

Impact Assessment Outlook Journal

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# Considering the Water Environment in Impact Assessment

Thought pieces from UK and international practice



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The water environment is at the forefront of people's consciousness more than ever before. Pollution incidents are regularly reported in the media with powerful images shown of sewage releases onto beaches and public bathing areas. High-profile campaigners such as former punk rocker Feargal Sharkey are successfully raising awareness of the issues:

'Just 14% of our rivers are in good ecological condition and, unless there is a serious intervention, by 2027 that number will have dropped to just 6%. We have basically been destroying every single river in the country.' -Feargal Sharkey <sup>1</sup>

It is now also becoming a priority for UK Government. The Environment Act 2021<sup>2</sup> legislates stronger powers for regulators to hold water companies and polluters to account, and specific legally binding targets for reducing water pollution are set out in the Environmental Improvement Plan.<sup>3</sup> On 4th April 2023, the UK Government also released a Plan for Water<sup>4</sup> which aims to tackle every source of pollution, including from storm overflows, agriculture, plastics, road run-off and chemicals – as well as the pressures on the water environment as a result of hotter, drier summers and population growth.

To protect river catchments under the Habitats Regulations from further nutrient pollution, Natural England and the Department of Environment, Food and Rural Affairs (Defra) have identified 27 catchments covering 74 Local Planning Authorities (LPA) in England where nutrient pollution exceeds acceptable limits and the catchments need nutrient neutrality measures. In his article, Etisang Abraham reviews the implications of nutrient neutrality for developers and the recent government attempt to jettison the nutrient neutrality rules by proposing an amendment to the Levelling-Up and Regeneration Bill (LURB).

This issue examines the role that Impact Assessment professionals play in achieving positive outcomes for the water environment. Rhodri Thomas explores how the integration of Environmental Impact Assessments (EIAs) and Water Framework Directive (WFD) compliance assessments can deliver enhancements for the water environment in urban settings, creating added value for developers and the public. Meanwhile, Matthew Brennan and Becca Wilson review the implications of climate

change on future water quality; considering current practice for assessing these effects and whether it could be improved in line with assessments of flood risk.

Jacqueline Fookes explores how Strategic Environmental Assessment (SEA) can be used to deliver Water Resource Management Plans (WRMP) that adhere to regulatory compliance and take into account changes to population growth, climate change and emerging technologies.

The challenges faced in meeting the requirements of environmental permits and consents are set out by Lorna Indriks. This article emphasises the crucial role of collaboration in addressing these challenges to achieve positive environmental outcomes that extend beyond just permit compliance.

Edward Walker outlines the opportunities presented by the waters around the UK in supporting the growth of renewable and low-carbon energy, and our transition to Net Zero. With a focus on the north-east of England, he sets out the challenges posed by delivering development at coastal locations.

Elsbeth McIntyre presents a new collaborative initiative, the Offshore Wind Evidence and Knowledge Hub (OWEKH), which seeks to improve the consenting process for offshore wind projects by facilitating a valuable knowledge transfer for professionals and stakeholders. The OWEKH Hub will launch in autumn 2023.

Finally, Spencer McGawley puts a positive spin on the future of water impact assessment by discussing the dawn of 'Impact Positive Design' in the water industry.

1 [www.newscientist.com/video/2364181-feargal-sharkey-were-destroying-every-river-in-the-country/](https://www.newscientist.com/video/2364181-feargal-sharkey-were-destroying-every-river-in-the-country/)

2 <https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted>

3 <https://www.gov.uk/government/publications/environmental-improvement-plan>

4 <https://www.gov.uk/government/publications/plan-for-water-our-integrated-plan-for-delivering-clean-and-plentiful-water>

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# Review of water quality assessment considering the impacts of climate change upon freshwater systems in the UK

In the UK, many people already experience climate change through its effects on water, particularly through floods and droughts. The planning process traditionally focused on flooding as a main risk to proposed developments and a key impact that the proposals may cause to adjoining land because of its potential to damage assets and cause risk to life. It is our experience that water quality is in some cases given less consideration, most commonly highlighted in circumstances such as where contamination is present at a development site or when drainage design is required. To date, detailed assessment has predominantly focused on the climate change impacts on the availability of water rather than its quality, for example within water scarcity assessments.<sup>5</sup> This is despite the mounting evidence that changes to water quality are of significance and concern to both environmental and human health.<sup>6</sup>

Droughts can have a significant negative impact on water quality and biodiversity in the water environment and the more prolonged and intensive the dry conditions are, the worse these impacts can be. These events can result in low flows, increased water temperatures, increased salinity

due to reduced dilution and reduced dissolved oxygen concentrations in freshwater systems. Increased frequency and length of drought events predicted to happen as a result of climate change will negatively impact fish and other aquatic life within watercourses and the quality and quantity of groundwater.

*Water quality of watercourses changes seasonally and spatially, meaning that assessments should consider the impacts of a project on water quality under a variety of conditions, including both drought and heavy precipitation, to help ensure the proposals are robust to cope with the impacts of climate change.*

<sup>5</sup> Liu, J., Liu, Q. and Yang, H., 2016. Assessing water scarcity by simultaneously considering environmental flow requirements, water quantity, and water quality. *Ecological indicators*, 60, pp.434-441.

<sup>6</sup> Damania, R., Desbureaux, S., Rodella, A.S., Russ, J. and Zaveri, E., 2019. *Quality unknown: the invisible water crisis*. World Bank Publications.

Following periods of drought, periods of intense precipitation result in increased surface water run-off, causing a flush of sediment, nutrients and pollution being deposited within watercourses.

Increasingly frequent periods of this as a result of climate change will result in flash flooding and water quality management and treatment systems being inundated with more water than can be treated effectively unless capacity is increased to cope with these events.

Water quality of watercourses changes seasonally and spatially, meaning that assessments should consider the impacts of a project on water quality (and the effect of its changes on biodiversity) under a variety of conditions, including both drought and heavy precipitation, to help ensure the proposals are robust to cope with the impacts of climate change. The water quality at the site of a project can also vary because of factors such as temperature (an important driver of dissolved oxygen availability and biological or chemical reactions) due to tree cover/shading. There is a greater need to understand the current and future baseline conditions which may differ as a result of climate change.

Freely available water quality data can be limited in terms of monitoring frequency, parameters selected and the spatial range, with the focus being on larger watercourses or key catchments. Given the predicted impacts of climate change, we are likely to see more severe changes in smaller watercourses, which are not as represented in existing monitoring data. Therefore, impact assessments should be conscious of this data bias, and consider the impact might disproportionately affect the smaller watercourses.

The assessment of impacts upon water quality occurring from projects should use the 'source-pathway-receptor' pollutant linkage principle. Within an Environmental Impact Assessment (EIA), impacts on water quality are typically qualitative and based on the consideration of the project design and mitigation, and may involve the collection of baseline monitoring data to help inform design or compliance with best practice and regulatory standards during construction and operational phases. Monitoring during pre-construction, construction and operational phases and the interrogation of this data would support more quantitative assessment, which would allow for more specific design, management and mitigation to ensure the receptor is adequately protected.

Assessment can also involve the modelling of impacts upon receiving waterbodies' water quality using existing methodologies, including the following:

- UKTAG methodologies on specific pollutants, such as the Metal Bioavailability Assessment Tool (M-BAT)<sup>7</sup>
- Environment Agency Monte Carlo RQP (River Quality Planning) software<sup>8</sup>
- National Highway's Highways England Water Risk Assessment Tool (HEWRAT)<sup>9</sup>
- the use of Environmental Quality Standards (EQS) and in-situ data collection for comparison and
- River Quality Planning (RQP) methodology principles.

