

Energy UK response to Environment Agency River basin planning - Challenges and Choices 2019

Alternative response proforma

[Version 1.2] November 2019

Overview

The Environment Agency has launched a consultation seeking views on the challenges our waters face and the choices we all need to make to improve and protect this precious resource.

The responses to this consultation will help shape the future approach to the management of the water environment and will be used to update the existing river basin management plans in 2021.

The Challenges and Choices consultation seeks your views on:

- ➔ the challenges that threaten the water environment
- ➔ how we can work together to manage our waters
- ➔ who should pay

Consultation questions

We are seeking your views on:

The water story

1. The way we treat water today will shape all our futures. What changes can you make to improve the water we rely on?

Energy UK is the trade association for the energy industry with over 100 members spanning every aspect of the energy sector – from established FTSE 100 companies right through to new, growing suppliers and generators, which now make up over half of our membership.

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We represent the diverse nature of the UK's energy industry with our members delivering almost all (90%) of both the UK's power generation and energy supply for over 27 million UK homes as well as businesses.

The energy industry invests over £13.1bn annually, delivers around £85.6bn in economic activity through its supply chain and interaction with other sectors, and supports over 764,000 jobs in every corner of the country.

Power stations are highly regulated installations operating in accordance with Best Available Techniques (BAT) with commitment to the use of Environmental Management Systems (EMS) and using operational procedures which minimise risk to the water environment from their operations. They are responsible users of the aquatic environment, aiming to use water in an optimal way having regard to all aspects of the environment and affordability. Use of the aquatic environment, essentially a provisioning service within an ecosystems services framework, helps power stations to operate with increased thermal efficiency compared to air-cooled power plant and provides resilience for operation in high air temperature events. We would anticipate power station operators to be highly engaged stakeholders in initiatives which might affect their use of the water environment and to maintain their commitment to compliance with regulatory requirements. We would expect many power station operators to look to participate in innovative water sharing and partnership agreements to improve the way in which society, as a whole, makes use of the water environment both today and in the coming decades, as well as looking to develop innovative technology (e.g. hydrogen production or Carbon Capture Utilisation and Storage (CCUS)) to support the UK's drive towards net zero carbon emissions by 2050.

We anticipate that the future freshwater needs of the power/energy sector will change compared to those of today. It is possible that needs will increase dramatically in the period 2020-2040 in order to deliver a thermally and economically efficient, resilient and affordable pathway to UK net zero by 2050. To that end, we encourage the use of an updated treatment of water resource within regulatory and stakeholder frameworks that recognises the distinct role of water rights (in underpinning the ability to operate using a water-dependent process) separately from the actual abstraction of water under the right (in order to deliver a product or service). This is a vital distinction in the power/energy sector, in which the water right is used to underpin participation in the electricity Capacity Market (contributing to the security of electricity supply) as well as allowing the production of electricity when called upon by the wholesale electricity market. Both of these distinct roles contribute to economic efficiency. Therefore, in water resource and aquatic environment appraisals, it is vital that consideration is given to the substantial opportunity cost which could arise through the use of incomplete scopes of assessment (i.e. the failure to recognise the distinct roles of both water rights and water use/actual abstraction), leading to water resource restrictions that would affect power/energy sector development options on the pathway to, and achievement of, a net zero target in 2050.

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Climate and biodiversity crisis**2. What more can we do to tackle the impacts of climate change on the water environment and what additional resources (including evidence, targets, tools and additional mechanisms/measures) do we need to do this?**

Whilst the potential for climate change to affect the water environment must be considered, it should not be considered in isolation. Continued and appropriate anthropogenic use of the water environment will be integral to the climate change adaptation required of society in England in order to meet the challenge of achieving UK greenhouse gas (GHG) net zero by 2050, though the ways in which this is undertaken will evolve in the coming decades. For example, in many pathways illustrated by National Grid in its Future Energy Scenarios and projections from the Committee on Climate Change there are roles for thermal installations providing CCUS energy and/or hydrogen, as well as hydrogen production through electrolysis. These will use high quality water as a process input and will benefit from the use of the water environment for cooling. There may be advantage in blurring the traditional boundaries between sectors, for example through development of new types of installation that might provide energy, hydrogen and/or water for public or other supply use depending on market dynamics. Alternatively, water sharing agreements founded on multiple water rights and covering multiple installations at different locations may have advantages. It will be necessary for our regulatory approaches to permitting and water right, and resulting water resource, allocation and management to evolve to accommodate such innovative multi-sector initiatives where they are appropriate.

