



**WATER RESOURCE
MANAGEMENT PLAN
2025 - 2030
(final plan)**

Albion Eco Limited

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1 Summary

English Language

The Water Industry Act 1991 (as amended by the Water Act 2003) underlines the importance of a water company's ability to meet the supply and demand requirements of their customers both currently and into the future. This document and associated tables outline Albion Eco's supply demand balance through to 2050 and is produced as required by the Water Act 2003, which established a statutory duty for a water company to produce a Water Resources Management Plan (WRMP). Albion Eco has taken into consideration relevant Directions and guidance documentation in compiling this Plan.

To date Albion Eco Limited has been granted one inset appointment under Ofwat's new appointments and variations (NAV) process where it is responsible for the supply of drinking water. This is:

- Shotton Mill, Deeside (awarded 1999)

Water efficiency is at the heart of Albion Eco's overall approach to water and services. As well as providing customers with non-potable and potable supplies we ensure water efficiency by identifying and responding rapidly to system losses and by engaging regularly with users. Due to a change of ownership and production facilities, significant inward investment is currently being attracted to our NAV and every opportunity will be taken to promote efficient water use, low carbon solutions and biodiversity gain. Water use will be lower than that predicted in our WRMP19 until 2024.

The overwhelming majority of water consumed relates to industrial output, there being no obvious climatic influence and no current or planned household demand. This plan demonstrates that the bulk supply arrangements in place will provide enough water to meet our customers demand over the next 25 years.

The bulk supply agreement with Dŵr Cymru does not require us to match the incumbents' restrictions policy (although in practice this is likely) but does contain restrictive clauses and regular operational communications are therefore maintained.

Cymraeg/Welsh Language

Mae Deddf y Diwydiant Dŵr 1991 (fel y'i diwygiwyd gan Ddeddf Dŵr 2003) yn tanlinellu pwysigrwydd gallu cwmni dŵr i fodloni gofynion cyflenwad a galw eu cwsmeriaid ar hyn o bryd ac yn y dyfodol. Mae'r ddogfen hon a'r tablau cysylltiedig yn amlinellu cydbwysedd galw cyflenwad Albion Eco hyd at 2050 ac fe'i cynhyrchir fel sy'n ofynnol gan Ddeddf Dŵr 2003, a sefydlodd ddyletswydd statudol i gwmni dŵr gynhyrchu Cynllun Rheoli Adnoddau Dŵr (WRMP). Mae Albion Eco wedi ystyried dogfennau Cyfarwyddiadau a chanllawiau perthnasol wrth lunio'r Cynllun hwn.

Hyd yma mae Albion Eco Limited wedi cael un apwyntiad mewnosodedig o dan broses penodiadau ac amrywiadau newydd Ofwat (NAV) lle mae'n gyfrifol am gyflenwi dŵr yfed. Dyma:

- Melin Shotton, Glannau Dyfrdwy (gwobrwyd 1999)

Mae effeithlonrwydd dŵr wrth wraidd ymagwedd gyffredinol Albion Eco at ddŵr a gwasanaethau. Yn ogystal â darparu cyflenwadau anhyfadwy ac yfadwy i gwsmeriaid, rydym yn sicrhau effeithlonrwydd

ddŵr trwy nodi ac ymateb yn gyflym i golledion systemau a thrwy ymgysylltu'n rheolaidd â defnyddwyr. Oherwydd newid perchnogaeth a chyfleusterau cynhyrchu, mae mewnfuddsoddiad sylweddol yn cael ei ddenu ar hyn o bryd i'n NAV a manteisir ar bob cyfle i hyrwyddo defnydd effeithlon o ddŵr, datrysiadau carbon isel a chynnydd mewn bioamrywiaeth. Bydd y defnydd o ddŵr yn is na'r hyn a ragwelwyd yn ein WRMP19 tan 2024.

Mae'r mwyafrif llethol o'r ddŵr a ddefnyddir yn ymwneud ag allbwn diwydiannol, nid oes unrhyw ddylanwad hinsoddol amlwg a dim galw presennol nac arfaethedig ar gyfer cartrefi. Mae'r cynllun hwn yn dangos y bydd y trefniadau swmpgyflenwi sydd ar waith yn darparu digon o ddŵr i fodloni galw ein cwsmeriaid dros y 25 mlynedd nesaf.

