

INCEPTION IMPACT ASSESSMENT			
TITLE OF THE INITIATIVE	Minimum quality requirements for reused water in the EU (new EU legislation)		
LEAD DG – RESPONSIBLE UNIT – AP NUMBER	DG ENV C.1	DATE OF ROADMAP	07/04/2016
LIKELY TYPE OF INITIATIVE	Regulation on minimum quality requirements for reused water in agricultural irrigation and aquifer recharge		
INDICATIVE PLANNING	http://ec.europa.eu/atwork/pdf/planned_commission_initiatives_2016.pdf		
ADDITIONAL INFORMATION	http://ec.europa.eu/environment/water/reuse.htm		
<p style="text-align: center;">This Inception Impact Assessment is provided for information purposes only and can be subject to change. It does not prejudice the final decision of the Commission on whether this initiative will be pursued or on its final content and structure.</p>			

A. Context, Subsidiarity Check and Objectives
<p>Context</p> <ul style="list-style-type: none"> By looking into enabling the recycling of water and nutrient, this initiative would directly contribute to the achievements of some key objectives under the 7th EU Environment Action Programme to 2020 (i.e. protecting, conserving and enhancing the Union's natural capital and turning the Union into a resource-efficient economy). What is more, by stimulating structural changes in production and transportation of reused water, related technology and innovation in a fast-growing water market, the initiative offers opportunities for green growth and job creation, and contributes to the political priorities set by the European Commission to promote a more circular economy. As such a series of actions to promote water reuse were included in the Communication from the Commission "Closing the loop – An EU action plan for the circular economy" (COM(2015)614), and in particular a legislative proposal on minimum quality requirements for reused water, e.g. for irrigation and groundwater recharge. Because reusing water generally consumes less energy than alternative supply options (desalination/inter-basin transfers) and because it may allow for less energy consumption in waste water treatment this initiative can contribute to make EU countries less dependent on energy imports, in the framework of an Energy Union. The opportunity to take action at EU level with a view to increasing water reuse was already identified in the 2012 Commission Communication "A Blueprint to Safeguard Europe's Water Resources" (COM(2012)673). Water reuse for irrigation or industrial purposes is considered to have a lower environmental impact and potentially lower costs than other alternative water supplies (e.g. water transfers or desalination), but it is only used to a limited extent in the EU. Because of an inconsistent legal framework across Member States and a limited public awareness about actual risks and benefits, water reuse tends to be a costly practice subject to distrust from the general public; potential obstacles to the free movement of agricultural products irrigated with reused water is an additional risk deterring investments. Commission's intention to address this issue, possibly by setting common EU-wide environmental/health standards, was noted with interest by the Council at that time (Council conclusions 17872/12). Furthermore, the European Citizens' Initiative, "Water and sanitation are a human right! Water is a public good, not a commodity!" and the related Communication from the Commission (COM(2014)177) show that there is high public interest on water issues and provides an additional basis for further actions in order to increase and improve access to safe drinking water and sanitation. A Fitness check of EU Freshwater policy (SWD(2012)393) was published in November 2012, as a building block of the Blueprint. Its objective was to assess the performance of the measures taken, both in environment policy and in other policy areas, in achieving the objectives already agreed in the context of water policy and identify whether any gap needed to be filled to deliver environmental objectives more efficiently. In relation to waste water reuse, the Fitness check concluded that "alternative water supply options with low environmental impact need to be further relied upon" in order to address water scarcity. In this context, a particular issue that was emphasised by industry stakeholders in the

public consultation was the lack of EU standards for reuse of waste water in irrigation. The concern expressed is that the lack of EU-level standards could inhibit free movement of agricultural produce in the single market and inhibit investment by the water industry. The issue of reuse of treated waste water for different purposes (such as irrigation or industrial uses) is not specifically addressed by EU water policy through EU wide reuse standards. The Urban Waste Water Treatment Directive only encourages water reuse without setting standards (Art. 12, paragraph 1 of Directive 91/271/EEC “*Treated waste water shall be reused whenever appropriate. Disposal routes shall minimize the adverse effects on the environment.*”).