3. What can we do to address this biodiversity crisis and meet the 25 Year Environment Plan targets for wetlands, freshwater and coastal habitats and wildlife?

No comment

4. Environmental targets can generate action and provide a strong signal of intent. Could additional statutory targets contribute to improving the water environment? If so, what types of targets should be considered?

Any introduction of new statutory targets should be carefully considered and consulted upon during development so that the potential costs and consequences, for the water environment, the wider environment and wider society, can be identified and unintended consequences avoided.

We are concerned that current calls for 'environmental ambition' at policy level in some quarters may lead to circumstances where stakeholders at national, regional and local level seek action from users of the water environment based on a narrow interpretation of the water environment alone and without full consideration of the wider societal costs and

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benefits of such action (e.g. wider considerations such as net zero 2050 ambition, affordability and resilience of energy supply).

Similarly, we are concerned that Water Framework Directive (WFD) status targets, established through the proper working of Article 4 in its entirety, are being interpreted as a 'minimum standard', i.e. a starting point from which environmental ambition should begin, rather than representing an appropriate balance between environmental protection/improvement and anthropogenic use of the aquatic environment. Whilst we recognise the right of individuals and organisations to direct their own resources as they see fit, it is not appropriate that such a mechanism exerted, for example, through water resource regional planning, should frustrate the wider objectives of WFD/River Basin Management Planning (RBMP) in striking an appropriate balance between uses of water, water rights and protection of the aquatic environment.

We would regard the introduction of appropriately established statutory targets, subject to full consultation including appropriate socio-economic appraisal, preferable to widespread policy promotion of unspecified and unbounded environmental ambition through stakeholder processes that have not been subject to appropriate consultation and evaluation.

Some stakeholders continue to call for introducing more formal water use minimisation targets (with a view to easing pressures on surface and groundwaters). However, for thermal power generation, we repeat that it is not an appropriate target to seek to drive always towards water use reduction since water use within such installations needs to be considered holistically, including having regard to the overall BAT position including non-aquatic environmental media, use of resources other than water, use of chemicals, thermal efficiency and consequences for emissions to other media, installation resilience and wider socio-economic consequences including impact on affordability. We take the view that thermal power generators should seek to optimise water use (in the light of the factors above) and be responsible users of the aquatic environment, with Industrial Emissions Directive BAT and Environmental Permitting Regulations permitting (which in the near future will include abstraction) providing an appropriate regulatory framework for such considerations to be explored.

Challenge 1: Changes to water levels and flows

5. What can be done to address the challenge of changing water levels and flows?

Responsible use of water by thermal power stations to provide an affordable and reliable electricity supply is a vital element of national well-being and plays its part in the wider decarbonisation story in progress towards a GHG net zero 2050. Power station operators

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are active stakeholders in various initiatives linked to issues of water levels and flows. We support consideration of multi-sector and cross-sector approaches, including innovative approaches to sharing water and water rights, to achieve a more economically efficient use of water and water rights. We urge consideration of the consequences of increased electrification and the introduction of a hydrogen economy for the need for water, particularly in connection with carbon reduction clusters and CCUS technology for power, industry and hydrogen production.

Water Companies are currently dominant interests influencing the water environment through the operation of their abstractions, control of the clean water Public Water Supply (PWS) networks including PWS reservoirs, and control of wastewater networks including discharge of water through sewage treatment works. Both clean and foul water networks have interconnections at various geographic scales to provide resilience within and outside specific Water Company regions. This provides a rich range of opportunity for collaboration and innovation, some of which can address the water resource challenge.

Already, many users of the water environment, and the water environment itself, are dependent on sewage treatment works discharges at low flows, since the sewage treatment works flow is among the most reliable in the catchment. Currently, there are no regulatory controls which require such flows to be maintained, thus exposing the dependent users and the environment to risk were those discharge flows to be rerouted. The introduction of more formal Drainage and Wastewater Management Plans and requiring them to be better integrated into Water Resource Planning, may provide a framework in which the current dependency and risk can be better managed whilst still allowing Water Companies an appropriate degree of innovation with respect to sewage treatment works discharges.

The value in the collaboration between Water Companies and others is not confined to the environment alone and this should be recognised as the WFD and RBMP provide the appropriate planning framework to capture the wider societal benefit of such collaborations. However, these appear to be intrinsically wider frameworks than those currently being advocated within water resource regional planning initiatives, whose focus, not surprisingly, appears to be limited to issues of PWS and the aquatic environment. Whilst the Regional Plans themselves are not statutory, the water companies' Water Resource Management Plans are. Therefore there is a concern that outcomes which appear rational within the limited frameworks of water resource regional planning may not be optimal when considered from the wider socio-economic and environmental perspectives that WFD and RBMP have the potential to consider.

