to adding to the energy independence of the plant, it is contributing to the central government's policy of increasing the use of distributed energy resources. These two goals are realized because it is used both to supply power to the facility as a whole, and as a heat source for the warming of the digestion tanks.

Asan Sewage Treatment Plant
200kW X 1 Unit

This biogas cogeneration system was installed at the municipal sewage treatment facilities in the city of Asan, Chungcheongnam-do province. It produces 1,570MWh of electricity and 1,760Gcal of heat annually.

> Helping to improve the global environment by lowering costs and reducing the generation of greenhouse gases through efficient energy usage

Samchully ES is carrying out a broad range of projects in collaboration with its team of global partners.

Global Partners

- 双良节能 SHUANGLIANG ECO-ENERGY — Heat Pump Desalination
- elster Instromet — Gas Meter
- clean energy ahead TURBODEN — ORC System
- YANMAR — GHP Micro Cogeneration
- GE — Cogeneration
- KOBELCO — Heat Pump
- BALLARD — Fuel Cell
- Kawasaki — Bio-Mass Boiler

Energy Regeneration Business

Your most reliable partner for eco-friendly, alternative energy development, construction, and operations

Waste-to-Energy

Renewable Energy

WASTE-TO-ENERGY

Biogas Power Generation

Natural gas fields, capable of producing year-round

Samchully ES boasts a wide array of technologies for producing biogas from organic wastes. This especially includes bio methane, the main component of gas used by municipal fuel providers. We are constantly developing new natural gas fields across the country.

MAJOR PROJECTS

Biogas Combined Heat and Power Project, Seonam Water Recycling Center

Green Energy Town Project, Hongcheon

Bio-gasification projects are aimed at producing biogas that can replace natural gas by using organic waste resources of all sorts such as food wastes, livestock excretions, and sewage sludge, and offering total solutions to leverage it (biogas) mainly for power generation, vehicle fuels, and grid injection.

Samchully ES's state-of-the-art biogas technologies are being used to produce municipal gas for a Green Energy Town project in Hongcheon, Gangwon-do. We are also building a biogas production plant at the same location. In addition, we carried out engineering, procurement, and construction (EPC) activities for a 5.8MW cogeneration plant using biogas generated at the Seonam Water Recycling Center, the nation's largest such facility.

BIOGAS PRODUCTION SOURCES

- Food wastes
- Sewage treatment plants and industrial waste-water sludge
- Livestock and other agricultural wastes
- High-concentration industrial waste-water

Biogas is both carbon neutral and a form of renewable energy. This means that it can help to resolve South Korea's environmental problems and the worldwide depletion of fossil fuels. Because of this, the construction of plants that produce biogas by using organic wastes will undoubtedly accelerate going forward. We plan to build on our industry-leading technologies to strengthen our competitiveness in this area even further. This will include participating in both publicly and privately invested waste-to-energy projects.

KEY PERFORMANCE

- Organic wastes to biogas
- Biogas cogeneration
- Biogas to substitute for natural gas
- Biogas CO_2 to liquid

BIOGAS COMBINED HEAT AND POWER GENERATION, SEONAM WATER RECYCLING CENTER

The largest such facility in South Korea

This facility uses biogas that has been made from sewage in the Seonam Sewage Treatment Plant. It is capable of producing 5.8MW of electricity, making it the largest-capacity sewage-to-biogas generation project in South Korea.

Biogas Cogeneration Project, Seonam Water Recycling Center

Location: Seonam Water Recycling Center
Site Area: 2,000m²
Digestion Gas Supply: 48,700m³/day
Generation Capacity: 5.8MW
Revenue Sources: Commercial power, hot water

Green Energy Town Project, Hongcheon

Location: Somaegok-ri, Hongcheon-gun, Gangwon-do
Site Area: 3,575m²
Facility Capacity: 100 tons per day
Biogas production: 3,500m³ per day
Revenue sources: Grid injection

WASTE-TO-ENERGY

Waste-to-Energy Power Generation

Producing high value-added energy from household and industrial wastes

Making high-value-added, solid-refuse fuels (SRF) by recycling combustible wastes and lignocellulosic biomass that used to be relegated to old-fashioned reclamation and incineration processes

Waste-to-energy power generation projects produce heat and electricity by using high value-added SFR that has been made by recycling combustible household or industrial wastes. It is more economical than either waste-to-liquid or gaseous fuel-to-energy technologies.

