

# Riyadh City Business Unit

2008 - 2016

# An innovative partnership to address Riyadh's Water Challenges

The Kingdom decided to privatize its national utility services, following the aim of increasing operational efficiency into the areas of water and wastewater management, while simultaneously contributing to the broader goals of its development strategy.

In May 2008, Veolia has been awarded a performance contract by the Ministry of Water and Electricity for the treatment and distribution of water as well as wastewater collection for the city of Riyadh, the Kingdom's capital, providing its services to the National Water Company (NWC).

Since June 2009, Veolia is also in charge of operating the wastewater treatment plants serving Riyadh.

Since July 2014, Veolia has also been in charge of bringing technical support to RCBU (Riyadh City Business Unit, the NWC Unit in charge of Riyadh City).

# Peer Performance Solution: a compelling option for Riyadh

The performance-based contract has enable NWC to benefit from the experience of Veolia to improve the performance of their services and recommend new technical, technological and logistical solutions, while keeping environmental risks under control and reducing operating costs.

This model allowed NWC to measure the results generated by the Peer Performance Solution. Meaningful key performance indicators (KPI) are tied to the delivery of improved results and the potential savings to the utilities. The results are measurable, enabling full transparency to NWC and the public.

- Supporting & reinforcing NWC
- Delivering measurable benefits
- Innovative model that works under paid-for-performance contract



## Step 1:

Veolia has conducted together with NWC a detailed operations efficiency evaluation, examining every aspect of the water supply and treatment systems (including plants, underground piping, operational processes, management and staffing) to identify savings and improvement opportunities.



## Step 2:

In partnership with the NWC, our team of experts developed a comprehensive plan and approach that can be implemented to achieve long-term savings and improvements for the day-to-day operations.

Our efforts have been centered around key areas, like the development of metrics-based performance culture.



## Step 3:

By working hand in hand with NWC to meet the plans for progress across the utility, sustainable solutions have been deployed.



## Step 4:

Achievement of targets based on key performance indicators (KPI) to boost productivity, identify efficiencies and reach NWC strategic goals accordingly to specific timelines.



## Step 5:

By working together with NWC, to prepare a new operating model.

## Significant achievements

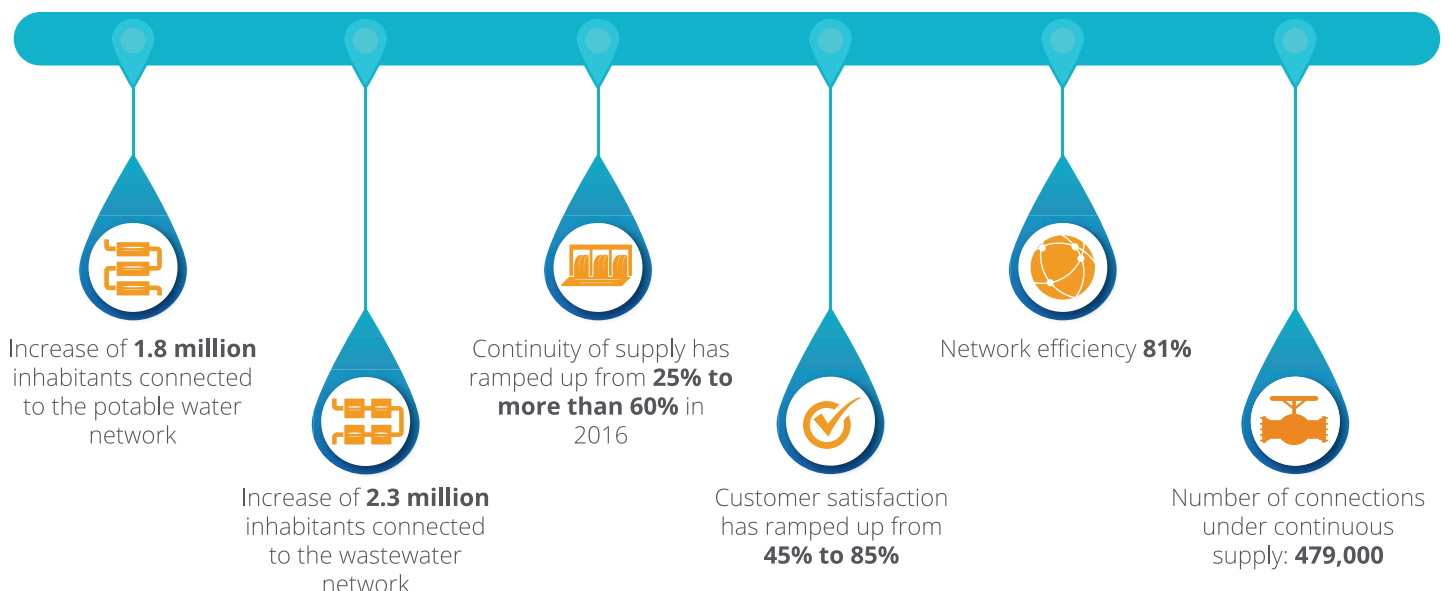
In the context of a first-of-its-kind performance contract ever signed in Saudi Arabia, Veolia's mission is to enhance the overall performance of water and wastewater treatment services in the city of Riyadh and adapt them to the demographic growth targets (a 30% increase of population since 2008: from 4.7 million to around 7 million inhabitants) in an environment of acute water stress.

