



## FINAL

# **Business Plan for the CEN Workshop on Sustainable Integrated Water Use & Treatment in Process Industries – a practical guidance “SustainWATER”**

(approved during the Kick-off meeting on 2015-04-22)

### **1. Status of the Business Plan**

Final Business Plan, approved during the kick-off meeting on 22 April 2015.

### **2. Background to the Workshop**

#### **Concept of Sustainable Water Use & Treatment**

Water plays an important role in chemical industry as it is a pre-requisite for many production processes. Water is also a limited natural resource in several regions and it is usually included in permits for industry operation. The chemical industry wants to be a responsible steward of natural resources and is therefore working to progress sustainable water use & treatment.

The sustainable water use & treatment approach is a broad concept indicating the uptake by industries of sustainable solutions to manage water in their operating sites, where innovation in technologies and services will play an important role

#### **2.1 The market environment: Corporate Water Stewardship**

The scope of this workshop is not to tackle sustainable water management, which is a much broader concept than water saving measures and water efficiency solutions. Nevertheless, sustainable water use & treatment approaches can be possible solutions adopted in the framework of the corporate assessment of water resources management. For this reason, we introduce in this paragraph on sustainable water, also known as corporate Water Stewardship.

In essence, **Water Stewardship** can be described as actions on the part of companies who seek to improve the efficiency and cleanliness of their internal operations and in their supply



chain, while also facilitating the sustainable use & treatment of shared freshwater resources through collaboration with other businesses, governments, NGOs, communities, and others<sup>1</sup>.

In its report<sup>2</sup> in 2012, the EEA mentioned stewardship approaches at corporate level as one of the future needs for sustainable water use & treatment.

### **2.1.1. Water Risk Assessment**

Water Risk Assessment is a first step in Water Stewardship as it allows to define where the priority water risks for a corporation are. It is of crucial importance to have sound information on what the water issues are in order to engage/plan efficiently for mitigation activities.

In order to manage the locally available water resources sustainably, companies need to gain a good understanding of the water situation/risks of each site they operate. This requires internal data (water use (quantity & quality)) and external data (availability/quality/competition for water in the river basin).

Combining those data allows assessing the local water situation and the risks. These risks include risks to the community, the environment around the site, and the operation itself. Both internal (efficiency improvements/purification/etc), and external measures (e.g. cooperation with other users/multi-stakeholder stewardship projects) can be considered. Several tools have been developed to help companies assess their sites water risk.

- WWF together with DEG (*German Insurance Company*) have developed a comprehensive **Water Risk Filter tool** which allows to review water use and availability, and the resulting environmental, reputational, policy and social risks associated with an organizations' water use.
- Another Water Risk Assessment tool that helps identify the priority water risks is the **WRI Aqueduct tool**. It allows companies to explore the complexity of geographic water risk with a high level of detail, as it combines sophisticated hydrological modeling and a robust analytical tool that uses up-to-date, publicly available data to help understand critical dimensions of water risk. (<http://www.wri.org/our-work/project/aqueduct>)
- A basic screening tool for water risk assessment is the **WBCSD Global Water Tool** that has been refined for Oil and Gas sectors and also specifically for water risk assessment in India.
- GEMI has further refined the WBCSD Global Water Tool into the **GEMI Local Water Tool** that allows to research water risk of any specific location in much more detail.
- [UNEP](#) –the United Nation Environmental Program- refers rather to the definition of corporate water accounting, including existing methods and tools to identify water use and discharge and the resulting impacts and business risks. It is developed to manage

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<sup>1</sup> <http://waterriskfilter.panda.org/KnowledgeBase.aspx?id=1#page=1>

<sup>2</sup> Towards efficient use of water resources in Europe, EEA, 2012.



three kind of risks linked to water which can affect industry process: physical risk (flooding, droughts, pollution) regulatory and reputational (stakeholder perception)<sup>3</sup>.

- Some companies have developed their own water risk assessment questionnaire to do this analysis.

Above tools allow to identified the water risks from industrial activity. Any human activity will result in an impact on the natural environment. Using these water risk assessment tools allows to measure and prioritize them in order to effectively mitigate the ones with most significant impact first.

### **2.1.2. Water Risk Mitigation**

When water risks are known, companies engage on the second step of Water Stewardship: finding effective ways of mitigating water risks e.g. through innovation for water efficient processes, recycling and buffering solutions. This is the area where E4Water is focusing on: the technology development and demonstration of water efficiency technology. Linked to this, there is work happening under E4Water on modelling, life cycle assessment and EU water related legislation.