Electricity produced by cogeneration plants using waste resources is sold to commercial users, while the heat from them is either supplied to businesses or used to heat homes and buildings. In both cases, the technology is contributing to the development of future-oriented, low-carbon, green growth industries.

Samchully ES is responsible for the EPC operations at a 32MW cogeneration plant owned by Jeonju Paper that uses both SRF and bio-SRF. After obtaining a Renewable Energy Certificate, it will generate revenue by supplying commercial power, while the steam it produces will be a heat source for the company's paper-making operations.

The South Korean government is promoting the construction of waste-to-energy facilities to increase the nation's use of renewable energy resources. This includes a policy of using 100% of the country's combustible wastes to generate energy by the year 2020.

SOLID REFUSE FUELS (SRF)

- Refuse-derived fuels (RDF)
- Refuse plastic fuels (RPF)
- Tire-derived fuels (TDF)
- Wood chip fuels (WCF)

> **Biomass Power Plant, Jeonju Power**
>
> Samchully ES is responsible for the EPC activities at this 32MW cogeneration plant.
> The facility uses both SRF and WCF.

Waste Heat & Steam Supply

Minimizing environmental impacts by recycling energy

This future-oriented green energy business supplies waste heat and steam to industrial users. This helps them to use energy more efficiently by reducing their use of fossil fuels.

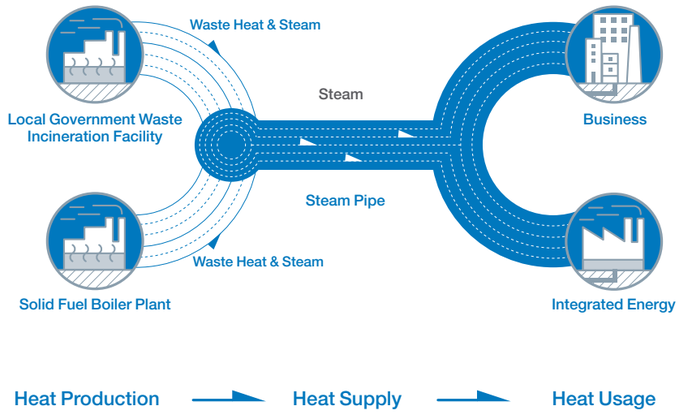
The business involves supplying industrial users with heat and steam recovered from waste incineration facilities or boiler plants that burn solid fuels, such as woodchips and SFR. This reduces their energy costs by using heat that can be produced more cheaply than that made with other fuels, such as LNG or Bunker-C.

Samchully ES offers its customers expert engineering, construction, and operational services in the area of waste-to-energy systems. The South Korean government is committed to lowering the country's present ratio of reclamation of waste materials and increasing the amount of energy that is recovered from waste. This means that the number of waste-to-energy projects is expected to rise dramatically going forward.

MAJOR PROJECTS

- Supplying waste heat and steam to industrial complexes at local government-owned waste incineration facilities
- Supplying heat using solid fuels

V Supplying Waste Heat And Steam Produced By Local Government-Owned Waste Incineration Facilities



V

Samchully ES is undertaking a project to supply waste heat and steam generatved by Unit 2 of the Cheongju Incineration Facilities to the Cheongju Industrial Complex.

RENEWABLE ENERGY

Fuel Cell

The world's leader in building fuel cell power plants

Fuel cells are another primary form of high-efficiency renewable energy. They are very reliable and environmentally friendly.

