Nijhuis Saur Industries

Total Water Reuse for Industrial Food Plant and Increased Output due to Operational Excellence

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Nijhuis Saur Industries

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Our Divisions

Water Services

Water Engineering

Industrial Water Solutions

Who we are.

Who we are | #NijhuisSaurIndustries

OUR SAUR GROUP VISION AND MISSION:

#missionwater

INDUSTRIAL WATER SOLUTIONS DIVISION:

nijhuis econvert unidro nortech riventa byosis PWNT

NIJHUIS SAUR INDUSTRIES IS MAIN RESPONSIBLE FOR THE PRODUCT PORTFOLIO OF THE DIVISION:

Sustainable and Resilient Water Use, Energy and Resource Recovery

Solutions and Services

>800
Team members in the Industrial Water Solutions division

>140
Countries Active

>150
Real-time monitored plants

SINCE 1904
>118 years of knowledge

€ >200
Million Order Entry

RENTAL >50
Mobile Water / Rental Solutions

>15.000m²
Manufacturing Area

>300
New projects a year

>4000
References

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A one-stop-shop for industrial and municipal water

Component provider → Equipment provider → Solution provider → EPI/EPC → Rental / Asset ownership → Services → Consumables

Technology provider (EP) | Technology provider (EP) | O&M / service provider

Drinking / Process water

Wastewater

Water Reuse

Cooling water

Resource Recovery

Modular / Decentral

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GLocal Network

= Nijhuis Saur Industries

= Saur

= Partner/Agent

In a nutshell

Nijhuis Saur Industries

- Main responsible for the Industrial Water solutions division portfolio
- (Waste)water treatment / Cooling tower expertise in Meat, F&B, Cosmetics, Mid/Down-stream O&G, Municipal.
- Innovative and Proven solutions, Best Available Technologies and Nobile water specialist.
- Customer for life approach: consultant, technology, project execution, turn-key supplier.

What drives today’s clients?

02

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What drives today's clients?

1. Business case oriented;
   introducing new business models, strong focus on funding and ROI
2. Water scarcity and climate resilience
3. Stricter environmental regulations
4. Flexibility required, economical (in)stability;
   modular design, easy to relocate and scale-up or scale-down if required
5. From TCO to TBO - total benefits ownership
6. Green image, lowest possible environmental footprint and meeting SDG goals
7. Reliability, always in control, no surprises using data

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Water Production and Reuse

Central Europe Case Study

Poultry industry

Why is WATER reuse a license to operate?

To process a chicken:

8 - 12 liter water

Energy

1 kg meat

8 - 12 liter wastewater

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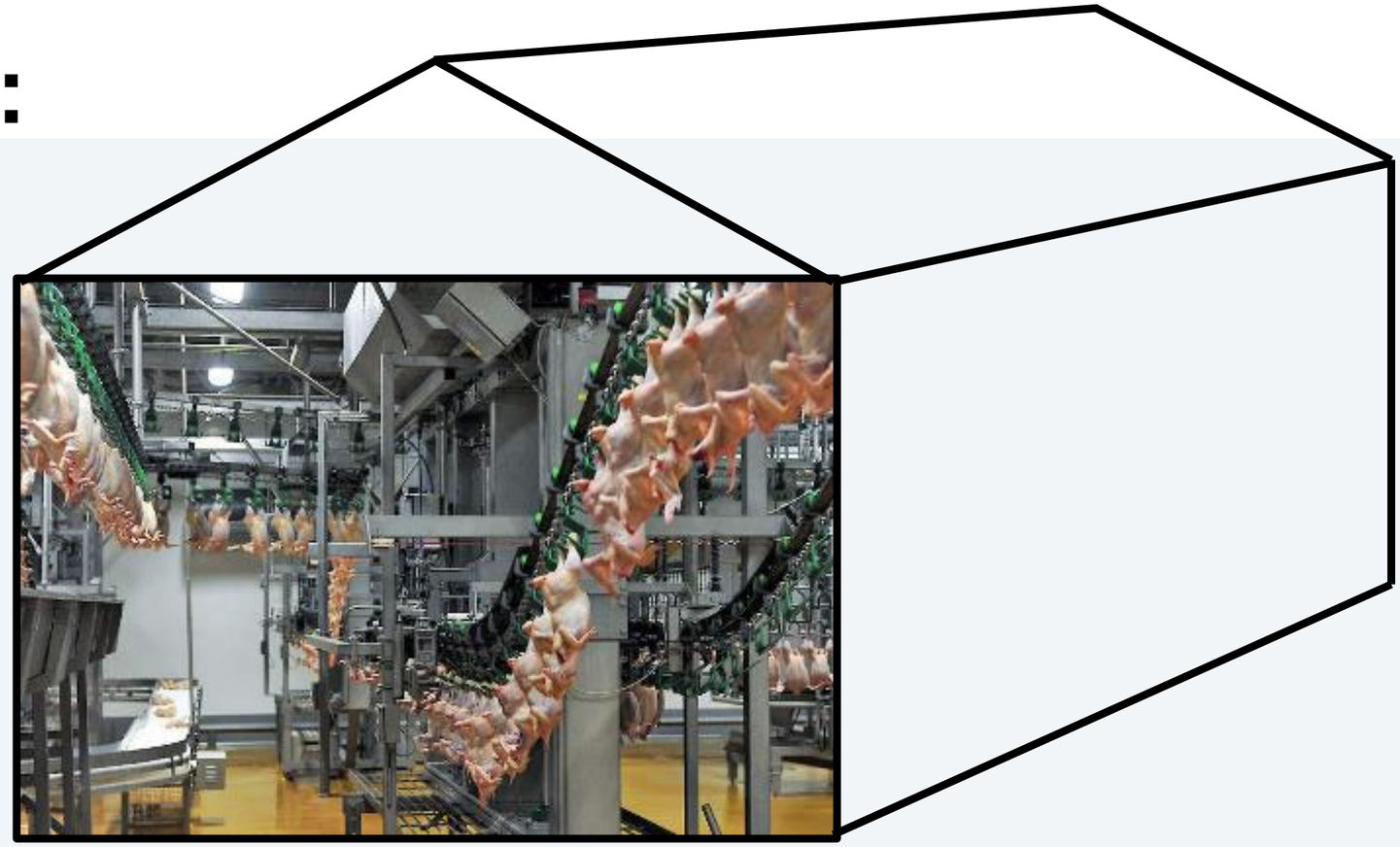
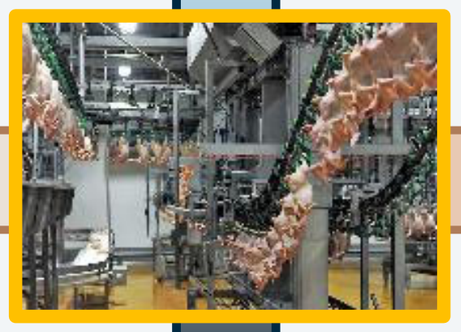
Industrial processing:

Typical slaughterline has **15.000** birds per hour capacity



Industrial processing:

