

JETS

Bærekraft i praksis

Øyvind Tørlen, CEO
15.3.2022

The Jets™ story

- Established in 1986 by Olav Hofseth and the Gjerde brothers
- Started as a supplier to the maritime markets
- Successfully expanded into several other markets
- Built on technological innovations





500.000
vacuum toilets sold



More than **30 years** of
experience and
development



Over **40.000** installations
worldwide.



Global presence and network
of representatives



Daily savings of **20 mln litres**
of drinking water*



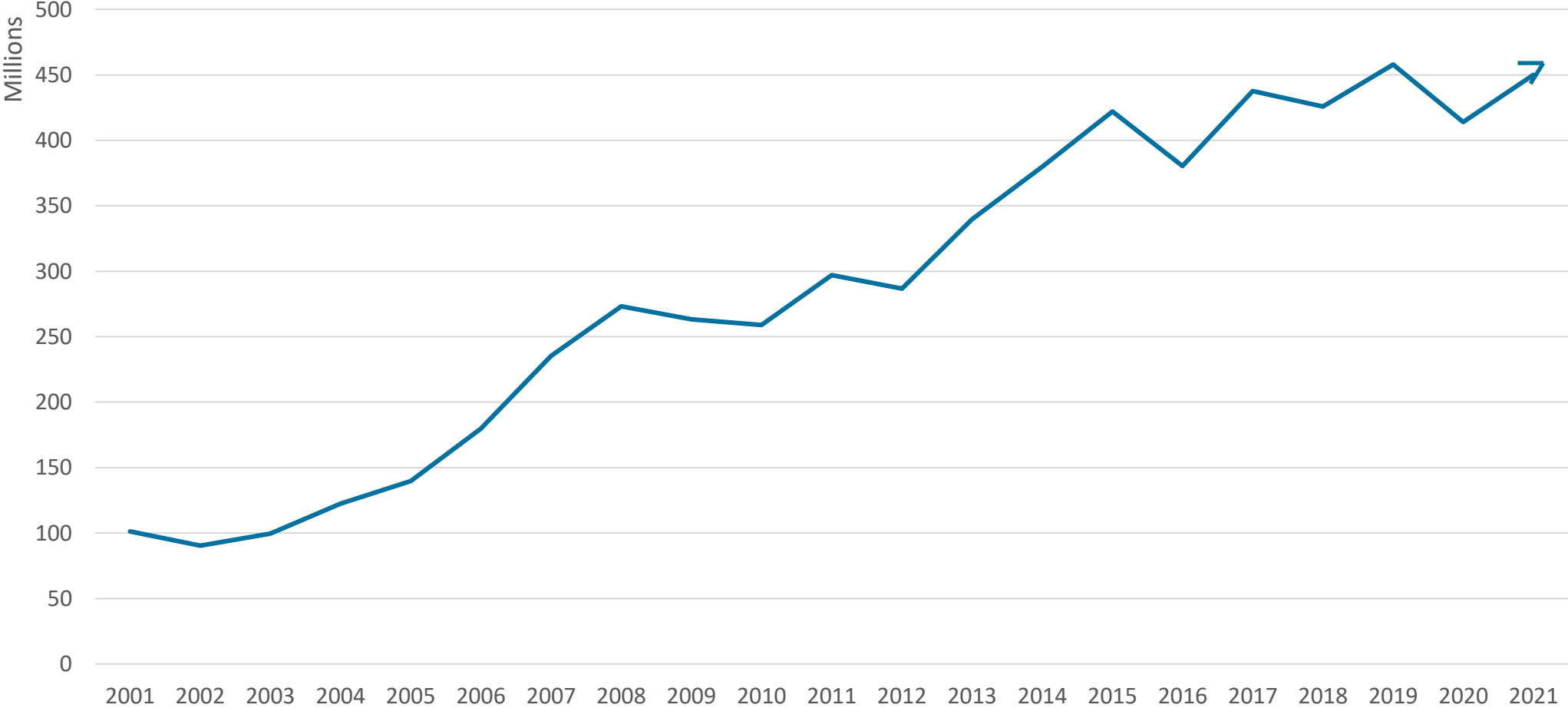
175 employees



80% export sales

*Compared to traditional gravity toilets.

Jets turnover 2001 - 2021





JETS VISION AND PURPOSE

VISION

Improving the world through pioneering technology that minimises stress on the planet's most vulnerable resources.

PURPOSE

We help save our planet by reducing the world's water and energy consumption.

