Smart Control of Wastewater Treatment Aeration
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Requires electricity!
Aeration - example

40-75% of electricity consumption is aeration

Measurements:  
Aeration “on”:  
Aeration “off”: 
MPC for aeration?
● Changing ammonium requirement at $t=1125$ min
Different controls!
Comparison

- **Total costs [DKK/day]**
  - (A)
  - (B)
  - RBC

- **Difference (B) - (A) [DKK]**
  - Example case
  - Other days

- **Within day max. price difference [DKK/MWh]**
Full-scale tests

Vamdrup WRRF

Melby WRRF
Conclusion

- Possible to use MPC for minimizing costs
- Cheaper compared to current control
- Feasibility depend on markets and within day variations
- Tested full-scale, but more tests needed
Thank you!

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