Eight years after the start of the initial contract, the optimizations of operating methods have contributed to the significant improvement of the quality of service while, at the same time, training the existing workforce and enhance water conservation in Riyadh.

In addition to the upgrade of Riyadh's water and wastewater networks, Veolia succeeded to overcome these challenges thanks to the implementation of several customer-oriented tools and best practices. In the meantime, people from RCBU have been following an intensive training programme to enhance their technical knowledge, performance and health & safety awareness.

In an environment of scarce water resources, effluent recycling for irrigation or industrial purposes is a promising avenue for new opportunities that Veolia Environnement is actively investigating with the client.

## At a glance 2008 to 2016

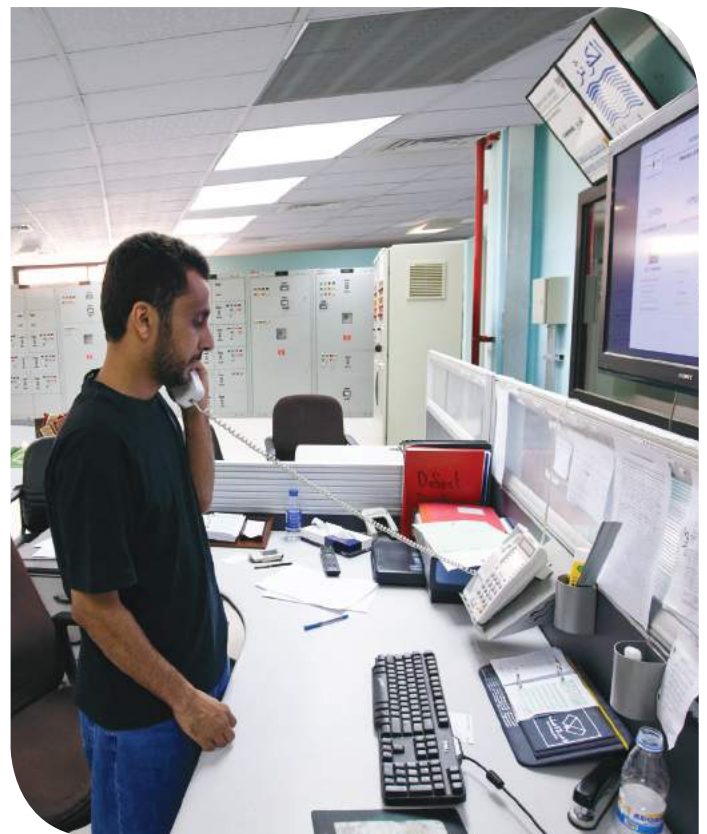


## Progress Summary 2008-2016

Knowing perfectly the water network of Riyadh is one of the key steps of this contract. Veolia has implemented several tools and practices to ensure a 24/7 eye on the Kingdom's capital. They also allow Veolia to get an efficient control on supplies, improve water distribution, manage crisis and easily detect leakage.

