

The Innovation Consortium "Danish Membrane Bioreactor Technology – MEMBIO"

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The Danish Council for Technology and Innovation (RTI)

The Danish Agency for Science-Technology and Innovation

Contribute to:

“provide a good framework for research, development and innovation at enterprises through increased knowledge transfer in society and improved frames for cooperation between enterprises and knowledge institutions”



- Minimum two enterprises participating during the entire project period
- Minimum one public research institution
- Minimum one consulting/knowledge transfer partner
- Associated enterprises /networks

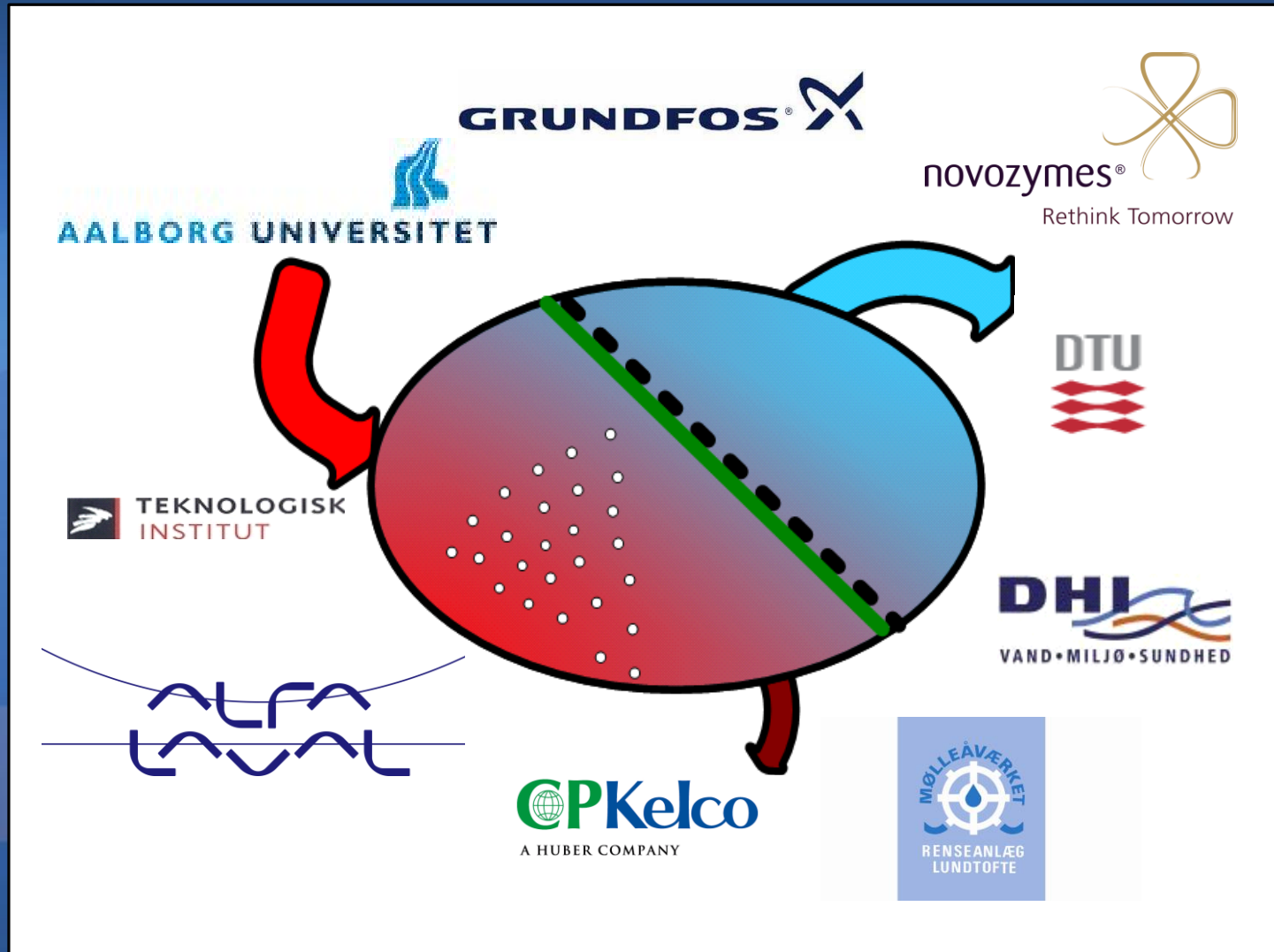
Financing:

- Enterprises – own activities corresponding to minimum 50% of the budget
- Universities – financed 100% - i.e. salary plus OH
- GTS – financed up to 100% - however some cofinancing is usually included

Duration: Typically 2-4 years

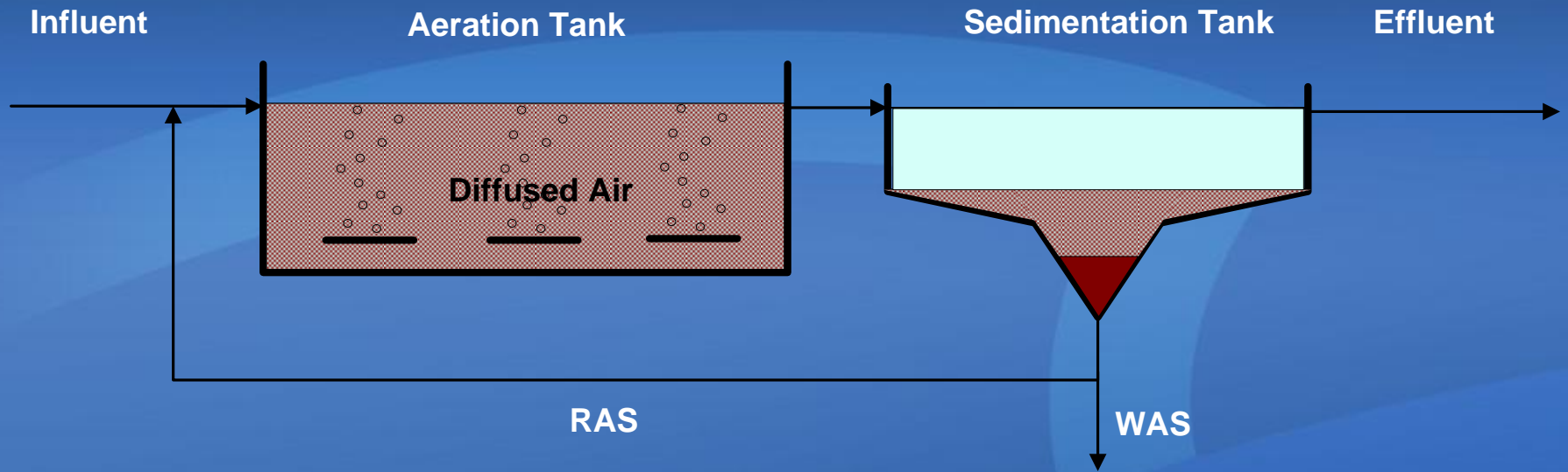
