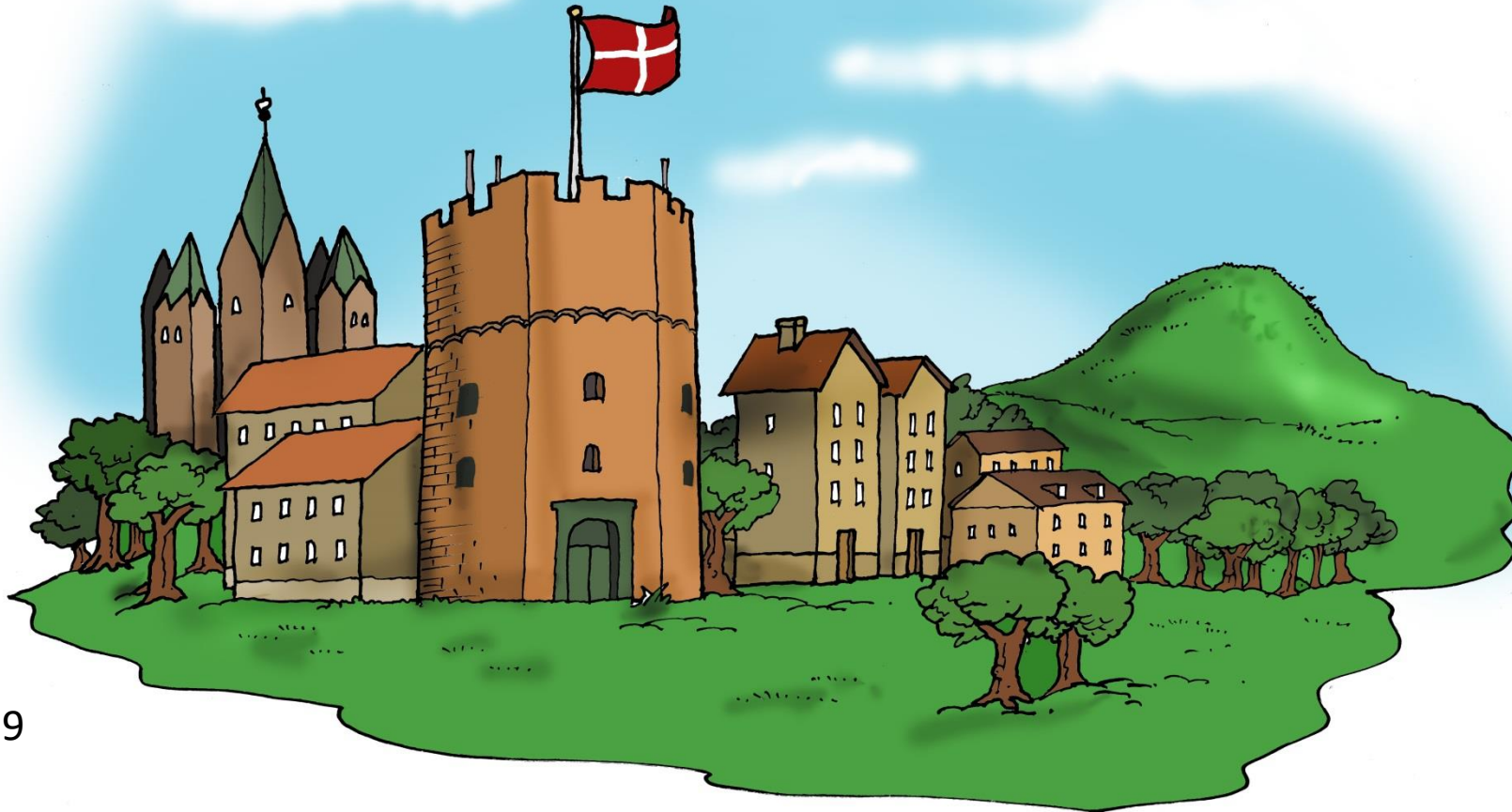


# I-SUSTAIN SUSTAINABLE INFRASTRUCTURE AND ENERGY DELEGATION TO DENMARK



17. September 2019  
Kalundborg Utility  
Ceo Hans-Martin Friis Møller



# KALUNDBORG CITY



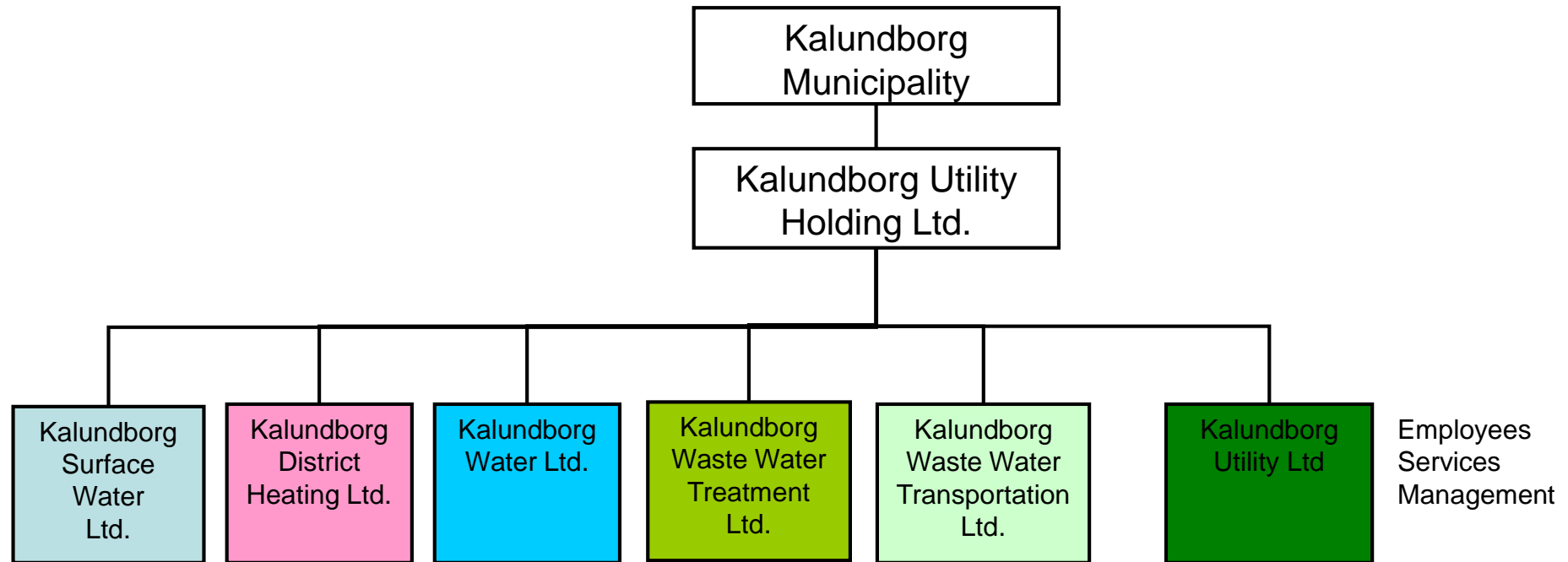


# Kalundborg Utility

Is responsible for:

- Drinking water treatment and distribution
- Proces water treatment and distribution
- Cooling water distribution
- Wastewater collection and treatment
- Water system management.
- District heating distribution





- Kalundborg Holding Ltd. is 100% owned by Kalundborg Municipality.
- There is a unit-board with 6 political, 3 employee elected and 2 consumer elected representative, for all companies.
- All staff are employed in the service company, Kalundborg Utility Ltd.

