



WATER SMART INDUSTRIAL SYMBIOSIS

indUstry water-utiLiTy symbiosis
for a sMarter wATER society:

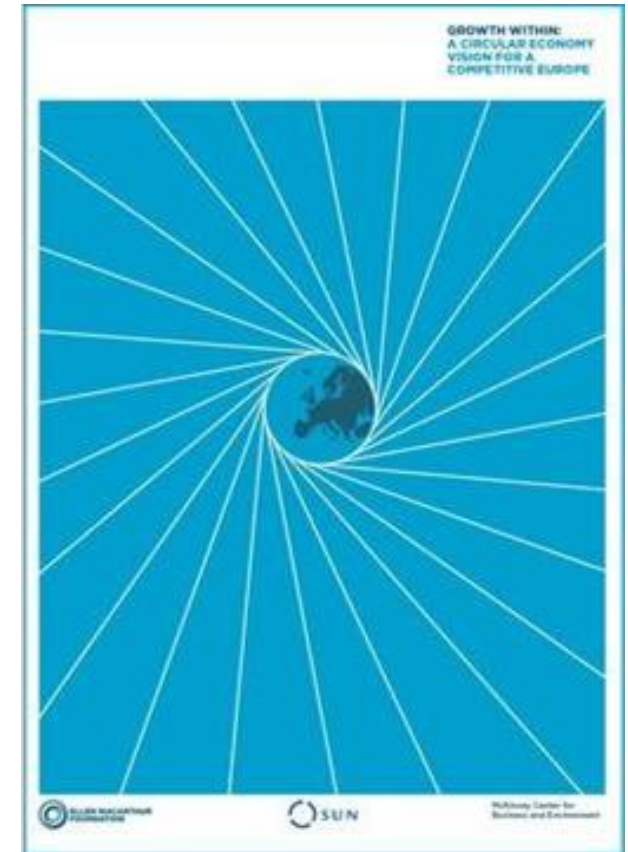
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The rationale: a transition from a linear to a Circular Economy (CE)

- Linear **production-consumption-disposal** chains make Europe (and its Industries) **vulnerable**:
 - to **climatic changes** due to (e.g. water) resource depletion
 - to fierce **industrial/commercial competition** worldwide, for limited resources and hence to volatile raw materials and energy.
 - to **environmental degradation** unless significant treatment and pollution control investments are (continuously) available.
- Solving each problem **on its own** is actually very difficult...
- What if, by moving to a CE paradigm that extracts and valorises water, energy, nutrients and high added-value compounds, from wastewater **we could solve all three problems at once?**
- **Future-proof** European industries, **climate-proof** European society and **safeguard** the environment.





Building towards 6 objectives:

1. Showcase, promote and learn from **successful high profile Water Smart Industrial Symbiosis (WSIS) Cases**.
2. Develop, optimise and demonstrate multi-layered water-related (water-energy-materials) resources **reuse technologies and solutions** within key industrial sectors
3. Assemble, further develop and apply **digital support tools** to identify symbiotic opportunities, improve the design, control and operation of industrial symbiotic schemes, as well as their medium- and long-term assessment
4. Develop and demonstrate novel exploitation/valorisation schemes (value chains) for these resources, through a range of **business models** and symbiotic arrangements and link them to ongoing investments and plans of industries and water utilities.
5. To design, promote and accelerate business transformation to WSIS, through active **stakeholder engagement and innovation co-creation**, by drawing on transdisciplinary knowledge and capacities from Art, Technology and Digital Humanities, for business-to-business, citizen and Living Lab engagement.
6. Reduce existing barriers for recovery, reuse and commercial exploitation of valuable water-related resources (incl. requirements and standards for reuse) through WSIS novel **governance approaches** and **best practice guidelines** supporting the transition to CE, the implementation of EU policies and UN SDGs.





We leverage much more than “just” technologies to achieve these objectives!

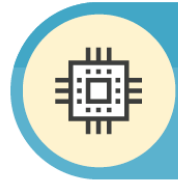
DEMONSTRATING WIN-WIN SYMBIOTIC OPPORTUNITIES ...

... FOR WATER-SMART INDUSTRIAL SYMBIOSIS (WSIS)



ENABLING TECHNOLOGIES

Demonstrating novel (TRL 5-7) technologies at meaningful scales achieving quantifiable impacts (economic, environmental, social)



SMART TOOLS

Leveraging the power of Ontologies, Hybrid Modelling and Simulation, Gamified Visualisation and immersive Mixed Reality Storytelling



INNOVATOR ECOSYSTEM

Open Innovation and co-creation with industry and the public meets start-ups and established players in B2B, B2G, B2C CoPs and Living Labs



GLOBAL OUTREACH

Engaging EU and global networks of industries, water companies, SMEs, business innovators and media to disseminate, influence, broker, transfer

SYMBIOTIC PARADIGMS

Showcasing 9 WSIS 'modes' between water providers (municipal or industry owned utilities, service-providing SMEs) and key industries



WATER-ENERGY-MATERIALS

Demonstrating circular solutions for water as both resource and vector of energy and materials with millions invested and decades of experience