In particular, we are not convinced that some of the current water resource management initiatives and expectations of stakeholders regarding abstraction reductions have factored in the wider socio-economic and environmental consequences, in particular with regard to the existing power sector and the future role of the energy sector in delivering a UK net zero 2050 target.

Much of the Government discussion of collaboration and innovation in the area of water resources appears to have the expectation that Water Companies will innovate. However,

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it should be recognised that non-Water Company stakeholders will also have innovative approaches worthy of consideration.

Meeting the challenge of the water resource consequences of achieving UK net zero efficiently must involve innovative approaches. These will likely include the development of new types of installation that contribute products into multiple 'traditional sectors', and involve multiple installations and users bound together in water sharing agreements. Evolving the regulatory framework, in both water resources and beyond, to accommodate such novel multi-sector solutions being developed where appropriate and consistent with environmental needs, is an integral element of the challenge.

6. The abstraction plan, referenced in the changes to water levels and flows narrative, explains our current and future approach for managing water abstraction. What else do we need to do to meet the challenges of climate change and growth while balancing the needs of abstractors and the environment?

We support consideration of multi-sector options, facilitation of water sharing and trading and encourage the Environment Agency to develop more flexible approaches to accommodate them. There may be opportunities for the aquatic environment to be an active participant in some forms of trading, both as 'buyer' and 'seller'. The reality of power sector thermal plant future water use, given the sector's direction of travel, must be considered. This includes a need for electricity/power production including CCUS, Bioenergy with Carbon Capture and Storage (BECCS), hydrogen combustion and hydrogen production, as well as the wider penetration of a hydrogen economy, and changes to space heating/cooling and transport. These are vital elements to achieve an efficient, affordable and resilient transition to UK net zero 2050.

We would welcome clarity from the Environment Agency on how stakeholder process should incorporate the policy calls for environmental ambition into RBMP (and other stakeholder processes such as regional water resource planning) whilst also not frustrating the fundamental objective of the WFD in striking an appropriate balance between environmental protection/improvement and anthropogenic use of the aquatic environment.

7. What kind of a water flow environment do we want? Should we maintain statutory minimum water flow and level standards universally across England as we do now, or go further in some places based on environmental risk?

We support flexible, risk-based approaches based on local circumstances allowing for innovation. This does not necessarily mean 'going further' in terms of increasing environment protection. It is likely that in some circumstances less restrictive flow standards can be acceptable (a vital strategic example is the lower Thames bespoke Catchment Abstraction Management Strategy (CAMS), but such flexibility could occur at small scale too). Such flexibility could provide significant societal benefit at little risk or even potential gain for the environment. We therefore cautiously welcome the Environment Agency's recognition of the 'adapt' water resource approach (as set out in

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Appendix 4 of the Water Resources National Framework in March 2020) to be explored within regional water resource planning.

However, we remain very concerned about the general message from the Water Resources National Framework that existing licence holders cannot assume that they can exercise their full licence water rights in future. This is a vital consideration in the power sector, which has seen dramatic falls in the physical abstraction of fresh water at many existing power plant locations in the last 10 years, in line with the evolution of the sector according to net zero trajectories. Nonetheless, as discussed in our response to Q1 above, the potential to exercise the full water right when required by power market conditions has underpinned the continued existence of power plant with increasingly important elements of the reward for the plant flowing through the Capacity Market mechanism. Thus, despite the reduced physical abstraction, the existing licences and associated water rights have been used to the full economically.

We therefore advocate that, when the question of river flows is considered in the context of allocation of scarce water resource between environment and anthropogenic use, the question is framed not only in terms of environmental risk but also the risk presented to society if anthropogenic use were to be restricted or curtailed.

We take the view that more flexible and dynamic potentially multi-sector and cross-sector allocation of water associated with existing water rights through appropriate water sharing arrangements has the potential to provide improved economic efficiency of both water and water rights use, whilst also contributing to affordable resilience across multiple sectors.

We welcome the initiative being taken by Defra/Environment Agency with respect to Future Local Management of Flows so that Environmental Flow Indicators (EFIs) are better linked to overall ecological status to provide an equitable allocation of water resource between all users, including the aquatic environment.