All companies has a **rest-in-it-self** regulation and are controled by the water sector law, administrated by the regulator

# Our **Owner strategy**

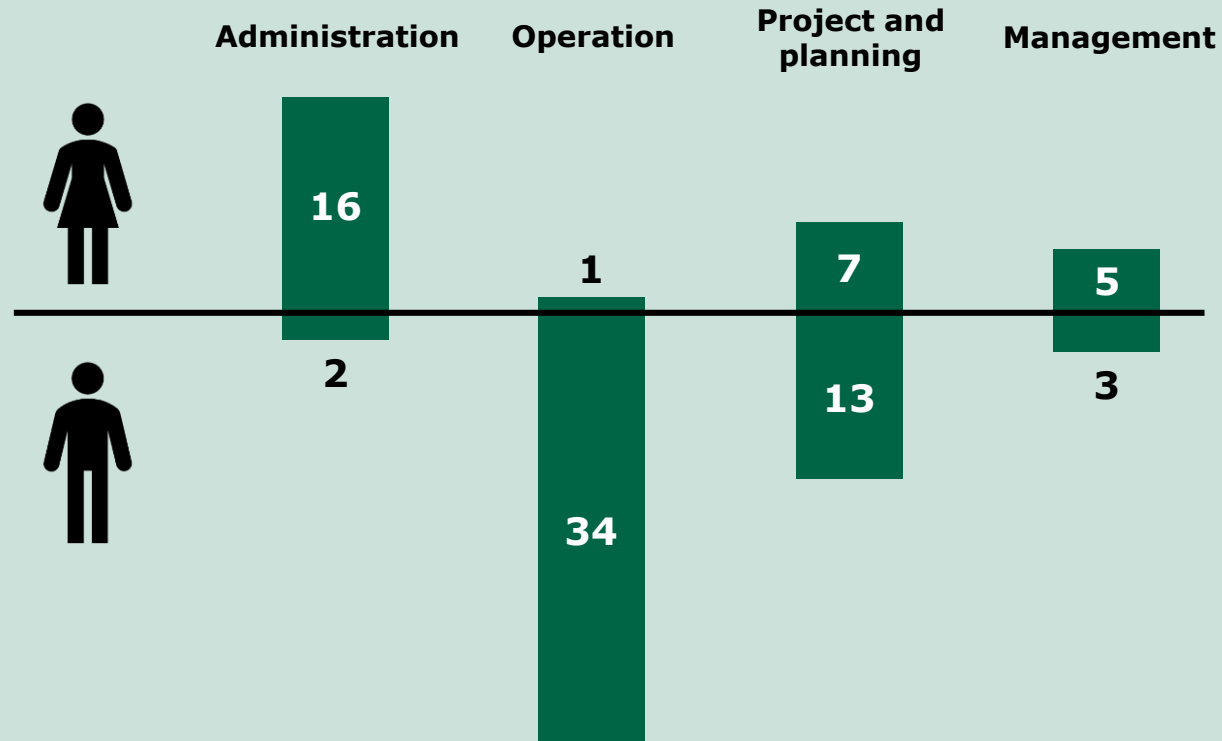
- A formulation of the common strategy between the municipality and Kalundborg Utility
- aiming to ensure that Kalundborg Utility takes responsibility of the long and short-term interests of our private and industrial costumers and the municipality of Kalundborg

## 5 strategical priorities



# 81

## Employees



**6**  
Flex/part time employees



**3**  
Apprentices



**5,1%**  
Sickness absence



**6**  
Work related cases of absence



**48**  
Average age



**5%**  
Employee turnover

Key figures 2018  
(tentative)



Economy

**314**

Turnover, million DKK.