WSIS MARKET BUILDING

WSIS matchmaking supported by start-ups, ontologies and financial engineering linking investments to KPIs for business innovation



STRONG PARTNERSHIP

A team of 8 technology & service providers (of which 6 SMEs), 8 utilities (incl. 2 multinationals), 4 industries, 9 Research Centres and Water Europe





Importantly we are actively working to inform Policy

- We contributed to the [UN water conference](#) in New York (22-24 March 2023) to stress circular solutions for industrial purposes during a side-event co-organised by the Consulate of Denmark.
- Provided input for a [Policy Paper](#) by Water Europe targeting the [European Economic and Social Committee](#) and its actions for a Blue Deal during the next Commission.
- At the National level, [Prof. Fatone](#) was invited by Italian Senate to advise on [new legislation on water scarcity management](#), and he highlighted ULTIMATE as a key project for reuse options climate proofing Italian industries.
- We produced a [policy brief](#) with inputs to European Policy Makers regarding the upcoming [Revision of the Industrial Emissions Directive](#).
- Together with partner projects we contributed to the [Open Public Consultation](#) on the Revision of the [Urban Wastewater Treatment Directive](#).
- We Contributed to the [JRC workshop](#) Reuse of reclaimed water for industrial applications - EU experiences on 20 June 2023)

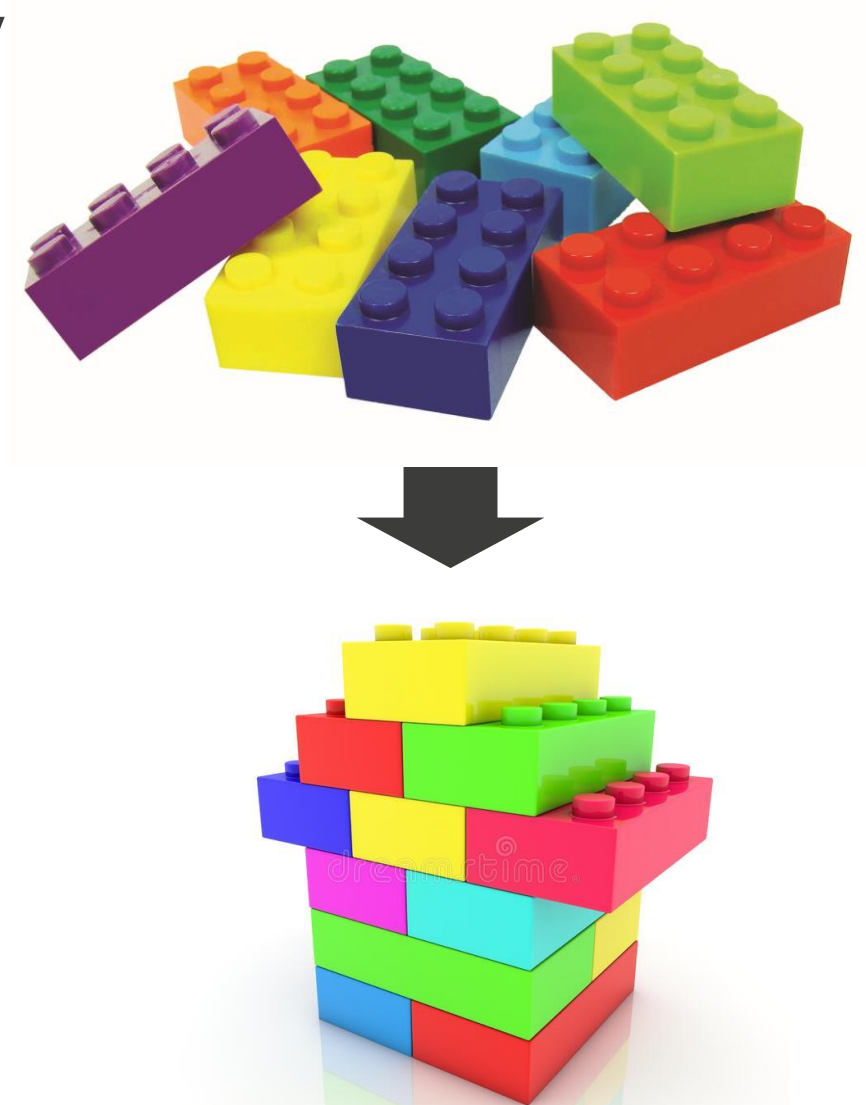




And we are not working in a vacuum!

There is growing EU research and innovation really pushing CE and WSIS forward and we are leveraging **this momentum and critical mass to make WSIS a reality**, working with (for example):

- **WaterMining, B-WaterSmart, REWAISE and WiderUptake** in the **CIRSEAU cluster** (e.g., collectively contributed to the Open Public Consultation on the Revision of the Urban Wastewater Treatment Directive.
- Members of the **ICT4Water Cluster** and the **BIOREFINE cluster**.
- **Water Europe** (as a hub for the water sector and custodian of the MarketPlace)



Thank you for your attention

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