Presentation of Denmark's co-operation with Chinese water authorities

U-S-E Launch

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Danish EPA
November 30th, 2022

Co-operation agreements

❑ MoU (Memorandum of Understanding) with 3 ministeries:

- Ministry for Environment and Ecology, MEE
- Ministry for Water Resources, MWR
- Ministry for Housing and Urban-Rural Development, MOHURD

❑Activities

- SSC project with MWR: groundwater management
- SSC project with MEE: water quality / wastewater
- Incoming delegations
- Annual meetings including a technical seminar
- Webinars (MOHURD)

China Europe Water Platform

❑ **Established in 2012**

- **Denmark hosting European Secretariat, 2012-2017**
- **Denmark lead of Business Program, 2018-2022**
- **2023 and onwards, to be discussed with European Commission**

❑ **Activities, Business Program, 2018-2022**

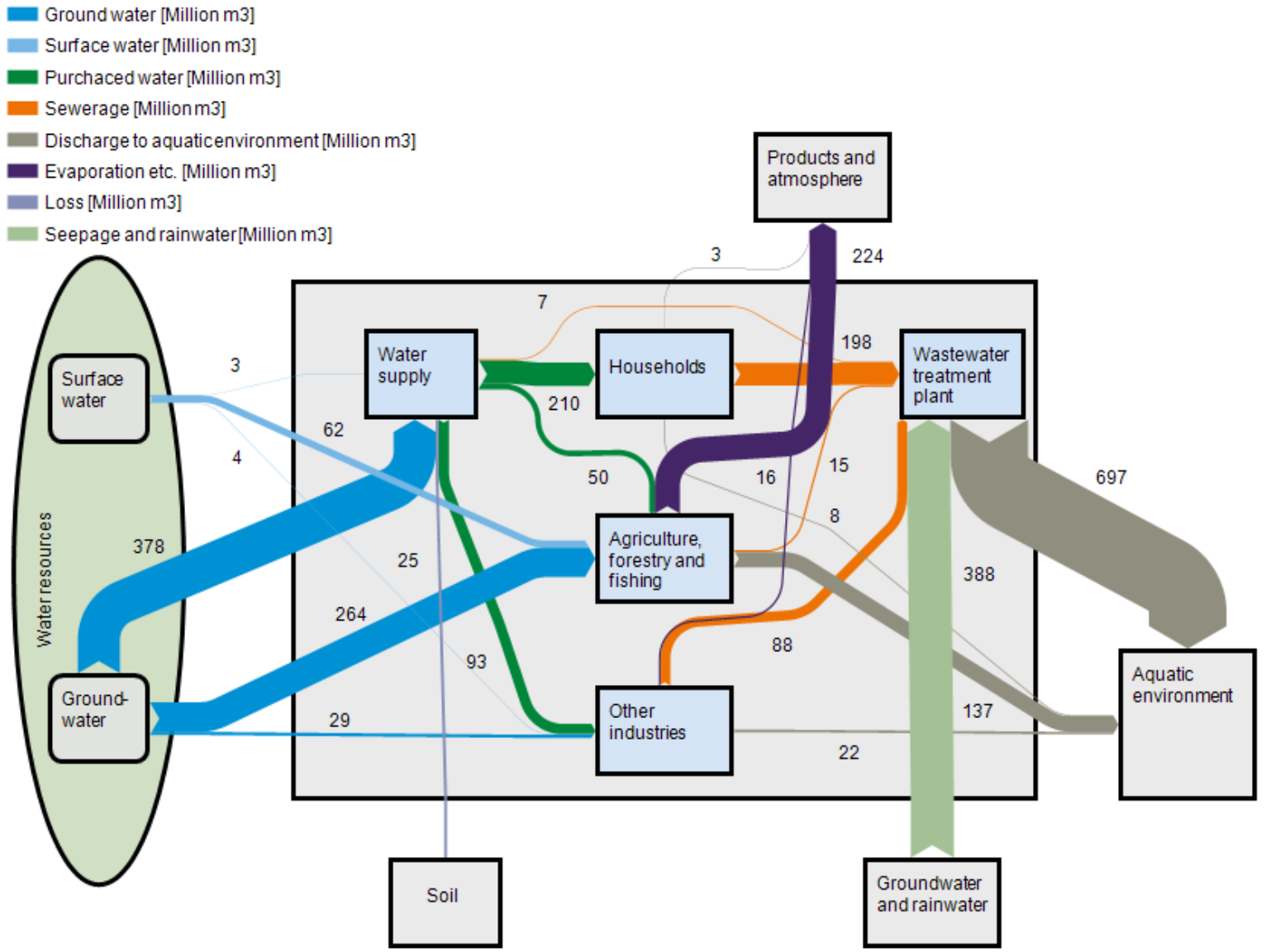
- **25 events and webinars, appr 180 technical presentations**
- **Thematic Reports, Market Reports**
- **Policy Recommendations: Review of Tender Procedures suggested**
- **All PPTs and reports available for download**

