Please find below the response from Natural Resources Wales regarding the Ofwat consultation on PR24 and beyond: Long term delivery strategies and common reference scenarios.

We would welcome a joint discussion with Ofwat, the Welsh water companies and Welsh Government to agree the way forward for the long-term delivery strategies and common reference scenarios in Wales.

Overall, these scenarios are broadly compatible from an NRW/ Wales perspective, however there are some missing pieces and mis-representations.

- We recommend using these reference scenarios in conjunction with Welsh specific resources, such as the Wales Future Trends report, which has been published very recently.
- We would like to see greater emphasis on future changes in the food, energy and transport systems and how these will influence water resources (these systems are highlighted in the NRW SoNaRR 2020 report).
- The biodiversity / nature crisis is not coming through very strongly in any of these common reference scenarios, we would like to see this given stronger consideration and a clear message given to the sector of the need to consider this in conjunction with climate change scenarios.

In relation to specific sections of the document our comments are as follows.

- 1.3 Ofwat have made a commitment to revisit reference scenarios at future price reviews with the sector. This should also include regulators.
- 2. Whilst it is understood that the price review process is about setting customer bills and they are key, this has to be balanced with the environment that provides the resource to meet customer expectations. There is an expectation for water companies to use evidence of customer expectations to inform their long term strategies but no equivalent message for the environmental capacity and constraints to be considered equally if not more so by water companies to inform their long term strategies. Why is this? In order to achieve the sustainable management (and use) of natural resources (SMNR), environment (including species) needs to have equal consideration. We would welcome clarity on Ofwat's expectations around this.
- 2.1 references to strategic planning frameworks are missing Shoreline Management Plans (SMPs) that are relevant to coastal water company assets. Also in 2.3.
- Box 2 Adaptive planning makes reference to ensuring 'that the reduction in social damage from adaptation justifies the costs of implementing the measure'. It is unclear if the environment is being considered equally in this as the section makes no reference to the role and value of the environment in adaptive planning. How do Ofwat see environmental damage featuring in their adaptive planning expectations? Will it have equal weight to social damage?
- 2.2 Adaptive pathways states that the common reference scenarios have been developed by Ofwat with engagement with the sector. In future work on the scenarios please also engage the regulators including NRW.
- 2.2 Monitoring, the monitoring plan in the strategy should also detail the level of uncertainty in relation to the data used to ensure quality assurance of the methods, data, and validity of the conclusions.
- 2.3 the Rationale should also detail why the adaptive pathways are the best approach in terms of the environment, species and SMNR.
- 2.3 references the WINEP options and appraisal guidance. For clarity it would be helpful to also state 'and the Welsh equivalent'. We accept that this does not currently exist but would wish it to be noted that the WINEP is for England only and Welsh requirements may differ.

- 2.5 the Board assurance should also be required to be measured against their satisfaction that the long term delivery strategy seeks to address the climate and nature emergencies and to contribute to the sustainable management of natural resources (SMNR).
- 3.2.1 Will Ofwat be providing more guidance to water companies on how to access use and interpret the Representative Concentration Pathways UKCIP18 data? This would be advisable to ensure consistency of use and comparability of conclusions.
- 3.2.1 Climate change potential impacts will also include changes in population number and location as migration affects occur. This should be included in the sector considerations as it could change current anticipated population pressures.
- 3.2.2 technological development should also consider the materials used, process including waste disposal / reuse and supply chain. A hardware technological development may not be viable if it is reliant on a material that is not sustainable. An example of this could be the removal of phosphate form wastewater using constructed wetlands. Whilst they address the sector's needs, there is then a bioresource that may not have a disposal / use route as its use could result in the release of phosphate back into the environment for which the wetland was installed to protect. Lifecycle will be a key consideration for technological development.
- Items missing from the list of Technology options under 3.2.2. include citizen science, smart farms that could help to show the impact of agricultural land use more accurately on water quality and resource to improve sustainable water use including reduced potable water treatment costs, provision of real time water quality data especially related to recreational sites and related to system operation to instil public confidence in the sector especially in relation to overflows.
- 3.2.2 It would be good to include potential negative impacts of technology in this section, such as the impact on natural habitats or the energy required for data storage and analysis.
- 3.2.3 on Demand does not address business customers or population behaviour change. For example agriculture and a change to vegetarian / vegan diets. Land use is especially relevant in drought scenarios / linked to climate change. Trends toward urban farming, smart farms, changes in crop type, reduction in meat consumption etc. will also affect demand.
- 3.2.3 the High Demand scenario for Wales matches Wales future trends report which uses ONS and statwales (Welsh Government) data.
- 3.2.4 is focussed on water resources. This needs to be made clear or re-written to fully address environmental ambition for all aspects of water company operations. There is a key need to balance water resource, water quality, wastewater treatment, environmental and species need, as well as social under this banner. In doing this for Wales it should reflect more strongly the unique Welsh policy landscape. Sustainable Development is a duty under Section 79, Government Wales Act 2006. Wales has the Wellbeing Future Generations Act (2015) and Environment Act (2016). Sustainable Management of Natural Resources is the recommended approach in Wales, following recommendations in from SoNaRR and Area Statements. This section is not representative of the Welsh context and policy landscape. NRW are planning to define the environmental ambition for all NEP drivers for PR24 to work with the companies in Wales on where we would like to be in 2050.
- In 3.2.4 in relation to water resources NRW has concerns about the reference scenarios. Please see the detailed comments below.
- 3.3 testing the reference scenarios would benefit from being done with partners and relevant stakeholders to make it understood and robust.