Issue

- Europe's freshwater resources are under increasing stress, with a worrying mismatch between demand for, and availability of, water resources across both temporal and geographical (spatial) scales (EEA, 2012). **Water stress affects one third of the EU territory all year round** (EC, 2012). During summer months **water scarcity** is more pronounced in Southern European basins but is also becoming increasingly important in Northern basins, including UK and Germany. As an effect of climate change, the frequency and intensity of **droughts** and their environmental and economic damages appear to have increased over the past thirty years (EC, 2012). Water over-abstraction, particularly for irrigation purposes but also for industrial use and urban development, is one of the main threats to the EU water environment. Resource availability is further compromised by **poor or unsuitable water quality** which can significantly increase the financial costs of supply. This is not only an issue for arid regions with low rainfall and high population density that are prone to increasing water stress; temperate areas with intense agricultural, tourism and industrial activities also suffer from frequent water shortages and/or expensive supply solutions. Many EU rivers have high levels of nitrogen (N) and phosphorus (P) which result, in part, from waste water treatment plant (WWTP) discharges (the concentration of N & P released depends upon the degree of sophistication of nutrient removal processes deployed in WWTPs). Water reuse could help **decrease the nutrient pollution load to rivers** and the associated risks of **eutrophication**. **Global climate change** is already exacerbating these problems with projections indicating significant and widespread impacts over the medium to long term. Growing competition for water resources between different water using sectors is already emerging, and there is a need for **high quality resources** to be protected and reserved for drinking water supply.
- Europe's ability to adapt to the increasing risks of water scarcity, drought and over-abstraction could be enhanced by **wider reuse of treated wastewater** for agricultural, industrial and urban uses. Water reuse is an accepted practice in several EU countries subject to water scarcity issues (e.g. Cyprus, Spain, Italy), where it has become an integral and effective component of long-term water resources management. Water reuse may have a lower environmental impact than other alternative water supplies such as water transfers or desalination, under certain conditions, and may offer a range of environmental, economic and social benefits. At present, however, the **uptake of water reuse solutions remains limited** in comparison with their potential. This appears to be due to a number of factors, including low economic attractiveness of reuse solutions, low public acceptance of reuse solutions and limited awareness of its benefits, a lack of common EU environmental/health standards for reused water, and poor coordination of the professionals and organisations who design, implement and manage such schemes.
- An initial Commission assessment of water reuse practices in the context of addressing water scarcity has identified potential risk from these practices, most notably water, food and soil contamination. The lack of full clarity as regards the appropriateness of applicable national regulatory frameworks, coupled with diverging requirements in individual Member States can **prevent/erode public acceptance, prevent optimal knowledge-based risk response strategies and affect operators' level playing field**. As some Member States introduced specific measures in their national legislation to deal with water reuse, their approaches differ. A patchwork of national policies could create difficulties for businesses operating cross-border, and distortions in competition within the EU.

Subsidiarity check

- EU action is justified because different and unstable requirements in individual jurisdictions are a **barrier to investments in innovation and technologies** for reuse in the water industry. Technology providers in this sector are EU-scale companies and difference in standards among Member States prevent companies to benefit from a clear framework allowing economies of scale and standardisation which would support innovation and development of solutions at lower costs. Considering that water reuse is an **emerging worldwide market** a greater uptake of reuse at the EU level would provide a showcase for the relevance of these technologies and skills of EU companies towards potential customers in third countries.
- Because water reuse in irrigation is one of the highest potential, EU action is justified to prevent that different requirements in individual jurisdictions negatively affect the level playing field (e.g. between

farmers) and cause **obstacles to the internal market, especially for agricultural products**. Disparities in the existing water reuse standards (in place in six MS) may generate differences in the production costs of food products. Additionally different standards may also be used as an argument to restrict the import of food products from MS suspected of having lower standards. This situation does not guarantee a level playing field between food producers of the different countries. Such disparities may also create potential barriers to internal trade and to the functional operation of the single market. Addressing such barriers is an appropriate EU level response, taking into account EU food safety, health, agriculture and energy policies.

- EU action on water management is also justified because **60% of EU river basins are international**, shared by between 2 and 19 countries (Danube); action taken by a single or a few States is therefore not sufficient, for instance in relation to quantitative aspects of water management or cross border water pollution. Moreover, if Member States act alone, the technical barriers and associated costs are likely to be unnecessarily high.
- Action at EU level **would not impose water reuse to Member States who do not want to pursue it**. It would rather ensure a systematic consideration for this alternative supply and develop measures to ensure coherence if Member States decide to develop water reuse and to set requirements for their respective jurisdictions.