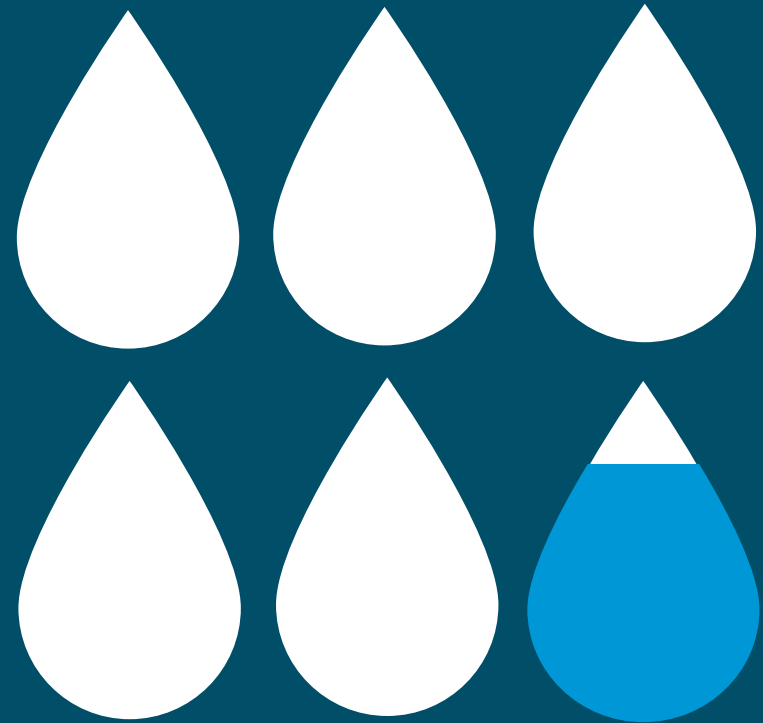
Pioneering
eco-efficient
technology



Water down the drain

A modern WC typically flushes 6L of water down the drain

A JETS toilet typically uses only 0,8L of water



Market Segments

LAND MARKETS



Retail

Smart and efficient removal of condensate water in supermarkets



Construction

Sanitary solutions for commercial buildings and Green Buildings



Cabins & Homes

Flexible options for any cabin or home design



Events

High standard sanitation for events and festivals of any size



Emergency & Defence

Safe, hygienic toilets rapidly deployed anywhere in the world



Worksites & Public

Temporary and permanent installations for shared facilities

MARITIME MARKETS



Merchant vessels

Reliable operation and Jets support and service throughout the ship's lifetime.



Navy & Coastguard

When failure is not an option, choose a well-proven and highly reliable system



Cruise & Passenger

From one-toilet cabins, to the worlds largest cruise ships



Rig & Offshore

Quality, reliability and strong support and service



Yachts

High quality equipment with award winning design for a luxury interior



Special vessels

A smarter sanitary system for any type of vessel

AFTERMARKET

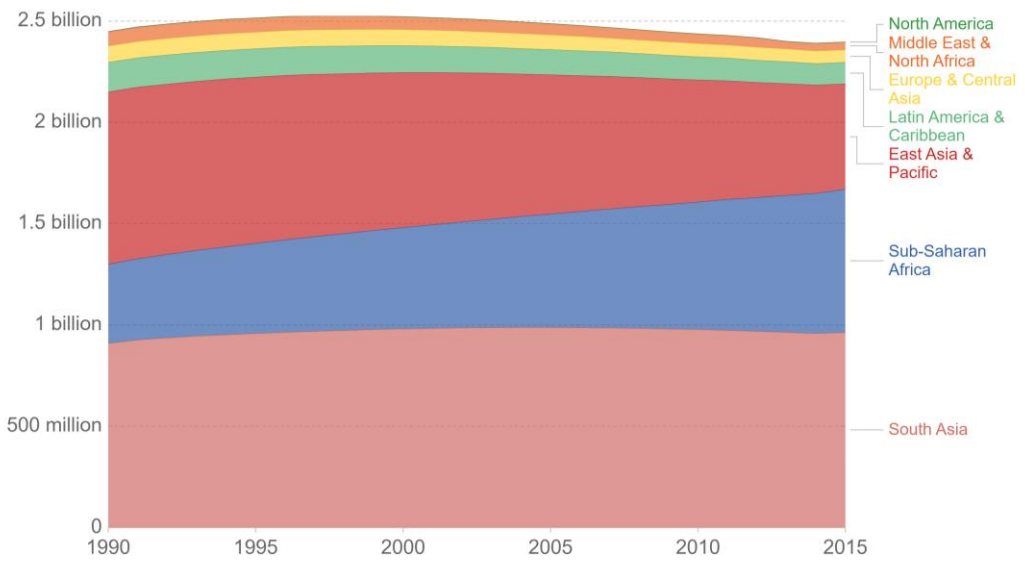


Spare parts
Retrofits
Upgrades
Service and warranty

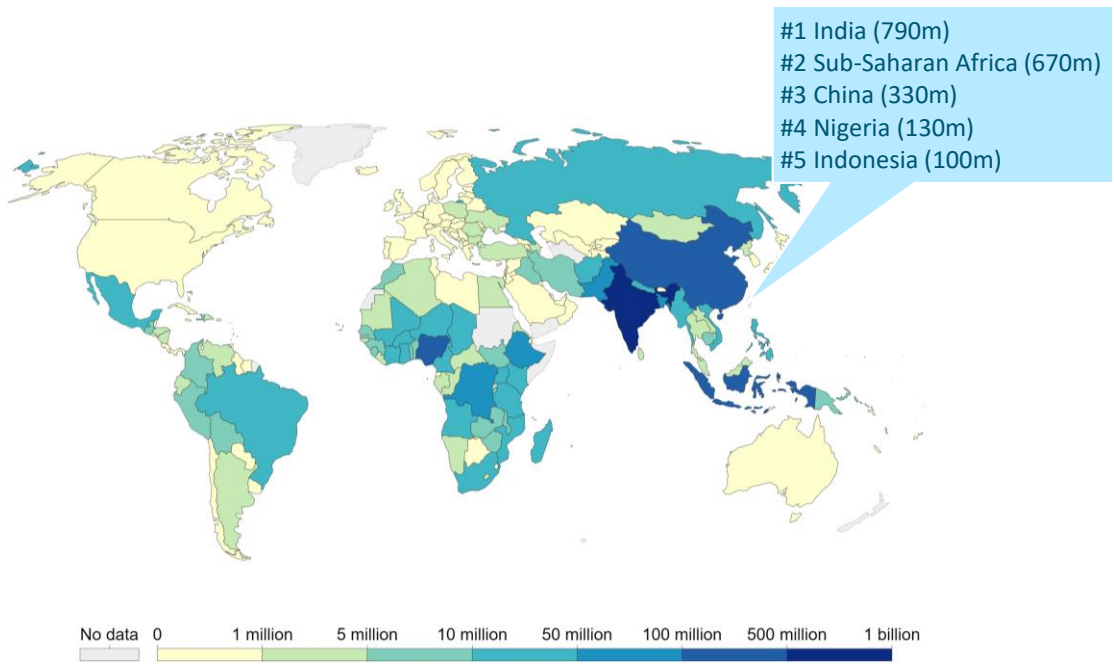
Over the last 25 years, the number of people without access to improved sanitation has been stable at ~2.4bn, mostly living in Asia and Africa