3.2.4 Environmental Ambition in relation to water resources

NRW have concerns that some of proposed reference scenarios do not align with Welsh Government policy / legislative expectations as well as those within the water resources planning guidance (of which Ofwat jointly produced with ourselves and Environment Agency). This misalignment could mean that the water companies (and regional groups) could be conflicted as to whether to meet Government expectations and those of the guidance or those that are outlined within this paper which in places go beyond current requirements for scenarios. Therefore, we would like Ofwat to review your reference scenarios to ensure alignment with the expectations of the Welsh Government, Natural Resources Wales as well as those of Ofwat for long-term plans.

Our specific comments for water resources for the reference scenarios are as follows.

Climate Change

We have raised our comments with yourselves via email already. This is an overview of our concerns that relate to the low and high common reference scenarios for climate change outlined in the discussion paper. The main concern is that these do not align with Welsh Government expectations and those outlined in guidance for water resource plans.

We have already agreed our position through consultation with yourselves and Welsh Government on climate change scenarios for use by water companies wholly or mainly in Wales (and regional groups as relevant) for water resource plans and therefore expect companies to follow our published position. Our position is included within an addendum to the water resources planning guidance (WRPG) and has been sent to yourselves. There is a clear direction that these should be used within the Welsh Government's guiding principles.

Therefore, as it stands the two 'reference scenarios' differ from this position. We would be concerned around also presenting RCP2.6 within their plan as this mixes the messaging if the companies are being directed to do otherwise. Given the academic discourse and research we do not believe this to be a realistic scenario to use as a low-end reference point if we are expecting companies to be resilient to a changing climate.

The presented reference scenarios also specifically direct companies to use the probabilistic projections and the use of 50th percentile. It's our belief that the companies are using a more spatially coherent scenario for the projections driving Deployable Output figures. There are different products available that are better suited to different purposes, as the probabilistic scenarios are not spatially coherent (although probabilistic scenarios are suited for us in uncertainty and headroom calculations).

In addition, Water Resources West have shared concerns with us that using the 50th percentile could cause significant risk to public supplies. Given that there is a 50% chance that the water resources system fails to cope with a future drought.

We agree with this assertion and believe that its best practice that a range of climate change uncertainty is dealt within headroom (whereby the companies explore a range of uncertainties in plan components). The WRPG references the expectation to use UKWIR methodologies for assessing and determining the appropriate level of headroom. As with the WRMP19 plans, we expect the use of 95th percentile at the start of the planning period and to reduce this over time.

The use of the 50th percentile by default could result in a deterioration in supply resilience since we would expect the plans to have been considered at a significantly higher headroom percentile.

Technology

We fully support the need to reduce leakage and per capita consumption through the promotion of smarter innovative technologies and behaviour change to do this. This aligns with Welsh Government's expectations for promoting innovation within the water sector.

Currently there is no compulsory metering requirement wholly or mainly in Wales. You will need to consider that a reference scenario expecting 100% smart metering isn't policy or realistic now as not all customers are metered or can be required to be. Therefore, this is not a plausible scenario for Wales and needs reconsidering.

It would be helpful if you could clarify the expectations for reference scenarios around non-household demand, given that in Wales the retail market is restricted to those of more than 50Ml/a. Therefore, their demand management is largely with the incumbents.

Welsh Government expectations for water resource plans are that they support a policy of reducing the carbon footprint associated with the abstraction, storage, treatment, and provision of water. It's worth considering how the low and high scenarios are still ensuring that the Wales statutory targets for reducing greenhouse gases are being met, including consideration of how any carbon impacts are being offset from the outset.

The Climate Change (Wales) Regulations 2021 prescribe a net zero target for greenhouse gas emissions by 2050, and interim targets as follows:

- **2021-25: 37% average reduction with credit ("offset") limit of 0%**
- **2026-30: 58% average reduction**
- **2030 target: 63% reduction**
- **2040 target: 89% reduction**

Demand

This paper proposes two elements to demand. The growth in population and properties and the adoption of standards and regulations for water efficiency.

