

Why do Linköping want to rebuild SHARON into a DEMON

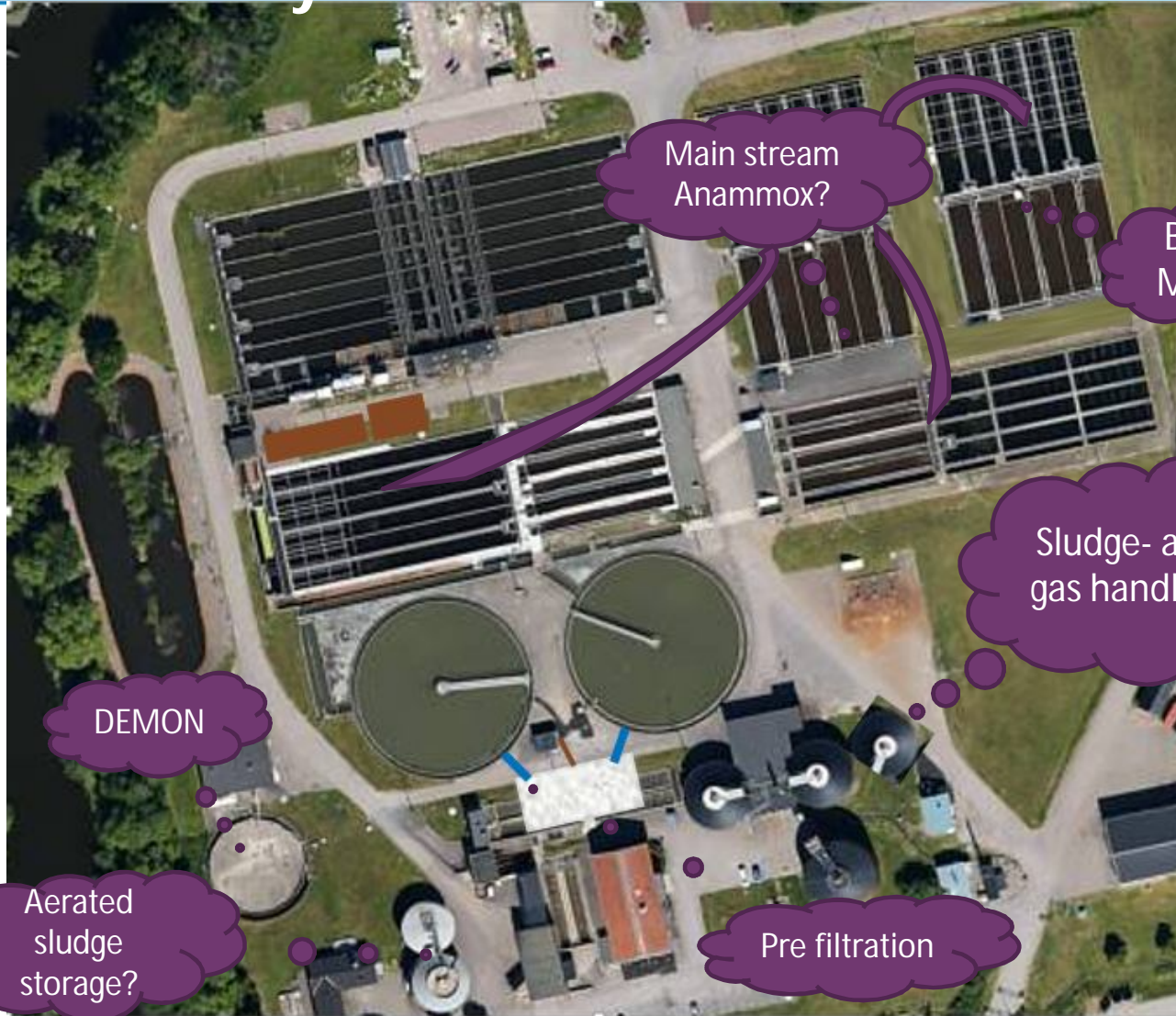
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NyFAR: Nykvarns Future wastewater treatment

Challenges and needs

- Increased load
 - Forecast 2035
- Adaptation to climate change
- Reduce climate foot print
 - N₂O and NH₄ emissions
 - Energy consumption
 - Carbon source
- Sharpened release demands?
- New demands/ challenges
 - Sludge hygienisation or combustion
 - Recovery of nutrients
 - Micro pollutants
 - Multiresistant bacteria
 - Micro plastics





Main stream
Anammox?

Bio 4
MBR?

Sludge- and
gas handling

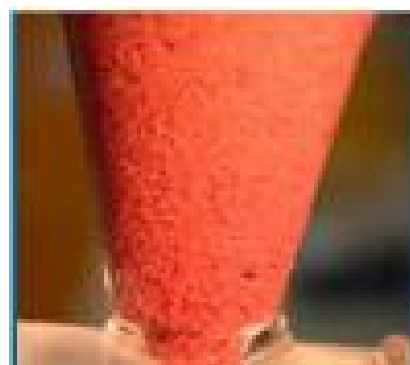
DEMON

Aerated
sludge
storage?

Pre filtration

Alternative rejekt water treatment Deammonifikation

- Probably high N₂O emissions in SHARON
- Conversion to DEMON reduces the air requirement. The carbon source can be reduced in whole or in part
- Anammox bacteria use nitrite to oxidize ammonium, which is simultaneously reduced to nitrogen.
- Prerequisite for Anammox in the mainstream
- References: Common process in Europe. Installation carried out at SYVAB and planned at Käppalaverket
- Disadvantage: Disturbances during start up?



- Conversion reduces the air requirement in the biology and carbon source need in the post denitrification MBBR
- Reduces nitrous oxide emissions and sludge production
- Improves sedimentation properties
- Visit to the reference facility in Austria 2012 (Hanna, Henrik and Robert)
- Uncertainties about the function during winter time

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Thank you!

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