**203**

Operating and administration costs,  
Million DKK

**538**

Long term debt, Million DKK  
(309 mill. in Varme A/S)

**279**

Investment, Million DKK

**50.000**

Total customers



Production and sale

**3,4**

Mill. m3 drinking water distributed

**4**

Mill. m3 surface water distributed

**1,8**

Mill. M3 waste water transported

**5,5**

Mill. m3 waste water treated

**173.714**

MWh district heating sold

**66.486**

MWh produced district heating by our  
heat pump

**100.911**

kWh produced power  
by solar cells



Consumption of resources

**9.416**

MWh used ex. the heat pump

**18.742**

MWh used by our heat pump

**21%**

Heat loss in our distribution net

**3.3%**

Water loss in our distribution net



Recycling

**4.274**

Tons of sludge dispersed to farmland

**17,8**

Tons of sludge to biogas

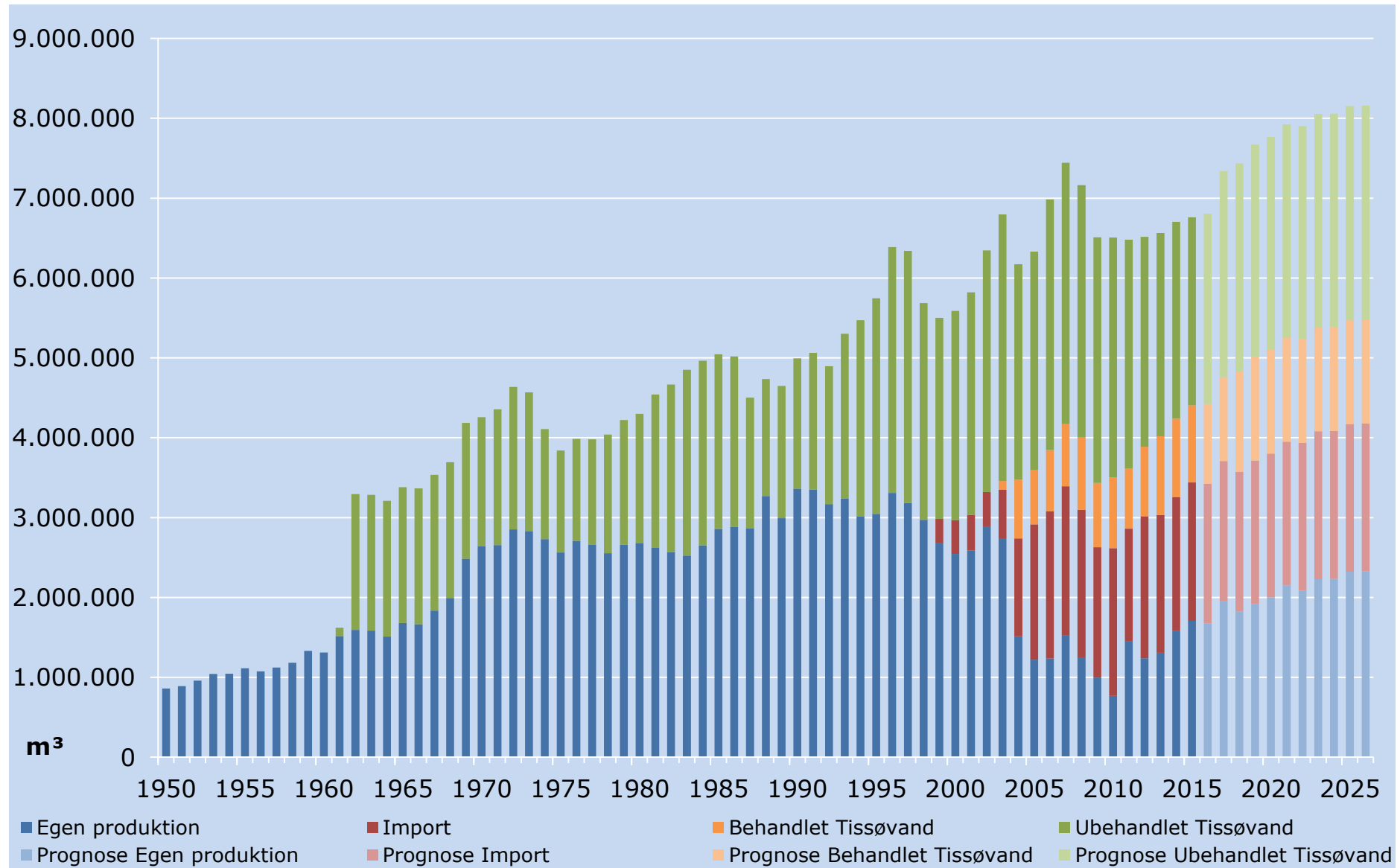
**160,5**

Tons of sand to recycling

**25,2**

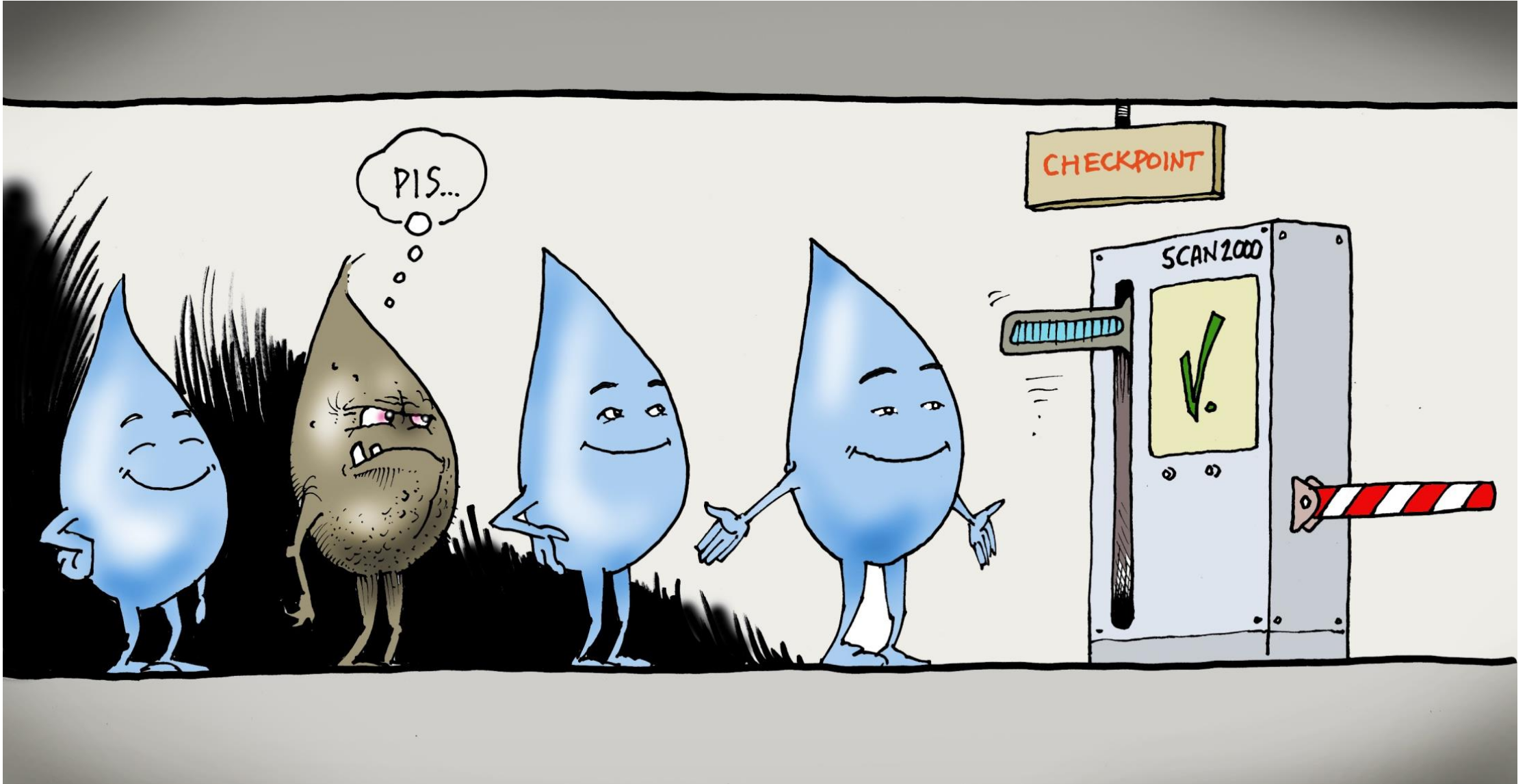
Tons of filter goods to combustion