MAJOR PROJECTS

FUEL CELL

Gyeonggi Green Energy (2.8MW X 21 Units)
Generation Capacity: 58.8MW (2.8MW X 21 Units)
Heat Production: 28.1Gcal/h
*Capable of supplying 70% of residential electrical consumption in Hwaseong City

Gwangmyeong Fuel Cell (2.5MW X 2 Units)
Generation Capacity: 5MW (2.5MW X 2 Units)
Heat Production: 2.2Gcal/h

First Phase of Pyeongtaek Fuel Cell Project
Generation Capacity: 100MW
Heat Production: 44Gcal/h

Fuel cell-based power plants produce electricity and heat by means of an electrochemical reaction between oxygen and hydrogen. Besides boasting a high rate of efficiency due to reduced energy losses, they can be built on sites that are only about one-hundredth as large as photovoltaic or wind-power plants. This means that they are in high demand to replace fossil fuels.
Samchully ES is a recognized specialist in the area of fuel cell EPC. Our track record includes carrying out engineering and construction activities for Gwangmyeong Fuel Cell and Gyeonggi Green Energy, the largest fuel cell power plant in the world. The popularity of fuel cell power generation facilities is expected to increase as a result of the central government's renewable portfolio standard (RPS) and its call for mandatory renewable energy installations in public buildings. Samchully ES plans to become a leading market player in this field by the year 2020.

MAJOR ACCOMPLISHMENTS

- Construction of 63.8MW worth of fuel cell power plants. Orders received for 163MW worth of engineering (as of 2014)
- Participated in a number of large-scale projects, including the 58.8MW Gyeonggi Green Energy facility (the world's largest) and Phase One of the 100MW Pyeongtaek Fuel Cell facility

V Gyeonggi Green Energy

Photovoltaic Power

Eco-friendly, high-efficiency renewable energy

Samchully ES is adding to its expertise in this very promising market. PV is widely considered to be the strongest alternative to nuclear power in Europe, the United States, Japan, and other countries around the world.

MAJOR PROJECTS

PHOTOVOLTAIC POWER

Hampyeong Solar Park
Installation Capacity: 2MW
Number of PV Modules: 9,984
Inverters: 2,000kW (250kW X 8 Units)

Samchully ES built the world's largest parking lot-based 2MW PV power plant to supply electricity to the World Butterfly & Insect Expo in Hampyeong, Jeollanam-do. The building of the facility presented exciting new possibilities for the construction of such power plants, overcoming their disadvantage of the relatively large areas that they require by utilizing the unused roofs of parking lots.
PV power generation has been praised for its high rate of efficiency, and is expected to play an increasingly important role in the area of renewable energy. Samchully ES will take advantage of the expertise it has gained in the building and operation of the Hampyeong Solar Park to increase its number of high-efficiency PV energy undertakings.

V Hampyeong Solar Park

Geothermal Heat

A highly-regarded form of eco-friendly energy generation

We are committed to becoming the industry's leader in the area of geothermal heat pumps. They possess the highest level of energy efficiency of any air conditioning and heating technologies.

Geothermal heat pumps are both eco-friendly and economical to use. They are used for air conditioning and heating in private residences, hospitals, industrial sites, horticultural businesses, and for melting snow on roads.
Geothermal heat is not influenced by the external environment as much as other energy sources are, since it maintains a relatively constant temperature range throughout the year. Another advantage is that it can be used on a semi-permanent basis.
The number of geothermal heat pump systems is increasing sharply in South Korea, and hundreds of thousands of them have already been installed in the United States and Europe. In addition, steadily-decreasing production costs due to new engineering methods and technologies have allowed Samchully ES to extend their application to the agriculture and fishing sectors.

