

# Veolia Korea e-Newsletter

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## Pure water for better healthcare, pharma & Cosmetic applications



**Veolia is a market leader in providing pure water solutions and services for “service critical” healthcare, pharma & Cosmetic applications.**

Our experience in producing pure **water for healthcare and pharma** spans over 80 years, during which we have constantly strived to meet our customers’ priorities: reliability, innovation, functionality and patient safety with an unfailing commitment to provide exceptional service and value for money.

Our services range from consultancy, to plant design, installation, validation, testing and maintenance to ensure ongoing compliance.

Each Healthcare service engineer carries their own stock of parts and receives appropriate and regular factory training to carry out system maintenance, calibration, revalidation and hardware/software enhancements as part of an ISO9001:2000 quality system.

We retain the capability and flexibility to provide you with a response to meet your specific needs - 4, 8, 12 & 24 hour response times. Customer training is delivered during commissioning and further training/refresher training can be requested if desired.

Further support is provided with raw water and processed water testing.

## Our commitment to the future

### Culture of innovation

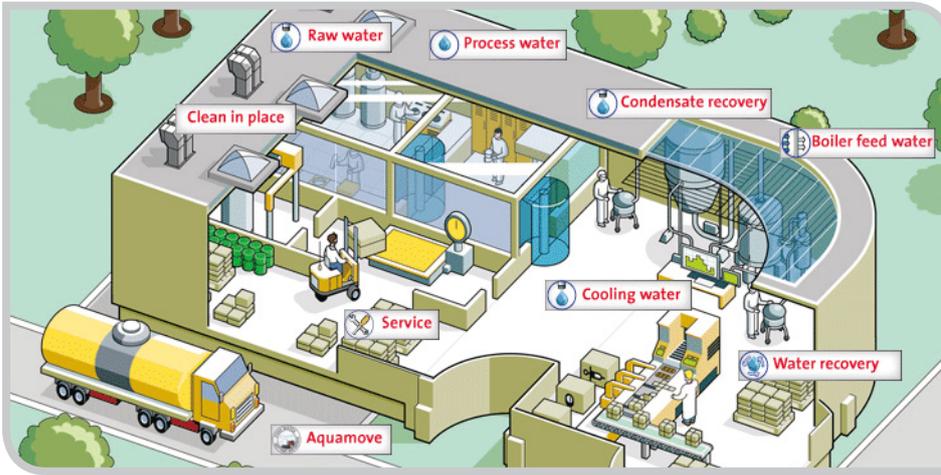
We are committed to innovation. We invest heavily in research and development, exploring fresh possibilities for tomorrow’s healthcare applications including areas such as:

- Therapeutic waters
- Pharmacy production
- Primary and Secondary Care

## Quality environments

We intend to remain true to our core values and culture - and those of our parent company - in helping you to deliver added value in healthcare generally and, most importantly, to your patients specifically.

## Pharma & Cosmetics



**Water is the most commonly used liquid in the Pharmaceutical industry, not only as an ingredient in many formulations but also as a cleaning agent.**

The production of Purified Water, Highly Purified Water, Pyrogen Free Water and WFI (Water for Injection) to international Pharmaceutical standards is widely recognized as a critical process.

Our product development and testing facility includes a wet test area for fully functional FAT and ISO 9001 accredited. As a world leader for process water, Veolia uses the latest technologies available to

improve manufacturing efficiency and reduce costs, without compromising process security and product quality. All aspects of our product development, project management and service offerings are managed to the highest quality standard to ensure that our dedicated teams of experts are in tune with the market needs.

Whatever your **pharmaceutical water** needs - **Process Water, Distribution & Sanitization, Water Recovery, Boiler Feed** - Veolia uses the latest technologies available to improve efficiencies and reduce costs, without compromising process security and product quality.

Veolia utilizes a risk-based approach to select the best water treatment systems to meet your needs. Water for pharmaceutical purposes is used in a variety of applications with different levels of risk. As our client, you can match your expenditure to each application. All of our systems are validated, FAT tested, packaged to reduce on-site installation time and come with our full product water quality guarantee.

