

Hafren Dyfrdwy PR19 business plan

Lowest bills, improved service and a healthier environment

A plan for future generations in Wales

3 September 18

RHAGOROL O'R TAP
WONDERFUL ON TAP



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Hafren Dyfrdwy PR19 appendices

More detail and supporting data on the complex areas of our plan, included in separate documents

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FOREWORD

Delivering on our promises: lowest bills, better services, healthier environment – our plan for the next five years

Hafren Dyfrdwy was set up this year to serve customers in Mid and North-east Wales with high quality water services at the most affordable price in the country.

We have locked in the benefits from our predecessor companies Dee Valley and Severn Trent. From this platform we are creating an even stronger more resilient service for customers in Wales by combining the benefits of a very local approach whilst drawing on the broader benefits of being part of a wider public company.

We are today launching a detailed plan for 2020 to 2025 that delivers on the promises we have made to improve service in Wales.

Our plan starts with you. It is based on 18 months of listening and discussing the issues that are important to our customers in Wales. It unashamedly takes a long term view: it delivers for customers today and puts the building blocks in place for delivering for customers in 30 years' time, protecting these vital services for future generations.

The three most important things about our plan are:

1. We're keeping our bills by far the lowest in Wales

- The average water and sewage bill in the Hafren Dyfrdwy area is currently £288 a year, compared to the average bill in the rest of Wales of £439.
- Our plan is to limit any price rises between 2020 and 2025 to a total of 2.2 per cent above inflation over the whole five-year period on the combined water and sewage bill.
- At the same time as holding prices down, we propose to increase investment by 4% per customer to improve services.
- We are squaring this circle by being more innovative and efficient and by finding solutions that deliver multiple benefits. We are utilising new funding, such as heritage lottery, to create infrastructure that benefits

RHAGAIR

Cyflawni'n haddewidion: biliau rhatach, gwell gwasanaethau, amgylchedd iachach – ein cynllun ar gyfer y pum mlynedd nesaf

Sefydlwyd Hafren Dyfrdwy eleni i wasanaethu cwsmeriaid yng nghanolbarth a gogledd-ddwyrain Cymru gyda gwasanaethau dŵr sydd ymysg y gorau yn y byd, a hynny am y pris mwyaf fforddiadwy yn y wlad.

Rydym yn cynnwys, fel rhan annatod, y buddion oddi wrth y cwmnïau oedd yn rhagflaenwyr inni, Dyffryn Dyfrdwy a Severn Trent. Yn seiliedig ar y llwyfan hwn, rydym yn creu gwasanaeth sydd hyd yn oed yn gryfach ac yn gadarnach i gwsmeriaid yng Nghymru drwy gyfuno'r buddion o gael ymagwedd hynod leol â hefyd fanteisio ar y buddion ehangach o fod yn rhan o gwmni cyhoeddus sylweddol.

Rydym heddiw'n lansio cynllun manwl ar gyfer 2020 i 2025 sy'n cyflawni'r addewidion rydym wedi'u gwneud i wella gwasanaeth yng Nghymru.

Mae ein cynllun yn dechrau gyda chi. Fe'i seilir ar 18 mis o wrando a thrafod y materion sy'n bwysig i'n cwsmeriaid yng Nghymru. Mae'n cymryd safbwynt hirdymor eofn: mae'n cyflawni ar gyfer cwsmeriaid heddiw ac mae'n gosod y sylfeini ar gyfer cyflawni i gwsmeriaid ymhen 30 mlynedd, gan ddiogelu'r gwasanaethau hanfodol hyn ar gyfer cenedlaethau'r dyfodol.

Y tri pheth pwysicaf am ein cynllun yw:

1. Rydym yn cadw'n biliau yr isaf yng Nghymru o bell ffordd

- Y bil dŵr a charthffosiaeth cyfartalog yn ardal Hafren Dyfrdwy ar hyn o bryd yw £288 y flwyddyn, o'i gymharu â'r bil cyfartalog yng ngweddill Cymru, sy'n £439.
- Ein bwriad yw cyfyngu ar unrhyw godiadau mewn prisiau rhwng 2020 a 2025 i gyfanswm o 2.2 y cant uwchben chwyddiant dros y cyfnod cyfan o bum mlynedd.
- Ar yr un pryd â chadw prisiau'n sefydlog, rydym yn bwriadu cynyddu buddsoddiad 4% y cwsmer er mwyn gwella gwasanaethau.
- Rydym yn cyflawni'r ddeubeth hyn trwy fod yn fwy arloesol ac effeithlon a thrwy ganfod

all our customers in Wales, and we are refinancing historic debt and reducing gearing to strengthen the resilience of our business.

2. We're improving services further

- Our plan sets out ambitious improvements to make our already good services better still. We will, for example, be reducing water supply interruptions by 27 per cent, leakage by 15 per cent and pollution incidents by a further 18 per cent. We know from our discussions with customers that these are things which are important to you.
- In addition to improving the basics, we're investing to safeguard services for the long term. For example, we're investing almost £19 million to improve dams and treated water reservoirs so they are fit to serve future generations.
- Despite having by far the lowest bills in Wales, we are also stepping up the support for those customers who may be in difficult circumstances and need some additional support. We will offer both financial and non-financial support through our dedicated Customer Care and Assistance team in our Wrexham office. For those customers who are struggling to pay their bill, we're doubling the number of customers we'll be helping with discounts of up to 90 per cent.

3. We're doing more to improve the environment

- We're planning the largest statutory environmental programme in our part of Wales for over 20 years, improving around 22km of river.
- We're investing to improve 450 hectares of upland peat bog around Lake Vyrnwy, something that will make the area more attractive for visitors as well as protecting and enhancing our precious environment.

The overall package of improvements set out in our plan will raise what is already a very high standard higher still. Our customers will continue to have the lowest bills and some of the very best services.

You can read more about our plan on our website. You will find a short executive summary as well as the detailed, fully costed and independently audited

datrysiadau sy'n cyflawni llu o fuddion. Rydym yn gwneud defnydd o gyllid newydd, megis Cronfa Dreftadaeth y Loteri, i greu seilwaith sydd o fudd i'n holl gwsmeriaid yng Nghymru, ac rydym yn gostwng dyled hanesyddol i gryfhau cadernid ein busnes.

2. Rydym yn gwella gwasanaethau hyd yn oed yn rhagor

- Mae ein cynllun yn amlinellu gwelliannau uchelgeisiol i wneud ein gwasanaethau sydd eisoes yn dda yn well fyth. Er enghraifft, fe fyddwn yn lleihau toriadau ar gyflenwadau dŵr 27 y cant, a digwyddiadau llygredd 18 y cant yn rhagor. Gwyddom o'n trafodaethau â chwsmeriaid fod y rhain yn bethau sy'n bwysig ichi.
- Yn ychwanegol at wella'r hanfodion, rydym yn buddsoddi i ddiogelu gwasanaethau ar gyfer y cyfnod hir. Er enghraifft, rydym yn buddsoddi £19 miliwn i wella argaeau a chronfeydd dŵr wedi'i drin fel eu bod yn addas i wasanaethu cenedlaethau'r dyfodol.
- Serch y ffaith mai gennym ni y mae'r biliau isaf o bell ffordd yng Nghymru, rydym hefyd yn cynyddu'r cymorth i'r cwsmeriaid hynny a all fod mewn amgylchiadau anodd ac sydd angen cymorth ychwanegol. Byddwn yn cynnig cymorth ariannol a chymorth nad yw'n ariannol, fel ei gilydd, drwy'n tîm Gofal a Chymorth Cwsmeriaid pwrpasol yn ein swyddfa yn Wrecsam. Ar gyfer y cwsmeriaid hynny sy'n ei chael hi'n anodd talu'u bil, rydym yn dyblu nifer y cwsmeriaid y byddwn yn rhoi cymorth iddynt, gyda disgowntiau o hyd at 90 y cant.

3. Rydym yn gwneud mwy i wella'r amgylchedd

- Rydym yn cynllunio'r rhaglen amgylcheddol statudol fwyaf yn ein rhan ni o Gymru ers dros 20 mlynedd, gan wella mwy na 22 cilometr o afonydd.
- Rydym yn buddsoddi i wella 400 hectar o weunydd mawn yr ucheldir o amgylch Llyn Efyrynwy, sy'n rhywbeth fydd yn gwneud yr ardal yn fwy deniadol i ymwelwyr, yn ogystal ag yn gwarchod ein hamgylchedd gwerthfawr.

Bydd y pecyn cyffredinol o welliannau a amlinellir yn ein cynllun yn codi'r hyn sydd eisoes yn safon uchel iawn yn uwch fyth. Bydd ein cwsmeriaid yn parhau i

version.

Our plan will now be scrutinised by our regulator. Once it is approved, we will publish every year independently audited reports on how we're meeting the ambitious commitments we have set out.

With best wishes

Liv Garfield



gael y biliau isaf a rhai o'r gwasanaethau gorau y mae modd eu cael.

Gallwch ddarllen mwy am ein cynllun ar ein gwefan. Fe ganfyddwch grynodedb gweithredol byr, yn ogystal â'r fersiwn manwl, sydd wedi ei gostio'n llawn ac sydd wedi'i archwilio'n annibynnol.

Bydd ein rheoleiddiwr yn awr yn craffu ar ein cynllun. Unwaith y caiff ei gymeradwyo, fe fyddwn yn cyhoeddi bob blwyddyn adroddiadau sydd wedi'u harchwilio'n annibynnol ynglŷn â sut rydym yn cyflawni'r ymrwymadau uchelgeisiol rydym wedi'u hamlinellu.

Gyda dymuniadau gorau

Liv Garfield



Business plan executive summary

Serving our customers

We have listened carefully to our customers to understand what matters to them in their daily lives and probed in more detail about their expectations from their water, and where applicable, waste service provider.

We have talked to around 4000 of our customers in over 25 different locations, ranging from rural areas with a handful of customers, to small villages where the Welsh language is prevalent and the larger towns of Wrexham, Welshpool and Newtown. We've listened to our customers using a range of techniques, from telephone surveys, face to face interviews to deliberative research and co-creation.

We have also engaged with policy makers to ensure we understand the requirements and ambition in Wales. We have shared the challenges, and aligned solutions with stakeholders.

We heard that our customers want three key things from us:

1. Continue to provide a reliable day to day service and reduce service failures, which cause inconvenience and dissatisfaction (get the basics right)
2. Support customers when they need it, with a personal and human touch
3. Make a positive difference for the local environment and local communities

We have shown them how they have shaped the plan for the next five years and 85% of our customers found the overall package acceptable.

A plan that must deliver for Wales

The Welsh Government has set a clear and bold ambition in its *Water Strategy for Wales* and the sustainability principles and well-being goals set out in the *Well-being of Future Generations (Wales) Act* which aim to achieve:

- **A prosperous Wales** - An innovative and productive society, which recognises the limits of the global environment and uses resources efficiently and which develops a skilled population in an economy which generates wealth and provides employment opportunities;
- **A resilient Wales** –A nation which maintains and enhances a biodiverse natural environment that supports resilience;
- **A healthier Wales** –A society in which people's well-being is maximised and in which choices and behaviours that benefit future health are understood;
- **A more equal Wales** –A society that enables people to fulfil their potential no matter what their background or circumstances;
- **A Wales of cohesive communities** –Attractive, viable, safe and well-connected communities;
- **A Wales of vibrant culture and thriving Welsh language** –A society that promotes and protects cultures, heritages and the Welsh language; and
- **A globally responsible Wales** –A nation which takes account of whether doing such a thing may make a positive contribution to global well-being.

These principles resonate strongly with our customers – and our plan has been guided by them.

Unrelenting focus on the core services

We have nine customer outcomes in which we commit to deliver reliable, consistent service to our customers now and in the future. We commit to:

- Ensure water is **good to drink**
- And **always there** when customers need it
- And then **take waste away safely** everyday
- Do all of this in a way that not just protects but creates a **thriving environment**
- Whilst engaging with our communities and making a **positive difference** for the benefit of current and future generations
- Ensure customers receive an **outstanding customer experience**, which is centred around providing a personalised **service for everyone** whatever their unique needs
- Do all of this while ensuring we charge the **lowest possible bills** that are affordable for all
- We will demonstrate that we are a **company you can trust** who have controls, checks and balances in place to ensure we make the best decisions for our customers. We have made a good start in this area, ensuring that Hafren Dyfrdwy has a strong, independent board with effective non-executive input, but with the added benefit of operating within a strong group.

Our customers expect this to be true for future generations as well as customers today.

Investing in service improvements

Our plan balances the affordability of bills with the steps needed to safeguard services and the environment for future generations. We have talked to our customers about this and across the four main investment areas where we have long term challenges between 85% and 92% of our customers either supported our proposed action or thought we should invest more to reduce some of the risks sooner. We have also responded to customers and stakeholders and are committing to reduce leakage by 15% in the next five years.

The most significant challenge relates to our raw water and treated water reservoirs. Over the next five years we will be investing around £19 million in our dams and treated water reservoirs, which has been identified through the application of best practice risk management. Not only are the dams and reservoirs a hugely important part of providing a reliable service, they are also a big part of the landscape in Wales and we are making improvements to ensure our communities can enjoy them.

We will deliver performance that puts us in the top quarter of the industry across 65% of the comparable performance commitments, which includes service areas that are the most fundamental to our customers such as reducing drinking water quality risks and reducing internal sewer flooding. Our plan sets out ambitious improvements where we are not in the top quarter but our customers want us to be, such as reducing interruptions to supply and reducing drinking water complaints.

Our customers have told us that they want us to keep them informed with progress in delivering the outcomes and performance commitments, but also more broadly about the work we are doing to support our communities and enhance the environment. This ongoing engagement will be part of our delivery plan.

Investing in our community and the environment

Over the next five years we will be investing £2.5m to improve around 22km of river water quality, which represents the largest statutory environmental programme required in this part of Wales for 20 years. We will also be enhancing biodiversity and well-being by investing almost £2m, the majority of which is planned at Lake Vyrnwy, where we have a fantastic opportunity to support Wales. The project will:

- enhance the visitor experience so that more people visit the site and stay in the surrounding area thus improving the local economy;
- restore approximately 450 hectares of upland peat bog to move the SSSI status from 'Unfavourable' to 'Favourable', which will provide greater resilience of our ecosystems; and
- enable local communities to shape the developments and develop a shared sense of ownership.

Together with our partners, we have secured £1.5m Heritage Lottery Funding that allows us to leverage 60% match funding which makes this flagship scheme more affordable to our customers.

We are also increasing our contribution to our communities through our community champion programme – an employee volunteering initiative to support community projects.

Improving the well-being of customers and society

We have identified ways that we can support well-being by thinking more holistically to deliver opportunities and improvements at minimal or no extra cost. These include:

- We are partnering with Welsh government, Welsh Water and the charity City To Sea to roll out the Refill initiative, with the ambition to be the first 'refill nation'. We strongly believe that it is important for us to promote the benefits of water for hydration.
- We are members of the All Wales Water Safety Group, who promote safe use of water. We have 14 reservoirs in our region so this is an important consideration.
- We are making infrastructure improvements to improve amenities at more of our reservoirs. Benefits include promoting local economy through a local tender process for café management, improving access and awareness of the site so that they are more enjoyable and making it easy for people to take part in well-being activities.
- Supporting other local initiatives such as the Newtown Go Green consortium, which has a wide reaching scope; our involvement is around safe and enjoyable access to the river, which runs through our Mid Wales region.

We will also be taking a first step towards the Welsh Government long term ambition of a lead free Wales. In the next five years we will be protecting around 230 homes and schools by replacing the lead pipes, therefore removing the health risk that lead poses.

Having a voice in Wales

As we plan for the future we also recognise that we need to give our customers a louder voice in Wales. We serve a comparatively small area that has been under represented in the past. We will champion the issues that matter to our communities and engage with policy and decision makers. We will be doing this by making sure we are active members representing the interests of our customers on groups such as:

- River Dee Consultative Committee to ensure that the issues affecting our catchments are focused on.
- The Drinking Water Inspectorate / Water Research Council (WrC) steering group for reducing lead.
- Working closer with the four Public Service Boards covering our region, who are responsible for responding to the requirements under the Well-being of Future Generations (Wales) Act.
- Working with the local resilience forums to ensure we are both forward looking but also able to respond to incidents quickly and efficiently in a joined up manner.

A model of operation that delivers for Hafren Dyfrdwy's customers

We are embracing new ways of working that combine the best attributes of large and small companies to deliver more for less for our customers. This combination of cultures also means we will not require additional funding to operate as a stand-alone small company, saving our customers £6 million over the five years.

We believe that just as important as what we deliver, is how we deliver it. A recurring comment from our customers is that they take water and waste services for granted. In one respect this is reassuring, as it demonstrates that we serve our customers in a manner which means they don't have to worry about their service and can rely on us. But we believe the only way to deliver affordable solutions to the long term challenges we face is through a more collaborative approach with our customers and stakeholders. We have made a positive start and have already learned a lot about how customers want to engage with us and which topics resonate most with them; over the next five years we will be building on this foundation.

We are also targeting innovation where we have the greatest challenges. For example we will be building on the great foundation that the Dee Valley team laid when they introduced a system that gave them 100% visibility of the performance of their above ground assets. This provides a wealth of easy to analyse data and has resulted in a reduction in unplanned maintenance of around 25% in just two years. On the waste water service we are developing plans for how we can maximise the innovation that we are trialling between 2015 and 2020 at Llys Rhysnant. This approach builds treatment solutions bespoke to the local area's needs, makes the most of natural solutions (for example, reed beds) and by doing so reduces operational costs and adverse environmental impact by 40% over the 25 year life and creates a more resilient solution through the use of low/no technology waste processes.

Affordability

We want our plan to be affordable for everyone and our customers will continue to have the lowest bills in Wales. Service and resilience enhancements are driving a 2.2% real bill increase on the combined water and sewage bill (in so-called CPIH terms) and we have challenged ourselves to minimise the impact of the increases. We have tested the overall acceptability of the plans and 85% of customers find it acceptable.

Supporting those in need

We have set up a Care and Assistance team, based in Wrexham, who will retain a local focus and are trained to respond to customers' individual needs, both financial and non-financial.

We estimate that approximately 11% of our customers are likely to struggle to pay their bill at some point during the next five years. To manage this, our plan is to double the number of customers we offer financial support to. This ambitious target is partly driven by the need to catch up with our peers in the sector. We have worked with customers to co-design the social tariff to make the process easy and the support meaningful and tailored to the circumstances. We will be offering a range of support from short term payment breaks to longer term payment plans.

Some customers have circumstances that can make them more vulnerable and we want to ensure we recognise when our customers need our help and support them in an empathetic and respectful way. To set the foundations we have contacted around 400 customers who were on the existing priority service register to allow us to tailor the support we provide. External evidence suggests that there could be around 2,000 additional customers who might need our help and we have already made progress through targeted communications and working with others to make sure everyone who needs our help gets it.

There can be a wide range of circumstances which can lead to a customer requiring our support in the short and long-term. Our care and assistance team have been trained to identify these needs and offer appropriate support to all customers, for however long they need it.

Crynodeb Gweithredol o'r Cynllun Busnes

Gwasanaethu'n cwsmeriaid

Rydym wedi gwrandao'n astud ar ein cwsmeriaid i ddeall beth sy'n cyfri' iddynt yn eu bywydau dyddiol, ac fe wnaethom ymholi'n fanylach ynglŷn â'u disgwyliadau o'u darparwr dŵr, a lle y bo'n berthnasol, eu darparwr dŵr gwastraff.

Rydym wedi siarad â mwy na 4% o'n cwsmeriaid mewn mwy na 25 o wahanol leoliadau, yn amrywio o ardaloedd gwledig â llond dwrn o gwsmeriaid i bentrefi bychain lle y caiff yr iaith Gymraeg ei siarad yn helaeth a'r trefydd mwy, fel Wrecsam, Y Trallwng a'r Drenwydd. Rydym wedi gwrandao ar ein cwsmeriaid gan ddefnyddio ystod o dechnegau, o arolygon ar y ffôn, cyfweiliadau wyneb yn wyneb i ymchwil ystyriol a chyd-greu.

Rydym hefyd wedi ymgysylltu â llunwyr polisi i sicrhau ein bod yn deall y gofynion a'r uchelgais yng Nghymru. Rydym wedi rhannu'r heriau, ac wedi cysoni datrysiadau â rhanddeiliaid.

Clywsom fod ar ein cwsmeriaid eisiau tri o bethau allweddol gennym:

1. Parhau i ddarparu gwasanaeth beunyddiol dibynadwy a gostwng methiannau yn y gwasanaeth, sy'n peri anghyfleustra ac anfodlonrwydd (cael yr hanfodion yn iawn);
2. Cynorthwyo cwsmeriaid pan fo arnynt angen cymorth, gydag elfen bersonol a dynol;
3. Gwneud gwahaniaeth cadarnhaol i'r amgylchedd lleol ac i gymunedau lleol.
4. Dangosasom iddynt sut maent wedi llunio'r cynllunio ar gyfer y pum mlynedd nesaf ac fe ganfu 85% o'n cwsmeriaid y pecyn cyffredinol yn dderbyniol.

Cynllun y mae'n rhaid iddo gyflawni i Gymru

Mae Llywodraeth Cymru wedi pennu uchelgais eglur a beiddgar yn ei *Strategaeth Ddŵr i Gymru* a'r egwyddorion cynaliadwyedd a'r amcanion llesiant a amlinellir yn y *Ddeddf Llesiant Cenedlaethau'r Dyfodol (Cymru)* sy'n anelu at gyflawni:

- **Cymru lewyrchus** - Cymdeithas arloesol a chynhyrchiol, sy'n cydnabod terfynau'r amgylchedd byd-eang ac sy'n defnyddio adnoddau'n effeithlon ac sy'n datblygu poblogaeth fedrus mewn economi sy'n cynhyrchu cyfoeth ac sy'n darparu cyfleoedd gwaith cyflogedig;
- **Cymru gadarn** - Cenedl sy'n cynnal ac sy'n gwella amgylchedd naturiol bioamrywiol sy'n cynnal cadernid;
- **Cymru iachach** – Cymdeithas lle y caiff lles pobl ei ddyrchafu ac ymhle y caiff dewisiadau ac ymddygiadau sydd o fudd i iechyd y dyfodol eu deall;
- **Cymru fwy cydradd** – Cymdeithas sy'n galluogi pobl i wireddu'u potensial, ni waeth beth fo'u cefndir neu'u hamgylchiadau;
- **Cymru o gymunedau cydlynus** – Cymunedau deniadol, hyfyw, diogel ac sydd wedi'u cysylltu'n dda;
- Cymru a chanddi **ddiwylliant llawn bywyd ac iaith Gymraeg ffyniannus** – Cymdeithas sy'n hyrwyddo ac sy'n diogelu diwylliannau, treftadaeth a'r iaith Gymraeg; a
- **Chymru sy'n fyd-eang gyfrifol** - Cenedl a rydd ystyriaeth i'r cwestiwn a yw gwneud 'peth a'r peth' yn gwneud cyfraniad cadarnhaol tuag at lesiant byd-eang.

Mae'r egwyddorion hyn yn taro tant yn bendant iawn â'n cwsmeriaid – ac mae ein cynllun wedi'i dywys ganddynt.

Canolbwyntio'n ddigyfaddawd ar y gwasanaethau craidd

Mae gennym naw o ddeilliannau cwsmeriaid lle rydym yn ymrwymo i ddarparu gwasanaeth dibynadwy a chyson i'n cwsmeriaid yn awr ac yn y dyfodol. Rydym wedi'n hymrwymo i:

- Sicrhau bod dŵr **yn dda i'w yfed**
- Ac **ar gael bob amser** pan fo ar gwsmeriaid ei angen
- Ac wedyn **mynd â gwastraff i ffwrdd yn ddiogel** bob diwrnod
- Gwneud hyn i gyd mewn ffordd sydd nid yn unig yn gwarchod ond sydd hefyd yn creu **amgylchedd ffyniannus**
- Ymgysylltu â'n cymunedau a gwneud **gwahaniaeth positif** er budd cenedlaethau presennol a'r dyfodol
- Sicrhau bod cwsmeriaid yn derbyn **profiad cwsmeriaid eithriadol**, sy'n canolbwyntio ar ddarparu **gwasanaeth wedi'i bersonoli i bawb**, pa beth bynnag y bo'u hanghenion unigryw
- Gwneud hyn i gyd gan sicrhau ein bod yn codi'r **biliau isaf posibl** sy'n fforddiadwy i bawb
- Byddwn yn dangos ein bod yn **gwmni y gallwch ymddiried ynddo** sydd â rheolaethau, gwiriadau a mesurau cydbwysu ar waith i sicrhau ein bod yn gwneud y penderfyniadau gorau i'n cwsmeriaid. Rydym wedi dechrau'n dda yn y maes hwn, gan sicrhau bod gan Hafren Dyfrdwy fwrdd cryf ac annibynnol gyda chyfraniad anweithredol effeithiol, ond gyda'r fantais ychwanegol o weithredu o fewn grŵp cryf.

Mae ein cwsmeriaid yn disgwyl i hyn fod yn wir ar gyfer cenedlaethau'r dyfodol, yn ogystal ag ar gyfer cwsmeriaid heddiw.

Buddsoddi mewn gwelliannau i'r gwasanaeth

Mae ein cynllun yn cydbwysu fforddiadwyedd biliau gyda'r camau sydd eu hangen i ddiogelu gwasanaethau a'r amgylchedd ar gyfer cenedlaethau'r dyfodol. Siaradasom â'n cwsmeriaid am hyn a ledled y pedwar prif faes buddsoddi lle mae gennym heriau hirdymor. Roedd rhwng 85% a 92% o'n cwsmeriaid naill ai cefnogi'n gweithred arfaethedig neu'n credu y dylem fuddsoddi mwy i leihau rhai o'r risgiau ynghynt. Rydym hefyd wedi ymateb i gwsmeriaid a rhanddeiliaid ac rydym wedi'n hymrwymo i ostwng gollyngiadau 15% yn y pum mlynedd nesaf.

Mae'r her fwyaf sylweddol yn ymwneud â'n cronfeydd dŵr crai a dŵr wedi'i drin. Dros y pum mlynedd nesaf, fe fyddwn yn buddsoddi tua £19 miliwn yn ein hargaeau a'n cronfeydd dŵr wedi'i drin, a nodwyd drwy gymhwyso rheoli risgiau arferion gorau. Nid yn unig y mae'r argaeau a'r cronfeydd dŵr yn rhan hynod bwysig o ddarparu gwasanaeth dibynadwy, maent hefyd yn rhan fawr o'r dirwedd yng Nghymru, ac rydym yn gwneud gwelliannau i sicrhau y gall ein cymunedau eu mwynhau.

Byddwn yn cyflawni perfformiad sydd yn ein rhoi yn chwarter uchaf y diwydiant ledled 65% o'r ymrwymadau perfformio cymaradwy, sy'n cynnwys meysydd gwasanaeth sydd fwyaf sylfaenol i'n cwsmeriaid, megis lleihau risgiau i ansawdd dŵr yfed a lleihau llifogydd carthffosydd yn fewnol. Mae ein cynllun yn amlinellu gwelliannau uchelgeisiol lle nad ydym yn y chwarter uchaf ond bod ar ein cwsmeriaid eisiau inni fod, megis lleihau toriadau ar gyflenwadau a gostwng cwynion am ddŵr yfed.