250.000 per day



250 t/d

>3000 m3/d

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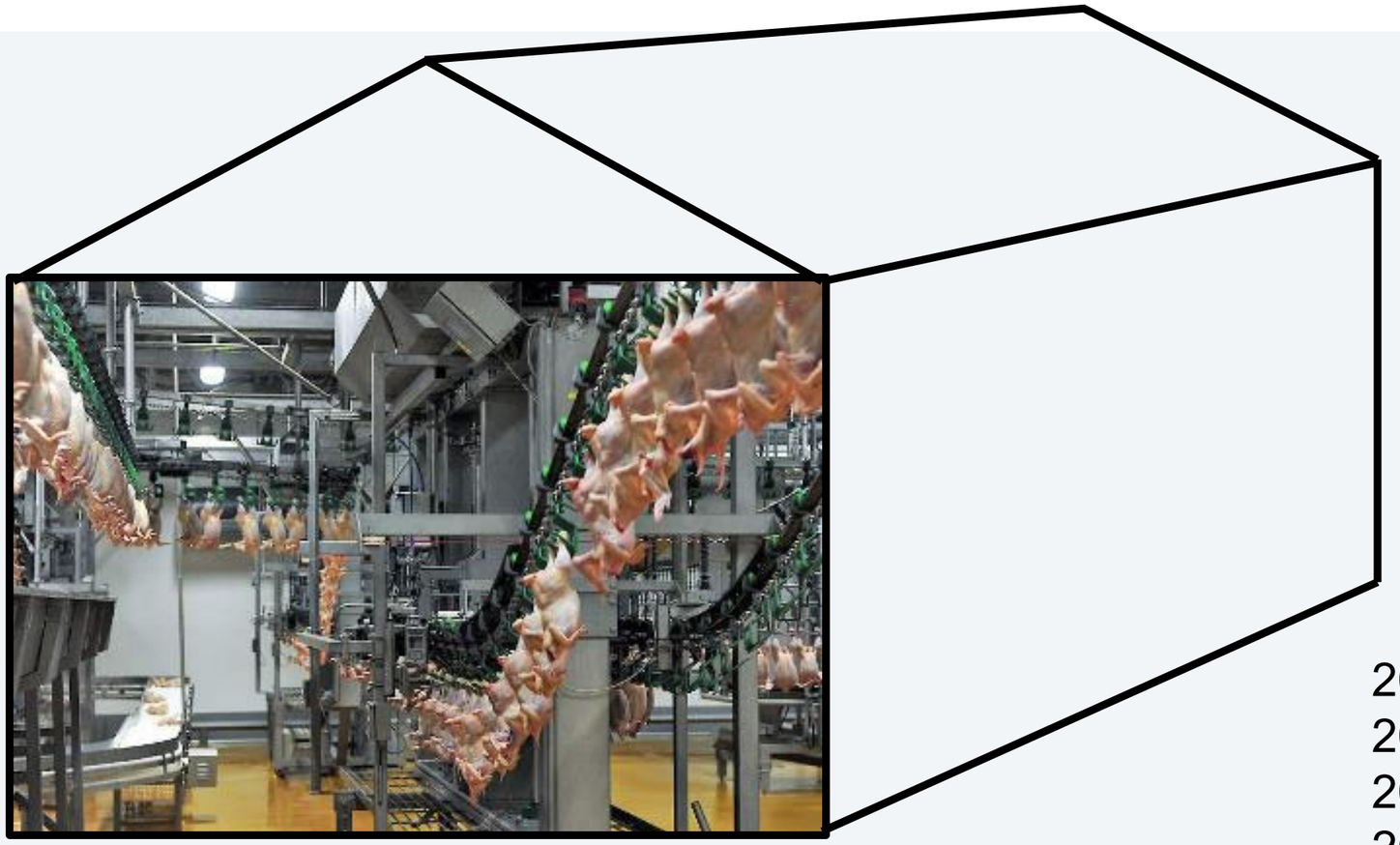
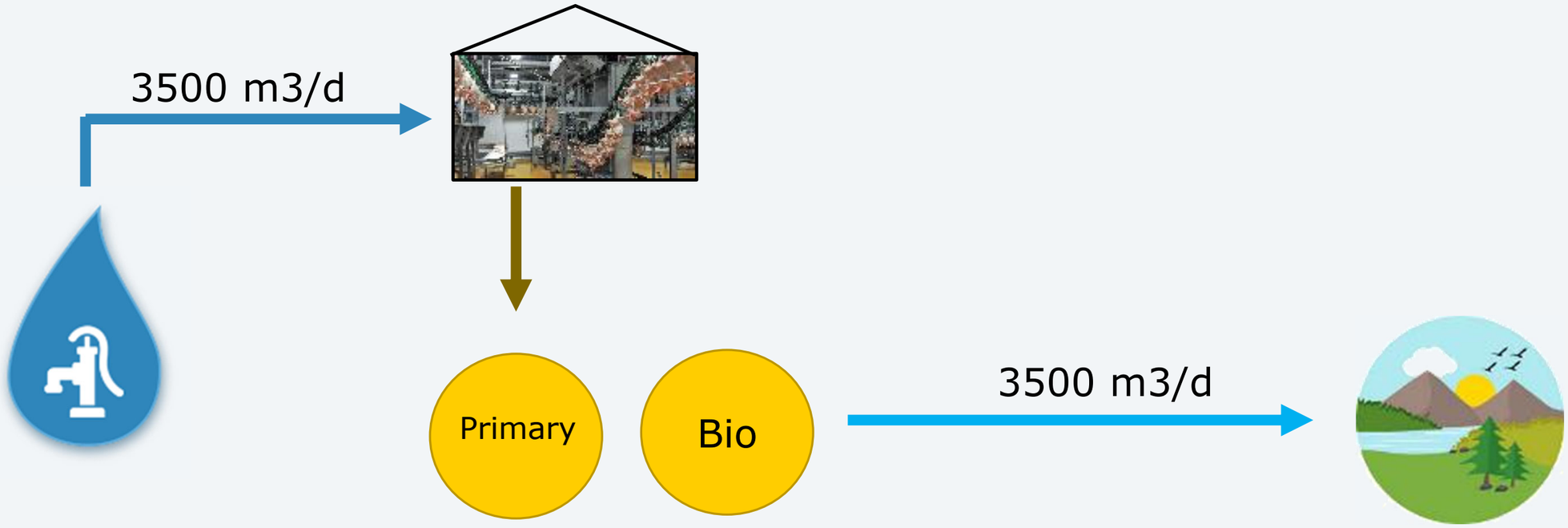
Central Europe case:



2013 first slaughter line
2016 extension with 2nd line
2018 extension with 3rd line
2019 water reuse implementation
2025 future extention

