

Working-group 1:

Within this working group, questions regarding dimensioning and planning of an ozonation plant was discussed.

The feedback, which includes both questions and some concrete advice, from the ~ 20 participants is summarized. Some questions might be answered by the running research programs:

Questions/problems:

- Construction of a plug flow reactor for smaller plant are limited by practical concrete casting work. Difficulties during construction with walls too narrow between each other. Certain thickness of walls is also required during concrete casting.
- Cast canvas for a smooth concrete surface, to reduce concrete wear, used in Linköping after advice from Switzerland (Christian Abegglen).
- Cooling is an essential sub process which will directly affect the energy consumption. In Linköping process water is filtered before heat exchanger. Small amount of ozone is injected in the heat exchanger to avoid biofilm formation. Air cooler is used in Simrishamn -> no problems.
- Pre filtration of bio treated water in simrishamn. By-pass during high SS-concentration in Linköping
- Dimensioning of ozone reactor based on worst case scenario for ozone decay rate, presuming plug flow.
- Dimensioning of MBBR post nitrification/ deox-zone?
- Dimensioning of ozone post treatment?
- Power supply needed for ozone generation. 13-14 kWh/kg ozone in Linköping. Up to 40 kWh/kg ozone in Kalundborg!
- When to go for side stream injection or diffusers?
- Safe working environment. Prerequisite for the operators to rely on the plant being safe. Include operators in planning and design.