Sustainable water solutions

Resourcing the world
Safety first

SAFETY is at the heart of everything we do
Veolia Water Technologies provides the complete range of services required to design, build, maintain and upgrade water and wastewater treatment facilities and systems for industrial clients and public authorities.
Global network
Local expertise
2014 Key Figures

North America: 900 employees
France: 1800 employees
Europe excl. France: 3100 employees
Africa/Middle East: 1500 employees
Asia-Pacific: 1200 employees
South America: 1000 employees

Total: 9500 employees
Asia Industrial as of 1st January 2015

- 30 years in Asia
- > 300 projects
- China: 73 people
- Taiwan: 628 people
- Thailand: 73 people
- Philippines: 628 people
- Vietnam: 73 people
- Malaysia: 628 people
- Singapore: 73 people
- Indonesia: 628 people

€79.8M*
€13.4M**
Our Expertise
Our Expertise

- Commissioning
- Service
- Technologies
- Solutions
- Mobile/Emergency Systems
- Design
- Turn-key solutions
- Build/Construction
- Process expertise

What we do...
We Know Water

- Results-based company culture
- Numerous references worldwide
- Sustainable, cost-effective solutions
- Local presence on all continents
- 350 proprietary technologies
- Customer-focused innovations
Serving **municipal and industrial clients worldwide**, our business units:

- deliver **engineering and turnkey design & build** projects
- provide client-tailored **water treatment solutions** and associated services
Creating **sustainable, cost-effective solutions** to protect water resources is the focus of everything we do.

We utilize tools such as **Carbon Footprint**, **Water Impact Index** and **True Cost of Water** evaluations to help our clients achieve their corporate sustainability goals and lower their operating costs.
Our differentiating technologies and solutions, combined with outstanding management skills make us the preferred partner for

- Large and complex projects
- “Difficult to treat” wastewater
With **100 years** of proven experience and **12 million** cubic meters of water produced per day, Veolia is the global leader in desalination.

- **Thermal water desalination**
- **Reverse osmosis desalination**
- **Hybrid water desalination**
Evaporation & Crystallization technologies help to reduce environmental impact, by improving performance and recovering resources, and to optimize production costs, by boosting productivity.

- Eliminate pollutants
- Recover resources
- Recycle water
We design and manufacture custom-designed equipment to meet each client’s unique needs. Standard solutions are also available for those clients who do not require a custom system.
State-of-the-art Solutions

- **Endetec™**
  Environmental monitoring solutions

- **Advanced on-line control systems**

- **Hydrex™**
  Water treatment chemicals

- **Aquamove™**
  Mobile water solutions

- **Orion®**
  Hot water sanitizable solution

- **MEDICA®Biox**
  Treatment of clinical analyzer effluents

- **PURELAB®**
  Laboratory water purification systems

- **Service and Maintenance**
We offer a range of 350 leading-edge technologies backed by the knowledge of how to combine them to create tailor-made solutions addressing the particular needs of each client.

By working closely with operators, we ensure that our technologies meet and exceed requirements, and we are able to anticipate future needs and demands.
State-of-the-art technologies

- **Actiflo®**
  High rate clarification

- **Multiflo®**
  Enhanced clarification and lamella settling

- **Exelys™**
  Continuous thermal hydrolysis

- **ROSS™**
  Treatment of oilfield produced water

- **AnoxKaldnes™ MBBR**
  Moving Bed Biofilm Reactor

- **Memthane®**
  Anaerobic Membrane Bio-Reactors

- **Hydrotech™**
  Discfilters

- **Kaldnes® RAS**
  Recirculating Aquaculture Systems
Focus on Circular economy
Selected markets
Key industrial markets in Asia

**Oil & Gas (Upstream & Downstream)**
Technip/Petrovietnam (VN), HHI/Total (NG), Modec/Petrobras (BR), Foster Wheeler/Shell (SG), Air Liquide/Soxal (SG), ABB/Shell (SG), SBM/Encana (CA), Petronas (MY), Emery (MY), Sinopec (CN)

**Power**
Siemens Power (Phu My 3 BOT, VN), Siemens Power (Panglimar, MY), Alstom Power (Keppel Merlimau, SG), FHI (Panay, Anda, Toledo, PHP)