In most cases companies will not be the only water users in a water basin. It will therefore be important to engage with other water users drawing from the same sources or emitting into the same receiving systems to allow effective mitigation of water risks.

A number of tools are available that can contribute to sustainable water use & treatment at a specific site. One example is the **UN Water Action hub** which helps build relations between stakeholders in a river basin, by assisting collaborations in water-related collective action.

At this time there is no agreed definition for Water Stewardship, but several organizations have developed and promoted specific approaches:

- The Alliance for Water Stewardship-[AWS](http://allianceforwaterstewardship.org/about_pdfs/AWS_Intro_Nov_2012.pdf) is a non-profit organization gathering some leading players in sustainable water resource management committed to driving collective responses to shared water risk through a stakeholder-endorsed International Water Stewardship Standard.<sup>4</sup> AWS defines Water Stewardship as the use of freshwater that is socially and economically beneficial as well as environmentally sustainable.
- The European Water Partnership-[EWP](http://www.ewp.eu/activities/ews/) is a non-profit organization coordinating the European Water Stewardship (EWS) as the integrative system for business and agriculture to assess, verify and communicate sustainable water stewardship practices.<sup>5</sup> For EWP water stewardship is “The use of water that is socially equitable, environmentally sustainable and economically beneficial, achieved through a stakeholder-inclusive process that involves site- and catchment-based actions. Good water stewards understand their own water use, catchment context and shared risk in

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<sup>3</sup> Measuring water use in a green economy, UNEP 2012

<sup>4</sup> [http://allianceforwaterstewardship.org/about\\_pdfs/AWS\\_Intro\\_Nov\\_2012.pdf](http://allianceforwaterstewardship.org/about_pdfs/AWS_Intro_Nov_2012.pdf)  
[aws.html#governance](http://allianceforwaterstewardship.org/about-aws.html#governance)

<http://allianceforwaterstewardship.org/about-aws.html#governance>

<sup>5</sup> <http://www.ewp.eu/activities/ews/>



terms of water governance, water balance, water quality and important water-related areas; and then engage in meaningful individual and collective actions that benefit people and nature.”

- Some companies are developing their own approach, sometimes in close cooperation with local or global active NGO's (e.g. WWF or others.)

On a technical level, operators need to adopt the most appropriate solution in the specific local context as water resources and their use & treatment are very much linked to spatial and geographical considerations.

## 2.2 The European legal environment

Manufacturers in Europe nowadays are operating in a fairly complex set of rules and legislations, which are continuously further shaped and influenced by global megatrends.

“Environmental” legislation can be categorized in different ways, but for the purpose of the E4Water project and the CEN Workshop agreement, we defined the following ones:

1. Legislation directly impacting/steering daily operations, or “inside the fence” legislation;
2. Legislation aimed at protecting the receiving environments (water, air, soil) from emissions, discharges and losses
3. Legislation aimed at protecting the natural resources, nature, including biodiversity and ecosystem services.
4. Finally, other policy areas are also influencing the HSE operational environment, including policies such as REACH or Energy policy.

### Legislation directly impacting/steering daily operations, or “inside the fence” legislation

The **Industrial Emissions Directive (IED)** is the successor of the IPPC Directive and in essence, it is about minimising pollution from various industrial sources throughout the European Union. Operators of industrial installations operating activities covered by Annex I of the IED are required to obtain an integrated permit from the authorities in the EU countries. The emission limits included by local authorities in the site 's permit has to be based on the range of emissions set in the Best Available Techniques (BAT) Conclusions of the Best Available Techniques Reference (BREFs) Document (Link: [Industrial Emissions Directive](#)).

The **Waste Framework Directive (WFD)** lays down measures to protect the environment and human health by preventing or reducing the adverse impacts of the generation and management of waste and by reducing overall impacts of resource use and improving the efficiency of such use (Link: [Waste Framework Directive](#)).

The **Waste Incineration Directive** establishes measures for controlling, reducing and/or preventing air, water and soil pollution caused by the incineration or co-incineration of waste, as well as the resulting risk to human health. (Link: [Waste Incineration Directive](#)).

The **European Pollutant Release and Transfer Register Regulation (E-PRTR)** establishes an integrated pollutant release and transfer register at Community level in the form of a publicly



accessible electronic database and lays down rules for its functioning, in order to implement the UNECE Protocol on Pollutant Release and Transfer Registers. (Link: [European Pollutant Release and Transfer Register Regulation](#)).