ADVANTAGES OF GEOTHERMAL HEAT PUMPS

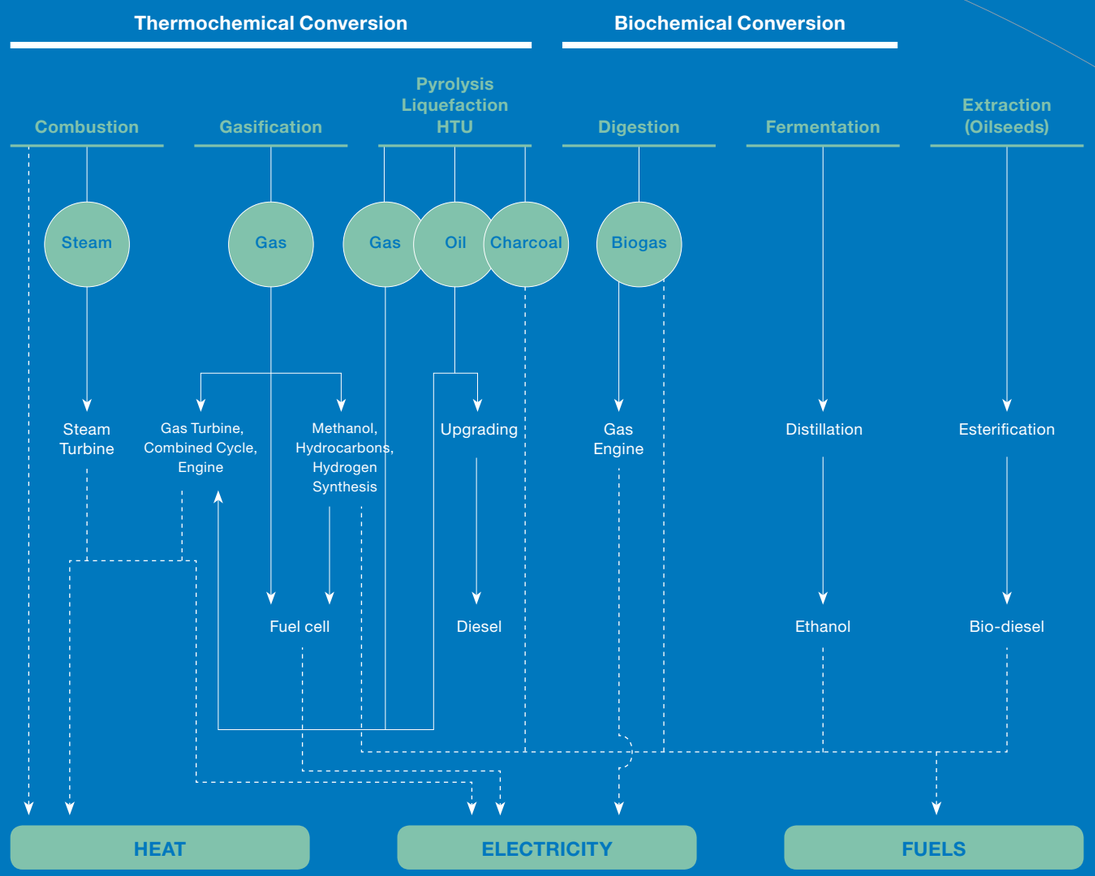
- High level of eco-friendliness (boasts CO_2 reductions of as much as 30-40% compared to gas)
- High performance and efficiency
- Low operating costs
- Stable long-term maintenance

Samchully ES is a proud participant in the "One Million Green Homes" project that is being carried out as part of the central government's *New Energy and Renewable Energy Development, Use, and Spread Promotion Law.*

> The more sophisticated our industries and lifestyles become, the more energy we will need. Samchully ES is committed to finding and supplying innovative, economical, and sustainable energy sources for every user.

Contributing to the sustainable development of industries and communities

Biomas to Energy Technology



Plant Engineering

Boasting sixty years of experience and expertise providing EPC services to energy plants

EPC
ENGINEERING, PROCUREMENT, CONSTRUCTION

O&M
OPERATIONS & MAINTENANCE

EPC

EPC ENGINEERING, PROCUREMENT, CONSTRUCTION

Providing expert EPC solutions for the past sixty years

Samchully ES offers a total range of EPC services for energy plants, from engineering and procurement to construction and maintenance. We boast an unmatched reputation for safety, quality, timeliness, and cost.

Biomass Power Plant, Jeonju Power

Client: Jeonju Power
Major Facilities: ICFB 130Ton/hr
Generation Capacity: 32MW

Eco-Friendly Waste-water Treatment and Biogas Power Plant, Jeonju Paper

Client: Jeonju Paper
Major Facilities: CHP 1.4MW X 2

Unused Energy ESCO Project, Banwol Dyeing Complex

Client: Ansan Urban Development
Major Facilities:
Heat Pump 12Gcal X 4 Units

Water Treatment Plant, S-Power Combined Cycle Power Plant

Client: S-Power
Major Facilities: Water treatment plant for 800MW CCPP

Hyangnam Heat Source Facility Construction Project

Client: HUCES
Major Facilities:
HOB 34Gcal X 2 Units /
Accumulator 30,000m³ X 1 Unit