<sup>7</sup> <https://www.wfduk.org/sites/default/files/Media/Environmental%20standards/MBAT%20UKTAG%20Method%20Statement.pdf>

<sup>8</sup> [https://assets.publishing.service.gov.uk/media/5a807941e5274a2e8ab50596/LIT\\_10419.pdf](https://assets.publishing.service.gov.uk/media/5a807941e5274a2e8ab50596/LIT_10419.pdf)

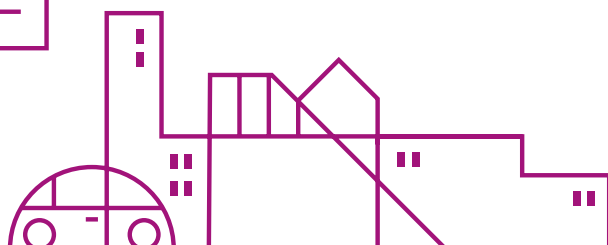
<sup>9</sup> <https://www.standardsforhighways.co.uk/tses/attachments/d6388f5f-2694-4986-ac46-b17b62c21727?inline=true>

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Some existing assessment methodologies rely on assessing the amount of sediment or pollutants being discharged and the flow of the receiving watercourse. It is best practice to calculate dilution based on the conservative Q95 flow rate (the flow rate that is exceeded 95% of the time). Q95 flows are taken from historical data, which is accepted as a robust way to calculate the average Q95 flow rate for that river.

This may not be as conservative as we currently expect, as the data is spatially limited (due to location of gauging stations, frequency and time monitored) and some studies have modelled up to a 60% reduction in Q95 flow rates in rivers within the UK due to the changing climate. This would have drastic impacts on the dilution rate of discharges and may lead to an under prediction of the magnitude of impact that a project may have on a watercourse.

The profession has adapted to using climate change allowances for modelling flood risk and capacity and design of drainage systems; however, it may be time to investigate the use of climate change allowances to inform assessment of impacts on water quality.



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# Using Impact Assessment and the Water Framework Directive to drive water environmental enhancements as part of urban regeneration

Urban regeneration developments with an attractive and well-functioning water environment can create significant added value for developers and the public alike. For developers, this can be through higher property prices and demand from buyers or tenants. For the wider public, this can be through stronger connections with nature and the positive effects that can have on health and well-being. The potential benefits for the water environment can also be significant, particularly where natural processes are returned to highly modified waterways and links can be formed with wider blue-green corridors. This article explores how effective Impact Assessment and engagement as part of Environmental Impact Assessments (EIAs) and Water Framework Directive (WFD) compliance assessments can deliver positive outcomes, and some of the challenges in practice. Although the WFD no longer applies in the UK, its principles are still enshrined in law under the Water Environment Regulations 2017.<sup>10</sup>

Consideration of the water environment as part of EIA and WFD compliance assessments requires a holistic understanding of the water cycle and how it interacts with a development. This is particularly acute for urban regeneration developments, where space is at a premium and historic development brings challenges such as contaminated land, heavily modified waterways and ageing infrastructure.

Developing a robust baseline of the functioning of the water environment is a key part of any assessment. This will help to identify potential risks to surface water, groundwater, flooding and the provision of clean and wastewater to the site. Understanding the potential risks is best done early in the design process.

Early consideration of risk and opportunities, and consultation with regulatory bodies (including the Environment Agency), lead Local Flood Authorities and local or regional councils, can avoid costly and time-consuming rework later on in the design process.

<sup>10</sup> <https://www.legislation.gov.uk/ukxi/2017/407/contents/made>

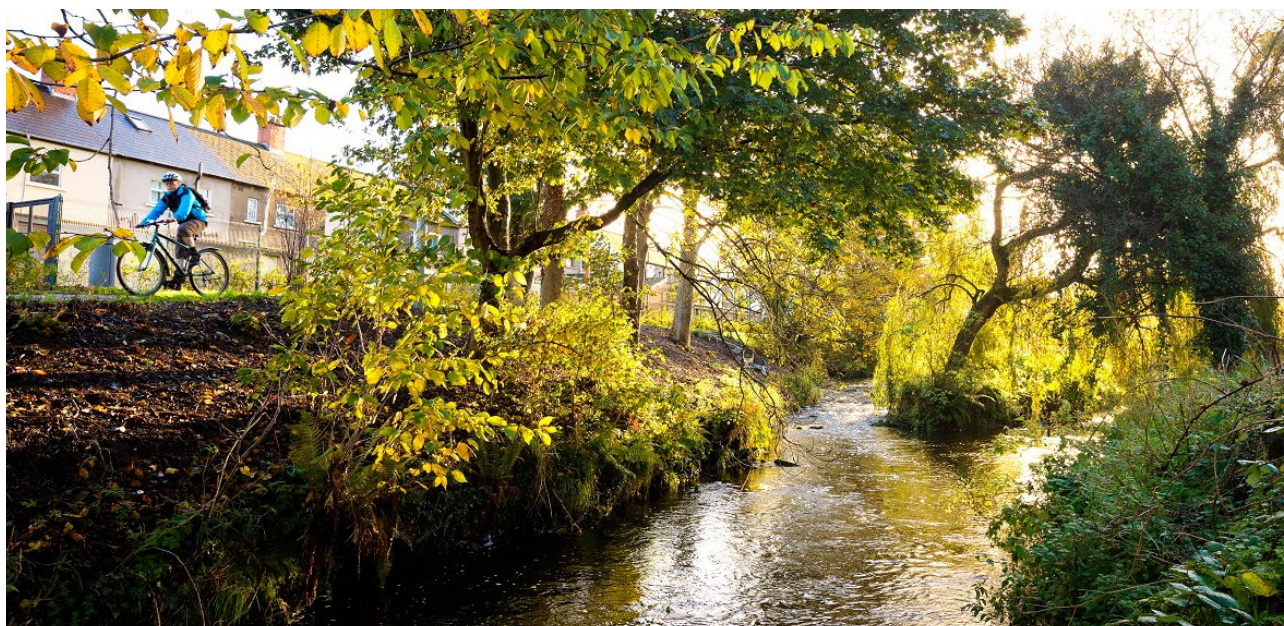
Early consideration of risk and opportunities, and consultation with regulatory bodies (including the Environment Agency), lead Local Flood Authorities and local or regional councils, can avoid costly and time-consuming rework later on in the design process. As designs develop, frequent and meaningful engagement with regulatory bodies provides robust challenge and helps to minimise consenting risks. Public consultation is another important step to understand the needs and wants of residents. The visualisation of proposals, perhaps utilising emerging technologies such as augmented or virtual reality, helps the public to experience the designs in an immersive way.

The land required to store water during times of flood can offer significant opportunities to develop green space that benefits biodiversity, active travel and well-being. Where possible, setting developments back from a watercourse to create a blue-green corridor can provide the greatest opportunity for enhancement. This was the case for Olympic Park<sup>11</sup> in London and Connswater Community Greenway<sup>12</sup> in Belfast.

*Investment in a shared vision at an early stage, including with regulators, can drive better outcomes for the benefit of the water environment, biodiversity, flood risk and placemaking.*

The level of land contamination at a site can prevent true restoration of natural processes due to the cost and complexity of remediation. This can be overcome by strategically retaining sections or parts (e.g. the bed or banks) of modified river channels to maintain a barrier between contaminated soils and the water environment. Such designs can seek to introduce natural forms and processes around these areas by adding clean gravels, soils and pre-established planting. Porter Brook Park<sup>13</sup> in Sheffield is a good example of this (Figure 2). Aquatic and marginal vegetation is best established using species that are tolerant to changes in flows and poor water quality.

Figure 1: Connswater Community Greenway (Copyright: Arup).



11 <https://www.arup.com/projects/london-2012-landscape-engineering-the-olympic-park>.

12 <https://www.arup.com/projects/connswater-community-greenway>.

