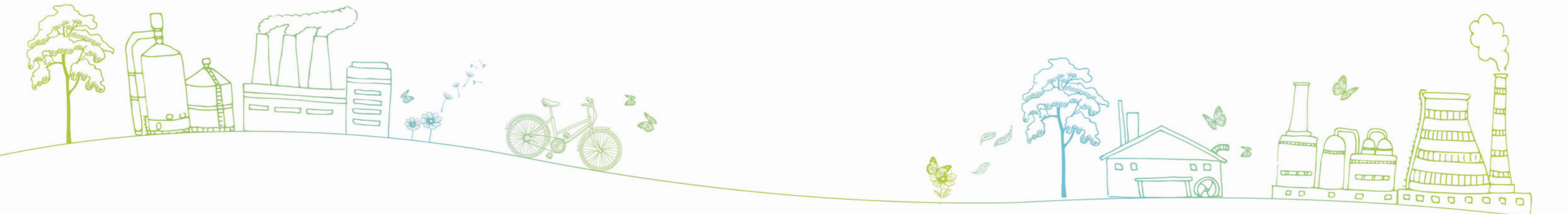
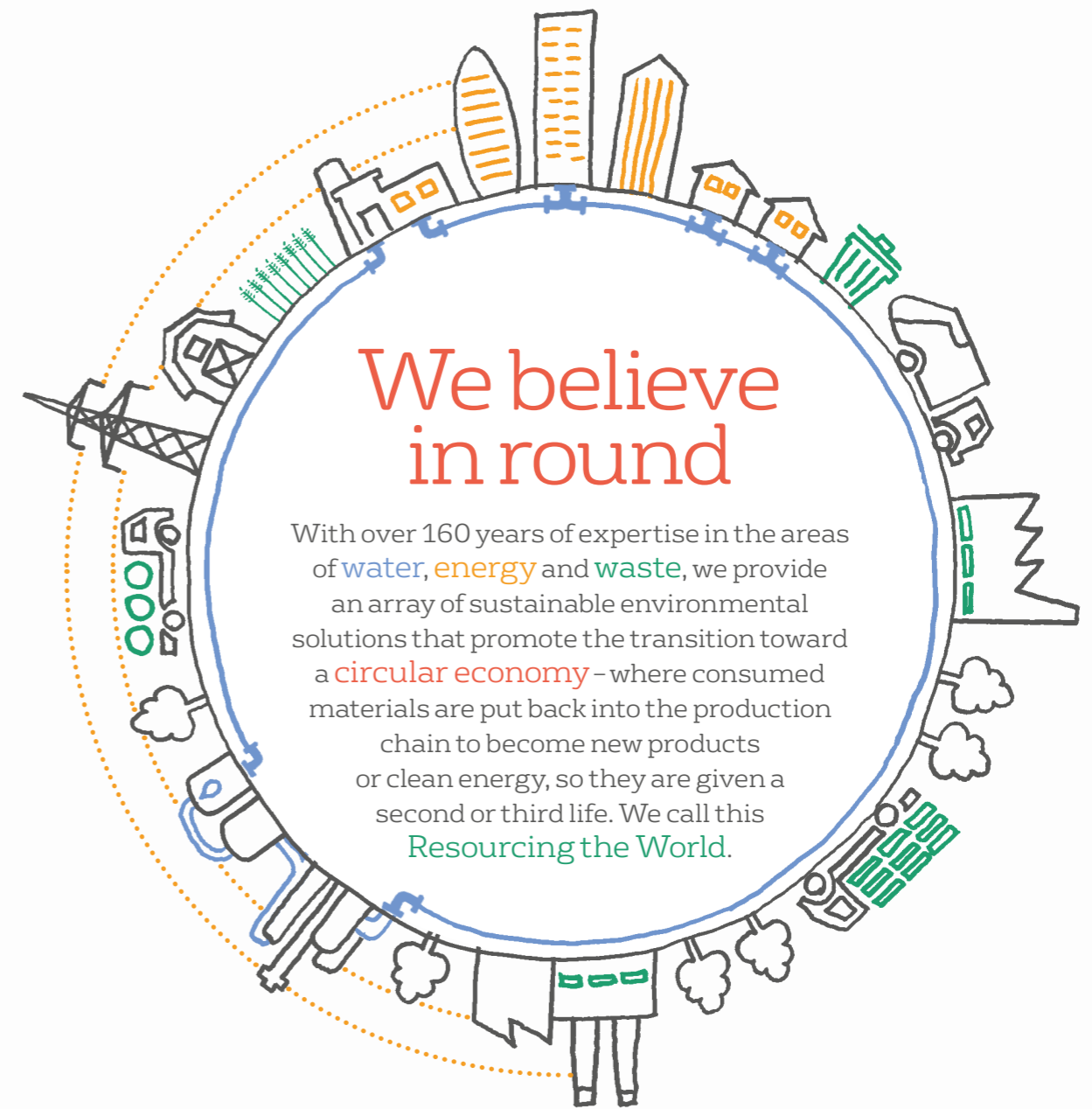


VEOLIA KOREA



Contents

- 03 We believe in round
- 04 Global References in Environmental Services
- 06 Combined Expertise for Optimizing Resource Management
- 08 Veolia Leads the Circular Economy
- 10 Veolia Korea
- 12 Water Management
- 16 Waste Management
- 18 Energy Management
- 20 CSR and Sustainable Development
- 22 Veolia Asia Industrial Technical and Training Center



Global References

3 areas of benchmark expertise in environmental services

Since the establishment of Veolia Group in France in 1853, Veolia has provided total environmental solutions in water, waste and energy management services to customers worldwide. In these three business sectors, Veolia provides solutions in EPC, establishment of system & optimization, and operation & maintenance. Veolia leads our society to reach the goals of economical effectiveness and environmental sustainability around the world.

