Clean & Circular Water
Fostering healthier cities and regions

7 June 14:00 – 15:30
EU GREEN WEEK 2021 PARTNER EVENT

ZERO POLLUTION
for healthier people and planet
Introduction

Moderation: Tamsin Rose, Senior Fellow, Friends of Europe
How much do you know about water legislative framework?

I'm an expert - ask me anything! 5%

I know a bit - tell me something I don't know! 62%

I'm a newcomer - tell me everything! 33%
**Agenda**

- **Introductory remarks**
  Oriana Romano (keynote speaker), Head of Unit, Water Governance and Circular Economy, OECD

- **Panel discussion**
  Marieke Schouten, Alderman of the municipality of Nieuwegein and member of the Committee of the Regions
  Filippe Araujo, Vice-Mayor of the city of Porto and Chair of the Environment Forum of Eurocities
  Carla Chiaretti, Head of Policy, EurEAU
  Nele-Frederike Rosenstock, Directorate-General for Environment (DG ENV), European Commission

- **Q&A**

- **Concluding remarks**
  Sari Rautio, Member of the Hämeenlinna City Council and of the Committee of Regions, CEMR Spokesperson on Environment
Introductory Remarks

Oriana Romano Head of Unit, Water Governance and Circular Economy, OECD
Adapting urban water system to address climate change

Marieke Schouten, Alderman of the municipality of Nieuwegein and member of the European Committee of the Regions
Urban Circular Water in Porto
Filipe Araújo, Vice-Mayor of Porto
Chair of the Environment Forum of Eurocities

Clean and circular water: an opportunity to foster healthier cities and regions
7 June 2021
Porto.
A city shaped by water.
:: Our 360° vision. Key figures.

- Number of clients: 158,237
- Customer satisfaction level: 78%
- Average bill for a standard family: € 15,8
- Number of employees: 513
- EBITDA: 10,7 M€
- Extension of water pipe network: 820 km
- Water quality: 99.5%
- Non revenue water: 17%
- Extension of sewers network: 558.6 km
- Fulfillment of discharge criteria: 100%
- Extension of stormwater network: 660 km
- Extension of water lines: 85 km
- Number of beaches with Blue Flag: 8
- Number of visitors of Water House: 52,000
Porto: Becoming a Water Wise City
:: 17 principles grouped into four categories.

1 Regenerative Water Services
• Replenish waterbodies and their ecosystems
• Reduce the amount of water and energy used
• Reuse, recover, recycle
• Use a systemic approach integrated with other services
• Increase de modularity of systems and ensure multiple options

2 Water Sensitive Urban Design
• Enable regenerative water services
• Design urban spaces to reduce flood risks
• Enhance liveability with visible water
• Modify and adapt urban materials to minimise environmental impact

3 Basin Connected Cities
• Plan to secure water resources and mitigate drought
• Protect the ecological health of water resources
• Prepare for extreme events

4 Water-Wise Communities
• Empowered citizens
• Professionals aware of water co-benefits
• Transdisciplinary planning teams
• Policy makers enabling water-wise action
• Leaders that engage and engender trust

Source: IWA
Porto Circular Economy Roadmap
:: Priorities for water management by 2030

**Priority Axis 2:**
Ensuring the availability of natural resources and the environmental balance

- Reduction of non revenue water
- Energy efficiency in water distribution
- Extension of the smart irrigation network in the green spaces
- Reuse of treated wastewater
- Sewage sludge valorisation in agriculture
- Use of stormwater for non potable uses

Porto, Circular City in 2030
Urban Circular Water.
:: Porto WWTP as future resource recovery factories.

- WWTP with Tertiary Treatment
- Energy efficiency
- Clean energy production
- Wastewater reuse
- Nutrients recovery
- Bioplastics production
- Process efficiency
- Best available techniques
- New solutions for sludge treatment
- Emerging pollutants

- Freixo WWTP
- Sobreiras WWTP

- Daily volume of treated wastewater: 56,614 m³
- Compliance with discharge criteria: 100%
Porto Wastewater Treatment Complex.
:: New by-products and resources.