Number of people without access to improved sanitation facilities, 1990-2015

Improved sanitation facilities includes flush/pour flush (to piped sewer system, septic tank, pit latrine), ventilated improved pit latrine, pit latrine with slab, and composting toilet



Number of people without access to improved sanitation facilities, 2015



Source: Our World In Data

But it is not only a challenge in developing countries

– 20% of Americans are responsible for their own sewage-disposal

- 2m** More than 2m Americans live **without basic access to safe drinking water and sanitation**
- 44m** More than 44m people are served by **water systems that recently had health-based Safe Drinking Water Act violations**
- 20%** 20% of Americans are septic tank owners - they are **responsible for the maintenance of their own sewage-disposal system**
- 12%** 12% of people living in rural areas **report issues with their sewage system**
- 50k** 23 000 to 75 000 **sanitary-sewer overflows** happen per year (11-35 billion liters of untreated waste)

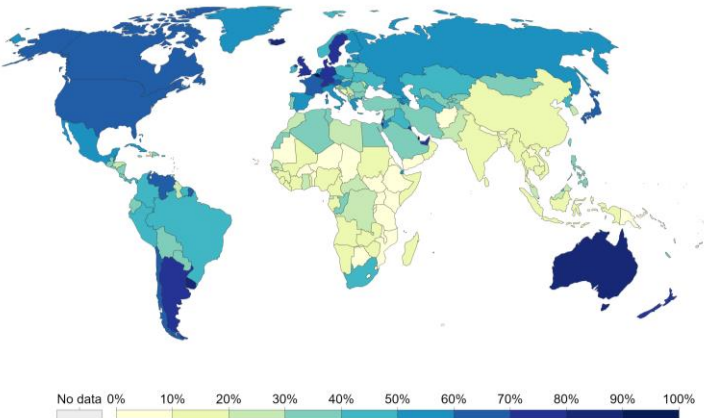
Water access challenge in the US



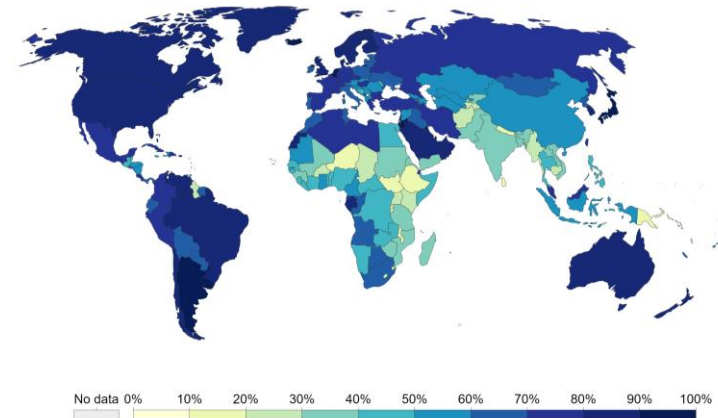
However, with continuous urbanization, increases also the challenges of access to clean water and sanitation, especially in developing countries ...