Veolia uses a lifecycle costing model to establish your true cost of ownership over the lifetime of an installation

### Reference: Pharmaniaga, Malaysia - Pure Water

Key Features	
<b>Client</b>	Pharmaniaga (One of Malaysia's leading pharm companies producing generic pharmaceuticals) 
<b>Contract start /type</b>	Sept 2008 / O&M
<b>Scope</b>	Multi-utility offering including pharmaceutical grade water, air handling plants and energy center
<b>Capacities</b>	Purified water: 25 m <sup>3</sup> /d Water for Injection (WFI): 12 m <sup>3</sup> /d Pure steam Wastewater: 80 m <sup>3</sup> /d Energy center (Comprising CDA, Cooling Towers, Chillers and Dust collection) Air handling plant (Clean dry air, Clean rooms)

► **contact: [sanghoon.seo@veolia.com](mailto:sanghoon.seo@veolia.com)**

## Veolia's participation at 7<sup>th</sup> World Water Forum



### April 12 - 17: Ideas for the 21<sup>st</sup> Century

The 7<sup>th</sup> World Water Forum brought together the entire international water community in Korea focusing on "Implementation" with over 500 sessions in Daegu and Gyeongju.

Antoine Frérot, Veolia CEO, represented the Group, particularly on two high level juries: on deploying innovations, and subsequently "Infrastructures Financing", in a conference organized by the OECD and the World Water Council.

### Innovating to ensure access to water for all

Veolia can meet these priorities thanks a lever, i.e. innovation, as innovation is the only means of combining growth and the use of natural resources with a logic based on a circular economy, gaining more with less. Whether the innovation is technical, social or economic, it represents the cornerstone of ensuring access to drinking water for all, and what's more, minor savings in water. Innovation also means finding and developing alternatives to the use of fresh natural resources, such as recycling municipal or industrial wastewater, or recharging groundwater by infiltration or re-injection.

Furthermore, in addition to its over **900 researchers and 220 partnerships with research centers**, Veolia has created **innovation accelerators for start-ups, helping technologies to take off and facilitating their launch on the market.**

This 7<sup>th</sup> World Water Forum in Korea, focusing on the implementation of the solutions adopted at the World Water Forum in Marseille in 2012, must integrate a particularly decisive international agenda for 2015 with the adoption of the sustainable development goals in New York in September and the attempt to reach a climate agreement in December at the COP21 in Paris. Veolia, world leader in optimized resource management, wishes to actively contribute to achieving these targets.

## Veolia and the Climate: COP21

Veolia is a **founding partner of solutions COP21 climate conference**. CEOs from 43 leading international groups in 20 different sectors with operations in over 150 countries, jointly generating over \$1.2 trillion in revenue in 2014, are launching a joint initiative to lay down the bases for a global and responsible agreement on the climate, at the COP21 in Paris in December 2015.

This initiative convinced that private sector must take action at the global level to reduce greenhouse gas emissions and drive the transition to a strong low carbon economy, and call for an ambitious agreement to be signed in Paris, aligned with the sustainable development goals of the United Nations.

Veolia commits to the climate in recent years. **As a circular economic operator and contributor of innovative solutions, Veolia is on the front line in the fight against climate change.**



► **contact: [miyoung.choi@veolia.com](mailto:miyoung.choi@veolia.com)**

# Veolia's environmental services: Water, Waste & Energy services and worldwide references

Veolia designs and delivers services that are vital to human development and sustainable performance through three complementary business activities: water management, waste management and energy services. The company provides innovative, sustainable solutions to improve people's everyday lives and protect future resources.



## Water Management

Water is our lifeblood. Yet resources are unevenly distributed around the globe with significant differences in quality. 60% of the world's freshwater resources are split between just 10 countries.

### Case Study: QGC, Australia



*The equivalent of 80 Olympic-sized swimming pools treated every day*

#### Key figures:

- Contract start: 2013 (20 years)
- Site: Surat Basin, Queensland, Australia
- Scope: Design, Build, Operate and Maintain water and wastewater treatment facilities
- Activity sector: Oil & Gas

#### The challenge:

QGC is a leading coal seam gas explorer and producer focused on establishing the world's first project to convert coal seam gas into liquefied natural gas - Queensland Curtis LNG (QCLNG). QGC, a leading player in the global energy market, was in search of a partner who could **operate and maintain the company's three water treatment plants** situated in the Surat Basin that support coal seam gas production operations.

