

# HYBACS

ENERGY-EFFICIENT HYBRID  
ACTIVATED SLUDGE TECHNOLOGY



WASTEWATER

ACHIEVE ADVANCED BIOLOGICAL TREATMENT  
IN AN ECONOMICAL WAY



#### **CAPTIAL SAVINGS**

Reduces CAPEX by up to 20% on greenfield, or up to 50% on upgrades



#### **ENERGY SAVINGS**

Reduces power consumption associated with aeration by 30-40%

**suez**  
environnement

  
Degrémont

# INNOVATION

USE OF SMART UNITS (*SHAFT MOUNTED ADVANCED REACTOR TECHNOLOGY*) TO ENHANCE SOLUBILIZATION OF POLLUTION LEADING TO REDUCED ENERGY CONSUMPTION AND CAPITAL COSTS

## KEY FIGURE:

Plants with the **HYBACS**

system can achieve up to

# 30-40%

savings in energy consumption associated with aeration.

## HYBACS TECHNOLOGY...

The **HYBACS** system utilizes an innovative nutrient removal hybrid activated-sludge process. The process consists of two biological stages followed by clarification.

1. The first stage comprises of SMART units, with attached biomass.
2. The second stage is an activated sludge process, with suspended biomass.

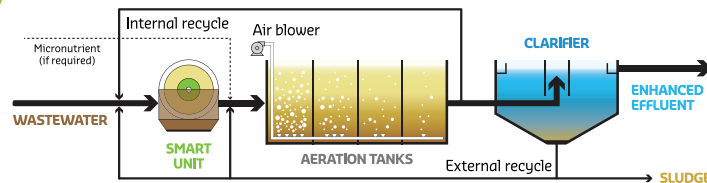
**SMART units** are a type of biological reactor comprising plates fixed to a rotating structure. The plates are manufactured from mesh with a porosity of 95%, which produces a biological environment containing aerobic, anoxic and anaerobic regions, supporting a large quantity of attached biomass with substantial diversity and activity, ensuring high treatment capacity.

**Aeration from Rotation** The biomass partially drains as the plates rotate so that both liquor containing the pollutants and air flow by convection in and out of the plates. Thus, as the plates rotate, the biomass is aerated from the atmosphere above the liquor, and brought into contact with pollutants when submerged. This convective flow substantially increases the transfer rate of pollutants and oxygen to the biomass, increasing its utilisation and activity.

**Optimized Aeration Tanks** Because of the high efficiency of the SMART units, the size of the downstream aeration tanks can be reduced by 50%, compared with a conventional activated sludge plant for nutrient removal.

## HYBACS

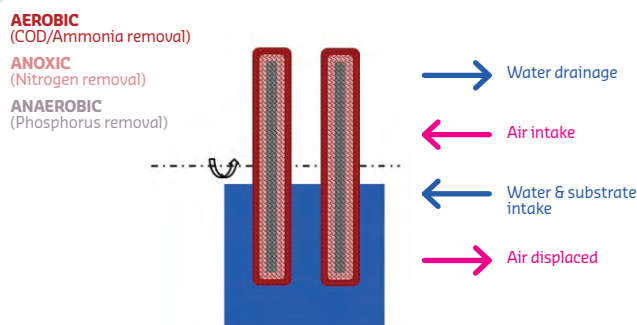
## WASTEWATER



The **HYBACS** process is an innovative hybrid activated-sludge system that is well-suited for municipal and industrial WWTPs looking for an economical technology for capacity upgrades and nutrient removal capabilities.

## ADVANTAGES

- + HIGHLY-EFFICIENT FIRST STAGE SMART™ UNITS
- + REDUCES CAPEX UP TO 20% FOR GREENFIELD PROJECTS AND UP TO 50% ON UPGRADES
- + REDUCES OPEX: ENERGY AND CHEMICAL SAVINGS
- + REDUCES FOOTPRINT BY UP TO 30%
- + IDEAL FOR CAPACITY AND TREATMENT UPGRADES
- + IMPROVED SLUDGE SETTLEMENT
- + INTRINSICALLY ODORLESS



A partnership with Bluewater Bio.

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