### Achievements

- Enhancement of **SCADA** to manage the water cycle
- Set up and develop control room capabilities
- **710 operational pressure loggers** installed on the Riyadh network gives access to accurate information and enhance the utilization of the systems
- **Smart network & pressure management** improves the distribution of water throughout the city - Implementation of new DMZ (District Meter Zone) equipped with flow meters
- **GIS** developed for water and wastewater networks allowing cross function support, reporting and linear data assessment
- **Development of a sophisticated hydraulic model** to identify issues on the network and assess the feasibility of new investments
- **24/7 operations & enhanced emergency response**
- **Implementation of CMMS** (Computerized Maintenance Management System) for all plants
- **Development of SOPs** (Standard Operative Procedures) for Operations & Maintenance
- **Improvement of plant preventive maintenance program**
- Set up of **network maintenance** dispatch center



**We aim at maximizing the efficient supply of water in the city of Riyadh**

**Jonathan Kempton,**  
Operations Support Manager





## Drinking Water Production & Distribution

With low resources in water, an efficient organization of Riyadh's production and network is essential. This is why Veolia determined several actions to manage and make the best of the water available. From water treatment plant output improvement to saving water through leak detections, everything is done to do more with the same amount of water.

### Achievements

- **Optimization of the production** with a 40% increase since summer 2008 of total peak volume of water produced from National Water Company's plants
- **Over 64% continuity of supply** throughout the past 12 months
- **Increasing water quality and compliance** with international standards with 99.7 % conformity
- **Introduction of planned shutdown** to improve the production of assets and increase their availability
- **Reduction of the environmental impact** through optimization of chemicals use
- **Implementation** of pressure control and pressure modulation on the water network
- **Increase** of the leak detection teams and introduction of new leakage detection techniques
- **Implementation** of a new electronic work order management system
- **Introduction, management & technical training** and application of standard operating procedures
- **Development of SOPs** (Standard Operative Procedures) for Water production
- **Implementation of LIMS** (Laboratory Information Management System)
- **Implementation** of water demand forecast model
- **Enhancement** of the summer action plan delivery program - Peak demand management

#### Water plant maintenance

- **15** treatment plants
- **28** boosters stations
- **300** wells
- **10,000** assets
- **2,500** work orders per month



## Wastewater Collection, Treatment & Distribution

25,000 new connections are added each year to the wastewater network in Riyadh. This extraordinary growth requires Veolia to implement safe, sustainable and controllable systems to recover and treat wastewater. Reuse of the water and the residuals are also amongst Veolia priorities to maximize the use of water resources.

### Achievements

- **Wastewater network improvements thanks to the implementation of new tools and initiatives**

- New activities: House - Connections and trunk line cleaning
- CCTV inspections
- Survey of 9,000 clients for industrial discharges

- **Wastewater treatment plants operations progresses**

- Organizational change program
- Improved team communication and planning
- Improved effluent quality
- New treatment works
- Sludge management
- British Safety Council International Safety award received thanks to the safety culture change

### Environmental Service Maintenance

- **4** treatment plants
- Treatment capacity: **900,000**M3 per day
- **5,000km** network
- **270,000** connections
- **9** pumping stations
- **3,200** work orders per month

“ We don’t really do different than the nature but we accelerate the process of water treatment, safely and sustainably.

Vincent Tovar, Wastewater Manager





## Customer Services

In a horizontally built city, with more than 470,000 customers, a significant population growth and limited water resources, Riyadh City presents specific challenges. To meet those challenges, Veolia has tailored a specific approach to **water resources management** and is conscientiously taking into account Riyadh citizens' current and future needs. In addition, a portfolio of specific technologies specially dedicated to customer services has been set up.