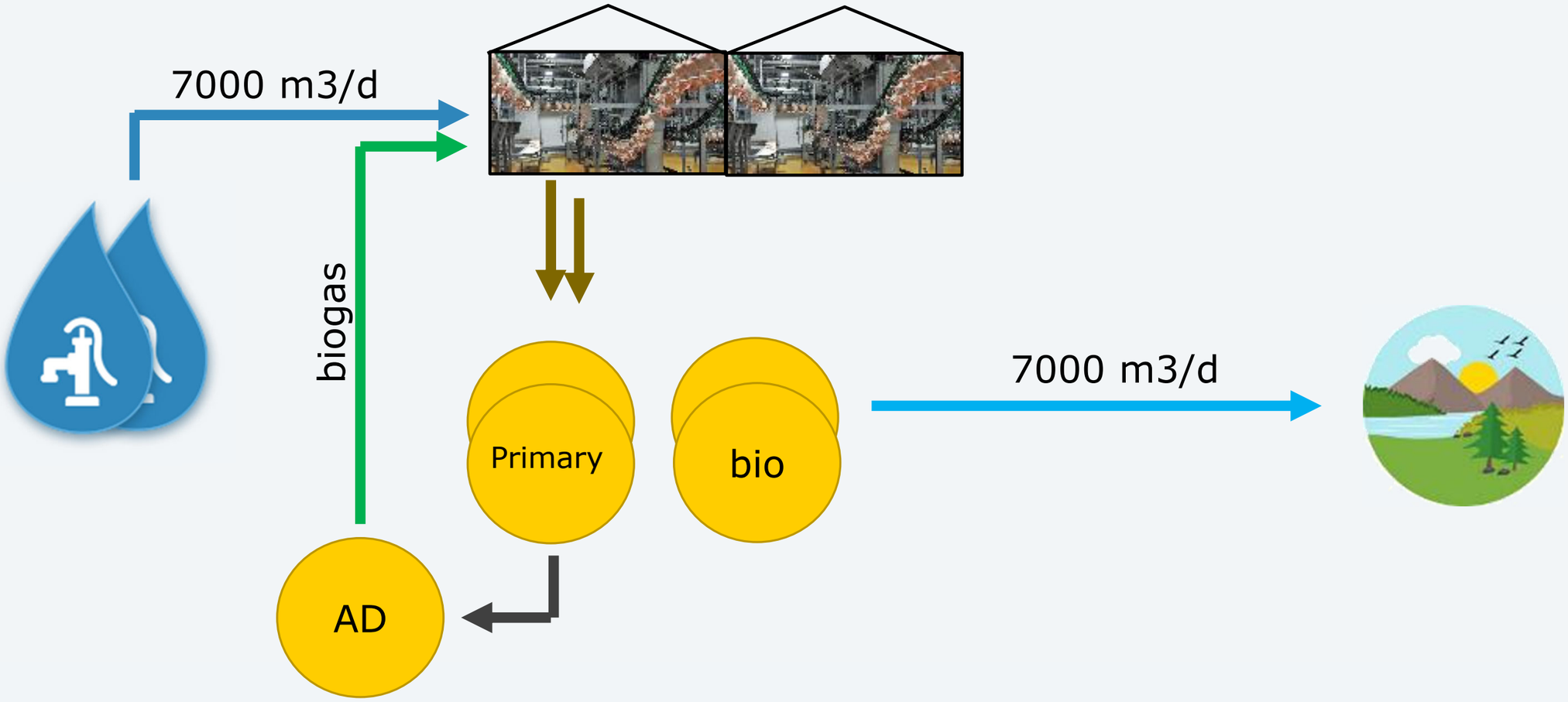
Central Europe case:

2013



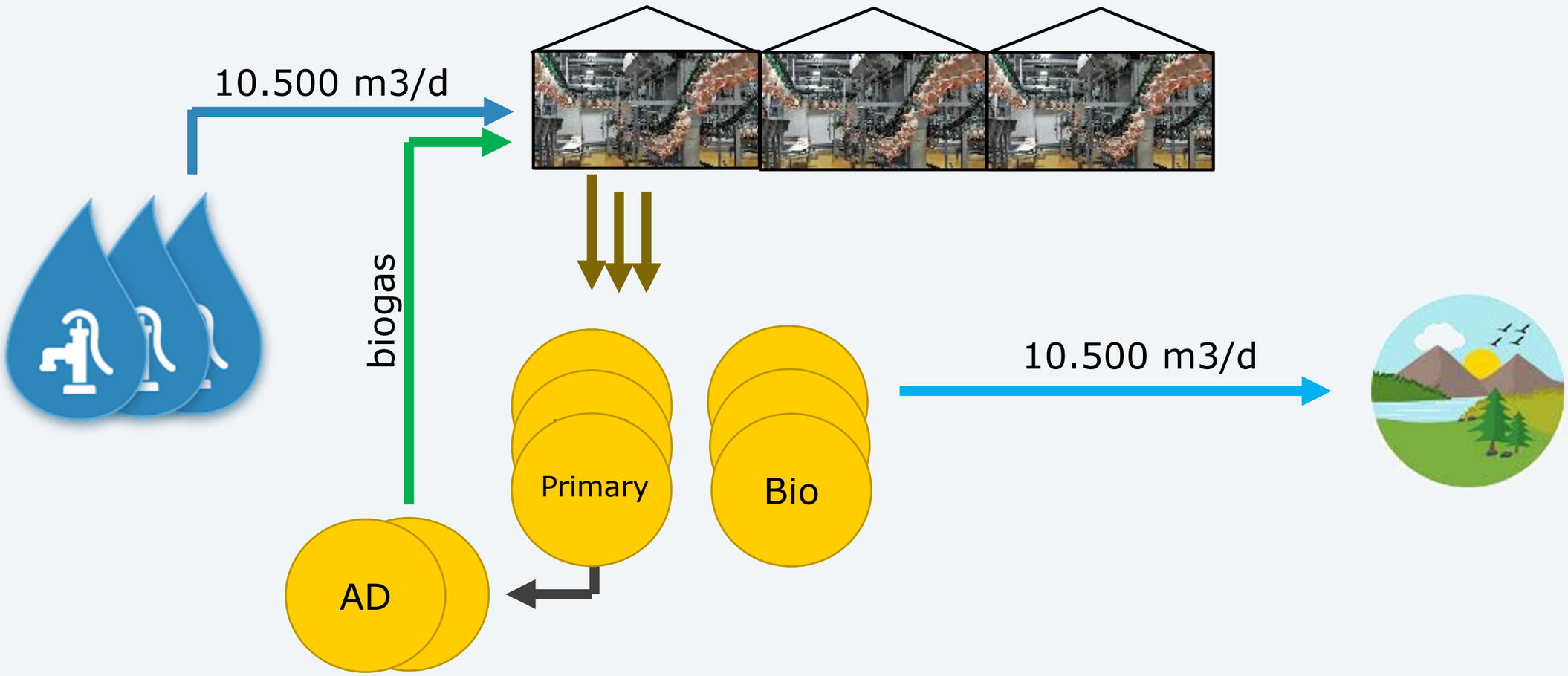
Central Europe case:

2016

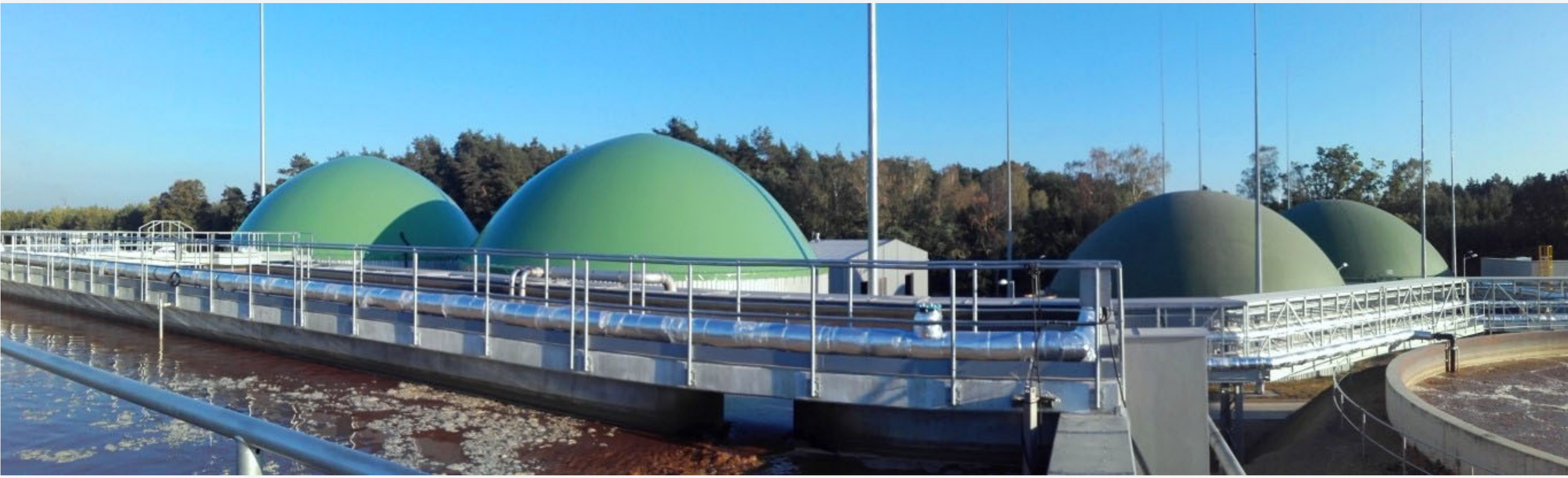


Central Europe case:

2018



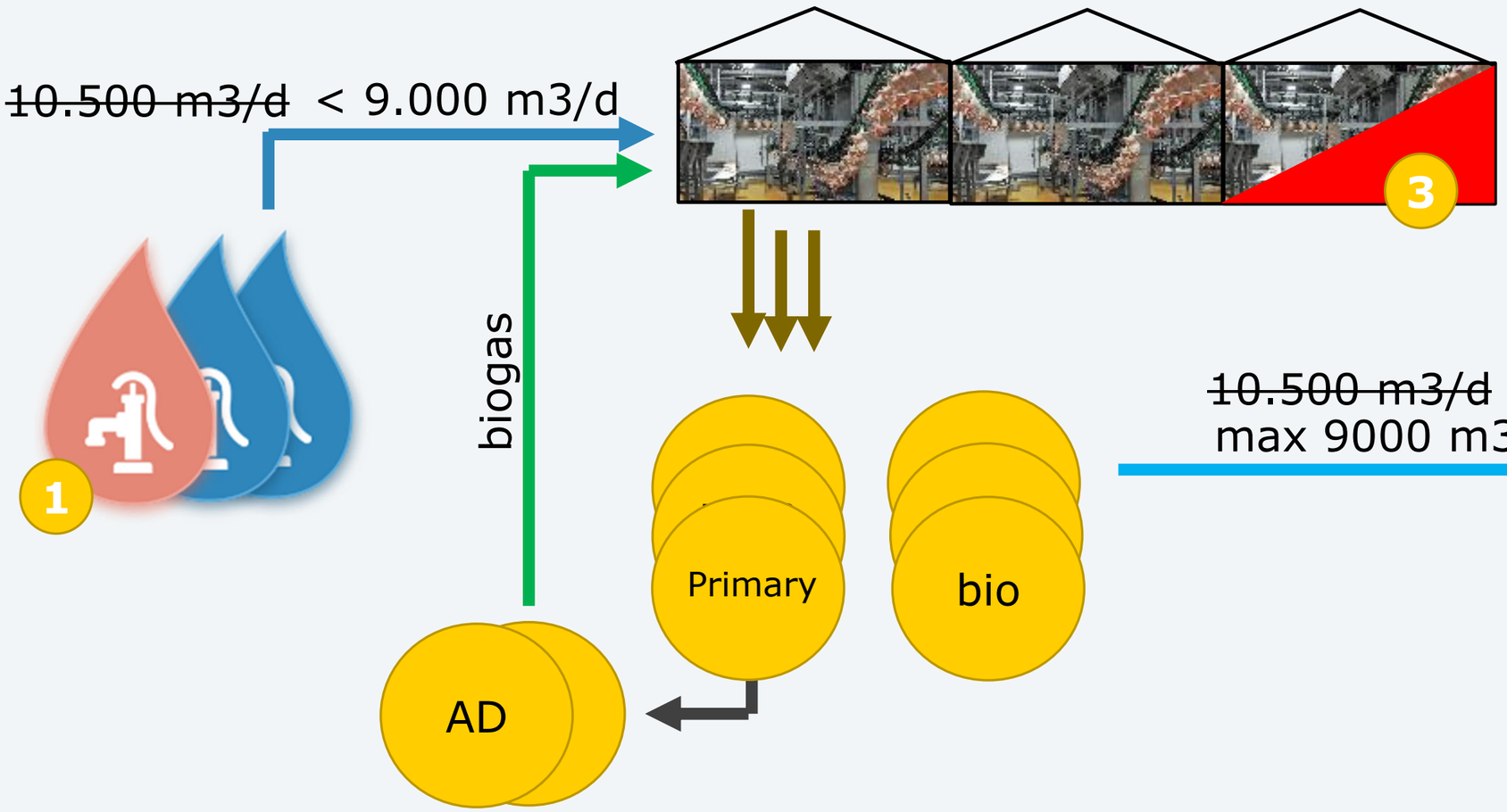
Extension with AD



Central Europe case | Site development

Central Europe case:

2018 in practice: DRAUGHT & EFFLUENT limitations



RESULTING in:

1. Shortage on fresh water intake
2. Restriction on effluent disposal
3. Slaughter capacity can't be utilized

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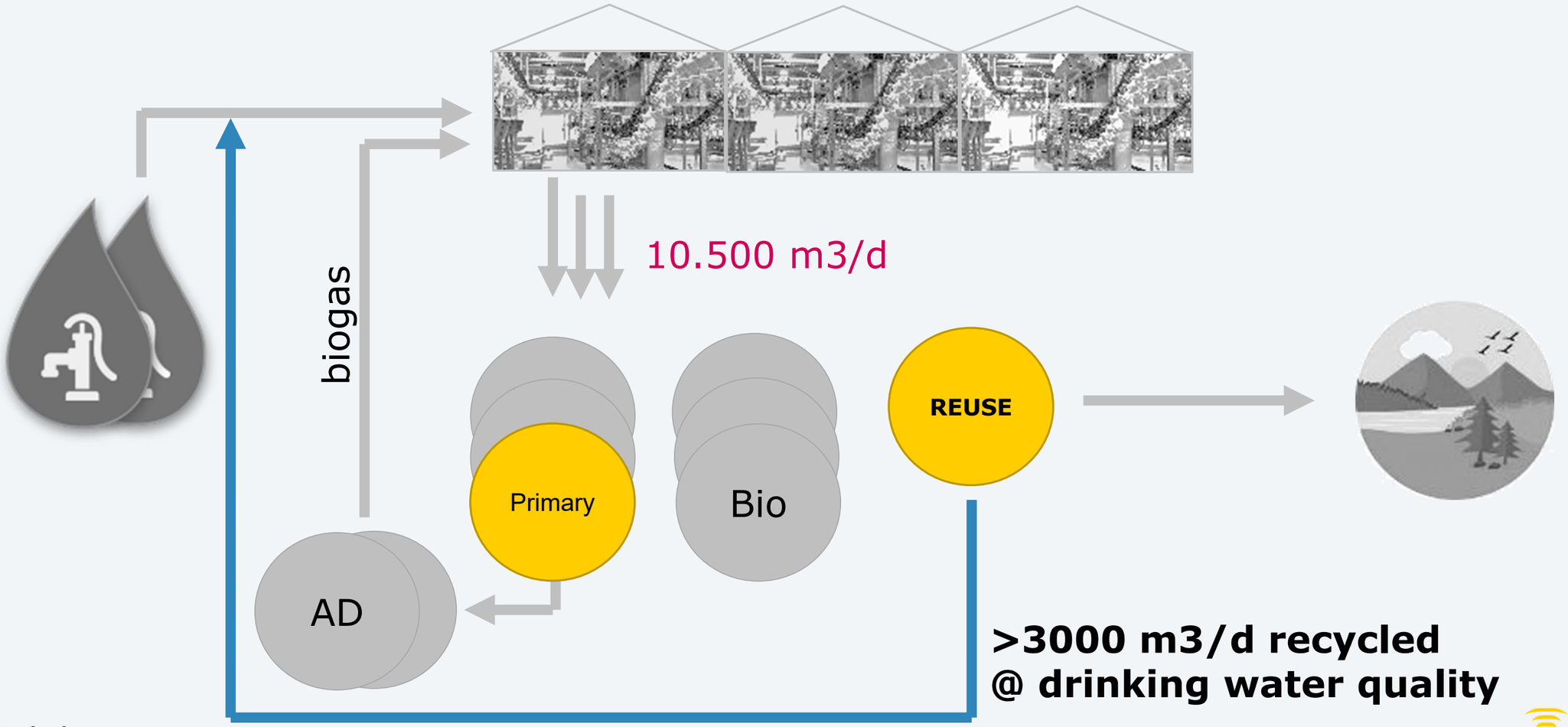
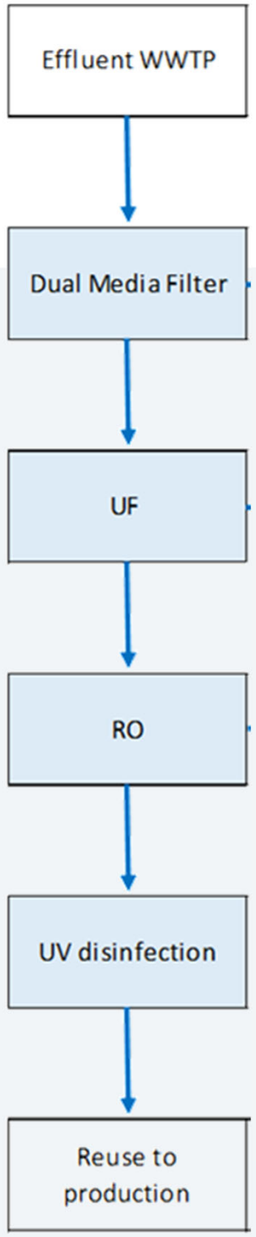
Central Europe case:

2019 with REUSE



Central Europe case:

2017 reuse pilot trial



Main goals:

- proof drinking water quality

- proof stable performance

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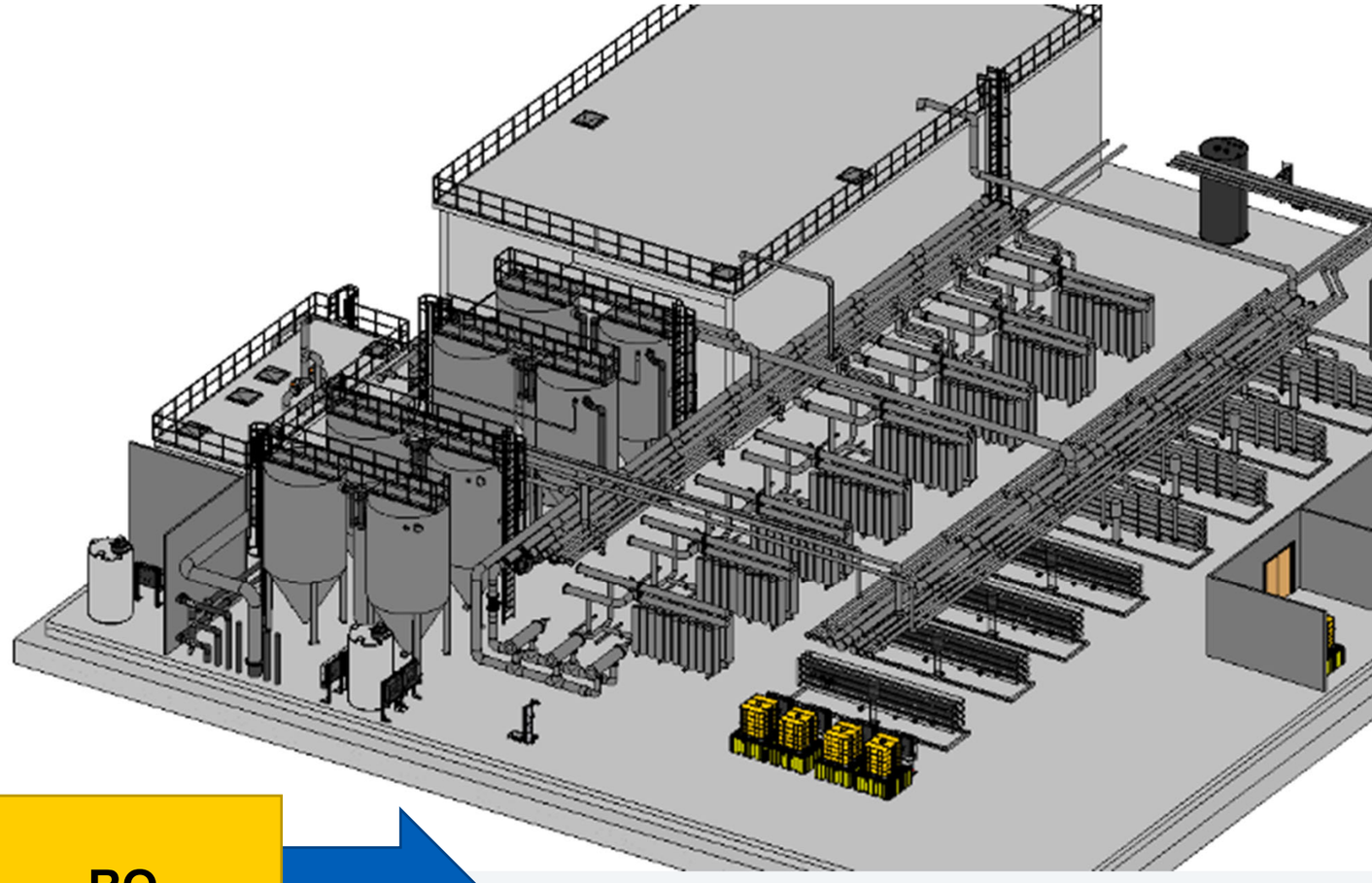
Central Europe case:

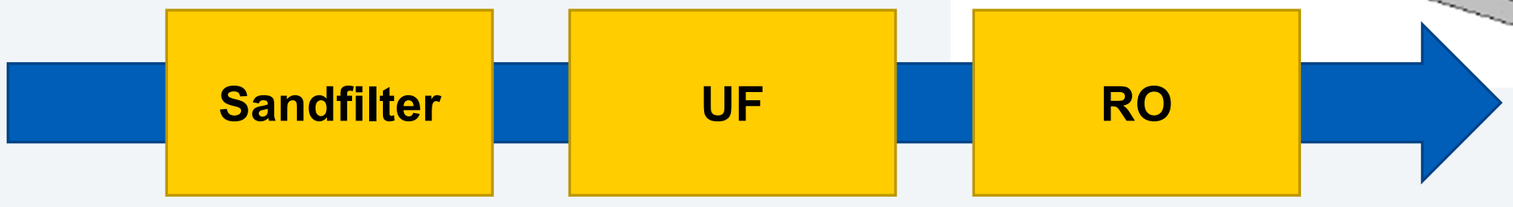
2018 reuse full scale design

8000 m^3/d water reuse

- 8 lines of 1000 m^3/d each
- Initial start with 4000 m^3/d
- From WWTP effluent
- to drinkingwater for reuse

- **Sandfilter** for TSS removal
- **UF** for bacteria and virus removal
- **RO** for removal of dissolved materials
- **Final disinfection** by hypochloride