#### Veolia's solution:

In April 2013, Veolia was successfully awarded a 20-year contract to operate and maintain QGC's three water treatment plants, which **treat groundwater produced alongside natural gas**. Veolia was chosen for its unique expertise in managing the complete production water treatment cycle in the complex field of unconventional oil and gas.

The water treatment systems are a robust series of mainly physical processes that progressively clean the water to a pure, safe and consistent standard. The efficient reverse osmosis treatment process will convert almost **97% of produced water into treated water suitable for beneficial use**.

#### Client benefits:

- Strict regulatory compliance
- Smaller environmental footprint
- Improved social acceptability

Capacity to treat **200,000m<sup>3</sup>** of production water per day

**97%** of treated water will be reused

Strict regulatory compliance and improved social acceptability



## Energy Services

The ability to provide cleaner, more accessible, more sustainable energy sources is a key challenge in the drive to tackle issues related to climate change, volatile prices and dwindling resources.

### Case Study: DEMB, Joure, Netherlands



*Turning waste into renewable energy*

#### The challenge:

Douwe Egberts Master Blenders (DEMB) produces coffee and tea products. The Dutch company wanted to meet the growing global demand for coffee products by increasing its production.

- Client wanted to increase their production capacity in order to meet the growing market demand, whilst in parallel reduce its carbon footprint.
- They wished to be compliant with new environmental legislation in relation to landfills.
- They wanted to create value from the by-products of their production process (Spent Coffee Grounds/SCG).
- Contribute to sustainability targets of DEMB.

**Veolia's solution:**

Veolia sat down with DEMB to first understand its needs and future growth plans. A long term plan was put in place to upgrade current installations and for the DBOM (Design, Build, Operate and Maintain) of a new biomass boiler to produce energy from biomass (a by-product of the production process).

**Client benefits:**

- Lower energy bills and production costs
- Recovery of a by-product from the production process
- Reliable industrial utilities

**Key figures:**

- **Contract duration:** 10 + 3 years
- **Scope:** Design, Build, Operate
- **Activity:** Food & Beverage

**Video:**



**20,000** tons SC recovered & reused

**14,000** tons of CO<sub>2</sub> avoided annually

Gas consumption reduced (equivalent of 2000 households)

## Water Management



Waste volume and related risks entail growing environmental, economic and health costs, making sustainable management a crucial cornerstone of any future economic model.

**Case Study: Rostock, Germany**



*Bottle to bottle, from the source to the end user*

**The challenge:**

Landfilling of untreated solid wastes is prohibited in Germany since 2005 and it is forbidden to produce "MSW compost" for agricultural use. To be fully compliant with German Regulation, the Municipality of Rostock and surrounding counties needed to find a company to handle the whole waste process from collection to final elimination or recovery. Veolia won the contract in 2005.

**Veolia's solution:**

Veolia operates the Rostock MBT plant that treats 195,000 tons of municipal solid waste per year and produces both Solid Recovered Fuel (SRF) and biogas thanks to the Anaerobic Digestion (AD) process.

**Key figures:**

- **Starting date:** 2005
- **Client:** City of Rostock
- **Scope:** Waste transportation, collection, sorting, treatment, recycling and disposal and selling

**Veolia objectives are to:**

- Deliver a stabilized, disposable fraction of MSW
- Achieve optimal energy recovery
- Improve the plant's economic situations
- Reduce the environmental footprint
- Significant carbon footprint reduction

**Client benefits:**

- A guaranteed process
- Health Safety
- Improved waste recovery
- Lower processing costs
- Significant carbon footprint reduction

**90,000** ton/year mechanically pre-treated waste sent to composting

**71,000** ton/year SRF produced

**90,000** ton/year MBT\* capacity

\* MBT: Mechanical-Biological Treatment