Dywedodd ein cwsmeriaid wrthym bod arnynt eisiau inni eu hysbysu'n rheolaidd am gynnydd gyda chyflawni'r deilliannau a'r ymrwymadau o ran perfformiad, ond hefyd yn fwy cyffredinol am y gwaith rydym yn ei wneud i gefnogi'n cymunedau ac i wella'r amgylchedd. Bydd yr ymgysylltu parhaus hwn yn rhan o'n cynllun cyflawni.

Buddsoddi yn ein cymuned a'r amgylchedd

Dros y pum mlynedd nesaf, fe fyddwn yn buddsoddi £2.5 miliwn i wella tua 22 cilometr o ansawdd dŵr afonydd, sy'n cynrychioli'r rhaglen amgylcheddol statudol fwyaf sy'n ofynnol yn y rhan hon o Gymru ers 20 mlynedd. Byddwn hefyd yn gwella bioamrywiaeth a llesiant drwy fuddsoddi bron i £2 filiwn, y mae'r mwyafrif ohono wedi'i gynllunio yn Llyn Efyrrwy, lle mae gennym gyfle bendigedig i gefnogi Cymru. Bydd y prosiect yn:

- gwella profiad ymwelwyr fel y bydd mwy o bobl yn ymweld â'r safle ac yn aros yn yr ardal o amgylch, a thrwy hynny wella'r amgylchedd lleol;
- adfer oddeutu 450 hectar o weunydd mawn ucheldir i newid y statws Safle o Ddiddordeb Gwyddonol Arbennig o 'Anffafriol' i 'Ffaffriol', fydd yn darparu mwy o gadernid i'n hecosystemau; ac
- yn galluogi cymunedau lleol i lunio'r datblygiadau a datblygu ymdeimlad ar y cyd o berchnogaeth.

Ynghyd â'n partneriaid, rydym wedi sicrhau £1.5 miliwn o Gronfa Dreftadaeth y Loteri sy'n caniatáu inni drosoli 60% o arian cyfatebol, sy'n gwneud y cynllun allweddol hwn yn fwy fforddiadwy i'n cwsmeriaid.

Rydym hefyd yn cynyddu'n cyfraniad tuag at ein cymunedau drwy'n rhaglen hyrwyddo gymunedol – menter gwirfoddoli gan weithwyr i gefnogi prosiectau cymunedol.

Gwella llesiant cwsmeriaid a chymdeithas

Rydym wedi nodi ffyrdd y gallwn gynorthwyo llesiant drwy feddwl yn fwy cyfannol i ddarparu cyfleoedd a gwelliannau ar y gost leiaf neu ddim cost ychwanegol. Mae'r rhain yn cynnwys:

- Rydym yn partneru â Llywodraeth Cymru, Dŵr Cymru a'r elusen City To Sea i roi'r fenter 'Ail-lenwi' ar waith fesul cam, gyda'r uchelgais o fod y 'Genedl Ail-lenwi' gyntaf. Credwn yn gryf ei bod hi'n bwysig inni hyrwyddo buddion dŵr ar gyfer disychedu.
- Rydym yn aelodau o Grŵp Diogelwch Dŵr Cymru Gyfan, sy'n hyrwyddo defnydd diogel o ddŵr. Mae gennym 14 o gronfeydd dŵr yn ein rhanbarth, ac felly mae hon yn ystyriaeth bwysig.
- Rydym yn gwneud gwelliannau i seilwaith i wella amwynderau mewn mwy o'n cronfeydd dŵr. Mae buddion yn cynnwys hyrwyddo'r economi lleol drwy broses dendro leol ar gyfer rheoli caffis, gwella mynediad ac ymwybyddiaeth o'r safle fel ei fod yn fwy pleserus a'i gwneud hi'n haws i bobl gymryd rhan mewn gweithgareddau llesiant.
- Cefnogi mentrau lleol eraill megis consortiwm 'Bydd Wyrdd' Y Drenewydd, sydd â rhychwant pellgyrhaeddol. Mae ein cysylltiad yn ymwneud â mynediad diogel a phleserus at yr afon, sy'n llifo drwy'n rhanbarth ym Mhowys.

Byddwn hefyd yn cymryd cam cyntaf tuag at uchelgais hirdymor Llywodraeth Cymru o Gymru ddi-blwm. Yn y pum mlynedd nesaf, fe fyddwn yn diogelu tua 230 o gartrefi ac ysgolion drwy newid y pibelli plwm, ac felly'n cael gwared â'r risg i iechyd a geir gyda phlwm.

Cael llais yng Nghymru

Wrth inni gynllunio ar gyfer y dyfodol, rydym hefyd yn cydnabod bod arnom angen rhoi llais cryfach i'n cwsmeriaid yng Nghymru. Gwasanaethwn ardal gymharol fechan nad yw wedi'i chynrychioli'n ddigonol yn y gorffennol. Byddwn yn hyrwyddo'r materion sy'n bwysig i'n cymunedau ac fe fyddwn yn ymgysylltu â llunwyr polisïau a phenderfyniadau. Byddwn yn gwneud hyn drwy sicrhau ein bod yn aelodau gweithgar sy'n cynrychioli buddiannau'n cwsmeriaid ar grwpiau megis:

- Pwyllgor Ymgynghorol Afon Dyfrdwy i sicrhau y canolbwyntir ar y materion sy'n effeithio ar ein dalgylchoedd.
- Grŵp llywio'r DWI / WRC ar gyfer lleihau plwm.
- Gweithio'n fwy clos â'r pedwar Bwrdd Gwasanaethau Cyhoeddus sy'n ymdrin â'n rhanbarth, sy'n gyfrifol am ymateb i'r gofynion o dan y Ddeddf Llesiant Cenedlaethau'r Dyfodol (Cymru).
- Gweithio gyda'r fforymau cadernid lleol i sicrhau ein bod yn edrych tua'r dyfodol ond hefyd yn gallu ymateb i ddigwyddiadau yn gyflym ac yn effeithlon mewn modd cydgysylltiedig.

Model gweithredu sy'n cyflawni i gwsmeriaid Hafren Dyfrdwy

Rydym yn cofleidio ffyrdd newydd o weithio sy'n cyfuno priodoleddau gorau cwmnïau mawrion a bychain i gyflawni mwy am lai i'n cwsmeriaid. Mae'r cyfuniad hwn o ddiwylliannau hefyd yn golygu na fydd arnom angen arian ychwanegol i weithredu fel cwmni bach annibynnol, gan arbed £6 miliwn i'n cwsmeriaid dros y pum mlynedd.

Credwn mai peth arall sydd yr un mor bwysig â'r hyn a gyflawnwn yw sut rydym yn ei gyflawni. Sylw a gafwyd dro ar ôl tro gan ein cwsmeriaid yw eu bod yn cymryd gwasanaethau dŵr a gwastraff yn ganiataol. Mewn un ffordd, mae hyn yn galonogol gan ei fod yn dangos ein bod yn gwasanaethu'n cwsmeriaid mewn modd sy'n golygu nad oes yn rhaid iddynt bryderu am eu gwasanaeth a'u bod yn gallu dibynnu arnom ni. Ond fe gredwn mai'r unig ffordd i gyflawni datrysiadau fforddiadwy i'r heriau hirdymor a wynebwn yw drwy ddull mwy cydweithredol o weithredu gyda'n cwsmeriaid a'n rhanddeiliaid. Rydym wedi dechrau'n bositif ac rydym eisoes wedi dysgu llawer am sut mae ar gwsmeriaid eisïau ymgysylltu â ni a pha bynciau sy'n taro tant â nhw yn fwyaf pendant. Dros y pum mlynedd nesaf, fe fyddwn yn adeiladu ar y sylfaen hon.

Rydym hefyd yn targedu arloesedd lle mae gennym yr heriau mwyaf. Er enghraifft, fe fyddwn yn adeiladu ar y sylfaen wych y mae tîm Dyffryn Dyfrdwy wedi'i gosod pan wnaethant gyflwyno system a roes 100% o welededd iddynt ar berfformiad eu hasedau ar y tir. Mae hyn yn darparu cyfoeth o ddata hawdd ei ddadansoddi ac mae wedi esgor ar thua 25% o ostyngiad mewn gwaith cynnal nas cynlluniwyd mewn ond dwy flynedd. O ran y gwasanaeth gwastraff, rydym yn datblygu cynlluniau ar gyfer sut y gallwn fanteisio hyd yr eithaf ar yr arloesedd rydym yn ei dreialu rhwng 2015 a 2020 yn Llys Rhysnant. Mae'r dull hwn o weithredu yn creu datrysiadau triniaeth sy'n unswydd bwrpasol i anghenion yr ardal leol, gan wneud y mwyaf o ddatrysiadau naturiol (er enghraifft, corsleoedd) a thrwy wneud hynny, mae'n lleihau costau gweithredu ac effeithiau amgylcheddol llesteiriol 40% dros oes 25 mlynedd ac mae'n creu datrysiad cadarnach drwy'r defnydd o brosesau gwastraff technoleg isel/dim technoleg.

Fforddiadwyedd

Mae arnom eisiau i'n cynllun fod yn fforddiadwy i bawb, ac fe fydd ein cwsmeriaid yn parhau i gael y biliau isaf yng Nghymru. Mae gwelliannau mewn gwasanaethau a chadernid yn cymell cynnydd o 2.2% mewn biliau real (mewn termau CPIH, fel y'i gelwir), ac rydym wedi herio'n hunain i leihau hyd yr eithaf ar effaith y codiadau. Rydym wedi profi derbynioldeb cyffredinol y cynlluniau, ac mae 85% o gwsmeriaid yn eu canfod yn dderbyniol.

Cynorthwyo'r rheiny mewn angen

Rydym wedi sefydlu tîm Gofal a Chymorth, a leolir yn Wrecsam, fydd yn cynnal ffocws lleol, ac mae wedi'i hyfforddi i ymateb i anghenion unigol cwsmeriaid, yn ariannol a heb fod yn ariannol fel ei gilydd.

Amcangyfrifwn fod oddeutu 11% o'n cwsmeriaid yn debygol o'i chael hi'n anodd talu'u bil ryw adeg yn ystod y pum mlynedd nesaf. I reoli hyn, ein bwriad yw dyblu nifer y cwsmeriaid rydym yn cynnig cymorth ariannol iddynt. Caiff y targed uchelgeisiol hwn ei gymell yn rhannol gan yr angen i geisio ennill tir ar ein cymheiriaid yn y sector. Rydym wedi gweithio gyda chwsmeriaid i gyd-gynllunio'r tariff cymdeithasol i wneud y broses yn hawdd a'r cymorth yn ystyrlon ac wedi'i addasu'n benodol i'r amgylchiadau. Byddwn yn cynnig ystod o gymorth, o seibiannau talu byrdymor i gynlluniau talu dros gyfnod hwy.

Mae gan rai cwsmeriaid amgylchiadau a all eu gwneud yn fwy diymgeledd, ac mae arnom eisiau sicrhau ein bod yn gwybod pa bryd y bydd ar ein cwsmeriaid angen ein cymorth, a'u cynorthwyo nhw mewn ffordd llawn empathi a boneddigaidd. Er mwyn gosod y sylfeini, rydym wedi cysylltu â thua 400 o gwsmeriaid oedd ar y gofrestr Gwasanaethau â Blaenoriaeth bresennol i ganiatáu inni addasu'r cymorth a ddarparwn. Awgryma tystiolaeth allanol y gallai fod yna tua 2,000 o gwsmeriaid ychwanegol a allai angen ein cymorth, ac rydym eisoes wedi gwneud cynnydd drwy gyfathrebiadau a dargedwyd a chan weithio gydag eraill i sicrhau bod pawb sydd angen ein cymorth yn ei gael.

Gall fod yna ystod eang o amgylchiadau a all arwain at sefyllfa pan fo ar gwsmer angen ein cymorth yn y byrdymor a'r hirdymor. Mae ein tîm gofal a chymorth wedi'i hyfforddi i adnabod yr anghenion hyn ac i gynnig cymorth priodol i bob cwsmer, am ba hyd bynnag y mae arnynt ei angen.

Confidence at Board level and beyond

From boardroom to treatment works and from the engineers on the front line to the people who answer customer phone calls in the middle of the night, this plan will be delivered by the entire Hafren Dyfrdwy team. But ultimate accountability for its quality and delivery rests with our Board.

Board statement

We're a new Board collectively responsible for making sure that the values of our new organisation, Hafren Dyfrdwy, reflect our privileged role as a supplier of an essential public service to our customers. We recognise that we are on a journey to achieving exceptional service that began over the last few years and will continue beyond this business plan. Our approach recognises the specific challenges for Wales and maintains a proportionate approach that allows us to keep bills low for our customers. This business plan is the foundation of how we achieve this, underpinned by our 'Doing the Right Thing' ethos.

High quality business planning, strengthened by Board engagement

We have been actively engaged in the development of our plan. We have reviewed, challenged and shaped the elements of the plan and specific risk areas at our Board meetings, Committees and through management briefings with Directors. To inform our views, we've also taken part in customer research events and Ofwat non-executive director events. In addition, our two executive Board members, the Chief Executive Officer and the Chief Financial Officer have overseen the development of the plan through their executive function.

"Over the eighteen months since acquisition by the Severn Trent group, I've been pleased to see the enhancements made by the executive to embed the same diligent leadership, governance and assurance processes within the company to align with those established across the group. This focus, combined with maintaining the relationships already held with our customers and communities, is part of our continuing journey to build trust with all our stakeholders as we deliver our critical public service. And it was great to experience this journey first hand during my sessions with customers. I'm confident that the executive commitment to embed the right culture at all levels within the entire team, will enable the successful delivery, and transparent accurate reporting, of our plan." (John Coghlan)

Our Board and customer engagement programme, combined with the completion of our assurance programme described below, has enabled us to provide high quality challenge, ownership of the overall strategy and provided the direction of the plan in the long term. Through this engaged approach, we are satisfied that the chapters of our plan add up to an overall high quality and deliverable plan - underpinned by a data assurance framework and governance processes designed to deliver high-quality data.

"The depth of scenario planning and financial risk management delivered by the executive has been impressive. The transparency of the discussions and the ability to discuss and challenge through the Board, has provided me with the confidence to support the overall financeability and deliverability of our plan." (Mohammed Mehmet)

Our business plan will deliver operational, financial, corporate and reputational resilience over the next control period and the long term, through our robust and independently assured governance and assurance processes. We know resilience goes beyond traditional risk management, and we take a holistic, systems level view of our business resilience and operating environment. Our resilience approach starts with a solid understanding of shocks, stresses and risk – we have begun implementing our Enterprise Risk Management system, learning from best practice from other group companies and our wider experience, into Hafren Dyfrdwy. This will provide an improved process to assess and manage significant risks, such as a catastrophic failure of a large raised reservoir, at Board level regularly.

The customer voice in decision making

Our aim has been to create the most ambitious, yet achievable and proportionate plan we could for our customers, taking account of our past performance. We did not believe we could achieve this without gaining a deeper understanding of our customers' thinking and then making sure that we acted on that insight, our customers' voice, in our decision making.

To guide this plan we've overseen our in-depth customer engagement programme to take account of the diverse breadth of localities in which our customers live.

"I'm particularly proud that we ensured that our research involved those who might be harder to reach, for example by targeting communities speaking predominantly Welsh with bilingual fieldworkers, and using in-depth in home interviews for customers in vulnerable circumstances, whether from a financial or service perspective. Being able to take part in one of our research sessions has provided me with useful insight upon which to guide our choices, not least through balancing the best possible service with the lowest possible bills." (Ann Beynon)

In addition to our business as usual engagement with our regulators, our customers, our communities and other political, societal and environmental stakeholders to create this plan, we have targeted our research and talked to around 4% of our customers in over 25 different locations - including willingness to pay and deliberative research on strategic investment areas; this has shaped the plan. Our research has also helped us develop a better understanding of how we can provide more help to customers who are struggling to pay their bills. Some of us have attended these sessions to hear from our customers first hand. And to ensure that our customer views were accurately represented, we engaged independent Market Research Society accredited research agencies to conduct our research.

It is also important to us that our plan promotes our customers' trust and confidence through high levels of transparency and customer engagement on issues such as our corporate and financial structures, and sharing knowledge of our approach to how we pace investment over time helps to engender trust that we will behave in our customers' interests. So our plan continues to build on the transparent reporting we made in these areas as part of our annual report and accounts and our annual performance report.

"As a Board we have carefully considered our social purpose when making our choices and trade-offs. I've been particularly pleased to see that we have built strong relationships to develop our plan with our Welsh stakeholders such as Natural Resource Wales, through workshops and working with them on biodiversity, and with the Welsh Government to ensure we've taken account of the specific challenges in Wales" (Sally Jones-Evans)

We worked constructively to develop our plan with our Customer Challenge Group who have provided extensive challenge to ensure we've taken account of our customer views.

High quality and ambitious commitments, underpinned by robust assurance

Our approach to assurance is the result of our work to build upon our existing governance and a robust assurance framework that is used for all of our performance reporting – be that our financial statutory reports or our many regulatory submissions – to ensure we are transparent, honest and open with our customers, and our regulators who hold us to account.

To support our own independent challenge, using our collective broad knowledge and expertise, we asked the executive to develop a bespoke risk-based approach to our PR19 Plan assurance - building on our established assurance framework¹ which is summarised in the diagram below:

¹ <https://www.hdcymru.co.uk/content/dam/hdcymru/regulatory-documents/company-monitoring-framework/DVW-Company-Monitoring-Framework-Risk-Statement-Final-V1.pdf>

- Contains outcomes, performance commitments and ODIs reflect customer preferences and are stretching.
- Is supported by a proposed approach to reporting on our performance commitments, ODIs and projections of outcomes that is robust and transparent.
- Has been informed by a robust and systematic assessment of the resilience of the company's systems and services.
- Has been informed by customers' views about managing resilience.
- Has been informed by a comprehensive and objective assessment of interventions to manage resilience in customers' long-term interests.
- Is built on expenditure forecasts which have been produced using a robust and efficient process.
- Contains large investment proposals that are robust and deliverable, that a proper assessment of options has taken place, and that the options proposed are the best ones for our customers.
- Is financeable on both the notional and actual capital structure and that the plan protects customer interests in both the short and the long term.

Having taken account of, and applied learning from, our track record of performance, we have reviewed the conclusions expressed in the plan, collectively identified the risks associated with its delivery, and are satisfied that the risk mitigation and management plans in place are appropriate to protect our customers, and meet our statutory and licence obligations, now and in the future – taking account of both the UK and Welsh Government's strategic policy statements.

Signed:



John Coghlan
Non-Executive Chairman



Olivia Garfield
Chief Executive



Andrew Duff
Independent Non-Executive Director



Ann Beynon
Independent Non-Executive Director



James Bowling
Chief Financial Officer



Sally Jones-Evans
Independent Non-Executive Director



Mohammed Mehmet
Independent Non-Executive Director

Chapter 1

Alignment to Welsh Government policy and ambition

1.0 Alignment to Welsh Government policy and ambition

1.1 Overview

We are fully committed to playing our part in the vision to create a better future for Wales. We have taken time to get to know our customers, stakeholders and policy makers to understand what is expected and how we can add value and align our long term plans to drive towards these goals.

On 31 January 2017, the Wales Act 2017 received Royal Assent. This provides a new devolution settlement for Wales. While all EU legislation and associated standards remain in force, the Welsh Government has set out its vision to go beyond EU standards where it will contribute to their long term vision for Wales. To put us in a strong position to respond to this change and the issues and recommendations made by the Silk Commission, we applied for and were granted a water supply and sewerage licence by Ofwat. This change took effect on 1 July 2018 and now means we serve wholly in Wales. This is great news for two key reasons:

- Our customers will benefit from their own locally-driven plan. We are the smallest water and waste provider which allows us to deliver a personal and targeted service.
- We are aligned to the legislative framework which allows us to completely focus on the aims set out by Welsh Government and deliver against the legislation governing Wales, without compromise.

This is chapter one of our plan, to emphasise that we are responding to the Welsh Government's Strategic priorities and the resulting legislation. It is not something we are doing in addition to our plan – it is the core of our plan and has guided the way we will deliver the plan so that we completely embrace the collaborative and long term thinking that is central to so much of this legislation.

1.2 Creating a better future

The Welsh Government has set out a clear and bold ambition in its Water Strategy for Wales and Strategic Priorities Statement to Ofwat. It has also stated that all legislation developed in Wales will reflect the themes set out in the Well-being of Future Generations (Wales) Act 2015.

We want to make sure that we serve our customers well today and also ensure sustainable services for the benefit of future generations. We are retaining our local focus, while the creation of Hafren Dyfrdwy also allows us to play a bigger role in Wales. Our customers will benefit from the best of both worlds - our smaller size, agility and community presence, with the opportunity to work collaboratively as part of a larger group and sector.

There are three central themes that inform how we will deliver the long term customer outcomes.

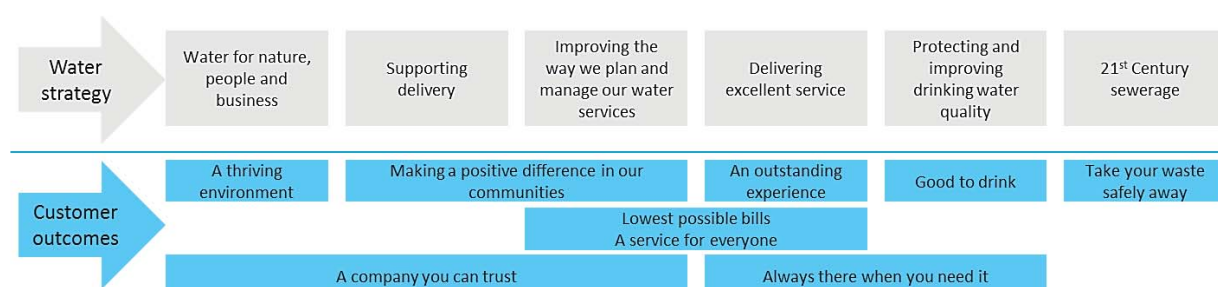
- We are committing to deliver a personalised and accessible service to meet the local needs of our customers. We are making nine customer pledges to ensure we offer an outstanding customer experience (see chapter 6.1).
- We are taking demonstrable steps to safeguard future services and promote the well-being of future generations.
- While bills are going up in the short term we are delivering better service and doing more to keep them affordable for all over the long term.

This vision and guiding themes are our public commitment to contribute to the ambition for Wales.

1.2.1 Aligning the Water Strategy for Wales to our customer outcomes

The Welsh Government's [Water Strategy for Wales](#) focuses on how Wales can increase the resilience of the end to end water system in order to maximise the benefits and reduce the costs to customers, businesses and the environment. The strategy has six key themes. Figure 1 sets out the alignment between the Water Strategy and our customer outcomes.

Figure 1: Our outcomes align to the Water Strategy for Wales



1.3 Contribution to the Well-being of Future Generations (Wales) Act 2015

This act aims to enhance the economic, social and environmental well-being of people and communities across Wales, achieving a better quality of life for current and future generations in ways which promote social justice and equality of opportunity, enhance the natural and cultural environment and respect its limits.

The Act covers public bodies, including Welsh Ministers and Natural Resources Wales, so while the act does not directly apply to us, the themes run throughout other legislation that does apply to us, such as The Environment (Wales) Act.

1.3.1 Focus for the next five years

We're starting from a strong foundation. The former Dee Valley Water had built up an excellent relationship with their customers and stakeholders, both in terms of working in a collaborative and open way and also making difficult decisions to balance long term resilience and affordability. From this platform we are creating an even stronger more resilient service for customers in Wales by combining the benefits of a very local approach whilst drawing on the broader benefits of being part of a wider public company.

We have challenged ourselves and our customers to understand how we can work differently to ensure the improvements we are making simultaneously contribute to well-being goals and work in a way that is congruent with the sustainable development principles. A key theme in our plan is to ensure every pound of investment delivers multiple benefits and this is an area where that principle is most evident. In the summary below we have picked out the key actions we are taking in the next five years to contribute to the goals. Many activities support multiple goals but we have listed them against the main benefit.

A resilient Wales

- Our flagship project at Lake Vyrnwy is an excellent example of enhancing ecosystem resilience, by creating blanket bogs which provide food to attract species of birds that haven't been seen in these parts of Wales for decades. A restored blanket bog will also slow the speed of run off (reducing risk of flooding), help purify water and capture and store more carbon.

- Our upland catchment maintenance programme is an extremely cost effective way of enhancing resilience. First it reduces our exposure to a pollution incident on the River Dee. Secondly, it delivers customer service and improvements to the local economy as it will address localised flooding issues on farm land that can arise in periods of heavy rain. Thirdly it will enhance ecosystem resilience by restoring the natural landscape by removing invasive species such as Bracken.

A prosperous Wales

- To deliver our statutory requirements and safeguard future service, we are increasing investment by around 4% per customer in the next five years. Despite this we have committed to limiting the average bill increase to no more than 2.2%. Our bill is already the lowest in Wales.
- We are developing our delivery model to ensure we have a resilient balance of local, national and international suppliers. This is also a significant part of our plan to deliver cost efficiencies.
- We are involving local communities in our plans at both Lake Vyrnwy and Clywedog to provide opportunities for local business, an example of this is the local tendering for managing the café at Clywedog.

A healthier Wales

- This is core to our business - chapters 6.3 and 6.5 set out how we will be providing 'water that is good to drink' and 'taking waste away safely'.
- The key area where we contribute to a healthier Wales is set out in our business case for working towards a lead free Wales. We have identified a programme of work which focuses on protecting young people as the priority but also developing more cost effective solutions to a problem that will take hundreds of years to solve unless we can find more innovative solutions that minimise cost and customer disruption.
- We are partnering with Welsh government, Dŵr Cymru Welsh Water (DCWW) and the charity City To Sea to roll out the Refill initiative, to support the ambition to be the first 'refill nation'. We strongly believe that it is important for us to promote the benefits of water for hydration.

A more equal Wales

- We are taking ambitious steps to help our customers who find themselves in vulnerable circumstances.
- We have worked with customers to co-design the social tariff to make the process easy and the support meaningful and tailored to the circumstances. We are delighted that our customers want to support each other in a way that enables us to increase the number of people receiving financial support. We will be offering a range of support from short term payment breaks to longer term payment plans, with discounts up to 90% to those who need it most.
- Some customers have circumstances that can make them more vulnerable and we want to ensure we recognise when our customers need our help and support them in an empathetic and respectful way. We have started by contacting around 400 customers who were on the existing priority service register to allow us to tailor the support we provide. External evidence suggests that there could be around 2,000 additional customers who might need our help and we have already made progress through targeted communications and working with others to make sure everyone who needs our help gets it.

A Wales of cohesive communities

- As part of our work to enhance biodiversity at Lake Vyrnwy and other sites, we have worked with stakeholders and the local community to enable them to shape the plans, develop a shared sense of ownership and get involved in delivery.

- We are supporting other local initiatives such as the Newtown Go Green consortium, which has a wide reaching scope; our involvement is around safe and enjoyable access to the river, which runs through our mid Wales region.

A Wales of vibrant culture and thriving Welsh language

- We are enhancing our Welsh language scheme to ensure all customers have access to the same level of service.
- We will be working with other organisations to offer cost effective Welsh language courses for our employees.
- As part of our education programme we will ensure material is available in both English and Welsh.

