Deutscher Verein des
Gas- und Wasserfaches e.V.

DVGW

www.dvgw.de

POSITION PAPER

Fitness Check of the EC Water Framework Directive

12/10/2018

DVGW German Technical and
Scientific Association for Gas and Water

Contact person
Dr Claudia Castell-Exner
Dr Daniel Petry
Josef-Wirmer-Straße 1-3
D-53123 Bonn
Tel.: +49 228 9188-651/-856
E-mail: castell-exner@dvgw.de, petry@dvgw.de

Contents

Abstract

The entry into force of the European Water Framework Directive (WFD) in 2000 marked a milestone for European water protection. This directive has provided decisive impetus for sustainable management and comprehensive water protection. However, in order to actually achieve the water quality objectives, the WFD must be further developed beyond 2027 and be given additional, effective implementation instruments.

There is a significant **need for action to improve protection and reduce the pollution of water bodies used for drinking water supply**. The evaluation of the existing management plans and programmes of measures shows that hardly any additional measures have been taken to protect drinking water resources. At the same time, operating costs for management measures and investment costs for additional treatment stages for the removal of trace substances and nitrate have been rising steadily for decades for the water supply sector. Furthermore, the WFD does not yet provide the Member States with **instruments for effective emission control, neither for nitrate nor for plant protection products and anthropogenic trace substances**. The call for “good status” miss the mark without the possibilities of measurable emission limitation.

To this end, WFD Article 7 must be provided with clear requirements and guidelines for their implementation by the Member States.

A **firm establishment of the polluter-pays principle** is essential. This requires a close **linking with the political and legal areas relevant for addressing the causes of pollution**.

To this end, the Common Agricultural Policy as well as legislation regarding chemicals, plant protection products and pharmaceuticals must be given binding requirements, in particular emission limits that correspond with the objectives of the Water Framework Directive, and appropriate instruments for achieving the water protection objectives of the WFD.

Preamble

The public water supply sector must provide drinking water in sufficient quantity and pressure, in perfect quality, permanently at socially acceptable prices, i.e. safety, reliability, sustainability and economic efficiency of the supply must be guaranteed in accordance with legal requirements and technical rules.

In this public service mission, the public water supply sector relies on well-protected drinking water resources that are free of chemicals and microbiological contaminants that may be harmful to health. The guiding principle of public water supply in Germany is to provide at the tap drinking water that is taken from the hydrologic cycle in as natural condition as possible.

The public water supply sector must be able at all times to meet the legal requirements on drinking water quality by employing appropriate water treatment processes. This involves technical and financial expenditure, which is passed on to consumers via drinking water charges.

When considering the sustainability principles of ecology, economy and social welfare, it is in the interest of the entire society that waterworks are not just end-of-pipe companies and that water bodies, and in particular drinking water resources, are sustainably protected from pollution, so that drinking water, being the number one foodstuff, can be supplied to citizens in the most natural condition possible and, at the same time, ecological objectives can be achieved through the protection of drinking water resources by fulfilling the protection requirements in the catchment areas. This proven positive multiple effect drinking water protection areas have on economy and ecology means effective precaution instead of expensive “end-of-pipe” repairs in the waterworks; it must therefore be taken up in an update of the Water Framework Directive.

1 DVGW is committed to the EC Water Framework Directive – a milestone for European water protection beyond 2027

With the Water Framework Directive (2000/60/EC), the European Union has achieved an important milestone in the protection of waters in Europe. It is rightly pointed out in the Preamble, par. 1, that “*water is not a commercial product like any other but, rather, a heritage which must be protected, defended and treated as such*”.