# Water resources



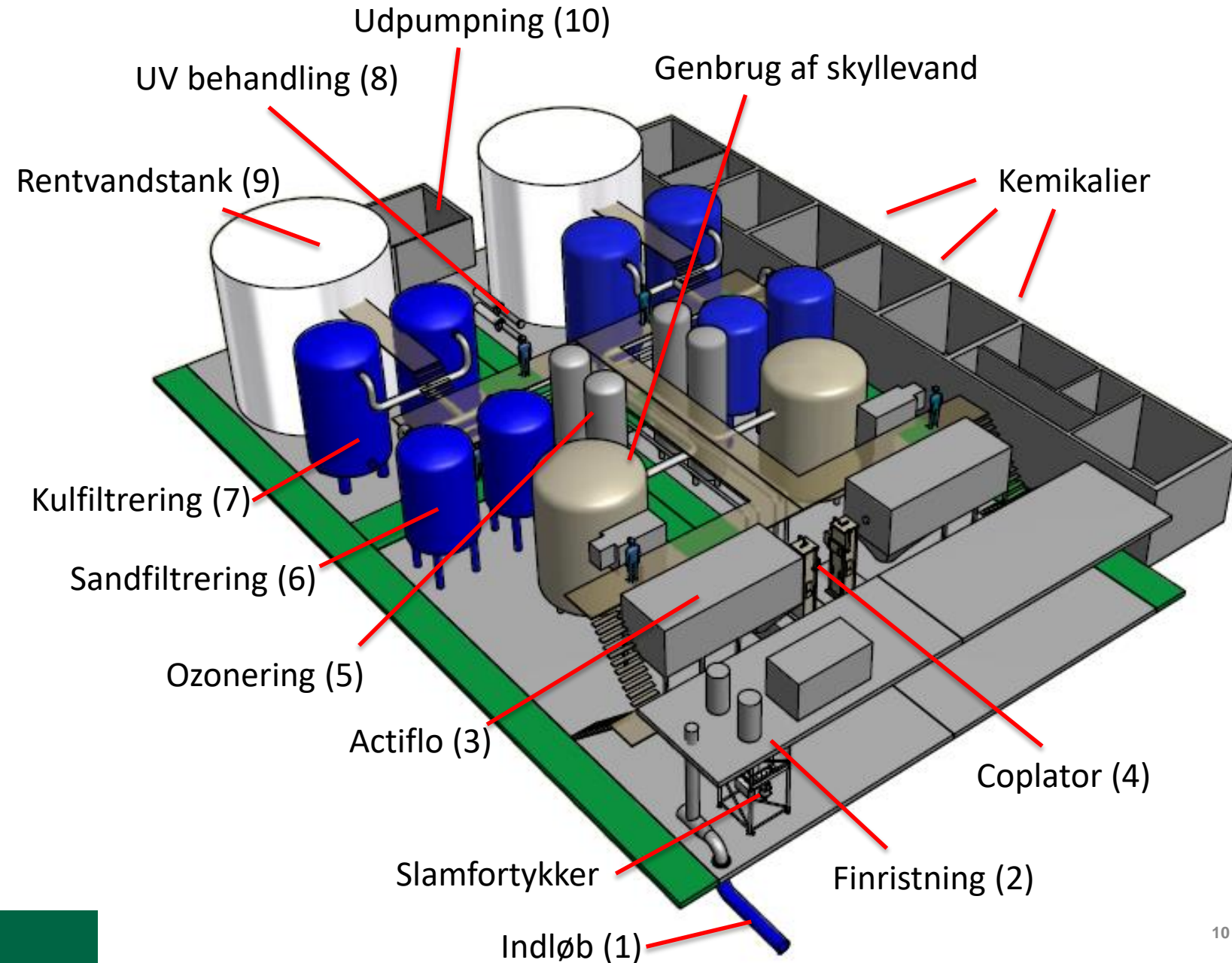


# High water quality – online –real time



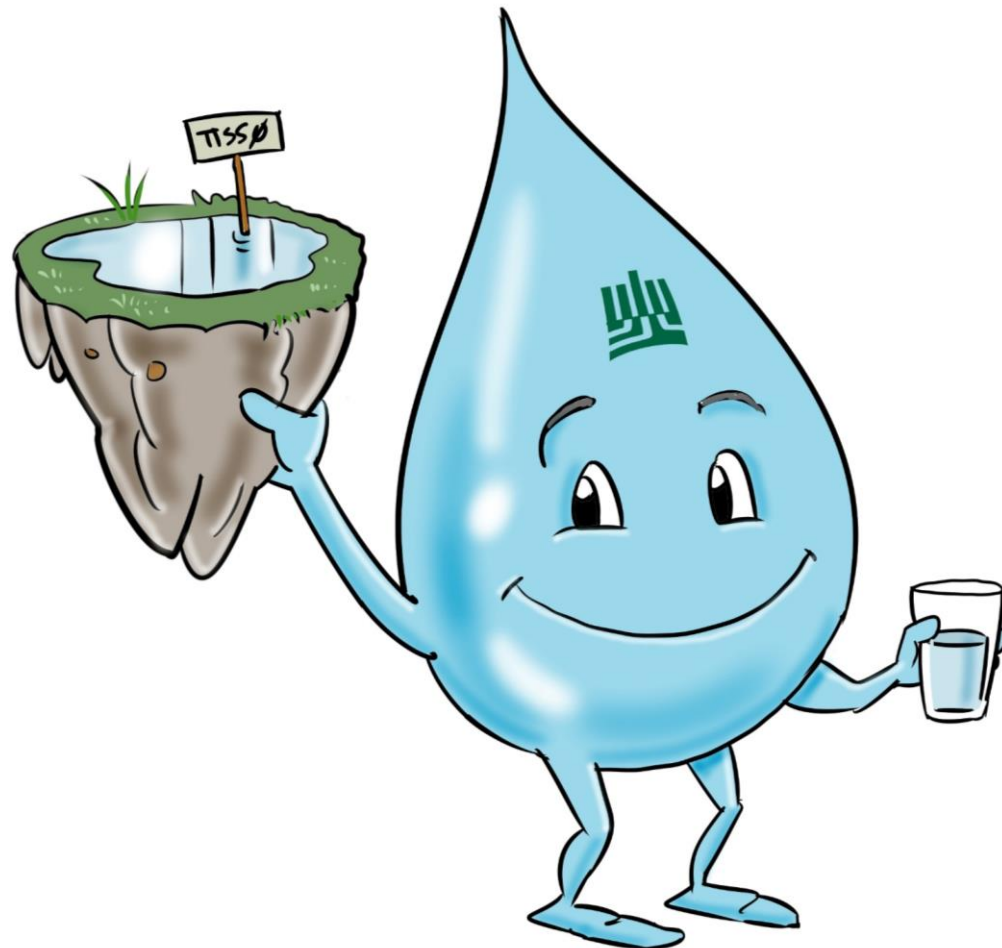
# NEW TREATMENT PLANT FOR INDUSTRIAL WATER

- Water resource is surface water, lake Tissø
- Production capacity of  $2 \times 95 \text{ m}^3/\text{t}$
- In operation late 2018
- Supplies industries in Kalundborg
- Water of drinking water quality
- No use of chlorination
- The only surface water treatment plant in Denmark



