



# DAIRY MILK PROCESSING PLANT ANAEROBIC RESOURCE RECOVERY FACILITY

*Food and Beverage*

**Veolia Services Southern Africa** alleviates stress on local municipality by treating effluent produced by the dairy plant, and minimizes overall waste discharge to generate a green energy source.

## | The Challenge

The local Municipal Water Treatment Facility does not have sufficient capacity to accommodate the wastewater generated by this dairy production site.

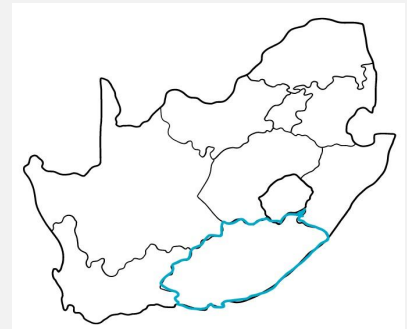
The Dairy is committed to incorporating **sustainable solutions**, and has developed a long-term strategy aimed at improving their ecological footprint, whilst **adding value to the site**.

## | Veolia's Solution

A pilot study was conducted, to determine the most viable technical solution, ensuring process performance, and alignment with the **client's expectations and business strategy**.

With understanding the Client's vision and production process, Veolia designed, build, installed, as well as operate and maintain the Resource Recovery Plant (RRP), consisting of:

- **Anaerobic Digestion** -> biogas production used as an **energy source for steam boilers** (figure: right)
- **Ultrafiltration (& Reverse Osmosis)**-> producing treated water **compliant with municipal standards**



Eastern Cape, South Africa

**1 500 m<sup>3</sup> per Day**  
Feed Rate

- 95% Removal of Effluent COD
- Biogas Production
- Reducing Municipal Load
- SANS 241 Potable Water



## | Key Design Features and Benefits



### DESIGN FLEXIBILITY

The design caters for multiple wastewater streams from the production facility as feed sources to the RRP. Buffer storage capacity is also included, to absorb peak loads.



### WATER CYCLE OPTIMIZATION

Up to 60% of water used in the factory is recycled through the RRP, and routed to the existing WTP. Within the first operational year, the municipal water demand was reduced by 44%.



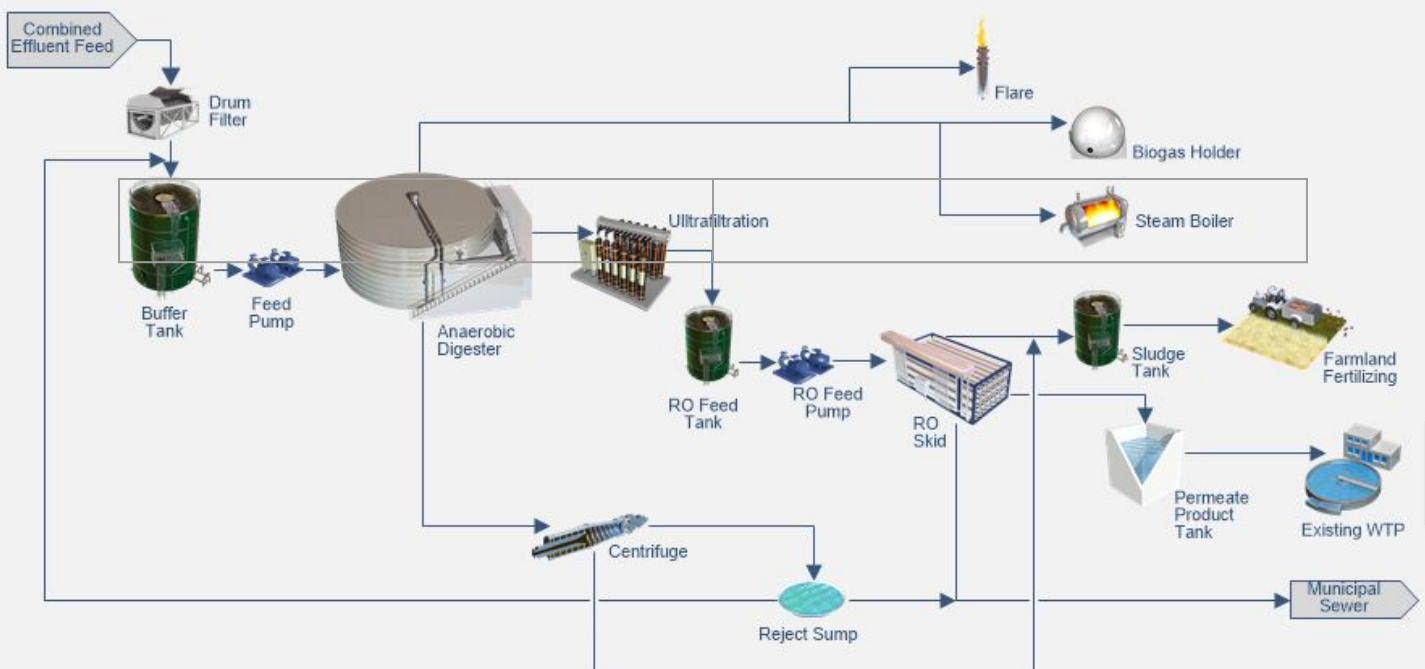
### TECHNOLOGY EXPERTISE

The membrane technology used, combines anaerobic biological treatment and membrane separation, reducing operating costs compared to conventional technologies.



### GREENER PRODUCTION

Environmentally friendly process: the methane gas produced from the bio-reactor, is used to fire the boiler, which can produce up to 15% of the factory's steam requirements.



PROCESS SCHEMATIC (ABOVE)

**VEOLIA'S PURPOSE** : contributing to human progress by firmly committing to the **SUSTAINABLE DEVELOPMENT GOALS (SDGs)** as set by the United Nations, to achieve a better and more sustainable future for all. Listed below are the UN SDG goals that Veolia helps to achieve, through this opportunity:

“ *The notion of balance is key to our commitment to multifaceted performance* ”

*Olivier Brousse,*  
Veolia Strategy and Innovation ”



#### SOCIAL:

- SDG No. 11 - Sustainable Cities and Communities



#### ENVIRONMENTAL:

- SDG No 6 - Clean Water And Sanitation
- SDG No. 12 - Responsible Consumption and Production