### **Legislation aimed at protecting the receiving environments (water, air, soil) from emissions, discharges and losses**

The **Water Framework Directive (WFD)** (Quality aspects) establishes a framework for the protection of all European water bodies. It states that all water bodies must at least meet the standard of “good status<sup>6</sup>” by the end of 2015 (EC, 2011e). This Framework-Directive has a number of objectives, such as preventing and reducing pollution, but also promoting sustainable water usage, environmental protection, improving aquatic ecosystems and mitigating the effects of floods and droughts. (Link: [Water Framework Directive \(WFD\)](#)).

#### Key elements in the WFD for E4Water Case Studies for **quality** aspects:

- The implementation of the WFD objectives has to be done by Member States through River Basin Management Plans (RBMP) associated with Programmes of Measures (PoM) by 2015. Possible link to the E4Water pilots is to assure that any proposed solution will lead to compliance with the quality objective of the Water Framework Directive.

The WFD is complemented by two more operational daughter directives: the groundwater Directive (GWD) of 2006 and the Environmental Quality Standards Directive (EQSD) of 2013. The GWD and EQSD are directly linked with the WFD with the purpose of operationalize and clarify specific parts of the framework.

The **Drinking Water (DW) Directive** aims at defining the essential quality standards for water intended for human consumption. The Water Framework Directive includes the objective to reduce the level of purification treatment required for the production of drinking water (Link: [Drinking Water Directive](#)).

The **Groundwater Directive (GWD)** establishes a framework to prevent and control groundwater pollution. This includes procedures for assessing the chemical status of groundwater and measures to reduce levels of pollutants. (Link: [Groundwater Directive \(GWD\)](#)).

The **Environmental Quality Standards Directive (EQSD)** also known as the Priority substances Directive aims at identifying a list of substances of concern (priority substances) that present a significant risk to or via the aquatic environment in accordance with Article 16(2) and (3) of the Water Framework Directive (WFD). These standards are coupled with an inventory of discharges, emissions and losses of these substances in order to ascertain whether the goals of reducing or eliminating such pollution have been achieved. This Directive is reviewed every four years (the first EQS Directive was developed in 2008, and reviewed for the first time in 2013; next revisions will follow every 6 years.). (Link: [Environmental Quality Standards Directive \(EQSD\)](#)).

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<sup>6</sup> « good status » means that « the values of biological quality elements for the surface water body type show low levels of distortion resulting from human activity, but deviate only slightly from those normally associated with the surface water body type under undisturbed conditions » (EC, 2000)



The **Nitrates Directive** aims to reduce and prevent water pollution by nitrate originating from agricultural sources. It requires member States to monitor waters, designate “nitrate vulnerable zones” and adopt and implement action programs and codes of good agricultural practices with aim of improving fertilizer management and reducing nitrate towards water (EC, 2011e). ([Link: The Nitrate Directive](#)).

The **Environmental Liability Directive** establishes a common framework of environmental liability with a view to preventing and remedying damage to protected species and natural habitats, damage to water and damage to land. Operators who carry out the activities listed in Annex III to the Directive (e.g. operations of plants subject to permits under the Industrial Emissions Directive, waste management operations, landfill sites, manufacture of plant protection products, trans-boundary shipment of waste) are strictly liable (without fault) for environmental damage or an imminent threat thereof. That is, if such damage or imminent threat occurs, operators will in principle have to bear the costs of preventive and remedial actions taken pursuant to the ELD. Operators carrying out occupational activities not listed in that Annex are only liable for fault-based damage to protected species and natural habitats (Art. 3(1) ELD). ([Link: Environmental Liability Directive](#)).

The **Environmental Impact Assessment Directive (EIA)** establishes the need to carry out an impact assessment on environment before approving certain public and private projects. The Directives lists the projects concerned, the information to be provided and the third parties to be consulted in connection with approving such a project. ([Link: EIA](#)).

The **Marine Strategy Framework Directive (MSFD)** provides that all marine waters must meet the standard of “good environmental status” by 2020. To this end, Member States must draw up the necessary Programmes of Measures (PoM) by 2015 (EC, 2011e). This Directive is to be reviewed in the year 2023. ([Link: Marine Strategy Framework Directive](#)).

The **Blueprint (A Blueprint to Safeguard Europe’s Water Resources)** aims to tackle the obstacles which hamper action to safeguard Europe’s water resources. It synthesises policy recommendations building on (1) the assessment of the River Basin Management Plans delivered by the Member States under the WFD, (2) the review of the policy on Water Scarcity and Droughts (WS&D) and (3) the assessment of the vulnerability of water resources to climate change and other man made pressures (EC, 2011e). ([Link: Blueprint to Safeguard Europe’s Water Resources](#)).