We note that for other than 'high' ecological status, flows and hydrology are supporting, not classifying, quality elements in the WFD. Therefore, where WFD considerations provide the basis for environmental protection, the water flow environment should be managed as a consequence of the maintenance or attainment of the target water body status, which strikes the appropriate balance between protection of the aquatic environment and its use, established using WFD principles including disproportionate cost considerations, not as the primary consideration. For example, if the target water body status is 'good' and the ecology metrics are all 'good' whilst the flow metric is 'moderate' and where flow is not limiting on the benefit society can take from the water body, there should generally be no reason to restrict water use to increase flows to achieve flows supporting 'good' (in the EFI approach). (An exception might be if status is declining within 'good' and hydrology is established as a leading indicator and causal factor). Whilst we recognise that some stakeholders seek increased environmental ambition for the water environment, the consequences for the wider environment and the wider socio-economic implications of realising that ambition should also be explored.

Challenge 2: Chemicals in the water environment**8. What can be done to address the challenge of chemicals in the water environment?**

We recognise that the WFD already includes several means and mechanisms through which issues presented by inadequate water quality caused by excessive chemical concentrations can be tackled. As noted in our response to Q9 below, the regulatory pressures exerted by WFD Article 16, the requirements of IED BAT and the requirements of the EU Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) in concert result in careful consideration of any use of chemicals within an installation with the potential to result in chemical emissions to the environment. For many installations, many chemicals and many water bodies the continued use of these mechanisms may be sufficient without the need for further action.

We note that the principles of regulatory mixing zones have long been an important part of the UK's approach to regulation of chemical emissions from point discharges. European Guidance on the use of mixing zones was developed within the context of the Environmental Quality Standards (EQS) Directive and reference to this approach has been included in some UK regulatory guidance. It would be useful to extend and clarify the guidance to ensure mixing zone principles can be applied in assessing all chemicals and for non-chemical emissions from point discharges.

We note that RBMP Round 2 was largely silent on measures relating to chemicals and ubiquitous Persistent, Bioaccumulative and Toxic (uPBT) substances in particular. We would welcome early engagement with the Environment Agency on any emerging issues or measures relevant to the sector prior to finalisation of RBMP Round 3, either in regard to existing installations or with an eye to future approaches to CCUS and/or hydrogen production.

9. Do you support the Environment Agency's proposed strategic approach to managing chemicals as referenced in the Chemicals in the Water Environment challenge document? If not, what changes would you make?

Emissions of chemicals from the energy sector are regulated through Environmental Permitting Regulations which require European established best available techniques to be applied in order to meet required emission limits or, where required, locally tighter emission levels can be applied to meet EQSs. The sector welcomes a sector-specific approach where this is required and will continue to work with the Environment Agency on future requirements. We welcome the Environment Agency's acknowledgement of the issues regarding legacy pollutants such as mercury and again will continue work with the regulator with regards to meeting requirements under the UN Minamata Convention.

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We recognise the challenge presented by the reporting, and the significance for classification of status, of legacy uPBT substances in some water bodies as a result of the 'one out all out' principle, even when the ecology and other quality metrics are consistent with WFD target status. We note that this is a live issue within the WFD review process and we note and support the Environment Agency's strategic approach on uPBT. It would not be an appropriate outcome to seek to remove such substances or reduce their concentration in cases where they are not causing ecological or other impairment.

10. What balance do you think is needed between current chemical use, investing in end-of-pipe wastewater treatment options and modifying consumer use and behaviour?

There is likely to be a role for all of the above measures in an integrated approach to the management of chemical pressures. The appropriate balance of measures may differ between substances, between types of installation activity and use, and potentially between locations in order to reflect technical feasibility, cost effectiveness and affordability. When considering potential controls on an installation such as a thermal power plant, it is necessary to consider its chemical use and emissions in a holistic way, consistent with IED multi-media BAT, and not to confine consideration to the aquatic environment alone. Regard should also be given to the measures already taken within an installation or sector to eliminate or reduce chemical emission in establishing equitable policies, should further emission reduction be required.

Challenge 3: Invasive non-native species

11. What can be done to address invasive non-native species?

No comment.

12. How would you promote Check, Clean, Dry to all recreational users of water, including those who are not in clubs or attend events?

No comment.

13. Are there any barriers stopping you adopting good biosecurity when you are in or near water?

Appropriate biosecurity arrangements would be expected to be an integral part of relevant planning (e.g. for power plant project construction or retrofit activity near water).