Budget: Typically 20-30 mio. DKK

Grant: Max. 20 mio. DKK, typically 8-12 mio. DKK

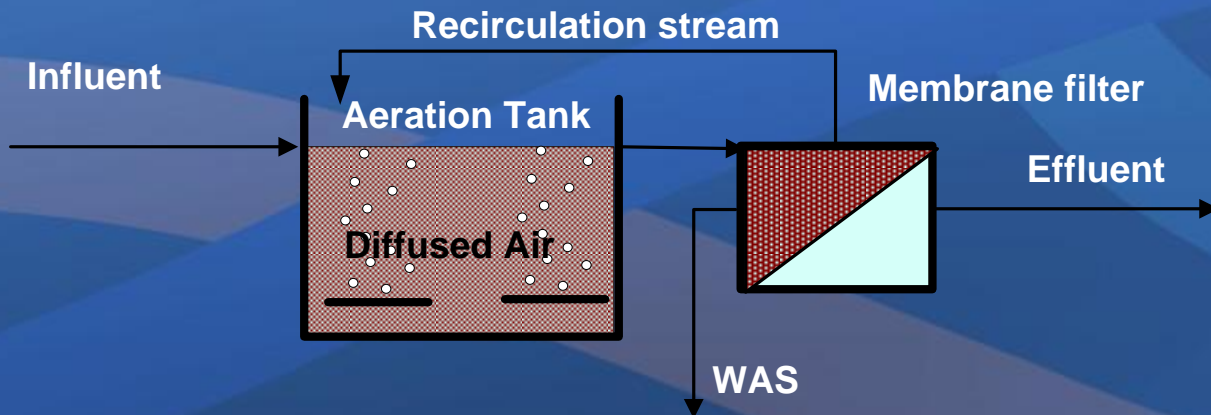


Duration: 4 years (2008-2011), Budget: 25 mio. DKK, Grant: 12 mio. DKK

Conventional activated sludge



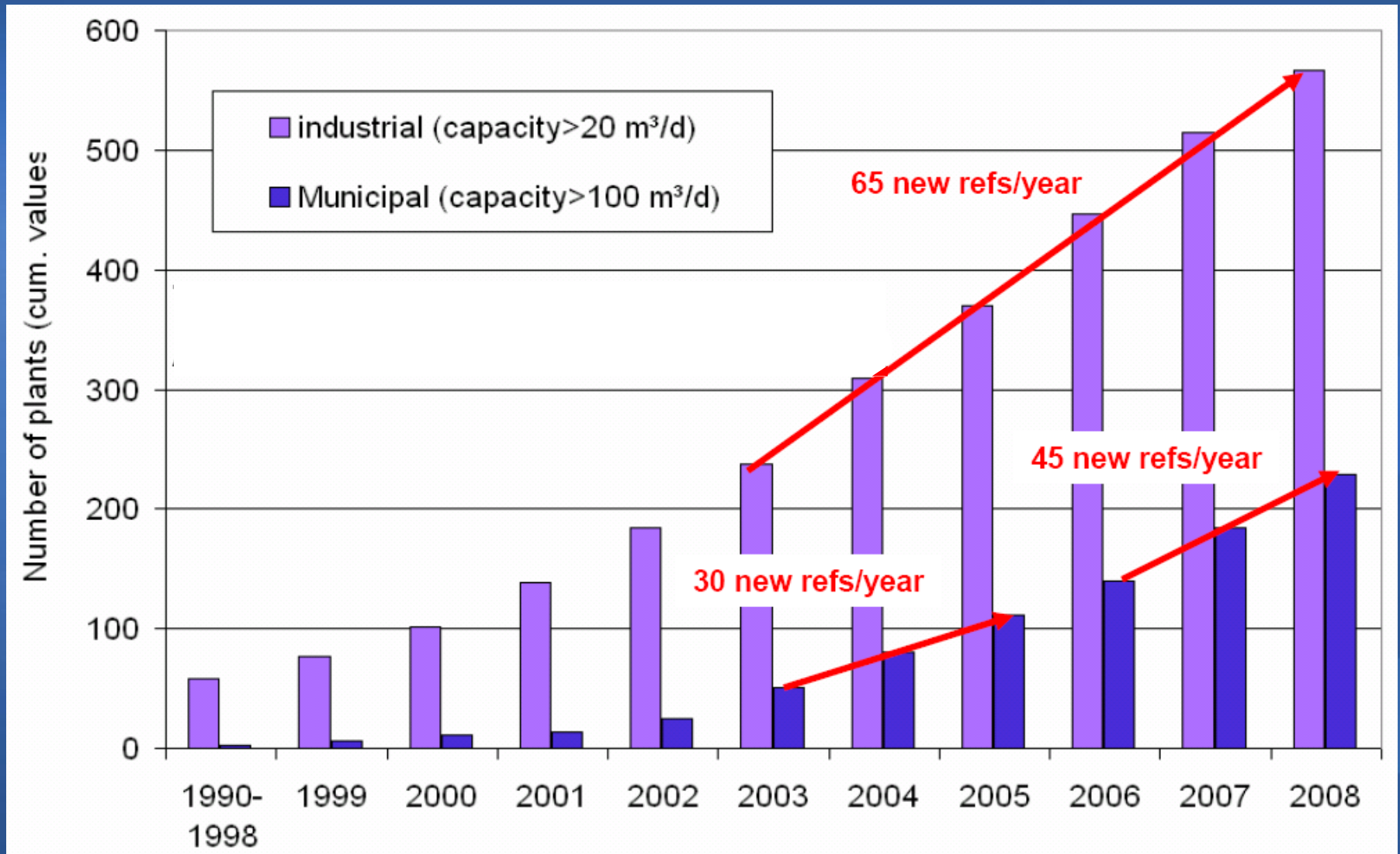