2018 Revenue: €25.91 billion
171,500 employees



WATER



95 million

people supplied with water

63 million

inhabitants connected to wastewater systems

3,603

water production plants managed

2,667

wastewater treatment plants managed

€10.89 billion

2018 Revenues



WASTE



43 million

people provided with collection services on behalf of municipalities

49 million

metric tons of waste treated

560,505

business customers

655

waste-processing facilities operated

€9.60 billion

2018 Revenues



ENERGY



46 million

MWh produced

42,053

thermal installations managed

2,389

industrial sites managed

615

heating and cooling networks managed

€5.42 billion

2018 Revenues



WATER

Veolia offers a unique range of expertise in the sustainable management of water resources. This expertise is backed by state-of-the-art technology and covers a complete array of solutions to meet the needs of individuals and industries around the world.

Veolia treats water and monitors its quality at each stage of the water cycle, from initial source withdrawal to subsequent discharge back into the natural environment. Veolia innovates to reduce the amounts extracted and to encourage cities and industries to recycle and reuse water.

- Designing and building treatment plants
- Producing drinking water and industrial process water
- Treating wastewater
- Recycling treated wastewater and industrial effluent
- Operating, maintaining and optimizing treatment plants

WASTE

Veolia specializes in the management of both liquid and solid hazardous and non-hazardous waste. Its expertise spans the entire waste lifecycle, from collection to recycling, in order to recover end-products as materials and energy.

- Production of energy, organic and raw materials from waste
- Waste plastic recycling (SRF Production, Recycling to plastic flakes)
- Waste management and logistics for municipalities and industrial clients (maintenance, cleaning, sewer cleaning, collection and transfer)
- Sorting, treatment and recycling services for hazardous & non-hazardous waste by incineration, composting, landfilling & physical-chemical treatment
- Biogas generation



ENERGY

An expert in energy services, Veolia supports the economic growth of its local authority and industry clients, while also reducing their ecological footprint. Energy efficiency, effective management of cooling and heating networks, production of green energy: just some of our unique expertise for a sustainable world.

- Energy management: district heating and cooling
- Industrial energy services: steam and electricity supply
- Energy efficiency and renewable energy
- Integrated facilities management
- Design, build, operate & maintain Combined Heat & Power (CHP) and utilities plants
- Reduction in carbon footprint through biomass, cogeneration and energy recovery

