BRIEFING

EU Legislation in Progress

European Parliament

Water reuse

Setting minimum requirements

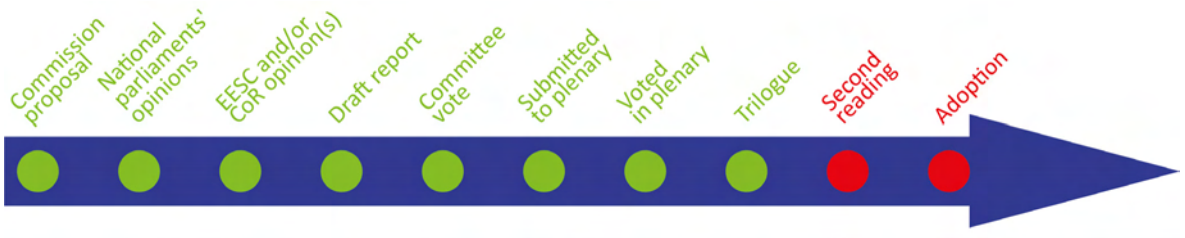
OVERVIEW

Although freshwater is relatively abundant in the European Union (EU), water stress occurs in many areas, particularly in the Mediterranean region and parts of the Atlantic region, with environmental and economic impacts.

In May 2018, the European Commission put forward a proposal for a regulation setting EU-wide standards that reclaimed water would need to meet in order to be used for agricultural irrigation, with the aim of encouraging greater use of reclaimed water and contributing to alleviating water scarcity. The Commission estimates that the proposal could increase water reuse in agricultural irrigation from 1.7 billion m^3 to 6.6 billion m^3 per year, thereby reducing water stress by 5 %.

The European Parliament adopted its first-reading position on 12 February 2019, and the Council agreed on a general approach on 26 June 2019. Trilogue negotiations concluded with a provisional agreement on 2 December. The agreed text, endorsed by the ENVI committee on 21 January 2020, was adopted at first reading by the Council on 7 April. It now returns to the Parliament for final adoption at second reading.

Proposal for a regulation of the European Parliament and of the Council on minimum requirements for water reuse		
Committee responsible:	Environment, Public Health and Food Safety (ENVI)	COM(2018) 337 28.5.2018
		2018/0169(COD)
Rapporteur:	Simona Bonafè (S&D, Italy)	
Shadow rapporteurs:	Pernille Weiss (EPP, Denmark) Jan Huitema (Renew Europe, the Netherlands) Sylvia Limmer (ID, Germany) Grace O'Sullivan (Greens/EFA, Ireland) Pietro Fiocchi (ECR, Italy) Idoia Villanueva Ruiz (GUE/NGL, Spain)	Ordinary legislative procedure (COD) (Parliament and Council on equal footing – formerly 'co-decision')
Next steps expected:	Second reading in Parliament	