**Pharmaceuticals & Healthcare**
Wyeth (SG), Johnson & Johnson (CN, MY, PH), Alcon (SG), Baxter (SG), Menicon (SG), GSK (SG), L’Oréal (CN, ID), Procter & Gamble (VN), Ciba Vision (ID), Lilly (CN), Merial (CN), Astra Zeneca (CN)

**Food & Beverage**
Pepsico (VN, TH), Mafipro (MY), Nestle (PH), ThaiBev (TH), PT Sari Usada (ID), SATS (SG), Liaoning Huishan (CN), Friesland Campina (ID), Coca-Cola (CN, MMR), AB Inbev (CN)

**Palm Oil Mill Effluent (POME)**
Felda Palm Industries (MY), Prolific Yield-Mistral Engineering (MY), Sime Darby (MY)

**Microelectronics/Photovoltaic**
Webel Solar (IN), Showa Denko (SG), STM (SG), IMFS (SG), Soitec (SG), Konica Minolta (MY), REC (SG), Sunpower (MY), FCI (SG), Molex (CN), TSMC (TW), Chimei Innolux (TW), Seagate (SG, MY), UMC (SG), Truly (CN), AUO (TW)
### The Municipal Market

#### Challenges

| Ensure safe and secure access to drinking water |
| Optimize scarce water resources |
| Transform wastewater into a valuable resource |
| Reduce environmental footprint |
| Minimize the impact of plants on local populations |

#### Our expertise

- Optimal water supply and usage strategies
- State-of-the-art water monitoring
- Advanced treatment for removal of micropollutants and EDC
- Secure water supply via reuse
- Use alternative sources of water such as desalination
- Convert sludge to biogas, to energy
- Produce bioplastics and fertilizers from wastewater
- Lower energy consumption
- Minimize the impact of additives: use less, use greener
- Odor-free wastewater treatment plants
- High-rate, compact technologies with small footprints
- Advanced on-site treatment reducing transportation needs

### Projects

- **Paris Acheres, France**
  - Design, Build – Wastewater treatment plant
  - 1,450,000 m³/d

- **Chengdu, China**
  - Build, Operate, Transfer – Drinking water treatment plant
  - 460,000 m³/d
The Municipal Market

Solutions & Technologies
- Drinking Water
- Wastewater
- Desalination
- Water Reuse
- Sludge & Biosolids
- Combined Sewer Overflow
- Odor Control
- Water Treatment Chemicals
- Smart Sensors
- Services
## The Oil & Gas Industry

### Challenges

- Effective deployment of new exploration methods
- Improve yield in new and existing assets
- Secure continuous operations
- Decrease and control cost of operations
- Obtaining/maintaining license to operate

### Our expertise

- Secure energy and water for exploration
- Tackle increased energy and water supply for unconventionals
- Enhance exploration processes for primary recovery
- Enhance extraction processes for secondary/tertiary recovery
- Recover material from waste streams downstream
- Secure water supply via reuse
- Alternative sources of water such as desalination
- Deploy state-of-the-art water technology to avoid bottlenecks
- Ensure regulations are met

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**PXP, USA**

Design, Build, Operate – Produced water reclamation facility

**Carmon Creek, Canada**

Highly integrated system to treat and recycle produced water, achieving a water neutral operation
The Oil & Gas Industry

Upstream Solutions

Solutions & Technologies

- Produced Water
- Water Reuse / Recycling
- Oily Sludge Treatment
- Injection Water Treatment
- Enhanced Oil Recovery
- SAGD Processes
- Unconventional Gas Treatment
- Mobile Solutions
- Water Treatment Chemicals
The Oil & Gas Industry

Downstream Solutions

Solutions & Technologies

- Produced Water
- Water Reuse / Recycling
- Oily Sludge Treatment
- Injection Water Treatment
- Enhanced Oil Recovery
- SAGD Processes
- Unconventional Gas Treatment
- Mobile Solutions
- Water Treatment Chemicals
## The Mining Industry