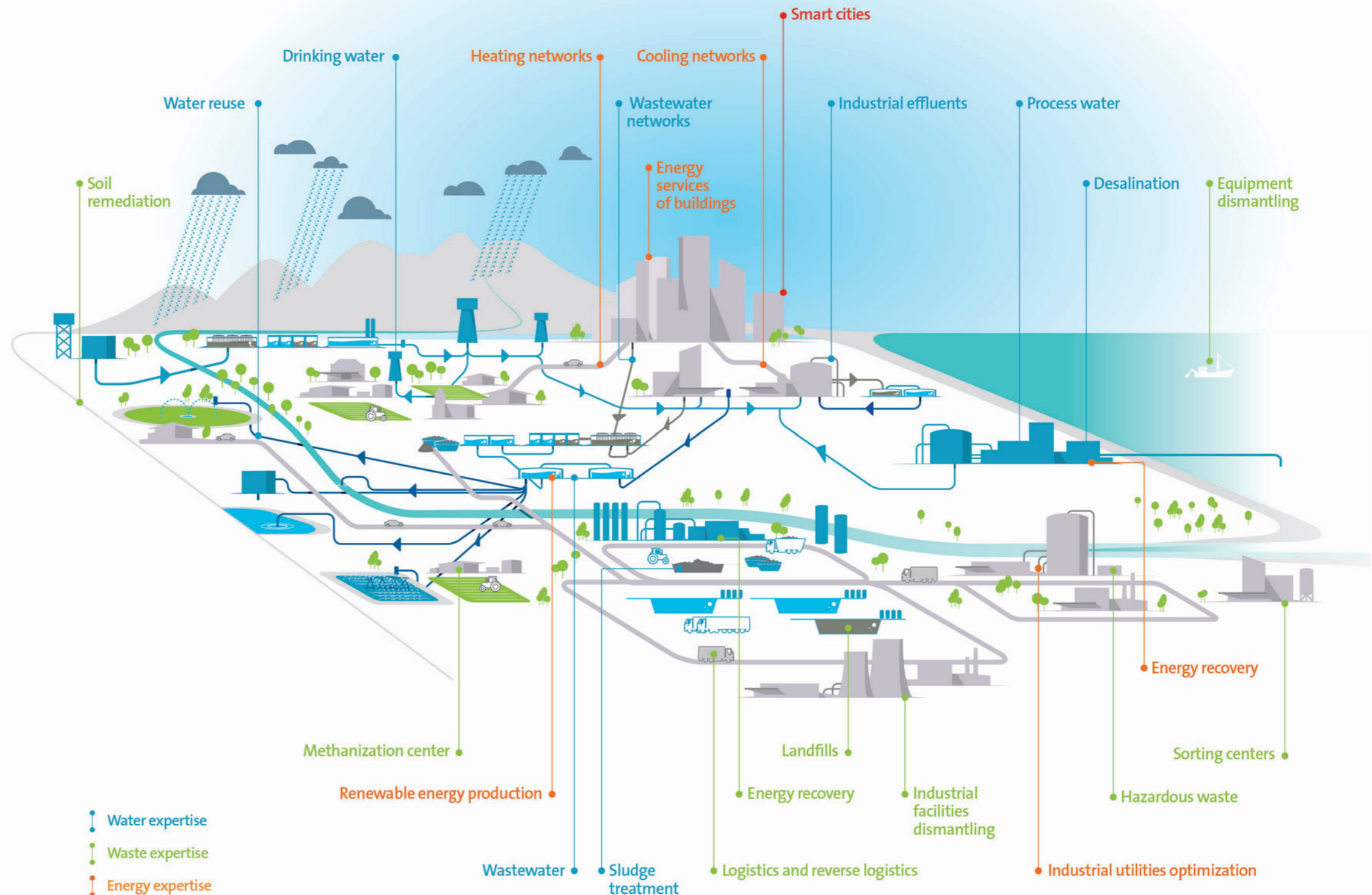


Combined expertise for optimizing resource management

In an increasingly populated and urbanized world, cities have to manage quality water, energy and waste services intelligently, innovatively and as inexpensively as possible. Their ability to implement new models of the **circular economy** will determine their dynamic and their attraction.

Industrial companies are seeking sustainable solutions to ensure the long-term survival of their businesses, maintain growth and win the support of communities. Pressure on resources is forcing them into a paradigm shift.

To this end, Veolia designs and deploys specialist solutions to use, protect and replenish resources sustainably while increasing their efficiency from an environmental, economic and social standpoint. Such initiatives are all part of Veolia's ongoing campaign to resource the world.



Veolia leads the circular economy

Present in five continents, Veolia works with industrial companies, local government authorities and their populations to ensure the optimum use of resources.

2020 target

Achieve

€3.8 Bil.

in circular economy related revenue.

HYDRO-QUÉBEC CANADA

Cool the IT data center for 4 million customers covering 10,000 m². Heat extracted: 1.6 to 4.5 MW in 20 years.

ANTERO RESOURCES USA

Treat 9,500 m³ of industrial water per day on the Doddridge gas site (West Virginia). \$150,000 saved per well.

NEW ORLEANS USA

Manage water and sanitation: 550,000 m³ treated per day, 30% of earnings reinvested in social projects.

MONTERIA COLOMBIA

Promote access to safe drinking water and sanitation for everyone 24/7. A reduction in losses from 70% to 25%.

FIBRIA HORIZONTE BRAZIL

Recycling mineral waste from a cellulose plant (3 million t per year) owned by the largest pulp manufacturer in the world.

KURION

USA / EUROPE / JAPAN

Treat low-level nuclear waste by means of separation and stabilization using robotic solutions for access to confined spaces.

DANONE

WORLD

Danone / Veolia alliance for recycling and recovering water, plastics and waste. Supporting Danone to implement its climate policy "net zero carbon emissions by 2050".

HAMPSHIRE COUNTY COUNCIL – UNITED KINGDOM

Treat the county's waste: 157,000 t recycled, 96,200 t of compost, 38 MW of electricity and 420,000 t of non-recyclable waste treated via Energy Recovery annually. Landfill has decreased from 85% to 10%.

MAYO RENEWABLE POWER - IRELAND

Manage the largest independent biomass power plant in Ireland with a capacity of 42.5 MW of electricity and heat, which will power 68,000 homes.

ALTERGIS FRANCE

Expanding the energy services offering for local authorities, housing, health, the services sector and industry in France.

EUROPEAN METROPOLIS LILLE - FRANCE

Make "smart water" for a million people, with 3 million m³ per year less taken out, an incubator for urban services, solidarity pricing and 80% local subcontractors.

EDG

GUINEA

Co-pilot the performance of electrical networks, develop infrastructure and enable the development of local expertises.

SUR

SULTANATE OF OMAN

Extension of the desalination plant to meet the growing demand in the region: + 51,000 m³ per day treated (total capacity: 131,000 m³ per day).

BEE POWER BELGIUM

Produce 215 MW of electricity and 100 MW of heat in a biomass plant in Ghent: 450,000 t of CO₂ emissions avoided per year.

BORÅS SWEDEN

Make this city the "zero fossil fuel" pioneer by 2025, with combined water, waste and energy solutions.