EPRS | European Parliamentary Research Service

Author: Vivienne Halleux
Members' Research Service

PE 625.171 – April 2020

EN

Introduction

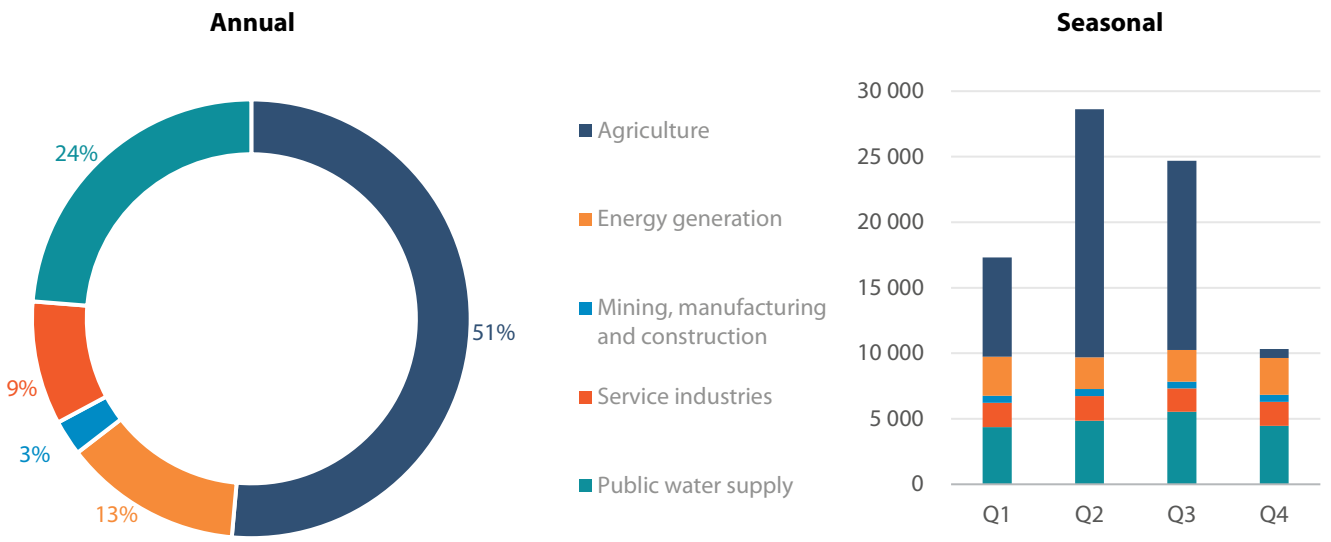
In May 2018, the European Commission put forward a legislative proposal seeking to incentivise the reuse of treated waste water (also called 'reclaimed water'), while ensuring a high level of protection of health and the environment. In its 2012 communication, A blueprint to safeguard water resources, the Commission announced it would look into 'the most suitable EU-level instrument to encourage water reuse, including a regulation establishing common standards'. The proposal also builds on the 2015 circular economy action plan, which announced actions to facilitate water reuse, including a legislative proposal on minimum requirements for reused water, for instance, for irrigation and groundwater recharge. Preventing or significantly reducing water stress is also one of the main targets of the seventh environment action programme, adopted by the EU in 2013. Related initiatives at global level include the United Nations' sustainable development goals.

Context

Although freshwater is relatively abundant in the EU, the uneven distribution of water availability, population density and economic activity results in major differences in water stress levels across river basins. With the exception of some northern and sparsely populated areas that possess abundant freshwater resources, **water stress** occurs in many areas of the EU, particularly in the Mediterranean region and parts of the Atlantic region. Water scarcity conditions created by population growth and urbanisation, fuelled in part by tourism, have in particular affected small Mediterranean islands and highly populated areas in recent years. Water scarcity has economic impacts: droughts can trigger direct economic losses,[1] mainly for farmers, as well as indirect effects, such as a reluctance to invest in an area at risk, subsequently affecting the competitiveness of the EU economy. The issue has a strong transboundary dimension, since 60 % of river basins in the EU extend beyond the territory of a single Member State.

Data from the European Environment Agency[2] on **water use by sector** in the European Union (see figure below) indicates that irrigation in agriculture accounts for about half of the water used annually (catering for 8-9 % of the total crop area), with high seasonal and geographical variations in demand.[3] Public water supply to households and small businesses accounts for about a quarter of the water used. Energy production (where water is used, for instance, to cool power plants) and the service industries (hotels and restaurants) account for 13 % and 9 % of water used, respectively.

Water use by sector in the EU (2014, hm³)



Data source: European Environment Agency.

The **area affected by water stress** has decreased in the past decade, mainly as a result of a reduction in water abstraction[4] (by about 7 % between 2002 and 2014), driven by efficiency gains in electricity cooling, agriculture and public water supply. The European Environment Agency notes that although this trend is likely to continue in the coming years, water stress hotspots are expected to remain, given continued pressures such as urbanisation, increasing population and climate change.

Reclaimed water refers to water that has been used once, has subsequently undergone treatment processes, and is then intentionally used again. A 2017 report by UN-Water notes that water reuse is mainly driven by legislation and water prices. It distinguishes three main **types of water reuse**: 1) direct potable reuse, where appropriately treated waste water is fed into the water supply network; 2) indirect potable reuse, where treated waste water is released into surface waters and groundwater used as drinking water sources; and 3) reuse for non-drinking purposes, including agricultural irrigation, industrial use (for instance, as processing or cooling water), recreational use (for example, for snowmaking or golf course irrigation), environmental use (for instance, for groundwater recharge or wetlands restoration), and urban use (for example, for irrigation of public parks, fire protection systems or street cleaning). The report notes that the reuse of water in agriculture is one of the areas of great potential.

Waste water treatment processes

Treatment processes are generally referred to as primary (physical process eliminating mainly visible material), secondary (biological process removing organic matter through the use of microorganisms), tertiary (chemical process removing pathogens as well as nitrogen and phosphorus), and advanced (process removing micropollutants, such as pharmaceutical residues, for instance, through the use of ozone or activated carbon).