Share of population living in urban areas

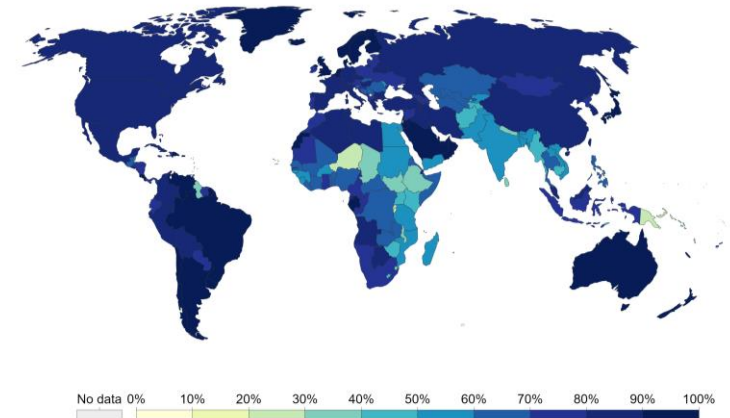
1960



2015

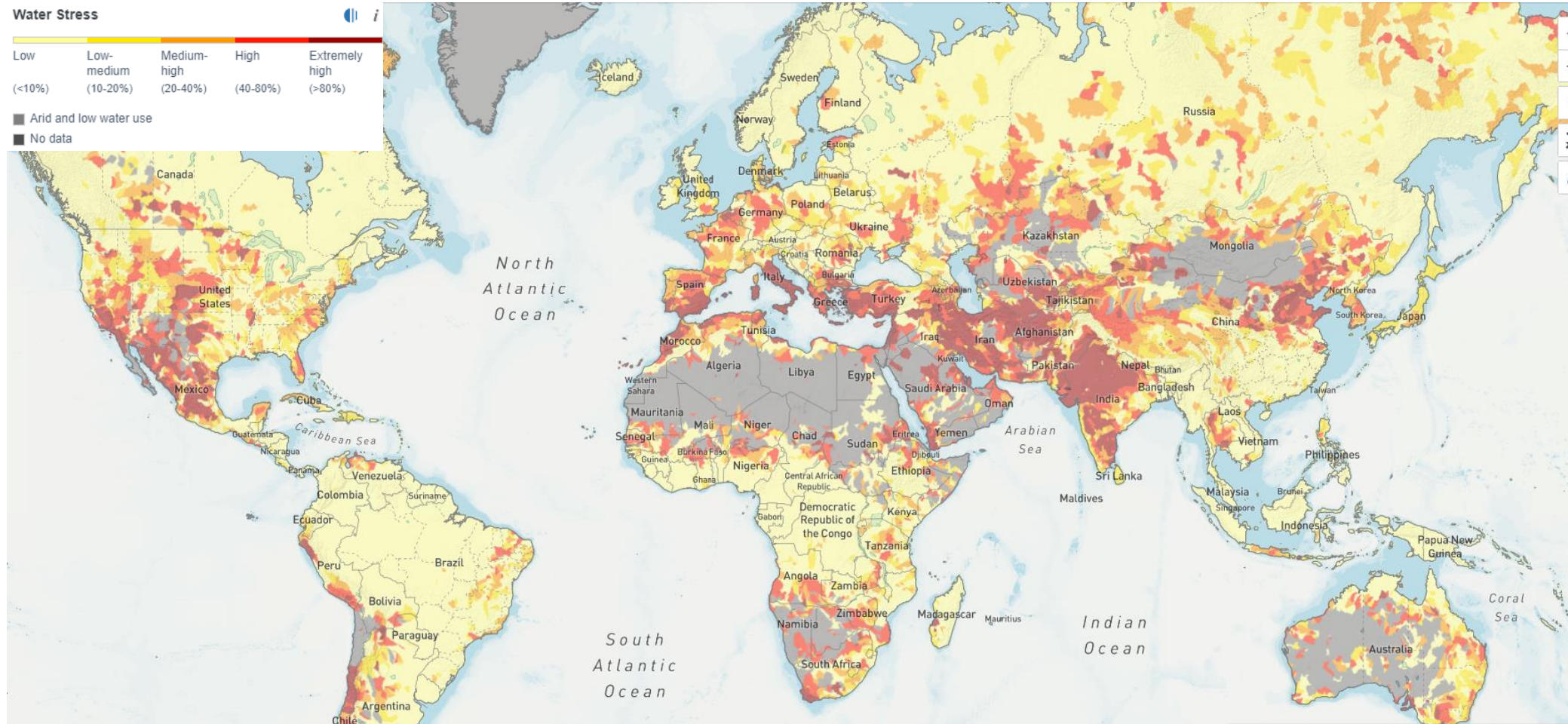


2050



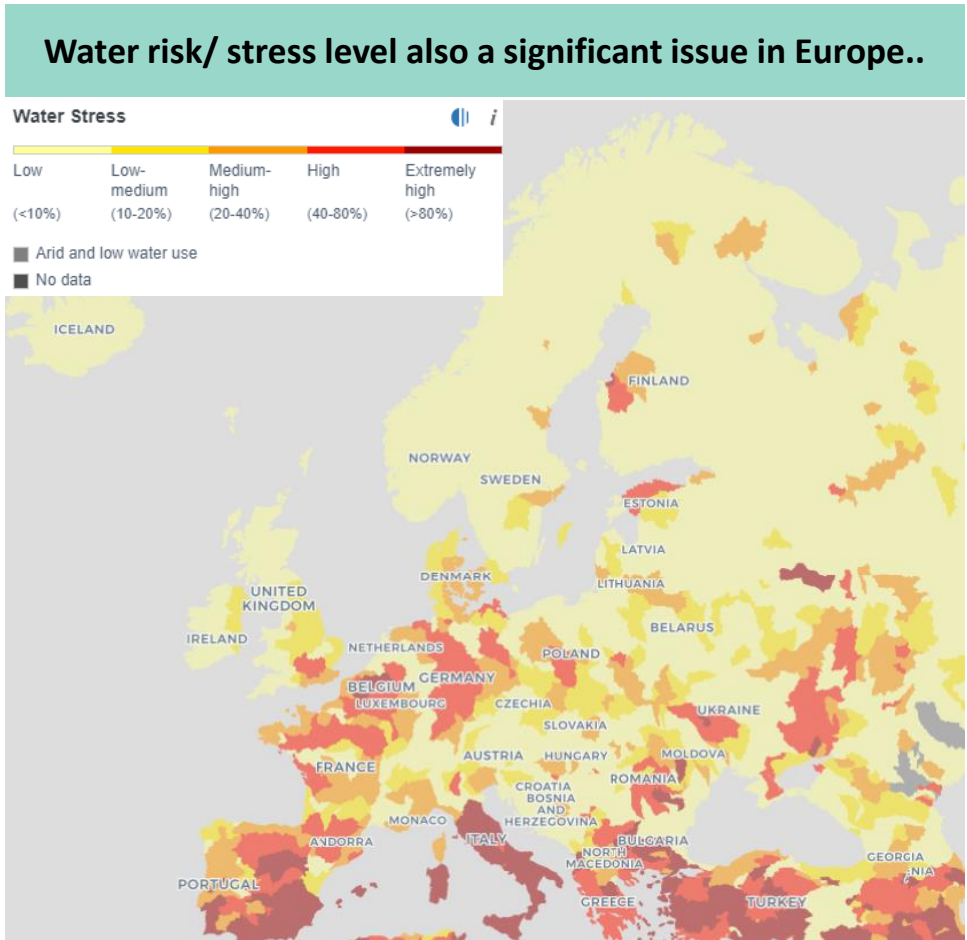
Source: Our World In Data

... and water stress levels are a major global issue...