NESTE OIL & BOREALIS FINLAND

Produce heat and electricity from asphaltene and natural gas. 450 MWh of heat and 30 MWh of electricity per year.

BRISTOL-MAYERS SQUIBB EUROPE

Manage utilities and services for the occupants of 11 European industrial sites in accordance with ISO 9001, ISO 14001 and OHSAS 18001.

EKO-ZEC POLAND

Recover and recycle industrial waste into secondary raw materials for road concrete, paving, bricks, cement, coatings and adhesives.

HIRAKAWA JAPAN

Produce 100 GWh/year of electricity with two biomass plants to power 22,000 homes. 40,000 t of CO₂ avoided. A partnership which associates municipalities and local foresters.

LIUGUO CHEMICALS CHINA

Treat 200 m³/h of industrial water to remove ammonia and produce fertilizer for which China is the largest consumer in the world.

SHANGHAI CHINA

Managing drinking water for 5 million people in Pudong through a 5,000 km network with a real-time 24/7 control center.

CONOCOPHILIPS AUSTRALIA

Recycle liquids and waste from a gas terminal in Perth.

Veolia Korea

With the establishment of the Korean branch in 1999, Veolia Korea provides a comprehensive range of waste, water, and energy management services designed to build the circular economy and preserve scarce raw materials. Around 1,830 employees are working at 62 sites for industrial water, municipal wastewater service, waste management and industrial energy service projects. In July of 2017, Veolia acquired Hanbul Energy Management and provides BES (Building Energy Services) for hospital · incineration facility · universities.

With our cutting-edge technologies and pioneering experiences in water, waste and energy businesses, we lead the environmental industry by providing O&M, EPC services for facilities, chemicals services and supplying consumables for water treatment.

1999~2005

1999

- Established in Korea

2000

- LG/Lotte Chemical (HPC) contract

2001

- SK hynix contract
- Incheon Songdo-Mansu STP

2004

- KKPC Rubber Yeosu contract

2005

- KKPC Rubber Ulsan contract
- KPC Yeosu contract



2006~2013

2006

- SK hynix contract extension (12 yrs to 17 yrs)

2007

- KKPC Resin Ulsan contract

2008

- Dongbu Steel hot-rolled contract

2010

- Dongbu Steel cold-rolled contract

2013

- KPC II Yeosu contract
- DH Recycling contract



2014~2016

2014

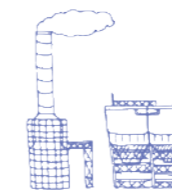
- KHNP contract
- COSMO AM&T contract
- Hongwon P&P contract
- Jeonju City Actiflo™ STP EPC contract

2015

- 100% Acquisition of Ecocycle
- Yeosu EPC contracts awarded for Exelys™ process
- SOLVAY WTP-WWTP EPC contract

2016

- Acquisition of Dongyang Green Bio food waste facility
- Seonam STP EPC awarded



2017~Present

2017

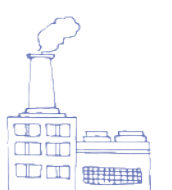
- Hyundai Powertech contract
- Acquisition of Uniken
- Acquisition of Hanbul Energy Management
- SK hynix(Happy More) for laundry project
- Kleannara water & wastewater treatment contract

2018

- SK hynix M15 contract
- SK hynix contract renewal (Icheon, Cheongju)
- MagnaChip contract
- Kleannara SRF boiler contract