In principle, the WFD is the right instrument for the protection of water bodies in Europe. It is a political instrument that must be continued beyond 2027. Since the introduction of the WFD in 2000, however, the pressure on drinking water resources has increased. The objective of ensuring good water condition by 2015 has not been achieved. This will probably not even be the case throughout the entire Community by 2027. With regard to the problematic parameters nitrate, plant protection products and their metabolites as well as organic trace substances, the WFD has so far made no effective and measurable contribution, which is essentially due to the fact that, ambitiously, a “good status” has been defined on the immission side, but no efficient tools have been provided to limit emissions. The main reasons for this, from the DVGW’s point of view, are listed below, and proposals are presented for a successful further development and better implementation of the WFD.

2 Failure to meet targets for pollution of drinking water resources and inadequate implementation of WFD Article 7

2.1 Pollution of drinking water resources with nitrate

Nitrate pollution of drinking water resources has been a problem in many regions for decades. Nitrate concentrations often stagnate at a high level or show an upward trend in some intensively farmed regions. The **Groundwater Nitrate Database** run by **BDEW, DVGW and VKU**[1] contains data from 1,123 water supply companies on 10,650 groundwater sampling points with 178,000 nitrate analyses (as of April 2018). The quality standard of 50 mg nitrate/l proclaimed in the Groundwater Directive is exceeded at around 22 % of the sampling points. Nitrate contents above 37.5 mg/l at 28 % of the sampling points require measures to reverse the trend in accordance with WFD Article 4(1b).

The analyses also show that the natural nitrate degradation capacity is no longer available in some groundwater bodies or has already been significantly depleted. If the nitrate can no longer be degraded by natural processes, this will result in an immediate rise in nitrate concentration in the groundwater and an increasing risk that the nitrate front breaks through to the wells.

DVGW conclusion:

- The nitrate pollution of groundwater bodies used for drinking water supply is high and does not differ significantly from the average pollution of all groundwater bodies.
- It is obvious that the additional measures required by WFD Article 7 to protect drinking water resources, if taken at all, have so far not been successful.

2.2 Pollution of drinking water resources with anthropogenic trace substances

In addition to nitrate, anthropogenic organic trace substances such as plant protection products, human and veterinary pharmaceuticals, biocides, flame retardants, degradation products of these substance groups and other substances with high persistence, mobility and possibly also toxicity are increasingly problematic from the point of view of water and drinking water protection.

Residues of these substances in the nanogram range or below can today be detected both in waste water and in ground and surface waters. Through the natural water resources, they can reach drinking water treatment plants to a small extent.

DVGW conclusion:

- The monitoring requirements of the WFD and its daughter directives do not yet cover the area of anthropogenic trace substances.
- Furthermore, the WFD does not yet provide the Member States with instruments for effective emission control. In order to significantly reduce the pollution of water bodies and

[1] BDEW is the German Association of Energy and Water Industries, DVGW is the German Technical and Scientific Association für Gas and Water, VKU is the German Association of Local Utilities

drinking water resources with trace substances, their entry into waters must already be prevented or reduced at the source or during application.

2.3 Implementation of WFD Article 7

The claim of the WFD to also improve the conditions for drinking water resources is expressed in WFD Article 7 “Waters used for the abstraction of drinking water”. Paragraph 2 requires the Member States to ensure that, for each water body, the environmental objectives of WFD Article 4 are achieved and strategies to fight water pollution as per WFD Article 16 are implemented, but also that the requirements of Directive 98/83/EC are met. Article 7 Paragraph 3 requires the Member States to ensure “the necessary protection for the bodies of water identified with the aim of avoiding deterioration in their quality in order to reduce the level of purification treatment required in the production of drinking water.” However, this close link between the WFD and the EC Drinking Water Directive has not led to an improvement as regards the pollution of drinking water resources.