Source: Water Reuse Europe; World Resource Institute

... and also an increasing issue in Europe



... and expected to continue to grow in the coming years

More than 50% of EU river basins expected to be affected by water scarcity by 2030

Industry (55%) is the biggest abstractor of water in Europe, followed by **agriculture (24%)**, although agricultural use is predicted to increase sharply over the coming years

Annual renewable freshwater resources per inhabitant decreasing due to several reasons:

-  Climate change
-  Growing industry requirements
-  Population growth/urbanization
-  Individuals' increasing water footprint

Less than 3% of urban wastewater is reused in the whole of Europe

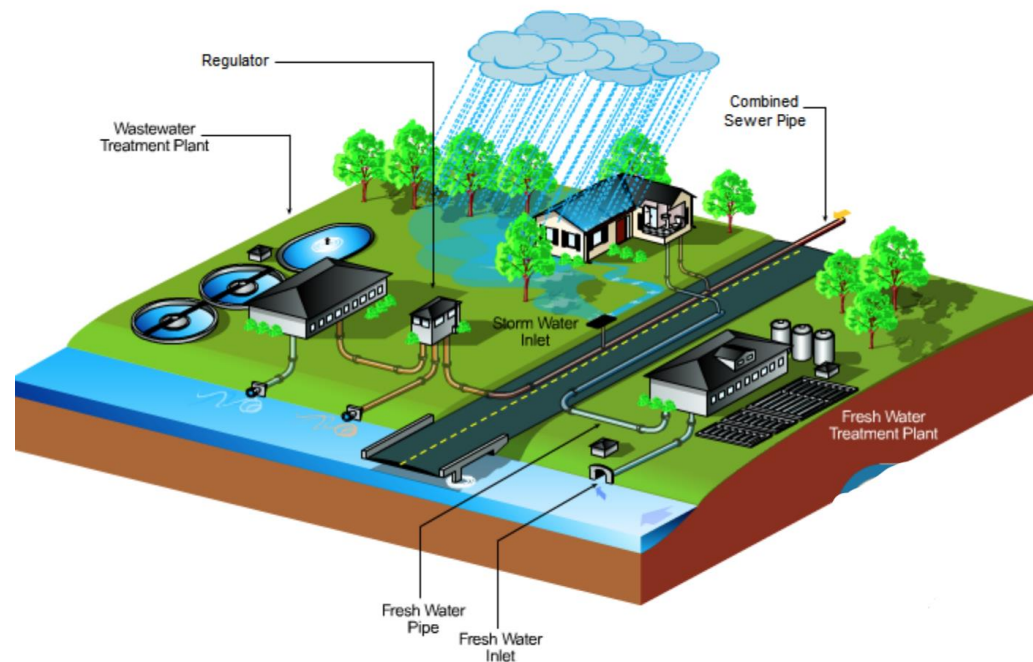
Source: Water Reuse Europe; World Resource Institute

Source separation



Traditional sewage systems in most developed countries do not separate greywater and blackwater

Traditional sewage system

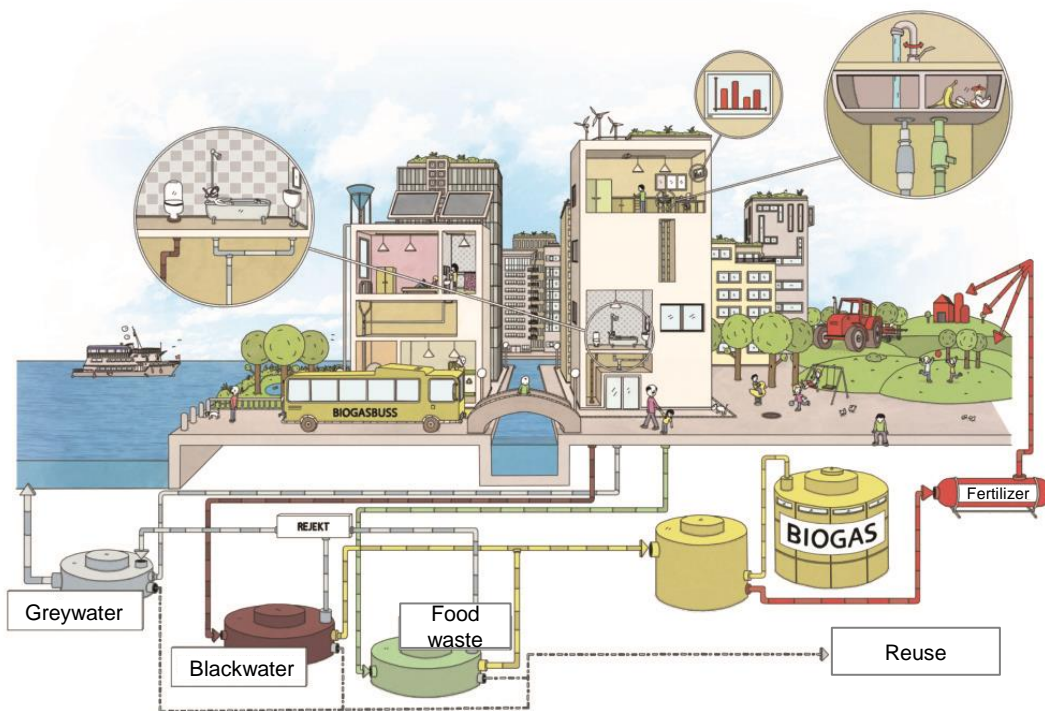


What are the disadvantages with today's system?

- ❖ High availability of water required (high water consumption)
- ❖ Efficient only in concentrated settlements
- ❖ Long planning horizons and slow population growth required
- ❖ High (up-front) investments in central infrastructure with long construction/lead times
- ❖ Inflexible system with fixed capacity and transport over long distances
- ❖ Elimination of nutrients instead of reuse (in Germany traditional WWTP need to be upgraded to recover valuable materials)
- ❖ Diverting water from sources of origin (dilution of groundwater sources)
- ❖ Risks of overflows and contamination/pollution when combined sewer system cannot handle storm water

New Sanitation as circular and more sustainable concept...

New Sanitation System



What is different compared to the traditional system?