2019

- Acquisition of Doksan & DSPL

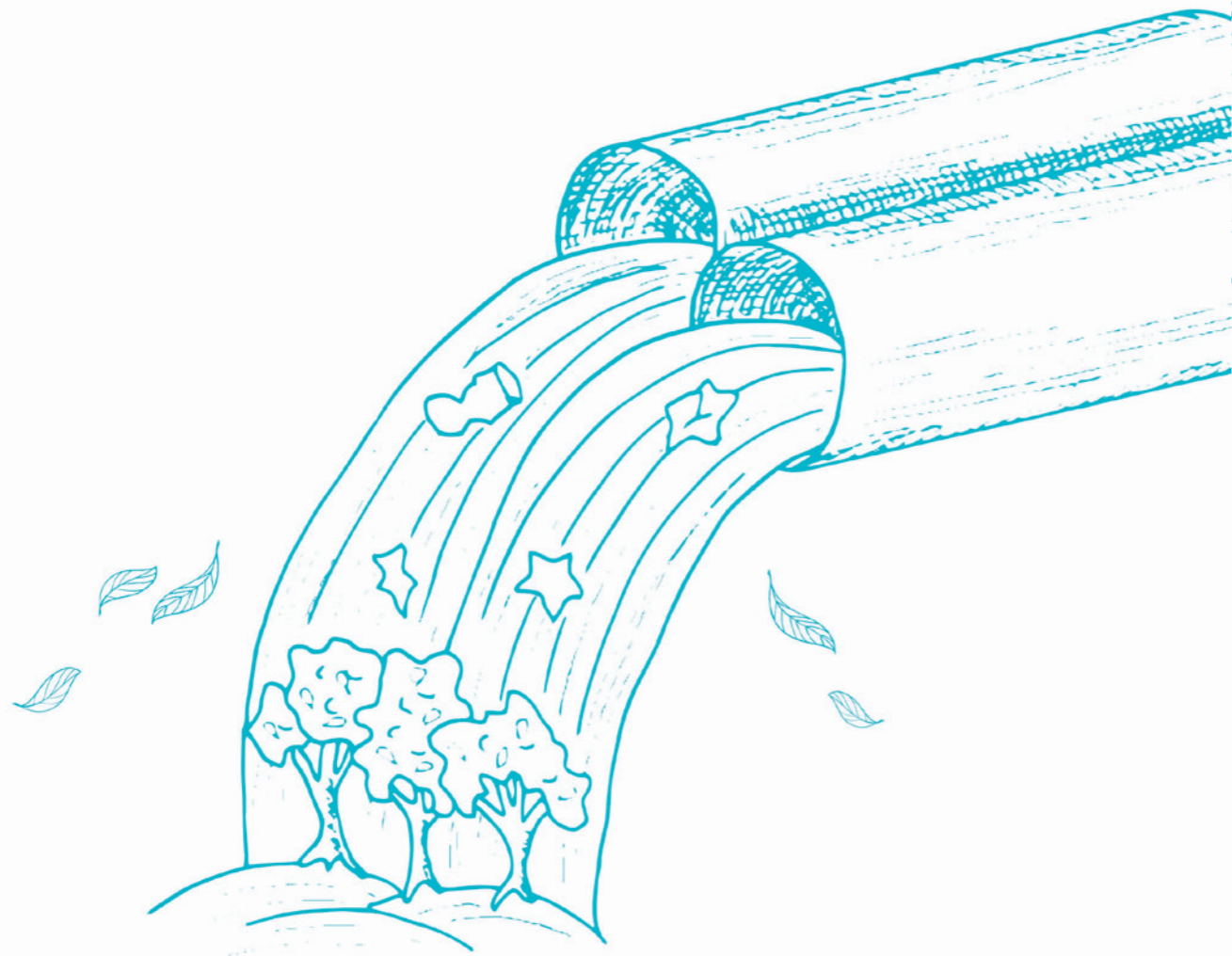




Water Management

Total solutions for water resources

Veolia offers comprehensive services in the water resources cycle including the withdrawal of raw water, production and supply of drinking water, and the treatment and recycling of wastewater. We possess the ability to meet the needs of municipal customers as the global leader in water business. In addition, we offer services for industrial customers such as SK hynix, Dongbu Steel, Kumho Petrochemicals, Kumho Polychem, LG/Lotte Chemical, Kleannara, etc. including the production of industrial water, operation & maintenance services of water treatment facilities. Veolia provides total water treatment solutions customized for each industry such as oil & gas, semiconductors, pharmaceutical, automobile, power plant, chemical and paper.



Operation and Maintenance

Veolia offers operation and maintenance services of water treatment facilities for municipal and industrial customers.



Construction of new facilities, Upgrade of existing facilities



Optimization of facilities operation and maintenance



Sustainable solutions for reducing effectiveness on water contamination and CO₂ emission.



Expert supervision of staff

Water Treatment Technology

Veolia offers more than 350 proprietary technologies to respond to issues that span the entire spectrum of water treatment, including drinking water, industrial process water, ultra-pure water, wastewater and seawater:



biological treatment: Biostyr[®], MBBR



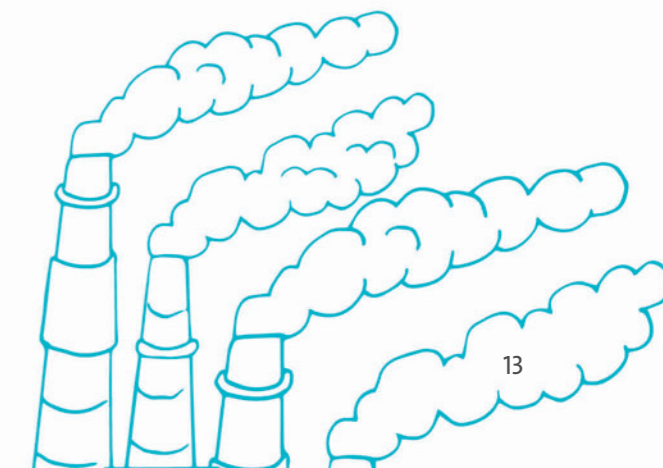
Membrane technology: microfiltration, ultrafiltration and reverse osmosis



Desalination via membrane, thermal and hybrid processes



Wastewater treatment: Evald[™], Actiflo[™], Biostyr[®], MBBR, Biothane[®], MBR





Water Management

EPC & Technology Solutions

Veolia offers a total turnkey solution for both municipalities & industries ranging from design and construction of water treatment facilities and system to facility renovations. As the global leader in water services, we make sure to deliver the best solutions for our clients to process & recycle wastewater including the recovery of energy and raw materials and reuse of sludge coming from wastewater.