**WWTP**

- Energy consumption: 16,135 MWh/year
- Sludge production: 27,000 tons/year
- Wastewater discharge: 56,614 m³/day

**RESOURCE FACTORIES**

- Energy production: 17,655 MWh/year of biomethane (or green hydrogen) 70% of self-efficiency
- Biocomposite production (sludge): 13,900 tons/year
- Incorporation of biowaste: Up to 7,100 tons/year
- Reuse of treated wastewater: 20% to 100%

Emissions reduction: -20%
Thank you
A holistic approach to pharmaceuticals and microplastics in water

Carla Chiaretti – EurEau Head of Policy

Green Week 2021 - Clean and circular water – 7 June 2021
Who we are

~ EurEau is the European Federation of Water Services - 1975

~ 34 national organisations of drinking and waste water operators from 29 European countries

~ Both the public and private sector

~ Providing essential services: realising the human right to water and sanitation

~ Protecting public health and the environment
Zero Pollution hierarchy

Union policy on the environment shall be based on the precautionary principle and on the principles that preventive action should be taken, that environmental damage should as a priority be rectified at source and on the polluter pays principle.

<table>
<thead>
<tr>
<th>PROTECT HEALTH AND THE ENVIRONMENT</th>
<th>ENCOURAGE INNOVATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevent</td>
<td>Promote clean, ‘zero pollution’ production processes, safe and sustainable products and services by design as well as innovative tools, technologies, and behavioral change.</td>
</tr>
<tr>
<td>Minimise &amp; control</td>
<td>Promote modern and smart production processes, safe and sustainable product uses, services and business models, and digital solutions for tracking and reducing pollution.</td>
</tr>
<tr>
<td>Eliminate &amp; remediate</td>
<td>Promote zero pollution recycling, waste management, decontamination and remediation.</td>
</tr>
</tbody>
</table>

Figure 2: The zero-pollution hierarchy – reversing the pyramid of action, prioritising the approaches for tackling pollution
Micropollutants and microplastics

Lack of definition in legal texts: WRR and DWD

Households products: detergents, paints

Pharmaceutical products

Veterinary pharmaceuticals

Dyes and microplastics from textiles

Tyres and Road wear particles

Cosmetics

Pesticides Biocides
Microplastics

~ Lack of definition but analytical method to measure microplastics to be established in DWD

~ Microplastics could be included in the DWD Watch List

~ Conventional WWTPs can efficiently remove up to 80-95% of microplastics -> reaching 99%

~ Source control measures remain fundamental:
  ~ To minimise the risks of microplastics spills from overflows
  ~ To promote a true Circular Economy for sewage sludge
Micropollutants

~ Advanced treatment processes exist, but:
~ removal rate vary (0-99%), depending on substances and treatment technologies
~ often substance-specific: no one off-the-shelf-solution for removing all (ozone, activated carbon)
~ energy intensive – consumption increases up to 60%
~ more expensive - treatment costs may increase by 50%, the water bill by 20-30%
~ Treatment may generate hazardous transformation products -> disposal?
~ Sewage sludge + reclaimed water: circular economy
~ To be considered as complementary and as means of last resort
Recommendations

~ A life cycle approach to micropollutants when legislating

~ Water resources protection objectives mainstreamed in other policies

~ Control at source must be the starting point

~ Mitigation measures at other levels must be based on cost-benefit analysis

~ The polluter-pays principle - and **NOT** the “consumer-pays” principle - must be applied (EPR)

~ Use the ecolabel more extensively
Thank you for your attention


Carla Chiaretti
carla.chiaretti@eureau.org
@CarlaChr
Making the EU legislation waterproof

Nele-Frederike Rosenstock, Directorate-General for Environment (DG ENV), European Commission

Revision
of the
Urban Waste Water Treatment Directive

Clean and circular water: an opportunity to foster healthier cities and regions

07/06/2021
The zero pollution vision for 2050

“Air, water and soil pollution is reduced to levels no longer considered harmful to health and natural ecosystems and that respect the boundaries our planet can cope with, thus creating a toxic-free environment.”
Starting point: results of the Evaluation