Key elements in the Blueprint for E4Water Case Studies: many elements included in the Blueprint are or will be of high importance for E4Water case Studies. Key elements are:

- Water reuse standard initiative: the Commission will make a proposal for reuse of waste water at EU level by the end of 2015. The standard may include chemicals as well as microbiological parameters that need to be respected to ensure environmental and human safety for the reuse of waste water.
- All the proposed actions to be developed on the WFD implementation, on the Nitrates Directive, on Urban Waste Water Treatment Directive, on the IED Directive, etc.

Cross-cutting between the WFD and other legislations such as the IED, the Common Agriculture Policy (CAP), etc. The **Landfill Directive** aims at stringent operational and technical requirements on the waste and landfills, to provide for measures, procedures and guidance to



prevent or reduce as far as possible negative effects on the environment, in particular the pollution of surface water, groundwater, soil and air, and on the global environment, including the greenhouse effect, as well as any resulting risk to human health, from landfilling of waste, during the whole life-cycle of the landfill. (Link: [Landfill Directive](#)).

### **Legislation aimed at protecting the natural resources, nature, including biodiversity and ecosystem services.**

**The Water Framework Directive (WFD) (quantity aspects)** establishes a framework for the protection of all European water bodies. It states that all water bodies must at least meet the standard of “good status<sup>7</sup>” by the end of 2015 (EC, 2011e). This Framework-Directive has a number of objectives, such as preventing and reducing pollution, promoting sustainable water usage, environmental protection, improving aquatic ecosystems and mitigating the effects of floods and droughts. (Link: [Water Framework Directive \(WFD\)](#)).

#### **Key elements in the WFD for E4Water Case Studies: quantity aspects**

- The Article 5 of the WFD concerning the characteristics of the river basin district and establishing a review of the impact of human activity on the status of surface waters and groundwater, and an economic analysis of water use. Next, revision of these analyses and reviews scheduled in 2015.
- The Article 9 of the WFD concerning the environmental and resource costs in accordance to the polluter pays principle. This article sets the bases for water pricing taking into account environmental costs and setting the adequate incentives for users to use water resources efficiently.

The **Blueprint (A Blueprint to Safeguard Europe’s Water Resources –quantity aspects)** aims to tackle the obstacles which hamper action to safeguard Europe’s water resources. It synthesises policy recommendations building on (1) the assessment of the River Basin Management Plans delivered by the Member States under the WFD, (2) the review of the policy on Water Scarcity and Droughts (WS&D) and (3) the assessment of the vulnerability of water resources to climate change and other man made pressures (EC, 2011e). (Link: [Blueprint to Safeguard Europe's Water Resources](#)).

The Blueprint presents the policy response to the challenges described above with the long-term aim **to ensure availability of good quality water for sustainable and equitable water use.**

To address the issue of **over-allocation**, there is a need in many EU river basins to put quantitative water management on a much more solid foundation: namely the identification of the **ecological flow**, i.e. the amount of water required for the aquatic ecosystem to continue to thrive and provide the services we rely upon. Fundamental to this is the recognition that water quality and quantity are intimately related within the concept of ‘good status’.

The sustainable use of Europe’s waters, especially its quantitative aspects, is a real challenge for water managers, given global phenomena such as climate change and demographic

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<sup>7</sup> « good status » means that « the values of biological quality elements for the surface water body type show low levels of distortion resulting from human activity, but deviate only slightly from those normally associated with the surface water body type under undisturbed conditions » (EC, 2000)



developments. The EEA State of Water report highlights worrying trends showing the increase and wider spread of **water scarcity and stress**, which is expected to affect in 2030 about half of EU river basins. To respond to this, in addition to improving water allocation based on ecological flow, **water efficiency measures** should be taken to save water and, in many cases, to save energy too.

Key elements in the Blueprint for E4Water Case Studies: many elements included in the Blueprint are or will be of high importance for E4Water case Studies. Key elements are:

- Ecological flow (The Commission together with Member States and Stakeholders, will develop CIS Guidance on water accounts and ecological flow by the end of year 2014.
- All the proposed actions to be developed on the WFD implementation, on the Nitrates Directive, on Urban Waste Water Treatment Directive, on the IED Directive, etc.
- Water reuse standard initiative: the Commission will make a proposal for reuse of waste water at EU level by the end of 2015. The standard may include chemicals as well as microbiological parameters that need to be respected to ensure environmental and human safety for the reuse of waste water.
- Natural Water Retention Measures: the Commission together with Member States listed current measures helping the natural water retention capacity of the retention capacity of aquifers, soil, and aquatic and water dependent ecosystems with a view to improve their status. As well, a policy document has been developed to support the adoption of such measures in River Basin Management Plans.
- Cross-cutting between the WFD and other legislations such as the IED, the CAP, etc.