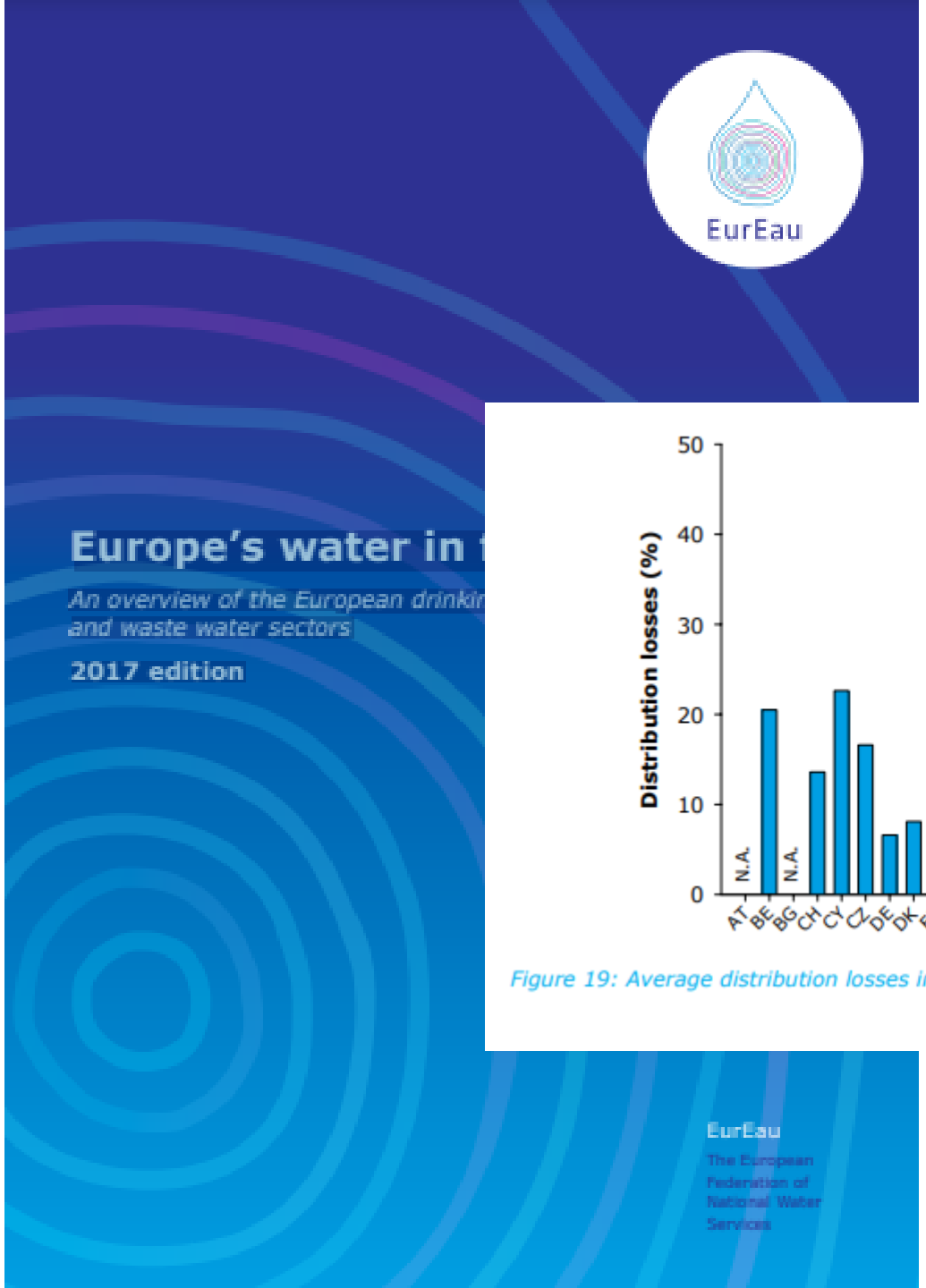
www.cewp.eu/business-co-operation

CEWP Annual High-level Meetings

The Danish Water-story: how do we present it?

Water flows in Denmark (2016)