EPC

EPC ENGINEERING, PROCUREMENT, CONSTRUCTION

Gyeonggi Green Energy Power Generation Facility and Plant

Client: Gyeonggi Green Energy
Major Facilities:
Fuel Cells 2.8MW X 21 Units

Biogas Cogeneration Plant, Seonam Water Recycling Center

Client: Seonam Bio Energy
Major Facilities:
CHP 3.0MW X 1 Unit /
1.4MW X 2 Units

Gwangmyeong Fuel Cell Power Generation Facility and Plant

Client: S-Power
Major Facilities:
Fuel Cells 2.5MW X 2 Units

Ansan MiraeN Incheon Energy Surplus Heat Supply ESCO Project

Client: Ansan Urban Development
Major Facilities: Construction of thermal networking pipes and pressurized water supply system

Surplus Heat Supply ESCO Project, S-Power CCPP

Client: Ansan Urban Development
Major Facilities:
Accumulators 25,000m³ X 2 Units

O&M

O&M OPERATIONS & MAINTENANCE

Sustainable energy, trustworthy service

Every energy system and EPC project undertaken by Samchully ES is exhaustively managed and efficiently maintained.

MAJOR PROJECTS

Hampyeong Solar Park

Seonam Bio Energy
Biogas Cogeneration Plant,
Seonam Water Recycling Center

Cheongju Green Energy
Waste Heat & Steam Supply,
Cheongju Incineration Facilities

The dependable operation of high-efficiency energy systems requires high levels of both operational and management expertise. Samchully ES ensures that such facilities are kept in prime condition by providing repair and maintenance services that include taking a facility's operating conditions into consideration.

HAMPYEONG SOLAR PARK

Photovoltaic power is a leading source of renewable energy. Samchully ES's experience and expertise in the PV sector includes operating and managing a 2MW PV power plant to supply electricity to the World Butterfly & Insect Expo in Hampyeong, Jeollanam-do. The building of the facility presented exciting new possibilities for the construction of such power plants, overcoming the disadvantage of the relatively large areas that they require by utilizing the empty roofs of parking lots.

BIOGAS COGENERATION PLANT, SEONAM WATER RECYCLING CENTER

The Biogas Cogeneration Plant at the Seonam Water Recycling Center is South Korea's largest power generation facility producing electricity and heat from biogas made from sewage. It will supply eco-friendly electricity for a minimum of twenty years, with Samchully ES assuming responsibility for O&M during its entire operating period.
Our unparalleled level of expertise in the field of green energy production and follow-up O&M allows us to minimize any volatility and risk that can arise during a project's execution stage.

Central Remote Service Center, Samchully ES

The CRSC helps us to optimize the energy usage of our customers. This goal is accomplished by monitoring the operation of GHPs, cogeneration systems, the Hampyeong Solar Park, the Seonam Water Recycling Center's cogeneration plant, and other facilities that we operate. The information that we receive from the Center regarding energy use patterns, operating conditions, O&M history, and so on are then entered into our database.

Hampyeong Solar Park

Installation Capacity: 2MW
Location: Parking Lot, World Butterfly & Insect Expo in Hampyeong, Jeollanam-do

Biogas Cogeneration Plant, Seonam Water Recycling Center

Generation Capacity: 5.8MW
(The Largest in South Korea)
O&M Period: Until 2034

> We provide optimized solutions for energy businesses, ranging from engineering and construction to O&M services.

Offering a full range of services in the areas of consumer-centered engineering, cost-effective construction, and trustworthy and reliable procurement and project management

Construction Site Overview

R&BD

Using innovation and creativity to develop new and sustainable growth engines


Samchully Energy Research Institute

Creating New Energy Paradigms

The world's energy industry requires new paradigms to help it keep abreast of rapid developments in technologies.
Energy costs can be reduced dramatically by increasing the efficiency of our energy usage, while the health of the global environment can be enhanced by reducing the production of greenhouse gases.
Samchully ES is continually expanding its range of new businesses to meet the demands of this rapidly-growing market.
We are especially proud of our accomplishments in the fields of energy recycling and the development of renewable energy sources.