From a practical point of view of the water suppliers, it must be stated that during the first two management cycles (2009–2015 and 2015–2021) hardly any concrete measures to implement Article 7 have made their way into the Member States’ river basin management plans and programmes of measures. DVGW considers the following points to be the causes of the existing deficits:

- Water protection areas and protected area regulations are supplementary measures as referred to in WFD Annex VI Part B, and they are generally suitable for achieving the requirements of WFD Article 7. DVGW notes that: a) the designation of protected areas, issuing of regulations and monitoring of the associated commandments and prohibitions vary greatly among the federal states, b) there are implementation and monitoring deficits throughout Germany, and c) the procedures often take years to decades.
- The programmes of measures are often limited to listing measures that have already been established or that are implemented independently of the WFD. One example of this are voluntary measures in the context of cooperation initiated by water suppliers with farmers in water protection areas.
- Lack of efficiency and effectiveness of measures in the agricultural sector and lack of legally based control mechanisms. Most often, these measures are support programmes, which can only become effective with the voluntary participation of farmers, and which are frequently overlaid by other agro-economic and agro-structural mechanisms that have a greater impact on land management. Funding is not linked to measurable environmental quality objectives (such as falling nitrate levels).
- When river basin management plans and programmes of measures are drawn up, it turns out that the protection of drinking water resources and effects on the groundwater are not or not sufficiently taken into account in any measures to improve the condition of surface waters. In practice, neither possible changes in the infiltration properties of water courses nor necessary measures to prevent the entry of problematic trace substances from surface waters into groundwater are considered when planning measures.
- No result-oriented approach: No cases are known to have reduced the expenditure of water treatment as a result of water protection measures taken to implement the WFD. The opposite is true: operating costs for management measures and investment costs for additional treatment stages for the removal of trace substances and nitrate have been

rising steadily for decades for the water supply sector. The costs incurred in Germany to secure the supply of drinking water that have their root cause in agriculture were investigated in an extensive study carried out by UBA (Umweltbundesamt [German Federal Environment Agency]).

DVGW conclusion:

- The provisions of WFD Article 7(2) and (3) have
  - not effectively and efficiently protected drinking water resources,
  - not brought the water supply sector any additional benefits beyond the already existing protection provisions, and have
  - not lead to a reduction in water treatment expenditure.
- DVGW deems a more concrete protection of waters that are used for the abstraction of drinking water (Article 7(2) and (3)) with binding requirements and clear targets for an ambitious implementation by the Member States urgently necessary.
- DVGW also considers the consistent implementation of the polluter-pays principle and closer links with the relevant political and legal areas to be urgently needed.

3 Further development of the WFD and linkage with relevant policy fields and legal acts

3.1 Linking WFD Article 7 with Article 8 of the draft Drinking Water Directive

DVGW supports a close linking of the WFD with the Drinking Water Directive with the aim of monitoring the quality of drinking water resources and initiating risk control measures by the Member States. This is a central approach to strengthening the provisions of WFD Article 7 in order to achieve an improved protection of drinking water resources.

The draft Drinking Water Directive (COM(2017)753) of 1 Feb 2018 introduces for the first time the Water Safety Plan approach to its full extent proposed by the WHO in 2004 (DWD Articles 7–10). According to this plan, all relevant persons in the water supply chain, i.e. from the catchment area to the tap in the drinking water installation, are made responsible and shall make their contribution to safeguarding drinking water. Authorities, water suppliers and home owners shall carry out risk assessments and initiate and monitor measures to prevent and reduce pollution.

DVGW particularly welcomes the introduction of the risk-based approach for the catchment areas of drinking water abstraction plants. This offers the possibility to combine the measures to be taken according to WFD Art. 7(2) and (3) with the water-body-related risk management to be carried out according to Article 8 of the draft Drinking Water Directive into an action programme which is adapted to the requirements of a safe drinking water supply with as simple a treatment as possible.

3.2 Adaptation and extension of monitoring obligations and quality standards in the WFD daughter directives for groundwater and surface waters

The WFD daughter directives for groundwater (2006/118/EC) and surface waters (2008/105/EC as amended by 2013/19/EU) contain quality standards for a number of contaminants. However, trace substances relevant to health and undesirable in drinking water largely remain unregulated. A well-known example of substances that would be important for the protection of drinking water resources are the so-called non-relevant metabolites of active substances in plant protection products (PPPs). This means for the catchment areas of drinking water abstraction plants that the authorities do not take any measures, or do not take sufficient measures, to reduce or prevent the entry of these substances.