A number of **opportunities** are associated with water reuse, including: increasing water availability in a sustainable way; delivering energy savings and reductions in greenhouse gas emissions from water treatment; and contributing to climate change adaptation. However, a number of **challenges** are also associated with water reuse, including: affordability, which can be at risk as a result of the high cost of advanced waste water treatment and the need for additional supply infrastructure; and public acceptability, which remains low, in particular as regards reuse for drinking purposes.

Existing situation

EU legislation allows and encourages water reuse through two instruments:

- the Urban Waste Water Treatment Directive, which provides that 'treated waste water shall be reused whenever appropriate';
- the Water Framework Directive, which lists water reuse as a possible measure to be included in the programmes of measures for each river basin.

However, EU legislation does not specify conditions for water reuse. The Commission notes that six Member States have requirements in place on water reuse, either in legislation or in non-regulatory standards,[5] and that these requirements vary significantly in their level of stringency.

Several **EU policy documents** relate to water reuse. The 2007 Commission communication on water scarcity and droughts sets out a hierarchy of measures that Member States should consider when managing water resources, with water saving as a preferred measure. The 2011 communication Roadmap to a resource efficient Europe sets an aspirational target, specifying that 'water abstraction should stay below 20 % of available renewable water resources'. The 2012 communication, A blueprint to safeguard water resources, announced measures to encourage reuse.

The European Union supports **research and innovation** on water reuse. Measures include several action groups under the European innovation partnership on water;[6] funding under the Horizon

2020 framework programme for research; and the first innovation deal (within the context of the innovation deals instrument) between the European Commission and 14 partners (national and regional authorities, universities, knowledge centres, innovators and end-users).

The 2012 fitness check on EU freshwater policy identified water scarcity as one of the main challenges. On the specific question of water reuse, it noted that 'alternative water supply options with low environmental impact need to be further relied upon', and that industry stakeholders had raised concerns about the lack of EU standards for waste water reuse in irrigation, with potential impacts on the free movement of agricultural produce in the single market.

Parliament's starting position

In its resolution of 8 September 2015 on the **follow-up to the European Citizens' Initiative Right2Water**, Parliament encouraged the Commission to draw up a European legislative framework for the reuse of treated waste water. The Parliament also noted that since 1988, its Committee on Petitions had received a significant number of petitions from EU citizens in many Member States, expressing their concerns about water supply and quality, and waste water management.

In its resolution of 17 April 2018 on the **implementation of the 7th environment action programme**, Parliament regretted the persistent shortcomings in the treatment of urban waste water in various regions of Europe and underlined the potential of waste water treatment and reuse to alleviate water stress situations, reduce direct water withdrawals, produce biogas and guarantee better management of water resources, particularly through irrigation for agriculture.

Preparation of the proposal

The proposal builds on the fitness check on EU freshwater policy carried out in preparation for the 2012 communication, A blueprint to safeguard Europe's water resources. **Data and analysis** used in preparing this proposal include:

- a Commission impact assessment for the 2012 Blueprint communication;
- work by the Commission's Joint Research Centre, in particular a 2014 study on guidelines, needs and barriers related to water reuse; a 2017 report on minimum quality requirements for waste water reuse; and a 2017 hydro-economic analysis;
- several supporting studies by external contractors: a 2013 report on waste water reuse in the EU, a 2015 report on optimising water reuse in the EU, a 2016 report on EU-level instruments on water reuse, and a 2017 report on the patterns of unplanned water reuse.

The Commission carried out a number of **consultations** related to this proposal. A first public consultation ran between July and November 2014 on general aspects, and a second public consultation ran from October 2016 until January 2017 on minimum quality requirements. In both consultations, 60 % to 80 % of respondents were in favour of an EU regulatory framework. The Commission notes that 70 % of respondents considered reclaimed water at least as safe as water from rivers. Additional consultations of experts took place in the context of the implementation of the Water Framework Directive. In developing the scientific basis for minimum quality requirements, the Commission's Joint Research Centre consulted academics as well as experts from the World Health Organization and Member States. The EU Scientific committee on health, environment and emerging risks (SCHEER) and the European Food Safety Authority (EFSA) produced scientific opinions related to the proposal.[7]

The Commission produced an **impact assessment**, which assessed three policy options: a legal instrument with a 'one size fits all' approach; a legal instrument with a 'fit for purpose' approach; and a guidance document with a 'fit for purpose' approach. The preferred option was the second one (a legal instrument with a 'fit for purpose' approach). The Commission's regulatory scrutiny board

issued a 'positive opinion with reservations' on the impact assessment.[8] The initial appraisal of the impact assessment by the European Parliamentary Research Service finds that the overall presentation of the options is clear and the analysis of the impacts seems to be reasonable, although some parts of the impact assessment do not entirely follow the requirements of the better regulation guidelines.