**Lessons learnt**

- Effective tool – Tangible impacts
- Simple and targeted instrument
- Carrot and stick
- Benefits >>> costs

**Room for improvement**

- Remaining pollution
- Eutrophication
- Energy use, sludge management
- Governance – transparency/reporting
- Coherence with other legislation

*Source: European Commission, 2019, UWWTD Evaluation*
Preliminary ideas for policy measures*

### Remaining pollution
- Integrated management plans for collecting systems
- EU standards/ Objectives for SWOs, small agglomerations, IAS
- Risk-based approach with derogations

### Coherence with other legislation
- **Nutrients**
  - "Pre-designated" sensitive areas
  - Stricter standards (N&P) to support meeting WFD objective
  - Risk-based approach with derogations
- **Industrial discharges**
  - Pre-treatment
  - Permits for Small & Medium Enterprises

### New pollution
- EU thresholds for performance indicator substances for large UWWTPs
- "Hot spot" approach
- Application of Extended Producer Responsibility

### Fit for the future
- **Energy**
  - Energy audits + reduction targets + production?
  - GHG targets
    - Sludge & water reuse
    - Track & tracing sludge for agriculture
    - phosphorus recovery
    - Foster water reuse

### Governance
- Planning obligations
- Reasonable deadlines
- Updated monitoring
- Reporting via national datasets
- Transparency

---

* Missing in overview but included in IA: access to sanitation, microplastics, access to justice

_Hint:_
Disclaimer: all measures may be subject to changes over the course of the IA
## How to contribute?

<table>
<thead>
<tr>
<th>Type</th>
<th>Topic // Result</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roadmap</td>
<td>• Roadmap for impact assessment displaying first ideas for revision</td>
<td>July-September 2020</td>
</tr>
<tr>
<td>Conference with DE</td>
<td>• Nutrients and micropollutants</td>
<td>October 2020 (summaries and ppts available on CIRCABC)</td>
</tr>
<tr>
<td>Speed dates</td>
<td>• Targeted input on draft ideas</td>
<td>October 2020</td>
</tr>
</tbody>
</table>
| Technical workshops*        | • Joint EEA-ENV reporting workshop  
• Joint sludge and waste water in the circular economy and climate change  
• Costs and benefits                                                                                                                                   | March-May 2020 (summaries and ppts available on CIRCABC) |

### Ongoing and upcoming stakeholder consultations

<table>
<thead>
<tr>
<th>Type</th>
<th>Topic // measures</th>
<th>Time</th>
</tr>
</thead>
</table>
| Open public consultation          | All topics // measures  
Contribute here: [Have your say!](#)                                                                                                           | 28 April -21 July 2021                    |
| Technical workshop               | Integrated sewer management *(May TBC)*                                                                                                             | 22 June 2021                              |
| Stakeholder conference           | Preliminary findings of impact assessment                                                                                                          | October 2021                              |

If interested to join, please contact: ENV-URBAN-WASTE-WATER@ec.europa.eu
Thank you
Links for further information

• **Urban Waste Water Treatment Directive (1991):**

• **Website for the UWWTD review:**

  • **Including information about stakeholder consultations:**

• **Evaluation of the Directive (2019):**

• **Roadmap for the launch of the Impact Assessment of the Directive (2020):**

• **Joint Research Centre Modelling Report supporting the Evaluation (2019):**

• **OECD study on investment needs + Member State factsheets (2020):**
Discussion
How would you rank the following challenges regarding water management, from the top priority to the least relevant?

1. Infrastructure investments
   - [Bar: 5.21]
2. Resilience - Adaptation to climate change
   - [Bar: 3.79]
3. Water efficiency
   - [Bar: 2.86]
4. Micropollutants
   - [Bar: 2.71]
5. Complex regulations
   - [Bar: 2.71]
Concluding remarks

Sari Rautio, Member of the Hämeenlinna City Council and of the European Committee of regions and CEMR spokesperson on Environment