In order to protect drinking water resources, substances relevant to drinking water quality need to be covered by both the Groundwater Directive and the Environmental Quality Standards (EQS) Directive. These include, but are not limited to

- pharmaceuticals for human and veterinary use,
- biocides,
- metabolites of pesticides that are not relevant in terms of approval and
- other persistent, mobile and toxic substances (so-called PMT substances and vPvM substances).

In the meantime, the widespread presence of these anthropogenic substances in aquatic environments has been well documented and urgently calls for an adaptation of monitoring requirements, quality standards and efficient avoidance strategies based on the polluter-pays principle.

From the multitude of anthropogenic substances occurring in aquatic environments, those substances that are particularly relevant for water supply, which are therefore priority substances for monitoring and protecting drinking water resources, must be identified. Substance assessment on the basis of persistence, mobility and toxicity criteria must therefore also become part of the approval procedures for substances. Furthermore, identified substances should be dealt with in the Groundwater Directive and EQS Directive.

3.3 Consistent implementation of the polluter-pays principle as the key to effective measures and achievement of objectives

In accordance with WFD Article 9, the polluter-pays principle forms the basis for covering the costs of water services, including environmental and resource costs. However, the WFD does not specify how the Member States are to implement it. The implementation has so far failed due to a lack of emission-related regulations in the political and regulatory areas relevant to the polluters, such as agricultural policy and chemicals, pharmaceutical or plant protection law. DVGW considers this to be the decisive regulatory shortcoming that is responsible for the inadequate implementation of the polluter-pays principle in water management practice and for the lack of effectiveness of measures in areas that are not directly subject to the enforcement competence of the water authorities.

The environmental and resource costs arising from the “water use” agriculture in the form of pollution with nitrate and plant protection products are mentioned here as an example.

Furthermore, the ECJ has found that the Nitrates Directive is not being complied with in several Member States. Agriculture, as the major root cause of poor groundwater and surface water condition, thus does not even bear the costs arising from compliance with the requirements of agricultural legislation. All other expenses are also paid for from general tax revenue or from public water supply funds, that is by the citizens. This clearly contravenes the polluter-pays principle and is therefore unacceptable both from the point of view of public drinking water supply and from the point of view of society as a whole and shows the urgent need for action in the CAP reform.

The polluter-pays principle must be implemented through clear rules. This requires clear and binding regulations for water use such as in agriculture and industry. For example, measures to reduce the input of substances from agriculture are to be financed exclusively from agricultural funds or the agricultural budget of the EU and its Member States.

Aid payments to agriculture must be linked to measurable environmental indicators (declining nitrate and pesticide concentrations, biodiversity, etc.); the sole orientation on individual measures as practised in recent years has proved to be ineffective. A close link between the CAP and the WFD is essential.

3.4 Internalisation of environmental and resource costs is part of the solution

The WFD calls on the Member States to generally pursue the principle of internalisation of the costs of water services, including environmental and resource-related costs. However, the WFD does not give a definition of the term “environmental and resource costs”. There are only explanatory attempts and definition approaches by the EU Commission and other authors, without explicit reference to the practice of water services.

DVGW calls for a comparable and binding designation of environmental and resource costs as an important aspect of economic analysis and as a prerequisite for an allocation of costs in accordance with the polluter-pays principle.

The information collected so far on levies and compensatory levies as well as compensatory payments as internalised environmental and resource costs is not sufficient to assess whether or not these transfers actually help to achieve the management objectives of the WFD.

DVGW emphasises that the water supply sector today bears to a considerable extent environmental and resource costs for drinking water resources that do not meet the water quality objectives of the WFD that are caused by and should be borne by other water users:

- plant and process-related costs of drinking water treatment,
- services and measures for the protection and prevention of and for the remedy or reduction of damage to the environment and resources that must be taken in order to provide a sustainable water service. These include, for example, costs for monitoring, information systems, measurement networks, sampling, analytics as well as plant, risk and safety management, and for related plants and equipment,
- all related planning, operating, maintenance and administrative services.