Main policy objectives

- The primary goal is to **encourage efficient resource use and reduce pressures on the water environment**, in particular water scarcity, by fostering the development of safe reuse of treated wastewater. To this end the initiative will look into the possibility of establishing a common approach on water reuse across the EU providing **clarity, coherence and predictability to market operators** who wish to invest in water reuse in the EU under comparable regulatory conditions.
- Additional objectives of the initiative would be to **increase the recycling of nutrients** contained in waste water when appropriate, and to contribute to growth and jobs creation in the EU by stimulating the development of innovative technologies and water infrastructure that will provide EU actors a first-mover advantage in this fast growing world market.
- The new initiative would **complement the existing EU water policy**, notably the Water Framework Directive and the Urban Waste Water Treatment Directive.

B. Option Mapping

Baseline scenario – no EU policy change

- Under the baseline scenario, no new EU action specific to water reuse will be developed. This means that the current state of national, un-coordinated legislation and approaches with related barriers and little incentive to water reuse would be continued. Improved implementation of the existing EU water policy framework (especially as regards water pricing and control of abstractions) is expected to increase the uptake of water reuse. However first evaluations and studies already indicate that this baseline scenario may lead to an uptake much below its potential development and benefits to the economy and the environment.

Options of improving implementation and enforcement of existing legislation or doing less/simplifying existing legislation

- A number of actions on improving implementation and enforcement of existing legislation on water will be taken independently of this initiative as not specific to water reuse. These actions are included in the baseline as mentioned above.
- In the Communication "Closing the loop – An EU action plan for the circular economy" (COM(2015)614), the Commission already committed to develop a **series of non-regulatory actions to promote safe and cost-effective water reuse in 2016-2017**. These actions aim at improving implementation and enforcement of existing legislation with a specific focus on water reuse. They include guidance on the integration of water reuse in water planning and management, improved consideration for water reuse in the industry in relevant Best available techniques Reference documents (BREFs), and increased visibility for supports to innovation (through the European Innovation Partnership and Horizon 2020) and investments.

Alternative policy approaches

- In the above mentioned Communication on circular economy, the Commission also announced it would table in 2017 a legislative proposal on minimum requirements for reused water for irrigation and groundwater recharge.
- As regards water reuse in irrigation, the envisaged option consists of **regulation on minimum quality**