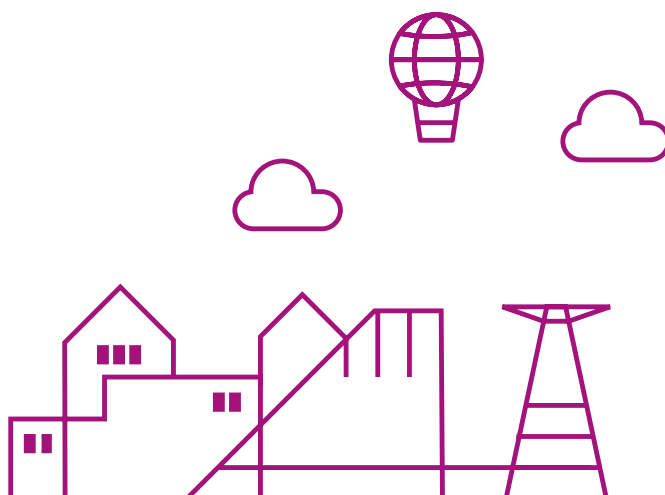
13 <https://dcrt.org.uk/wp-content/uploads/2018/11/3.-Porter-Brook-Pocket-Park-compressed.pdf>.

The transitions between natural and modified sections of channel require careful design to mitigate the risk of unwanted erosion or deposition of sediments. Sometimes regulatory aspirations or requirements can conflict, requiring a least-worst solution to be developed. For example, flood risk or heritage requirements can conflict with efforts to improve habitats for biodiversity or protected species benefit. It is important to not just consider how the development can benefit the water environment but that under the Water Environment Regulations it must also not compromise the future achievement of good status.

The development of enhancement opportunities in urban settings is complex and requires close collaboration across a multi-disciplinary design team, consisting of engineers, hydraulic modellers, environmental practitioners and landscape architects. When approached in a collaborative and timely manner, EIA and WFD compliance can be used to drive enhancement across an urban regeneration site, rather than just being completed for compliance purposes. Investment in a shared vision at an early stage, including with regulators, can drive better outcomes for the benefit of the water environment, biodiversity, flood risk and placemaking. Creating a sense of place is also heavily linked to enhancement of waterway corridors and can bring about further enhancements for play, health and social value.



Figure 2: Porter Brook Pocket Park (Source: RestoreRivers.EU).





# Planning for the future: Strategic Environmental Assessment of Water Resource Management Plans

## Introduction

Water resource planning plays a crucial role in maintaining a sustainable and resilient future water supply system in England. Water Resource Management Plans (WRMPs) are undertaken by water companies every five years but look to the next 25 years and beyond to secure water for the population. It is a systematic and comprehensive process used to manage, allocate and protect water resources in a specific region or area.

*Water resource planning must be flexible and adaptive, taking into account changing conditions such as population growth, climate change and emerging technologies.*

It involves, among other things, the evaluation, development and management of both surface water (e.g., rivers, lakes) and groundwater sources, to ensure the long-term sustainable and reliable supply of water for various uses,

including drinking water, agriculture, industry and ecosystem preservation.

Water resource planning must be flexible and adaptive, taking into account changing conditions such as population growth, climate change and emerging technologies.

This article explores the benefits that Strategic Environmental Assessment (SEA) can provide to WRMPs.

## What is water resource planning?

Water resource planning involves evaluating current and future water demands, identifying available water sources and developing strategies to meet those demands sustainably. Investment modelling complements this process by evaluating the economic viability of proposed projects and determining the most cost-effective solutions. Together, they provide a roadmap for the optimal allocation of resources and infrastructure development.

Water supply-demand balance is a fundamental concept in water resource management. The process involves assessing current and future water availability and comparing it with the expected needs of different stakeholders, while simultaneously pushing forward with water-saving activities. It considers future social and environmental pressures such

as changes to water availability and flood risk arising from variations in precipitation from climate change.

The latest water resources planning guidance<sup>14</sup> requires WRMPs to adhere to regulatory compliance and demonstrate that environmental considerations have influenced the development of the plan through SEA. The assessment must also consider Habitats Regulations Assessment, Water Framework Directive Assessment, Natural Capital Assessment, Biodiversity Net Gain calculations and a risk assessment for the spread of invasive non-native species, all of which support the generation of decision-making metrics.

### Utilising SEA and its benefits

SEA is an effective, important tool in assessing the adverse or beneficial effects of a plan on receptors including ecology, local communities, landscapes and cultural heritage.

By assessing ecological impacts, WRMPs take account of the water requirements that protect aquatic ecosystems, enhance biodiversity and allocate sufficient water flow in rivers and streams to maintain healthy habitats that support wildlife. This can be achieved by implementing environmental flow regimes that mimic natural flow patterns and protect ecological functions. SEA can also support with monetising changes to natural capital and calculating the percentage changes in biodiversity net gain.

SEA also helps provide an understanding of the dependencies and interconnections between natural systems and human activities including the impact of water resource development projects on natural capital, agriculture, tourism and biodiversity conservation.

Engaging with stakeholders including local communities throughout the assessment process fosters transparency and inclusive decision-making. This ensures that water resource planning decisions are evidence-based, adaptive and responsive to stakeholder feedback. It also helps to prevent conflicts and disputes by considering the concerns

and interests of various stakeholders. Engaging local communities, non-governmental organisations and technical experts fosters collaborative decision-making and promotes social acceptance of water resource planning initiatives.

SEA also helps identify and mitigate risks associated with climate change, such as increasing water scarcity, extreme weather events and sea-level rise. By factoring in these potential challenges, decision-makers can design adaptive strategies that withstand future uncertainties.

### Conclusion

The integration of SEA into the WRMP process optimises resource allocation and investment decisions. By considering the environmental opportunities, planners can identify cost-effective and sustainable solutions that balance economic development with ecological conservation. Water resource planning can prioritise projects that improve water availability and quality while building in climate change resilience and contribute to the achievement of Net Zero targets.

Integrating Environmental Assessment into water resource planning offers a range of benefits, including sustainable management, protection of ecosystems, risk mitigation and compliance with regulations. Water resource planning is essential for maintaining water security, minimising conflicts over water use and safeguarding the environment. It plays a crucial role in addressing the challenges of water scarcity, climate change and the sustainable management of this vital natural resource.

The identification and promotion of nature-based solutions in the form of catchment improvements and the valuation of the benefits derived from ecosystem services, enables decision-makers to prioritise investments and policies that maximise the use of natural infrastructure. This will further promote nature-based solutions for improving water quality, reducing flood risks and enhancing biodiversity with the development of innovative technologies.

<sup>14</sup> Water resource planning guideline – Published 14th April 2023 <https://www.gov.uk/government/publications/water-resources-planning-guideline/water-resources-planning-guideline>

# Environmental permitting in an integrated design and build business

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## Introduction

Mott MacDonald Bentley (MMB) is a leading integrated design and build contractor operating in the water sector, playing a crucial role in the delivery of complex projects with complex environmental needs. This article explores the challenges faced by MMB in meeting the requirements of environmental permits and consents. It emphasises the crucial role of collaboration in addressing these challenges to achieve positive environmental outcomes that extend beyond just permit compliance.

## What are environmental permits?

Environmental permits are documents issued by regulatory bodies, such as the Environment Agency and Natural England, that grant permission to businesses to carry out activities that may have an adverse impact on the environment. Examples of activities that may be subject to permitting and consent include working in or near protected sites and discharging effluent into watercourses. Environmental permits and consents ensure that such activities are carried out responsibly and in compliance with the relevant environmental laws and regulations.

## What are the challenges?

### *Complex regulatory setting*

By its very nature, the water sector often operates in environmentally sensitive areas, such as Sites of Special Scientific Interest (SSSIs), Special Protection Areas (SPAs) and Special Areas for Conservation (SACs), which are protected under varying levels of conservation importance. Different activities in different locations require environmental permits and consents that are unique to each scenario.