### Challenges

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<tr>
<th><strong>Increase O&amp;M efficiency</strong></th>
<th><strong>Our expertise</strong></th>
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<tbody>
<tr>
<td></td>
<td>o Optimal water supply and usage strategies</td>
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<td>o State-of-the-art water management approaches</td>
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<th><strong>Improve yield</strong></th>
<th><strong>Our expertise</strong></th>
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<tr>
<td></td>
<td>o Recover precious resources from waste for by-product recovery</td>
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<td>o Uninterrupted access to critical water production resources</td>
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<th><strong>Secure continuous operations</strong></th>
<th><strong>Our expertise</strong></th>
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<td>o Secure water supply via reuse</td>
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<th><strong>Obtaining / maintaining license to operate</strong></th>
<th><strong>Our expertise</strong></th>
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<tr>
<td></td>
<td>o Ensure all appropriate local standards are met to minimize delays and disruptions</td>
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<td>o Offer environmental analysis tools such as The True Cost of Water</td>
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<th><strong>Optimize CAPEX delivery</strong></th>
<th><strong>Our expertise</strong></th>
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<td>o Ensure on-schedule and on-budget projects</td>
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- **Ambatovy, Madagascar**
  - By-product recovery of ammonium sulfate

- **El Teniente, Chile**
  - Recovery of copper from tailings pond water
The Mining Industry

Solutions & Technologies

- Boiler Feed Water
- Process Water
- Tailings Pond Management
- Acid Mine Drainage
- Alkaline Mine Drainage
- By-product Recovery
- Coal Pile Runoff
- Mine Dewatering
- Process Solution Filtration
- Water Reuse
- Wastewater
The Power Industry

Challenges

- Decrease cost for water
  - Reduce water consumption of power plant
  - Upgrade system to enable usage of cheaper/lower quality water sources

- Decrease cost for chemicals
  - Reduce need for chemicals in processes

- Improve yield of power plant
  - Use exhaust gases to regenerate power

- Increase uptime
  - Apply systems for continuous water feeding
  - Outsource water supply responsibility to experts

- Ensurance of license to operate
  - Fulfill strictest environmental regulations

Our expertise

ELCOGAS, Spain
Zero Liquid Discharge for Integrated Gasification Combined Cycle power plant

Abengoa, USA
Integrated water treatment system for thermal solar power plant
The Power Industry

Solutions & Technologies

- Pre-treatment
- Boiler feed water
- Condensate polishing
- Cooling tower sidestream filtration
- Cooling tower blowdown
- Wastewater treatment
- Services
- Mobile Solutions
- Water Treatment Chemicals
The Food & Beverage Industry

**Challenges**

- Improve product quality and risk management
- Increase yield and capture additional revenue streams
- Improve operational performance and resource management
- Optimize Capex delivery
- Build and run facilities in emerging countries

**Our expertise**

- Enhance process water quality
- Produce high purity process stream
- Avoid raw material contamination

- Enhance in process by-product recovery
- Boost co-products usage/sales

- Reduce water costs
- Reduce energy costs and emissions
- Reduce operational costs through outsourcing
- Rethink waste management incl. recycling

- Standard solutions for lowest CAPEX and easy implementation
- Reduce financing needs

- Design and operation of highly reliable utilities in emerging countries

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**Soft drinks manufacturer in Thailand**

Reclamation system reduces water footprint

**PepsiCo Germany**

Design towards minimizing operating cost
The Food & Beverage Industry

Solutions & Technologies

- **Process** water production
- **Utility** feed water
- **Water recycling & reuse**
- **Wastewater**
- **Sludge** treatment
- **Bio-energy**
- **Green chemicals**
- **Mobile** water treatment
Creating value for our customers

- As the **world leading** water treatment process integrator, we are able to combine best available technologies to **create tailor-made solutions** addressing the particular needs of each client.

- We understand the importance of **increasing the value of water** and we do so by supplying **high quality water**, treating and **reusing wastewater**, producing or recovering **energy**, extracting raw materials and capitalizing on **valuable byproducts**.
The Veolia Foundation mobilizes to supply potable water to Philippines typhoon victims

After a natural disaster such as that in the Philippines, it is vital to provide people in stricken areas with access to basic services. Emergency humanitarian aid focuses on health, water and sanitation to avoid epidemics. Supplying potable water is a priority, which is why the Veolia Foundation is mobilizing alongside its partners.

Created in May 2004

Veoliaforce

Outreach
Workforce development
Environmental care