- ✓ Circular and more sustainable system
- ✓ Source separation (greywater and blackwater) to reduce water, energy and CO2 and reuse and recover materials and energy
- ✓ Reuse food waste onsite, increasing nutrient content of concentrated blackwater and reduced waste management cost
- ✓ Reuse heat from greywater to provide heat to households
- ✓ Vacuum toilets to reduce water and concentrate blackwater
- ✓ Lower infrastructure cost requirements for newbuilds/ greenfield investment

... aims to mitigate significant issues with existing water and sanitation infrastructure and provides opportunities for innovation and growth

Still many with limited access to sanitation and clean water ...

- An estimated **2.4 billion** people are still without improved and **13%** of the population lives without any form of sanitation
- Poor sanitation cost the world around **USD 223 billion** in 2015

... in a world that faces increasingly shortages of water, ...

- **22%** of the world's water basins are stressed today, accounting for **51%** of withdrawn water volume
- Water scarcity to intensify over next 20 years, esp. across countries with limited scarcity today



... relying mostly on costly and aging water and wastewater infrastructure ...

- The EU 28 estimates that it will be necessary to invest ca. **EUR 25 billion** annually to rehabilitate and construct new sewers and wastewater treatment plants

... as well as the opportunity to mitigate climate change.

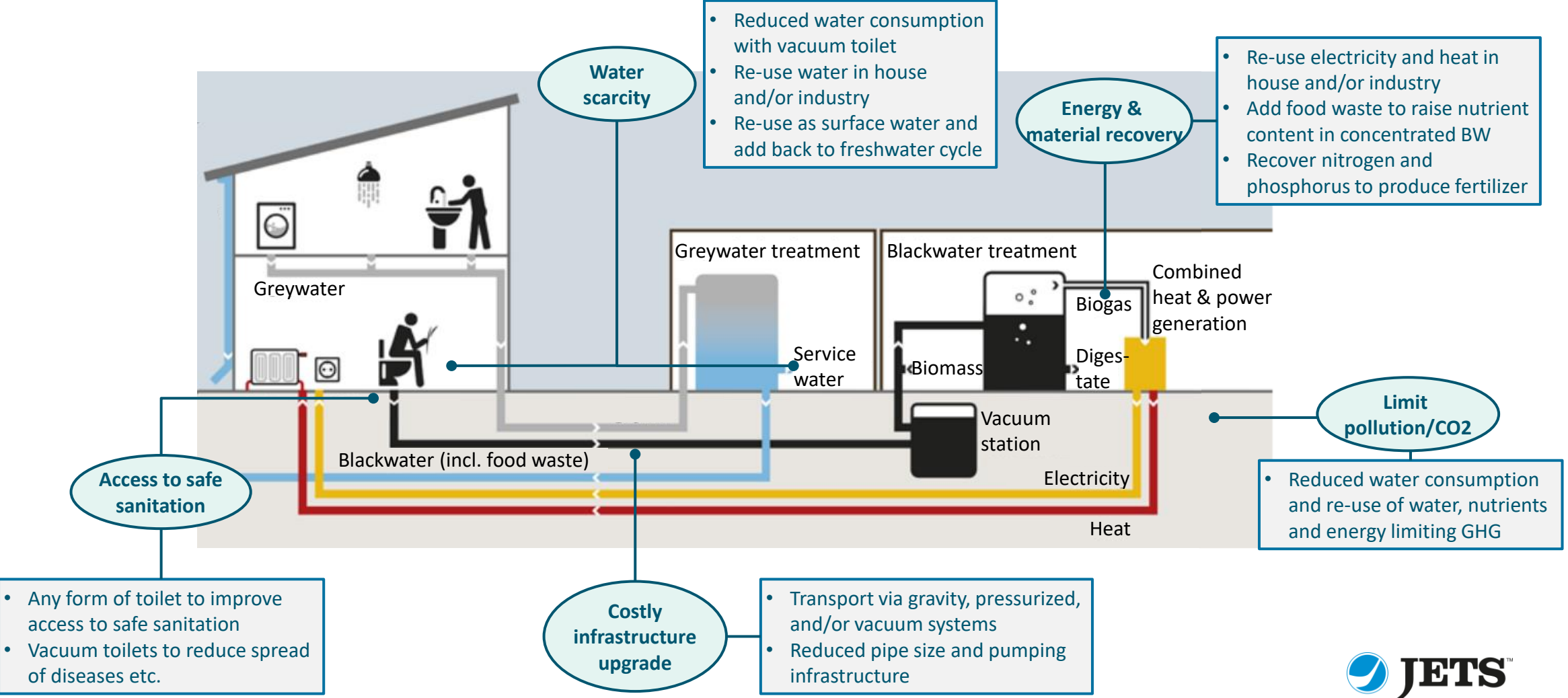
- Wastewater treatment plants account to **3%** of greenhouse gas (GHG) emissions globally
- Treating wastewater reduces its GHG emission by **one-third**

... and ignoring the untapped potential of material and energy sources ...

