

# Use of desalinated reject water as a source of magnesium for phosphorus recovery from wastewater

**Presented by:  
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Thomas Room: P recovery & reuse III



# Sustainable Practice in Phosphorus Recovery



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# Desalination Plant Discharge Impact

- More than 45% of desalination plants in the world are located in the Gulf region. United Arab Emirates (UAE) is one the Gulf countries that relies extensively on desalination for potable water production
- Reject water from the plants contains nearly twice the amount of salts as found in sea water
- Negative impacts of aquatic life around discharge locations

# Sustainable Practice in Phosphorus Recovery

- Use desalination plant reject water as a source of magnesium for struvite formation
- For a secondary treatment plant treating an average of 450 MLD, with 2.5 mg P/L in influent and 100 mg P/L in the centrate, the potential  $\text{MgCl}_2$  saving could be around 750 kg/d
- At the same time treat 150 L of reject water
- Potential reuse of the treated reject water