Nid yw'r cytundeb cyflenwad swmp gyda Dŵr Cymru yn ei gwneud yn ofynnol i ni gydweddu â pholisi cyfyngiadau'r deiliaid (er bod hyn yn debygol yn ymarferol) ond mae'n cynnwys cymalau cyfyngu ac felly cynhelir cyfathrebiadau gweithredol rheolaidd.

2 Background

2.1 Albion Eco's Plan - Structure and Comments

The Water Act 2003 places a statutory duty on all water companies to prepare and maintain a WRMP under section 37A to 37D of the Water Industry Act 1991. Albion Eco developed its plan in line with the Welsh Government's Guiding Principles (2022) for water resource planning and further guidelines developed by Natural Resources Wales to ensure that all essential aspects of its statutory duty are covered in the final WRMP submission. We have also worked closely with our stakeholders in developing our plan, including through pre-consultation meetings and communications.

All water companies operating within England and Wales must produce a WRMP every 5 years or when there is a material change of circumstances or the Secretary of State or Welsh Minister direct that a new plan be prepared. This WRMP identifies how we intend to provide a sustainable, efficient, secure and affordable supply of water to our customers. This document identifies how Albion Eco plans to maintain the balance between supply and demand over the next 25 years.

Unlike most other water zones in England and Wales, the principal factors driving change in our water resource requirements is not population growth or climate change. The overwhelming majority of demand is driven by water use in industrial output, this in turn is constrained by production capacity and market conditions.

This document has been checked for information that may be sensitive on the grounds of national security. A separate statement accompanies this WRMP, certifying that the plan has been reviewed and does not contain any information that would compromise national security interests, thus complying with section 37B of the Water Industry Act 1991 as amended by the Water Act 2003.

This plan has been approved by the Board of Albion Eco. Key technical and development issues were discussed and agreed by the Board during 2022 with final sign off in April 2023.

2.2 Water Legislation

The following documents, plans and policies were considered during production of this draft plan:

- Water Strategy for Wales 2015 (Welsh Government)
- Environment (Wales) Act 2016 (Welsh Government)
- Well-being of Future Generations (Wales) Act 2015 (Welsh Government)
- Water Resources Management Plan Regulations (2007)
- Water Resources Management Plan (Wales) Directions 2016
- UK Climate Change Risk Assessment 2017, Evidence Report (Wales)
- UK Climate Risk (Wales)
- WFD River Basin Management Plans (NRW)
- Conservation of Habitats and Species Regulations 2017
- Catchment Abstraction Management Strategies (NRW)
- Water Industry Act 1991
- Water Resources Planning Guideline (updated April 2022)
- North East Wales Area Statement (NRW)
- Guiding Principles for Developing Water Resources Management Plans (WRMPs) 2022
- Climate Change (Wales) Regulations 2021

Section 37A of the WIA states:

- (1) It shall be the duty of each water undertaker to prepare, publish and maintain a water resources management plan.
- (2) A water resources management plan is a plan for how the water undertaker will manage and develop water resources so as to be able, and continue to be able, to meet its obligations under this Part.

Section 37D of the WIA states:

- (1) Directions given under section 37A, 37AA or 37B above may be -
 - (a) general directions applying to all water undertakers; or
 - (b) Directions applying to one or more water undertakers specified in the directions.

WRMP guidelines provide some proportionality to NAV companies. We have previously submitted that an appropriate route to ensuring reliable supplies to the customers of bulk supply inset appointees, in the absence of an independent water resource, would be as a statutory consultee to an incumbent's plan or, consistent with 37D(1)(b) above, under simplified direction. In the absence of these routes, this plan has been completed with the benefit of existing guidance, feedback received and regulatory proportionality.

2.3 Albion Eco's Inset Appointment

The Shotton site was granted as an inset appointment in 1999 – see area location below (a more detailed plan is included in our original Instrument of Appointment).