<p>requirements for reused water. This could encompass elements such as risk management plans, treatment standards, treatment process controls, application controls and water quality benchmarks.</p> <ul style="list-style-type: none"> • As regards water reuse in aquifer recharge, a similar approach is considered with a regulation regarding minimum quality requirements specifically derived for this particular use. • Both options will be further divided into sub-options dependant on the level of stringency of the quality requirements to be aimed at, linked, for example, to the crops to be irrigated or the potential use of the recharged aquifers.
<p>Alternative policy instruments</p> <ul style="list-style-type: none"> • As regards water reuse in irrigation and aquifer recharge the alternative approach consists in Commission recommendations on minimum quality requirements for reused water on the basis of a risk-based approach providing a clear framework for managing health and environmental risks related to water reuse practices. This could encompass elements such as risk management plans, treatment standards, treatment process controls, application controls and water quality benchmarks.
<p>Alternative/differentiated scope</p> <ul style="list-style-type: none"> • While future policy developments beyond this initiative might cover other uses for which water reuse can be promoted (such as irrigation of green urban areas or reuse of greywater) the envisaged options will focus on the 2 uses identified for their greatest potential in terms of scarcity alleviation and EU relevance: agriculture irrigation (single market) and aquifer recharge (existing EU water legislation on Groundwater quality and Drinking Water).
<p>Options that take account of new technological developments</p> <ul style="list-style-type: none"> • The options described below will take account of new technological developments, particularly as regards available wastewater treatment and monitoring of water quality.
<p>Preliminary proportionality check</p> <ul style="list-style-type: none"> • See above on alternative/differentiated scope. • The envisaged EU legislation on minimum quality requirements for water reuse in agricultural irrigation and aquifer recharge in combination with other non-regulatory actions as outlined in the Action Plan on Circular Economy is a proportionate response to the objective of fostering the development of safe reuse of treated wastewater. It does not go beyond what is necessary to achieve this objective. Important Member State's prerogatives, such as the decision on whether or not to develop water reuse and the extent to which water reuse will be encouraged, remain untouched. • The Impact Assessment will analyse different options as regards the stringency of the quality requirements, to evaluate their proportionality.
<p style="text-align: center;">C. Data Collection and Better Regulation Instruments</p>
<p>Data collection</p> <ul style="list-style-type: none"> • A number of studies and evaluations are already available and will be used: <ul style="list-style-type: none"> ○ Fitness check of EU Freshwater policy. ○ The Blueprint and its impact assessment. ○ A report by the JRC concerning the innovation potential of water reuse and comparing existing standards and regulatory frameworks on water reuse in MS and in third countries (JRC science and policy reports 2014 – Water Reuse in Europe, Relevant guidelines, need for and barriers to innovation). • Specific studies collecting evidence on the current practices of water reuse, problem definition and assessing the impact of the different policy options were commissioned to external contractors. A first contract ran from September 2013 to February 2015; a second contract with another consultant started in December 2014. • Further information will be gathered through contacts with stakeholders, notably within consultation as explained in the box below. • Available studies are published on the Website of the initiative: http://ec.europa.eu/environment/water/reuse.htm.
<p>Consultation approach</p> <ul style="list-style-type: none"> • Member States and stakeholder organisations (water industry and water users, NGOs) have been informed and consulted in the framework of the Common Implementation Strategy (CIS) for the

implementation of the Water Framework Directive (WFD), which serves as a platform for discussions on the EU work on water reuse. Water reuse was discussed in 6 meetings of the former Working Group on the Programmes of Measures (September and November 2013, March and October 2014, March and October 2015). A technical workshop on possible minimum quality requirements on water reuse at EU level was organised by DG ENV and JRC in June 2015. A dedicated activity on water reuse is now included in the CIS work programme for 2016-2018 to accompany the development of related actions by Member States and the Commission. Information on this activity can be found at: <https://circabc.europa.eu/w/browse/657861df-abc2-4d8a-bb4a-227e12c72dad>

- A Green Week session on Water Reuse took place on 5 June 2014 with the aim to present the Commission work on water reuse, the US Guidelines on water reuse, agriculture sector view on water reuse and the innovation potential of water reuse practices. Outcome of this session can be found at: <http://ec.europa.eu/environment/archives/greenweek2014/05062014-6-2.html>
- An internet-based public consultation ran from 30 July to 7 November 2014 to gather wider feedback from the interested public and the expert practitioners across the EU. A dedicated stakeholder meeting regarding outcomes of the public consultation and policy options was held on 4 December 2014. Website for the public consultation (closed): http://ec.europa.eu/environment/consultations/water_reuse_en.htm. The report on the public consultation is available at the [Website](#) of the initiative.
- Future consultations of stakeholders are planned in the CIS process described above, in order to get feedback on draft policy options and their impact assessment. Additional information will be specifically looked for as regards economic impacts and on competitiveness, innovation and public administration.

Will an Implementation plan be established?

Yes No

- The need for an implementation plan is not established at this stage. The pertinence of such a tool will be further examined in the impact assessment under preparation, when assessing the option of a regulation.

D. Information on the Impact Assessment Process

- The IA work started in late 2013 and it is envisaged to be completed by spring 2017.
- An Inter-Service Group has been established in autumn 2013 and met twice (12 November 2013 and 11 July 2014). This Inter-Service Group became an IA Steering Group with the start of IA drafting and met on 17 December 2014 and 11 December 2015. At least two meetings are planned by spring 2017.
- All relevant Directorates General were invited; the DGs more directly related to the file have been proactively involved: Health and Food Safety (SANTE), Agriculture and Rural Development (AGRI), Joint Research Centre (JRC), Internal Market, Industry, Entrepreneurship and SMEs (GROW), Research and Innovation (RTD), Communications Networks, Content and Technology (CNECT), Regional and Urban Policy (REGIO), Climate Action (CLIMA), Secretariat General and the Legal Service.