Ministry of Environment of Denmark
Environmental Protection Agency

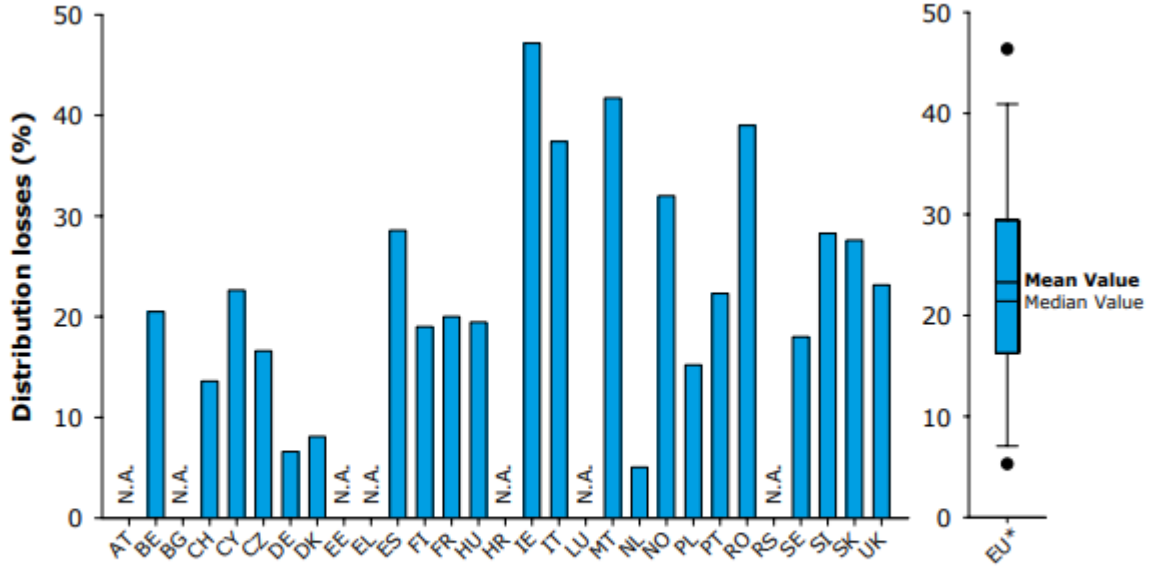


Figure 19: Average distribution losses in percentages

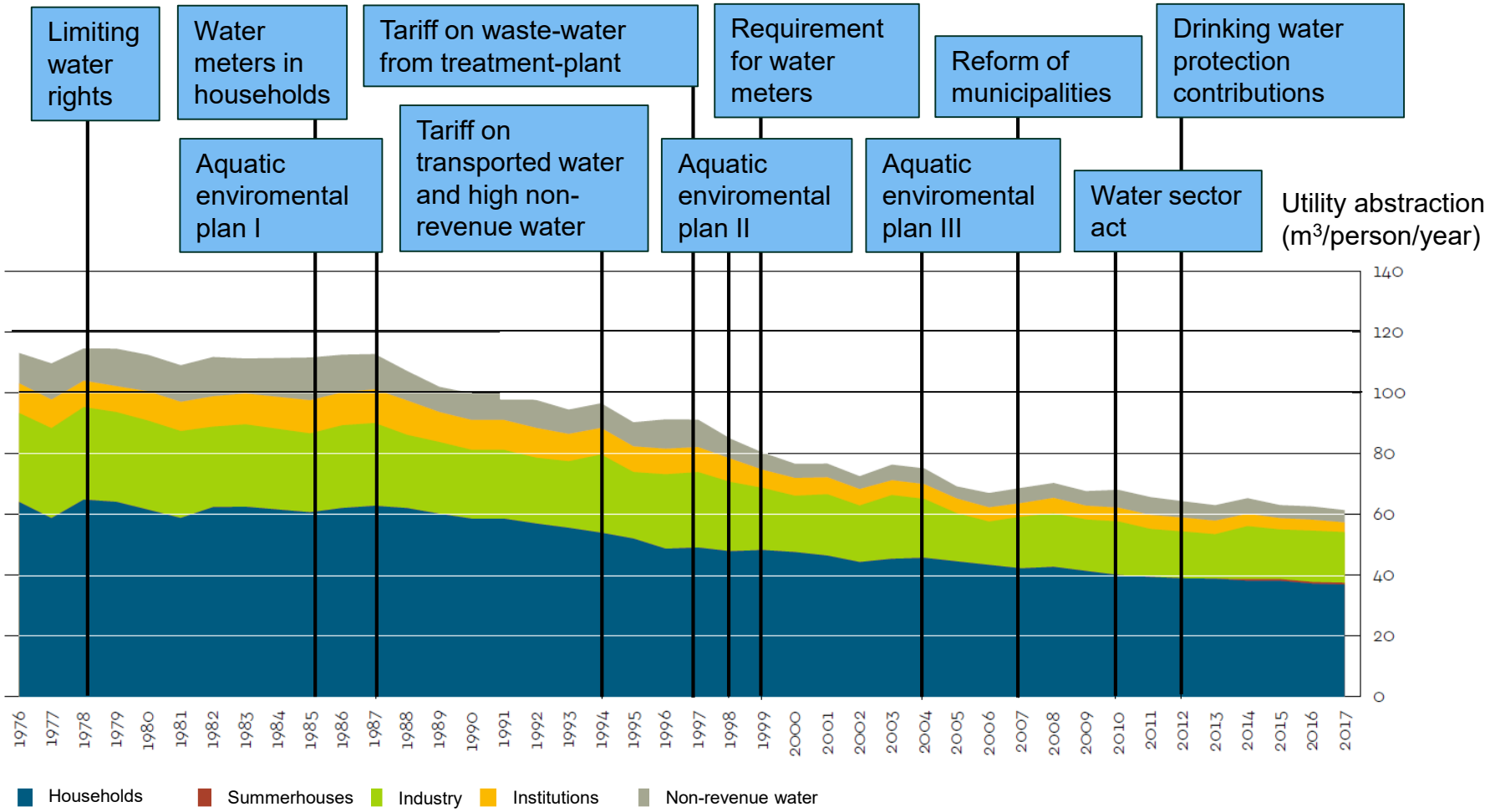
GETTING INVESTMENT PLANNING IN WATER SUPPLY AND SANITATION (WSS) RIGHT

CHINA EUROPE Water Platform

COWI

Sources: *Europe's Water in Figures* (2017) and *EEA Assessment of Water Resources Across Europe* (2021)