A globally responsible Wales

- As part of our long term water resource plan we are looking at the opportunities for Hafren Dyfrdwy to play a part in water trading that helps the UK and benefits our customers, doing so in a way that protects the environment.
- We are developing our renewables policy and establishing our long term plan to contribute to the Severn Trent group ambition which is to self-generate the equivalent of 50% of our energy requirements. There is less scope in Wales due to the very small volumes of sludge but we are looking at hydro initiatives and installing floating solar panels at our reservoirs, particularly at sites where we have algal blooms which will deliver energy benefits and reduce treatment costs.

1.3.2 We will publicly report on our contribution to the well-being goals

There is a clear overlap between our vision and plan and the well-being goals set out by the Welsh Government. We have reviewed the extent to which our performance commitments will contribute to the well-being goals. This is summarised in table 1 below.

Table 1: How our PCs contribute to the well-being goals

	A prosperous Wales	A resilient Wales	A healthier Wales	A more equal Wales	Cohesive communities	Vibrant culture and thriving language	A globally responsible Wales
CMex	✓	.	.	.	✓	.	.
DMex	✓
Supporting vulnerable customers	.	.	✓	✓	✓	.	.
Help to pay when you need it	✓	.	.	✓	✓	.	.
Effectiveness of financial support	✓	.	.	✓	✓	.	.
Welsh language standards	.	✓	.	✓	✓	✓	.
Reducing void properties	.	.	.	✓	✓	.	.
NHH customer experience	✓
Water quality compliance (CRI)	.	✓	✓
Supply interruptions	✓	✓
Mains bursts	.	✓
Unplanned outage	.	✓
Leakage	.	✓	✓
PCC	.	✓	✓
Drought resilience	.	✓	✓
Drinking water complaints	.	.	✓	✓	.	.	.
Number of lead pipes replaced	✓	.	✓	✓	.	.	✓
Properties at risk of low pressure	✓	.	.	✓	.	.	.
Internal sewer flooding	.	✓	✓	✓	✓	.	.
Pollution incidents	✓	✓	✓	.	.	.	✓
Blockages and collapses	.	✓	✓
Treatment works compliance	.	✓	.	.	✓	.	✓
Risk of flooding in a 50 year storm	.	✓	✓
River quality length improved	.	✓	.	.	✓	.	✓
Hectares managed for biodiversity	✓	✓	.	.	✓	✓	✓

We have also reviewed how our activity contributes to the 45 national indicators being used to track overall progress. We identified that:

- 22 relate to the services we provide and activity we will be carrying out. As part of our annual report on corporate social responsibility (CSR) we will provide an update on how we are contributing to the national indicators.
- 11 indicators have a very minor contribution and reporting would not help track the national picture.
- 12 of the indicators are not related to our business.

Our annual CSR reporting will allow us to demonstrate clearly how we are contributing to the national indicators as part of our broader plans and operations.

1.4 Contribution to the Environment (Wales) Act

We are clear that ensuring compliance with regulatory standards is our responsibility and is a critical foundation to maintaining customers' trust in us. We serve a comparatively small area of Wales, but 60% of that area is on land that is protected as either SSSI or SAC. Legislation in Wales looks to us to go further and to actively enhance the environment, not simply prevent deterioration and we are fully committed to this.

1.4.1 We have a public responsibility to contribute to enhancing the natural resources in Wales

The first State of Natural Resources Report ([SoNaRR](#)), published in September 2016 assesses the state of Wales' natural resources, and provides an assessment of the extent to which Sustainable Management of Natural Resources (SMNR) is being achieved. The report identifies the following key opportunities for implementing SMNR:

1. Urban green infrastructure
2. More and better management of woodland
3. Coastal zone management
4. Maintaining, enhancing and restoring floodplains and hydrological systems
5. Better soil management
6. Utilisation of uplands to deliver multiple benefits

There is limited scope for us to maximise the opportunities from some of these areas, for example coastal management due to our lack of coast line, and to some extent urban infrastructure as even our largest urban area is relatively small. But our plan does include initiatives to work with partners, such as the Montgomeryshire Wildlife Trust to enhance the management of woodland areas on our reservoir sites. Our plans also include maintenance of the upland areas which will provide localised flooding benefits, enhance biodiversity and enhance water supply resilience – these examples are expanded on within this chapter.

In March 2017, the Natural Resources Policy (NRP) was published and is the second statutory product of the Environment (Wales) Act 2016.

The focus of the [NRP](#) is the sustainable management of Wales's natural resources, to maximise the contribution to achieving goals within the Well-being of Future Generations Act. The policy sets out three National Priorities. These are:

- Delivering nature-based solutions
- Increasing renewable energy and resource efficiency
- Taking a place-based approach

We have sought to align our commitments with these priorities at every opportunity and these types of solutions are already embedded in the way we approach total expenditure solutions ('totex thinking', which is covered in more detail in appendix 5, Securing cost efficiency). The outcomes narratives set out the details of our plans and how we contribute to these priorities, but the areas where we are making the most contributions or taking a fresh approach are summarised below:

Delivering nature-based solutions - In our waste water service we are developing plans for how we can maximise the environmental innovation that we are trialling between 2015 and 2020 at Llys Rhysnant. This truly local approach builds treatment solutions bespoke to the local area's needs, makes the most of natural solutions (for example, reed beds) and by doing so reduces operational costs and adverse environmental impact by 40% over the 25 year life and creates a more resilient solution through the use of low/no technology waste processes. More details are included in chapter 7 markets and innovation.

Increasing renewable energy and resource efficiency – we have recognised the long term importance of reducing leakage and helping to inspire customers to reduce their usage as part of a long term plan for securing supplies and mitigating and adapting to climate change. We are committing to reducing leakage by 15% by 2025 and 50% by 2045, we are also committing to reducing consumption to 105 litres per person per day by 2065. One of the ways we will be achieving this incredibly stretching target is through an innovative education programme that will inspire the next generation to use water more wisely.

Taking a place-based approach – we have taken a collaborative approach to deliver what matters to our local communities. Our flagship scheme at Lake Vyrnwy is one example of how we have worked with other organisations and the local community to drive multiple benefits. This investment which includes significant Heritage Lottery Funding, enhances biodiversity, improves the facilities to encourage communities to use them and take part in well-being activities and involves the local communities to help drive the local economy. Due to the funding arrangements the cost is spread across all those who benefit which is helping us to keep bills as low as possible.

1.4.2 We have embraced the principles of sustainable management of natural resources for Wales

The Environment (Wales) Act 2016 sets out the requirement for the ‘sustainable management of natural resources’ (SMNR). SMNR is defined as using natural resources in a way and at a rate that maintains and enhances the resilience of ecosystems and the benefits they provide; and in doing so meets the needs of present generations without compromising the ability of future generations to meet their needs, and contributes to the achievement of the well-being goals. It includes taking action to promote, and not hinder, the objective of sustainable management.

The principles are shown in figure 2 and we have taken account of the principles of SMNR, as well as global sustainability goals such as the United Nations’ sustainable development goals, in developing our short, medium and long term plans, summarised in table 2.

Figure 2: the principles of sustainable management of natural resources.



Table 2: Our response to the SMNR principles

Principles of SMNR	Our response
Participatory and collaborative approach	<p>We have talked to customers in general terms and then specific terms about plans to enhance biodiversity. We hosted stakeholder workshops on environment, biodiversity and long term Water Resources Management Plans (WRMP) and catchments to share challenges and solutions.</p> <p>We have also reviewed the well-being assessment reports produced by the four Public Service Boards that cover our region to better understand where we have common challenges and opportunities for collaborative working.</p>
Assess the wider benefits	<p>One of the biggest challenges we face over the next five years is ensuring our impounding reservoirs are safe and serviceable and meet all of the requirements under the Reservoirs Act 1975. We have challenged ourselves to consider solutions to maintaining these long life assets that drive wider benefits for marginal increases in costs.</p>
Develop integrated and long term plans	<p>We have developed WRMPs and Drainage and Wastewater Management Plans (DWMPs) that consider the challenges and opportunities at catchment level.</p>
Adopt an adaptive and innovative approach to climate change mitigation and adaptation	<p>We are taking an adaptive approach to climate change and have plans to improve our understanding of the lead measures that we should be tracking to help us better define trigger points for action. We plan to partner with academic experts to ensure we make the best use of the fast growing evidence (such as seeking to contribute and benefit from the research groups such as the GW4 collaboration).</p>
Maintain and enhance biodiversity	<p>This is an area that resonates strongly with our customers. We are making the most material enhancements at Lake Vyrnwy, but our plan seeks to make smaller changes at various locations across our region. This both spreads the ecosystem benefits but also makes them accessible to more of our customers, with a long term aim of ensuring all of our customers are within 20 minutes of a visitor site.</p>
Increase resilience to natural hazards	<p>We are fortunate to already offer good resilience to extreme drought and our plans seek to safeguard that position to ensure we are not eroding headroom. Our emerging drainage and waste water management plans are a great opportunity for us to add more value to our communities and look for a collaborative approach to flooding.</p>
Culture of sustainable planning and actions	<p>Both Dee Valley and Severn Trent had an excellent track record of having a culture that promotes long term thinking. The new licence is a great opportunity to enhance this. Part of fostering this culture is demonstrated through our Community Champions initiative, which gives our colleagues the opportunity to contribute to local environmental and community projects.</p>

1.4.3 We have worked collaboratively with Natural Resources Wales (NRW) to drive environmental improvements

We have worked with NRW to develop objectives for our five-year business plans and our longer term WRMP and evolving DWMP. More information is included in chapters 6.4 and 6.5 respectively.

Our plan includes the largest environmental investment programme in this part of Wales for 20 years, which is the result of investigations that have been taking place over a number of years. The details are set out in chapter 6.6 creating a 'Thriving environment'. We have worked collaboratively with NRW to ensure our plan is based on the best information available to balance environmental improvements and affordability. Our environmental programme will deliver the following benefits:

Table 3: Summary of proposed benefits

Benefit	Measure
Kilometres of river improved	21.9 km
Sewage works treating increased flow (storm spill reduction)	2 no.
Sewage works with additional storm storage capacity (storm spill reduction)	2 no.

1.5 We are engaging in an open and collaborative way

We know that our stakeholders – from customer representative groups to environmental organisations, landowners to elected representatives – have tremendous expertise and can help us to develop the best possible plans. We have taken every opportunity to learn from them. We have held two workshops talking to stakeholders about our Water Resource Management plan and hosted an additional workshop to talk more specifically about catchment working and opportunities for enhancing biodiversity, in addition to bilateral meetings with special interest groups and neighbouring water companies. The insights from these sessions are set out in chapter 6.6 thriving environment.

We are committed to learning from experts and examples of best practice across our sector and beyond. We will seek to work with others on new and innovative projects across our operations, working collaboratively for the benefit of all. For example, we are impressed with the RainScape project created by DCWW and will consider what we can learn from that project for our own region. We have spent time talking to our customers and through deliberative workshops have gained a rich understanding of their views about the environment and matters relating to resilience and intergenerational fairness. When we talked to customers about the Well-being of Future Generations (Wales) Act we found that many were unaware of it, however when discussing it they believed that it is good for Wales, and felt that all businesses should definitely be working towards the stated goals.

Our customer challenge group have challenged us to demonstrate that we are working collaboratively and have highlighted that one of the strengths of our plan is our collaborative and open approach with NRW and other stakeholders.

Our PR19 research is only the beginning of our collaboration and it will become even more embedded into our culture as we work with others to deliver these commitments.

Chapter 2

Customer insights

Our approach to customer engagement

2.0 Our approach to customer engagement in Wales

2.1 Adopting a new approach to customer engagement

The 2019 price review marks a new approach to the way in which we have engaged with customers about water. Our application to vary the Dee Valley Water licence along national boundaries means that we are engaging with our customers at a more local level, dedicated solely to Wales – an industry first. We have talked to our customers in Mid Wales about levels of service specific to their local area, and how their needs and experiences might differ from those of the larger customer base they used to be part of in England. We have continued to engage with our customers in North Wales, who in the past, under Dee Valley ownership, have a very different experience of a local water company, where no customers is more than 40 minutes from the head office.

Traditionally, customer engagement for price reviews across the water industry has involved research focused on obtaining customer support for industry-centric issues and investment choices, with a strong reliance on “willingness to pay” research. Since PR14, customer insight at Dee Valley has included “Rant and Rave” (a post customer contact survey tool) and customer satisfaction tracking research, however there is still more we can do to understand customers’ longer term or more general views (as opposed to “here and now” issues) about their water service. Our Executive and Board challenged us to approach customer engagement differently. Specifically, we have been challenged to:

- try new techniques;
- engage with different types of customers;
- make greater use of data; and
- build a continual process of engagement.

We have also benefitted greatly from challenge from our Customer Challenge Group (CCG). This has prompted us to tailor our research content and sampling approach and to use the Welsh language where customers prefer it. For example, in our face-to-face valuation research we used bilingual interviews for all fieldwork for the first time.

Our customer engagement programme has also been much more extensive compared to PR14. At the last review Dee Valley consulted less than 1300 customers throughout the entire process of developing and resubmitting their plan. For PR19 we have more than doubled the number of customers we have engaged with. To date we have done research with over 3200 customers (split equally between Mid Wales and North Wales) and analysed the findings of the over 600 North Wales customers who had previously taken part in Dee Valley tracker research.

The direct consequence of these changes is that we have developed a more strategic, tailored and extensive approach to customer engagement.

2.2 Our strategic customer insight framework

Over the past two years we have developed a new customer insight framework based on the hypothesis that there is a hierarchy of customers' needs and not all needs are equal.

In addition to this, we have ensured that our research programme abides by a set of key principles:

- our approach needs to be proportionate and targeted to deliver value for our bill paying customers;
- the tools we use to understand our customers' needs should reflect the underlying characteristics of the issue or service; and
- our sampling strategy needs to reflect our customer base.

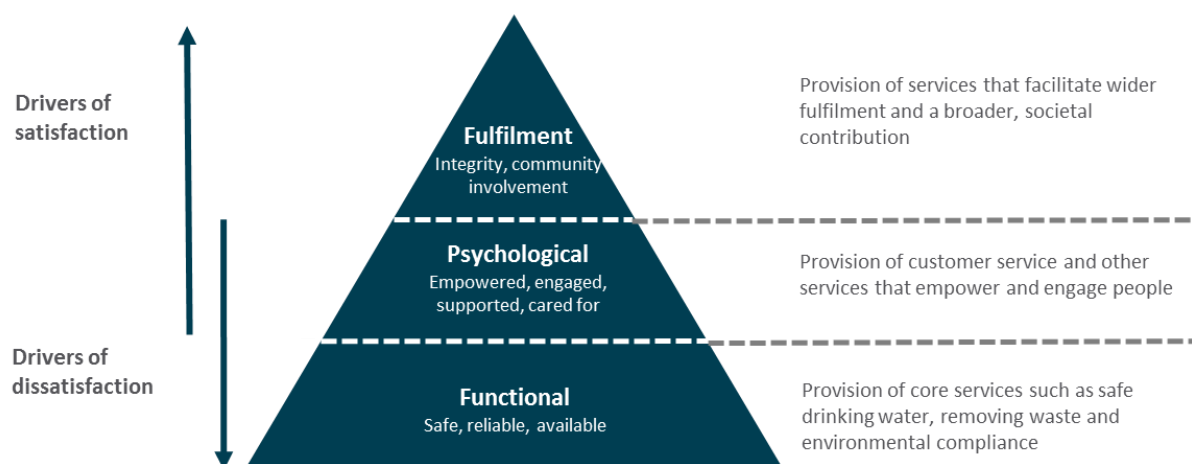
We have used these principles to define a programme of research for Hafren Dyfrdwy. This enables us to develop our understanding of the needs of our diverse customer base, and subsequently to explore our role in customers' lives and to co-create propositions.

2.2.1 Hierarchy of customer needs

At the heart of our research framework is our understanding that not all customer needs are equal. There is a hierarchy of needs and the tools which we use to understand these will be different; and we shouldn't ask customers to make trade-offs across different types of needs (for example trading off safe drinking water with aspects of customer service).

Our categorisation of customer needs draws on Maslow's¹ three levels – delivering basic needs, meeting psychological needs and creating opportunities for self-fulfilment. We established our initial view of the hierarchy, as it relates to the water sector, through a targeted piece of qualitative research across England and Mid Wales in 2016 which revealed the themes and issues that are important in people's lives, before exploring the ways in which, as a water company, we might already fit within the resulting picture.

Our analysis on the hierarchy of needs revealed that fulfilling basic needs may only serve to meet customers' expectations but may not improve satisfaction, whereas failing to meet those needs could drive dissatisfaction. As we move, in a cumulative fashion, towards the top of the hierarchy we observed needs that could increase satisfaction. This is illustrated in the figure below.



¹ A Theory of Human Motivation; A.H.Maslow (1943), *Psychological Review*, 50, 370-396

Traditionally, water companies, including Dee Valley, have only focused on understanding customer needs at the bottom of the hierarchy. We have realised however that:

- we have an opportunity to learn much more about how we can meet customers' psychological and self-fulfilment needs, thereby improving customer satisfaction. This is particularly relevant in context of the "Well-being of Future Generations (Wales) Act", whereby some of the solutions we adopt to address basic needs can actually deliver self-fulfilment needs (e.g. providing sustainable drainage solutions); and
- we could improve our understanding of basic needs - this will enable us to target areas of customer dissatisfaction.

Since our original view of the hierarchy and the 2016 research was done before the acquisition of Dee Valley, we have validated our understanding of customer needs through a further round of specific research with our customers in both Mid Wales and North Wales ([customer needs research](#)). This has highlighted some specific differences for our customers in Wales (for example when discussing the environment), but also revealed that there are many similarities.

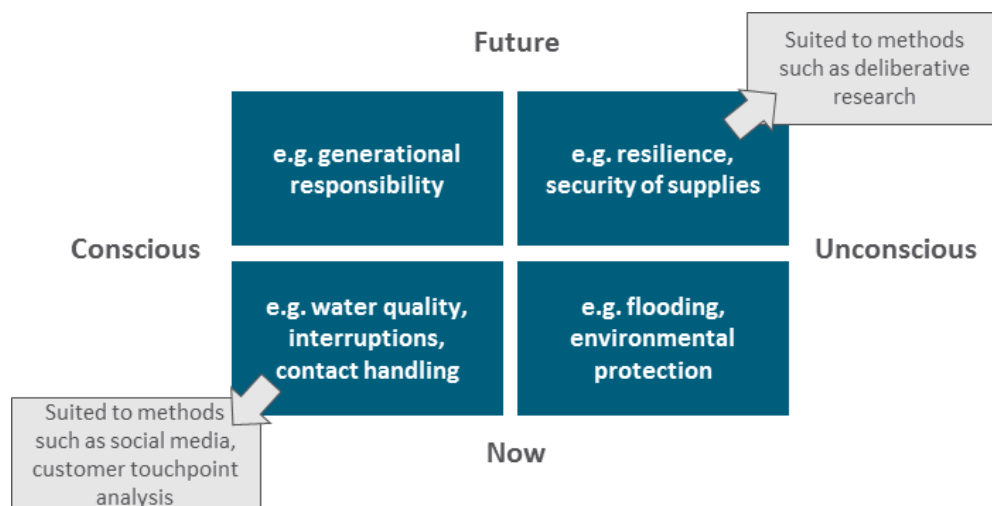
2.2.2 Insight tools chosen from our customers' perspective

The hierarchy helped to reveal gaps in our understanding of customers' needs. But we haven't simply asked customers how to fill these gaps – instead, we've used research techniques that take into account how our customers understand issues, by considering:

- where the service/issue sits within the hierarchy;
- the extent to which customers are conscious of the service/issue; and
- whether the issue occurs today or could occur in the longer term.

The further one goes into the future, the less customers are conscious of the key issues that might affect them, future generations, and their water service. We have used the model below to map some of the key research topics to the four dimensions – the spectrum of consciousness and whether the issue affects customer experience now or in the future. This has guided decisions on research approach and methodology. For example, we consider that issues such as resilience, which is unconscious and future facing, are best addressed using deliberative research, which builds awareness and uses active participation to get more informed opinions. Issues such as complaints handling – a 'service now' issue and one of which customers are well aware - can be explored using analysis of day-to-day customer contacts.

Choosing research tools based on our customers' perspectives



2.2.3 Sampling and methodologies that reflects our region

We serve a diverse region – covering urban areas such as Wrexham, Welshpool and Newtown and also very rural, agricultural and mountainous areas, particularly in Mid Wales. In North Wales, we supply water services only; in we supply some customers with water and wastewater services, and we supply other customers with a water-only or wastewater-only service. 60% of our household customers in North Wales have a water meter, whereas only 43% of our customers in Mid Wales have one. Throughout our research, we've embraced this diversity and the rich mix of backgrounds of our household and non-household customers. We've worked to understand whether their needs and views differ and how we can use a more bespoke approach to engaging them.

We were challenged by the CCG to recognise the vital importance of the Welsh language to many of our customers. Most of our projects offered participants the choice of participating in either Welsh or English. This meant we translated survey materials into Welsh (ensuring that local dialects were catered for), utilised bilingual interviewers, and offered qualitative depth interviews in the Welsh language.

We took into account the demographics of our region and used this to inform recruitment specifications for our research to ensure that the findings are representative. We conducted much of our research by telephone and face-to-face, often in customers' homes and workplaces. This ensured that we did not exclude those with limited transport options, those with health or well-being issues and those who do not use the internet. We also proactively conducted interviews in villages where a high proportion of residents have Welsh as their preferred language, and at the Welshpool cattle market, to ensure we captured the views of farmers, who might otherwise not have participated in our research. We also proactively targeted the sizable segments of customers in Mid Wales who receive a water-only or wastewater-only service from us.

Where relevant, we defined quotas which reflect our customer base (using data from the Office of National Statistics, census and profiles of bill paying customers) and if necessary weighted the results accordingly. In our analysis we have also looked at differences between respondents such as urban vs rural, household income, social economic group (SEG), whether they have a water meter and the degree to which they identify as Welsh. We also took care to evaluate the views of the 'just about managing' financially segment (JAMs), who now make up a fairly large proportion of the population.

2.2.4 Using comparative information to empower customers

Customers are often unaware of how their water company compares, in terms of service and performance, to other suppliers in the UK. We believe that appropriate contextual and comparative information can empower customers in their decision making.

We therefore included comparative information where possible in our research. For example, in our valuation research we highlighted for respondents where performance is above, below, or about average, based on consistent definitions and industry data from Discover Water. We also explored the role that comparative information plays when discussing future performance targets in our PCs and ODIs research project. We find that the majority of customers find comparative information important for transparency, particularly in a monopoly industry; however, in discussions on future service levels we find that the first consideration tends to be based on customers' own experience (either direct or anecdotal), or perceptions as to what their water company ought to be doing.

2.3 Our insight programme

Using our framework, we've developed a programme of research to uncover new insight coherently and cumulatively, building on our existing knowledge.

Our programme includes:

- quantitative research, including a stated preference valuation ("willingness to pay" study);
- qualitative and deliberative research, including a focus on asset health and resilience and an extensive programme to understand customers' needs;
- review of third party research, to better understand issues in Wales; and
- day-to-day analysis, such as customer complaint data and insight from frontline employees.

In some cases our research consisted in joint projects with our English licence, taking care to ensure representative samples in both England and Wales, in order to maximise the efficient delivery of our programme. In other cases we commissioned bespoke projects in Wales, with an approach that was specific and bespoke to the topics we wanted to explore in Wales.

We've used a range of insight to understand our customers' needs

Research method	Description
Customer needs and priorities research	Improves our understanding of customers' needs, wider priorities and the role that a water company plays in meeting those needs
Customer satisfaction tracker survey	Monitors the extent to which customers trust their water company and are satisfied with the service
Operational insight	Expands our understanding of the causes of satisfaction and dissatisfaction using complaints and "voice of the customer" feedback
Valuation research	Willingness to pay research quantifies the importance of service improvements in the context of other areas of our plan
Deliberative research	Allows detailed discussion on important topics, moving from the spontaneous customer view to a more informed perspective. Topics have included lead pipes, water efficiency, asset health, resilience, ODIs and performance commitments
In home interviews	Allows detailed discussion on customer needs, particularly for those customers in vulnerable circumstances from both a financial and health and well-being perspective
Co-creation	Enables customers to work with our employees on specific topics or to solve specific challenges
Research on helping customers who struggle to pay	Improves our understanding of how we help customers who are struggling to pay their water bill, the effectiveness of our current offerings, and how much customers are willing to cross-subsidise other customers
Acceptability research	Allows us to understand whether customers find the overall service package and bill levels acceptable and affordable
Research commissioned by CCWater	Surveys of water company customers commissioned by CCWater, such as Water Matters (household customers) and Testing the Waters (business customers) provide valuable insight on the perceptions of our customers vs those of other water companies
Engagement with employees	We ran workshops with employees to explore their views on customer dissatisfaction and priorities for investment

All of our main research projects have been conducted by professional market research agencies which are accredited by the Market Research Society (MRS), who champion the highest ethical, commercial and methodological practices. In addition to this, we have an experienced in house market research team, who hold MRS membership. Using independent professional market research agencies has ensured we obtained reliable and objective feedback and conclusions from our projects. In addition to this, research agencies will ensure that current data protection legislation is complied with, as well contributing their experience from similar projects.

2.3.1 Our leading research and insight projects

We've summarised six of our key research projects below. Full details of our programme and the resulting insight are explained in Appendix 1.

Understanding customer needs

We have developed a much richer understanding of the needs of our customer by undertaking **deliberative research**. Our focus was on understanding the needs of our customers from an “outside in” perspective and what is important in their lives. Our programme included diverse research techniques – including deliberative workshops, in-home interviews and co-creation with customers. In selecting these techniques we recognised that some customers in vulnerable circumstances might feel less comfortable in a group setting, or might be unable to attend a workshop due to sensitive personal health or well-being circumstances. Therefore, alongside our deliberative workshops we **conducted in-home depth interviews** with these customers.

Witnessing customer behaviour in their own homes also provides a different perspective than asking for stated behaviour as part of a survey, for example when exploring attitudes to water saving. We used **co-creation** with customers to explore one of the key themes that came out of our customer needs research, namely the desire from customers for more education and engagement with their water service, and to explore potential improvement options for assisting customers in vulnerable circumstances.

Co-creation differs from “traditional” market research; our co-creation events were designed to:

- generate opportunities for staff (including Exec and Board members) to hear directly from customers;
- facilitate ‘co-creation’ of solutions to challenges posed by the company and the research programme;
- give customers a real ‘say’ on a range of specific business questions; and
- provide us with some tools for taking forward its communication and engagement programme.

Our customer needs and co-creation programme has provided a considerable depth of insight on our customers, and in particular the areas of service they are interested in hearing more about.

Supporting customers in vulnerable circumstances

We've spoken in depth with customers in vulnerable circumstances, whether due to health and well-being vulnerabilities or financial issues. This engagement has helped us to develop a detailed understanding of the support offerings they would like, for example what support they need during incidents.

We've also carried out detailed research with customers on our current social tariffs, the Big Difference Scheme and Here2Help, and with those struggling to pay, including customers in water debt. Using the Index of Multiple Deprivation, we focused on customers living in areas with a high degree of deprivation who would be likely to qualify for assistance but are not currently receiving this. We wanted to understand both the effectiveness of the existing social tariff schemes and develop an understanding of the journey to water debt, including approaches to prevent future arrears and encourage debt repayment.