The changes the proposal would bring

The proposal aims to contribute to **alleviating water scarcity** in the EU by increasing water reuse, which remains below its potential. To do so, the proposal seeks to ensure that reclaimed water is safe for its intended use. The proposed type of legal instrument (a regulation) is intended to stimulate market uptake, as it would be directly applicable to businesses, and to come into force faster than an amendment to the Urban Waste Water Treatment Directive.

The proposal would apply solely to **water reused for agricultural irrigation**. The Commission notes in this regard that agricultural irrigation has the highest potential for an increased uptake of water reuse.

The proposal would set **obligations for the operators of reclamation plants**, where urban waste water is treated before being supplied to end-users (farmers). These obligations include:

- complying with minimum requirements for reclaimed water quality. Requirements differ according to four water quality classes defined on the basis of the relevant crop and irrigation method, as outlined in Table 1 below. Requirements relate to microbiological parameters (presence of pathogens: *E. coli*, *Legionella spp.* and intestinal nematodes) and physico-chemical parameters (biochemical oxygen demand, total suspended solids, and turbidity), as outlined in Table 2;
- monitoring reclaimed water quality on the basis of minimum requirements related to the frequency of tests;
- establishing a risk management plan in consultation with relevant actors (in particular the suppliers of waste water to be reclaimed and the end-users), on the basis of key risk management tasks listed in annex II to the proposal, to ensure potential additional hazards are addressed.

Table 1 – Proposed reclaimed water quality classes

Water quality class	Crop category	Irrigation method	Indicative treatment process*
A	Root crops consumed raw; food crops, where the edible part is in direct contact with reclaimed water; other food crops	All methods	Secondary, tertiary and advanced treatment
B	Food crops consumed raw, where the edible part is produced above ground and is not in direct contact with reclaimed water; processed food crops; non-food crops, including crops to feed milk- or meat-producing animals	All methods	Secondary and tertiary treatment
C		Drip irrigation only	
D	Industrial, energy, and seeded crops	All methods	

* See textbox above for explanation of treatment processes.
Source: European Parliamentary Research Service.

The proposal would make the supply of reclaimed water conditional on **permits** to be issued by the competent authorities of the Member States. These competent authorities would be empowered to impose additional requirements on the basis of the risk management plan submitted by the reclamation plant operator or the need to mitigate unacceptable risks to health or the environment.

The proposal would also require the competent authorities to check the reclaimed water for its compliance with the conditions set out in the permit.

Member States would be required to make available online **information** on water reuse, updated at least once a year, and to publish, every six years, information on compliance checks performed by the competent authorities.[9]

Table 2 – Proposed reclaimed water quality requirements

Water quality class	Quality requirements				
	E. coli, cfu/100 ml	Biological oxygen demand (BOD_5), mg/l	Total suspended solids (TSS), mg/l	Turbidity (NTU)	Other
A	≤10*	≤10	≤10	≤5	*Legionella spp.*: <1,000 cfu/l where there is risk of aerosolisation in greenhouses Intestinal nematodes (Helminth eggs): ≤1 egg/l for irrigation of pastures or forage
B	≤100	25 mg/l O_2**	35 mg/l**	-	
C	≤1 000			-	
D	≤10 000			-	

* or under detection limit; ** as set in the Urban Waste Water Treatment Directive (annex I, Table 1).
Source: European Parliamentary Research Service.

The proposal would require the Commission to carry out an **evaluation** six years after the regulation has entered into force. It also introduces provisions related to access to justice on environmental matters.[10]

The Commission would be empowered to adopt **delegated acts** on minimum requirements and key risk management tasks, as well as **implementing acts** on the format and presentation of information to the public on water reuse and compliance with minimum requirements.