Samchully Energy Research Institute: an industry-leading think tank for the promotion of sustainable growth

The Samchully Energy Research Institute was established in 1990. Its mission is to encourage a greater understanding of trends in energy management and to conduct research into the development of new energy-related technologies.
Its R&D activities include studying knowledge, technologies, and thought leadership in the energy sector. It plays a pivotal role in helping the company to secure leadership in the creation of new energy markets and in the development of new and innovative technologies to meet the challenge of rapid changes in the domestic and international energy environments.
We focus our attention on four key araeas: renewable energy, protecting the marine environment, economic research, and improvements to energy efficiency. We have an enviable record of developing patents and utility models for use throughout the industry.

ES Culture
Together & Love

Developing a company that can be trusted by its customers and the larger society

Providing a warm, welcoming, and challenging workplace environment

Samchully ES believes that the development of its human resources leads to its own sustainable growth. In order to build a warm, welcoming, and challenging corporate culture in which all our employees can utilize their abilities to the fullest, we are committed to providing them with fair and equal opportunities and ensuring that we always have the right person doing the right job in terms of his or her abilities and aptitudes. We also offer a full array of educational and training programs to increase their competencies.

Fulfilling our social responsibilities

Samchully ES takes its corporate social responsibilities very seriously. We are committed to open and transparent management, and sharing and caring for all the people living in what has truly become a “global village.” This includes providing opportunities for overseas volunteer activities by all our new recruits.

ES Days, focusing on communications and harmony

Samchully ES offers a number of activities to encourage fuller communications, increase harmony, and promote creative thinking among its people. They include a wide range of cultural events, such as a Movie Day, a Sports Day, a Drama Day, and a Mountain-hiking Day. These activities are based on the twin mottos of the Samchully Group, “Love for the Family” and “Love for the Company.” Our goal is to develop a spirit of togetherness that enables our employees to enjoy a warm and welcoming workplace and achieve a healthy work-life balance.

History

Samchully ES, which has been sharing growth with the Republic of Korea, is delivering energy to the lives of customers

Milestones

Oct. 1955 Birth of the Samchully Group

The Samchully Briquette Industry was established after the devastation of the Korean War. The path that the company has followed since then is synonymous with the history of the nation's energy industry.

Oct. 1955 Founded Samchully Briquette Industry
Dec. 1976 Listed on Korea Stock Exchange

May 1982

Samchully's first step in the area of business diversification began with the acquisition of Kyeongin City Gas. This laid the foundation for the ongoing development of its energy-related operations.

Jun. 1983

Samchully completed the construction of its head office in Yeouido, Seoul's leading financial center. The move reflected the company's overall goal of evolving into a comprehensive, specialized energy provider.

May 1982 Acquired Kyeongin City Gas Co., Ltd.
Jun. 1983 Completed construction of office building in Yeouido, Seoul
Oct. 1984 Company name changed to Samchully Co., Ltd.
May 1987 Established Chunman Scholarship Foundation

Oct. 1990 Established Samchully Technology Research Institute
Dec.1997 Ranked first in municipal gas sales in South Korea

Oct. 1990 South Korea's leading energy R&D center

Samchully's Technology Research Institute was established to conduct advanced-level R&D activities in the areas of energy supply, consumption, and circulation. The company's leadership in the area of energy R&D continued with the building of a training center in 2001. The two entities were renamed the Samchully Energy Research Institute following their merger in 2012.

Oct. 2001 Established training center at Samchully Technology Research Institute
Dec. 2001 Established Samchully ES; signed exclusive contract for GHP sales with Yanmar of Japan
Oct. 2005 Celebrated fiftieth anniversary and announced new corporate vision
Dec. 2005 Launched integrated energy supply business
Sep. 2006 Established HUCES Co., Ltd.
Apr. 2008 Began commercial operations at Hampyeong Solar Park
Aug. 2008 Registered as ESCO
Dec. 2009 Acquired shares in Ansan Urban Development Inc.