The aim of the **Habitats Directive** is to contribute towards ensuring bio-diversity through the conservation (preservation) of natural habitats and of wild fauna and flora in the European territory of the Member States to which the Treaty applies. ([Link: Habitats Directive](#)).

The **Birds Directive** relates to the conservation of all species of naturally occurring birds in the wild state in the European territory of the Member States. It covers the protection, management and control of the species as well as of their habitats. ([Link: Birds Directive](#)).

The [Biodiversity Strategy to 2020 \(3/5/2011\)](#): The Commission tries to fully valuing the nature's potential by setting a new headline target halting the loss of biodiversity and the degradation of ecosystem services by 2020 and restoring them in so far as feasible. The strategy identifies 6 sub targets, focusing on gaps (not in the field of climate change and pollution but in land use change and unsustainable use of resources). In this approach, it is assumed that the policy baseline (water, air, waste, chemicals,) will deliver substantial improvements for biodiversity. The review of the strategy in 2014 is expected to assess the contribution of these other policy areas (water, air, waste, chemicals). (Reference: (2011/2307(INI)). [Link: Biodiversity Strategy to 2020 \(3/5/2011\)](#)).

- Key elements in the Biodiversity Strategy for E4Water Case Studies: Elements included under the strategy on biodiversity such as ecosystem services, unsustainable use of resources can have an implication in other European legislations (e.g. CIS Guidance on Natural Water Retention Measures or on Ecological flows in the guidance developed) These definitions have a relevance to the case studies of E4Water.





The **Floods Directive** establishes an action plans for flood management and river basin management. All Member States are to assess if all water courses and coast lines are at risk from flooding by 2011, to map the flood extent and assets and humans at risk in these areas by 2013, and to take adequate and coordinated measures to reduce this flood risk by 2013 (EC, 2011a) ([Link: The Flood Directive](#)).

The **Concessions Directive** will aim at reducing the uncertainty surrounding the award of concessions contracts (in water sector), and thereby benefit public authorities and economic operators ([Link: Communication on Concessions Directive](#)).

The **Communication on Water Scarcity and Droughts (WS&D)** sets out options for reducing the impacts of droughts and planning for water scarcity. ([Link: Communication on Water Scarcity and Droughts](#)).

### **Other policy areas are also influencing the HSE operational environment**

The **REACH (Registration, Evaluation, Authorization and Restriction of Chemical substances) regulation** establishes a single regulatory framework for the registration, evaluation and authorization of chemicals. The aim is to ensure greater safety in the manufacture and use of chemical substances. ([Link: REACH](#)).

The European **Energy Policy** that the EU is putting in place an ambitious one, covering the full range of energy sources from fossil fuels to nuclear energy and renewables in a bid to spark a new industrial revolution that will deliver a low-energy economy, whilst making the energy we do consume more secure, competitive and sustainable. ([Link: overview of energy related policies](#)).

The **Common Agricultural Policy (CAP)** aims to address social, environmental and consumer concerns, as well as to ensure the sustainable development of Europe's agro-industry. ([Link: Common Agricultural Policy](#)).

The **Urban Waste Water Directive** concerns the collection, treatment and discharge of urban waste water and the treatment and discharge of waste from certain industrial sectors. The objective of the Directive is to protect the environment from the adverse effects of the abovementioned waste water discharges. ([Link: Urban Waste Water Directive](#)).

The **White Paper on Adaptation to Climate Change** presents the framework for adaptation measures and policies to reduce the European Union's vulnerability to the impacts of climate change through an integrated approach between water management and the management of marine and coastal areas. ([Link: White Paper on Adaptation to Climate Change](#)).

The **Public Procurement Directive** aims at ensuring transparent, non-discriminatory procedures, these Directives aimed principally to ensure that economic operators could fully enjoy fundamental freedoms in the competition for public procurement contracts. ([Link: Public Procurement Directive](#)).

The **Hazard Analysis and Critical Control Point (HACCP)** system was introduced approximately 20 years ago and aims at controlling food-related hazards at national and international level. The HACCP system is important for all food businesses along the food chain. ([Link: HACCP](#)).