Sludge Treatment Solutions

	EXEYS™	ATHOS™	INOS™	BIOHERM™	BIOPASTEUR™	SOLA™	BIOCON™	PYROFLUID™	PYROMIX	COMPOSTING™	SAPHYR™	LIMING	ALIZAR™	AQUILAIR™	IDRADEO™	ODOWATCH™
Sludge recycling																
energy recovery	•	•		•	•	•	•	•	•							
matter recycling		•	•	•		•	•	•		•	•	•				
Reducing sludge quantities																
within the existing sludge treatment process: for thickened sludge		•	•	•	•						•					
for dewatered sludge	•					•	•	•	•	•						
Reducing odor nuisances																
measurement solutions											•	•	•	•	•	•
treatment solutions											•	•	•	•	•	•
Improving health & safety and sludge quality	•	•	•	•	•	•	•	•	•	•	•	•				

- thermal solutions
- biological solutions
- chemical solutions



Water Recycling & Reuse Solutions

Veolia's patented engineering processes provide clients with water recycling and reuse solutions.

- Actiflo® : TurboRapid, flexible and performant
- AnoxKaldnes™ MBBR : Leading edge biological treatment
- EVALED™ : Evaporation technology
- MegaRO™ : Reverse osmosis Units for Boiler Feed and Process Water
- Uflex™ : Ultrafiltration Unit / Membrane Solutions

Services, Chemicals, and Consumables

Water treatment total service

- Cooling tower cleaning service: underwater cleaning robot
 - nonstop service without shutdown of cooling tower
 - service without drainage of CT pond
- On-site monitoring visits for process water optimization
- Pilot plant operation in Veolia Industrial Technical & Training Center, Water Quality Analysis
- AquaVista including SCADA
- Overall assessment of water systems

Chemicals

HYDREX™

- Customized chemical services for municipal and industrial water treatment system.

series	Application
series 1000	Boiler water treatment
series 2000	Cooling system treatment
series 3000	Drinking water production
series 4000	Chemicals for RO Membrane
series 5000	Industrial maintenance management
series 6000	Water & wastewater treatment
series 7000	Biocide and legionella treatment
series 8000	Process and specialty chemicals
series 9000	Other advanced treatment

Consumables

Standard models

- Aquafab, Endetec (Tecta™/ Kapta™) Preliminary parts
- UV System, Activated Carbon, Micro Sand, Membrane
- Parts for water treatment systems



• KAPTA



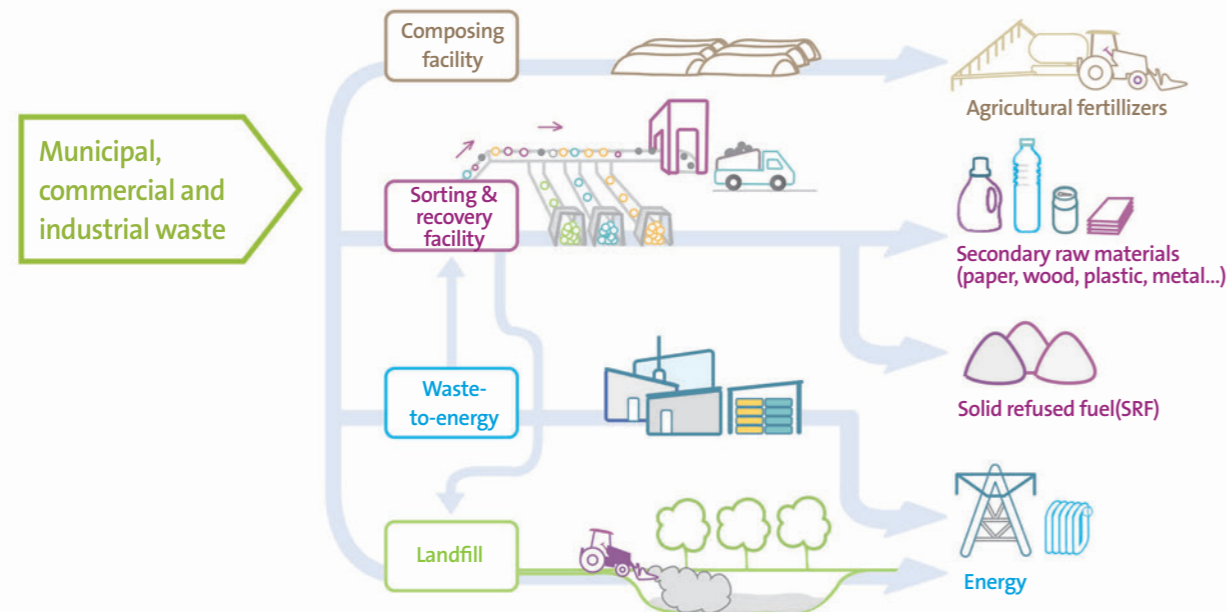
• TECTA



Waste Management

Safe and Professional Waste Services

Veolia is an international, market-leading waste management company providing a comprehensive range of services for municipalities & industries. It anticipates and evaluates new legislation, develops and assesses environmental technologies and researches our customers' practical requirements to provide successful sustainable waste management services. Today Veolia Korea operates material recovery facilities for plastics, which is recycled, and Solid Refuse Fuel (SRF) which is used as fuel for the Waste To Energy (WTE) it operates or for external clients



Services offered by the waste business unit of Veolia Korea

Materials Recovery

The recovery of materials helps conserve primary natural resources by turning waste into replacement energy products. By developing recovery solutions that provide its customers with certified secondary raw materials, Veolia has become the benchmark producer of renewable resources.