MBR



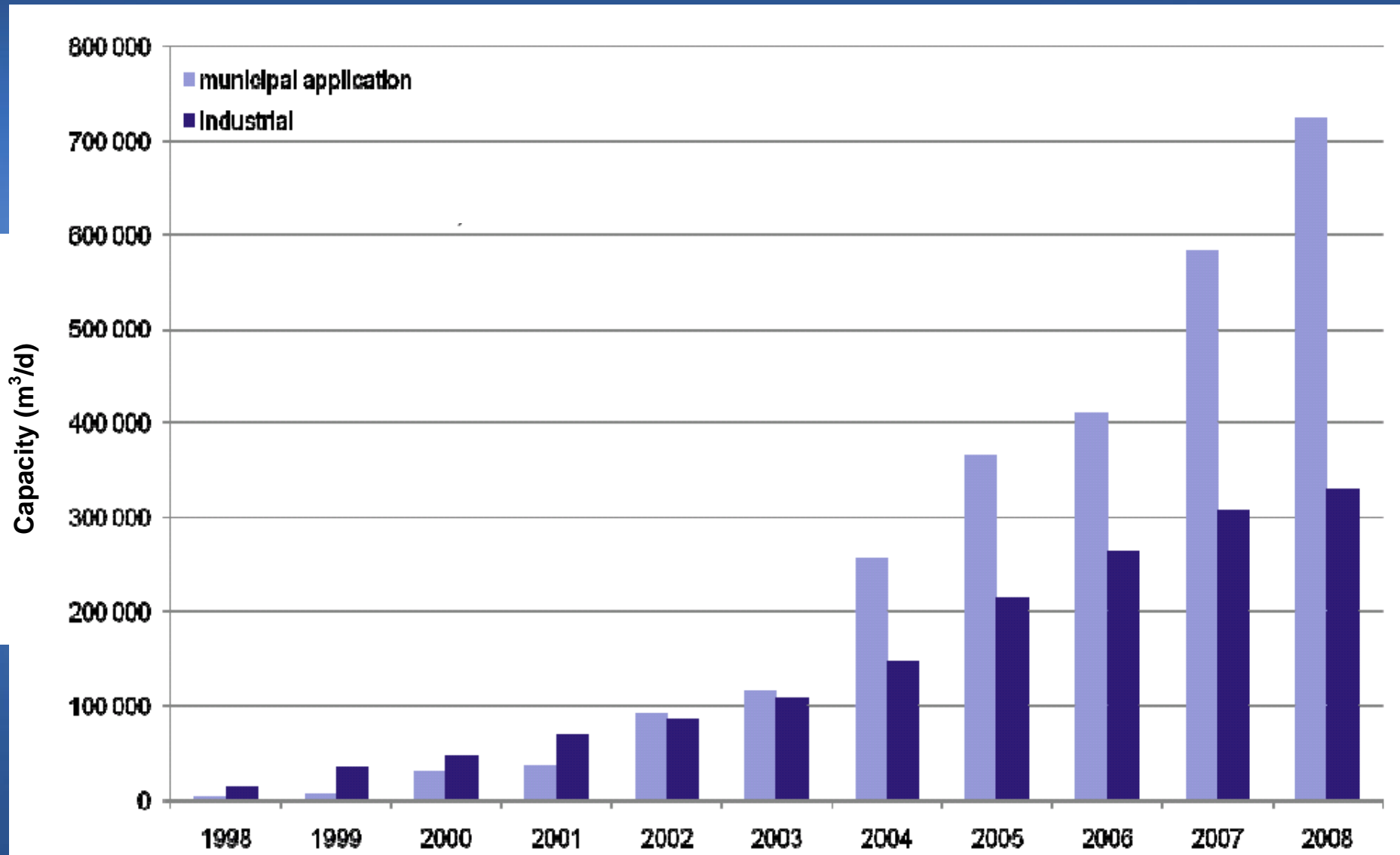
- Complete sludge/water separation control - SS in effluent always very low
- Good removal of microorganisms
- Compact technology
- Improved efficiency for polishing processes, i.e. improved potential for reuse