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Challenge 4: Physical modifications**14. What can be done to address the physical modification of our rivers and coasts?**

It is important that appropriate measures remain available to operators and developers to continue to protect adequately infrastructure near water such as power stations (e.g. through flood protection measures) and to allow interaction in operation with the aquatic environment through the use of intakes, discharges, jetties, etc.

When considering potential measures to remedy issues associated with hydromorphological modifications, care should be taken to assess fully the consequences for all water environment users to avoid unintended consequences. For example, the flow-depth regime has been altered in many lowland rivers through the construction and operation of weirs to protect navigation interests and over the years other users have developed their own use of water bodies on the basis of that regime. If in some circumstances (e.g. prolonged low flow events), weirs are operated differently in order to restore lower depth/higher velocity, this could affect the ability of abstractors to abstract water. Whilst it may still be appropriate to undertake the measure, it should be considered with the full potential consequences in mind.

15. Giving more space for rivers and coasts to move and adjust naturally will regenerate habitat, improve wildlife and help us adapt to climate change. What can you and others do to support these changes?

We would seek to continue to select appropriate designs and measures for near and in-water infrastructure as part of inclusive planning and permitting consultations including considerations of net environmental and biodiversity gain, natural capital and ecosystem services. However, once constructed, there may be little subsequent opportunity, for both technical and economic reasons, for significant changes to be made. In particular, reference is made in the supporting material on Physical Modification (p32, 7.1.3) to strengthening legislation for the protection of coarse fish. We welcome the mention of issues of technical and economic feasibility in relation to barrier removal. However, the principles of technical feasibility, cost-benefit and affordability should apply to all possible measures, not just barrier removal, including, for example, intake arrangements.

Challenge 5: Plastics pollution**16. What can be done to address plastics pollution in the water environment?**

No comment.

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17. What actions should the Environment Agency take to reduce plastic pollution?

No comment.

Challenge 6: Pollution from abandoned mines**18. What can be done to address pollution from abandoned mines?**

No comment.

Challenge 7: Pollution from agriculture and rural areas**19. What can be done to address pollution from agriculture and rural areas?**

No comment.

20. How can we support the farming sector to excel at innovative solutions which benefit both productivity and the environment? What should these solutions look like?

As with other sectors, improving the ease by which multi-location, multi-sector water sharing/water trading agreements can be set up and 'approved' would be a useful supporting step to allow innovation.

Challenge 8: Pollution from towns, cities and transport**21. What can be done to address pollution from towns, cities and transport?**

Progression along many trajectories towards a UK GHG net zero by 2050 would inevitably lead to increased electrification of many activities, which would remove pollution at the point of activity with the electricity provided through a combination of renewables, nuclear and low emission thermal generation (which is either highly abated or low load).

22. How can sustainable drainage systems and green infrastructure be most effectively used to tackle pollution from urban areas? What challenges are there to using them?

No comment.

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Challenge 9: Pollution from water industry wastewater**23. What can be done to address pollution from water industry wastewater?**

No comment.

24. What opportunities exist for water companies to collaborate with other sectors and organisations on measures to improve the water environment?

Water Companies are currently dominant interests influencing the water environment through the operation of their abstractions, control of the clean water PWS networks including PWS reservoirs and control of wastewater networks including discharge of water through sewage treatment works. Both clean and foul water networks have interconnections at various geographic scales to provide resilience within and outside specific Water Company regions. This provides a rich range of opportunity for collaboration and innovation. Already, many users of the water environment, and the water environment itself, are dependent on sewage treatment works discharges at low flows, since the sewage treatment works flow is among the most reliable in the catchment. Currently, there are no regulatory controls which require such flows to be maintained, thus exposing the dependent users and the environment to risk were those discharge flows to be rerouted. The introduction of more formal Drainage and Wastewater Management Plans and requiring them to be better integrated into Water Resource Planning may provide a framework in which the current dependency and risk can be better managed whilst still allowing Water Companies some degree of innovation with respect to sewage treatment works discharges.

The value in the collaboration between Water Companies and others is not confined to the environment alone and this should be recognised since WFD and RBMP provide the appropriate planning framework to capture the wider societal benefit of such collaborations.

Much of the Government discussion of collaboration and innovation in the area of water resources appears to have the expectation that Water Companies will innovate. However, it should be recognised that non-Water Company stakeholders will also have innovative approaches worthy of consideration.