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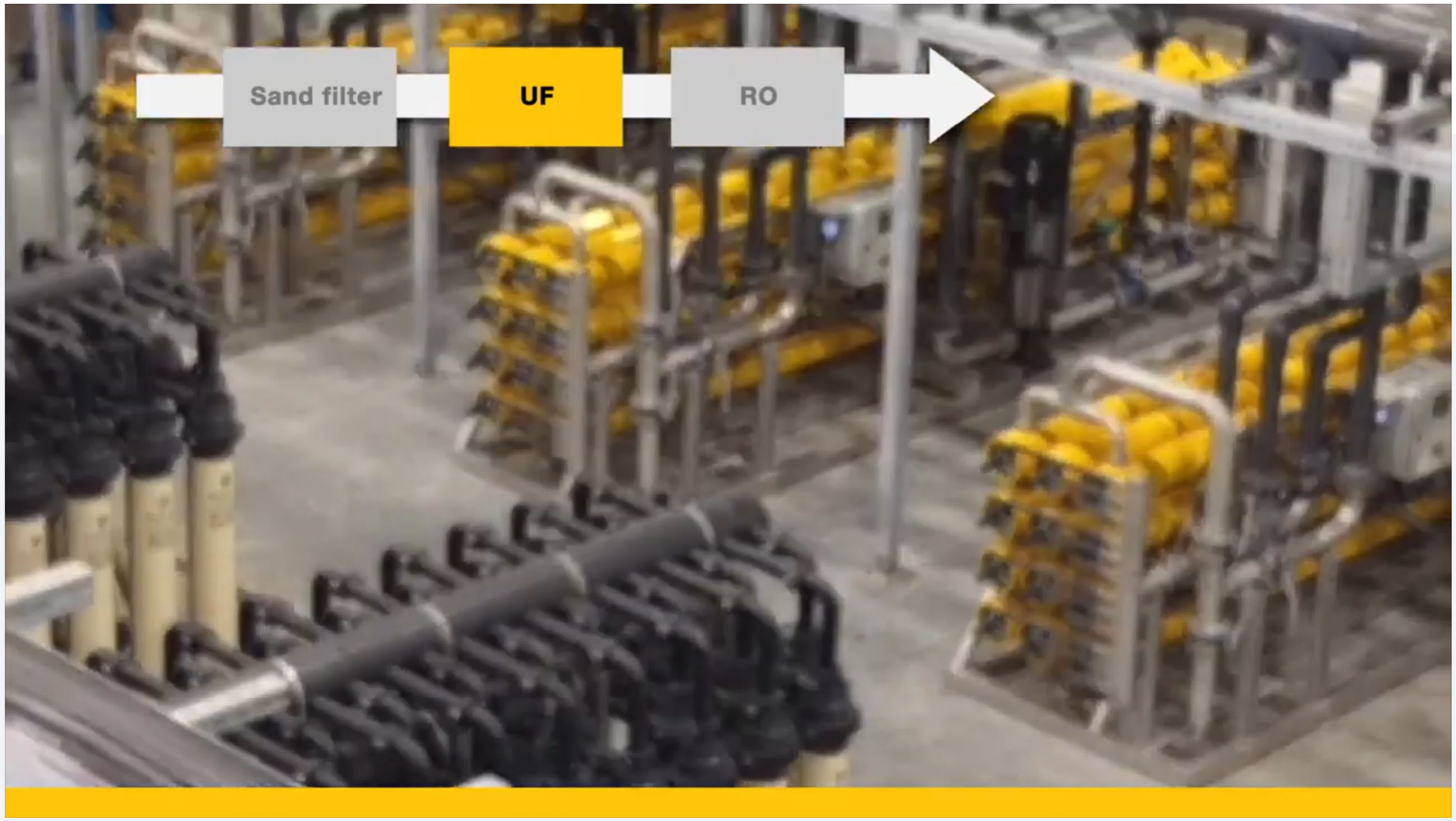
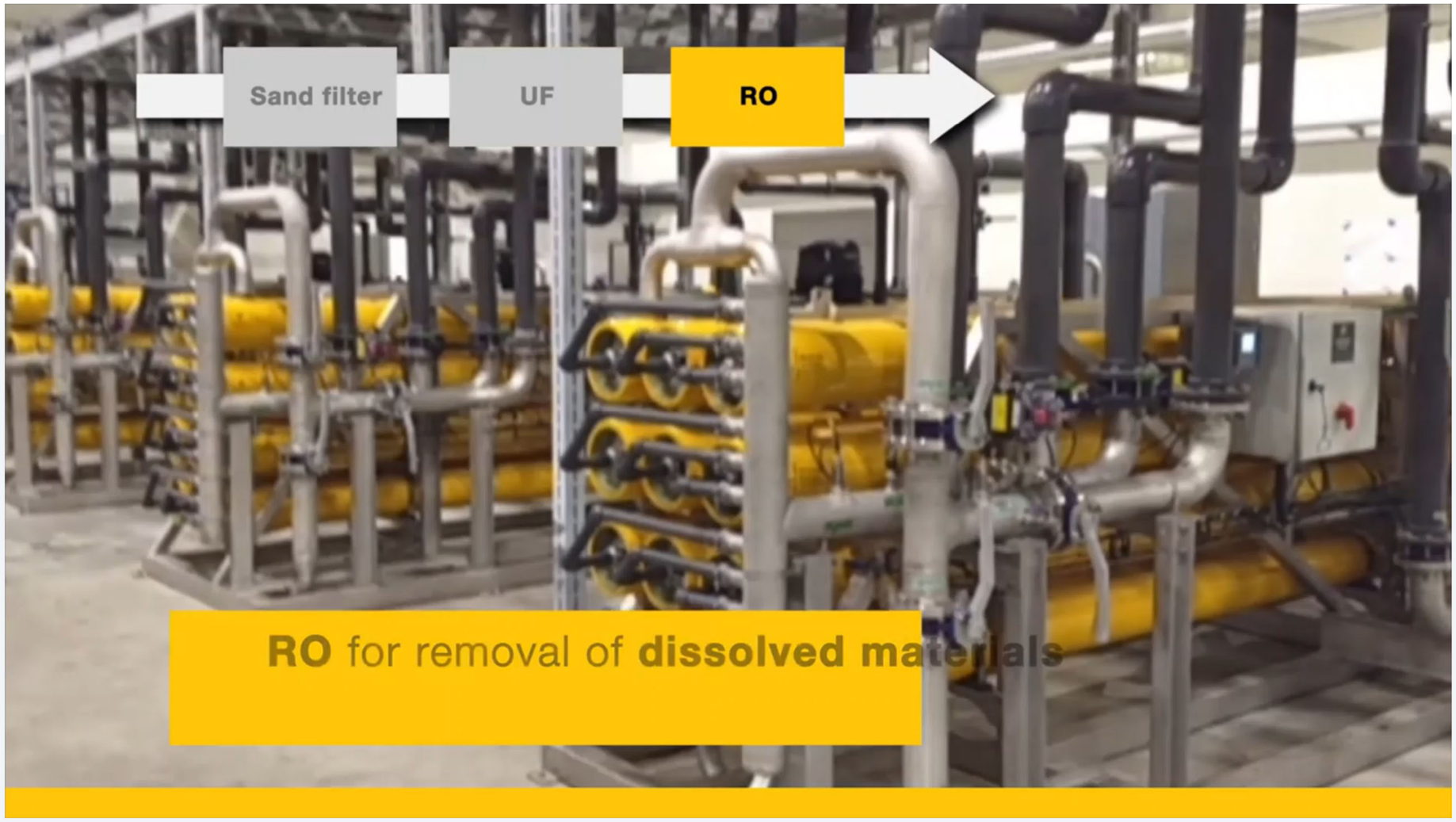
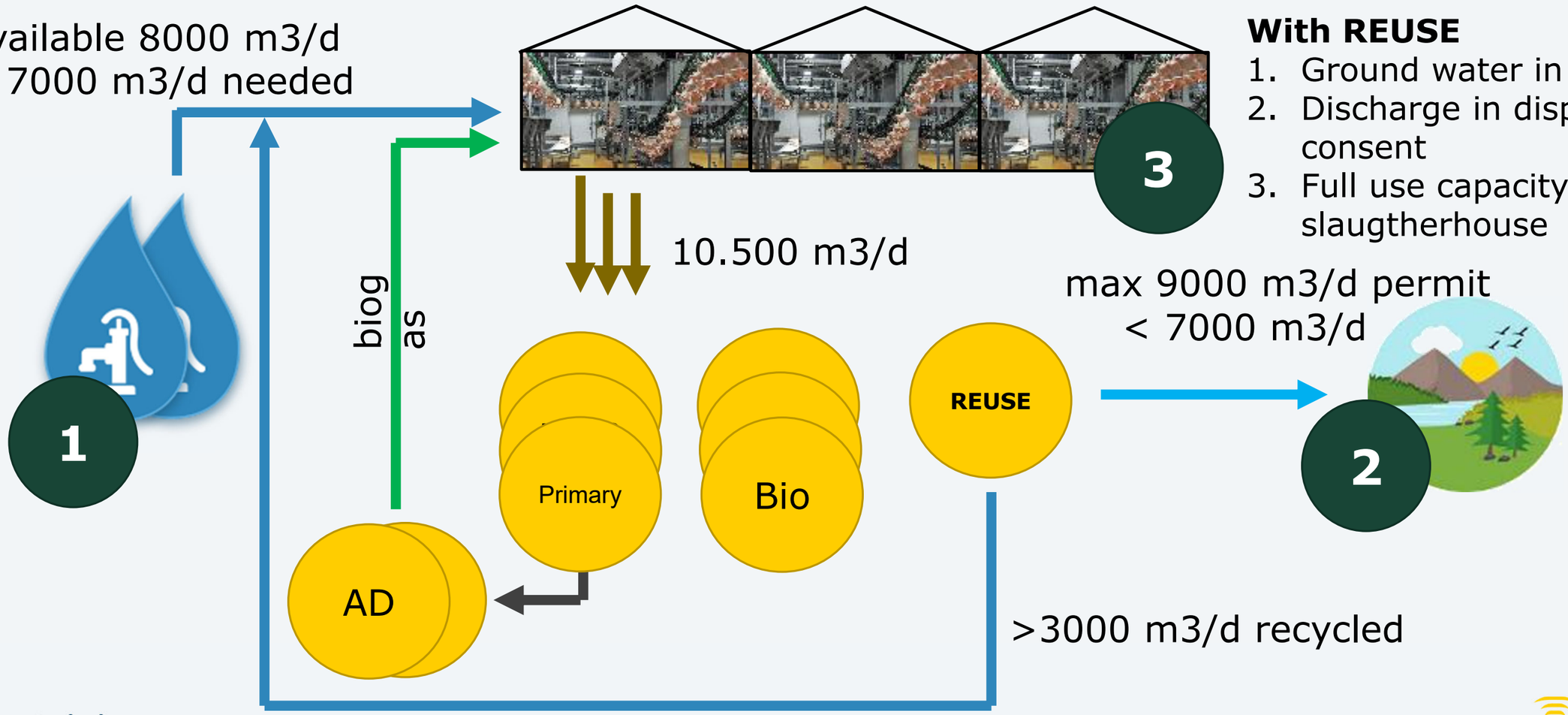
Sand filter
UF
RO