The “Catalogue of preventive services provided by water supply companies for the protection of waters and health” (published by BMUB [Bundesministerium für Umwelt, Naturschutz und nukleare Sicherheit, German Federal Ministry of the Environment, Nature Conservation and Nuclear Safety] and BMG [Bundesministerium für Gesundheit, German Federal Ministry of

Health] in the Federal Gazette on 13 Aug 2014) contains a comprehensive list of services provided by water supply companies that represent environmental and resource costs incurred by other water uses within the meaning of the WFD.

3.5 Closer links between the WFD and other European legal acts and policy areas

The WFD and its daughter directives provide only few instruments to limit emissions, which, additionally, have only been inadequately implemented. Achieving the objectives therefore depends on consistent and systematic linkage and cross-sectoral coherence with other legal acts and policy areas. In order to eliminate sources and causes of pollution, it is necessary to systematically review all relevant legal areas for their contributions to achieving the objectives of the WFD.

- **Nitrates Directive**

  In 2018, the ECJ has also condemned Germany for non-implementation of the Nitrates Directive and upheld the Commission's position on all points raised. The ineffectiveness of further EU legal acts owing to non-implementation is one reason why the WFD is still a long way from the objective of a "good status" in water protection.

  DVGW also emphasises that the fertilizer legislation last amended in 2017 is not suitable for achieving the objectives set out in the Nitrates Directive. In particular, the nitrogen surpluses permitted per hectare and year under the so-called *Stoffstrombilanzverordnung* (an ordinance defining obligations for balancing and reporting nitrogen surpluses at farm level) prevent the Nitrates Directive from achieving its objective. Depending on the type and structure of the farm, nitrogen surpluses of 175 kg and more per hectare and year are permitted. In order to be able to comply reliably and comprehensively with the 50 mg nitrate/l quality standard for groundwater under the WFD, already nitrogen surpluses of > 60 kg per hectare and year determined using nitrogen balancing methods are to be regarded as critical.

  DVGW therefore points out that the German action programme for the protection of waters against pollution with nitrates from agricultural sources will continue to not making decisive contribution to achieving the quality objectives of the WFD.

- **Common Agricultural Policy**

  In its working document "Agriculture and Sustainable Water Management in the EU" (SWD(2017)153) of 28 April 2017, the European Commission analyses the interplay of the various legal acts and policies in the fields of agriculture and water protection. The Commission concludes that the EU already provides a wide range of tools for a meaningful linkage of the two sectors, but that these are not consistently used by the Member States. DVGW shares this view and refers to the inadequate implementation of the Nitrates Directive as an example. However, DVGW also considers it the Commission's responsibility to provide its policies and legal acts with clearer requirements and guidelines for implementation in order to achieve consistent implementation by the Member States.

  DVGW calls on all those involved to use the forthcoming further development of the CAP and the ongoing evaluation and subsequent revision of the WFD to systematically and consistently link the two sectors. This also includes better coordination of the various support policies for the agricultural sector. Promoting greening or agro-environmental

measures is currently still at odds with other agricultural support policies, which result in further intensification, higher nutrient surpluses and higher application quantities of plant protection products. The principle must also be followed that agro-environmental services must be measurable; a sole orientation on individual measures is not enough. Aids may only be granted for attained environmental and water protection objectives.

- **Regulation concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (1907/2006/EC)**

  Life cycle assessments, producer liability and risk assessments with regard to environmental and health effects must become part of the authorisation procedure for chemicals.

  DVGW expressly supports the assessment criteria and procedures favoured by UBA (Umweltbundesamt [German Federal Environment Agency]), among others, for the identification of persistent, mobile and toxic (PMT) as well as very persistent and very mobile (vPvM) substances registered under REACH.