Growth in population and properties

The policy regarding population and properties for water companies wholly and mainly in Wales is that *"they will need to base their forecast population and property figures on the latest local authority population and property projections published by the Welsh Government*".

Water resource plans are built up of the population and property projections to the water resource zone level. The National Population Projection for Wales should only be used when looking at the population of Wales as a whole.

Therefore, it's our view the low and high reference scenarios need to be agreed with the Welsh Government as to what they expect water companies and therefore Ofwat to consider. To date, water companies themselves discuss possible scenarios.

Adoption of standards and regulations for water efficiency

The low scenario assumes the introduction in 2025 of a mandatory government-led scheme to label water-using products. Currently Welsh Government is considering its position on labelling and if so, what timelines will relate to any change.

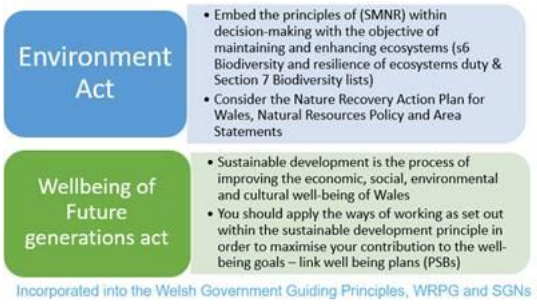
Alternative reference scenarios

To date, water companies themselves discuss possible scenarios which include reduced/increased population, peak demands, and the effects of COVID 19. For example, the regional groups adopted a scenario which assumed that only half the policy reduction in PCC was achieved.

Environmental ambition

The Ofwat paper should acknowledge that NRW has already shared its own paper about setting a long-term environment ambition (destination) with water companies / regional groups within or affecting Wales for water resources.

Our environmental destination paper sets out the need to consider the Welsh legislative requirements, Natural Resources Policy Priorities and delivering **Four long-term aims of SMNR** that have been agreed. This also includes ecosystem resilience as part of water resource management, protection, and enhancement activities to at least 2050 and preferably beyond.



Our framework does not provide a rigid approach and allows flexibility to agree a long-term environmental destination that reflects local, regional, and national priorities. Therefore, a holistic approach on catchment, water resource zone or regional basis (rather than common reference scenarios).

This approach to setting long-term destination will be through collative working with ourselves, water companies, regional groups and other stakeholders over AMP7 and beyond. The steps to doing this are as follows:

Setting out the short-, medium-, and long-term priorities for environmental destination (delivering Welsh Legislation and policy).

- **Set the context:** The Natural Resources Policy (NRP) will set the priorities for action. Using the priorities, relevant data, and information (including from the latest State of Natural Resources Report (SoNaRR) and Area Statements)

- **Understand the issues locally:** Using this information work with partners to set out the spatial areas where there is opportunity to improve water resource management to enhance environmental, social, and economic wellbeing.

- **Opportunities for change:** Within the identified areas you will need to set out the assessment of resilience/pressures on ecosystems and opportunities for implementing the NRP within these areas

- **A shared vision:** working with your partners (including regulators) identify the practical action that can be taken to improve water resources in line with the NRP priorities.

- **Implementation:** Identify the most appropriate delivery and funding mechanisms for inclusion into any relevant plans (business plan, NEP etc).

It is NRW's aspiration to work with the water companies, Ofwat and Welsh Government to set out and agree the environmental ambition (destination) for the National Environment Programme Drivers in Wales as part of PR24. So broadening the work shared with you to date on water resources to all aspects of the environment relevant to water companies.

Reporting scenarios and adaptive plans

Given that we produced a joint guidance for water resource plans that has been updated and signed off by Ofwat that outlined expectations for scenario testing (and headroom uncertainty), these appear to be over and above those discussed and agreed via Water Resources TAG and with water company to date (in respect to Welsh requirements).
As result it's not clear how water companies and regional groups are expected report on these. It could be a significant challenge to run all these common reference scenarios (alone or combined) at water resource zone, company and/or regional level. In addition, the number of different combinations of low/high scenarios for eight common references seems a disproportionate burden.

The principle of water resources planning is that it is risk based. Surely, we should expect a water company with surplus (less contentious plan) to have to look at a scenario proportionate to the risks posed (which are determined through problem characterisation).

We assume that if these scenarios lead to potentially different options via alternative pathways, then at what point are full assessments of the options required? Including the costs of alternative plans (carbon, social, environmental etc.). This needs to be made clear.

You will need confirm whether the expectation is that companies would need to decide/evidence the right number of adaptive pathways, which would likely be less than the potential total number of scenarios. Or would Ofwat only expect to see costed plans for each adaptive pathway not all the scenarios. It would be good to get this confirmed.
It's clear that this proposal could generate significant workloads for the water companies and regional groups to produce the scenario's depending on what combination is intended and likewise resulting in further regulator assessment requirements.