- Plastics: identification, separation, and certification of various types of plastics
- Recovery and production of secondary raw materials
- Production of recycled materials

Waste-to-Energy

Veolia supports the growing demand for renewable energy and, wherever possible, develops solutions to supply green energy to its customers.

- **Electricity and heat generation** for the local industry or domestic needs produced by the combustion of non-recyclable waste
- **SRF recovery:** solid recovered fuel (SRF) provides a way to recover a significant fraction of municipal waste or non-hazardous industrial waste while at the same time meeting industry's growing demand for energy

By operating such facilities, Veolia develops the circular economy. Veolia will continue to intensify its development in such activities allowing the reduction of greenhouse gas emission and limiting the use of the primary resources.

Veolia can provide different solutions to reuse, recycle, valorize or treat waste by developing and implementing dedicated solutions in other fields of the waste management including:

- Industrial services
- Recycling, sorting and trading operation
- Organic, hazardous, medical or radioactive waste activities
- Waste to Energy & incineration
- Landfill
- Collection and Municipal services





Energy Management

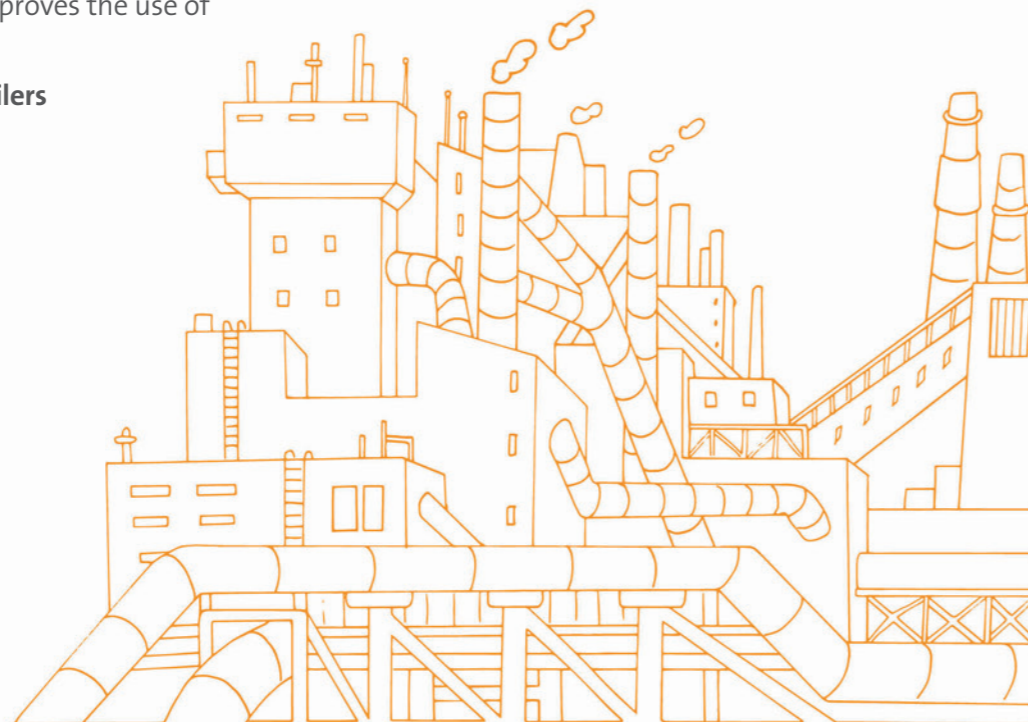
Integrated Management for Energy Systems & Optimization Solutions

Veolia offers both economical and eco-friendly optimization services of energy management system for municipal and industrial clients. Veolia improves the business performances of clients by providing these services such as heating and cooling network management, combined heat & power (cogeneration,) and building energy performance improvement. Veolia offers clients energy solutions that reduce the costs and likelihood of risks due to insufficient energy supply.

- Designing, building, operating, and maintaining heating and cooling networks
- Designing, building and operating energy utilities
- Managing energy supplies, with a focus on renewables
- Energy audit, design and implementation of improvement plans, including work on buildings, upgrades for energy facilities, monitoring tools and systems to encourage occupants to save energy, etc.
- Fine-tuning, managing and maintaining facilities
- Creating cost-effective, environmental solutions including biomass, biogas, energy recovery and CHP
- Managing carbon quotas

Energy Plant Management

- **Combined Heat & Power (CHP)**
CHP plants produce recyclable heat along with electricity, which is most commonly used for heating and industrial processes. With energy efficiency of 80% or more, it improves the use of primary energy.
- **Incineration of waste using boilers**
- **Waste to energy**
- **District heating**