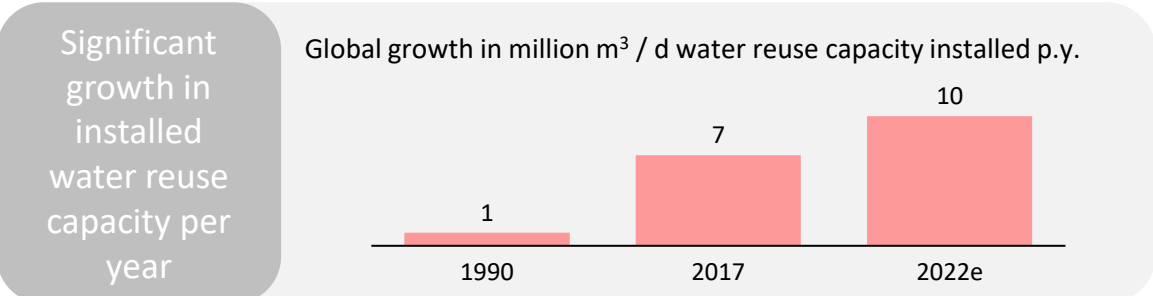
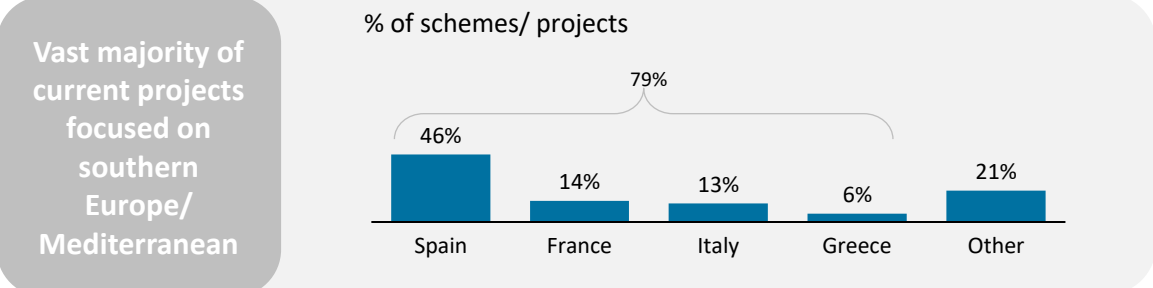
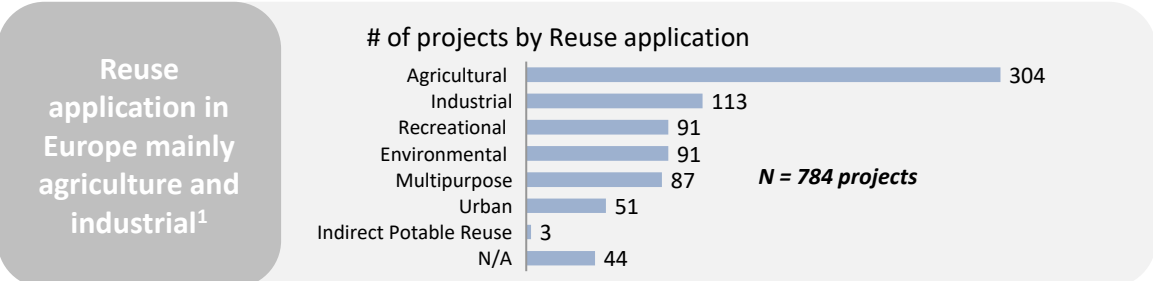
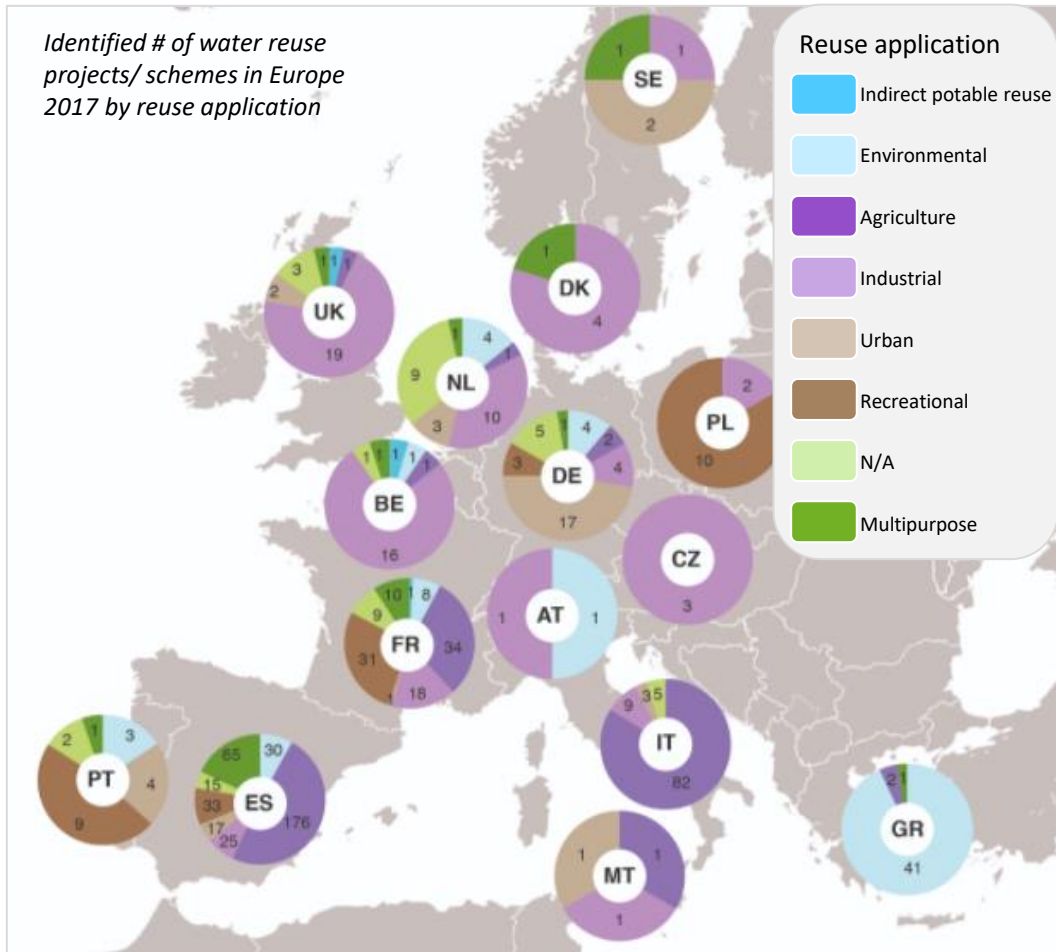
- Only **0.9bn out of 40bn** m³ treated wastewater is reused in the EU
- Greywater accounts for **75% up to 90%** of wastewater volume per household