According to the Commission, the proposal would ensure a level-playing field for operators of reclamation plants and end-users, prevent potential obstacles to the free movement of agricultural products irrigated with reclaimed water, and increase confidence in the practice of water reuse. The Commission estimates that the proposal could increase water reuse in agricultural irrigation from 1.7 billion m^3 to 6.6 billion m^3 per year. The Commission notes that the preferred option identified in the impact assessment could make it possible to reuse half the water volume theoretically available for agricultural irrigation, thereby reducing water stress by 5 %. It estimates that investment costs would amount to €700 million and benefits to €3 billion per year.[11]

Advisory committees

In its opinion of 12 December 2018 on the proposal (rapporteur: Mindaugas Maciulevičius, Diversity Europe – Group III / Lithuania), the European Economic and Social Committee recommended, for the regulation to achieve its maximum intended impact, that effective policing of water resources and an active accountability and enforcement regime be followed in all Member States, insisting in particular on the need to apply more consistently the enforcement of prohibitions on illegal water extraction. It also noted the potential of water reuse for aquifer recharge and suggested undertaking further technical analysis to resolve the problems identified in the impact assessment.

The European Committee of the Regions adopted its opinion on 6 December 2018 (rapporteur: Oldřich Vlasák, Czechia, ECR). Recommendations include extending the scope of the regulation to include the use of water for irrigation of green spaces in urban areas, parks, gardens and grounds for public use; introducing appropriate standards for sampling and analysis; clarifying the liabilities

of the producer of reclaimed water, considering also the managers of the water cycle and end-users; and extending the date of entry into application of the regulation to three years.

National parliaments

The deadline for national parliaments to submit comments on the proposal was 13 September 2018. No reasoned opinions were submitted.

Stakeholders' views[12]

Copa Cogeca, representing farmers and agri-cooperatives, welcomed the proposal. It highlighted the need to apply a fit-for-purpose criterion when utilising reused water in irrigation, and to overcome bottlenecks, such as consumers' perceptions and legal liabilities.

The European Irrigation Association noted that the proposal would hamper developments in treated waste water recycling in Europe as well as prospects of nutrients recovery in a circular economy perspective. It called for the proposal to apply to other uses besides agricultural irrigation, and for a cost-benefit approach.

EurEau, the European federation of water services, welcomed the proposal. However, it called for extending responsibilities to all involved stakeholders, and noted that meeting class A quality requirements could prove extremely difficult.

Aqua Publica Europea, the European association of public water operators, welcomed the proposal. It called however for considering environmental implications, for better distributing responsibilities regarding risk management plans, for incorporating new requirements into existing permit systems, and for adopting a proportionate approach as regards quality requirements.

Legislative process

In the European Parliament, the file was referred to the Committee on Environment, Public Health and Food Safety (ENVI), which appointed Simona Bonafè (S&D, Italy) as rapporteur. The ENVI Committee adopted its report on 22 January 2019.

The European Parliament adopted its first-reading position in a plenary vote on 12 February 2019. Amendments to the Commission's proposal include:

- clarifying the **roles and responsibilities** of the various entities involved in water reclamation operations, in particular, defining the roles and obligations of reclaimed water distribution operators and reclaimed water storage operators;
- adding **'Salmonella'** to the parameters considered for reclaimed water quality;
- entrusting **oversight** of risk management to the competent authorities;
- adding detection of the presence of **microplastics** to the list of additional requirements that can be imposed by competent authorities;
- expanding the list of **preventive measures** to limit risks;
- requiring Member States to set up information and awareness-raising **campaigns** concerning the safety of water reuse, and the savings of water resources resulting from water reuse;
- requiring the Commission to assess, within five years after entry into force, whether the scope of the regulation can be extended to include **further specific uses** (i.e. other than agricultural irrigation). In the meantime, Member States could allow the use of reclaimed water for further purposes, such as reuse for industrial, amenity-related and environmental purposes, provided that a high level of protection of human and animal health and the environment is ensured;
- postponing the date of application of the regulation to **two years** after entry into force.

