

Veolia: resourcing the world through environmental services

Chris Braybrooke of Veolia Services South Africa talks to *MechChem Africa* about the new and broader global purpose behind Veolia's rebranding, which not only reflects its historic water treatment expertise, but also embraces optimised and integrated resource management solutions involving water, waste and energy.



“Our presence in South Africa over the years has been cemented through our water treatment expertise, technologies and solutions, ranging from the treatment of industrial and municipal wastewater to the installation of many complex treatment plants for municipal and industrial clients alike.”

Veolia has more than 350 tried and tested water technologies to draw from in establishing large, customised plants or even smaller modular or containerised units for the Southern Africa market; all of which can be designed, constructed and factory acceptance tested at the Sebenza factory in Gauteng, South Africa.

Globally, Veolia offers a much wider range of environmental services. “We have seen that our stakeholders want to see what value we can add beyond the technologies. In terms of our Impact 2023 programme, Veolia chairman and CEO, Antoine Frérot asked us to

think about the broader purpose of Veolia, by finding answers to four questions: In what way is Veolia useful to society? What is our mission? How is Veolia different from other companies? And for whom and how is wealth generated and shared?” Braybrooke relates.

“This led to a refining of Veolia's purpose: to contribute to human progress by firmly committing to the United Nations Sustainable Development Goals (UNSDGs) in order to achieve a better and more sustainable future for all. So Veolia has set itself the task of ‘resourcing the world’ through its environmental services businesses,” he continues, “This programme is contained in a Multifaceted Performance approach. When we analysed the UN's SDGs, we found that we were already involved in 13 of the 18 listed in the document, proving that Veolia is more than just a profitable supplier of solutions,” he notes.

In South Africa, Braybrooke says, the environmental principles embodied in SDGs

and the concept of the circular economy have long been an integral part of Veolia's ethos. “In terms of environmental sustainability, Veolia is the frontrunner when it comes to water reuse, as illustrated by our Durban Water Recycling (DWR) plant. It is here that we receive municipal wastewater and treat it to a very high industrial specification for use by the largest industrial users in the region. This facility has had a large impact in terms of protection of the environment and has freed up potable water for community use. As a result, since the plant's inception, the Durban municipality has freed up to 47 Mℓ/day of water. This meant, at the time, no Capex had to be spent on new facilities to supply this amount of potable water to the city residents,” he notes.

In addition, the project at the Wingoc facility in Namibia, where Veolia has been in operation for over 20 years, enabled Windhoek to become the first city in the world to produce drinking water directly from municipal wastewater.

“There is no doubt that plants like these contribute significantly to improving access to water and sanitation for local communities and society,” says Braybrooke.

“Our redefined purpose, however, is leading us to proactively adopt sustainability principles. We are now going beyond the delivery of plant technologies by actively seeking out opportunities that will add further benefits for clients, the environment and local communities.”

Braybrooke points out that technologies such as Sea Water Desalination, Membrane Bioreactors (MBR), RO plants and many more are regularly deployed these days, and to run these plants at optimum performance requires highly trained operators. “To ensure that we respect skills development as per SDGs 4, 5 and 8, our standard practise is to

employ local community members where these plants are constructed and to then provide training to the standards required, especially with regards to safe working principles,” he reveals.

“We have also adjusted our expectations for sub-Saharan Africa to include waste and energy, and not just focus on water. We already operate a Hazardous landfill site called the Dolphin Coast Landfill Management situated at Kwadukuza in Natal, for the safe management and treatment of hazardous waste.

Veolia also has the capability to add energy generation from water treatment plants. “The by-products of Food and Beverage wastewater treatment plants often include biological mass. We are now able to process this bio-waste to extract biogas (methane), which can then be used as a fuel for heating or feeding engines which then generate electricity,” Braybrooke informs *MechChem Africa*.

