COMPARISON OF NEREDA TO OTHER TREATMENT SYSTEMS (from the Royal Haskoning website Q&As)

What are the differences with MBR?

There are several differences:

Compact: Nereda technology is at least as compact as a MBR but will show much lower investment and operating costs

Virtually no suspended soils: due to the membranes, MBR will virtually have no suspended solids in the effluent. The suspended solids concentration in the effluent of Nereda without polishing step will be comparable to a normal activated sludge system (and is thus higher than MBR). However by applying simple screens or filters, the suspended solids in the Nereda effluent can be easily removed down to very low concentrations and thus effluent quality for base parameters like SS, P, COD and N will be comparable to those of MBR.

No microfiltration: MBR applies microfiltration or ultra filtration membranes. Due to theses membranes also a part of bacteria and viruses are removed from the water. Without a similar polishing step, Nereda technology is expected to have bacteria/viruses in the effluent similar to normal activated sludge systems.

Reusage: MBR is often used if water reuse is required. Similarly, Nereda effluent from municipal Nereda plants can be reused for irrigation.

What are the differences with BNR activated sludge?

Parameter	BNR	Nereda technology
Effluent quality	Good	Similar or better
Process stability	Good	Similar or better
Footprint	100%	25%
Energy consumption	100%	<65 - 75%
Sludge production	100%	Similar or lower
MLSS in reactor	3 - 5 kg/m3	10- 15 kg/m3
CAPEX	100%	Significally lower
OPEX	100%	Significally lower

What are the differences with classical SBR?

Parameter	SBR - classical	Nereda technology
Process Cycles	1. Fill 2. Intermittent aerate 3. Settling 4. Draw	1. Fill and decant 2. Aerate 3. Fast settling
MLSS in reactor in N-removal	4 - 7 kg/m3 Good via intermittent aeration	10 - 15 kg/m3 Extensive & simultaneous
P-removal	Chemical	
Effluent quality	Good	Biological
Process stability	Fair to good	Similar or better
Footprint	100%	Good to excellent
Energy consumption	100%	<50%
Sludge production	100%	<90%
CAPEX	100%	Similar or lower
OPEX	100%	Significally lower Lower