### *Communication*

Design/planning and construction teams have traditionally operated as separate entities, which can result in inadequate handover of environmental risks and permit requirements to construction teams. This can result in poor implementation of mitigation measures on-site, increasing the risk of environmental harm.

### *Time and programme constraints*

Environmental permits and consents often require extensive data collection and analysis, including the undertaking of seasonally dependent ecological surveys.

Failure to integrate the permitting process, including survey and monitoring requirements, into the project plan can lead to significant delays in the delivery of the project. This can be particularly challenging for projects where the client is also required to meet a statutory compliance deadline (for example, in the interests of safety under the Reservoirs Act 1975), limiting the time available for thorough planning and engagement with stakeholders.

### **Collaborative solutions and positive environmental outcomes**

MMB has addressed the above challenges by improving collaboration within and between design/planning and construction teams.

#### *Early engagement with environmental specialists and stakeholders*

Early engagement with environmental specialists and stakeholders helps ensure that environmental risks and permit requirements are integrated into the planning and design stages. This proactive approach to collaborative project management helps streamline the permitting process by identifying and reducing the likelihood of regulatory conflicts and hurdles, whilst also driving wider beneficial outcomes. For example, environmental specialists can influence design choices that aim to minimise environmental harm, such as locating compound and storage areas in less ecologically sensitive areas or reusing materials to avoid disposal to landfill.

#### *Collaborative project management tools and Common Data Environments (CDEs)*

Integration of the permitting process into collaborative project management tools and CDEs, such as Miro and SharePoint, helps ensure that environmental sensitivities, commitments and permit requirements are well-documented and shared with the project team. Consent-related actions and deadlines can also be managed through a consents management spreadsheet or tracker, which ensures that the project meets all of the necessary requirements throughout its lifecycle.

#### *Information exchange*

Regular meetings help establish open lines of communication between design and construction teams, ensuring that works align with permit requirements. This leads to positive outcomes that extend beyond just permit compliance and benefit various stakeholders and the environment. For example, works within SPAs can be timed within the programme so that they reduce disturbance to birds during breeding season.

*By improving collaboration and integrating environmentally conscious project planning and delivery, projects can achieve positive environmental outcomes that extend beyond just permit compliance and align with sustainability objectives.*

### *Site support visits*

Site support visits from environmental specialists help ensure that works remain in compliance with environmental permits by identifying issues and providing on-site training and guidance. This reflects a positive commitment to upholding environmental standards.

### *Post-project reviews*

Post-project reviews encourage continuous improvement and innovation by facilitating learning and refinement of processes, whilst also assessing the effectiveness of the mitigation measures prescribed in the permits.

Teams can identify what worked well and what could have been done differently to achieve better results.

### *Environmental compliance training and awareness*

Training and knowledge sharing run by environmental specialists improves understanding of permit requirements

during project planning and delivery. It raises awareness around new and emerging challenges, such as biodiversity conservation and the impacts of development on flora and fauna. This leads to better integration of environmentally friendly practices that aim to minimise harm to sensitive receptors.

### *Shared responsibility and accountability*

Fostering a culture of shared responsibility and accountability with regard to the environment helps align teams towards common goals, encouraging teams to 'think across the gap' to identify opportunities and reduce risks. Team members should understand their roles in the permitting process and work together to achieve these goals.

### **Conclusion**

By improving collaboration and integrating environmentally conscious project planning and delivery, projects can achieve positive environmental outcomes that extend beyond just permit compliance and align with sustainability objectives.



# Nutrient Neutrality Scheme: The need for regulatory clarity to support mitigation mechanisms and promote sustainable development

## Introduction

Waterbodies are important for preserving aquatic species and plants, making it essential to protect them from pollution. To safeguard these habitats, certain waterbodies have been designated as Special Areas of Conservation (SAC) under the European Union Habitats Directive,<sup>15</sup> which has been adopted in the UK under the Habitats Regulations.<sup>16</sup> The legal protection granted to these areas requires a Habitats Regulations Assessment (HRA) to be conducted before any development that could significantly impact them is approved and mitigation strategies are suggested.<sup>17</sup> Nutrient neutrality is an example of such pollution mitigation mechanisms. Nutrient neutrality is a situation where new developments do not increase nutrient pollution (from nitrogen and phosphorus) into protected waterbodies.

## The Dutch Nitrogen case and its implications for nutrient neutrality in England

New legislation on wastewater treatment works quality standards are being proposed in the Levelling-Up and Regeneration Bill (LURB).<sup>18</sup> The amendment will make it mandatory for water companies to upgrade their wastewater treatment to higher standards set out in the proposed Bill by 1 April 2030. Similarly, Local Planning Authorities (LPAs) have been advised by Natural England to ensure that new housing developments must not increase nutrient pollution in affected catchments. Thus, nutrient mitigation measures must be available before planning permission is issued.<sup>19</sup> This advice is an upshot of the Dutch Nitrogen case.<sup>20</sup>

<sup>15</sup> Council Directive 92/43 /EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, Article 1.

<sup>16</sup> The Conservation of Habitats and Species Regulations 2017, part 2-3.

<sup>17</sup> *Ibid.*, Sections 63 and 70.

<sup>18</sup> UK Parliament, Michael Gove's amendment to Levelling-up and Regeneration Bill, Report stage available at: <https://bills.parliament.uk/bills/3155/stages/17044/amendments/10003516>

<sup>19</sup> Natural England, Natural England Water Quality and Nutrient Neutrality Advice (16 March 2022) (NE785).

<sup>20</sup> Joined Cases C-293/17 and C-294/17 Cooperative Mobilisation for the Environment UA and Others v College van gedeputeerde staten van Limburg and Other (the Dutch Nitrogen cases).

In the Dutch Nitrogen case, the Dutch Government's nutrient mitigation scheme allowed high-polluting projects to receive approval if their pollution were offset by other projects within the scheme. Environmental non-governmental organisations challenged the application of the scheme to farms involved in livestock grazing and the use of fertilisers, whose activities caused nutrient pollution to protected waterbodies. They applied to the Court of Justice of the European Union (CJEU) to determine whether the scheme complied with the Habitats Directives.<sup>21</sup> The court held that national schemes or legislation could empower competent authorities to permit developments around protected sites (including protected waterbodies), provided nutrient pollution thresholds are stated, and the relevant assessment required if these thresholds are exceeded.

The case reiterated the impact of nutrient pollution on protected waterbodies in the UK and highlighted the need to ensure that new housing developments do not worsen their water quality conditions.

### Mainstreaming nutrient neutrality schemes

To prevent river catchments protected under the Habitats Regulations from further nutrient pollution, Natural England and the Department of Environment, Food and Rural Affairs (Defra)<sup>22</sup> have identified 27 catchments covering 74 LPAs in England where nutrient pollution exceeds acceptable limits and the catchments need nutrient neutrality measures.

This has culminated in the introduction of guidelines and tools to assist LPAs in establishing nutrient neutrality schemes and supporting developers with mitigation projects to demonstrate that their project will be nutrient neutral. These guidelines and tools are outlined in Natural England's nutrient neutrality advice of 16 March 2022<sup>23</sup> and they include:

- a national generic nutrient neutrality methodology
- a national map showing the affected catchments
- thresholds for insignificant levels of phosphorus discharges to ground
- area team contacts for each habitats site and catchment
- catchment-specific nutrient neutrality calculators and associated calculator guidance
- nutrient neutrality principles, among others.

Nutrient mitigation strategies are now required for 74 LPAs affected by nutrient pollution. Natural England and LPAs in some affected catchments have collaborated to produce nutrient mitigation schemes for promoting nutrient neutrality in their catchments. An example is the Solent Nutrient Market Pilot, a pilot nutrient trading scheme that ran from December 2021 and closed in March 2023.