## 2.3 Existing standards and standard related activities and documents

There are some Technical Committees at CEN that deal with topics that are partly related to the contents of this proposed Workshop:

- CEN/TC 164 - Water supply
- CEN/TC 165 - Wastewater Engineering

Definitions developed in CEN/TC 165/WG 30 “Terminology in the field of wastewater engineering”, e.g. EN 16323:2014 "Glossary of wastewater engineering terms" will be used for the proposed Workshop as far as the terms needed are already defined herein.

## 2.4 Motivation for the creation of this Workshop

A set of proven approaches and technologies is now being developed to reduce industry's impact: reduce consumption, improve water efficiency, and change strategy in water provision. Among possible responses, the water efficiency aspect is very much a high priority on the European political agenda: the resource-efficient Europe flagship initiative communication has to be mentioned in this regard, establishing resource efficiency as the guiding principle for EU sectorial policies. Its subsequent Roadmap sets out a framework for the design and implementation of future actions for use of water resources. The “Blueprint safeguard Europe's water” communication is considered the water milestone for the Resource Efficiency Roadmap: it focus on achieving quality and quantity objectives as set in the European Water legislation. Based on this political and legal background, new initiatives at EU level are being discussed, such as European standards for the reuse of waste water, for chemical and microorganism parameters, mentioned already in the previous section.

Concretely, the EU is devoting an important interest and amount of EU budget to projects focusing on resource efficiency in water use & treatment in order to support the critical needs for investment in research & innovation and demonstration options: one of those projects is [E4Water](#) that was developed out of the cooperation between the European Technology Platforms SusChem (Sustainable Chemistry) and WssTP (Water) and will provide solutions that operators can use to make their situation more sustainable.

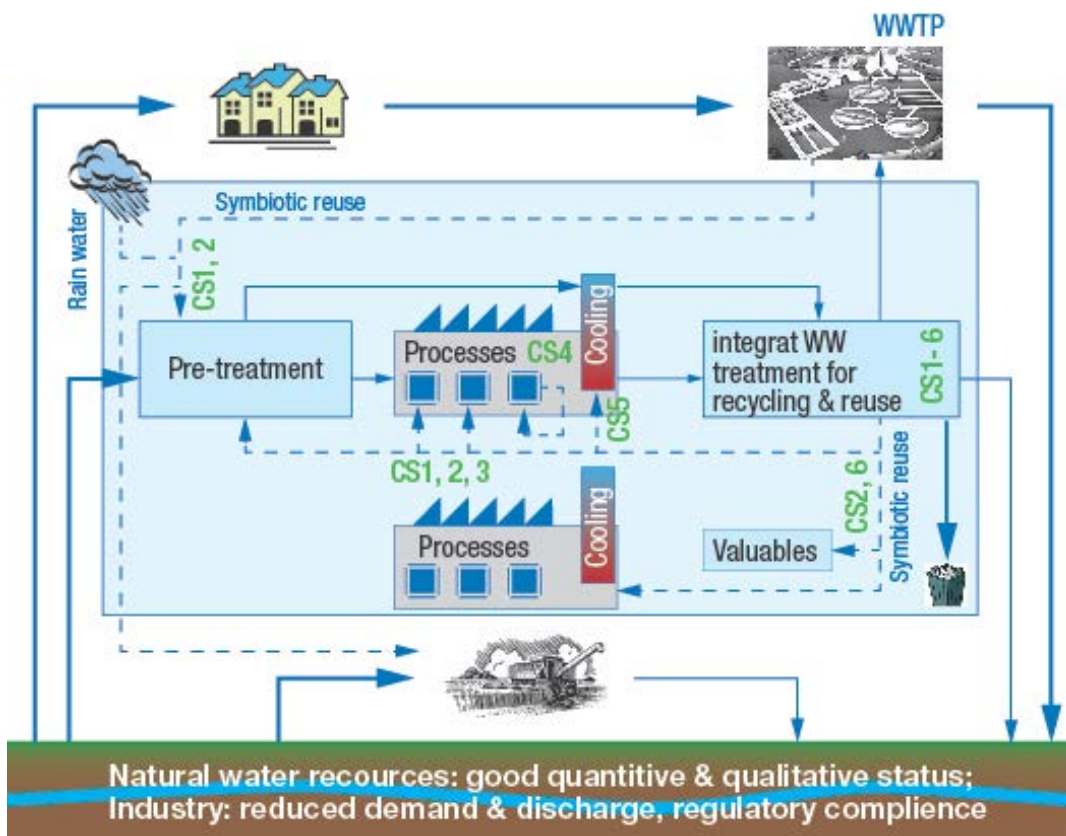
The EU FP7 project “E4Water” (Economically and Ecologically Efficient Water Management in the European Chemical Industry – [www.e4water.eu](http://www.e4water.eu)) is looking at the water efficiency: The main objective is to develop, test and validate new integrated approaches, methodologies and process technologies for a more efficient and sustainable use & treatment of water in chemical industry with cross-fertilization possibilities to other industrial sectors. The implementation and validation of E4Water development are set in 6 industrial case studies, representing critical problems for the chemical industry and other process industries.