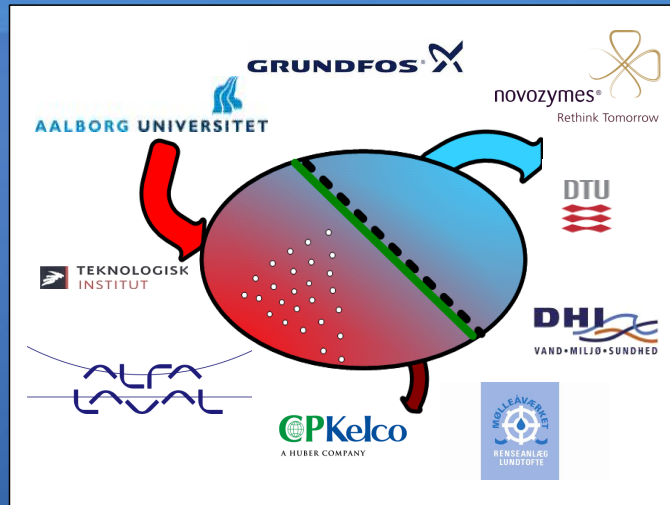
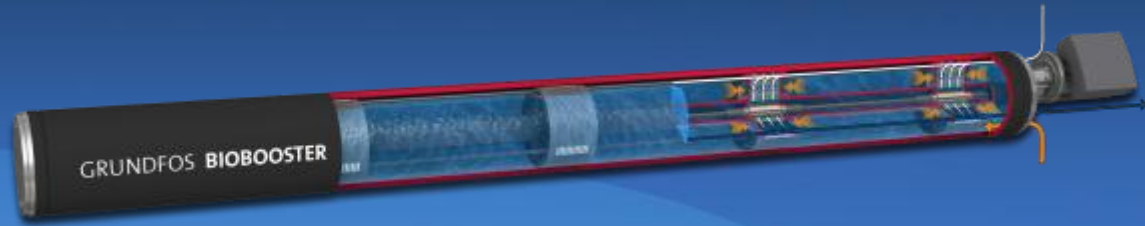
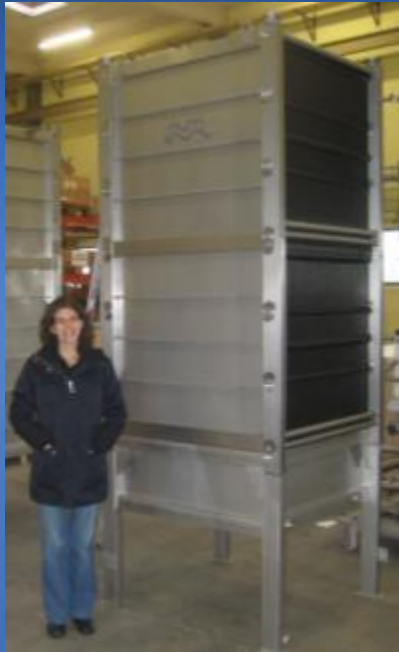
- Increased energy consumption
- Increased investment and operation costs
- Less flexibility towards hydraulic variations

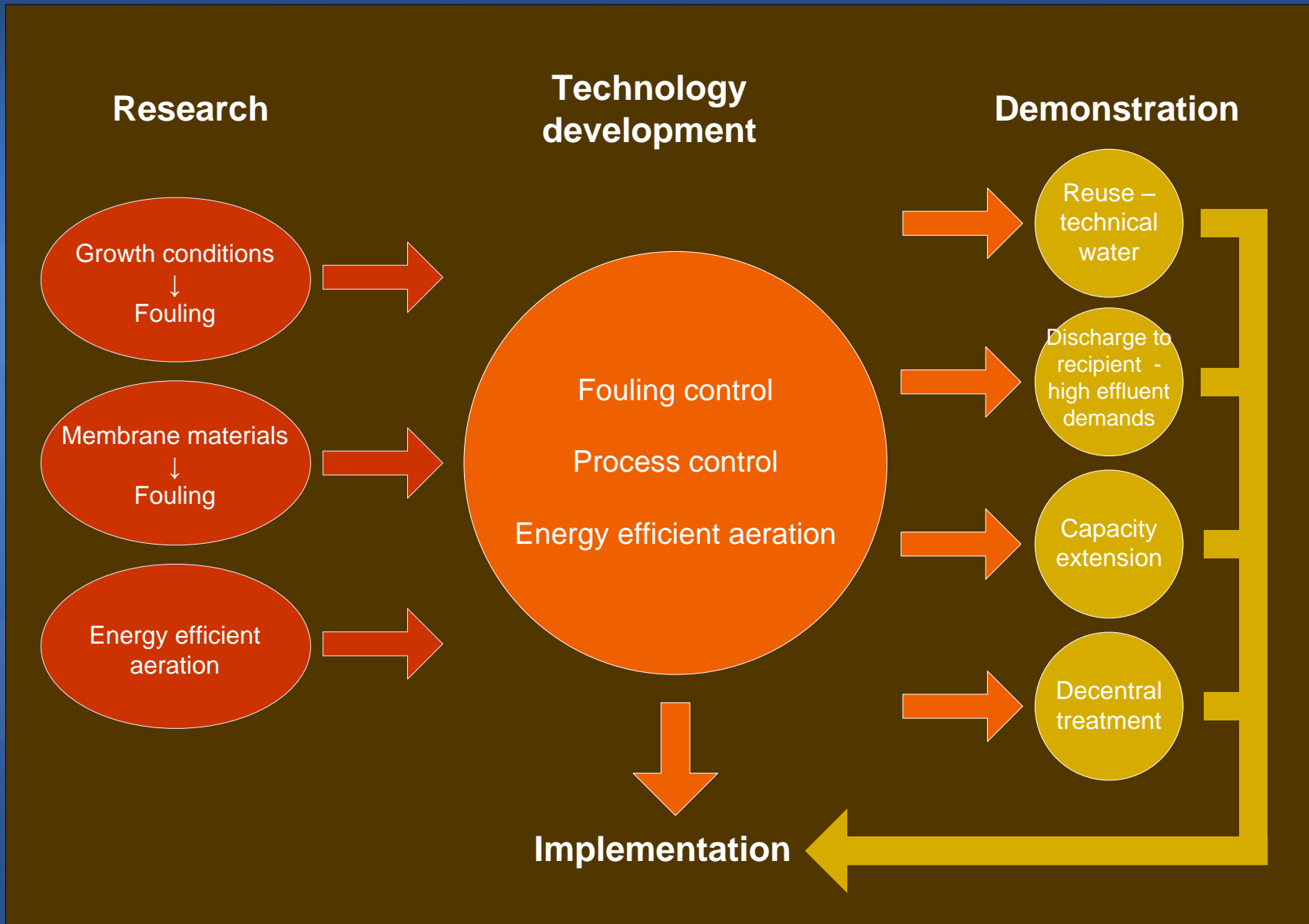
European MBR market development – number of plants