<sup>21</sup> Lorenzo Squintani (2019) 'Balancing nature and economic interests in the European Union: On the concept of mitigation under the Habitats Directive' RECIEL, 29(1), pp.129-130.

<sup>22</sup> Defra, Statement on improving water quality and tackling nutrient pollution. Statement made on 20 July 2022 available at: <https://questions-statements.parliament.uk/written-statements/detail/2022-07-20/hcws258> accessed 29 August 2023; see also Natural England, 'Strategic Solutions: Nutrient Neutrality' 2 August 2022 available at: <https://publications.naturalengland.org.uk/publication/6687601766694912> accessed 05 October 2023.

<sup>23</sup> Natural England, Natural England Water Quality and Nutrient Neutrality Advice (16 March 2022) (NE785).

The Solent Catchment Market provides nature-based solutions to nutrient pollution.<sup>24</sup> Developers can bid for nitrogen (N-Credit) and phosphorus (P-Credit) mitigation credits, as well as rights to biodiversity units to meet biodiversity net gain requirements. Landowners and farmers can supply wetland, woodland and grassland on their land in exchange for payment, offsetting the estimated nutrient pollution generated by the new development with nature-based mitigation. The proceeds from the sale can be used to pay landowners and further strengthen the scheme. There are other schemes such as Natural England's Nutrient Mitigation Scheme for the Tees catchment.<sup>25</sup>

Whilst the various strategies adopted in the different catchment areas are tailored to their domestic circumstances and the developmental needs of the LPAs, there is a need for an overarching regulatory framework at the national level.

#### Implications of nutrient neutrality and the Government's response

The implementation of nutrient neutrality requirements for new developments has resulted in delays for new developments. LPAs must meet housing targets whilst simultaneously ensuring that development is nutrient neutral. LPAs must navigate the challenge of setting up nutrient mitigation strategies to enable developers to purchase credit, and developers must deal with the uncertainty around their planning applications. The delay in obtaining planning permission for new developments has hindered housing supply in England<sup>26</sup> and further threatens to derail the Government's plan of 300,000 new homes annually by

mid-2020s.<sup>27</sup> Given the delays, the Government announced plans in August 2023 to jettison the nutrient neutrality rules by proposing an amendment to the Levelling-Up and Regeneration Bill.<sup>28</sup>

*While the removal of the nutrient neutrality obligation for new housing developments is being requested by developers and LPAs alike, the design and construction of Sustainable Drainage Systems (SuDS) should be made mandatory as an on-site nutrient mitigation mechanism for new developments.*

The alternative measures proposed, such as not requiring nutrient neutrality as a planning condition for new housing developments and imposing an obligation on farms and water companies to treat wastewater in the affected catchments, would have effectively removed the current planning bottleneck for developers. The Government expected the 'very small' nutrient pollution from new homes to be offset by increased investments in nutrient mitigation schemes. However, the proposed amendment was rejected in September 2023 by the House of Lords as this would have caused adverse effects on the environment.<sup>29</sup>

<sup>24</sup> Solent Catchment Market, Solent Catchment Market, available at: <https://www.solentnutrientmarket.org.uk/> accessed 29 August 2023.

<sup>25</sup> Natural England, Natural England's Nutrient Mitigation Scheme for developers, available at: [www.middlesbrough.gov.uk/media/nalj5c2f/nutrient-neutrality-natural-england-nutrient-mitigation-scheme-guidance-mar23.pdf](http://www.middlesbrough.gov.uk/media/nalj5c2f/nutrient-neutrality-natural-england-nutrient-mitigation-scheme-guidance-mar23.pdf) accessed 29 August 2023.

<sup>26</sup> DLUCH, National statistics, Housing supply: indicators of new supply, England: January to March 2023, Published 29 June 2023 available at: <https://www.gov.uk/government/statistics/housing-supply-indicators-of-new-supply-england-january-to-march-2023/housing-supply-indicators-of-new-supply-england-january-to-march-2023#regional-figures> accessed 29 August 2023.

<sup>27</sup> Wendy Wilson & Cassie Barton, Tackling the under-supply of housing in England, available at: <https://researchbriefings.files.parliament.uk/documents/CBP-7671/CBP-7671.pdf> accessed 29 August 2023.

<sup>28</sup> Ione Wells & Sam Francis, Ministers propose scrapping pollution rules to build more homes, available at: <https://www.bbc.co.uk/news/uk-politics-66642878> accessed 29 August 2023.

<sup>29</sup> Jennifer Scott, 'Government loses bid to relax waterway pollution as Lords rebel' available at: <https://news.sky.com/story/government-loses-bid-to-relax-waterway-pollution-as-lords-rebel-12960709#:> accessed 5 October 2023.



The decision to exclude new housing developments from nutrient neutrality obligations seemed ill-conceived as this would have been a missed opportunity for housing developments to fund nature-based nutrient mitigation.<sup>30</sup> Beyond reducing nutrient pollution, the creation of grasslands, wetlands and woodlands at catchment scales associated with housing development will promote biodiversity net gain and carbon sequestration and act as flood reduction mechanisms. Further, it would have blocked a new revenue source for landowners and farmers whose land are used for nutrient mitigation purposes. Without a mandatory nutrient mitigation obligation, a business-as-usual attitude will persist as developers will prioritise profit over nutrient neutrality. Instead of removing the obligation, a more flexible solution which allows new developments to be built quickly whilst ensuring nutrient pollution is prevented through on-site and/or off-site nutrient mitigation mechanisms should be sought.

### Nutrient mitigation through SuDS

While the removal of the nutrient neutrality obligation for new housing developments is being requested by developers and LPAs alike, the design and construction of Sustainable Drainage Systems (SuDS) should be made mandatory as an on-site nutrient mitigation mechanism for new developments.

SuDS are currently mandatory for new developments in Scotland and Wales,<sup>31</sup> and will become mandatory in

England from 2024.<sup>32</sup> This is a welcome development as the construction of SuDS could also promote nutrient pollution mitigation (nutrient neutrality). SuDS are designed to control surface water flows by storing or reusing surface water, reducing the surface water flow rates to watercourses and enhancing water quality.<sup>33</sup>

Given that SuDS will soon become a legal requirement for new developments in England, they could be designed to prioritise retention of nutrient-rich surface water from construction sites for subsequent reuse such as for watering vegetation in summer months. Moreover, surface water run-off could be channelled through grassland and woodland (in bigger sites) to provide natural filtration, and through swales to remove nutrients before they reach watercourses. In larger sites, SuDS could include ponds, retention basins or wetlands to provide storage of run-offs from the new development. In addition, other techniques such as infiltration trenches and soakaways could be added to the SuDS to allow for surface water absorption, thereby stimulating aquifer recharge.

New developments that cannot develop mitigation projects on-site due to a lack of space or financial constraints could purchase nutrient neutrality credits, as is done in the Solent and Tees catchments nutrient neutrality markets, and this can be submitted to the relevant LPA as part of the planning application process. This would ensure that small-scale developments without mitigation projects could still obtain planning permission to facilitate development and achieve nutrient neutrality.

<sup>30</sup> Wildlife and Countryside Link, Letter to the Prime Minister on Nutrient Neutrality, (24 July 2023) available at: [https://www.wcl.org.uk/docs/WCL\\_Letter\\_PM\\_Nutrient\\_Neutrality\\_24\\_07\\_2023.pdf](https://www.wcl.org.uk/docs/WCL_Letter_PM_Nutrient_Neutrality_24_07_2023.pdf) accessed 31 August 2023; see also The Rivers Trust, Nutrient pollution; we're calling for environmental regulations not to be relaxed, available at: <https://theriverstrust.org/about-us/news/nutrient-pollution-were-calling-for-environmental-regulations-not-to-be-relaxed> accessed 31 August 2023.