E. Preliminary Assessment of Expected Impacts

Detailed assessment of expected impacts will be carried out during the IA work.

Likely economic impacts

- For economic sectors that are highly dependent on water supply, such as agriculture, the food industry, the power generation industry and the tourism and recreation industry, exploiting the full potential of water reuse would reduce their vulnerability to water scarcity and droughts, with associated cost savings.
- Impact of cost of reused water will depend on the level of stringency of the quality requirements. Being differentiated and calibrated along the intended uses, these requirements are expected to reduce over-precautionary approaches and unnecessary treatment costs. Therefore the impact on cost of reused water is expected to be neutral to positive.
- The EU water industry would also benefit from the initiative, as reuse technologies represent a significant area for further innovation and there is a growing worldwide market for such technologies.

Likely social impacts

- The establishment of EU minimum quality requirements on water reuse is expected to have positive impacts on health and welfare as minimising the risk of contamination with insufficiently treated reused water. This impact is however expected to be limited as no evidence has been found that current practices in the EU are causing health issues.
- The establishment of this EU framework together with improved communication on actual risks and benefits of water reuse is expected to have a positive impact on confidence of the general public in the quality of the reused water and, therefore, on acceptance of water reuse as a water management tool.

<p>Likely environmental impacts</p> <ul style="list-style-type: none"> Options are expected to result in mostly positive environmental impacts, primarily through a reduced pressure on EU water resources and a positive contribution to the quality of EU waters (e.g. by reducing the impact of waste water discharge on sensitive rivers or and the risk of saline intrusion in over-exploited coastal aquifers). The possible impact of reduced availability of water for the environment or for other uses, if water reuse is not properly considered as part of a range of management options will be investigated. The impact on soil will depend on the option and quality parameters considered in the requirements: while the presence of some nutrients and organic matter in treated wastewater can be beneficial to enhance soil fertility and crop production, the presence of other elements (e.g. salts, micropollutants) may be detrimental, as well as impacting on the wider environment. Some studies have shown that non-potable water reuse schemes often have lower energy intensities than other sources, particularly when compared with desalination. This can have knock-on effects such as lowering overall greenhouse gas emissions. However, this is not always the case and available evidence looks limited. Reuse of treated wastewater for irrigation has potential to decrease the level of purification/treatment necessary for discharge and thus reduce energy consumption and costs associated with water treatment.
<p>Likely impacts on simplification and/or administrative burden</p> <ul style="list-style-type: none"> Given the significant difficulties encountered with the implementation of complex national standards with significant differences between Member States, clarification in the legal framework and increased consistency across the EU are expected to result in a reduction of the administrative burden on water reuse projects' developers and beneficiaries.
<p>Likely impacts on SMEs</p> <ul style="list-style-type: none"> Impacts on SMEs are expected to be positive as they will benefit from an increased and/or better secured access to water. Agricultural businesses, which are the largest consumers of freshwater in the EU, are likely to be particularly influenced. SMEs especially are expected to benefit from a simplification and alleviation of the administrative burden related to implementation of water reuse.
<p>Likely impacts on competitiveness and innovation</p> <ul style="list-style-type: none"> Impacts on competitiveness and innovation are expected to be positive as the initiative aims at removing present barriers to investments in innovation and technologies for reuse in the water industry caused by different and unstable requirements in individual jurisdictions. A clear and consistent EU framework would allow economies of scale and standardisation and in turn support innovation and development of solutions at lower costs. The impact on innovation will depend on the design of the requirements. Quality related criteria that would allow for the design of new and more cost-efficient techniques are expected to be more positive than technology oriented criteria.
<p>Likely impacts on public administrations</p> <ul style="list-style-type: none"> Given the existence of a legislative framework in Member States where water reuse is already implemented and that the envisaged legal option is a regulation, additional effort by administrations is expected to be limited.
<p>Likely impacts on third countries, international trade or investment</p> <ul style="list-style-type: none"> Considering that water reuse is an emerging worldwide market a greater uptake of reuse at the EU level would provide a showcase for the relevance of these technologies and skills of EU companies towards potential customers in third countries. Possible impact on trade of agricultural goods irrigated with reused water will be further investigated in the IA work.