# Tissø II – surface treatment plant

Innovation and sustainability



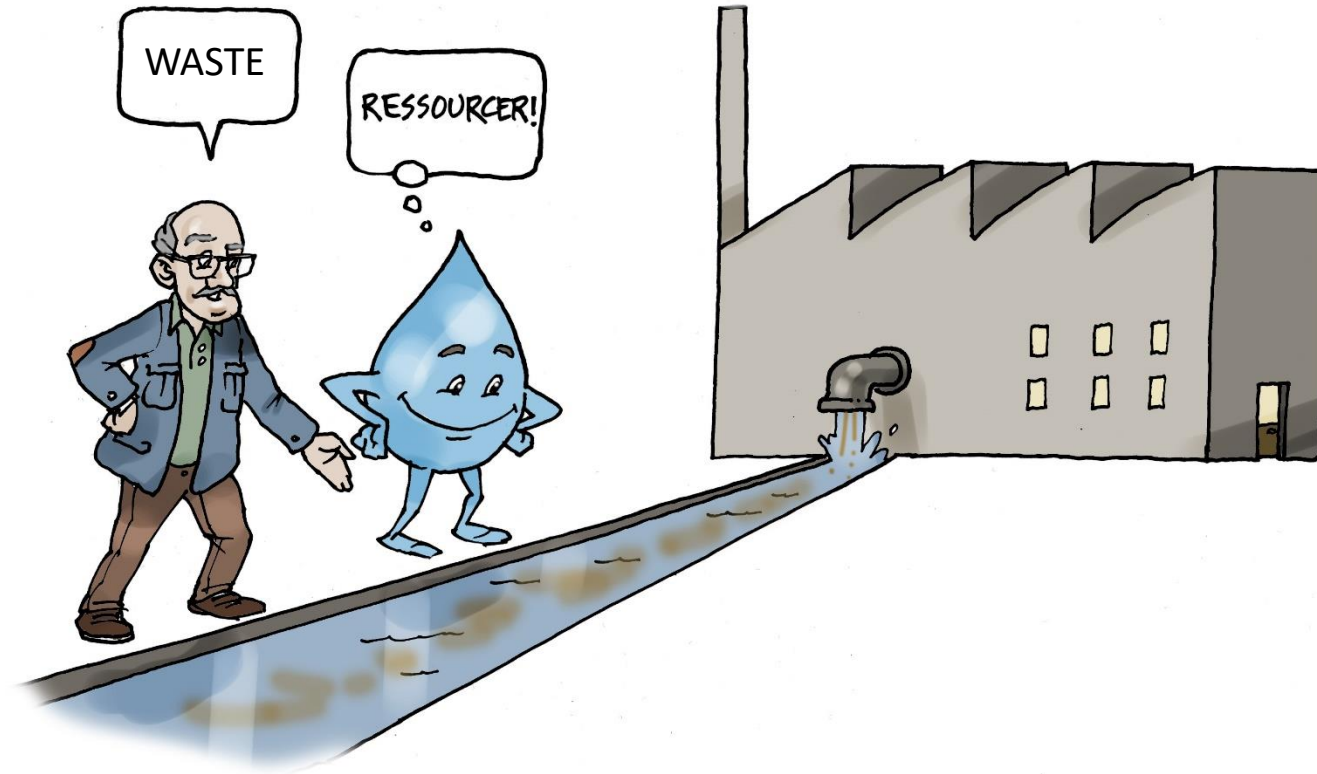


# Desalination plant on the island Sejerø





## From wastewater to resource water



# ENERGY IN WASTEWATER

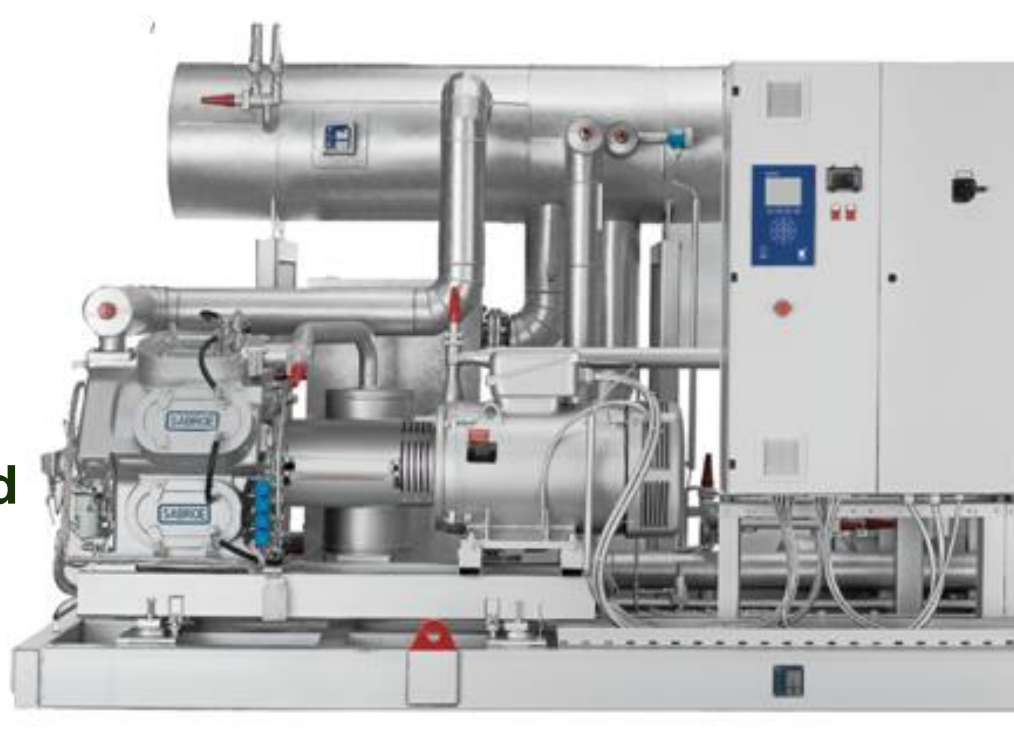
Heat pump installation  
using hot waste water,  
24-25 °C from the  
industry

80.000 MWh heat  
produced

CO2 reduction 16.600  
tons/year

Covers 30 % of total  
district heating demand

3 heat pump modules á 3,3  
MW, total 10 MW installed  
at Kalundborg Utility



Energy in wastewater  
reused 3 times:

1. Novozymes extracts organic matter to biogas production
2. Separate waste water streams from the city and Novozymes are mixed at WWTP, makes bacterial processes faster
3. Heat is used again by the heat pump

# Advanced wastewater treatment

## Kalundborg Full-scale ozonation

- Demonstrate advanced wastewater treatment technologies for removal of active pharmaceutical compounds (APIs)
- Process optimization of pilot and full-scale systems