The E4Water project is intended to provide the operator exactly with the set of proven approaches and technologies for increasing water efficiency in industrial processes. E4Water hereby is not limited to technology solutions, but also includes an economic module, assessing

whether the provided solutions are affordable. Moreover, solutions are developed in close contact with stakeholders.

The involvement of the companies in the project is the answer to corporate risk assessment, concerning physical risk in Europe or in other regions, regulatory constraints (such as high taxes for water consumption, or increasing of water prices) and reputational risk (being a credible partner in political discussion with other stakeholders and public authorities).

The main contribution to sustainable water use & treatment of the E4Water project is the development of new solutions for increasing water efficiency in the chemical production plants: different case studies will reuse recycled water internal to their operations (Case studies 1-5), or for external purposes, such as other industrial uses (Case studies 1, 2, 6)<sup>8</sup>.



**Figure 2:** The E4Water concept, following an integrated, multi-disciplinary and holistic approach in different industrial scales and across sectors. The dashed lines indicate the impact by E4Water, CS (= case study) indicate where on site industrial pilot testing and demonstration are focused on, the number allows their identification.

<sup>8</sup> For more details on the E4Water Case studies: see <http://www.e4water.eu/1314.php>



The objective of this CEN Workshop is to develop a guidance document on the practical approach to find “best practice” solutions for sustainable water use & treatment in process and chemical industry and make it based on the experiences gained in the E4Water project.

### **Workshop proposers and Workshop participants**

The present CEN Workshop is proposed by the E4Water consortium, which is conducting a Collaborative Project on Economically and Ecologically Efficient Water Management in the European Chemical Industry. E4Water is supported under the 7<sup>th</sup> Framework Programme of the EU, Theme NMP.2011.3.4-1, Eco-efficient management of industrial water.

#### **The Workshop proposers from the E4Water consortium are:**

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### **3. Workshop scope and objectives**

The main objective of E4Water is to develop, test and validate new integrated approaches, methodologies and process technologies for a more efficient and sustainable use & treatment of water in chemical industry with cross-fertilization possibilities to other industrial sectors. In the CEN Workshop Agreement the results and experiences on how to come to an efficient and sustainable water use & treatment are brought together out of the case studies in E4Water to provide a guidance document on the practical approach on measures to achieve “a sustainable water use & treatment in chemical industry (and related process industry sectors)”.

The objective of the workshop is to describe a framework for this approach.

It will include

1. Commitment of companies as driver
2. Technical aspects at industrial scale, e.g.
  - Methodologies for technology selection
  - Integration of technologies at industrial scale and under industrial operating conditions
3. Non technical aspects, e.g.
  - Integration in existing water use & treatment concepts/approaches
  - Set up of new water use & treatment concepts
4. Assessment/Decision aspects, e.g.
  - Life cycle assessment and costs (LCA/LCC) elements
  - Risk and opportunities



## 5. On site implementation

### 4. Workshop programme

The working language will be English and the CEN Workshop Agreement will be drafted and published in English.

#### Work plan

The E4Water consortium (and potentially other EU projects/organisations) will provide the Workshop with inputs and other draft material – for the elaboration of the framework, i.e. a supportive/guidance document on the conceptual approach on measures to achieve “a sustainable water use & treatment in chemical industry (and related process industry sectors)”

The Workshop participants will subsequently consider the drafts and propose amendments and additions.

The Workshop will be free of charge and open to any interested party willing to support the Workshop’s objectives.