Sand filter
UF
RO


Sand filter
UF
RO
RO for removal of dissolved materials

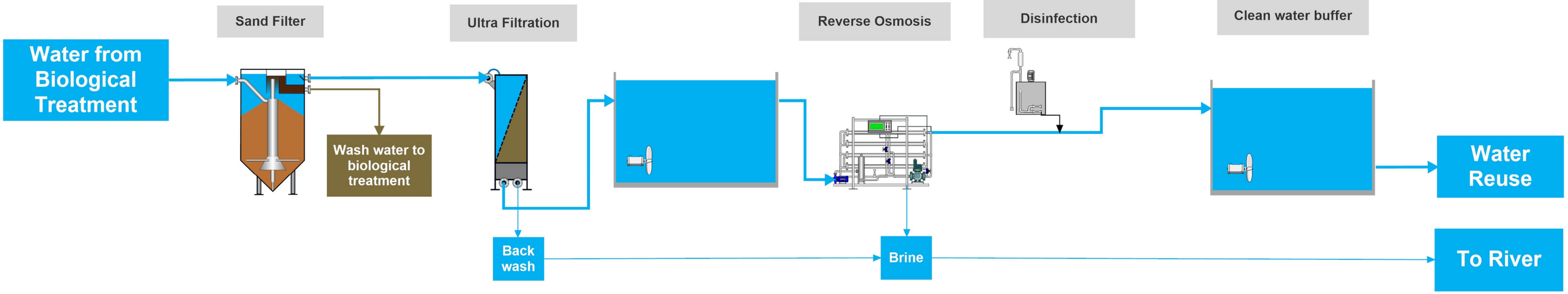
Central Europe case:

2019 with REUSE



With REUSE

1. Ground water in balance
2. Discharge in disposal consent
3. Full use capacity slaughterhouse



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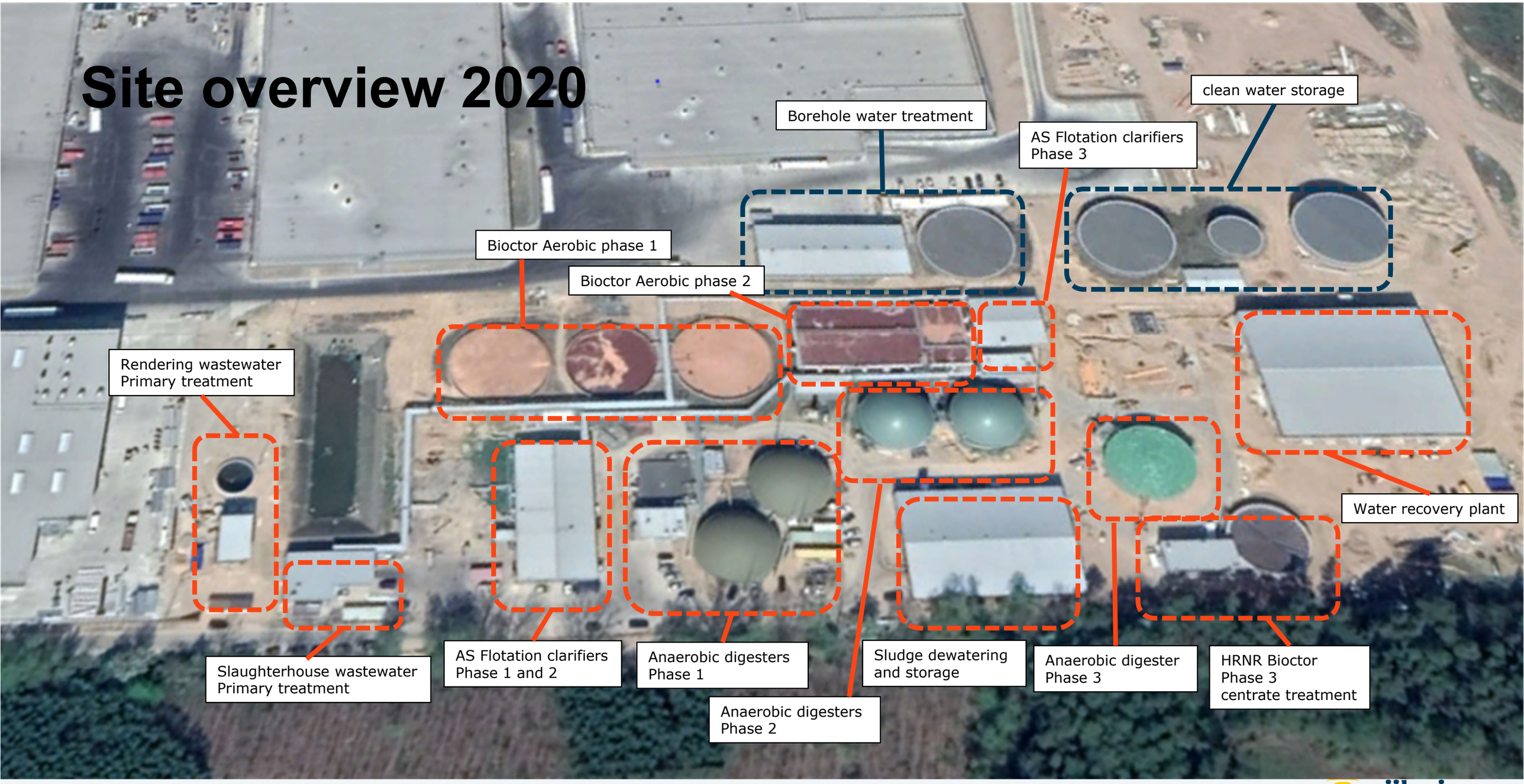
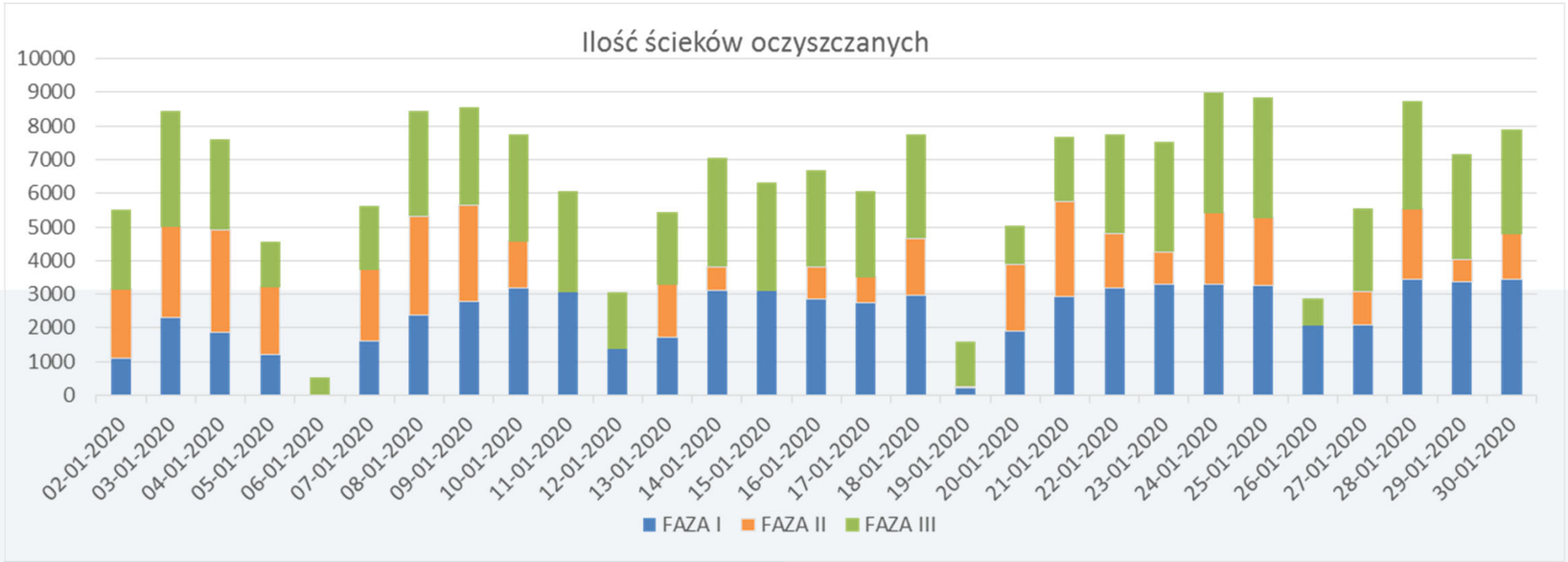
Site overview 2020

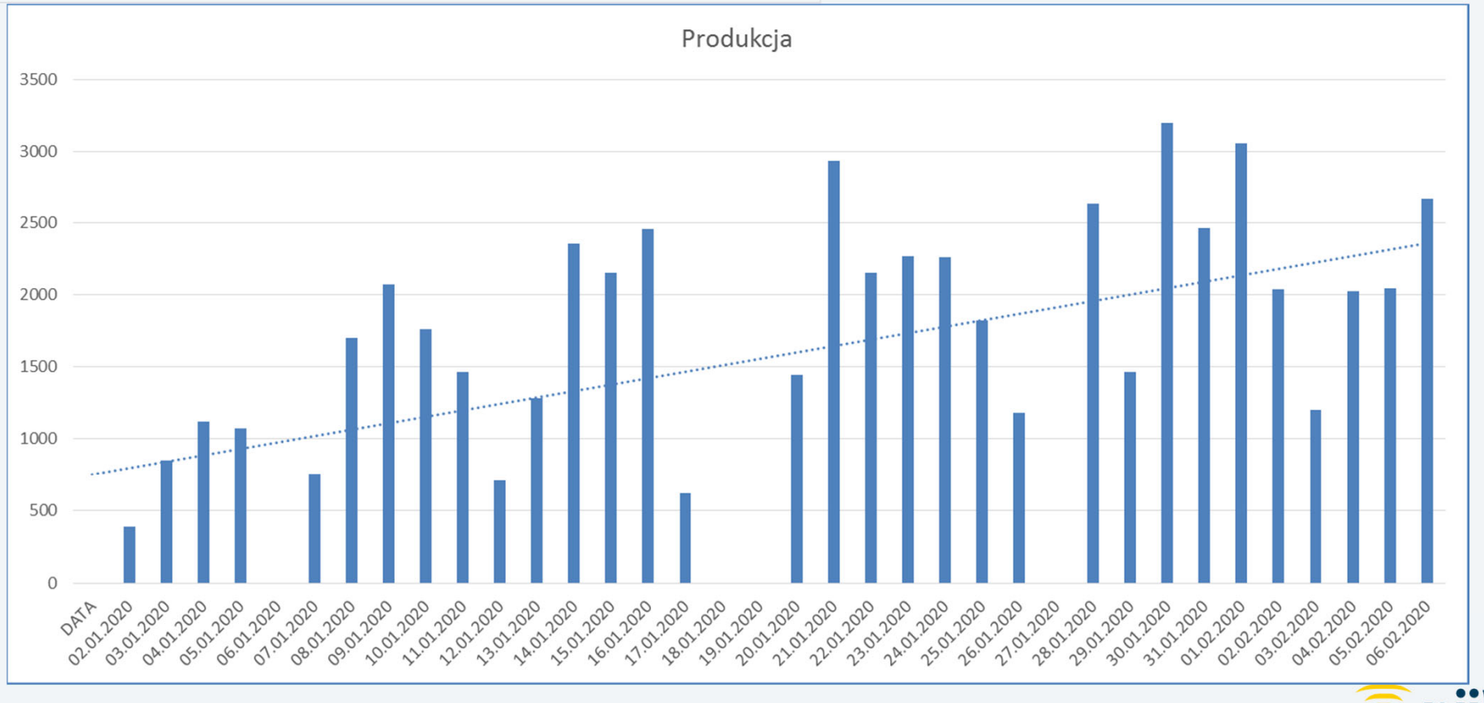
Site overview 2020





WWTP capacity and hydralic patern

Reuse production



Water Reuse LESSONS learned

Rethinking (Waste)water to ‘waste’water

- WWTP is not the outlet to river but inlet to water production

- Any hick-up of WWTP could immidiately influence the operation of the water production

Good housekeeping Slaughterhouse is KEY; **quality IN = quality OUT**

Drinking water **approval** on REUSE facility

Both WWTP and REUSE facility do need to be in technical optimal shape; **good maintenance**

Know-how of operational staf needs to extended and focus on technology interfaces

WWTP and REUSE work together as one organic mechanism

Why is WATER reuse a license to operate?

- Water **Reduction** by good house keeping
- **Recover** biogas and water
- **Reuse** water
- Energy **Reduction** by reuse water


For more information visit:
https://nijhuisindustries.com/solutions/water-recycle-reuse-solutions
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