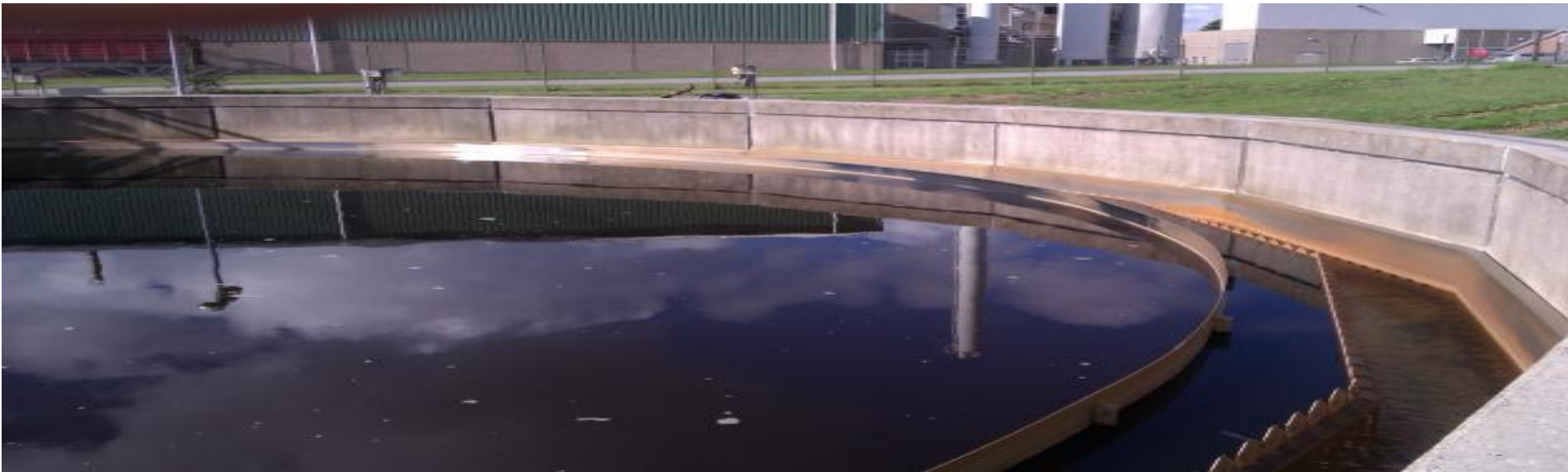


**CWPharma**

# Cooperation with KompetenzCenter Wasser Berlin (KWB)

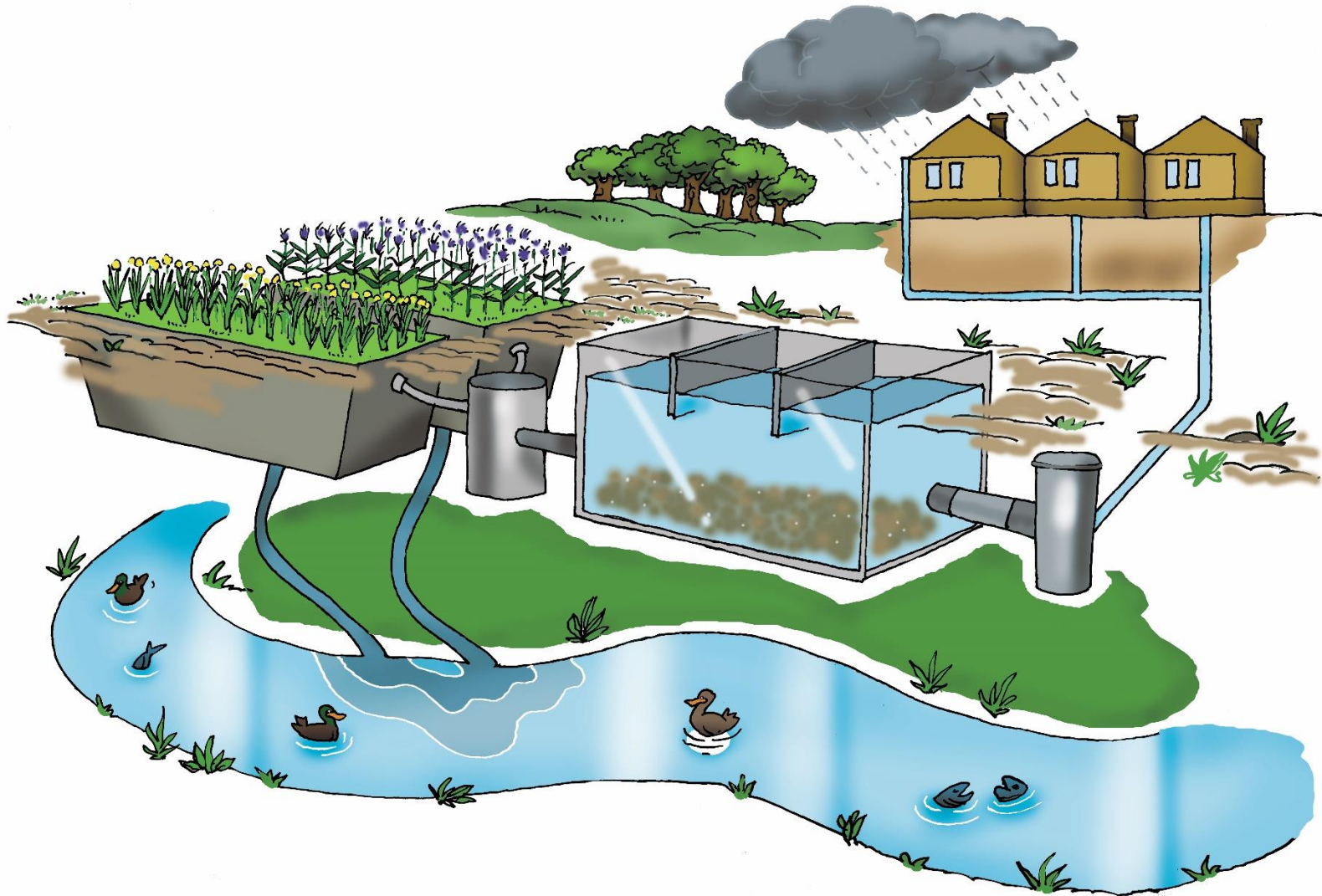
The combined knowhow on industrial symbiosis in Kalundborg and advanced wastewater cleaning technologies in Berlin offer new horizons to the development of sustainable industrial development.

Involving the industry directly, we are together with KWB working on creating a cheaper, more efficient and more sustainable industrial symbiosis.





