

UNLEASH THE POTENTIAL OF THE WATER-ENERGY NEXUS IN THE ENERGY EFFICIENCY DIRECTIVE

JOINT DECLARATION



EUROPEAN ALLIANCE TO
SAVE ENERGY

Creating an Energy-Efficient Europe



Technology & Innovation

JOINT DECLARATION

ON THE WATER-ENERGY NEXUS IN THE ENERGY EFFICIENCY DIRECTIVE

We, the undersigned organisations European Alliance to Save Energy (EU-ASE) and Water Europe (WE), call on the European Parliament and the Member States to unleash the potential of the Water-Energy nexus in the Energy Efficiency Directive (EED). The nexus holds the potential to generate large-scale energy and water savings across sectors and reduce greenhouse gas (GHG) emissions.

The Water-Energy nexus catches the strong interdependencies between water and energy across all water cycles in industry, agriculture, cities and the built environment. On the one hand, energy is essential in the production, transfer, distribution, heating, cooling and treatment of water and wastewater. On the other hand, producing energy consumes large amounts of water for cooling, heating, cleaning, storage or for biofuels and hydropower. In addition, many water treatment plants could become energy positive, producing more energy than what is required to run their own operations.

Saving water saves energy and saving energy saves water. Several technologies to seize this opportunity already exist and their environmental and cost benefits are underpinned by strong business cases. After decades of neglecting this potential, it is time for policy-makers to accelerate European efforts toward a clean energy transition and a Water-Smart Society.

WE and EU-ASE welcome the European Commission's effort to integrate the nexus into the EED. Yet, there remains considerable room for improvement, and we have joined forces to support policy makers and outlines 11 recommendations.

- 1. Secure that the energy efficiency first (EE1) principle applies across sectors and all water cycles and that the quality of water used is fit for purpose.** A systematic application of the EE1 principle to the water sector, for example, will support the achievement of its commitment to net zero carbon by 2050 in line with the COP26. In addition to reducing the unnecessary consumption and losses of energy and water, the EE1 principle will nurture new and innovative wastewater service innovation model promoting the production of energy from waste water, which will better reflect the value of water and resource recovery opportunities.
- 2. Create an enabling framework that ensure the delivery of all the benefits deriving from water efficiency.** This requires including energy savings through water efficiency measures among the eligible measures for energy efficiency obligation schemes (EEOS) under Articles 8 the EED. Member States should be more clearly informed of the opportunities to capture energy savings from water efficiency measures across water and wastewater sector, water industrial cycle and commercial and residential settings.

1. A Water-Smart Society is a society in which the true value of water is recognised and realised, all available water sources are managed in such a way that water scarcity and pollution of water resources are avoided, water and resource loops are largely closed to foster a circular economy and optimal resource efficiency, and the water system is resilient against the impact of climate change events ; and all relevant stakeholders are involved in the governance of our water system.

2. 'Energy efficiency first' means taking utmost account in energy planning, and in policy and investment decisions, of alternative cost-efficient energy efficiency measures to make energy demand and energy supply more efficient, in particular by means of cost-effective end-use energy savings, demand response initiatives and more efficient conversion, transmission and distribution of energy, whilst still achieving the objectives of those decisions.

3. The Board of Water Europe commitment to achieve net zero carbon neutrality by 2050

3. **Promote water reuse to generate energy savings in water management.** Depending on the local situation, optimising the exploitation of alternative water sources by increasing reuse up to 30% can make up to an additional 100 km³/yr of water available for multiple uses. The avoided use of additional water will reduce energy consumption.
4. **Facilitate interoperability and easy integration to the energy grid of energy generated by wastewater treatment plants.** This includes alternative energy generated through sludge reuse and heat recovery.
5. **Introduce a mandatory system of assessment for both energy and water usage in industry, water supply systems, wastewater network and treatment plants.** The EED can bridge co-benefits with the Urban Waste Water Treatment Directive and the Industrial Emissions Directive, both due to be revised.
6. **Provide meaningful incentives to ensure that water suppliers reduce water leakage levels, particularly for large and very large water suppliers.** Avoid water leakage that represents 23% of EU total treated water which save energy.
7. **Mandate the introduction of green infrastructure and adapt grey infrastructures in cities to reduce the amount of storm water being directly released into wastewater treatment plants.** This would help to prevent urban overflows, reduce the need to build extra treatment capacities and the energy required from existing plants to treat increasingly large quantities of rainwater. In addition, it would foster biodiversity, reduce urban heat island effect and improve the energy performance of buildings.
8. **Provide incentives to the use of digital technologies and real-time data analytics across water cycles.** Agile monitoring and use of machine learning (artificial intelligence) allows for a much smarter, energy efficient, more dynamic and adaptable near real-time water and waste water allocation and management. This will further guarantee the robustness and resilience of the governance system and lessen vulnerability to external events.
9. **Foster transparency and free-flow of data across EU on water quality and availability, water leakages, system capacity and energy use for water and waste water infrastructure and performance.** This will promote multidisciplinary cooperation and also strengthen inclusive governance and public awareness on the value of water.
10. **Develop communication standards for data sharing across the water cycle and between national and regional entities.** To fully valorise the data and enable water managers to exploit them, Europe needs an open source, versatile and flexible data-sharing platform that provides sound information. This will further encourage proactive, collective engagement amongst stakeholders and co-creation processes.
11. **Introduce requirements and incentives in the EED for the ICT sector to monitor their energy and water consumption.** Data centres are key infrastructure for data-based efficient management of resources but are particularly intensive users of both energy and water. The EED must bring the digital sector to consider the value of energy and water in its operations via mandatory assessment of their water-energy consumption. This is necessary to support the digitalisation process of Europe in a sustainable fashion.

8 key data on the water-energy nexus

The Water-Energy nexus catches the strong interdependencies between water and energy across all water cycles in industry, agriculture, cities and the built environment. It is time for policy-makers to accelerate European efforts toward a clean energy transition and a Water-Smart Society.

Saving water saves energy and saving energy saves water.

The energy sector
withdraws
332,2^{bcm}
of water
in 2016

Source: IEA, 2020

Water utilities
account for
2,6%
of global GHG
emissions

Source: JRC, 2019

+35%
Is the projected
increase of the
global energy
demand by 2035

Source: IEA, 2012

The projected rise
in water consumption of
85%
over the period to 2035
reflect a move towards
more water-intensive
power generation

Source: IEA, 2012

The IEA Sustainable
Development Scenario
estimates that the energy
transition could lower by
20% all water
withdrawals for energy
purposes

Source: IEA, 2020

The
decarbonisation
of the energy
system could reduce
its water needs by

38%
by 2050

Source: JRC, 2019

The innovative water
sector committed to
Net-0
Carbon emission by 2050

Source: WE, 2021

Worldwide,
65 water and
wastewater utilities
have already successfully
become climate neutral
or reached net-zero
carbon emissions

Source: GWI, 2021



The European Alliance to Save Energy (EU-ASE) aims to advance the energy efficiency agenda in Europe. The Alliance allows some of the world's leading multinational companies to join environmental campaigners and a cross-party group of Members of the European Parliament. EU-ASE business members have operations across the 27 Member States of the European Union, employ over 340.000 people in Europe and have an aggregated annual turnover of €115 billion.



Water Europe (WE). WE is the voice and promoter of water-related innovation and RTD in Europe. WE is a value-based multi-stakeholder association with over 250 members representing the whole diversity of the water eco-system including industry, academia, utilities, public authorities and civil society organisations. All WE activities and positions are guided by our Water Vision "The Value of Water" and the ambition to achieve a European Water-Smart Society