## Achievements

- **Send pro-actively free tanker to customers** identified as not receiving supply from the network in order to avoid water shortage, and improve customer satisfaction experience
- Increasing **water conservation** through the **detection of violations**
- Create **seven customer service branches** with renewed corporate identity to serve better the subscribers in Riyadh
- **Set up of a single call center** to increase customer contact performance
- **Implementation of the new customer care and billing software**, as part of the strategic projects launched by NWC
- **Cash Collection enhancement program**: define debt segmentation & debt collection strategy for each segment and call center reminders
- **Development** of roadmap to enhance revenue streams



**We updated our management tools to be more customer focused and quality driven**

**Bassam Abdallah**, Front Office Manager



## Human Resources

Based on a full assessment made at the beginning of the contract, Veolia set up and implemented comprehensive training and development programs for RCBU personnel. Knowledge transfer, human resources strategy and talent management are amongst the multiple tools that Veolia keeps developing to ensure employees' well-being and performance.

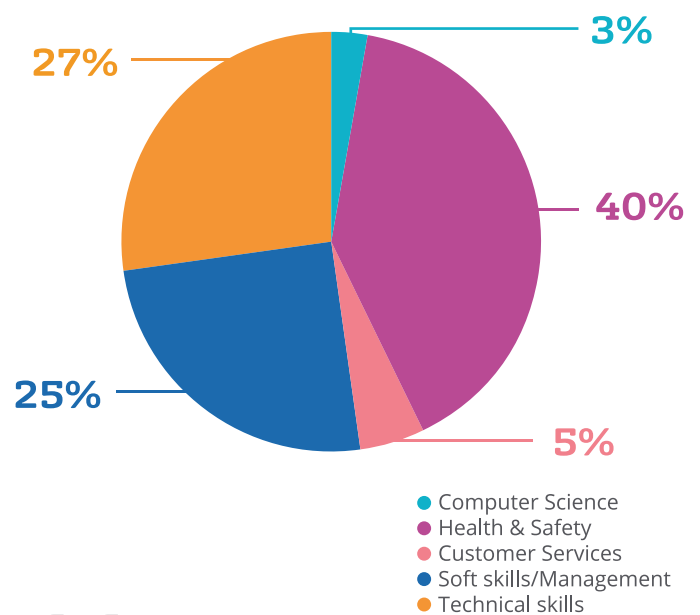
### Training Program

- More than **270,000** training hours to more than 16,000 people (cumulated) since 2008
- **78%** of the training are conducted internally
- **74 courses developed** and brought by Campus Veolia are available in the training catalogue

### Achievements

- **Supporting the growth of employees** through Identification and delivery of tailor-made training across various disciplines
- **Development of a performance management system** to increase staff productivity and efficiency
- **Assessment of all Riyadh employees (4,300 people)** according to Foederis method designed by Veolia' Human Resources department. This ambitious program is the basis of the reorganization and transfer plan of the RCBU personnel
- **Development of a strong Health & Safety culture** through continuous safety improvements (training, PPE, chlorine/ chemicals use, etc.)
- **Establishment of a training center** with totally new training procedures.
- **Organization review in order** to support the transformation
- **Implementation of ABM** (Activity Based Model)

### Type of Training



**Veolia has created a World class Human Resources and Training function at the RCBU through the transfer of Veolia international best practices. We pride ourselves on engaging, supporting and developing our Saudi colleagues who are responsible for the HR management and development of people within RCBU.**

**Brent Miles**, Human Resources Director





## Health, Safety & Environment

National Water Company has the vision to improve the level of HSE as every World class water utility company should be. An initial assessment was performed to evaluate the current level of HSE compliance and maturity of RCBU-NWC with respect to international best practices. Having identified the strengths and weaknesses of safety culture, a plan was defined and implemented to improve the level of maturity focusing on leadership actions and make it sustainable for the future.

## Achievements

- **Support in development of HSE corporate master plan** (NWC level)
- **Definition of HSE leadership tools** for both RCBU managers and for contractors management
- **Support to implement Corporate Safety Management System on pilot sites** - Support to obtain OHSAS18001 certification at Salboukh WTP
- **Support of Fire safety short term plan** - NWC corporate level

### HSE Training Program

- **5800 of training hours**, including more than **2000 hours of HSE On-site training**
- Creation and training of a pool of **8 HSE internal trainers** and **38 HSE representatives** to cover all RCBU sites
- **37 days of audit** on high risk activities

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**Our expertise and high standards in HSE allowed us to train HSE representatives in order for all RCBU employees to work in the safest conditions**

Arnaud Breuzard, HSE Expert

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