Regulatory measures – an ongoing process – case: water leakage reduction



Based on DANVA, ”Vand i tal” – 2018 edition

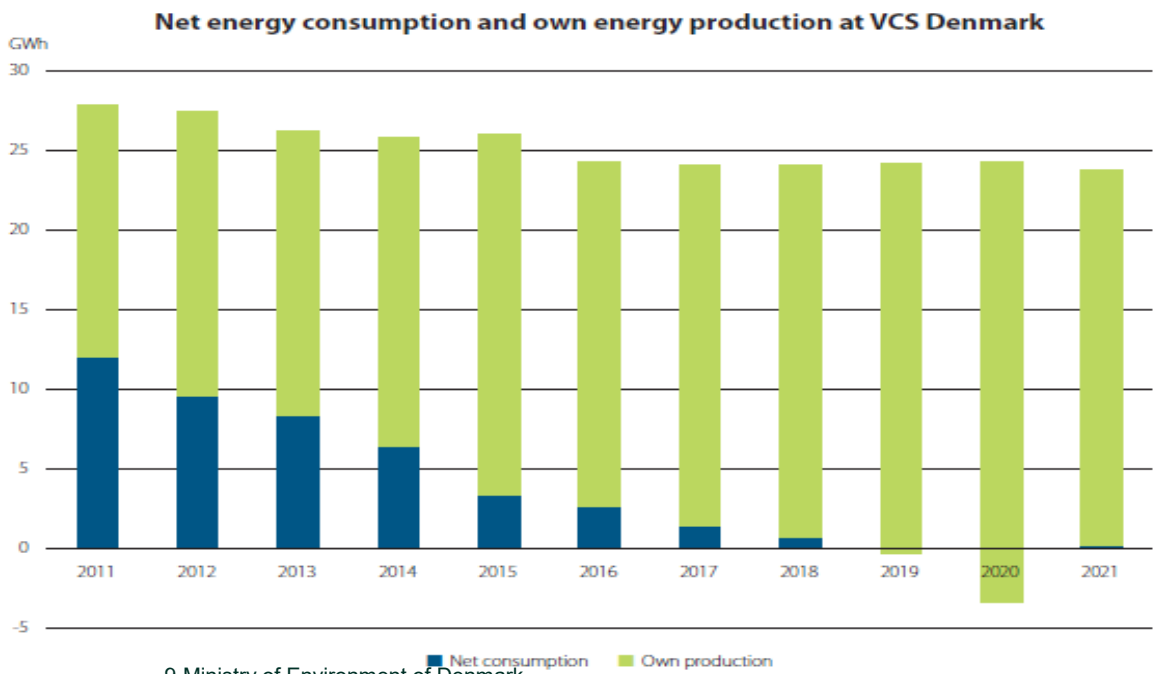
VCS Denmark WRRF Ejby Mølle

This location has been allocated to wastewater treatment since 1907, and VCS Denmark has developed and upgraded the facilities ever since. Ejby Mølle is a unique facility. It provides the city's wastewater treatment and sustains an impressive energy production.

When it was first constructed, the treatment plant was located outside the city. But with the city's expansion, it is now located in close proximity to the city centre. As the need for expansions of the treatment plant arose, the location itself posed many challenges, as wastewater had to be led under the river in several places.

The facility receives wastewater from a major part of the city of Odense and, after undergoing treatment, the water is discharged into the local river. Discharging into the river entails stricter environmental requirements concerning the discharged water quality. VCS Denmark has set strict internal quality parameters, ensuring treatment that surpasses the legal requirements.

Energy production exceeds energy consumption at Ejby Mølle WRRF



Ejby Mølle WRRF Data (2021):

Wastewater received:
19,066,400 m³
(up to 19,400 m³/hour)