Five main issues underly the new sanitation trend



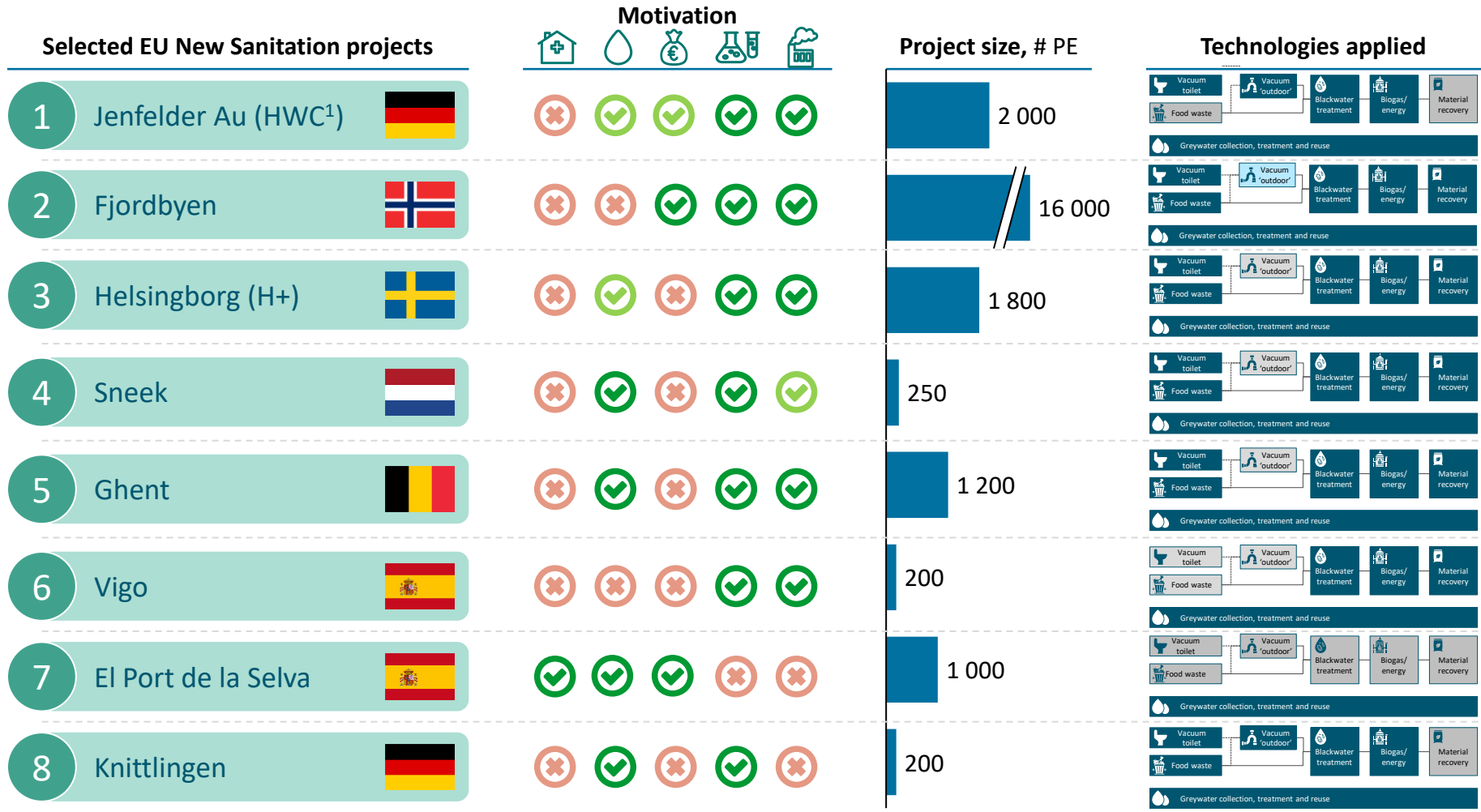
Projects/schemes for water reuse in Europe starting to pick up pace



1. Review of sector in 2017 by Water Reuse Europe
Source: Water Reuse Europe state of the sector 2020;

Looking at selected projects in Europe, most New Sanitation elements are being implemented in combination

- Access to safe sanitation
- Water scarcity
- Costly infra. upgrade
- Energy/material recovery
- Limit pollution/CO2



- ### Selected challenges
- Vacuum toilet and sewage system acceptance and system robustness
 - High initial investments and support from public authorities/EU required
 - Nutrient recovery from wastewater is still too expensive compared to conventional fossil sources
 - Challenges with removing pollutants sufficiently from wastewater
 - Classification of treated greywater as drinking water
 - Water prices still very low (not yet a driver for New Sanitation)

1) HWC = Hamburg Water Cycle; PE = Person Equivalent

Pioneering
eco-efficient
technology

JETS™ Solutions



Toilet systems

- Water saving
- Reliable operation
- Hygienic



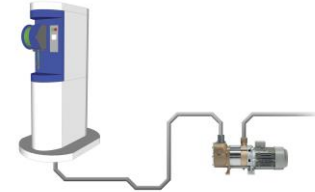
Greywater treatment

Safe and environmentally friendly wastewater solution for cabins and homes.



Sewage treatment

Designed to minimize the impact that humans have on the oceans and marine life.



Discharge stations

Marina pump-out stations can be scaled to suit any harbour - using the same core technology.



Condensate water removal

A smarter, simpler and more profitable system for transporting condensate water.

Jets™ Vacuum Toilets



JETSTM JADE wall



JETSTM JADE floor



JETSTM PEARL



JETSTM CHARM

VACUUMATOR™ PUMPS BY JETSTM



JETSTM ULTIMA



JETSTM EDGE SMALL



JETSTM EDGE MEDIUM



JETSTM EDGE LARGE



JETSTM EDGE X-LARGE