The area is wholly industrial and benefits from both potable and non-potable supplies, sourced through a bulk supply agreement with Dŵr Cymru. In 2021 Shotton Paper's owner, UPM Kymene, sold their site to Eren Holdings, a leading Turkish cardboard and packaging company. Paper production ceased in September 2021 and work is currently underway to convert operations whilst auxiliary processes continue.

Our single water resource zone (WRZ) falls within Dŵr Cymru's Alwen/Dee WRZ from which bulk supplies are sourced. The maximum bulk non-potable import of 22 MI/d (made up of a guaranteed 18 MI/d plus 4 MI/d if available) equates to Albion Eco's deployable output. Flows in the River Dee can be regulated under the River Dee Drought General Directions established by the Dee Consultative Committee. No restrictions have historically been imposed as a result of drought on our

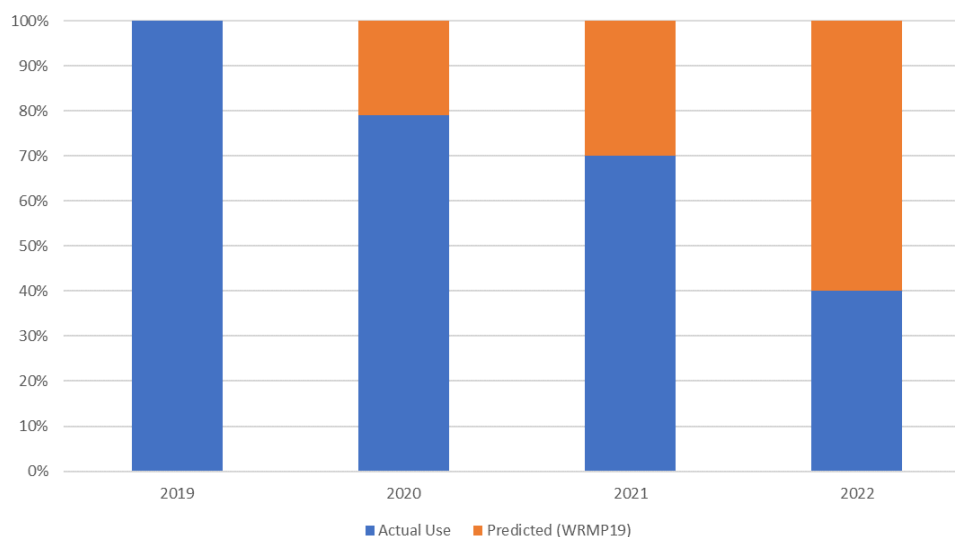
bulk supply arrangements but, in light of risks associated with climate change and industrial development, discussions relating to efficient water utilisation are ongoing between stakeholders.

A restricted potable back-up supply option is established under the bulk supply agreement and is available for non-household usage.

2.4 WRMP19 Outcome

Outturn water resource use as a percentage of planned usage is illustrated in the table below.

TABLE 1. Actual Water Use as a Percentage of WRMP19 Tables



2.5 Pre - Consultation

Guidelines produced by NRW recommend that, before preparing its plan, we should consult with a variety of organisations. Our pre-consultation during 2022 is summarised in the table below.

Consultee	Response
Natural Resources Wales (NRW)	Feedback on pre-consultation draft WRMP document received, outcome of discussions and comments incorporated into this consultation document and summarised as: Water legislation – additional links provided for reference. SEA/HRA – comments on screening Drought reliability – ongoing review in Alwen/Dee zone. Water demand – discuss assumptions and approach to efficiency. Headroom and sensitivity – link to common reference scenarios. GHG emissions – approach to net zero and climate and nature emergencies Discussions also ongoing related to accompanying data tables.
Welsh Government	Supported NRW feedback.
Dŵr Cymru	Contacted by email enclosing pre-consultation draft WRMP document. Included as an agenda item in regular liaison meetings.
Ofwat	Feedback on pre-consultation draft WRMP document received and comments incorporated into this consultation document and summarised as:

	<p>WRMP Approach – provide evidence and ID changes between WRMP19 and WRMP 24. Add problem characterisation section.</p> <p>Supply forecast – discuss supply and quality issues, if any. Match LoS. Management and maintenance of assets.</p> <p>Demand forecast – consider all efficiency and leakage improvements. Set out demand assumptions.</p> <p>Supply-Demand Balance – include 25 year forecast, demand and supply options and comment on headroom risks.</p> <p>Customer engagement – demonstrate adequate customer engagement.</p> <p>Assurance – demonstrate Board level involvement.</p>
CADW	Response received supportive of the draft WRMP.
DWI	Contacted by email enclosing pre-consultation draft WRMP document.
Consumer Council for Water (CCW)	Contacted by email enclosing pre-consultation draft WRMP document.
Users	Meetings and regular communication are ongoing to ensure that demand can be met both now and into the future. Including advice on monitoring, reducing leakage and promoting the efficient use of water in current and future activities. A significant package of investment is underway for the area for which we are encouraging the use of highly efficient processes and consideration of maximising process water recycling.

As a result of the feedback received to date, this document benefits from and incorporates additional detail relating to risk characterisation, wellbeing ambitions, targets and managing demand within the constraints of supply.

2.6 Strategic Environmental Assessment/Habitat Regulation Assessment

A separate screening exercise and statement has been carried out and concluded that our WRMP will not give rise to any significant environmental effects.

3 Water Resources

3.1 Shotton Mill

Following sale of the site and the cessation of paper production at Shotton, work has commenced on converting the site to cardboard manufacturing. During this period process water usage will be depressed until commissioning of the new facility, which is expected to be largely complete in 2024/25.

Demand for water in the Shotton inset area (primarily Shotton Mill Ltd) is provided through metered potable and non-potable mains from Dŵr Cymru. All water supplied passes through bulk meters.

The water supplies come from Dŵr Cymru's Alwen/Dee Water Resources Zone. The bulk supply agreement between Albion Eco and Dŵr Cymru has an upper supply limit of 22,000 cubic meters per day (22 MI/d) of which 18MI/d is guaranteed.

Historic water use data does not provide a reliable guide to future demand, notwithstanding this the WRMP tables will assume that historic average usage represents an equivalent base year. Water use will remain depressed during the next 18 to 24 months, beyond which usage will increase, as represented on the accompanying WRMP tables.

Regular reviews and assessments will be undertaken until stable demand is established. Consistent with historical patterns, no significant seasonal variations are expected within the NAV (section 2.1 describes the demand factors driving this outcome).

3.2 Outage

No allowance has been made for outage in the supply demand balance. The company providing the bulk supplies have made an outage allowance in their supply demand calculations.

3.3 Severe droughts

The availability of bulk supplies has proven to be reliable during dry years, including 2022. Albion Eco's bulk supplies originate from the River Dee which is a regulated source under the NRW/EA Dee General Directions. Stage 3 cutbacks due to severe drought have never been implemented and no restrictions have been applied since our appointment. We are in regular contact with Dŵr Cymru to discuss, amongst other things, the impact of drought modelling on our levels of service.