Following quantitative research, we tested a range of ideas which were then developed further with customers using a co-creation approach. Through this research we have identified improvements to our social tariff, such as reducing the average level of discount for the Big Difference Scheme whilst still providing meaningful support. This, alongside the increased financial support our customers are willing to pay, identified through our cross-subsidy research, will enable many more of those who struggle to receive support.

Customer valuations

Customer valuations underpin crucial components of the plan, including our outcome delivery incentives. We have sought to improve on previous **willingness to pay (WTP) stated preference research** by simplifying the approach to make it less cognitively challenging for respondents.

At the same time, we have been challenged by our CCG to ensure the material is appropriate for the audience. In Mid Wales we have defined the current and improved service levels specifically for the county, and ensured that the service attributes were appropriate for the audience. For example we didn't include a service attribute relating to the risk of drought and consequent water scarcity restrictions because this is not applicable in Mid Wales. Current service levels were based on splitting Severn Trent performance commitments between England and Wales, for example the current number of pollution incidents was split based on the geographic location of each reported incident.

We also used bilingual researchers for all the WTP fieldwork, and listened to the challenge of our CCG to ensure the Welsh survey translation catered for the many dialects in the region.

Informed views on complex topics and longer term issues – such as resilience

Some of the areas of our plan involve decisions over the pace of investment, and long term resilience. We know that customers do not consciously consider these, indeed they often take the services we provide for granted. We chose a **deliberative approach** to provide information and build participants' knowledge so they could give informed views about these issues and so that we can really probe the "why". Our workshops included both current bill-payers and future bill-payers (young adults), in order to probe the intergenerational aspect of the pace question. Our research agency worked with a behavioural scientist to plan the research in a way which made it engaging for the customers, whilst not under or overplaying the subject matter. The design of the research took into account behavioural biases, to ensure customers gained an appropriate level of understanding of issues to be able to make an informed choice, without being subject to inappropriate influence from the context provided. We used real life examples, such as the lifecycle of a car, to get customers to think about questions such as asset health, before delving into some case studies specific to our plan.

Exploring performance targets and investment choices

It is important that customers support, and have a say on, our performance commitment targets. We used an extensive programme of qualitative and quantitative research to understand customer views on our outcomes and performance commitments. We have reflected customer views by making changes to one of our outcomes. We presented customers with our proposed targets and discussed our comparative position compared to the industry – empowering customers with the information to make decisions on whether they feel the target is stretching enough. On key areas of the plan, we offered them investment choices, with costed bill impacts and engaging descriptions of the options and customer benefits. We also sought to understand whether customers support incentives and penalties, and which areas of the plan they would prioritise for outperformance. Our initial leakage target was found to be the least acceptable to customers – we have listened to customers and as a result we have doubled the proposed reduction in AMP7.

Testing the acceptability of the plan

It is important that the plan we propose is acceptable and affordable to our customers. We have consulted over 700 household and non-household customers through face to face research on the acceptability and affordability of our plan, including potential ODI impacts. We've used engaging materials, tested with 10 year old to ensure ease of understanding, to illustrate our plan to customers, and tailored our research to the region we service, including fieldwork at the Welshpool cattle market to ensure the farming community is represented. And we have listened to our customers – our first wave of research told us that a significant minority of customers in mid Wales found the plan unacceptable. We have responded to this feedback by using the financeability levers at our disposal and increasing our top down efficiency challenge, and retesting a revised bill with customers. In the second wave of research acceptability in mid Wales we find that acceptability increases from 51% to 81%.

2.4 From passive research to active and engaged

We want active and engaged consumers who are demanding about their service and take part in its design and delivery

We recognise that we don't have all the answers – to deliver better outcomes for our customers we need to create a culture and mindset that actively encourages customer participation. And by involving our customers not only in service design, but also delivery, we're confident we can drive greater satisfaction and deliver better outcomes at a lower cost.

Participation goes much further than simply the consumption of water and its disposal. It's an opportunity to co-create future solutions with customers, such as our future social tariff. It's about engaging local communities and contributing to their well-being and local environment. Participation is about empowering and actively connecting customers with our retail services, through tools such as 'Track My Job', and giving them control over their experience.

In our approach, we've drawn on Ofwat's March 2017 publication Tapped In and used the four elements referred to as the FACE model – Futures, Action, Community and Experience - to shape customer participation.

Our commitment to customer participation

We've made a step change in how we view and engage with our customers, in part through cultural and organisational improvements. These changes mean that customer participation is not just something we're doing for this plan – we've already established three new teams at group level as part of a longer term commitment.

Three new teams at group level to drive customer participation

Innovation team

To support our aim to be at the forefront of innovation, we analysed best practice outside the sector and created a new innovation in 2015. Our model includes specialist innovation management roles, including a team focused solely on innovation needs and idea generation, and is unique to the sector.

Customer insight and analytics team

In recent years, the power of modelling and analytics has grown exponentially. We've created an Insight and Analytics team to implement behavioural analysis, modelling and analytics across the business. An improved understanding of customer behaviours, together with demographic data is being used to nudge behaviour change in key areas of the business.

App technology team

The rapid evolution of the smartphone has allowed people to achieve so much more 'on the go' than ever before. To focus and harness the power of this technology, we created an App Technology team to devise and develop mobile apps that can enhance customer experience, and help us progress as a business overall.

Futures: customers helping us to shape the future

Participation starts with actively engaging customers and enabling them to have a voice in decisions that affect their lives. We've used deliberative research and co-creation to give customers a real say on specific business issues across our insight programme, working alongside technical experts across the business, as well as with Board members and our executive team.

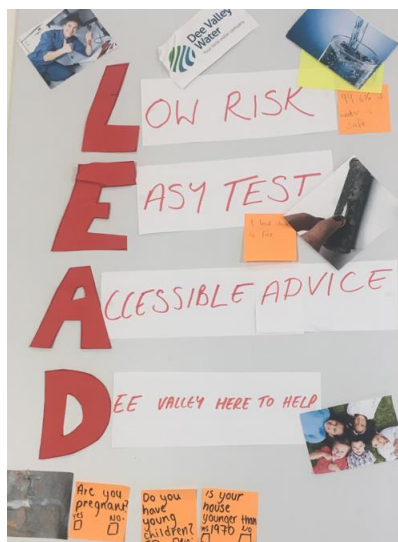
Asking customers for their views isn't new for us - but the way we've gone about it, raising awareness and informing customers so they can genuinely contribute to the debate and shape the future, is dramatically different.

Co-creation

Using co-creation has allowed us to design areas of future service delivery, in conjunction with customers. Our use of co-creation has focused on three topic areas:

- Communication and engagement: as we explored what matters to customers a consistent theme that emerged was the need to communicate and engage more with customers. We used co-creation to explore this further and to enable customers, working with Severn Trent colleagues, to determine a series of practical recommendations for communications on the topics they were most interested in hearing about, such as water efficiency and promoting visitor sites.
- Lead in drinking water: we explored the topic of lead in drinking water with customers and co-created a series of key messages that resonated with the target audiences our customers defined.
- Helping customers who struggle: we refined and tested ideas for improving and promoting our social tariff and assistance scheme offerings, including designing text message reminders after missed payments and testing eligibility criteria and bill discount levels.

"I think it's terrific to have an opportunity to engage with a broad mix of customers from different walks of life, to give them an opportunity to learn something about their local water company. And indeed then, to raise questions and give the company an opportunity to feedback on that." – John Coghlan, interview at the co-creation workshop



Deliberative research

Across our insight programme, and aligned with our strategic insight framework, we have used deliberative research. This is to primarily engage customers on matters which they don't consciously consider or which are

future facing. We have partnered with our research agencies to run a series of workshops on topics ranging from broader customer needs to asset health and resilience. The deliberative approach allows us to provide information and build participants knowledge so they can make informed decisions about issues they might not previously have considered. This provides us with much deeper and considered insight compared to the spontaneous responses we get through other research methodologies. Levels of engagement through the workshops were high, and the feedback from participants was overwhelmingly positive.

“I think it was very interesting and informative” – Workshop participant

“I was surprised by how much water is used per day and how much environment work is going on that we don’t know about” – Workshop participant

“It has given a face / identity to the company” – Workshop participant

Action: customers take action to change behaviour

By changing customer behaviours, we can help ensure that the outcomes that matter to customers are delivered in a cost effective and environmentally sustainable manner. For example, changes to water consumption behaviours can ensure that water is available for future generations and benefit the environment or taking action to reduce sewer misuse can prevent customer disruption due to sewer blockages and reduce cleansing costs.

Our Insight and Analytics team uses demographic data analysis and behaviour data tools to understand our customers - and then find ways to nudge them to change their behaviours. Across our England plan we have found that incorporating this understanding of customer behaviour can:

- give us greater insight in to our customers’ priorities by understanding what really drives changes in behaviour or satisfaction in service; and
- help us develop targeted solutions that deliver the greatest benefits by having customers help design and implement the solutions.

Observing real world behaviour is often better than research at telling us about our customers. Behavioural economics can also show us how to use subconscious methods to achieve behavioural change to the benefit of all customers. For Hafren Dyfrdwy we are considering how we can use analytics in the following areas:

- better target comms on our social tariff and priority services register;
- help us meet ambitious leakage and per capita consumption targets; and
- driving direct debit payments where customers would find this payment method easier.

We are also considering how we can use social media to promote both the local feel of our business, particularly for non-household customers, whilst also driving our education programme. For example tweeting after a “great day helping Katie’s Cupcakes save water”.

Community: increasing community ownership and participation

Working in partnership with expert groups and communities, together with increasing community ownership of issues, can deliver the outcomes our customers want while providing wider benefits for the community. We’re engaging with communities in many different ways. These include working with stakeholders and expert partners, embedding partnership working in outcome delivery, and volunteering in the community.

Investing in our community and the environment

Over the next five years we will be investing £2.5m to improve around 22km of river water quality, which represents the largest statutory environmental programme required in this part of Wales for 20 years. We will also be enhancing biodiversity and well-being by investing just less than £2m. The majority of this investment is planned at Lake Vyrnwy, where we have a fantastic opportunity to support Wales. The project will:

- enhance the visitor experience so that more people visit the site and stay in the surrounding area thus improving the local economy;
- restore approximately 450 hectares of upland peat bog to move the SSSI status from 'Unfavourable' to 'Favourable', which will provide greater resilience of our ecosystems; and
- enable local communities to shape the developments and develop a shared sense of ownership.

We are making infrastructure improvements to improve amenities at more of our reservoirs. Benefits include promoting local economy through a local tender process for café management, improving access and awareness of the site so that they are more enjoyable and making it easy for people to take part in well-being activities.

Together with our partners, we have secured £1.5m Heritage Lottery Funding that allows us to leverage 60% match funding which makes this flagship scheme more affordable to our customers.

Working in partnership to promote support well-being in the community

We have identified ways that we can support well-being by thinking more holistically to deliver opportunities and improvements at minimal or no extra cost. These include:

- partnering with Welsh government, Dŵr Cymru Welsh Water (DCWW) and the charity City To Sea to roll out the Refill initiative, with the ambition to be the first 'refill nation'. We strongly believe that it is important for us to promote the benefits of water for hydration;
- promoting safe use of water alongside the All Wales Water Safety Group. We have 14 reservoirs in our region so this is an important consideration;
- education and volunteering opportunities to encourage people to participate in energetic outdoor activities and improve the local communities connection to the natural environment; and
- supporting other local initiatives such as the Newtown Go Green consortium, which has a wide reaching scope; our involvement is around safe and enjoyable access to the river, which runs through the Mid Wales region.

Community Champions

Our "Community Champions" volunteer programme partners with a number of local organisations to achieve mutual benefits for our region's environment. We are contributing to cleaning and clearing 10km of the regions river, through a number of volunteering activities.

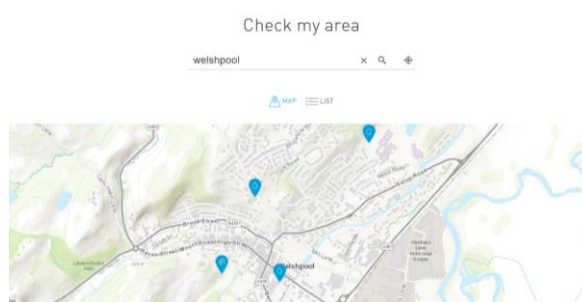
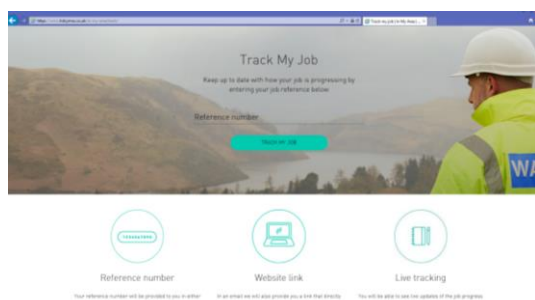
Experience: increasing control of customers' experience

The more customers can control their experience, the more they can become active agents in their own service. We're developing multiple ways in which customers can take greater control in their use of water as a product, as well as their experience of our service. This includes launching services such as Track My Job which enables customers to monitor progress on reported jobs. Digital contact channels, such as web self-service and web-chat are also becoming increasingly popular. Some areas where we have seen benefits are:

- "Track my job" and "Check my area" online service

Through our Track My Job online service, we allow customers to instantly keep up to date with how their jobs are progressing. Customers are able to see live updates, with detailed status updates and dates such as when the job was raised, whether teams are on site, if the site is being resurfaced, and finally when the job is completed. This service is vital for busy customers on the go. In the digital age, customers have an increased desire for instant updates about their situation, and we've taken heed of the advancements made by other sectors, like telecommunications. This technology gives customers a better overall experience, as we've improved the communication we provide, and are able to give customers much more awareness about their jobs.

Through our Check my area online service, we allow customers to keep up to date with what's going on in their local area. Issues ranging from general water supply issues to blocked drains, planned construction work and leaks are shown, alongside information on the stage of the incident resolution.



2.5 Key findings from our customer research

Across our research programme we have talked to over 3,600 of our customers in over 25 different locations, ranging from larger towns to rural areas and small villages where the Welsh language is widely spoken.

We've used a range of techniques, from telephone surveys and face-to-face interviews to deliberative research and co-creation. To complement the research we have analysed customer contacts and considered research commissioned by other organisations from within our sector (such as CCWater) and outside (such as the "The Wrexham we want" research which has informed the public service board's response to the Well-Being of Future Generations (Wales) Act).

Many of the research pieces explore attributes and issues that are well known to the water industry and have been a key focus of our activities for many years. For our PR19 plan we have explored the wider needs of our customer base to understand how we can adapt our approach to make a positive impact on their daily lives and the communities in which they live.

The key things we have heard from our customers are:

- continue to provide a reliable day-to-day service and reduce service failures, which cause inconvenience and dissatisfaction – in other words, get the basics right!;
- support customers when they need it, with a personal and human touch; and
- make a positive difference for the local environment and local communities.

We heard:

Making a positive difference matters

"It [education] is a good idea because we weren't educated when we were younger and we take it for granted"

"It's important to know the customers and the area"

"I'd be willing to spend a bit more if it was going to promote"

"I think it's a good thing to get rid of [some] lead piping. Lead is a metal I don't trust at all"

Support me when I need it

"It's great that the PSR flags the issue – they can act better if they know there is a vulnerable person who needs help"

"When I applied for H2H I'd had no wages for nearly four months and I'd had no benefits either so I really was on rock bottom"

Get the basics right

"We require an uninterrupted supply of clean, good quality water for the business to be able to function. Without that we'd have to stop"

"That [the drinking water quality complaints target] is unreal. That's brilliant!"

"If it's [internal sewer flooding target] not deliver, then again it's a disaster!"

At the level of the **core and basic needs** (the lower part of Maslow's hierarchy of needs), there are few surprises in our research to date. Customers typically take their water supply for granted, and expect safe drinking water to be there when they turn the tap on, and for their wastewater to be safely taken away. Failure to provide this service can cause dissatisfaction, and customers expect us to be continually improving and minimising service failures.

At the level of '**psychological needs**' (the middle parts of Maslow's hierarchy) our research tells us that we have an opportunity to improve the support we offer to customers when they are struggling, whether due to financial hardship or vulnerabilities which mean they have difficulty accessing our services. We have been told we can help even more customers by making some small changes to our social tariff and other assistance schemes. Our current 90% discount on bills (in Mid Wales) is surprisingly generous for some customers, and being more targeted in terms of who gets the maximum discount rate for assistance will enable more people to be helped. At the same time, there is an opportunity to increase the discount for our customers in North Wales to make the scheme more impactful. In both regions we can also improve awareness of our support and make the application process easier for customers.

Our customers will benefit from our local focus, while the creation of Hafren Dyfrdwy will allow us to play a bigger role in Wales. Our research tells us about the importance of retaining Welsh roots and services such as Welsh language services. The provision of Welsh language services is factored into notions of identity and meets both functional as well as emotional needs. When told about the proposed licence change in the NAV research, some Mid Wales customers felt that there was a risk of Severn Trent's customers in Wales being treated as "second class". One of the themes that came out of the customer needs research was that customers see water as an important resource for Wales and one that needs protecting. Customers would also like greater transparency about where "their" water goes and who uses it.

Our customers in North Wales told us they appreciated their local water company being "just down the road". Although the acquisition and licence change will bring some changes, there is an opportunity to retain a 'local touch' where possible, whilst at the same time providing additional services and opportunities such as extended call centre opening hours, live webchat and social media channels.

At the level of **wider fulfilment**, the natural environment resonates strongly with our customers. Many of our customers, particularly in Mid Wales, live in rural areas, and have a high appreciation of the natural environment in which they reside and with which they interact on a daily basis. Our reservoirs are well-known spaces and offer great potential for recreation and enjoyment. Where customers are less aware of these, there is an opportunity to promote these further, as well as the environmental improvements we make in areas such as biodiversity.

Across all of our research and in both Mid Wales and North Wales, one common theme emerges - customers expect us to be more proactive in our communications to engage and educate them. This includes more effective education about water efficiency and sewer use (in Mid Wales) but also improved engagement on issues like help with paying bills.

Across our insight programme, we have only asked customers to make trade-offs or prioritise where it is meaningful to do so. For example we have not asked customers to choose between having a high quality drinking water and enhancing biodiversity.

For water, our customers told us that reducing drinking water quality complaints was their highest priority, followed by improving water pressure and then reducing supply interruptions. For waste, the highest priority is reducing internal sewer flooding even though there are very few incidents, but customers place a high value on the environment and in particular enhancing biodiversity. In addition to the core services, they gave us a clear message about that the things they value most from their local water company, which are:

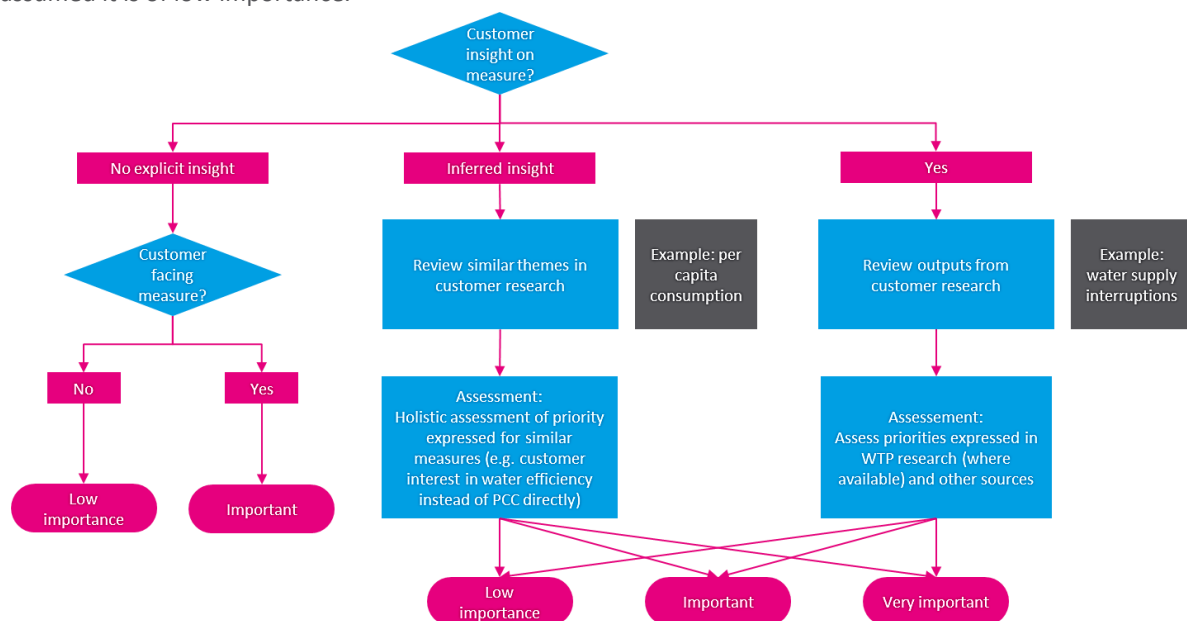
- good career opportunities;
- using local supplies and contractors; and
- being visible and contributing in the community.

We used this information to develop our performance commitments. We have ensured that our most stretching performance is where it matters most to our customers and we have been additionally challenging where our current comparative performance is weak.

2.6 Triangulating customer views on performance commitments

Our insight programme has enabled us to develop a rounded view of our customers and this evidence has underpinned the development of our outcomes, our plans for the next five years, and our performance commitments and targets.

Ofwat expects companies to cross check and sense check evidence, drawing on a range of techniques and sources. We have triangulated the evidence for each outcome, as well as provided the details for each evidence source (including objectives, sample, new insight and validation of existing knowledge). This has been used both internally – to challenge back on how customers have shaped the plan and performance targets, and externally with the CCG, to enable members to see the line of sight between customers and key decisions. In synthesising the evidence for each outcome we have considered the extent to which customers regard the service area as a priority for improvement, which informs the level of stretch we are proposing in our performance commitment. We have formed a view on whether an area of service is of “low importance”, “important” or “very important” based on the sources of evidence presented for each outcome. In assessing the relative priority we note that there are a few performance measures which we have not consulted customers on – satisfactory sludge disposal is an example. Where the measure is directly customer facing we have inferred that the performance commitment would be important to customers, otherwise we have assumed it is of low importance.



In some cases, such as in the example presented below, we have evidence from multiple pieces of research. In other cases, it is more appropriate to use other techniques, such as deliberative research, to uncover customer views on more complex topics and infer the relative priority from this.

Triangulating different sources of insight

	Implications for target	Customer tracker	Willingness to pay	Other research	PC and ODI research
Leakage	Very important	Top priority	Priority for improvement but low WTP	n/a	High priority for improvement
Pollution	Important	n/a	Lower priority than other waste measures	Environment highly important	Medium priority

In addition to the customers' relative priority, one of the basic principles of our strategic framework is the concept that not all customer needs are equal. In order to bring this to life we have allocated each performance commitment to a level in the hierarchy. The following matrix summarises our results; more details for each performance commitment are provided in the relevant outcome.

Self-fulfilment			<ul style="list-style-type: none"> Number of lead pipes replaced Hectares managed for biodiversity Inspiring our customers to use water wisely
Psychological		<ul style="list-style-type: none"> Supporting our Priority Service customers during an incident Help to pay when you need it Effectiveness of affordability support 	<ul style="list-style-type: none"> CMeX DMeX NHH experience
Basic	<ul style="list-style-type: none"> Resilience – drought risk Asset health – unplanned outage Satisfactory sludge disposal Treatment works compliance Number of void supply points 	<ul style="list-style-type: none"> Water supply interruptions Per capita consumption Asset health – burst mains Properties at risk of receiving low pressure Length of river water quality improved Pollution incidents Sewer blockages Sewer flooding – extreme storms Sewer collapses Welsh language services 	<ul style="list-style-type: none"> Water quality compliance (CRI) Leakage Internal sewer flooding incidents Number of complaints about drinking water
	Low importance	Important	Very important

In summarising the findings from a rich evidence base we find a great deal of consistency in terms of understanding customer priorities, and also findings which, on the face of it, are different. Our insight programme has developed a rounded view of our customers and what matters to them, accepting that different research methodologies, perspectives and contextual information inevitably can result in different results. In appendix A1 we've brought these together and explained the rationale for the conclusions we've drawn to develop our plan.

2.7 Challenge from the CCG

Our Customer Challenge Group (CCG) has challenged us extensively on the design of our research programme. They have challenged how we've interpreted and synthesised the insight, and then challenged how we've used that to build our plan. Our customer engagement has been strengthened as a result of their challenge.

We have captured some of the key challenges and our response here. For more detail please refer to the CCG report.

CCG challenge	Our response
Is the company being sufficiently innovative and effective at engaging hard to reach customers?	<p>We have targeted rural communities in Wales, and in particular those in which the Welsh language is more prevalent.</p> <p>Our quantitative research has used either face to face or telephone methods meaning that no digitally disenfranchised customers are prevented from taking part.</p> <p>As part of our "helping customers who struggle" research we used the index of multiple deprivation to target areas in which our target audience might be living.</p>
Have the company ensured that engagement is equal and balanced between Mid Wales and North Wales?	Initially there were some minor differences in our engagement between Mid Wales and North Wales (e.g. workshop duration), however since this challenge was raised we have rectified that and all subsequent engagement has been equal.
Have the company taken all practical steps to ensure that research is available in the medium of Welsh for those who want it, and that translations are of a high quality, being sensitive to variations in regional dialects?	<p>The valuation research has been translated into Welsh and we draft shared with the CCG for comments. It was noted that only 2 customers opted to take part in Welsh, despite specifically changing our sampling approach following CCG challenge and targeting Welsh speaking communities (in fact the two customers that opted to take it in Welsh did not live in these villages). The CCG commended the company for the effort, and for the balanced translation</p> <p>All other quantitative research has been made available in Welsh.</p>
Has the company sufficiently sought to present comparative performance when seeking customer views?	<p>In both the valuation research, PCs research and acceptability research we have presented customers with comparative information in order to give context to their decisions.</p> <p>Feedback from the research shows that customers do consider this in making decisions, as well as the impact of service failure on themselves / their community.</p>
Have the company tailored their approach to Wales, in particular seeking views in locations such as the Welshpool Livestock market	We have targeted additional locations such as cattle markets to get a better cross section of views.
Have the company ensured engagement material was specific to the bill and performance in each region?	We have ensured that engagement material was specific to each region, especially where there is divergence in performance between the former Dee Valley and Severn Trent areas.
Have the company ensured the survey material is accessible?	We have reduced survey length and complexity as far as possible, although the CCG have appreciated this is a balance between length and amount of insight required. We have also ensured the workshop material was engaging and simple. The CCG attended some of our workshops to observe and to witness the quality of engagement for themselves.
Have the company engaged customers sufficiently on ODIs?	We have discussed ODIs with customers in both our deliberative workshops and quantitative research, as well as within the acceptability research. Following challenge from the CCG we have asked customers about a likely ODI scenario with a mix of underperformance and outperformance, as well as the extremes.
Have the company consulted customers on both the bill in real and nominal terms?	We have included an informed acceptability question in both real and nominal terms, and used simple language to explain inflation to customers.

Chapter 3

Affordability and acceptability of our plan

3.0 Affordability and acceptability of our plan

Great service at an affordable price is the ultimate objective of our plan and the work we do every day. Hafren Dyfrdwy already has the lowest average combined bill in England and Wales, £50 lower than the next best company, and over £100 lower than the industry average.