In the response above, we have used the term 'collaboration' in the spirit we have taken to be implied in the question. It is important to note that 'collaboration' at sector level is not generally possible for the power sector given the absence of a sector plan and the requirements of Competition Law. Generally, 'collaboration' would take the form of contractual arrangements between relevant parties, the motivation for development of which would arise through statutory drivers and/or market signals. The current highly regulated and extended business planning cycle in the water industry can present difficulties for the development of projects involving players from sectors that are not subject to such a cycle. The creation of opportunities and mechanisms for non-PWS players to instigate innovative approaches outside the formal Water Company and water

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resource planning cycles would be valuable. Agents in sectors other than Water Companies may need to identify and exploit/reject or seek alternative opportunities on much faster timescales than is currently the case in Water Company business planning.

Catchment partnership working

25. How can local partnerships become more inclusive and representative of all of the stakeholders within their catchments?

No comment.

26. How can local partnerships achieve a better balance of public and private funding to support and sustain their environmental work?

No comment.

Who pays?

27. How should the step change in protecting and improving the water environment be funded and who should pay? Are there any barriers to doing this?

It should be recognised that many sectors and their customers have already paid for, and continue to pay for, protecting and improving the water environment e.g. through meeting IED BAT requirements for the prevention or minimisation of emissions, meeting local EQSs if these result in more stringent restrictions than would arise through sector indicative BAT, etc. This results in the internalisation within project and installation costs of what would otherwise be environmental externalities (or resource costs) which could be passed on in whole or in part to electricity consumers in the case of the power sector. Similarly, measures resulting in the reduction or curtailment of abstraction at power sector installations may result in increased costs to the consumer both through rendering security of power supply/resilience more expensive (e.g. through the Capacity Market mechanism) and/or increased costs of electricity (and, in future, hydrogen) provided through the operation of market mechanisms.

The WFD provides a means of exploring at water body level what the appropriate environment target status should be in order to strike the right balance between environmental protection and societal use of the water environment. The Government target of 75% of water bodies being at 'near natural' condition in the 25 Year Environment Plan was originally derived as an affordable 2027 outcome in RBMP Round 2 using broad-brush and, as seen from today's perspective, incomplete economic assessment. We welcome the opportunity to reconsider the appropriateness of the WFD RBMP Round 2 commitment and trajectories beyond 2027 in the context of today's economic circumstances (including, but not exclusively, recovery from COVID-19) and the commitment since 2019 of a statutory UK 2050 net zero target. Setting WFD statutory

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targets using all aspects of WFD Article 4 requires consideration of the costs and benefits of the measures required to achieve the target advocated. It is vital not to set an overly ambitious statutory target based on incomplete economics, as subsequent deterioration of individual quality elements compared to that target (or potentially the trajectory to that target) is not subject to cost benefit considerations.

As discussed in Q4, whilst we recognise that individuals and organisations should be free to direct their own resources as they wish, a policy-driven and narrowly-focused 'environmental ambition' agenda that has not been subject to appropriate consultation and economic appraisal should not be used to transfer costs to other water users (such as power plant) and subsequently to their customers (such as electricity bill payers).

We note that in the European Commission's WFD Fitness Check it has been found that across Europe there are clearly widespread barriers to improvement in the water environment (at least as reflected in water body status) which have resulted in perhaps 50% of water bodies not having achieved 'good' status in the period 2000-2020. Barriers include funding, the response times of the natural environment, and interpretation of the WFD itself, including the 'one out all out' principle.

One important factor that should be considered in determining appropriate environmental protection is the consequence for current, ongoing and prospective future societal use of the water environment. For example, many trajectories to a UK net zero carbon emissions target by 2050 involve increased electrification, CCUS and substantial use of the aquatic environment for the purposes of hydrogen production (both using water as process input and for process cooling). This will be a new source of pressure on both surface water (freshwater and coastal locations) and groundwater, and in particular at locations with connections to a future carbon technology cluster. Denying use of the aquatic environment (either through water resource or environmental protection requirements in the freshwater or saltwater environments) could represent a very substantial opportunity cost relevant at national strategic level, hindering progress on the 2050 net zero pathway and rendering it both more costly to the bill payer, less economically and resource efficient and less resilient to stress of various types.

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Submit your response

We encourage you to submit your responses via the link below:

<https://consult.environment-agency.gov.uk/environment-and-business/challenges-and-choices>

This will allow us to gather and summarise responses quickly and accurately. However, you can also use this document to submit your responses.

You should return responses by 24th September 2020 to:

RBMPconsultation@environment-agency.gov.uk

Or in writing to:

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