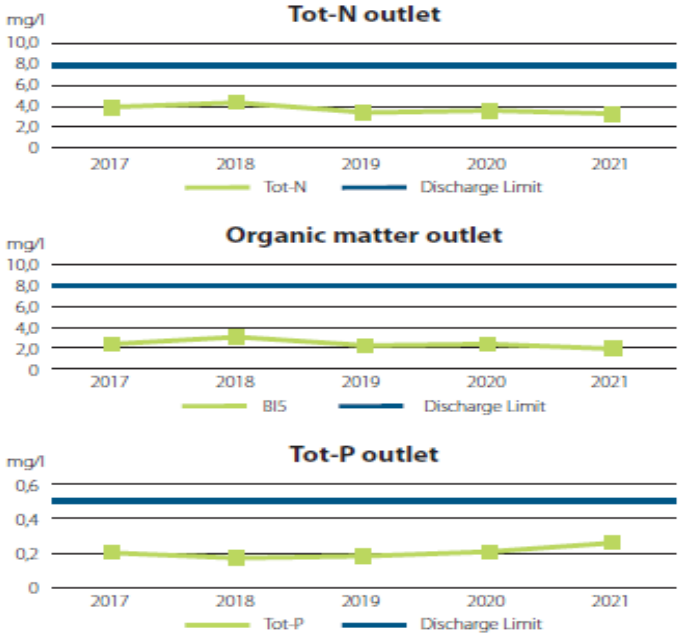
Energy consumed:
12,020,078 kWh

Energy produced:
22,978,789 kWh

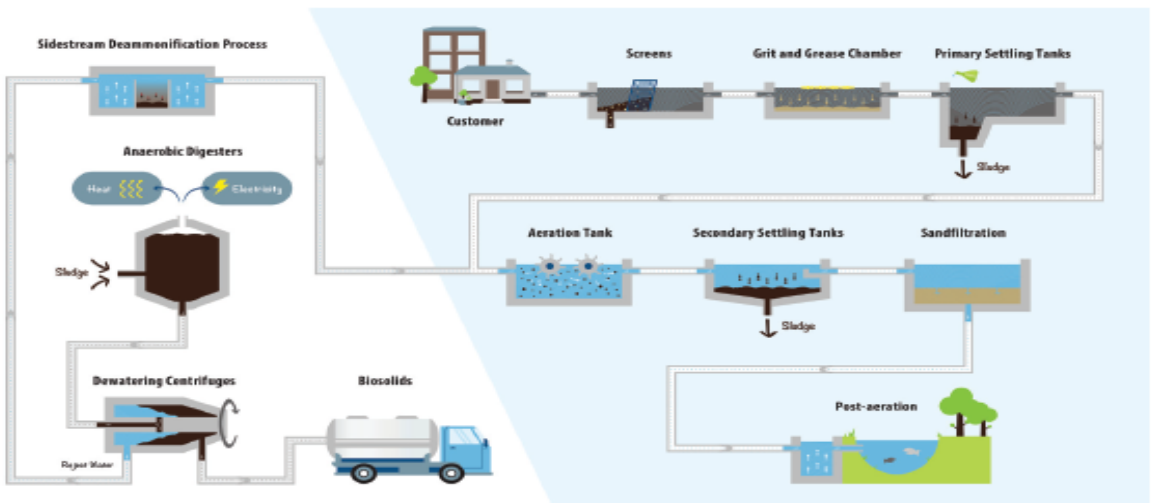
Capacity:
410.000 PE

Removal efficiency:

- Nitrogen: 90 %
- Organic matter(BI5): 99 %
- Phosperous: 94 %



Our wastewater treatment process – and utilization of sludge



Huge potential for economic savings with advance Asset Management

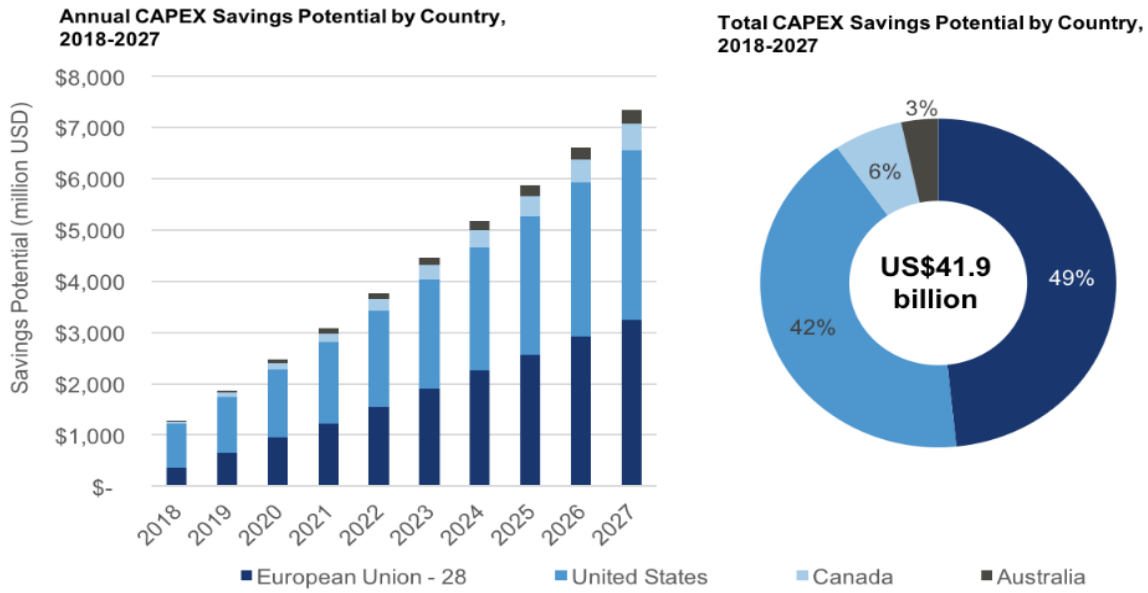
bluefield RESEARCH

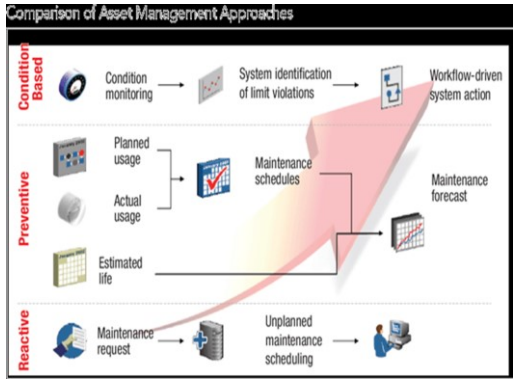
LOGIN REGISTER

ABOUT INSIGHT SERVICES REPORTS CONSULTING KNOWLEDGE CENTER SEARCH

Utilities in the U.S., Canada, Australia, and Europe (representing 31 countries) currently manage US$2.9 trillion in water, wastewater and stormwater assets, which provide critical infrastructure services to over 822 million people, globally. Bluefield's forecasts indicate that advanced asset management solutions will save these utilities US$1.2 billion in annual CAPEX savings in 2018 and scale to US$7.3 billion in annual savings by 2027.

Exhibit: CAPEX Savings by Country, 2018-2027 (Annual and Total)