Our customers see water as a basic human necessity and expect our bills to be as low as possible, and affordable for all. But customers do not want this at the expense of a deterioration in service. In fact, customers expect us to be continually striving to improve the services we offer and our plan delivers on this expectation.

We are investing in future resilience and improved services, including more investment in infrastructure than ever before (for example by 2025 we will have renewed two out of four long life asset classes – dams and reservoirs, and treatment works), environmental improvements, enhanced visitor experience at our reservoirs and improvements in biodiversity, and more investment in people and training. This creates some challenges in terms of future bills, and we have used financial levers to manage these and keep bills affordable for our customers. Our plan not only continues to deliver the lowest bills in Wales, but will deliver performance that puts us in the top quarter of the industry across 65% of comparable performance commitments, as well as doing more to identify and support those customers who are struggling to pay, doubling the number of customers we provide assistance to.

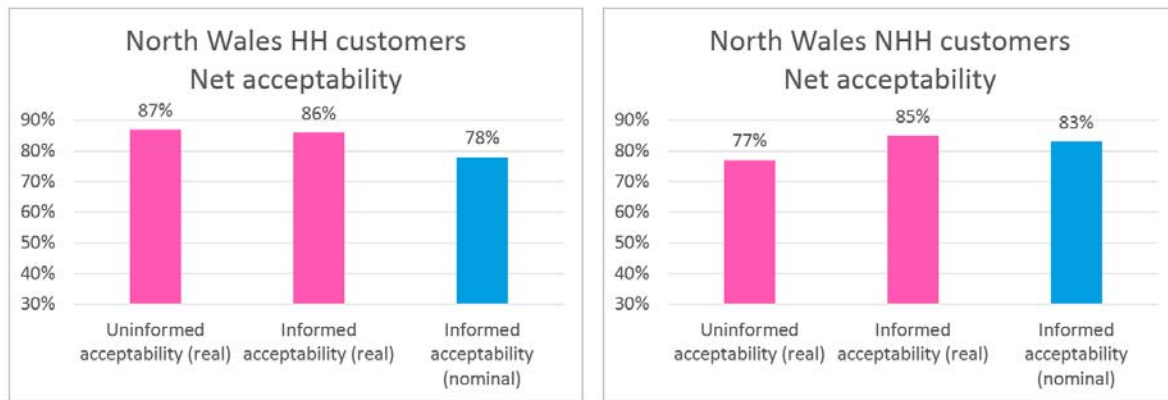
Our extensive customer insight programme in Wales provides a rich body of evidence on customers' expectations. We have learnt how we can improve the effectiveness of our support for customers who struggle, and co-created solutions with our customers. We have explored customers' views on the affordability of our current bill and proposed plan, as well as the ODI framework. We listened to our customers, and revised our proposals where they did not appear to meet customers' expectations.

3.1 Acceptability of the plan

We have done a large piece of acceptability research with over 700 customers, to understand if our proposed plan is acceptable and affordable. And we have listened to customer feedback – our first wave of research in Mid Wales found that customers did not find our first proposal acceptable, so we have responded to this, and to challenge from our CCG, and have retested a revised bill proposal which a significant majority of customers have found acceptable.

Acceptability research typically takes customers on a “journey”, introducing the future proposed bill in real terms (uninformed acceptability), before presenting the business plan and bill profile (informed acceptability (real terms)), and finally showing the future bill in nominal terms (informed acceptability (nominal)). For the questions where the bill was presented in real terms it was made clear to customers that inflation would also have an impact on the future bill, and they could access an inflation forecast if desired. Around a quarter of respondents chose to do this.

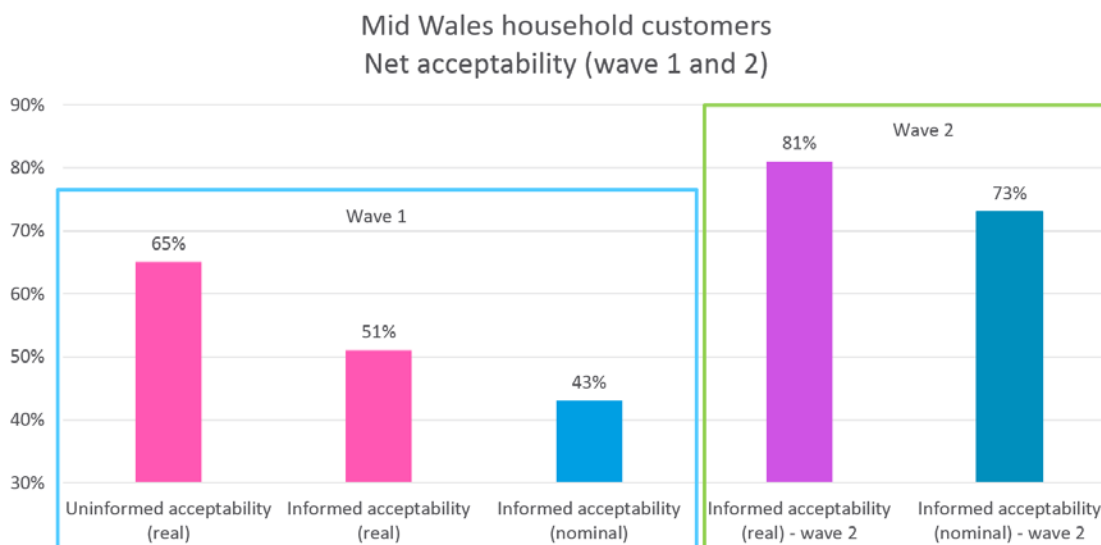
The initial proposal we shared with our North Wales customers included a (real terms) increase in their water bill of 1%, compared to a 6% increase in the combined bill in Mid Wales; and this is the likely cause of the significant difference we initially saw in regional customer's views. The results in North Wales are extremely positive. Despite the modest increase in bills we find that 86% of household customers and 85% of non-household customers, find our proposed plan acceptable, when presented with the service plan and bill in real terms (informed acceptability (real)), and 78% of household customers and 83% of non-household customers, when presented in nominal terms (informed acceptability (nominal)). We chose not to repeat the research in North Wales despite the proposed bill increase changing slightly, as we anticipate a majority of customers would still find the plan acceptable.



In the first wave of research customers in Mid Wales were less likely to find the place acceptable – when asked about the bill increase alone (uninformed acceptability), 65% of household customers find it acceptable (and 60% of non-household customers), compared to 51% of household customers, and 56% of non-household customers, when presented with the service plan and bill profile.

We listened to customers and revised our bill profile – in the second wave of research with household customers in Mid Wales we put forward a 2.5% increase in the bill (in real terms). Note the proposed bill increase is actually 2.2% not 2.5% which is what we tested with customers. Given the final increase is lower than the increase tested with customers we do not think this adversely impacts the results.

We found that 81% of customers found the proposal acceptable, when presented in real terms, and 73% when presented in nominal terms.



Across the two waves of research, we asked customers whether the proposed performance commitments for water, wastewater and retail are acceptable, and the majority of customers agreed they are:

- 79% of household customers in Mid Wales, and 79% in North Wales, supported the proposed package of water performance commitments;
- 86% of household customers in Mid Wales supported the proposed package of wastewater performance commitments; and
- 85% of household customers in Mid Wales, and 77% in North Wales, supported the retail performance commitments.

We analysed whether some customer groups are less likely to find our proposals acceptable and found no significant difference in North Wales, including for the low income groups and those who defined themselves as “just about managing” financially. In Mid Wales (wave 2 research) we find that those who are “just about

managing” (JAMs) do have a statistically different view compared to those who aren’t, however the results are still positive, with 72% of JAMs finding the plan acceptable compared to 92% non-JAMs. Socio economic group is found to have an impact on affordability but not on acceptability.

As we have found in other research, some customers are altruistic. Most customers recognise the significant service improvements that our plan delivers. “All customers will benefit from the improvements”, “My household will benefit from the improvements” and “the improvements are needed” were among the top reasons for the plan being acceptable in both Mid Wales and North Wales. Those customers who find the plan unacceptable tell us this is down to the bill being already expensive, being unable to afford an increase, or company profits being perceived to be too high.

3.2 Affordability of the plan

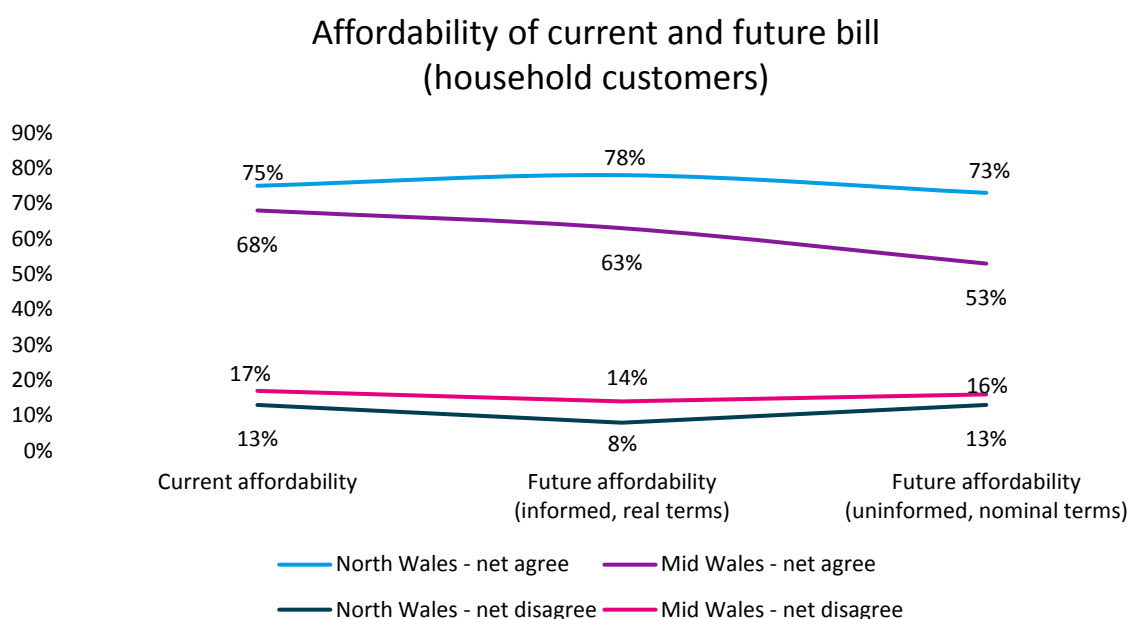
While there are some regional differences, the majority of customers are broadly happy with the affordability of their current water bill, and are satisfied with the value for money and the services we provide. Our latest set of survey data in 17/18 shows that:

- 94% of our customers are satisfied with us overall;
- 75% of customers in Mid Wales, and 85% of customers in North Wales explicitly state our bill is affordable; and
- 87% of customers in Mid Wales, and 83% in North Wales, rate us as good value for money.

Despite our low bill and strong affordability results, we recognise that a small proportion of our customer base does not find bills affordable. We estimate that approximately 11% of customers fall into this category based on our own internal research, and national research commissioned by CCWater.

Our PR19 plan should continue to deliver affordable bills for today and in the future. We have listened to our customers and responded – the future bill we proposed initially was clearly seen to present some affordability challenges for customers in Mid Wales, with an increase from the current 17% of customers finding their bill unaffordable, to 33% when presented with the future bill (in real terms).

Our second wave of acceptability research shows that the affordability of the bill remains fairly static between the current bill and the future bill, although there is a small reduction in the % of customers finding the future bill affordable when presented in nominal terms.



These results should be treated with some caution as following the first wave of acceptability research the proposed increase in the North Wales water only bill changed from 1% to 3.7%. The results from our first wave of acceptability, in which we included a “Gabor Grainger” type question on the 2025 bill, indicate that this might cause a 9% reduction in acceptability.

For Mid Wales the results for current affordability were taken from wave 1, whilst the future affordability results are taken from wave 2, although both samples are representative of our customer base.

It is important that we continue to provide targeted support to those customers who struggle to afford their water bill. Chapter 6.2 - Service for everyone explains how we will deliver a significant increase in the number of customers who struggle to pay that we support.

3.3 An appropriate balance of risk and reward

As a company we have embraced the ODI framework, and our customers support this. Most customers tell us that the ODI mechanism is a fair way to encourage good service, although some customers are concerned about the company being rewarded for doing the “day job” or simply disagree with the link between performance and bills.

Overall, in our PCs, ODIs and investment choices research 76% of customers find the ODI framework acceptable, in the context of an £8 impact on a combined bill (or the equivalent on a single service or non-household bill).

In our acceptability research, after being asked about the proposed AMP7 bill, customers were asked about the impact of ODIs in nominal terms on the 2025 bill. We found that:

- in North Wales 63% of household customers found the penalty mechanism acceptable, and 51% found the reward mechanism acceptable (wave 1 of acceptability research, with a ±4 impact on the water only bill); and
- in Mid Wales 59% of household customers found the penalty mechanism acceptable, and 67% found the reward mechanism acceptable (wave 2 of acceptability research, with a +£2/-£3 impact on the combined bill).

Chapter 4

Accounting for past performance

Learning from past performance so we can deliver better customer outcomes

4.0 Accounting for past performance

Learning from past performance so we can deliver better customer outcomes

This narrative supports the Hafren Dyfrdwy PR14 reconciliation data tables and models submitted to Ofwat on 13 July 2018 which are an integral part of our business plan submission. This is intended to support Ofwat's review of our PR19 data tables by providing key insight about our forecast performance and the assumptions that underpin our modelling.

This narrative should also be read alongside:

- [Dee Valley Annual Performance report 2016](#)
- [Dee Valley Annual Performance report 2017](#)
- [Hafren Dyfrdwy Annual Performance report 2018](#)

This narrative includes the following sections:

- Section 4.1 – a summary adjustments for Hafren Dyfrdwy
- Section 4.2 – maintaining transparency
- Section 4.3 – managing the in-period border variation between Hafren Dyfrdwy and Severn Trent
- Section 4.4 – initial assessment of plans (includes performance across our PCs)
- Section 4.5 – reporting against our Legacy treatment works PC
- Section 4.6 – reporting against our Service Reservoir water quality risk management schemes
- Section 4.7 – other adjustments, including TOTEX and WRFIM

4.1 Summary of adjustments for Hafren Dyfrdwy

The tests we are responding to are:

- How well has the company given evidence for its proposed reconciliations for the 2015-20 period, and has it proposed adjustments by following the PR14 reconciliation rulebook methodology?
- How well has the company performed, and is forecast to perform, over the 2015-20 period and, taking into account this overall performance, how well has it put measures in place to ensure that it maintains confidence that it can successfully deliver its PR19 business plan?

This narrative covers adjustments relating to performance commitments, the Service Incentive Mechanism, Totex sharing, WRFIM, Retail true-ups, land sales and the PR09 legacy adjustments. The following tables summarises the adjustments which are discussed in detail in this chapter.

Summary of adjustments for Hafren Dyfrdwy (HDC)

£m 17/18 prices	RCV	Revenue
ODI	-	0.9
SIM	-	(0.1)
Totex Sharing	(3.9)	(0.9)
WRFIM	-	1.9
Retail True-Up	-	(0.0)
Land	(0.1)	-
PR09 legacy	(1.5)	0.0

4.2 Maintaining transparency

A clear baseline for assessment

We have compared our performance to the targets outlined in the PR14 Final Determinations for Dee Valley Water and Severn Trent Water. In addition to these documents, following the variation to our licence effective from 1 July 2018 our performance commitments and targets for 2018/19 and 2019/20 were altered and confirmed by Ofwat in their formal notice to vary our licence.

We note that in Ofwat's formal notice we believe there to be a transposition error associated with England year 5 targets and those of Wales year 4 targets set out in appendix 3 of the NAV determination for the WB3 measure:

For:

		England			Wales		Unit
		Yr 4 – Q1	Yr 4 – Q2-4	Yr 5	Yr 4 – Q2-4	Yr 5	
WB3	Speed of response in repairing leaks (% fixed within 24 hours)	95	95	95	100	100	%

Read:

		England			Wales		Unit
		Yr 4 – Q1	Yr 4 – Q2-4	Yr 5	Yr 4 – Q2-4	Yr 5	
WB3	Speed of response in repairing leaks (% fixed within 24 hours)	95	95	100	95	100	%

For 2015-20, we set out a comprehensive package of 13 performance commitments. This included two schemes that deliver commitments relating to the replacement of the Legacy water treatment works and our service reservoir maintenance programme.

4.2.1 Transparent reporting of performance

We strive to ensure we are clear and transparent on our progress with our customers and stakeholders through our Annual Performance Report (APR). In APR 2017, we reported that leakage had increased but remained within expected levels for the performance commitment which expressed leakage as litres per property per day. However, total leakage, as measured in million litres per day, was higher than assumed in the Water Resource Management Plan (11.31 MI/d compared to 10.17 MI/d). We committed to investigating the reasons for this during 2017/18.

Our review concluded that the performance commitment in the 2014 Final Determination was based on household properties only, while actual performance had been calculated based on all properties (household and non-household) in both 2015/16 and 2016/17.

In APR 2018, we restated performance for 2015/16 (actual performance still achieved target as reported). However, restating performance for 2016/17 resulted in the target being missed rather than achieved. This underperformance generated a penalty of £29.4k.

This change was subjected to scrutiny by our external audits as well as our customer challenge group. We reported the position clearly in APR 2018.

4.3 Managing the in-period border variation between Hafren Dyfrdwy and Severn Trent

The position for Hafren Dyfrdwy and Severn Trent is slightly more complex because of the border variation. This has seen Hafren Dyfrdwy taking on wastewater operation in the Mid Wales region and water supply duties for Chester are now excluded from our licence area. These variations came in to affect from 1 July 2018.

This means that the reconciliation relies on data from final determinations and annual returns for Dee Valley Water and Severn Trent Water. We have developed a suite of models to reconcile the adjustments for the new borders, allocating these appropriately between Hafren Dyfrdwy (HDD) and Severn Trent England (SVE). We have submitted all of our workings to Ofwat alongside the tables and models in July 2018.

During the New Appointments and Variations (NAV) process we agreed with Ofwat that in principle, the customer should – as far as possible – pay no more or less for the regulatory incentives than they would have done if there had been no change in the boundary. This guides our approach.

4.3.1 Changes to investment since the merger

The Customer Challenge Group challenged us to demonstrate that customers were no worse off following the merger and any increased investment that has occurred. Relevant to this discussion was the solution for the Legacy treatment works (discussed later in the chapter) compared to the original scope agreed with Ofwat, which delivered a totex saving.

It is worth noting here that the framework that exists to share risk and reward between customers and investors means that 50% of any outperformance compared to the Final Determination is given back to customers, whereas 50% of any additional expenditure above the Determination is covered by customers through increases in bills. The table below highlights some key changes in investment between the PR14 plan and the reality of what has been delivered. This is not comprehensive of all changes and uses rounded values as a guide.

	What was assumed at PR14	Impact of security and customer service
Legacy Treatment Works	£17m	£9m
Service Reservoirs	£8m	£11m
Security	-	£3m
Customer service	-	£4m
Total	£25m	£27m

Looking at the Legacy treatment works alone, it is clear that had the totex solution and costs been known at the time of the PR14 Business Plan submission, the allowance approved by Ofwat could have been less. In the same way, had the final programme of work for the distribution service reservoirs been known the allowance for this element could have been more. This is the point of the totex and outcomes framework, companies are incentivised to identify better solutions for companies, but also to absorb certain types of risks.

In the above example the overall difference would have been around £5m totex saving (all other things being equal). This would have resulted in a slightly lower RCV (approximately £2.5m) and ultimately a small reduction in bills and a higher return for investors (approx. £2.5m).

Instead of taking a higher return and small bill reduction, we have made further investments in HD. This is something that is supported by our customers, with 88% saying they trust us to make the right investment decisions to ensure quality and consistency of service. They have also told us that they would like to be able to contact us through a wider variety of channels, such as email and online chats. However, predominantly they prefer telephone contact and would welcome a more flexible call centre that is not just open during office hours. They also value the stability of their bills, without large fluctuations year on year.

So, as part of the merger plans, we committed to move Hafren Dyfrdwy customers to a new more robust billing system which aligns to that of Severn Trent England. By combining the approach we are able to benefit from integrated ongoing support functions and ensure all of our customers benefit from future customer service improvements. Similarly, offering 24/7 contact centres is industry best-practice and something that has proven very successful in our English operating area. We want all of our customers to receive the best service possible so have re-invested the savings from Legacy to enable these changes.

At the same time, it became clear that additional investment was required at our assets and within our information technology services to ensure we continue to comply with the Service and Emergency Measures Direction, Protective Security Guidance 2020 and the Network and Information Systems Direction we would need to invest more during AMP6 and AMP7. This investment was required to meet statutory obligations and prevent risk of service failure to our customers; as such this cost (around £3m) would have been incurred anyway. We have also sought to improve the quality of network monitoring we have through the deployment of data and flow loggers to enable more accurate information to be used to comply with new reporting standards following a consistency review across the industry.

The result of the changes in scope and increased investment throughout AMP6 have resulted in a small under-performance relative to the FD allowance of around £2m. Had we known now at PR14 what we know now, we would have likely received a lower allowance for Legacy alone, but seen upward pressure from the service reservoir, security and customer service changes. The total expenditure menu framework has allowed us to incorporate these cost pressures and deliver improvements in service to our customers without the need to seek additional funding and limiting the upward pressure on future bills.

4.3.2 Performance rewards and penalties following the boundary change

For performance commitments and performance levels that Hafren Dyfrdwy will be reviewed against, we have:

- reported performance up to the 30th June 2018 based on the historic Hafren Dyfrdwy licence against a three month target for financial year measures (1st April to 20th June inclusive) and a six month target for calendar year measures (1st January to 30th June inclusive);
- reported the remaining year four performance against a nine month target for financial year measures (1st July 2018 to 31st March 2019) or a six month target for calendar year measures (1st July to 31st December 2018); and
- reported performance against the Severn Trent Water suite of performance commitments in the Mid Wales region from 1st July 2018 in line with the second point above.

Some of the water service commitments for Dee Valley Water and Severn Trent Water were very similar in their design but measured performance differently. In these circumstances we have not amalgamated them and instead continue to report against them as two separate commitments. Accordingly we are reporting our performance against the Dee Valley Water commitment in the North Wales area only and against the Severn Trent Water commitments for the Mid Wales area formally part of Severn Trent Water.

For those commitments where we measure normalised performance, and the targets remain the same for both the Welsh and English operating areas following the licence change (eg, supply interruptions), we have proportionally allocated the incentive rate between Hafren Dyfrdwy and Severn Trent in line with the revenue or RCV allocations for the relevant service. Whilst this was not specifically outlined in the NAV determination, it is necessary to ensure our ODI allocations reconcile with the counterfactual position.

4.3.3 Other incentives following the boundary change

We have also allocated the final determination allowances between the new boundaries. From Q2 of 2018-19, the new companies are measured against these targets for revenue and totex incentives. The division of allowed revenue was accepted by Ofwat and included within its decision document on the NAV.

4.3.4 Cross checks

To demonstrate that customers are no worse off as a result of the variation, we have calculated the counterfactual for all incentives – that is, the rewards and penalties that would have resulted if the original boundaries had continued until the end of AMP6. We can demonstrate that the aggregate rewards for the two companies would have been materially the same.

We have set out a summary of the reconciliation adjustments for SVE and HDD compared to the counterfactual in the table below.

Reconciliation adjustments	Counterfactual			Factual			Diff
	SVT	DVW	Total	STE	HDC	Total	
PR09 Legacy							
Water: RCV	11.0	(0.3)	10.7	10.8	(0.1)	10.7	(0.0)
Water: Revenue	(7.4)	0.1	(7.3)	(7.3)	0.0	(7.3)	0.0
Waste: RCV	1.0	-	1.0	1.0	0.0	1.0	0.0
Waste: Revenue	1.7	-	1.7	1.7	0.0	1.7	(0.0)
Water: CIS inflation	(71.5)	(1.9)	(73.5)	(72.1)	(1.4)	(73.5)	-
Waste: CIS inflation	(80.8)	-	(80.8)	(80.8)	(0.0)	(80.8)	-
Adjustment to RCV from disposal of land							
Water: Land	(8.3)	-	(8.3)	(8.3)	(0.0)	(8.3)	-
Waste: Land	(10.8)	-	(10.8)	(10.8)	(0.0)	(10.8)	-
Outcome delivery incentive reconciliation adjustments to be applied at PR19							
ODI in-period revenue	118.6	-	118.6	118.4	0.2	118.6	(0.0)
ODI end of period revenue	1.6	1.1	2.7	2.0	0.7	2.7	-
ODI end of period RCV	-	-	-	-	-	-	-
Wholesale total expenditure outperformance sharing							
Water: Totex revenue	23.3	(0.6)	22.7	23.8	(0.9)	22.9	0.3
Water: Totex RCV	86.6	(0.6)	86.0	88.4	(2.6)	85.8	(0.2)
Waste: Totex revenue	(19.8)	-	(19.8)	(19.8)	(0.0)	(19.8)	(0.0)
Waste: Totex RCV	(201.1)	-	(201.1)	(199.8)	(1.3)	(201.1)	(0.0)
Wholesale revenue forecasting incentive mechanism							
Water: WRFIM	(18.2)	3.4	(14.7)	(16.7)	2.0	(14.7)	0.0
Waste: WRFIM	(18.4)	-	(18.4)	(18.4)	(0.1)	(18.4)	-
Reconciliation of household retail revenue							
Residential retail	1.2	(0.0)	1.1	1.2	(0.0)	1.1	-
Service incentive mechanism							
SIM forecast	(18.9)	(0.1)	(19.0)	(18.9)	(0.1)	(19.0)	-
Total incentives and penalties	(210.5)	1.1	(209.4)	(205.7)	(3.7)	(209.4)	0.0

There are a few areas where our approach has resulted in differences of more than £1k compared to the counterfactual. In order of size these are:

1. Totex revenue and RCV adjustments: We've calculated a weighted average PAYG rate for HDC based on DVW and SVT. This results in a slightly higher allocation to revenue (+£265k) and a lower allocation to RCV (-£237k). There is a net increase of £28k for water. This is balanced by slightly lower values for both revenue and the RCV for waste (-£25k in total).
2. WRFIM adjustment for water: Compared to the counterfactual, there is a positive movement of +£25k. This is because following the variation the base revenue figures for 18/19 were based on the allowed revenue in the PR14 Ofwat financial model. These are different from those that would result from the application of PR14 K factors because the PR14 calculation of K was not consistent with the construction of the price limit within the licence. The calculation has been amended in Ofwat's PR19 model.
3. ODI in-period revenue: The separation of performance targets for waste results in a £17k penalty for HDD which would not have occurred if SVT had remained whole as it would have fallen within the cap.

The aggregate impact of all adjustments compared to the counterfactual is +£11k, which we do not consider material. If Ofwat considers it necessary, it would be possible to reduce or eliminate the movement between RCV and revenue (1) by adjusting the PAYG rates from the Final Determination.