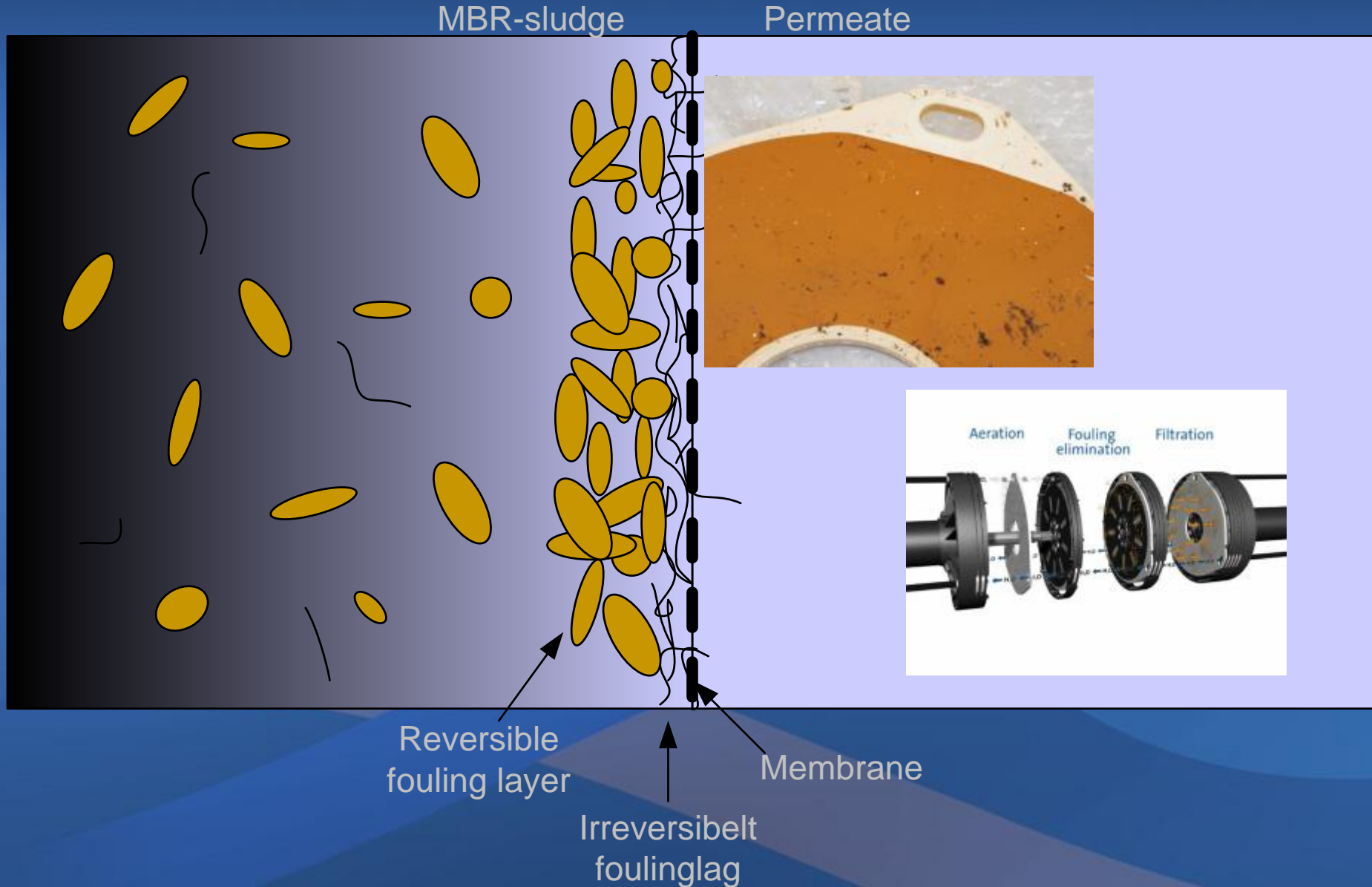
European MBR market development – installed capacity