<sup>31</sup> For Scotland see Water Environment and Water Services (Scotland) Act 2003 and SEPA, Regulatory Method (WAT-RM-08) Sustainable Urban Drainage Systems (SUDS or SUD Systems), (v6.4 July 2019), available at: <https://www.sepa.org.uk/media/219048/wat-rm-08-regulation-of-sustainable-urban-drainage-systems-suds.pdf> accessed 30 August 2023; for Wales see Schedule 3 of the Flood and Water Management Act 2010.

<sup>32</sup> Defra, The review for implementation of Schedule 3 to The Flood and Water Management Act 2010, available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1128073/The\\_review\\_for\\_implementation\\_of\\_Schedule\\_3\\_to\\_The\\_Flood\\_and\\_Water\\_Management\\_Act\\_2010.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1128073/The_review_for_implementation_of_Schedule_3_to_The_Flood_and_Water_Management_Act_2010.pdf) accessed 30 August 2023.

<sup>33</sup> BGS, Sustainable Urban Drainage Systems (SuDS), available at: <https://www.bgs.ac.uk/geology-projects/suds/> accessed 30 August 2023.

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# Managing challenges and exploiting benefits throughout the development of UK Coastal Energy infrastructure

The waters around the UK are critical in supporting the growth of renewable and low-carbon energy, and our transition to Net Zero. Whilst they may present opportunity, marine and coastal development presents a unique set of challenges for developers.

In the north-east of England, the scars of a landscape once home to extensive former industry, notably coal and steel, are visible to see; other industrial activity includes ironworks, coal extraction and transport, rope making and lesser-known industries, such as salt production.

Focusing on the Blyth and Cambois coastline, former industry has been replaced by various renewable and low-carbon development; the UK's first offshore wind turbine was

located just off the Blyth coast whilst the now-operational Blyth Demonstrator showcases the world's first pairing of gravity base foundations with powerful 8.3 MW turbines.

Onshore, the area is home to the Offshore Renewable Energy Catapult, the UK's leading technology, innovation, testing and research centre for offshore renewables; Northumberland Energy Park (Phases 1 to 4) encompass large areas of former industrial brownfield land; and the North Sea Link interconnector (a ~1.4 MW link with Norway) landfalls to the north of the Cambois coastline, benefitting from the sandy Cambois Bay to bring cables to shore. Existing and planned development represents significant regional investment in decarbonisation.

*Figure 1: Cambois Beach (note turbines in far distance, and presence of NSL cable below the beach)*



Taking NEP Phase 1 as an example, this is subject to a £35m public investment in enabling works covering the former Blyth Power Station (A & B stations) and the Ash Barge Dock; the site offers a current power capacity of 20 MVA with the potential of up to 100 MVA from renewable sources.

Looking at the planned NEP Phase 4, the 36-hectare site is close to a further 95 hectares of land intended for battery production; it boasts a 'ready-made' skills base with a population of 930,961 within a 30-minute drive time.

At locations of intensive former industry such as Blyth and Cambois historical pollution of brownfield land is a particular challenge, particularly where there are pathways between potential disturbance of pollutant and sensitive riverine and coastal waters.

*Dealing with development in complex locations is challenging yet the climate crisis and our national decarbonisation targets are relying on industry to bring forward development swiftly. Similarly, the global harm from not progressing with vital clean energy development is great yet the costs of 'getting it wrong' at a local level could be significant.*

Figure 2: Tees Bay (Teesside OWF in the distance, with former steelworks on the central horizon)



In Teesside, approximately 65 km to the south of Blyth, the area is undergoing a transformation to become a low-carbon hub; this includes Net Zero Teesside (a first-of-a-kind gas-fired power station with carbon capture sitting at the hub of a decarbonised cluster of industries on Teesside), H2 Teesside (one of the biggest planned blue hydrogen production facilities in the UK) and GE's new blade manufacturing facility (notably this will produce blades for the Haliade-X turbine which will power Dogger Bank, the world's largest offshore wind). However, industrial activity presents a complication to developers from a spatial perspective; it means finding room for development is challenging whilst grid connections for power demand and export may also be more complicated. Historical contamination from previous anthropogenic use can be extremely costly to manage in order to ensure human and ecological receptors are safeguarded.

For coastal locations, there is also the potential for disturbance to contaminant which can then disperse within the coastal environment with the potential for potentially significant harm to species and habitats.

In scenarios such as this, engagement with relevant local stakeholders with specialist knowledge and data relating to historical use is vital to establish a thorough understanding of local baseline conditions. Beyond this, ground investigations can help to provide greater insight into risks and required management whilst in coastal locations, subtidal sampling may well be needed to understand risks associated with contaminated sediment on or below the seabed. Comprehensive GI is expensive, often requires its own consent and may be complicated by issues such as investment and access (particularly so in the marine environment); for these and other complex reasons, it is not always possible to complete GI prior to environmental assessment and consent submissions. In these examples, it may well be necessary to place more weight on agreement of the scope and extent of future management and mitigation commitments with regulators and stakeholders. Alongside this, it may also be necessary to agree a phased approach to the site investigations and/or a highly

precautionary approach to investigations until contaminant is better defined (spatially) or absence is confirmed.

In simple terms, the general approach to handling complicated sites can be summarised by (a) characterising the baseline conditions of a site; (b) assessment key likely risks associated with development, drawing on principles such as conceptual site models; (c) defining the most appropriate management and mitigation measures; (d) delivering on these measures and (e) monitoring the efficacy of measures, an oft-overlooked but critical step. Management and mitigation measures will be dictated by a variety of technical and commercial factors and site-specific variables, but may include: identifying and avoiding / micro-siting around areas of contamination; excavation and removal / treatment of unsuitable or contaminated material, informed by a materials management plan; in-situ treatment of soils and/or groundwater; and barriers to intercept potential pathways (such as hard layers and surfaces, as well as application of clean or remediated material to separate contaminant). Within the marine environment, similar measures may be delivered albeit often with greater challenges (owing to both the harsh environment therein, and the different challenges managing contaminant in a hydrodynamic environment). Readers of this IEMA water journal may also be interested to read more on management of challenging coastal sites in CIRIA C718ii<sup>34</sup> (summarised by IEMA here)<sup>35</sup> – this expands on the approach in much more detail.

Looking to the growth of UK renewable and low-carbon energy (particularly north-east England and former industrial areas), the current suite of Nationally Significant Infrastructure Projects planned or under construction highlights the extent of future development on coastal brownfield land. Dealing with development in complex locations is challenging yet the climate crisis and our national decarbonisation targets are relying on industry to bring forward development swiftly. Similarly, the global harm from not progressing with vital clean energy development is great yet the costs of 'getting it wrong' at a local level could be significant.

<sup>34</sup> [www.ciria.org/ItemDetail?iProductCode=C718&Category=BOOK](http://www.ciria.org/ItemDetail?iProductCode=C718&Category=BOOK)

<sup>35</sup> [www.iema.net/articles/managing-contaminated-land-on-eroding-coastlines](http://www.iema.net/articles/managing-contaminated-land-on-eroding-coastlines)

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The challenges posed by coastal development requires approaching them with greater energy and commitment than more straightforward sites inland. These challenges, paired with the urgency required for the energy transition, mean that these developments can be complex to carry out. Identifying potential challenges early on in the lifecycle of prospective development will be vital, as will establishing early and robust strategies for management of challenges such as contaminated land. Professionals need to work together to share valuable lessons-learned from successful management of brownfield challenges to deliver good coastal development.

IEMA will be releasing the next suite of guidance focused on post-consent – watch this space for further peer-reviewed guidance on delivery of commitments including mitigation and monitoring.