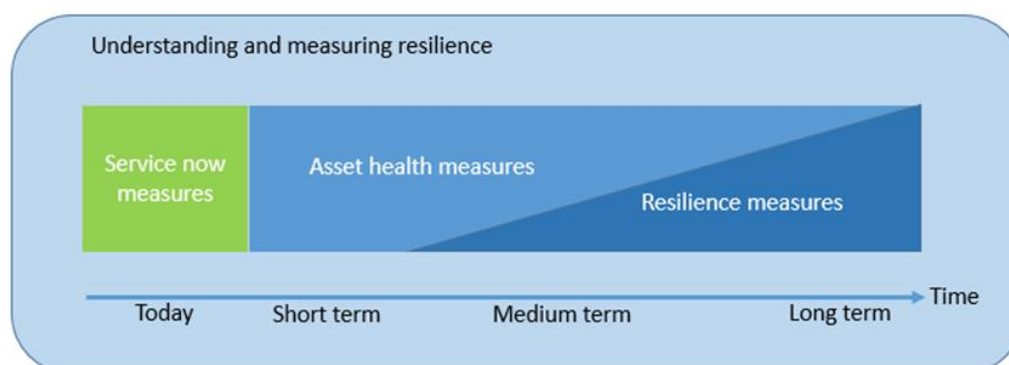
We will continue to work constructively with Ofwat to determine additional requirements in respect of the reconciliation. We believe the pragmatic approach we have used meets Ofwat's needs and is consistent with the letter from Andy Duff dated 28 June 2018.

4.4 Initial assessment of business plans

Reconciling our performance commitments

Our approach to forecasting performance in 2018/19 and 2019/20 has been driven by our internal governance processes. In early 2018, the Strategic Leaders accountable for delivery reviewed projected performance at our weekly loopcells (cross company Executive level meetings to review and challenge performance and delivery plans). These projections were based on subject matter experts and planning analyst guidance from across our performance teams.

We have categorised our measures into three areas – service now, asset health and resilience (as illustrated in the figure below). This approach enables us to see measures covering different time horizons - looking at all these aspects together helps us understand our level of overall resilience.



- Service now metrics provide information on the resilience of services that have immediate impact;
- Asset health metrics capture resilience issues that occur frequently (that is many times per year); and
- Resilience measures which focus on issues that occur far less frequently (e.g. drought), or evolve on a long timescale (e.g. flood risk).

4.4.1 Ensuring transparency of reporting

We submitted a view of our expected performance for 2018/19 and 2019/20 – the final two years of this AMP – to Ofwat in July 2018. Our forecasts were overseen by our internal governance processes, which included scrutiny of delivery plans for each performance commitment at our weekly cross-company executive level oversight meetings. This established process has also been used to review performance during the prolonged warm weather this summer, and has proved critical in understanding and co-ordinating our response. We've triggered a number of activities in response including accelerating investment, establishing a focussed incident team and suspending some routine activities to enable operational response to be prioritised. These activities are having an impact.

Given our commitment to transparency, we've highlighted below those metrics which have been materially impacted by the operating conditions in recent weeks. We have not updated the data tables given the risk of changing audited data at this late stage of the PR19 process.

We've provided a commentary to summarise key changes through the AMP6 period – more detail can be found in our Annual Performance Reports. In the following sections we have used a simple RAG assessment to visualise performance.

Initially we discuss the current and forecast performance for the measures formally part of the Dee Valley Water determination.

Transition from current position (2017/18):

Service now – water	Service now – retail	Assets and Environment	Named schemes
4 PCs of which: 2 are green 1 is in deadband 1 is red	4 PCs of which: 2 are green 2 are red	3 PCs of which: 2 are green 1 is red	2 PCs of which: 1 is complete 1 is on track for delivery



The expected 2019/20 position:

Service now – water	Service now – retail	Assets and Environment	Named schemes
4 PCs of which: 3 are forecast green 1 is forecast in deadband	4 PCs of which: 4 are forecast to be green	3 PCs of which: 3 are forecast to be green	2 PCs of which: 2 are forecast to be complete

In general our performance across all measures has been relatively stable over 2015-20. Within our **Service Now – Water** measures we have met our targets, or been within the expected range of performance indicated by our deadbands, for all measures. The exception to this is our supply interruptions performance in 2016/17 which was significantly impacted by a single large burst event.

We have shown particularly strong performance on both the household and non-household SIM measures of **Service Now – Retail**. In contrast, our ability to drive down waste use through our per capita consumption and water efficiency measure and our customers' perception of us (as measured by customer satisfaction scores) have proven very challenging.

We have a consistently strong performance on most of our **asset and environmental** measures. Despite a small rise in the number of bursts in 2017/18, due in part to the freeze/thaw effect of the cold winter, we have met our targets across these measures with an improving trend in our greenhouse gas emissions.

A particular success over the current AMP is the delivery of our Legacy treatment works replacement project. This is explained in more detail later.

In the following tables, we've shown all performance commitments, including those that are now relevant in the Mid Wales region, and used a simple colour coding system to demonstrate performance compared to our regulatory commitments.

- Green – committed performance level met or exceeded
- Amber – committed performance level missed but within the penalty deadband
- Red – committed performance level missed and outside of any penalty deadband

Service Now – Water measures (£ indicates where an ODI has been triggered)

Code	Definition	Actual Performance			Forecast Performance	
		2015/16	2016/17	2017/18	2018/19	2019/20
A1	Discoloured water contacts	1.32	1.07	0.91 £	0.85 £	0.80 £
A2	Mean zonal compliance	99.95%	99.99%	99.97%	99.97%	99.97%
B1	Average duration of interruptions	0.087 £	0.35 (£)	0.07 £	0.2	0.2
B2	Sustainable economic level of leakage*	85.0	96.5 (£)	92.4 (£)	90.8	90.8

* Reported actuals for 2015/16 and 2016/17 have been restated to reflect household properties only

Service Now – Retail measures (£ indicates where an ODI has been triggered)

Code	Definition	Actual Performance			Forecast Performance	
		2015/16	2016/17	2017/18	2018/19	2019/20
D1	Customers' perception based on market research	80%	77%	73%	>80%	>80%
E1	Per capita consumption and water efficiency	134.87	135.21	136.57	128.37	127.28
E2	SIM	83.42	86.0	86.5	86.5	
F1	Non-household SIM	88.51	90.4	94.0	94.0	94.0

Assets and Environment measures (£ indicates where an ODI has been triggered)

Code	Definition	Actual Performance			Forecast Performance	
		2015/16	2016/17	2017/18	2018/19	2019/20
B3	Security of supply index	100	100	100	100	100
B4	Number of bursts	169 £	209	243	168	155
C1	Gross operational greenhouse gas emissions	9219	8,385	7,709	8,049	7,535

Named schemes (£ indicates where an ODI has been triggered)

Code	Definition	Actual Performance			Forecast Performance	
		2015/16	2016/17	2017/18	2018/19	2019/20
A3	Delivery of the outcomes of the Legacy Treatment Works			Complete		
A4	Service reservoir maintenance schemes				Milestone	Complete

From July 2018 we also have the following commitments to meet in our Mid Wales operating area.

Overview of our water PCs – Mid Wales area (£ indicates where an ODI has been triggered)

Code	Definition	Actual Performance			Forecast Performance	
		2015/16	2016/17	2017/18	2018/19	2019/20
WA1	Number of complaints about drinking water quality				78 (£)	150 (£)
WA2	Compliance with drinking water quality standards				99.97%	99.97%
WA3	Asset stewardship - number of sites with coliform failures (WTWs)				0	0
WB1	Resource efficiency (distribution input per customer)				232	229
WB2	Leakage levels				6.5	5.4
WB3	Speed of response in repairing leaks (% fixed within 24 hours)				24%	25%
WB4	Number of minutes customers go without supply each year				12.5-16.5 (£)*	8.0
WB5	% of customers with resilient supplies (those that benefit from a second source of supply)					29.4%
WB6	Asset stewardship - mains bursts				<149**	<179**
WB7	Customers at risk of low pressure				17	17
WB8	Restrictions on water use				0	0
WC1	Customers rating our services as good value for money (based on tracker survey)				63%	65%
WD2	Asset stewardship - environmental compliance				96.76%	96.76%
WE1	Size of our carbon footprint				2	2
WF1	Improved understanding of our services through education				1,050	1,043
SA1	Number of internal sewer flooding incidents				4	6
SA2	Number of external sewer flooding incidents				21	28
SA4	Asset stewardship - blockages				196	259
SB1	Customers rating our services as good value for money				63%	65%
SC2	The number of category 3 pollution incidents				4	8
SC3	Asset stewardship - environmental compliance				97.67%	97.67%
SC6	Serious pollution incidents				0	0
SC7	Overall environmental performance					Pass
SC8	The number of category 4 pollution incidents				6	12
SD1	Size of our carbon footprint				2	2
SE1	Improved understanding of our services through education				1,050	1,043

* Note that the number of minutes lost to supply was reported as 8.6 minutes in table App5 reported in July 2018. The range shown here is the current estimate as of September 2018 following the hot weather through the summer.

** Due to the increase in burst pipe repairs we have are undertaking during the hot weather, and to target the three-year rolling average leakage reductions, we have revised the number of expected mains bursts for 2018/19 and 2019/20

Code	Definition	Actual Performance			Forecast Performance	
		2015/16	2016/17	2017/18	2018/19	2019/20
RA1	Customer satisfaction with their service (based on a customer survey)				Upper quartile	Upper quartile
RA2	Customers' experience of dealing with us (based on Ofwat's SIM)				85.4	
RA3	Number of customers helped by a review of their tariff and water usage and/or supported by our social fund				335	335
RA4	% of customers who do not pay				2.2	2.2

Outcome Delivery Incentive summary

As part of our Annual Performance Reports each year we have confirmed the outperformance payments and underperformance penalties that are due. We have also identified where we did not consider that it was appropriate to claim the full outperformance payment or increase the underperformance penalty.

Water service

		2015/16	2016/17	2017/18	2018/19	2019/20
Outperformance	Gross	0.026	-	0.0234	0.2429	0.3270
	Adjustment	-	-	-	-	-
Underperformance	Gross	-	(0.0077)	(0.0085)	(0.1824)	(0.0813)
	Adjustment	-	-	(0.0294)	-	-

Wastewater service

		2015/16	2016/17	2017/18	2018/19	2019/20
Outperformance	Gross				0.5522	0.7749
	Adjustment				-	-
	Cap				(0.5192)	(0.7749)
Underperformance	Gross				(0.0146)	-
	Adjustment				-	-

Our wastewater services will breach the overall cap for outperformance payments of 2% of our return on regulated equity. This equates to £0.033m which will be breached during the 2018/19 report year and all outperformance payments from this point forward are not being passed forward in to customers' bills.

4.4.2 Retail performance commitments

In order to forecast the SIM incentive position we have modelled potential approaches Ofwat could take as well as a number of scenarios considering how companies perform in 2017/18 and 2018/4. Our proposal below uses the following assumptions:

- Ofwat continue to use a relative ranking based on average performance rather than adopting a more simplistic approach;
- Ofwat will apply a level of stretch by positioning the deadband at the arithmetic UQ rather than the mean;
- performance is assessed over the four year period 2015/2019, so incentive will also be calculated based on the four years' of retail revenue; and
- companies 2017/18 and 2018/19 performance will follow their individual three year trajectory of improvement/deterioration (excluding Severn Trent and Dee Valley where 2017/18 actuals have been used and stable performance assumed for 2018/19)

Based on this analysis, the summary table below shows the industry and company averages and ranks.

	2015/16	2016/17	2017/18	2018/19	Four year average	Rank
Industry Average	82.5	83.7	84.8	86.0	84.3	
Industry UQ	85.1	86.0	87.2	89.5	86.4	
DVW	83.4	86.0	86.5	86.5	85.6	9
SVT	83.7	83.6	83.2	85.4	84.0	12

In order to determine the incentive value we made the further following assumptions:

- Companies close to the UQ would receive no financial penalty or outperformance payment;
- companies up to 1 standard deviation below the UQ would receive underperformance payments between -1% and -6%; and
- companies greater than 1 standard deviation below the UQ would receive underperformance payments of between -7% and -12%.

We determined that Dee Valley Water would receive a penalty of £0.1m; Severn Trent Water would receive a penalty of -4% equal to £4.2m in 2017/18 prices. These were then apportioned between the new licence regions, Hafren Dyfrdwy and Severn Trent England, in line with the approach confirmed in Ofwat's determination. We have reviewed the sensitivity of our analysis based on 2017/18 actual performance and note that the outcomes were not materially different from that included in the PR14 reconciliation submission; as such no adjustments have been made.

4.5 Legacy Treatment Works

In this section we describe our Legacy Treatment Works programme and provide evidence to demonstrate delivery of the expected outcomes. This is particularly important as we have delivered these through an alternative, more innovative solution compared to our PR14 submission five years ago.

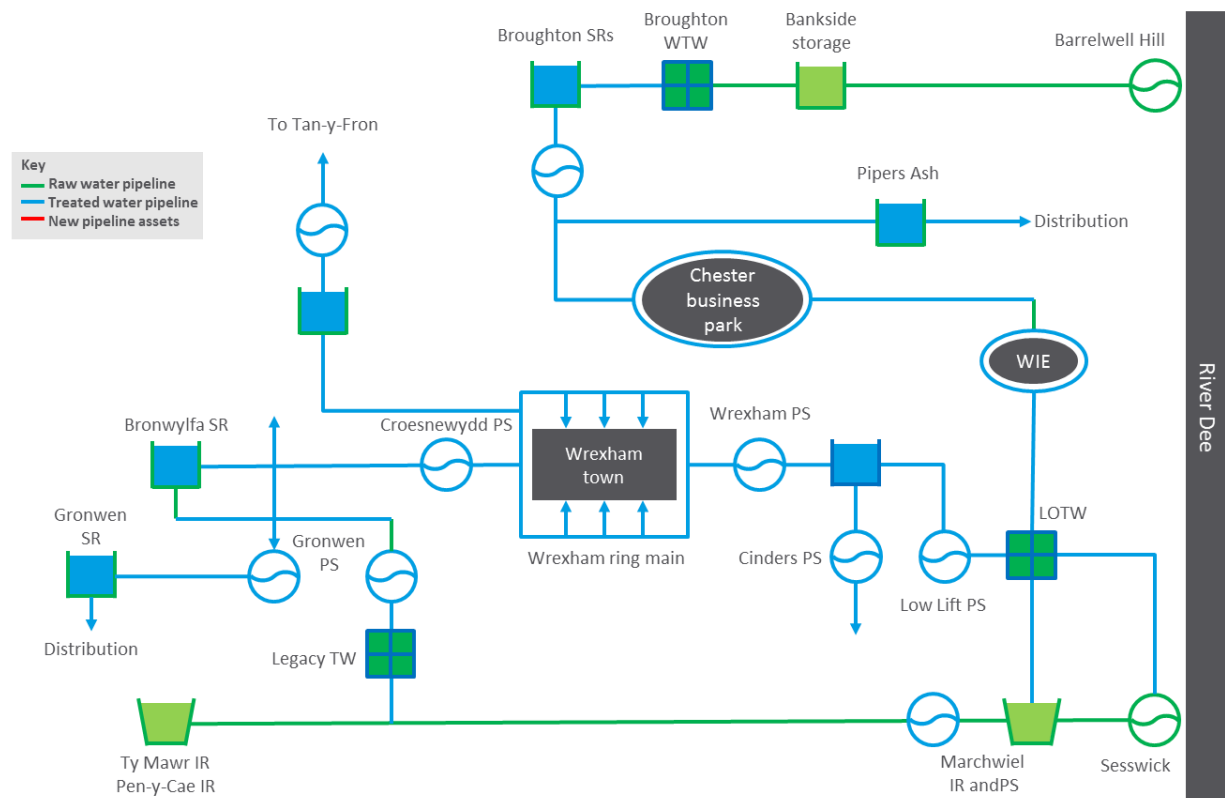
Our alternative approach has been scrutinised by our Customer Challenge Group, the Drinking Water Inspectorate and Natural Resources Wales. Delivery has been subjected to a high level of independent assurance. Ofwat were made aware of the changes in 2015, and we have informed them of completion in March 2018. We can evidence that our customers have received greater benefits through the alternative solution (improved water quality, additional service resilience and reductions in totex) by the agreed date and, as such, penalties relating to timing and non-delivery of this performance commitment do not apply.

In this section, we have used Dee Valley Water (DVW) to reflect where actions were undertaken prior to the company becoming part of the Severn Trent Group.

4.5.1 A3: The performance commitment in the 2014 Final Determination

The performance commitment required completion of improvements at Legacy treatment works. This scheme was covered by the special cost factor claim which provided £12.1m totex (in addition to an implicit allowance of £5.2m, all at 2012/13 prices). Two incentives were put in place – one covering timing (£0.51m/year) and one for non-delivery (£19m). The performance commitment was to be delivered by 2017/18.

Schematic of the system at the time of the PR14 business plan submission



During 2011/12, Legacy overtook Llwyn Onn treatment works in terms of root cause of discolouration contacts.

These were predominantly due to raw water quality issues within the upland reservoirs which had particularly high manganese concentrations.

The increase in discolouration contacts led to an improvement plan being agreed with the Drinking Water Inspectorate, with the key elements being:

- Seasonal manganese issue at Ty Mawr reservoir led to installation of alarmed online manganese monitor at Legacy used for source water selection;
- Mains cleaning rate increased from 50km per year to 70km per year;
- Legacy filter nozzles replaced to improve performance;
- Legacy DAF system upgraded with headers to replace needle valves; and
- Notice agreed for Legacy manganese removal treatment during AMP6 (DVW3160). New notice (DVW3323) for rebuild of treatment works by December 2017.

The last of these were the basis of the PR14 business plan submission.

Exploring alternative options

MWH were commissioned by DVW in late 2014 to provide an assessment of the adequacy of an alternative to the proposals to undertake capital maintenance at Legacy Water Treatment Works as defined in DVW's PR14 Business Plan. The Legacy Alternative Supply proposal consists of:

- Decommissioning Legacy WTW;
- Transferring raw water supplying Legacy WTW to Llwyn Onn WTW using an existing pipeline;
- Constructing a new treated water pipeline and three pumping stations to transfer water from Llwyn Onn WTW to the distribution area previously supplied by Legacy WTW; and
- Utilising existing (3.5 MI/d) and developing new (6.5 MI/d) bulk treated water supplies via neighbouring water companies to supplement DVW supplies during peak demand periods.

DVW undertook an independent study in 2014 which had confirmed that the alternative solution was preferable in terms of availability, reliability and maintainability.

The costs of the alternative were estimated to be £14.1m (i.e. lower than in the PR14 business plan (£18.1m) and lower than assumed in the Final Determination (£17.3m)).

Explaining the benefits of change

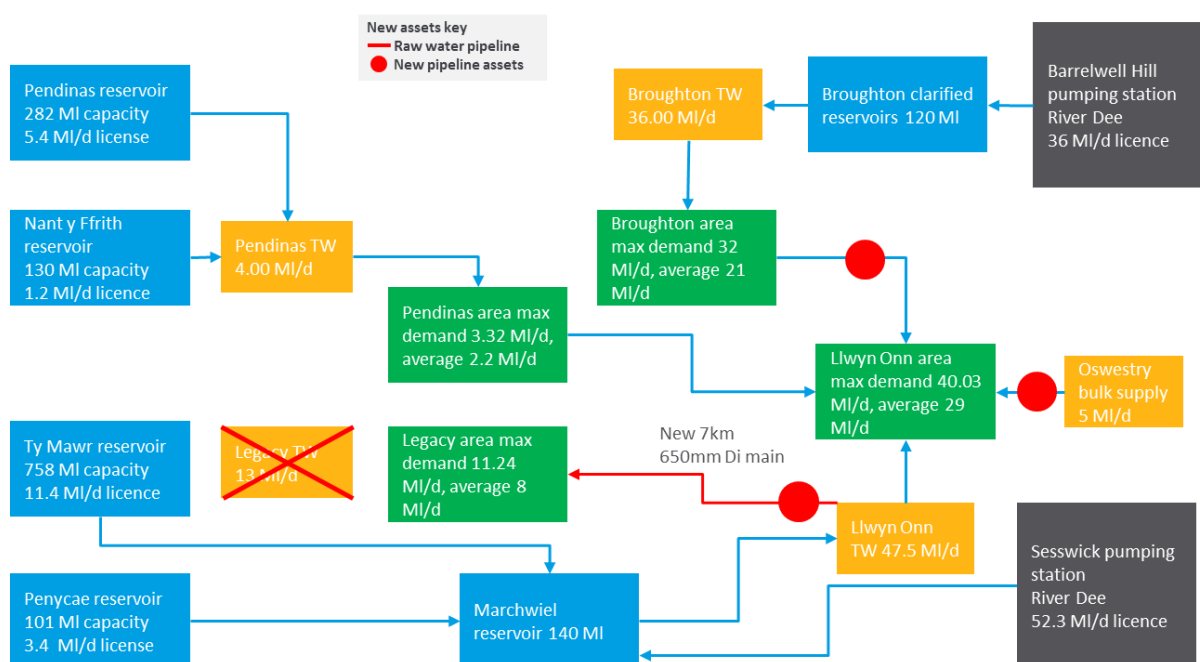
Having established that the alternative solution would offer performance, resilience and cost benefits to customers, DVW shared the proposals with key stakeholders.

DVW met with Ofwat in summer 2015 to explain the drivers behind the change. DVW explained that Legacy treatment works could be decommissioned and investment made instead at Llwyn Onn treatment works to provide proven high quality water to customers in the Legacy supply area. This alternative solution would also provide additional benefits:

- By reinforcing the mains network to deliver available water to the locations required, a more integrated system would be created;
- By enhancing the treatment works at Llwyn Onn and Boughton, further improvements in reliability would be delivered; and
- By improving the level of connectivity with neighbouring water companies, supply resilience would be strengthened.

DVW explained that the alternative solution provided a system solution rather than asset solution, resulted in additional customer benefits and demonstrated effectiveness of the outcomes approach which allowed selection of a more efficient output to address the risk.

DVW presented this asset configuration overview to Ofwat



DVW explained that the Legacy treatment works currently provided around 8MI/d of a theoretical 13 MI/d of distribution input. Across the entire supply area, treatment capacity, excluding Legacy, would be 87.5MI/d, sufficient to meet both average and peak demand. The Oswestry bulk supply provides an additional 5MI/d for increased headroom.

Category	Volume	Average demand 60.2MI/d	Peak demand 86.59MI/d
Raw water storage	1,504 MI	25 days	17 days
Abstraction maximum	109.7 MI/d	Meets average demand	Meets peak demand
Treatment capacity	92.5 MI/d (5MI/d from Oswestry)	Meets average demand	Meets peak demand
Treated water storage	77.46 MI	1.3 days	0.89 days

The alternative design incorporated installation of three pumping stations and the laying of a 7km pipeline to increase the transferable volume in the network from 7.5MI/d to 23.5MI/d. This would increase the flexibility of the system to move water around and respond to demand, increasing the resilience of our network to shocks:

Transfer volumes	Current system max MI/d	Proposed system max MI/d
Broughton to Llwyn Onn	1	6
Llwyn Onn to Legacy	4.5	12
Pendinas to Llwyn Onn	0.5	0.5
Legacy to Llwyn Onn	1	N/A
Oswestry to Llwyn Onn	0.5	5
Total	7.5	23.5

DVW also presented their Availability Reliability Maintainability (ARM) analysis, produced by a third party, which demonstrated the increased benefits of the alternative (shown as option 3):

Modelling Case	Overall LO Resource Zone		
	Predicted Average Flow	Availability %	Unavailability %
Base Case – existing systems	50.43 MI/d	99.93%	0.070%
Option 1 – Replace Legacy TW like for like	50.43 MI/d	99.93%	0.070%
Option 2 – Replace Legacy TW plus gravity feed to Bronwylfa SR	50.43 MI/d	99.93%	0.070%
Option 3 – Remove Legacy, upgrade LOTW and bulk imports and lay trunk main from LOTW to Bronwylfa SR	50.45 MI/d	99.97%	0.030%

The alternative solution was subjected to detailed scrutiny by the Drinking Water Inspectorate to ensure that risks in Notice DVW3323 (manganese) and DVW3318 (lead) at Legacy were adequately addressed. A number of challenges were raised during this scrutiny to ensure customers received at least the same level of protection as the original solution would offer. In particular, the DWI challenged:

DWI Challenge: Does the scheme achieve the same outcome in the same timescale as the original?

- Company response: Uses proven process at Llwyn Onn to reduce manganese risk and will be achieved at the same timescale or quicker than the original solution.

DWI Challenge: Demonstration that alternative does not reduce our resilience?

- Company response: Third party ARM analysis and MWH Legacy alternative supply assessment confirmed increased resilience.

DWI Challenge: Had we considered all available options, such as refurbishment using a whole life cost approach?

- Company response: NPV report carried out examining refurbishment options compared to original and proposed solution. Confirmed that proposed was cost favourable.

DWI Challenge: Llwyn Onn service reservoir is being rebuilt under notice DVW3373, scheduled for completion in 2019, can we fast-track this to match 2017 Legacy scheme date?

- Company response: Agreed that service reservoir rebuild will be brought forward to align with overall Legacy solution.

The DWI provided a letter of support with requirements confirmed in legal instruments.

The alternative solution was also subjected to scrutiny from the CCG, NRW and the Welsh Government.

Assuring delivery of the outcome

Legacy treatment works ceased to be in operational use on 8 March 2018. We notified Ofwat of this in March 2018, highlighting that we had delivered an alternative solution. We queried whether a formal update to the Final Determination was required for completeness, but noted that we considered the outcome as delivered. The total cost of delivery was £9.2m.

We subjected delivery to independent assurance from our assurers, Black & Veatch. They concluded that:

Although the ODI was clearly achieved, we noted some shortcomings in the archiving of records certifying the completion of elements of the work and so would support a Confidence Grade of B1.

Our assurers reviewed each element of work necessary to allow the abandonment of Legacy WTW. The following is an extract from their assurance report:

“Llwyn Onn Treated Water Tank Rebuild: The existing treated water tank dated from 1942. Ultimately, two new service reservoirs (SRs) will be built on the Llwyn Onn site, each with two compartments of 6 megalitre capacity. Only the first of these needed to be complete to allow Legacy WTW to be abandoned and we confirmed from the Plant in Use (PIU) certificate that this was complete and in service by 31.12.17. The existing treated water tank was then abandoned (meeting the DWI undertaking date of 31.12.17 for this element) and demolished and work is underway on the second SR, which occupies the same footprint, but this is not required for the achievement of ODI A3.”

Wrexham Pumping Station Upgrade: This pumping station is on the Llwyn Onn site. The work was included in the SR contract, described above, and we confirmed from the PIU that it was complete and in service by 31.12.17.

Bronwylfa Pumping Station: Work on this pumping station was also included in the SR contract and was completed on 16.12.17. However when the pumping station was switched on, a burst resulted in the link main. The resolution of this and other problems with the link main meant that the pumping station could not be put fully into use until 8.3.18. However we confirmed from the PIU that this was complete and available for use by 31.12.17.

Llwyn Onn Power: An assessment of power needs was carried out by the contractor for the SR. This concluded that power feeds to the site were adequate, but that improvements to the temporary generator arrangements, a new generator and switchgear were required to meet Bronwylfa pumping demand at peak flows. We confirmed that this was commissioned on 14.7.17 and saw the PIU, dated 31.12.17.