Savings 0,3-0,7% of Assets Value

Source: Bluefield Research

arch.com/

Physical System

Automation & control

Sensors

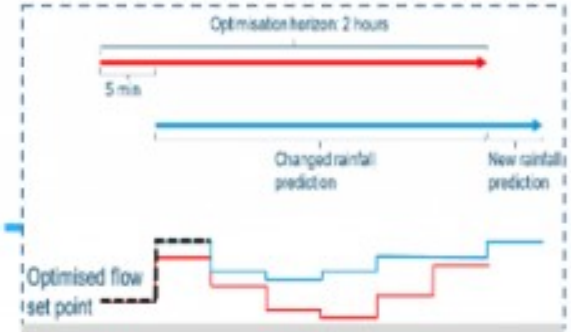
Other data

1. Describe

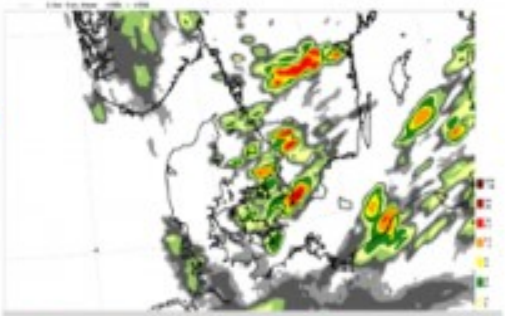
2. Diagnose

3. Predict

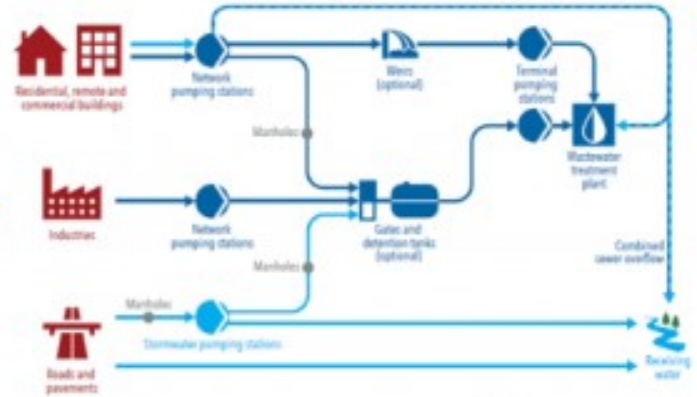
4. Prescribe



Optimisation Model



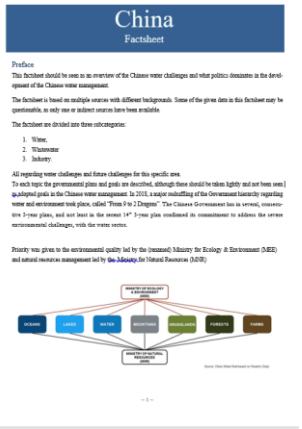
System Loads Forecast Model



Process Model(s)

Digital Twin

Further reading


China
Factsheet

Preface

This factsheet should be seen as an overview of the Chinese water challenges and what politics dominates in the development of the Chinese water management.

The factsheet is based on multiple sources with different backgrounds. Some of the given data in this factsheet may be questionable, as only one or indirect sources have been available.

The factsheet are divided into three subcategories:

1. Water
2. Wastewater
3. Industry.

All regarding water challenges and future challenges for this specific area.
To each topic the governmental plans and goals are described, although these should be taken lightly and not been seen [illegible] as adopted goals in the Chinese water management. In 2018, a major reshuffling of the Government hierarchy regarding water and environment took place, called "From 9 to 2 Dragons". The Chinese Government has in several, consecutive 5-year plans, and not least in the newest 14th 5-year plan confirmed its commitment to address the severe environmental challenges, with the water sector.

Priority was given to the environmental quality led by the (renamed) Ministry for Ecology & Environment (MEE) and natural resources management led by the Ministry for Natural Resources (MNR).

https://mst.dk


SEPTEMBER 2022
DANISH ENVIRONMENTAL PROTECTION AGENCY
CEWP PI LOT 5

GETTING INVESTMENT PLANNING IN WATER SUPPLY AND SANITATION (WSS) RIGHT

FINAL

CHINA EUROPE Water Platform

https://cewp.eu/report-getting-investments-right

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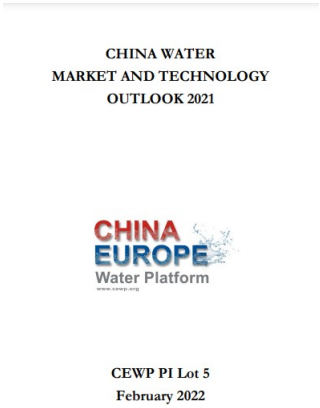
CHINA WATER
MARKET AND TECHNOLOGY
OUTLOOK 2021

CHINA EUROPE Water Platform

CEWP PI Lot 5
February 2022

https://www.cewp.eu/sites/default/files/2022-02/CHINA%20MARKET%20OUTLOOK%202021.pdf

Thank you for your attention

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