More detailed planning arrangements will be agreed on at the kick-off meeting. In general terms, though, it is thought that the here proposed CEN Workshop will follow the time schedule below:

- (I) preparation of a 1<sup>st</sup> draft CEN Workshop Agreement within 4 months after the kick-off meeting;
- (II) preparation of a 2<sup>nd</sup> draft CEN Workshop Agreement until month 7 after the kick-off meeting;
- (III) reconfirmation, internal inquiries, and final draft preparation in month 8-9 after the kick-off meeting;
- (IV) public comment phase in month 10-11 after the kick-off meeting;
- (V) final approval, taking due account of public comments, in month 12.

It is proposed that, subsequent to the kick-off meeting, the Workshop will work electronically. In addition to the use of e-mail, it is proposed to hold online meetings. DECHEMA e.V., as coordinator of the E4Water project, already has experience to host such online meetings. Any documents to be discussed at such meetings shall be available at least two weeks in advance.

Any further physical meetings will be held only if there are particular difficulties in reaching agreement. The final draft CEN Workshop Agreement will be placed on the web for public comment for a minimum of 60 days. The Workshop will take due account of any comments made before proceeding to adoption of the CEN Workshop Agreement through electronic agreement by registered participants.



## 5. Workshop structure

Subject to the approval of the kick-off meeting, the E4Water consortium proposes Dr. Thomas Track as Workshop Chairman (short CV given in Annex). Uwe Fortkamp is proposed as Vice Chairperson (short CV given in Annex).

The responsibilities of the Chairman will include:

- organizing communication with the Workshop participants through the Secretariat;
- monitoring workshop procedures and overall progress of the draft CEN Workshop Agreement;
- chairing the Workshop (part kick-off and online/or plenary) meetings;
- representing the Workshop in relevant outside meetings;
- assess the consensus on the draft CEN Workshop Agreement.

The Vice-Chairperson can take over the responsibilities of the Chairman when necessary or if any particular tasks are assigned to him.

The NA 055 of DIN, the German CEN member, in responsibility of Dr. Renata Körfer, will act as Workshop Secretariat. The Secretariat will work in close collaboration with the workshop participants through the Chairman.

The following activities will be carried out by the Workshop Secretariat:

- organizing Workshop plenary meetings (electronic and physical)
- producing Workshop meeting reports and action lists
- administrative contact point for the Workshop
- managing Workshop membership lists
- managing Workshop document registers
- follow-up of action lists
- assisting the chairman in monitoring and follow-up of electronic discussions

## 6. Resource requirements

The registration and participation at this CEN Workshop is free of charge for every member of the Workshop, but each participant will bear his/her own costs for travel and subsistence.

The administrative costs of the Workshop Secretariat and other logistical support, for instance the online conference tool, will be covered by the E4Water project through its FP7 funding.

The copyright of the final agreement will be with CEN, though all proposers will get a free version of the CEN Workshop Agreement.



## 7. Related activities, liaisons, etc.

Exchange of information (regular) with Technical Bodies mentioned in Chapter 1.3 as laid down in CEN-CENELEC Guide 29 (edition 1, Nov. 2014), Chapter 4.5.

## 8. Contact points

Such as Workshop Chairperson, Workshop Secretariat, Editors, CCMC contact, etc.

### **Chairperson:**

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## **Annexes**

### **Short CV of the Chairman**

Thomas Track has more than 15 years of experience of scientific, research and innovation management in, sustainable industrial water management, soil and groundwater protection and environmental technology verification. His actual position is senior responsible environmental technologies with focus on industrial water management. He has coordinated and participated in several FP5, FP6 and FP7 projects e.g. WATCH, AIMs, PROMOTE, AdvanceETV, ChemWater, Hombre and is coordinator of the EU FP7 project E4Water. Since 2007 he is responsible for the DECHEMA-VDI/GVC expert board SuPER (Sustainable Production Energy and Resources) that covers 14 related committees. Starting from 2008 he is involved in DECHEMA's SusChem activities. In this position he is one of the initiators of the SusChem – WssTP cooperation on innovation in industrial water management.

From 2007-2008 he was chair of CEN Workshop 32 – “ETV-SGS”, from 2008 – 2009 he chaired CEN Workshop 42 – “ETV-AEA” and since 2013 he is chair of CEN Workshop 74 – “GoT-HOMBRE”.

### **Short CV of the Vice Chairperson**

**Uwe Fortkamp** (MSc Process engineering) has 15 years of scientific and applied research for sustainable production, mainly working with separation technology and process optimisation in different industry branches and as project leader for national and EU projects. He has worked in several EU FP projects like INNOWATECH, AdvanceETV, TESTNET, AIRTV and is active in the Water Technology Platform (WssTP). At IVL he is assistant director of the department Sustainable Organisations, Products and Processes.