# Introducing OWEKH: the Offshore Wind Evidence and Knowledge Hub

Offshore wind professionals currently face two oceans: one of water and the other of knowledge. Mariners and consenting consultants will agree that neither is easy to navigate. The current consenting process often requires developers to start ‘from scratch’ in knowledge gathering, which can be expensive and lengthy. Best practice can feel locked away within individual organisations, or trapped behind paywalls, and data is frequently dispersed, without clear metadata or with murky accessibility guidelines. Particularly as new digital technologies should increasingly be opening up more efficient ways of working, these building blocks of knowledge need to be in the hands of everyone. A new initiative, the Offshore Wind Evidence and Knowledge Hub (OWEKH), seeks to make this a reality.

The OWEKH will help to realise the ambition of 50GW of offshore wind by 2030 by enabling easy access to information to accelerate and streamline the consenting process. The OWEKH is a new, funded initiative to design and build an open online portal for practitioners to access offshore wind data and documents. It will transform the information landscape for all developers, regulators, marine specialists, and other professionals operating in or interacting with offshore wind.

Jointly steered by The Crown Estate via OWEC; Institute of Environmental Management and Assessment (IEMA); Department for Environment, Food & Rural Affairs (Defra);

Pathways to Growth (P2G); Department for Energy Security and Net Zero (DESNZ), and delivered by AtkinsRéalis, the portal will be designed with existing data advances in mind, prioritising interoperability, openness and user experience. OWEKH will sit at the heart of a vibrant Community of Practice, assisting in community decision-making and data fluency. This gives OWEKH’s two components:

- The Portal: An open online data and information platform
- The Community of Practice (CoP): A structure of stakeholders that support and curate the portal’s content.

*Offshore wind professionals at all levels need rapid access to contextual data of all types to drive high-quality development decision-making around the consenting process.*

The aim is to facilitate a valuable knowledge transfer, for instance, providing data on cetacean movements that may have already been captured, or a piece of best practice on analysis methodology. It is the Community of Practice that will guide publication of these crucial pieces of information and build on them to provide cohesive guidance for the industry. The Community as a whole is intended to incorporate all individuals working within Offshore Wind, or in stakeholder areas, while Technical Topic Groups are a fundamental component of the OWEKH platform; sector specialists who will collaborate to identify, shape and create best practice industry guidance in their specific domain.

The first Technical Topic Group to meet is focused on Impact Assessment and will constructively assist in shaping developing of further groups.

As OWEKH grows, organisations and individuals are invited to help support and shape the development of OWEKH by signing up to become part of the Community of Practice and Technical Topic Groups. By doing so, they can lend their expertise in curating and interpreting the data and evidence collected within the knowledge hub. Participants will be able to keep up to date with the latest industry advances, input their own expertise and link up with subject matter experts in key concerns.

Any parties involved in the offshore wind consenting process are invited to participate; from consultants, specialised sub-contractors and developers to regulatory and other stakeholders, including marine professionals and fisheries planners.

Rufus Howard, Policy and Engagement Lead at IEMA, said:

**'The environmental assessment and consenting of offshore wind farms and their associated electrical transmission infrastructure is a hugely complex undertaking, requiring technical and environmental data on a wide range of issues over large and varied geographical areas. The OWEKH is a groundbreaking project to provide a new pathway to collate and distribute both data and good practice in offshore wind assessment, to increase the efficiency and accuracy of evidence-based decision-making.'**

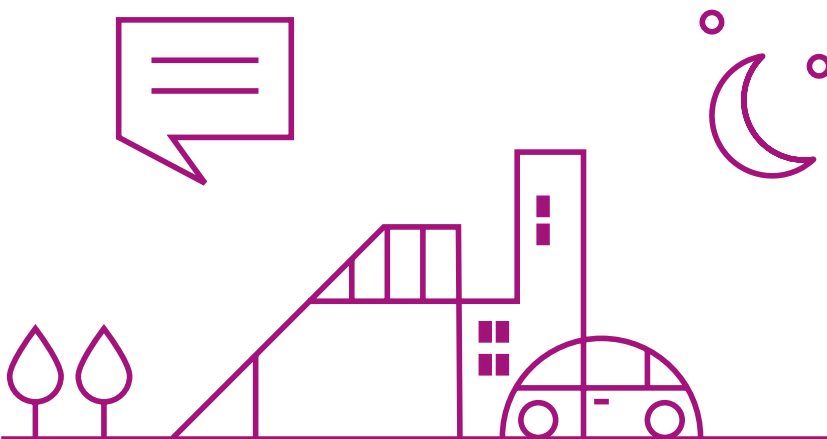
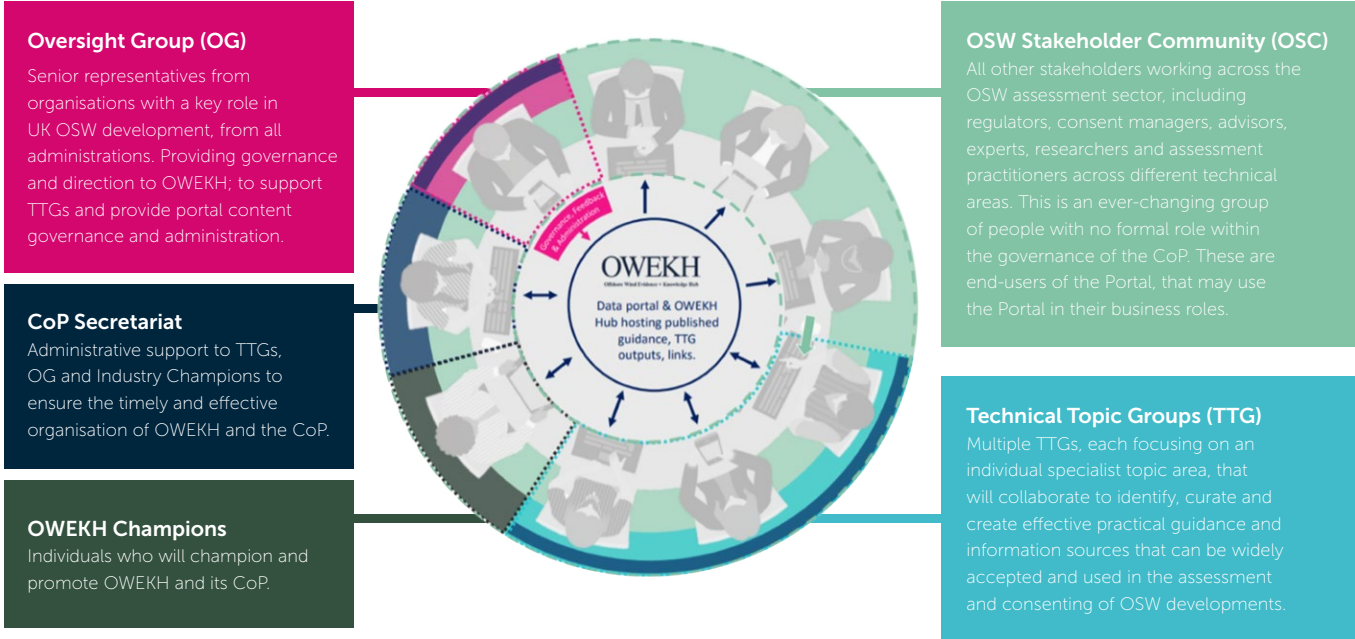
Sion Roberts, Marine Consents Manager, The Crown Estate, said:

**'Information availability across our sector will be a key influence on the speed of expansion for offshore wind generation as we increase capacity to 50GW by the end of the decade. Offshore wind professionals at all levels need rapid access to contextual data of all types to drive high-quality development decision-making around the consenting process.'**

Since the OWEKH programme initiated in July 2022, an in-depth requirement gathering phase has taken place with industry stakeholders, facilitated by AtkinsRéalis, who is leading on stakeholder engagement and development of the initial digital platform and associated Community of Practice (CoP). Workshops and engagement with subject matter experts have informed a gap analysis to advise the design and build of the sector-wide portal. Feedback will continue to be integrated from the OWEKH project steering group and industry stakeholders.