Dec. 2001 The Birth of SAMCHULLY ES

The Samchully Group launched Samchully ES as part of its goal of evolving into a specialized, comprehensive energy group. Since then, Samchully ES has built a wide-ranging global network in collaboration with a large number of global energy equipment providers, allowing it to become South Korea's leader in the areas of engineering and total energy efficiency solutions.

2010
Jul. Completed Gwangmyeong Combined Heat and Power Plant
Oct. Built "Net Doore," an ERP-based integrated information system

2011
Apr. Samchully ES merged with Hampyeong Solar Park
Nov. Established Gyeonggi Green Energy Co. Ltd.

2012
Aug. Completed construction of Samchully Energy Research Institute
Nov. Registered for Energy Diagnoses

2013
Aug. Orders received exceeded KRW 100 billion
Oct. Received general construction license
Oct. Obtained two patents (including one for biogas production technology)

2014
Jun. Awarded "A" credit rating by Korea Investors Service
Nov. Orders received exceeded KRW 200 billion
Dec. Completed construction of Seonam Biogas Combined Heat and Power Plant, Seonam Water Recycling Center
Dec. Established Cheongju Green Energy Co., Ltd.

Samchully Group Networks

Samchully Co., Ltd.
Samchully is South Korea's largest provider of municipal gas services, helping its many customers to live better through the stable supply of municipal gas. It currently supplies 4.1 billion m^3 of gas annually to 2.77 million customers. They live in thirteen cities in Gyeonggi-do, and in five districts in Incheon City.

S-Power Co., Ltd.
S-Power was established in 2012 as a joint undertaking with Korea South-East Power and POSCO E&C, with an overall goal of facilitating the development of large-scale power generation projects.
The company completed the 835MW LNG Combined-Cycle Power Plant in the Multi-Techno Valley of Sihwa, Choji-dong, Ansan, Gyeonggi-do in December 2014.

HUCES Co., Ltd.
HUCES was established in 2006 as a joint venture with Korea District Heating Corporation. Its goal was to engage in the delivery of integrated energy services and create synergies among the Group's various companies. HUCES currently supplies heat to 26,313 households, most of them in the districts of Hyangnam, Hwaseong, and Homaesil, Suwon.

Samchully ENG Co., Ltd.
Samchully ENG specializes in construction and engineering services relating to gas supply and heat pipeline installations, the construction and operation of CNG recharging stations, safety inspections of gas facilities at large energy-consuming worksites, and the installation of stopgaps to allow the safe operation of gas and heating pipes.

SL&C
SL&C is engaged in the life and culture business, operating six business establishments under two premier Chinese restaurant brands--CHAI797 and GASTROPUB. The company is expanding the range of its existing brands and developing new ones.

Samchully Asset Management Co., Ltd.
Established as a joint venture with Australia's Macquarie Funds Group, the company invests in domestic and overseas energy undertakings, including energy resources, energy infrastructures, power generation, and renewable energy projects.

Ansan Urban Development Inc.
Jointly managed in collaboration with the city of Ansan, Ansan Urban Development is currently supplying heat to about 54,000 households in Gojan New Town and Singil District. The company completed the construction of the Ansan LNG Combined-Cycle Power Plant in 2014.

Some people are relentless and stubborn.
They talk about challenges,
instead of taking “no” for an answer when things get tough.
They are speedy, yet aim for perfection, and
continue to make new paths along their visions.
They don’t follow paths that have been made by other people.
They are dreamers who are full of excitement and passion,
specialists who lead the energy market, and champions
in the art of devising energy solutions. They are dedicated to
making the world a better place for everyone by coming up
with new and innovative energy solutions.

We provide your best energy solutions.
We are Samchully ES.

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Gas Meter
t 82-2-368-3598

ESCO
t 82-2-368-3565

Distributed Power Generation
t 82-2-368-3306

Energy Regeneration Business

Biogas
t 82-2-368-3237

Waste-to-Energy
t 82-2-368-3237

Waste Heat & Steam Supply
t 82-2-368-3597

Renewable Energy
t 82-2-368-3565

Plant Engineering Business

EPC
t 82-2-368-3317

O&M

Yes Partner
t 82-2-368-3497

Seonam Bio Energy
t 82-2-3660-2015

Hampyeong Solar Park
t 82-61-323-5841