Llwyn Onn to Bronwylfa SR Link Main: Laying of the 600 mm diameter link main from Bronwylfa SR to Llwyn Onn by DWV's own Below-ground Operations section was completed by mid-December 2017. However when the Bronwylfa pumps were switched on to test the main, a burst resulted, due to inadequate thrust restraint. Further problems were subsequently encountered with the commissioning procedure and debris found in the SR necessitated re-swabbing and re-disinfection. These were the main reason the ODI date was missed. The link main was commissioned on 8.3.18, on the date Legacy WTW was disconnected and we confirmed this date from the PIU.

Bronwylfa SR Chlorination Improvements: We confirmed from sectional completion certificates that these were physically completed on 20.12.17. However they could not be commissioned until 8.3.18, due to delays in pipeline commissioning. We saw the PIU, dated 28.3.18.

Vyrnwy and Hollybush Pipework Modifications: These modifications were carried out by Networks. We confirmed from the PIUs that the UU cross-connection was completed on 30.10.17 and that to Dŵr Cymru Welsh Water (DCWW) on 21.3.18.

As a result of the checks described above and e-mail correspondence from the Head of Engineering and Operations, we confirmed that Legacy WTW was disconnected from the network and the ODI achieved on 8.3.18. At the time of audit, we noted that paperwork certifying the completion of some elements of the work could not readily be found. This was subsequently provided but we recommend that procedures are introduced to ensure timely completion and archiving in future.

4.7 Service Reservoir water quality risk management schemes

In this section we describe progress on our programme and provide evidence to demonstrate we are on track for successful delivery of the expected outcomes by 2019/20.

4.7.1 A4: The performance commitment in the 2014 Final Determination

The performance commitment required completion of improvements at four schemes by 2019/20. The programme was covered by the special cost factor claim which provided £5.9m totex (in addition to an implicit allowance of £2.4m, all at 2012/13 prices). Four incentives were put in place covering each scheme – roof membranes at eight sites, Berwyn SR, Llwyn Onn treated water tank and Sugn-y-Pwll SR. We have seen increases in the cost pressure for this programme as outlined below:

Llwyn Onn – during the detailed design phase we identified an opportunity to increase the level of resilience to supply the service reservoir offers. By increasing the storage capacity we are able to reduce the volume of water treated at the works for a longer period of time without risking the availability of water for our customers. Critically, this facilitates longer periods where key maintenance operations can be carried out. This change in scope added around £1.5m to the project costs. Additionally, we encountered some complex pipeline construction issues due to the availability of land near the site which would have aided the construction. As such we saw an increase in the costs due to the methods we had to deploy, however we worked to manage this cost pressure and mitigated the overall impact where we could.

Sugn-y-Pwll – we encountered some significant issues in obtaining permission to purchase adjacent land to the service reservoir which would have allowed the offline construction of the new service reservoir. Ultimately we had to revise our approach and rented sufficient land to build a temporary 600 cubic meter tank to store water whilst the existing reservoir was decommissions and a new, permanent structure was constructed. Whilst the scope of the final asset is in line with the original proposal, we saw significant cost pressures and overheads through the negotiation and redesign stages of around £0.5m.

Berwyn – the final solution delivered included a relocation of the asset to Llangollen; this is primarily to aid future supply requirements and improve resilience in the distribution network. However, our forecast assumptions had assumed the new asset would be constructed on land we already owned and require minimal additional pipework to connect to the existing system. The revised location required land purchases, construction of road access and a new main to be laid to connect to the distribution network adding around £1m to the project costs. It does, however, provide an asset which better integrates in to the future network requirements and helps secure supply distribution for the future.

Assuring delivery of the outcome

We subjected delivery to independent assurance from our assurers, Black & Veatch. They concluded that:

“We concluded from our checks that good progress has been made and there is good confidence in meeting the ODI deadline, barring serious unforeseen circumstances.”

Our assurers reviewed each element of work necessary to deliver the performance commitment. The following is an extract from their assurance report:

“Replacement of Llwyn Onn Treated Water Tank: The existing treated water tank dated from 1942. It is being replaced by two new SRs on the Llwyn Onn site, each with two compartments of 6 megalitre capacity. The first of these was completed to allow Legacy WTW to be abandoned and we confirmed during our audit of ODI A3 – Legacy Abandonment that this was complete and in service on 16.12.17. This provided the same capacity as the useable capacity of the existing treated water tank and thus allowed achievement of the DWI undertaking date for treated water tank replacement. The existing treated water tank was then abandoned and demolished and work is underway on the second SR, which occupies the same footprint. The pouring of concrete has begun and we confirmed from the contractual programme that construction is programmed to be complete by October 2018, well before the ODI date of 31.3.20.

Sugn-y-Pwll SR and Berwyn SR Rebuilds: These SRs are linked, as Sugn-y-Pwll feeds Berwyn. Tenders have been received covering the work needed on both sites. These have been reviewed and a tender recommended for acceptance. Acceptance is expected to take place before the end of March 2018.

Sugn-y-Pwll: This SR is a converted raw water tank with a steel roof which also suffers ingress through the floor. It proved impossible to purchase adjacent land for the construction of a new SR, so it will be necessary to construct the new SR within the footprint of the existing tank. Land has been rented and a temporary tank (Tank A) will be constructed on it to allow the demolition of the existing tank and the construction of the new SR. Tank A is programmed to be in commission by 15.8.18. The existing tank will then be demolished and the new SR constructed in post-tensioned precast concrete, to be in commission by 18.2.19. We confirmed these dates from the tender acceptance report. Completion is therefore programmed to be well before the ODI date of 31.3.20. DWI has confirmed that achievement of the undertaking date will result from the abandonment of the old tank. This is programmed for 15.8.18, before the undertaking date of 31.12.18.

Berwyn: This SR is 142 years old and is known to leak through the floor. Following modelling, it is planned to rebuild this reservoir on a new site nearer to Llangollen, the main area of supply, where it will in future be known as Llangollen SR. Work is included in the same tender as Sugn-y-Pwll SR. The contract requires the new SR to be commissioned by 9.9.19, allowing Berwyn SR to be disconnected before the DWI undertaking date of 31.12.19 and the ODI date of 31.3.20. We confirmed these dates from the tender acceptance report.

Service Reservoir Membranes: At our 2016 audit we inspected the relevant portions of the December 2014 Business Plan (BP) and confirmed the components of the ODI measure. The BP included funding for the provision of roof membranes at the following SRs: Cinders, Gilfach, Gronwen, Higher Berse, Penrhos, Tan-y-fron, Boughton Garden Reservoir and Boughton Circular Reservoir. This situation on these sites is as follows:

- Cinders – New membrane fitted in 2014 and has passed a flood test
- Gilfach – Abandoned
- Gronwen - Currently out of service. A new membrane has been fitted. Expected to be back in service during April 2018.
- Higher Berse – Passed a flood test in 2014 and membrane replacement deferred.
- Penrhos – Membrane replaced.
- Tan-y-fron – Membrane replaced in 2015 and passed a flood test in 2016
- Boughton Circular – abandoned
- Boughton Garden – Passed a flood test in 2015 and membrane replacement deferred

We inspected the company's service reservoir risk register (version 7). The register lists SRs in ascending order of risk likelihood and attention is focussed on those having the greatest risk scores. These are generally those which have never been flood-tested, have gone the longest since the last draw-down inspection and have the oldest membranes. The company has a programme, consistent with the agreement reached with DWI, to inspect all of its SRs and to flood test those which have never had such a test. Nine remained untested at the time of our 2017 audit. This figure has now reduced to four. These are:

- Sugn-y-Pwll and Berwyn - to be abandoned
- Higher Wilford and Llansysillio (Rhewl) - testing programmed for 2019, but could be abandoned

We saw the company's letter to DWI dated 23.6.16 confirming the revised programme. This was subsequently agreed by DWI.

Each reservoir has a drain-down procedure. There is a procedure for carrying out an inspection and flood test. All inspection and testing is carried out by DVW resources, but necessary remedial work, including membranes, will be carried out by a term contractor."

4.8 Other adjustments

4.8.1 Totex sharing

Expenditure to date: As set out in the APR, total cumulative expenditure (restated to 2012/13 price base) is £7.2m (10.8%) lower than allowed in the FD menu.

Differences between actual and allowed totex

Totex in £m at 12/13 prices	2015/16	Cumulative to 16/17	Cumulative to 17/18
Adjusted Actual totex (menu)	15.327	34.285	59.284
FD menu assumptions	20.900	45.561	66.439
Total variance	-5.573	-11.276	-7.155
	-26.7%	-24.8%	-10.8%

The outperformance to date can largely be attributed the benefits from the alternative Legacy scheme, where total investment of £8.4m (£9.2m outturn) compares to £17.3m assumed in the FD. A timing adjustment had been included in 2016/17 to reflect slower than expected progress. This was reversed in 2017/18 as the outcome was successfully delivered on time.

There have been cost pressures eroding this outperformance including around £2-3m more on distribution service reservoirs, around £1m more on raw water reservoirs and additional investment on instrumentation in the network and cyber security.

4.8.3 Wholesale Revenue Forecasting Incentive Mechanism

Dee Valley under-collected against allowed wholesale revenue, particularly in the first year of the AMP (5.6%). Because DVW did not accept the licence modification allowing for symmetrical in-period corrections, these amounts are all carried forward to AMP7. Water revenue for Hafren Dyfrdwy will include an upward adjustment to reflect this.

At this point in the year, we are not forecasting a variance against our revenue controls in 18/19. Our charges were based on central estimates of properties, volumes and capital income; unless there were very strong trends away from these values at the end of Q1 we would not anticipate a variance. Likewise, our charges for 19/20 will be set with the aim of recovering revenue in line with the determination.

Over the course of AMP6 to date, Severn Trent generally collected more than the amount assumed in the final determination. The primary driver has been capital income. Corrections for these variances have been made through downward adjustments to charges in 17/18 and 18/19 (the latter of which impact on charges for Hafren Dyfrdwy customers in Mid Wales). There is a mixed picture for 19/20 where Severn Trent under collected waste charges in 17/18 and this will result in an upward movement in waste charges.

4.8.4 Land sales

As with other incentives, the land sales adjustment for Hafren Dyfrdwy reflects the performance of both Dee Valley and Severn Trent, ensuring that customers receive a share of the benefit from sales by SVT and DVW.

When SVT net proceeds from land sales for 2017/18 were collated, an error in the SVT 2016/17 APR submission was identified. The figures had been understated by £2.0m because the list of disposals was not complete. The corrected numbers are reflected in App9 for both HDD and SVE.

We note here that there were no land sales for Dee Valley Water in 2014/15 as reported in the Annual Performance Report; the value originally reported to Ofwat in July 2018 in table App9 was incorrect and has been corrected as part of this submission to align with the APR15 value.

4.8.5 PR09 Legacy Adjustments

We have reflected the values published by Ofwat in December 2017. As with other adjustments relating to the legacy companies, we have allocated these values between HDD and SVE.

Chapter 5

Resilience in the round

Securing long term resilience

5.0 Resilience in the round

5.1 Overview

Our customers expect us to deliver a reliable service 24 hours a day, 365 days a year, and to plan and take decisions that mean we can do this reliably into the future at a price that is affordable for all.

They also expect us to be around for the long term and to operate in a responsible manner, both financially and with regard to corporate governance. The service we provide is necessary for life and, when encouraged to consider these issues, customers quickly express the view that a strong, reliable and responsible company is required to deal with these issues both now and for future generations.

As a new business we have a unique opportunity to take stock of the shocks and stresses that could affect our ability to provide services and to listen to and understand the expectations of our customers and stakeholders. This has allowed us to identify gaps between the level of resilience inherent in our business today and the optimum level to meet future needs.

Our overall aim is to make decisions that would have been taken with the benefit of hindsight.

Aspects of resilience in the round feature in every chapter of our plan. In this chapter, we explain the overall approach, summarise the key findings and set out some examples to illustrate them. The specific evidence setting out the risks, customer and stakeholder views and any planned mitigations are included in the relevant outcome chapters. This chapter sets out:

- the importance of resilience to our customers and stakeholders;
- our approach to identifying and assessing risks and opportunities and a summary of the findings;
- our approach to understanding how resilient we are now to establish a baseline and monitoring approach;
- the evidence we have gathered to establish what the optimum level of resilience is;
- our approach to considering and appraising short, medium and long term interventions to deliver a resilient in the round service; and
- our continuous improvement process and continuation of our co-creation and co-delivery approach.

5.1.1 Summary response to the Initial Assessment of Business Plan (IABP) tests

The key responses to the IABP tests are summarised in table 1 and the supporting evidence is set out throughout this chapter.

Table 1: Headlines against IABP tests

LR 1	How well has the company used the best available evidence to objectively assess and prioritise the diverse range of risks and consequences of disruptions to its systems and services, and engaged effectively with customers on its assessment of these risks and consequences?	<p>-We have used our understanding of our assets and systems combined with external data and understanding of the broader challenges facing us and our communities over the long term. We have carried out hydraulic assessments of flood risk and drought risk</p> <p>- We have embraced the requirements of the Well-being of Future Generations (Wales) Act and are forming relationships with organisations who all have a role to play in securing long-term resilience for the communities we serve.</p> <p>- We have talked to our existing and future customers about the biggest long term challenges and our plan reflects their views on how they expect us to balance these challenges with their bills today.</p>
LR 2	How well has the company objectively assessed the full range of mitigation options and selected the solutions that represent the best value for money over the long term, and has support from customers?	<p>-We have assessed a wide range of options to meet all the challenges in our plan, but the main evidence presented focuses on the cost adjustment claims in appendix 4. In each case we have evaluated a wide variety of responses to the resilience challenges we face and ensured that our plan reflects the most cost beneficial solutions.</p> <p>- We are not proposing to invest to improve resilience in all areas - only where there is sufficient compelling evidence that now is the optimum time. Instead we are improving our understanding of the uncertainty of future trends and establishing tools and data collection so that we will know when action is needed.</p>

Because resilience covers such a wide spectrum, to assist the navigation throughout our plan we have also picked out the highlights of how our approach supports the key PR19 themes.

Innovation	Affordability	Great customer service
<p>We had an open and frank conversation with current and future customers to expose and debate considerations of intergenerational fairness. Research agencies told us this was an innovative approach to almost facilitate customers' conversations with each other.</p> <p>We are looking for innovative ways of meeting future challenges. During AMP6 we have been piloting a low energy sewage treatment process that can offer significant cost saving without compromising environmental compliance. A case study is included in chapter 7 Markets and Innovation.</p>	<p>We have worked in a collaborative way seeking partnerships wherever possible to both improve the holistic nature of the solution and to share the costs. A good example is the Heritage Lottery funding to enhance biodiversity and well-being at Lake Vyrnwy.</p> <p>We are developing an adaptive planning approach, particularly through the development of metrics to monitor the impact of shocks and stresses so that we can more confidently predict the trigger point for investment. This will allow us to minimise large investment spikes that particularly affect small companies.</p>	<p>We already have a resilient water supply system and in North Wales have managed to avoid any long duration interruptions (>12hours) despite extreme temperatures (during the recent freeze thaw and drought), but we need to do more to improve the response and recovery aspects of our resilience capabilities. This will be a focus over the next five years and a key part of delivering the 38% improvement in supply interruptions.</p>

5.1.2 We have engaged with customers and stakeholders

It is really important to engage with customers and stakeholders on resilience for three key reasons:

- because of its potential impact on affordability;
- because we need to take some very difficult decisions about pace of investment that require us to answer questions about intergenerational fairness; and
- because customers and stakeholders need to be part of understanding the problem, finding the best solution and jointly delivering it.

We had a general discussion with customers about their expectations of our role, specifically in terms of planning for the future and then we focused on the long term challenges that will be a continuing component of their bill for many years to come – specifically investment on reservoirs (raw and treated) and reducing lead in drinking water.

More detail is provided in section 5.2 below but the overriding message was that customers expect us to take a proactive or mid-ground stance in regard to maintaining our assets to a high standard. A reactive investment position is not acceptable because water is such an essential service. Customers were more relaxed about service being disrupted because of one-off incidents or things they saw as acts of God, but were intolerant of service failure as a result of asset or company failure. They also raised lots of questions about the fairest way to pay to prepare for the future and found the relationship between general taxation and costs covered by charges like utility bills very confusing.

We have considered and used the insights from the wide range of conversations in the development of the plan, but there are two key learnings that are particularly relevant to shaping the way that we will be approaching resilience going forwards:

- We learnt a lot about how to talk to customers about this subject and found that being too open ended with the questions actually unsettled them and gave them concerns that we didn't have a view on the required long term investment. We learnt from this and in the subsequent workshop presented the range of options that we were considering and found that the discussion was much more constructive and positive.
- We need to be more transparent about the responsibility and sharing of the costs. Collaboration is at the heart of our plan and policy in Wales overall, which allows more benefits to be delivered for an overall lower cost. However that does also add confusion and a lack of transparency about fair share contributions. Having early sight of this customer concern as we are setting up these partnerships means we can establish a transparent processes and reporting of the contributions that our customers are making, the benefits they will see and why we think it is fair. This will also contribute to our outcome on being a company you can trust.

5.1.3 Alignment with wider policy and ambition in Wales

Legislation and policy in Wales has been developed with sustainability and resilience at its heart. Chapter 1 sets out how we are aligning ourselves and being guided by the broader ambition in Wales.

One of the ten recommendations in the resilience task and finish report was to look at resilience at both a regional and national level. There are several routes to enable us to do this effectively, some are more established than others:

Water Resource Management planning (WRMP) process

Our final WRMP will be based on the new licence boundary and already considers the role for and resilience benefits of water trading. As set out in our chapter 6.4, Water always there when you need it, we are considering the long term role of Hafren Dyfrdwy in the national water resources challenges. We are investigating how we can maximise the opportunity for our customers whilst safeguarding the environment and security of supplies into the future.

Environmental obligations

In chapter 1 we set out how we are contributing and complying with environmental legislation and ambition. NRW have published a report, SoNNaR which sets out the challenges in Wales. We are fully engaged in the process that NRW are leading to produce area statements which will identify the environmental priorities for each area within Wales. This enables us to see clearly what our contribution is to the overall ambition.

Well-being of Future Generations (Wales) Act

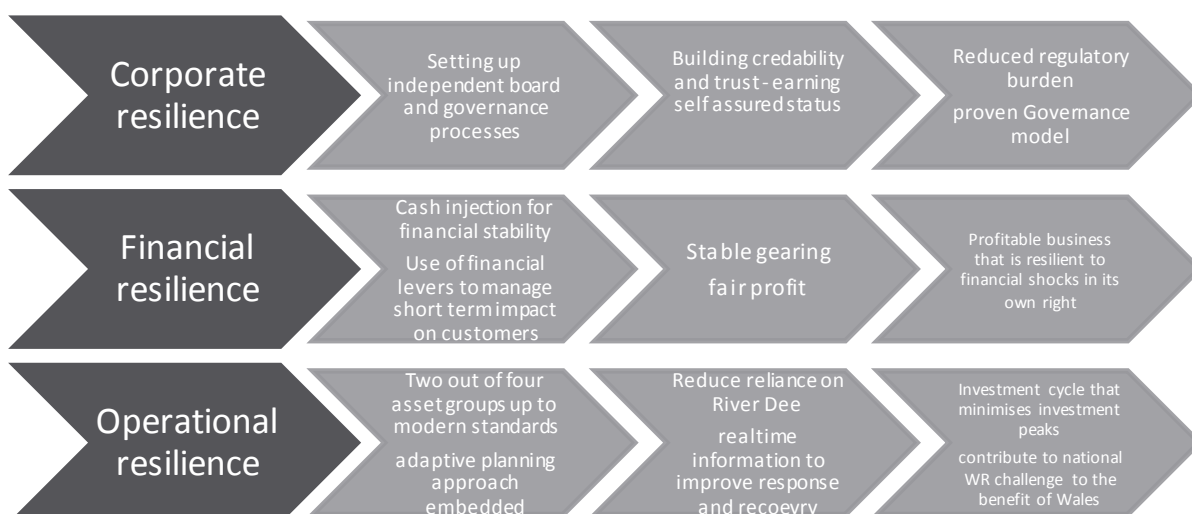
In chapter 1 we also set out how we are contributing to the well-being goals and sustainability principles set out in this Act. This is a pioneering piece of legislation that helps all organisations contributing to public life to see how they can contribute to the bigger picture. In chapter 6 we also include details of a review we have carried out to understand how we can monitor our contributions to the 45 national well-being indicators.

5.1.4 Summary of our long term plan

We have built on many existing business as usual approaches to identify and evaluate risks. We have applied good practice tools but made them specific to our business and region. This approach is set out in more detail in section 5.3.

Based on our analysis, discussions with colleagues, customers and stakeholders and inspired by Welsh policy ambition, we have set out the short, medium and long term developments that will help us ensure long term resilience. Having a plan is important but having one that allows adaptive planning is more important and section 5.4 sets out the monitoring framework we have and will continue to develop, refine and adapt to make sure we are tracking trends and periodically assessing whether our plans need to change. We have reviewed and considered how the growing research and guidance on this subject can be used to improve our approach and resilience. Our approach considers the findings of this review and sets out how we have adapted it to our assets, customers and systems. Section 5.5 sets out the level of resilience our customers and stakeholders want and expect.

In deciding the level of investment and activity for the next five years we have considered a broad range of options and evaluated the risks and benefits through the resilience in the round lens – this is set out in section 5.6. Our AMP7 plan includes around £1.5 million (see line 14 of data table WS2) investment specifically to enhance our resilience in the next five years, but this low materiality masks the step change in approach we are making to fully embrace and join up our resilience thinking and long term plans. We have agreed with customers to spend their money on known and robustly quantified risks, but we are spending time ensuring all decisions are made through the resilience in the round lens.



5.1.5 This business case is supported by technical appendices

In addition to this narrative further supporting information is presented in the following appendix

Appendix 7	Securing long term resilience – Financial Viability Statement
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5.2 We have established the importance of resilience to our customers and stakeholders and what it means to them in practice

5.2.1 Customers

Customers see the provision of water and wastewater services as a basic need, and failure to provide a consistent service erodes trust and generates dissatisfaction. Customers told us, through our research, that in many instances they take for granted the provision of an essential public service until it is not there.

And, while customers tell us that they have some tolerance for failures that are beyond our control, such as landslips, failings in continuity of our service due to our own assets failing is deemed unacceptable. When things go wrong, customers expect us to be able to resolve the issue in an appropriate timescale and to be aware of their personal needs. Our customers also tell us we need to do more to provide alternative supplies in the event of an interruption and keep them well informed.

Discussing resilience and risk with customers is challenging as these are topics which are far from customers' conscious thought. We found that low levels of service disruption have given customers high levels of confidence in our resilience and our service, and an assumption that we have plans in place for disruptive events. It is only by raising awareness with customers through deliberative research that we have been able to probe their views more deeply. Customers have made comments including:

"It's important to speak in layman's terms – you are really just talking about planning for the future"

"Shouldn't you just put money aside to deal with these things?"

"You can't really plan for everything, people understand if it's out of your control"

"Companies just make up horror stories to get our money"

Our research identifies that customers can instinctively be 'risk averse' - both for our business and themselves. For example, when discussing resilience and risk, initially customers felt we should anticipate a challenge or disruption (i.e. plan to avoid it) as well as prepare a response for when things go wrong (i.e. recover from it). When probed further, they realise that some low probability events are difficult and expensive to prepare for.

When we talked to them about the specific challenges facing service in the next five years customers have supported our investment proposals and expect us to take action, with between 85% and 92% of customers finding our proposals acceptable or wanting us to do more to reduce risks faster.

Our research also gave us insights on how customers feel about factors that affect our financial and corporate resilience.

- Amongst some, trust in the water company scores declined by the end of the discussion, mostly due to scepticism around where investment would be spent versus going into shareholders' pockets. A few also lost some confidence in the company after discussing some of the scenarios, as they felt the company should have already planned for these. We need to be more transparent about investment and how costs and incentives are shared.
- Customers who were less aware of the acquisition were originally sceptical about the thought of losing a local company but were reassured when we explained how our licence was focused entirely on the region in Wales. Ensuring customers understand this will help us build trust and confidence which in turn improves our corporate resilience.

5.2.2 Stakeholders

We talked to stakeholders about our long term challenges and then asked them about theirs. We carried out an online questionnaire and we also held several workshops to allow face to face discussion and debate. This was an important part of getting to know our stakeholders in Wales. The main forms of engagement include:

- Launch the public consultation process for our WRMP
- Online questionnaire, summarising our challenges and asking for theirs
- Stakeholder workshop on the environment (specifically covering WRMP and biodiversity duty)
- Stakeholder workshop on how to reduce lead and work towards the Welsh Government's ambition of a lead free Wales
- Bilaterals with the DWI in particular to discuss our May submission on long term management of drinking water quality (included in appendix 9 for completeness, but highlights brought out in outcome narrative 6.3 Water that is good to drink).

We have created a stakeholder compendium to log the findings and the key areas of overlap are:

- land use change;
- meeting the industry challenge of water resources and climate change;
- implications of Brexit;
- pollution and specifically diffuse pollution;
- poverty and the impact on affordability; and
- surface water management and flooding

Talking to stakeholders about our WRMP was an area where we received challenge from our CCG. They were concerned that the water resource plan in Mid Wales had not been sufficiently discussed with stakeholders. We accepted this challenge and recognised that it was a result of the timing of the licence change and the fact that the Mid Wales zones were still embedded in the Severn Trent WRMP. We responded to this challenge by providing an update on the water resource picture and discussing overlaps and asking for comments at a workshop in April 2018. Our CCG were satisfied with our response.

5.3 Our approach to identifying and assessing risks and opportunities

In an ever more complex and less certain world, we need to view resilience in its broadest sense, and ensure that our operational, governance and financial systems and processes are robust to external shocks and stresses. We are in a unique position of creating a new business and so we have taken this opportunity to review and assess risks and opportunities.

5.3.1 Establishing service failures that could occur if we are not resilient

We think it is important to understand the broad range of ways service failures could occur now or in the future. Starting with this step and not jumping straight into the shocks and stresses is an important mind-set shift, as the difficulty with all risk assessments is that we are limited by our own imagination (specifically past experience) and considering the ultimate consequences opens up our thinking.

Consequence/ service failure
Fail to gain/ retain trust and confidence
Fail to meet customer expectations
Fail to protect public health
Fail to protect public safety and well-being
Fail to protect the environment
Fail to protect our assets
Fail to comply with legislation

5.3.2 Establishing shocks and stresses that could cause service failure

We have considered both the sudden shocks and also the factors that stress our systems, which over time could also lead to service failures (in the broadest sense).

Review of past observations – includes a review of root cause analysis, near misses and data such as serviceability measures where we have a long time series of data.

We have carried out a desk top review of the following information sources to help us understand the types of events or issues that have caused (or nearly caused) service failures in the past:

- Regulatory feedback (for example previous final determinations, responses to our WRMP, annual compliance assessment of our company monitoring framework)
- Credit rating history, financial reports and city commentary on the new licence and on the previous ownership performance of both Dee Valley and Severn Trent.
- Review of the Severn Trent and Dee Valley corporate risk registers (this is the highest level risks that are reviewed at Board level).
- Annual performance reports (previously June Returns) for information about service failures. The PR14 Ofwat Serviceability true up spreadsheets were also a useful source to see the regulator's assessment of performance trends.
- Wherever possible, for any significant incidents (e.g. trend in the durations of supply interruptions) the incident report was reviewed.
- Review of internal risk registers.
- Review of the existing failure modes and effects analysis (FMEA) for Dee Valley water treatment works but in many cases these need to be updated to reflect changes to the assets and configurations as they have not been updated since 2013.
- Review with experienced colleagues from the Dee Valley and Severn Trent operational teams. Both teams have employees with 25 year plus service, which means they have excellent understanding of previous issues.
- Desk top review of the well-publicised service failings of recent times (to ensure we are also learning from others).