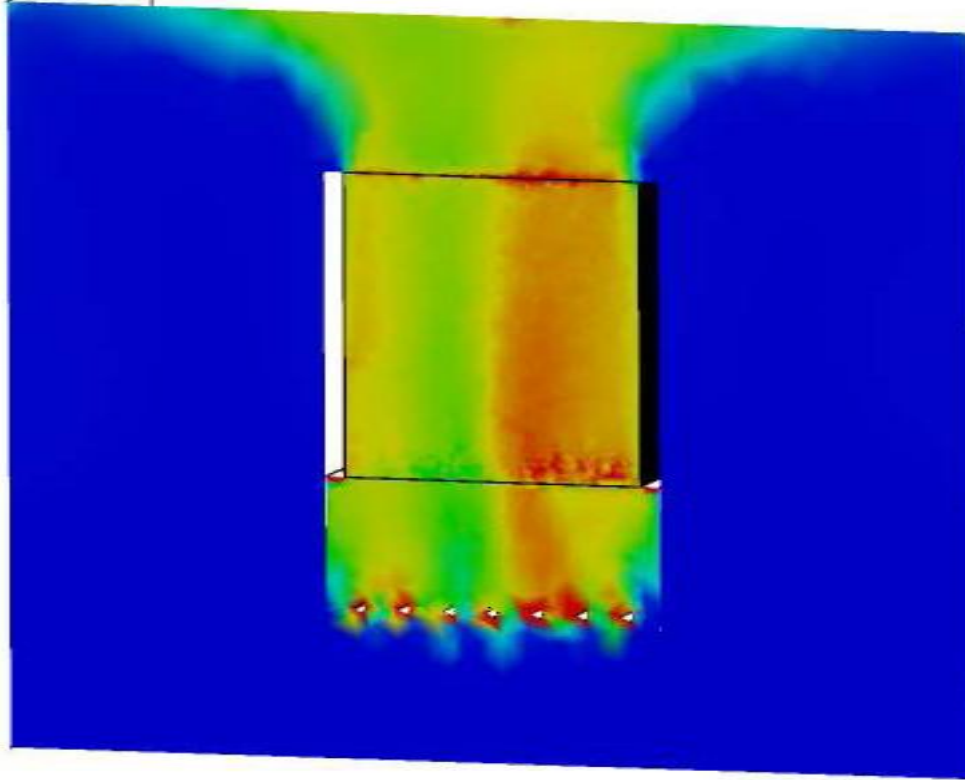
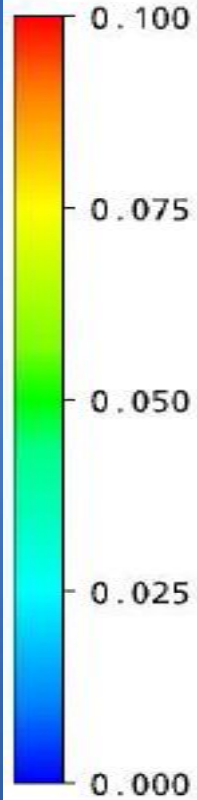