The Council adopted its position (general approach) on 26 June 2019. The main elements include:

- giving Member States that do not intend to practice water reuse at this stage the possibility to **opt out** from the application of the regulation. Such a decision, which the Member State needs to justify and can review as necessary, must be communicated to the Commission and made available to the public;
- clarifying reclamation plant operators' responsibility regarding **reclaimed water quality**; and providing for the possibility of complementing the minimum quality requirements with additional barriers (including physical or process steps or conditions of use) in the water reuse system to ensure that water meets the quality requirements at the point of end-use in accordance with EU rules on the hygiene of foodstuffs;
- clarifying the general harmonised obligations regarding reclaimed water **permits**, while giving Member States flexibility to determine the details of the procedures for granting those at national level (such as the competent authorities and deadlines);
- removing provisions related to **access to justice** on environmental matters;
- requiring the Commission to assess the need to **review the minimum requirements** applicable to reclaimed water, based on the results of the evaluation of the regulation (to be carried out within eight years after entry into force) or whenever new technical and scientific knowledge so requires;
- postponing the application date of the regulation to **five years** after entry into force.

Following the European Parliament elections, the ENVI committee voted on 9 October 2019 to enter into interinstitutional (trilogue) negotiations on the basis of Parliament's first-reading position. Negotiations started the following day, and resulted in a provisional agreement on 2 December 2019. The text was approved by the Permanent Representatives Committee (Coreper) on 18 December 2019, and endorsed by Parliament's ENVI committee on 21 January 2020. The Council formally adopted its first-reading position on the basis of the agreed text on 7 April 2020, and so the proposal now returns to the Parliament for second reading. Once formally adopted, the regulation would become applicable three years later.

EP SUPPORTING ANALYSIS

Vikolainen V., Minimum requirements for water reuse, Initial appraisal of a European Commission Impact Assessment, EPRS, European Parliament, July 2018.

Réchard D. et al., Global Trendometer: Essays on medium- and long-term global trends – Summer 2017, Study, EPRS, European Parliament, September 2017.

Zandstra T., Water legislation: Cost of Non-Europe Report, Study, EPRS, European Parliament, May 2015.

Rossi, R., Irrigation in EU agriculture, Briefing, EPRS, December 2019.

OTHER SOURCES

Minimum requirements for water reuse, European Parliament, Legislative Observatory (OEIL).

Wastewater: The Untapped Resource, UN-Water, 2017.

ENDNOTES

[1] The European Environment Agency notes that the 2003 drought and heat wave is estimated to have cost almost €15 billion. The Italian farming sector has estimated its losses from the 2017 drought at €2 billion, according to press reports.

[2] Charts are based on data available from the European Environment Agency at the time when the Commission submitted its proposal. More recent data can be found on the Agency's site.

[3] In the spring of 2014, irrigation in agriculture accounted for 66 % of the total water used in Europe. Around 80 % of total water abstraction for agriculture occurred in the Mediterranean region.

[4] Water abstraction is the process of taking water from a source, either temporarily or permanently.

[5] Cyprus, France, Italy, Greece and Spain have legislation setting requirements for waste water reuse; Portugal has non-regulatory standards on reused-water quality.

[6] Action groups supporting research and innovation projects on water reuse include industrial water reuse and recycling (InDuRe), water & irrigated agriculture resilient Europe (WIRE), real time water quality monitoring (RTWQM), and modular & sustainable wastewater treatment (Verdygo).

[7] The EFSA published its opinion in May 2017, issuing ten specific recommendations. The SCHEER adopted its opinion in June 2017, concluding that the foreseen minimum quality requirements provided insufficient protection both to environmental and human health. The Joint Research Centre subsequently took the opinions into account when finalising its report on minimum quality requirements for water reuse.

[8] The regulatory scrutiny board issued a first negative opinion on 27 October 2017. On 19 January 2018, it issued a second, positive opinion with reservations. The impact assessment was subsequently modified to take its recommendations into account.

[9] The first report on compliance checks would be published three years after the regulation has entered into force.

[10] In doing so, the proposal implements provisions of the Aarhus Convention on access to information, public participation in decision-making and access to justice in environmental matters. For more details, see A. Altmayer, Implementing the Aarhus Convention: Access to justice in environmental matters, EPRS, European Parliament, October 2017.

[11] Based on a willingness to pay about €0.50/m^3 for preserving natural flows in rivers and aquifers.

[12] This section aims to provide a flavour of the debate and is not intended to be an exhaustive account of all different views on the proposal. Additional information can be found in related publications listed under 'EP supporting analysis'.

DISCLAIMER AND COPYRIGHT

eprs@ep.europa.eu (contact)

www.eprs.ep.parl.union.eu (intranet)

www.europarl.europa.eu/thinktank (internet)

http://epthinktank.eu (blog)

Second edition of a briefing originally drafted by Didier Bourguignon. The 'EU Legislation in Progress' briefings are updated at key stages throughout the legislative procedure.