The OWEKH will launch in autumn 2023. We are encouraging any offshore wind consent experts with knowledge to share to get involved. You can learn more and sign up for further information at the website.<sup>36</sup>

<sup>36</sup> <https://register-owekh-interest.azurewebsites.net/home>.





# The dawn of Impact Positive Design – opportunities and challenges for the IA industry as water infrastructure moves from grey to green

The water industry has suffered from underinvestment for decades. Old infrastructure, outdated practices, increased awareness of changing climatic conditions and ongoing population growth has put increased pressure on the industry.

*Traditional 'grey' engineering solutions are now being challenged by green engineering, with landscape and ecological interventions now becoming favoured, to create 'impact positive design.'*

The most recent Public Water Supply reservoir completed in the UK was Carsington in Derbyshire in 1991. Various reservoir proposals have been made since then, yet none have made it through to construction.

Government and water companies are now increasing investment levels in an attempt to upgrade existing infrastructure and provide resilience for the future, leading to an influx of capital into new projects, including reservoirs, desalination, bulk transfers and flood and coastal risk management schemes.

However, water infrastructure is difficult to deliver, with high up-front costs, large land take, a slow planning system, and long construction periods (around 12 years for a reservoir), which means that the industry will have to demonstrate real commitment.

The emphasis of these projects has also changed. Traditional 'grey' engineering solutions are now being challenged by green engineering, with landscape and ecological interventions now becoming favoured, to create 'impact positive design.'

These interventions provide the following opportunities:

- Good design creates the potential for new open and leisure space either in a waterside context or using associated landscaping acting as a source of social value
- Due to impending legal requirements for Biodiversity Net Gain of 10% applying to the schemes, there are opportunities to create offsetting land for other developments. This provides an income/funding source for the provider
- Related to the above, the ability to 'stack' other credits on suitably qualifying land and habitat enhances the revenue potential of the land, and
- The move away from grey 'concrete' solutions means that lower CO2e emissions are possible, positively impacting the path to Net Zero.

Overall, this shift towards 'impact positive design' will require the IA industry to adapt current practice.

New design is always a challenge, especially when new methods and materials are introduced. This often requires a 'departure from standards' that needs approval from statutory bodies, itself a time-consuming process. Impact Assessment has a key role to play here in accurately quantifying the benefits of the scheme to allow a technical or business case to be made.

The definition and capture of embedded mitigation will be crucial to this process. Impact Assessment traditionally places its focus on negative effects and the subsequent mitigation of these. New green solutions will require far more focus on the positive outcomes and may also require a revision on the 'standard issue' Impact Matrix to greater reflect positive/beneficial outcomes. This will require a new flexibility in thinking from technical teams who are used to assessing the negative impacts of schemes.

Impact positive design is well suited to the emerging new style of Impact Assessment, 'Environmental Outcome Reporting', which should facilitate and encourage the adoption of design solutions into the project safe in the knowledge that these will be well reported.

This will again require IA professionals to shift their thinking on innovative methods and embrace the potential of new reporting regimes within the industry.

Cumulative effects will also become a crucial element of any IA work. With landscape schemes effectively delivering a series of outcomes, from initial design realisation, to promoting Biodiversity Net Gain, to acting as offset assets, each scheme now becomes a series of sub-schemes, within the overall project envelope. The challenge here will be for the IA practitioner to effectively assess these overlapping outcomes.

Of course, assessing and reporting of environmental effects is now only half the task at hand. With schemes offering the promise of positive outcomes there will be a huge emphasis on ongoing monitoring and reporting. Monitoring is traditionally the weakest element of EIA, and it is fair to say that both scheme proponents and competent authorities lose interest in monitoring requirements as time goes on. However, with the emphasis switching to impact positive design, backed by a series of planning and financial covenants that give effect to the offsetting elements of a scheme, there is likely to be a far greater willingness for all parties to commit to the delivery of annual monitoring reports, in the form of an Annual Environmental Capital Return, or similar, such as is used in more traditional corporate discourse.

The challenge here is one of opportunity, and IA professionals will need to be ready to adopt innovative approaches and embrace the benefits that these can bring to the schemes in question, and the IA industry as a whole.

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# Do you make effective use of ALL of IEMA's IA member resources?

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IEMA's website contains a treasure trove of IA-related content, as well as information about IEMA's volunteer network groups, blogs, webinars and policy. But not everyone makes the most of this free member content, including:

- future events and webinars
- recordings of past webinars, with over 24 hours' worth of IA content
- IA guidance and advice: such as the recent guides on Land and Soils, GHGs, Traffic and Movement, and Health in EIA
- the Proportionate EIA Strategy
- over 400 EIA articles and 200 case studies related to EIA, developed by Q Mark registrants in recent years
- individual and organisational recognition specific to EIA, through the EIA Register and EIA Quality Mark schemes respectively
- opportunities to get involved with:
  - IA Steering Group
  - IA Network and Working Groups
  - Geographic/Regional Groups.

[www.iema.net](http://www.iema.net)



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# Summary

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From legislators and regulators to members of the public, the drive to improve the water environment has never been greater and Impact Assessment professionals play a pivotal role in achieving positive outcomes. It is important that we not only ensure regulatory compliance but also strive for improvements and innovation in current practice. Some examples of how this could be achieved are provided in this journal.

The articles in this journal illustrate the breadth of expertise required by professionals and showcase not only the complexities and challenges of assessing impacts on the water environment, but also opportunities to improve practice. The assessment of the water environment overlaps with other technical disciplines including ground contamination, ecology and human health. As such, it is critical that different disciplines and professionals work collaboratively to ensure that impacts are assessed robustly.

This journal's authors have all presented new ideas and critical thinking that could be demonstrative of a 'punk ethos' that even Feargal Sharkey of the Undertones would be impressed by. I hope you have found this journal to be insightful and will think about the issues raised in your work going forward.

I would like to end by thanking all of the contributors for volunteering their valuable time and sharing their expertise with fellow professionals. I hope you have found this experience worthwhile and as enjoyable as I have.

**-Lewis Jenkins**

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**IEMA's EIA Quality Mark:** A scheme operated by the Institute allowing organisations (both developers and consultancies) that lead the co-ordination of statutory EIAs in the UK to make a commitment to excellence in their EIA activities and have this commitment independently reviewed. Founded in 2011, the EIA Quality Mark is a voluntary scheme, with organisations free to choose whether they are ready to operate to its seven EIA Commitments: EIA Management; EIA Team Capabilities; EIA Regulatory Compliance; EIA Context & Influence; EIA Content; EIA Presentation; and Improving EIA Practice.

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## Considering the Water Environment in Impact Assessment

This eighteenth edition of the Impact Assessment Outlook Journal provides a series of thought pieces on water in Impact Assessment. In this edition the Guest Editor, Lewis Jenkins, has selected eight articles produced by IEMA professionals and EIA experts. The result is a valuable yet quick read across some of the different aspects of UK and international practice exploring the water environment in Impact Assessment

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### About the Guest Editor: Lewis Jenkins, PIEMA

*Associate at Quod*



Lewis Jenkins has over 10 years' experience in Impact Assessment and has experience of delivering EIAs for housing, commercial and infrastructure projects. He is currently an Associate in the Environmental Planning team at Quod and sits on IEMA's IA Steering Group and the Yorkshire and Humber Steering Group.



## About IEMA

We are the global professional body for over 20,000 individuals and 300 organisations working, studying or interested in the environment and sustainability.

We are the professional organisation at the centre of the sustainability agenda, connecting business and individuals across industries, sectors and borders.

We also help and support public and private sector organisations, governments and regulators to do the right thing when it comes to environment and sustainability-related initiatives, challenges and opportunities. We work to influence public policy on environment and sustainability matters. We do this by drawing on the insights and experience of our members to ensure that what happens in practice influences the development of government policy, legislation, regulations and standards.

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