Fouling mechanisms

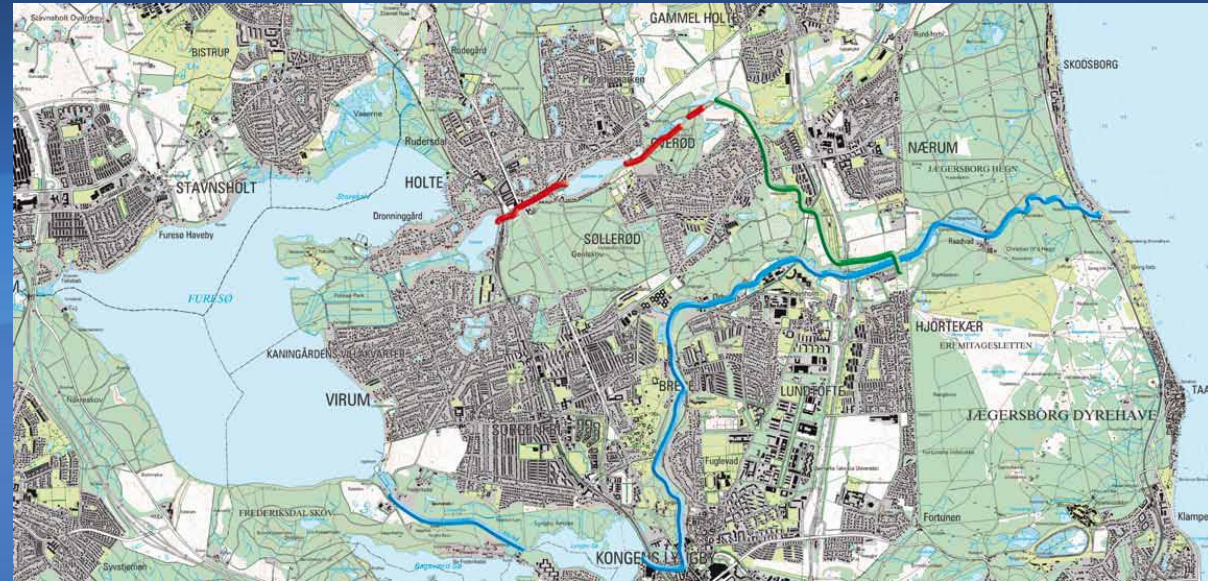


Air at 25 C. Volume Fraction
(Plane 1)



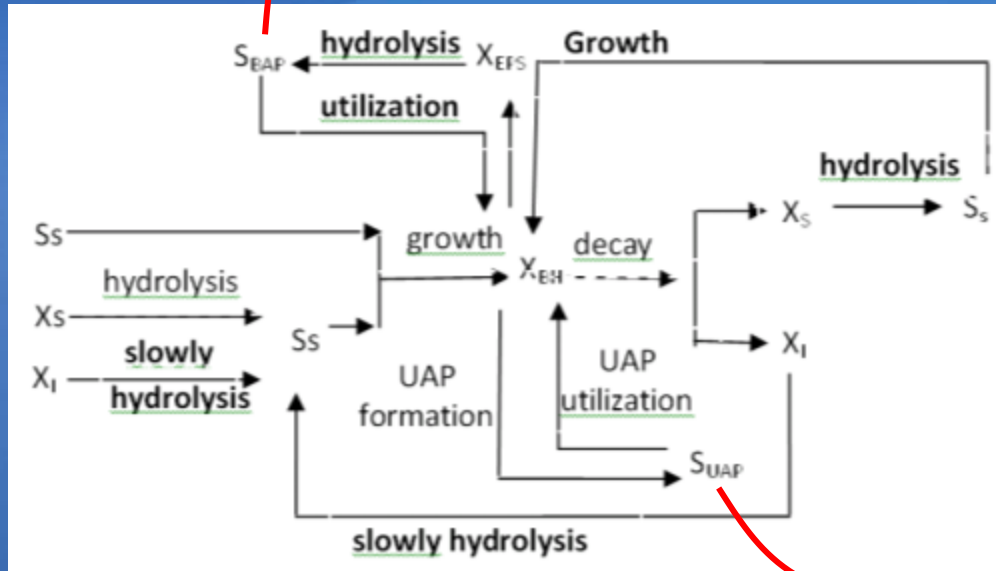
AALBORG UNIVERSITET

INSTITUT FOR BYGGERI OG ANLÆG
Vand & Jord



Key activities:

- Microorganic pollutants
- P-removal
- Peak-tests



MBR-slam

Permeat

Reversibelt
fouling lag, R_c

Irreversibelt
foulinglag, R_c

Membran,
Egen-modsta

Danish MBR-day May 2010

- Primary focus on use of MBR-technology
- Review of research themes
- International key note speakers



- The different approaches and competences of the partners is a great strength of the innovation consortium set up
- Working across different cultures can also be challenging, e.g. in relation IPR
- Innovation Consortia constitutes a flexible and non-bureaucratic cooperation framework, in which the parties themselves set up the detailed agreements on cooperation