Heating and cooling networks management

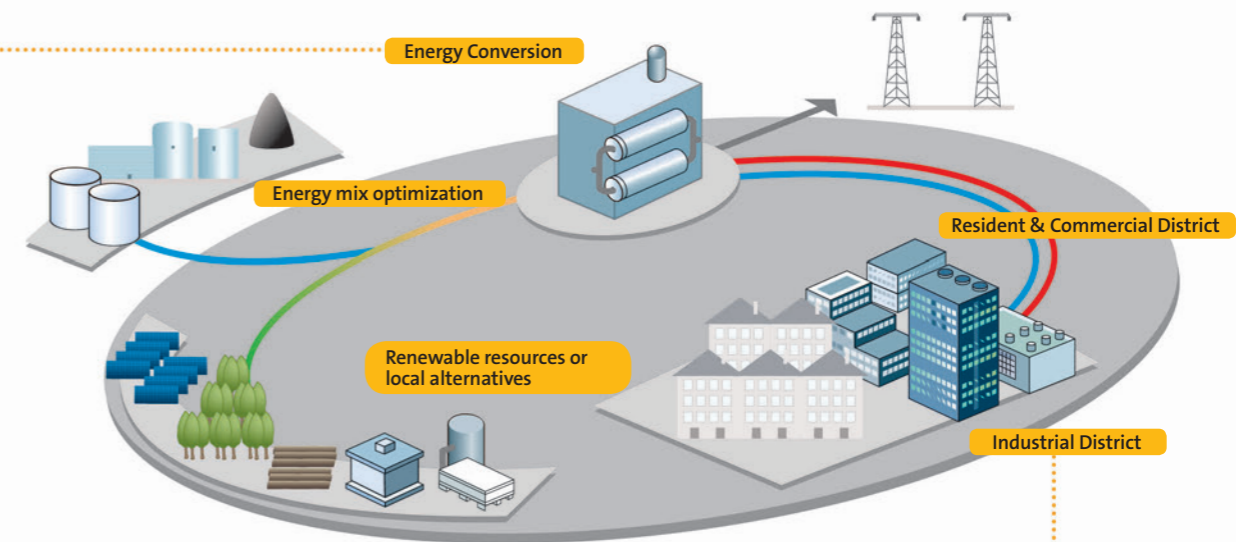
As the global leader in heating and cooling networks, Veolia has unique expertise in their design, construction, O&M, in addition to extensive know-how in innovative technologies, managing energy supplies, particularly renewable energies, and services to the end customer.

- Make use of renewable (biomass) and recovered energy (waste, industrial gaseous effluent , etc.)
- Reducing cities' carbon footprint and their dependence on fossil fuels
- Hooking buildings up to the heating network and so decreasing the individual coal consumption

Building energy performance improvement

Buildings of all kinds are major consumers of energy in the form of heating, cooling, lighting and hot water. Veolia develops energy services that enable building owners to reconcile occupant comfort with energy and environmental performance.

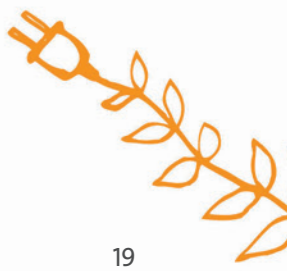
- Managing heating, ventilation and air-conditioning facilities
- Managing controlled-atmosphere facilities
- Multi-technical building maintenance



Industrial facilities optimization

In these times of rising fuel costs and increased awareness of the carbon footprint, energy has become a competitiveness factor for manufacturers. Everything is at stake at their sites. Veolia, as a decentralized energy specialist, provides them with high value added energy solutions that meet their reliability, quality, availability and cost requirements.

- Supplying primary energy, integrating renewable and alternative sources
- Managing power plants for industrial utilities such as steam, cooling and compressed air
- On-site power generation, cogeneration (CHP) and trigeneration (CCHP)
- Reducing carbon emissions



Veolia Asia Industrial Technical & Training Center (ITTC)



Introduction

- Year of establishment: 2013
 - Location: Incheon Free Economic Zone (IFEZ) Songdo Area
- Veolia Asia's Industrial Training and Technical Center (ITTC) offers Veolia employees across the Asia Pacific regions advanced educational training programs targeted to the subject of technical expertise, research trends, best practices, management, finance, and project development. The environmental friendly design of the training center accommodates 30,000 employees throughout the year, equipped with a pilot plant, central laboratory, and training rooms showcasing Veolia's expertise in the water, waste and energy activities.

Innovative global research network

- 900 Specialists
- Seven specialized research units
- Water & wastewater, seawater desalination and water quality testing facilities
- 250 pilot programs
- International relations with 220 organizations: 130 educational institutions and 90 industries.
- More than 2,000 patents



Educational Facilities

The training Center at ITTC is designed to enhance employees' professional competences in the area of technical, management, general subjects and functional areas which will contribute to improvement of business operations.



Central Laboratory

As an independent, certified institution, the Central Laboratory offers not only the technical support for water treatment systems & process enhancement but also education programs for proper analysis.



Pilot Plant Hall

The hall is equipped with in-house instruments for conducting a pilot test of multiple items, such as production of water with different quality ranging from raw to ultra-pure, wastewater reuse, optimal use of chemicals and smart operation of cooling towers.



Veolia Korea

Signature Towers East 16F, Cheonggyecheon-ro 100, Junggu, Seoul 04542

02.6323.2900

www.veolia.co.kr

Resourcing the world  **VEOLIA**