- **Regulation concerning the Placing of Plant Protection Products on the Market (1107/2009/EC)**

  The European Commission is still evaluating its plant protection product legislation until the end of 2018, in particular the Regulation concerning the Placing of Plant Protection Products on the Market.

  Article 44 of the Regulation gives the Member States the possibility to modify or withdraw the authorisation of a plant protection product if they conclude that the use of the product could compromise the quality objectives of the WFD and in particular if it contravenes the protection of waters intended for the abstraction of drinking water in accordance with WFD Article 7. DVGW considers this regulation to be an important link between plant protection product law and water law, as it could also serve as an example for the required link with other legal areas. However, there is as yet no evidence that the Member States make use of this provision. From the DVGW's point of view, the specific approval practice should be reviewed and, if necessary, readjusted in the course of the evaluation.

  DVGW also considers it necessary to integrate post-authorisation monitoring into the authorisation of plant protection products in order to be able to react to findings in water monitoring. This would be an important further step towards systematically linking plant protection product authorisation and water law. The possibility newly created by the German authorisation authority to impose application restrictions for certain plant protection products in order to protect groundwater resources used for the abstraction of drinking water is an important step in the right direction. This possibility of application restrictions so far only applies to conspicuous findings of non-relevant metabolites of an active substance; it should be extended to findings of relevant metabolites and the active substance itself.

- **Authorisation of medicinal products and the proposed European pharmaceutical strategy**

  Pursuant to Article 8c of the Directive concerning Priority Substances in the Field of Water Policy (2013/39/EU), the European Commission shall "develop a strategic approach to pollution of water by pharmaceutical substances" (pharmaceutical strategy). In April 2017, the Commission presented a roadmap for this.

In the course of the ongoing consultations, DVGW drew the Commission's attention to the urgent need for additional measures to minimise drug discharge into aquatic environments, which

- already affect the research stage and manufacture of active pharmaceutical ingredients,
- take into account the environmental impact of pharmaceuticals in the approval procedures and in the ongoing monitoring of pharmaceuticals, and
- provide information to and sensitise hospitals, physicians and patients about a more environmentally friendly use of pharmaceuticals.

Life cycle assessments, producer liability and risk assessments with regard to environmental effects must become part of the approval procedure for pharmaceuticals.

- **Provision of emission and application data to water authorities and water suppliers**

  Obligations to provide emission data (e.g. nitrogen surpluses, application quantities of PPP and organic trace substances) to water authorities and the public water supply sector are to be provided for in the WFD and in the legal areas regulating the respective polluters. Emission is understood to expressly include the use of plant protection products and fertilisers. In order to adapt the legally required monitoring programmes to local conditions and to take appropriate measures to protect water bodies and drinking water, water authorities and the water supply sector must know which substances are released into the environment in which quantities and at what times.

3.6 Continuous improvement process with deadlines for milestones

With the three management cycles between 2005 and 2027, the existing directive sets a narrow time corridor for the Member States to decide on the continuation of existing measures and on new measures.

However, changes in the condition of groundwater in particular cannot generally be implemented at short notice, but only over much longer periods of action and observation. This is due to the long retention times of the seepage water in the unsaturated zone and to the retention times of the groundwater in the upper aquifer.

DVGW suggests that the system of six-year management cycles, especially for groundwater, should be fundamentally reviewed and, if necessary, longer cycles should be selected. In order to prevent the necessary measures from being postponed into the distant future, a permanent improvement process should be developed, if necessary with differentiated deadlines for achieving sub-objectives.

In this permanent and continuous process of improvement, the "basic", "supplementary" and "additional" measures implemented by the Member States to protect waters that are used for the abstraction of drinking water (Article 7(2) and (3)) shall be regularly reviewed and, where appropriate, adjusted in terms of enforcement and efficiency in order to avoid or reduce shortcomings in implementation, enforcement and monitoring.