3.4 Impact of climate change

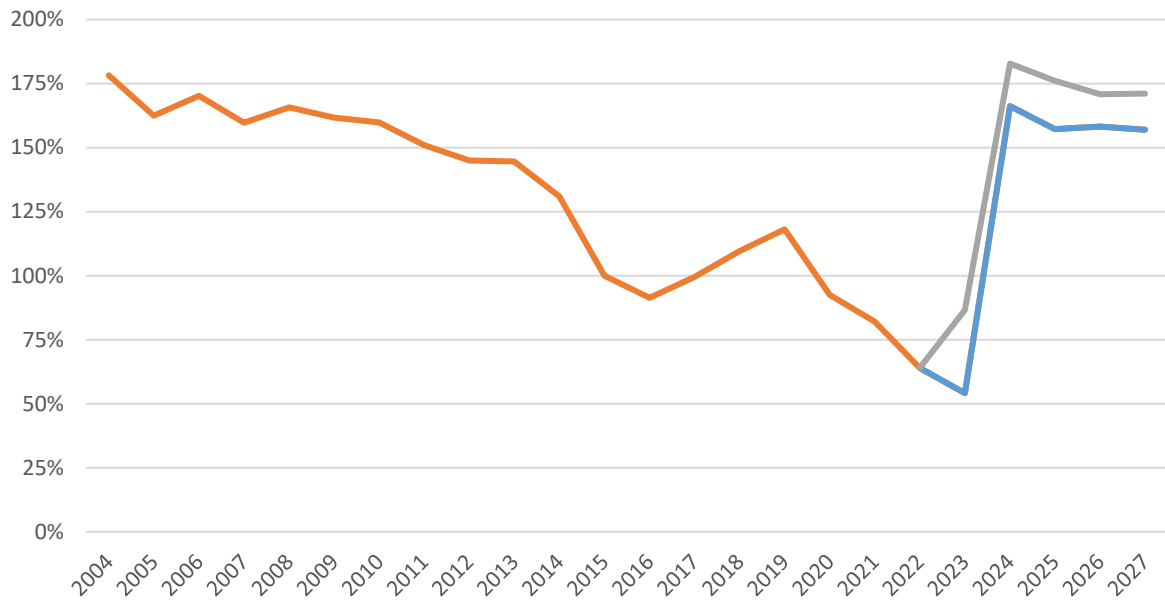
Dŵr Cymru allows for the impact of climate change in their supply demand balance, and there is no condition in the bulk supply agreements that allows a variation to the agreed supply quantity as a result of climate change.

4 Water Demand

4.1 Historic levels of demand

Unlike most water companies, demand is not influenced by weather patterns. Whilst demand is currently low due to planned paper production decommissioning and significant investment in cardboard manufacture, 'settled state' demand will be almost wholly driven by industrial production. Area usage will remain determined by non-household demand. Under these circumstances, the most appropriate planning forecast is based on predicted usage, with a starting assumption that historic levels of demand will not be exceeded - figure 1 illustrates historic demand (relative to 2015) and predicted water usage trends over the next 5 years.

**Figure 1. Historic (orange), Predicted (blue) and Risk (grey)
NP Water Usage - 2015 base year**



We continue to work closely with our customers to promote water efficiency and with our bulk supplier to facilitate good operational supply management and planning for industrial growth.

4.2 Base Year

The current split of demand has been assessed as follows.

TABLE 2 – Current Demand

Demand element	Shotton	Source / Comment
Unmeasured households		
Number of properties	0	Industrial site only
Occupancy	n/a	
Population	0	
Water supplied	0	
PCC	n/a	
Measured households		
Number of properties	0	Industrial site only
Occupancy	n/a	
Population	0	
Water supplied	0	
PCC	n/a	
Non-households		
Number of properties	<10	
Population	0	
Water supplied (potable)	<0.1 Ml/d	Meter records
Water supplied (non-potable)	<13 Ml/d	Meter records
Other		
Leakage (potable)	0.01 Ml/d	Estimated
Water taken unbilled	0	

4.3 Leakage

Albion Eco does not currently own supply infrastructure downstream of the bulk supply meters. Leakage from our customers potable supply pipes can be identified during monthly billing. Any increase in anticipated volume is identified and investigated with the aid of zonal and sub-meters. Repairs are carried out as necessary.

Usage on the non-potable supply is closely monitored and discussed with utility and production managers. The nature of 24 hour operations, production, maintenance and down-time does not allow detailed 'night flow' analysis so usage efficiency is regularly reviewed.

Significant investment in private on-site networks is associated with the transition to card manufacturing and we are working closely with users to embed water efficiency and enable zonal monitoring to facilitate leakage identification and management.

4.4 Demand forecasting

Shotton area demand is currently driven by ongoing plant operations, decommissioning activity and welfare provision for workers. These are influenced by market conditions, but 'steady state' demand will be limited by production line capacity and the amount of water recycling possible.

KPIs will be established and monitored once the site has been fully commissioned, wherever possible linked to zonal usage units across the network.

These assumptions are based on the latest discussions with our customers, any changes will be reflected in our water resource planning.

Population forecasts

n/a

Metering

All bulk supplies are metered.