# New waste water treatment solutions in rural areas and villages



# GOING FORWARD: ONGOING PROJECTS

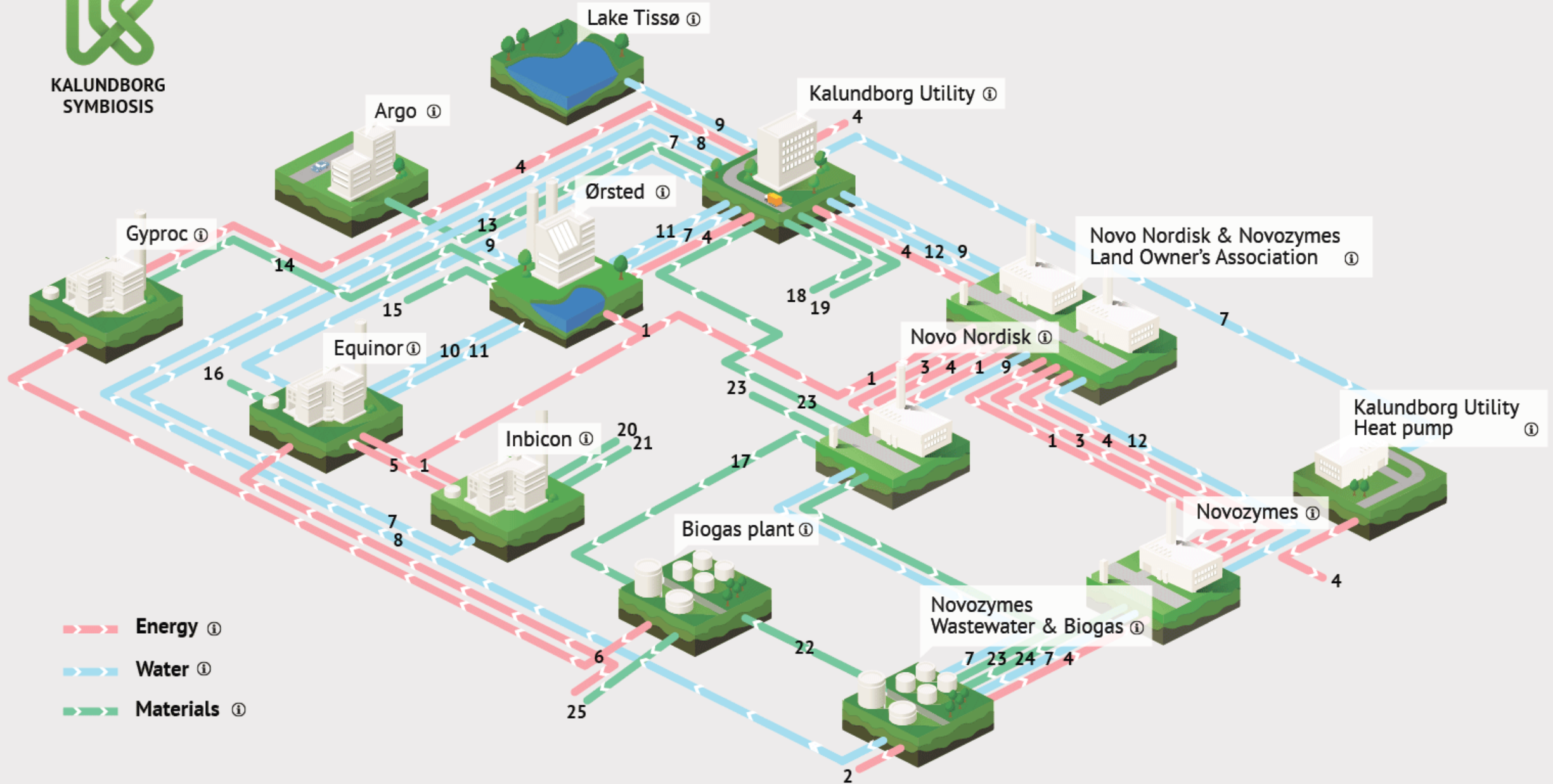
## Huge conversion project in Kalundborg initiated

The conversion of Asnæs Power Station is kicked off and this year, the power station will convert coal to biomass. This is made possible by an mutual investment by the industry and the Utility





KALUNDBORG  
SYMBIOSIS



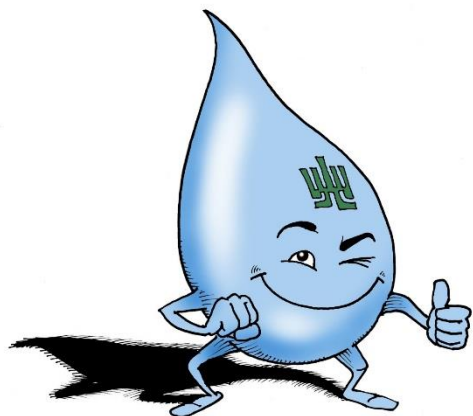
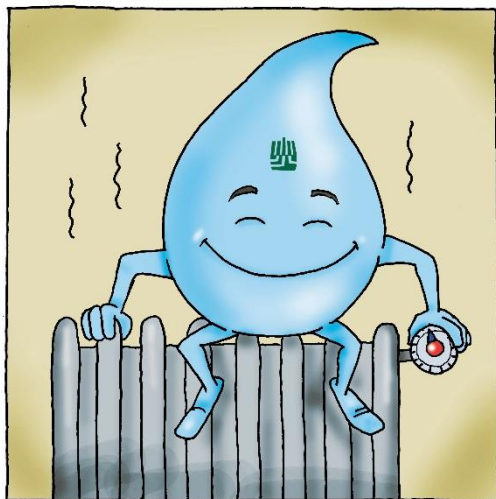
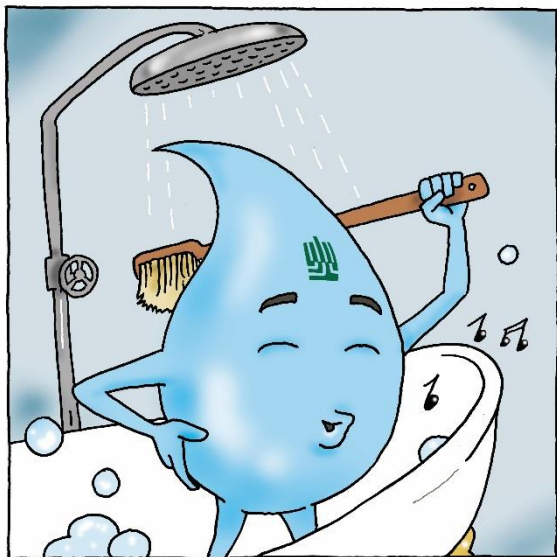
# UN Global Sustainable development goals





Certified after ISO 2200, DS/OHSAS 18001, ISO 14001 and ISO 9001.







# IWA WORLD WATER CONGRESS & EXHIBITION 2020

# JOIN US IN COPENHAGEN

WATER FOR SMART LIVEABLE CITIES  
18-23 OCTOBER 2020



[WWW.IWA2020COPENHAGEN.DK](http://WWW.IWA2020COPENHAGEN.DK)