He adds that large Municipal sewage plants can generate up to 70% of their energy requirements from processed bio-waste. Veolia recently established a plant in China (T-Park) that generates 100% of its energy needs through this method and therefore makes the plant 100% autonomous, in both electricity and water. “For clients, this means that energy costs are significantly reduced and lowering the carbon footprint ultimately lessens the environmental impact. This also brings significant reputational benefits to stakeholders,” he points out.

Corporate Social Responsibility (CSR) initiatives play an important role in Veolia's purpose. “We are co-founder of an organisation called the Baobab, which was established to promote plastic recycling and community agricultural programmes. “At the Network's core is skills development in entrepreneurship. With the circular economy in mind, we engage young people in entrepreneurial initiatives: producing new products from recycled plastic, for example,” he says adding that this is a link to the SDG involving small businesses, jobs and wealth creation.

Turning attention back to Veolia's clients, Braybrooke says that Veolia strives to arm clients with innovative solutions that are beyond the core purpose of the service being offered. “We believe that a company's value should be determined by the contribution it makes to society and the world, rather than its earnings and asset value. So whilst we still provide all our technical expertise, a big growth area is onsite-services, where we are tasked to take over the management and operation of water or wastewater services at client sites. With water treatment, the more water resources become contaminated, the more complex and expensive the treatment gets,” he points out.

“For the Overstrand Municipality in the Western Cape, for example, which includes



A Veolia filtration plant design for the front end of wastewater treatment, which comprises a settling plant followed by a Veolia Dual Media filtration plant.

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scenic areas such as Hermanus and Gansbaai, we have a 15-year concession to manage and operate the potable and wastewater treatment facilities for the entire region. Through this project, we have kept all previous employees and focused on uplifting their skills. The number of training hours we deliver is a key Veolia KPI, which is recorded and audited and used to measure service delivery as well.” Braybrooke tells *MechChem Africa*.

On the industrial side there are many complex wastewater treatment applications, particularly for mine effluent, and Veolia has a history of taking care of several of these on a zero effluent discharge (ZED) basis. Braybrooke says that the concentrated or dissolved solid waste streams that remain after treating mine effluents can often be further treated to extract additional value. “For a nickel mine in Madagascar, for example, we designed and constructed an evaporator-crystalliser plant for the production of Ammonium Sulphate, a high-value product used in the fertiliser industry. So instead of having to safely dispose of a hazardous substance, we help the mine to create a saleable product that can subsidise the cost of wastewater treatment.

Veolia also deploys a tool designed to calculate the ‘True Cost of Water’. “A client's focus is generally concentrated on elements such as water coming into a facility and the wastewater only, whilst the cycle in its entirety is ignored. Using our True Cost of Water tool, we conduct a study to compile a complete list of potential risks involving water; possible drought, water shortages, possibility of flooding, the revoking of a license to operate, contamination reparation and plant shutdown risks. By identifying and reducing

these risks early, and simultaneously always moving towards a zero discharge approach, environmental clean-ups can be avoided and damage costs eliminated.

“Another important tool, proving invaluable during the COVID lockdown, is our Hubgrade digital platform which was designed for monitoring and optimising the performance of treatment plants. As specialists in optimising the plant operations, we have knowledge of best practices and are able to implement them. We can install Hubgrade on new or existing plants, establish critical measuring parameters and set alarm thresholds for each one. This information is then available for alerting operators to the need for any interventions, maintenance requirements and ongoing optimisation of plant performance,” Braybrooke explains.

Hubgrade packages can even be upgraded to a level where our Engineers can provide onsite operators easy access to Veolia support on a 24-hour basis. “Maintenance is vital and this system logs routine maintenance requirements, keeps historical data and alerts personnel to the possible dangers of neglect,” he adds. An example of predictive maintenance is when Hubgrade is utilised to monitor an RO plant, the algorithms can optimise a plant to such an extent that, in most cases, it can extend the life of the membrane.

“I believe all organisations in this industry have a duty to look inwards and identify what their contribution to society and the environment can be. I am particularly proud to be part of Veolia, which is actively trying to implement the Sustainable Development Goals in order to leave a more diverse, more environmentally friendly and better world for future generations,” Braybrooke concludes. □