Changes in PCC

n/a

Changes in non-household demand

Non-household demand is forecast to be depressed until 2024, beyond which demand is predicted to peak and then settle at historic (pre-2015) levels.

The latest and most efficient manufacturing infrastructure is to be installed on site, as such, it cannot be assumed that an arbitrary efficiency saving can be achieved year on year. However, with our focus on monitoring (see 4.3), establishing KPIs and zonal data (see 4.4) and engaging with customer when considering replacement infrastructure, we aim to keep future operations in line with leading edge efficiency.

Changes in leakage

Much of the private water network within our supply zone is being replaced to meet future site needs. Leakage associated with new pipes will be very low and is then assumed to settle and then be maintained at a low level on the customers potable and non-potable networks. Leaks reported downstream of the bulk supply meters are promptly investigated and repaired.

Dry year uplift

No increase in non-household demand is assumed or is likely to be evident in a dry year.

5 Supply demand balance

Demand for water is met by bulk imports and, where practicable, recycling. Whilst no supply demand deficit is currently forecast over the period of the plan, we are in discussions with the bulk supplier in relation to industrial growth predictions on the non-potable network.

In the event that our bulk supplier is unable to provide the non-guaranteed non-potable water (up to 4MI/d), our modelling has shown that in 2025/26 there is a potential shortfall of 1.91 MI/d. In the

unlikely event of this shortfall, demand will be met through a combination of increased recycling and/or the use of alternative sources – either non-potable or potable (in the case of the latter, up to 2 MI/d – reflected in row 3.1BL of the WRMP tables). Discussion with users and the bulk supplier are ongoing.

6 Headroom and sensitivity

Given that our area covers small ring-fenced industrial units that must focus on raw material costs (including water) within a highly competitive industry there are few exceptional factors to consider.

To assess a notional worst case we have considered the impact of average demand being 14% higher (up to 2027) than in our central forecast. Under this scenario we would retain sufficient headroom with demand within the range of historic peak usage. Whilst a review and dialogue continues with our bulk supplier, for current planning purposes, no additional headroom is required in addition to the enduring bulk supply arrangements. There are therefore currently no measures, beyond continuing operational efficiency, to be considered upstream of our bulk supply meters to meet our water resource obligations, neither is there a need to adjust infrastructure plans in the downstream network. The following table provides further detail:

TABLE 3 – Problem Characterisation

Strategic Needs			
WRMP Risks	No significant concerns (score=0)	Moderately significant concerns (score=1)	Very significant concerns (score=2)
Customer service could be significantly affected by current or future supply side risks (without investment)	0		
Customer service could be significantly affected by current or future demand side risks (without investment)	0		
Acceptability of the cost of the likely investment programme, or the nature of the investment portfolio to stakeholders (inc. environmental/planning risks)	0		

Complexity - Supply				
WRMP Risks	No significant concerns (score=0)	Moderately significant concerns (score=1)	Very significant concerns (score=2)	Commentary
Concern about understanding of supply system performance (due to LoS or resilience under sever drought scenarios)	0			See section 3.3 & 7
Concern about understanding of supply system performance (due to climate change uncertainty or source deterioration)	0			See section 2.3 & 3.3
Risk of uncertain stepped change in supply (sustainability reductions or bulk imports)	0			See section 3.1, no significant changes in bulk abstraction and supply are anticipated
Concern about 'DO' metric failing to reflect significant risk (due to storage failure, infrastructure resilience of conjunctive dependencies between new options)	0			n/a

Complexity - Demand				
WRMP Risks	No significant concerns (score=0)	Moderately significant concerns (score=1)	Very significant concerns (score=2)	Commentary
Current or near term demand changes due to large scale metering programme or change in economics/demographics	0			Zone is fully metered already and current investment phase secures future industrial output
Impact of long term demand changes on investment - due to uncertain economics/demographics	0			Demand is expected to remain broadly stable following the completion of inward investment
Does inter-annual variability in demand and leakage cause concern over forecasts and planned investment?	0			n/a
Does seasonal supply:demand influence the need for investment?	0			See section 3.1 & 4.1

Complexity - Investment				
WRMP Risks	No significant concerns (score=0)	Moderately significant concerns (score=1)	Very significant concerns (score=2)	Commentary
Concern that capex uncertainty could compromise selecting 'best value' portfolio	0			n/a
Is there an issue with construction led times?	0			n/a
Stakeholders requirement for modelling investment analysis including objectives other than least economic cost	0			n/a
Do uncertainties about relative opex or utilisation of resources cause concern about the adequacy of simple, deterministically derived investment portfolio	0			n/a

7 Drought reliability and drought actions

The bulk supply to Albion Eco contains clauses that deal with bulk imports should there be a catastrophic failure of water supplies due to extreme weather conditions or environmental problems. No restriction has been necessary since the NAV was granted in 1999. We would plan to match the relevant restrictions that Dŵr Cymru impose on their customers in relation to non-essential usage in the neighbouring area in the event of a drought. Such restrictions to potable supplies are expected to comply with a level of service of 1 in 200 years for temporary use bans and 1 in 500 for non-essential use bans.

Dŵr Cymru's non-potable water supply is provided under the terms of a bulk supply agreement with United Utilities; this volume is not included within Dŵr Cymru's supply forecasts. No temporary use ban is relevant for this industrial non-potable supply and non-essential use bans are estimated at levels exceeding 1 in 80 years. Under these circumstances no restrictions of non-potable water (beyond existing contractual arrangements) are anticipated within the current planning horizon and no customer support was expressed to provide greater levels of service.

We will keep this plan under review should new information be received from Dŵr Cymru.

8 Other matters referred to in Guidance and Directions

8.1 Greenhouse gas emissions accounting

Based on Dŵr Cymru's published figures (held on Water UK's Discover Water website) we predict annual greenhouse gas emissions resulting from the bulk supply of potable water will amount to 1,700 kgCO₂e. Assuming that non-potable water produces one third of the greenhouse gas emissions of potable water, we predict that annual greenhouse gas emissions (once fully operational) will amount to 164,000 kgCO₂e. Achieving net zero will be pursued in line with the water industry's ambitious target of 2030.

Albion Eco, through its parent Waterlevel, is committed to achieving carbon neutrality in its own operations and aims to introduce appropriate measurement and reporting systems once the new production facilities are up and running.

8.2 Resilience

Actions to be taken by both parties should there be a problem in maintaining the bulk supply will include maximising the utilisation of system storage, the provision of an alternative back up water supply (if available) or, for potable, an alternative supply of water by bowser, temporary mains, bottled water or otherwise. On-site storage (including the installation of new infrastructure and controls) will also be considered to smooth out short term supply fluctuations or temporary peak demand.

8.3 Wellbeing, Community and Environmental Initiatives

We are delighted to be working as a long-term Natural Partner with the North Wales Wildlife Trust at a reserve close to our Shotton supply zone. This relationship aims to enhance local community facilities, to promote biodiversity and bioabundance, and to establish monitoring and educational resources.

Further afield, we are working on new business opportunities that seek to promote landscape change leading to improved flood management and carbon sequestration.

8.4 Commercial confidentiality

There is no commercially confidential material in this document.

8.5 Board assurance

This Water Resources Management Plan was considered by the Board of Albion Eco Limited, in particular:

April 2022, the Board agreed the assumptions from which the plan is built up.

August 2022, the Board reviewed the resulting Supply Demand balance and are assured that the plan will meet our customer requirements over the next 25 years.

April 2023, the Board expressed gratitude for the consultation submissions and approved the changes set out in our Statement of Response.

8.6 Tables

Following discussions with NRW and the EA, it was decided that the previous, post WRMP19, reporting tables should be completed rather than a revised NAV version. Usage figures in these tables are reported in the units megalitres per day (Ml/d) rather than cubic metres per day (m³/d) to meet the requirements of NRW.

9 Responses to the draft Water Resources Management Plan

This Plan benefits from representations received and considered following a period of consultation. Details of changes made between the draft and final plan can be found in Albion Eco's Statement of Response which is available on our website or can be provided on request.