All of the shocks and stresses that we identified fall into one or more of the following five categories. The categorisations are not essential but they are useful for communicating internally and useful shorthand when testing our responses and understanding how well we measure and observe the full breadth of issues.

- **Damage** - external events that can affect assets, processes and resources
- **Deterioration** - changes in the performance of assets and processes over time
- **Demand** - changes to external but predictable demands around which the system is constructed
- **Human** - individual errors or systemic deficiencies that lead to failures and poor performance
- **Policy** - impacts of changes to legislation or regulation

Horizon scanning for the future

In many areas the past is a good guide to the future and, in particular, for stresses that build over time, the past is an essential starting point. But we are mindful that we need to consider how the future might be different and not be constrained by history.

To do this we held a series of workshops (both with Severn Trent colleagues and Dee Valley colleagues) to establish what our employees think are the biggest challenges that we need to meet to continue to deliver service to customers.

The internal workshops were designed to expose areas where we face new or emerging challenges. Around 20 DVW employees (prior to the acquisition around 150 Severn Trent colleagues carried out the same exercise) attended the sessions and were asked to describe their view of the future challenges. Over 100 challenges were raised, reviewed and categorised into the following themes:

- Maintenance.
- Legislation/policy.
- Standards/compliance.
- Resilience.
- Data quality / information.
- Other.

We have used this information to update our driver trees. Driver trees are at the heart of our asset management approach, they are a map showing all of the factors that affect successful delivery of our customer outcomes. One of the practical changes of taking a broader view of resilience is that we have considered the additional factors of success in the driver tree that are related to financial and corporate resilience. Driver trees are explained in more detail in chapter 6 and then included in each of the outcome chapters.

5.3.3 Using the best available evidence to evaluate the risks

Evaluating risks is a key step in prioritising and making short, medium and long term plans, but it is also the most difficult step in our approach. This is because we are trying to evaluate the relative impact of risks that we understand well and have large and reliable data series against emerging risks where we have no past experience and empirical evidence is either non-existent or has low confidence grades. We are using three main ways to estimate the impact any shock or stress could have on service:

- Observations/experience
 - Asset observations – particularly strong for last two years as we have systemised performance on all maintainable non infrastructure assets
 - Credit rating trends
 - Ofwat assessment of efficiency – past performance is comparatively strong
 - Ofwat assessment of governance – an area where we have focused improvement

- Desktop risk assessment – carrying out standard risk assessments (probability of failure occurring multiplied by the consequence if it did occur). We have drawn on wider evidence such as the developing NRW area statements to ensure we are being balanced when comparing service failure and environmental failure.
- Asset management tools such as failure modes and effects analysis which helps us understand single points of failure and the level of redundancy in our systems
- Modelling to predict the future – where the rate of change is too great to rely on the past being a good guide to the future. This is the approach we have taken to understand the impact of long return period flooding (1 in 1000 year) and water resource long range modelling, specifically to understand drought resilience. This is an area where we are looking to partner with other organisations to ensure we take advantage of the large amount of research being done.

Long term financial viability and planning

With respect to evaluating the financial impact of risks specifically, we perform an annual review of our financial resilience and viability which is published in our annual report and accounts. This involves stress - testing our forward looking plans by modelling plausible and severe scenarios (including combined scenarios) which reflect the risks to the business. The Board reviews and approves the medium term plan on which the statement is based and the statement itself is subject to review by Deloitte, our External Auditor.

We have modelled the scenarios set out in the Ofwat consultation paper published in April 2018 ('Putting the sector back in balance: Consultation on proposals for PR19 business plans') as part of our process for financial viability statement testing for the 2017/18 financial year, along with further scenarios developed from the principal risks included in our Enterprise Risk Management (ERM) process. The period of assessment for the stress testing performed was seven years through to the end of 2025.

We identified actions, including reducing outflows of funds and securing additional sources of finance, that would mitigate the effects of adverse outcomes. None of the scenarios tested resulted in an impact to the company's expected liquidity, solvency or credit metrics that could not be addressed by mitigating actions and hence were not considered to be threats to Hafren Dyfrdwy's viability. Further detail of the stress testing performed and mitigating actions is provided in appendix 7.

5.4 Quantifying our current level of resilience and monitoring framework

Section 5.3 set out how we have established the range of shocks and stresses and the next step in our approach is to evaluate how resilient we already are – we call this establishing the resilience baseline.

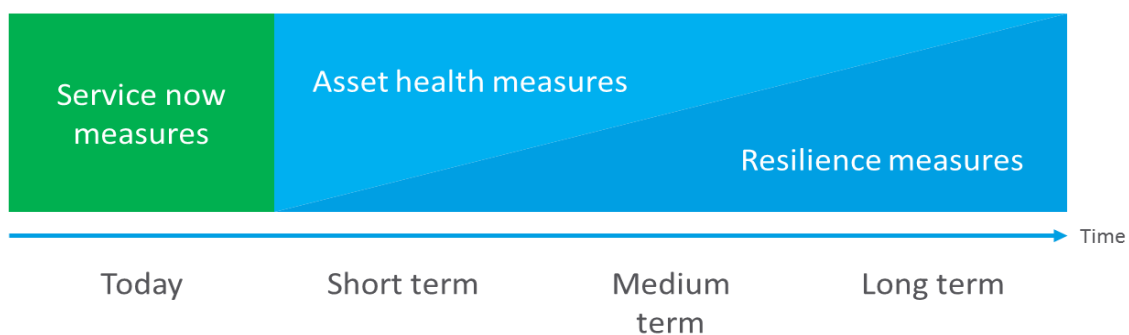
We have not tried to quantify the baseline level of resilience for financial or corporate resilience. These aspects are just as important but it is less meaningful to consider quantitatively. Chapter 9 sets out the financial metrics that we use to understand financial resilience and Chapter 10 sets out the qualitative way in which we are ensuring corporate resilience.

5.4.1 Establishing the baseline level of operational resilience

Developing suitable resilience metrics was one of the ten recommendations in the task and finish report and is an area where the industry is trying to work collaboratively.

To fully understand resilience a range of metrics should be considered across different time horizons. These begin with “service now” metrics, which indicate the resilience of services that have been delivered. However, service now metrics do not reveal how resilient services are to risks that have not yet materialised. This is where asset health and resilience metrics play important roles. As a guiding principle we are defining asset health measures as ones that capture resilience issues that occur frequently (that is many times per year, for example bursts or collapses), while resilience measures tend to capture resilience issues that occur far less frequently (such as drought), or evolve on a long timescale (for example flood risk). This is summarised in the figure below. The key point is that considering all aspects together (service now, asset health and resilience metrics) is critical in understanding a company’s overall resilience.

Understanding and measuring resilience



Within these time horizons we are considering a range of metrics so that we can identify the most useful/insightful measure according to who needs the information and what they are trying to understand.

Considerations include:

- Event - Counting disrupter events that will stress our assets and systems.
- Failure - Counting defined asset or system failures that are likely to lead to a service impact.
- Preparedness - Counting interventions that have been made or asset configurations that will increase the ability to prevent or manage service impacts.
- Recovery – Quantifying how well the system recovers following a shock or stress.
- Service - Quantifying the level of service that customers receive.
- Scenarios - Understanding how a system might respond if a defined event is placed upon it.

We are conscious of the need to not overload the performance reporting landscape with every possible metric we could watch and further work is needed to align the possible range of measures with the formal reporting structure (for example through our internal governance and to Ofwat) versus the metrics that are watched by operators and planners and then escalated if necessary.

In chapter 6 we describe the driver trees which is at the heart of our approach to asset management and resilience. We have looked at all the factors to understand what, if any, data we have that helps us understand how resilient we are and how that might be changing over time. We combined this analysis with the insights gained from customers, stakeholders and policy makers and created a register of the extent to which we can quantify our current resilience.

5.4.2 We are developing metrics where we have gaps in our understanding

There are many variables that we need to track and monitor to ensure we are planning for the future. But four key aspects came out of this analysis where our current understanding is limited compared to the importance and urgency with which we want to understand it. These are:

- diffuse pollution;
- number of customers and location of private supplies and septic tanks;
- land use changes and the impact on our water sources; and
- recovery following a shock and how that is changing over time. This is especially important on our infrastructure assets, where we have very long inferred asset lives based on current replacement rates.

In establishing metrics we are testing them against the possible shocks and stresses to understand how well the measures would give us insights about our resilience to these shocks and stresses. Data collection and analysis is expensive so we need to test its usefulness. We have reviewed the possible metrics to assess whether, if we had had this data, we would have been more resilient to events that others have suffered from – for example flooding in Hull, dam failure in America and South West Water's extreme affordability issues that resulted in a government cross subsidy because the required environmental obligations were not affordable by the relatively small customer base.

5.4.3 Assessing ourselves against the characteristics of resilient service providers

Being resilient is not just about metrics and data trends. All systems have a different starting point of inherent resilience based on factors such as the specifics of our region and asset base, diversity of our customer base and culture within our business. As part of understanding the optimum level of resilience we have considered the characteristics of resilient systems as set out through the [100 resilient cities](#) work. This has helped us consider factors that contribute to resilience other than the physical assets that are within our control.



5.5 Establishing the optimum level of resilience

The previous sections set out how we are establishing a baseline. This has also shown us that we have inherently different level of resilience in different parts of our systems and business. For example we are testing resilience to 1 in 1000 year floods but only 1 in 200 year drought – is that the right level of resilience?

To establish this we are considering three aspects:

- the absolute level of risk (likelihood x consequence);
- the statutory minimum; and
- the cost beneficial level (where the benefits link to customer value or environmental impact).

It is important to recognise that the optimum level changes depending on things like:

- Events that occur that may change peoples' perception – for example, the recent hot weather will be influencing views on the level of drought resilience.
- Ongoing observations – for example, if trend analysis predicts that the salinity on the River Dee will not increase by more than 2% until 2050 as a result of climate change, but if in 2019 we observe a 1.9% change then we would need to reevaluate the plan.
- Legislation – for example abstraction reform could have a material impact on the large number of people in our region who currently have private supplies (could be as much as 30% of the properties in Mid Wales) – if legislation meant these customers could no longer have a private supply then we would need to work out how we would supply these customers in an affordable way.

This work is developing across our broader systems. We have focused in the first instance on the areas that are driving material investment – these are covered by our cost adjustment claims and the business cases set out in appendix 4 show how our consideration of resilience in the round has shaped our plan.

5.5.1 We have identified the gaps between baseline and optimum resilience

In many cases we are very fortunate to have lots of the characteristics of a resilient system, but that is balanced with the scale of our business that means we are more exposed to shocks (particularly financial shocks). The acquisition has mitigated several of the risks that the former DVW were managing but we are still very sensitive to any changes that could have a large totex implication as we have few customers to share the cost and limited scope for rebalancing across the programme.

Our biggest immediate risks are:

- Reservoir safety
- DSR maintenance and supply resilience
- Lead reduction
- Exposure on PC stretching targets and ODIs

Our biggest opportunities:

- Enhancing biodiversity
- Promoting well-being
- Playing a part in solving the national water resource puzzle but in a way that maximises benefit for Wales

How we are managing these risks and opportunities is set out in more detail in chapter 6 customer outcomes.

5.6 Developing the best long term solutions to achieve the ‘optimum’ level of resilience

5.6.1 We are not starting from scratch, we have a wide range of business as usual tools

Scenarios/ Consequence	Resilience tools to help prevent or respond to the scenarios							
	Continuity of service	WRMP	Drainage planning (new DWMP)	Asset health (asset management)	Technology, data and information	Catchments approach	Supply chain management	Workforce management
Fail to protect public health	✓			✓	✓			✓
Fail to protect our assets	✓	✓	✓	✓	✓			✓
Fail to protect safety (and well-being) of staff and public	✓			✓	✓	✓	✓	✓
Fail to protect environment and wider ecosystems	✓	✓	✓	✓	✓	✓		✓
Fail to comply with legislation/licence obligations		✓	✓	✓	✓			✓
Fail to gain/retain confidence and trust	✓	✓	✓	✓	✓		✓	✓
Fail to meet customer expectations	✓			✓	✓	✓	✓	✓

We also have well developed tools and processes for managing long term drinking water risks. Appendix 9 includes the submission we made to the DWI setting out our approach and the key risks.

5.6.2 We have objectively assessed a broad range of mitigations

For each of our cost assessment claims we have set out the evidence to show that we have considered a broad range of mitigations, assessing in terms of resilience in the round. We also show how we are applying best practice like Cabinet Office four box model of resilience responses and the 100 resilient cities, seven characteristics of resilient systems. We have also considered the robustness of the information from which we have to make our decisions. The table below sets out the key aspects of the decision making process and the level of confidence we have for each cost assessment claim.

	Reservoir safety	Supply resilience	Lead reduction	Biodiversity
Information - asset	✓	✓	X	✓
Information - customers	✓	✓	✓	✓
Information - stakeholder	✓	✓	✓	✓
Systems	✓	✓	X	X
Process	✓	✓	✓	✓
Governance	✓	✓	✓	✓
Capability	✓	✓	✓	✓
Financial	✓	✓	X	✓

Strategy in summary	<p>We have got to do it, the question is how to balance cost and how to create a more targeted replacement rate to avoid another big spike in investment in 30 - 40 years.</p> <p>Overall this is a risk mitigation strategy</p>	<p>Too many of these assets to take a reactive approach- we need to address the most significant risks now whilst establishing a robust long term plan that has clear steps to reconfiguring network to retain storage but reduce the number of assets which is unsustainable given the inferred asset life is 150 years</p> <p>Overall this is a risk mitigation strategy</p>	<p>Not enough certainty to justify material step change. Need to take time to find a long term solution that customers can both afford and buy into (customers don't want us to dig up their drives to solve this). Push hard to improve data and identify more innovative solutions</p> <p>Overall this is a pilot approach to inform our long term plan</p>	<p>Ability to use natural capital as an investment driver is still in its infancy, but this multi-agency approach allows us to gather more experience whilst minimising cost to our customers.</p> <p>Overall this is a pilot approach to inform our long term plan</p>
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The full details can be found in appendix 4: enhancement investment – cost adjustment claim.

5.7 Adaptive planning and continuous improvement

This is not an exact science and the key word is uncertainty. Therefore we have already taken steps to embed this approach into business as usual activities so that we can learn and adapt our plans.

Our aim is to make the same decisions that you would make with hindsight – a no regrets approach. Risk management is already part of our DNA, the focus now is to extend the lens from risks to resilience. The key to success is the monitoring framework – we have to be looking in the right direction and our extended driver trees help us visualise the connections. The data that will be generated is going to be key in the future when answering the hardest question of all – why now? Data trends allow people to make informed decisions.

That is why our continuous improvement plan has three focuses:

1. Invest now if the evidence is compelling, our customers expect and trust us to safeguard future services but keep challenging ourselves to find solutions that are the best long term approach.
2. Spend time understanding and tracking less well understood risks.
3. Learn from others and join in. Reading a generic report about resilience is interesting, taking part in a study based on our assets, customers and geographic circumstances is hugely valuable.

We have clear next steps

- We are reflecting on lessons from the freeze thaw.
- We are continuing to reflect and learning from the findings of Ofwat's targeted review on asset health and in particular the role for real time monitoring.
- We also need to keep up the engagement with our customers. In the next AMP period we will focus on engagement through the following areas where we can gather views on how to ensure resilience: Making our sites more accessible and engaging – specifically Vyrnwy but also smaller sites across our region.
- Education programme – specifically talking to customers about water efficiency and setting the long term strategy for maximising opportunities from water trading.
- Working with our stakeholders and through collaborations.

Chapter 6

Customer outcomes

6.0 Customer Outcomes

Overview

We have refreshed our outcomes, taking the opportunity to tailor them to reflect priorities in Wales and extend them to cover wastewater and water services. The breadth of outcomes continues to demonstrate our unrelenting focus on core service while contributing to our wider communities and goals across Wales.

Our plan is ambitious and focused on what matters most to our customers whilst delivering improvements for the wider environment and the communities we serve. It includes nine outcomes and 28 performance commitments (including the 14 performance commitments common to all companies). We have an ambitious plan that offers performance in the top quarter of the industry across many service areas and, where our performance is not good enough, we are committing to a step change in performance. It's important to see our targets in context of the scale of our operation – we're the smallest of the eleven water and sewerage companies so we won't have the ability to balance out variability of performance across our region – we'll have to deliver consistently great performance for all our customers.

In 2020-25 our plan delivers:

- Upper quartile performance in the two highest priority areas – risks to drinking water quality (CRI) and internal sewer flooding;
- A step change to reduce drinking water quality complaints, supply interruptions and the risk of receiving low pressure;
- Continuous improvement in customer experience and a commitment to support 100% of customers who need help during an incident and an increase to ensure we support more customers who are struggling to pay;
- Continued focus on the underlying asset health of our network to ensure we're safeguarding future services using measures such as burst mains and sewer collapses;
- Enhanced resilience of our network both on water and waste, and improved understanding of resilience building measures such as drought and extreme flooding;
- Much more stretching improvements in leakage and PCC, in response to the strong and clear feedback and challenge we've received; and
- An ambitious suite of environmental improvements covering pollutions, enhancing biodiversity and river water quality.

We have balanced diverging views on outcome delivery incentives (ODIs). We've developed a suite of ODIs that embrace the potential of incentives to drive better performance for our customers, our investors and society, while ensuring that we do not earn rewards unless we've gone above and beyond what our customers expect. And we've ensured targets are the most stretching and ODIs most powerful in the areas where customers value improvements the most.

To deliver the above package, we'll need to innovate both in terms of activity and cost – we simply won't be able to succeed in delivering our ambitions if we continue as we are today.

Structure

This chapter has four parts:

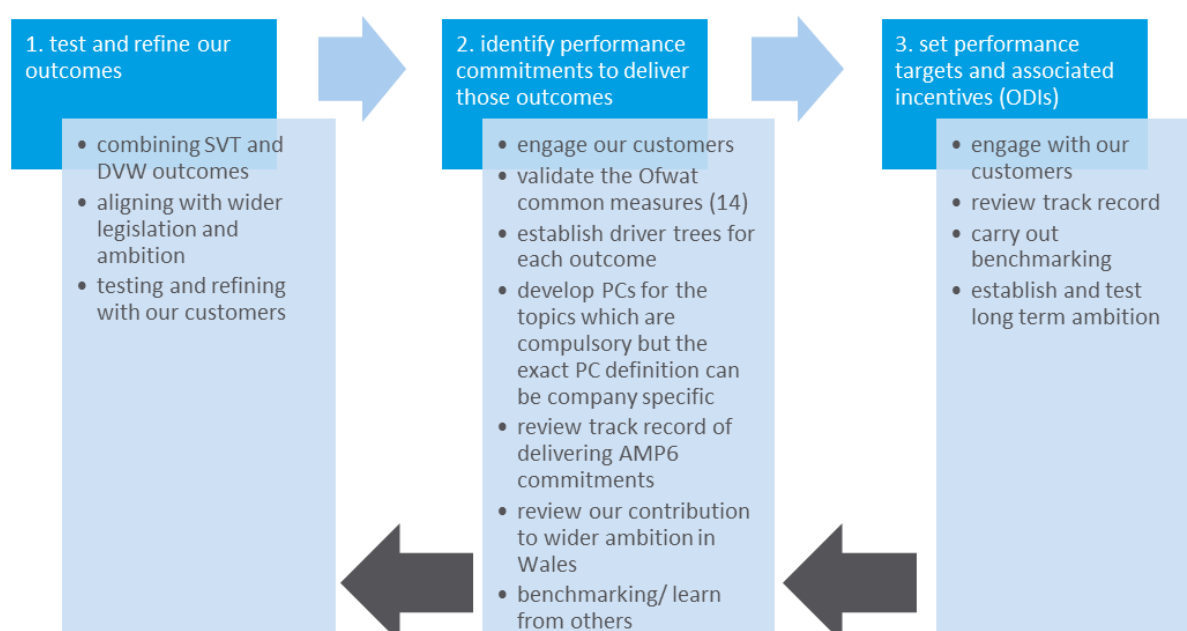
- Part 1 provides an overview of our approach to outcomes, covering:
 - how we have reviewed and refined the long-term outcomes put in place by the former Dee Valley (DVW) and Severn Trent (SVT) to make sure they remain relevant and focus on the local issues; and

- Part 2 provides an overview of performance commitments, covering:
 - o how we have designed performance commitments to measure our progress towards those outcomes;
 - o the approach to setting stretching targets; and
 - o a summary of our customers' priorities and how we have reflected that in our performance commitments.
- Part 3 provides an overview of our incentives (ODI), covering:
 - o our approach to ODIs and how we have created balanced incentives (ODIs) that strengthen the link between customer bills and our performance; and
 - o a summary of the incentives.
- Part 4 explains the expenditure in our plan and structure of the narrative for each of our nine customer outcomes.

Part 1 Approach to outcomes

To deliver in line with Ofwat's final methodology for PCs and ODIs, we developed a clear, logical and robust framework. We've worked collaboratively with our Customer Challenge Group (CCG). We have also sought independent review through third party assurance providers, which concluded that we have created and applied a robust framework which covers the rationale used to set both stretching targets and ODIs. This gives us the confidence that we have set challenging PC targets accompanied by meaningful, fair and balanced incentives.

We have developed the following process to enable us to align Ofwat's requirements to our customer, stakeholder and shareholder expectations. It's an iterative process that allows us to build and refine our outcomes and performance commitments (PCs) as we learn more from our customers and as we progress through the AMP, and reflects our experiences of delivering outcomes and PCs for the first time in AMP6.



The framework is underpinned by our customer research approach whereby we have chosen to talk to customers in a way that is meaningful (simple) with context (comparative) so they understand the choices that they have made. This has included conversations on difficult topics such as asset health and resilience where the outcome of our conversations with customers has shaped the key investment areas in our plan. Full details on our approach and findings from our customer research is set out in chapter 2 and appendix 1.

We have expanded the current (AMP6) suite of performance commitments, covering not only the areas that cause customer dissatisfaction such as sewer flooding and supply interruptions but also areas that improve customers' experience for example enhancing biodiversity and service vulnerability and affordability. These cover the breadth and depth of customers' needs now and into the future.

Refining outcomes

The joining forces of DVW and SVT provided an ideal opportunity to review the existing outcomes, talk to our customers and refocus them to ensure they reflect our own, our customers' and our stakeholders' ambitions.



The table below shows that the long term outcomes are a continuation of the past and sets out how we have mapped them between the former SVT and DVW outcomes.

Transitioning outcomes to new licence

DVW PR14 Outcomes	SVT PR14 Outcomes	HDD PR19 Outcomes	Rationale for change
Provide excellent water quality	We will provide water that is good to drink	Good to drink	To simplify and align between DVW and STW
Provide a reliable and high quality customer service	We will ensure water is always there when you need it, We will provide you with excellent customer service and We will help you if you struggle	Water always there An Outstanding Experience	Important to separate these two very important issues
Minimise our environmental impact	We will protect our local / wider environment	Thriving environment	To be bolder in our ambition
Manage our assets for the long term	Integrated within other outcomes	-	This is a core part of all of the outcomes and not an outcome in its own right
Provide a fair balance between affordable bills and reasonable profits	We will have the lowest possible charges and We will finance our business sustainably	Lowest possible bills	Shift in focus to reflect end to end customer deliveries
		A service for everyone	Expansion in scope to reflect broader accessibility issues
		A company you can trust*	To better reflect the benefits our financing structure provides for customer
	We will make a positive difference in the community	Making a positive difference	Mapping of the SVT outcome to make a positive difference to our communities

N/a no waste service	We will safely take your waste water away	Waste safely taken away	Continuation of the SVT outcome for our waste customers
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**A company you can trust is a new outcome to better reflect our purpose and commitment to becoming the benchmark for a private company providing an essential public service. It considers more broadly the issues that our group research into discontent in the sector revealed are important to earning the trust of our customers – including fair rewards (for customers, employees and shareholders), and balanced decisions (taking everyone’s interests into account).*

We played back the names of the outcomes with customers and there were two outcomes where the short form of the outcome didn’t immediately resonate with customers.

The first was “thriving environment”. In general the full link between water company activities and the environment is not front of mind for customers, but as we explore “a thriving environment” further we find that customers are generally supportive of the outcome, and feel it’s an important priority for the company to have. Customers used phrases like protect the environment but following discussion with them about the fact that legislation in Wales goes much further than just protect they warmed to the description thriving environment.

The second was “thriving communities”. Again customers felt this sounded like corporate jargon and from the title weren’t clear about the types of activity that this would entail. We discussed with them the common theme of education and the role they have in meeting the future challenges, which made much more sense to them. In discussion with the deliberative research groups and the CCG the outcome name was changed to “making a positive difference in our communities”.

Part 2 - Performance commitments

Approach to defining performance commitments

As performance commitments are designed to measure progress against outcomes, this was our starting point. We used our 'driver trees' which map the factors that relate to successful delivery each outcome. This ensures there is a clear line of sight between outcome, activity and measure so we can demonstrate that our performance commitments offer customers an appropriate breadth and depth of protection. This has enabled us to identify gaps and develop bespoke performance commitments where needed.

The driver trees show that there are many factors that contribute to successful achievement of the outcomes. We applied the following process to identify which of them should be formal commitments:

- Mapped the 14 compulsory common measures on to the driver trees.
- Identified which factors relate to things that matter to customers. This is based on insights we have gained through our research and business as usual contact with customers.
- Identified which factors relate to wider ambition and obligations (such as the Environment (Wales) Act).
- Reviewed against the current PCs in both DVW and SVT.
- Reviewed against our investment programme to ensure measures also reflect where the most significant investment is being made (with a particular focus on any cost adjustment claims).
- Discussed and refined the emerging performance commitments with the CCG.
- Refined the performance commitments based on feedback received from Ofwat covering our bespoke PCs.

These steps enabled us to identify a set of performance commitments that reflect the depth and breadth of things that matter to our customers and stakeholders. We then tested the possible PCs against Ofwat methodology and sought independent assurance to review our assessment. The criteria are set out in the table below.

Ref	Criteria
1	Clear, concise and unambiguous – use plain English as much as possible, avoid jargon to ensure customers, CCG and stakeholders can engage
2	Retain AMP6 PCs where customers support or if the company is not on target with AMP6 commitments
3	Sufficient coverage in all price controls
4	Sufficient coverage in compulsory areas, which are; asset health (AH), resilience (R), the environment (E) and vulnerability (V)
5	No or few exemptions, which should be justified and supported by customers
6	Quantifiable, with available data and a clear definition
7	Reproducible - yields a consistent result if the correct method is followed

We have not included a PC on Abstraction Incentive Mechanism (AIM). We have eight abstraction points in Wales, none of which have been identified for either investigation or action under the NEP. Six have existing sustainability mechanisms in place which have been approved by Natural Resources Wales or the Dee Consultative Committee, with the remaining two at impounding reservoirs where any reduced abstraction would have no impact on downstream flows. Therefore, in agreement with NRW, we have no proposed AIM sites. More detail about how we are ensuring a sustainable water resource position can be found in the outcome narrative for "Water always there when you need it".

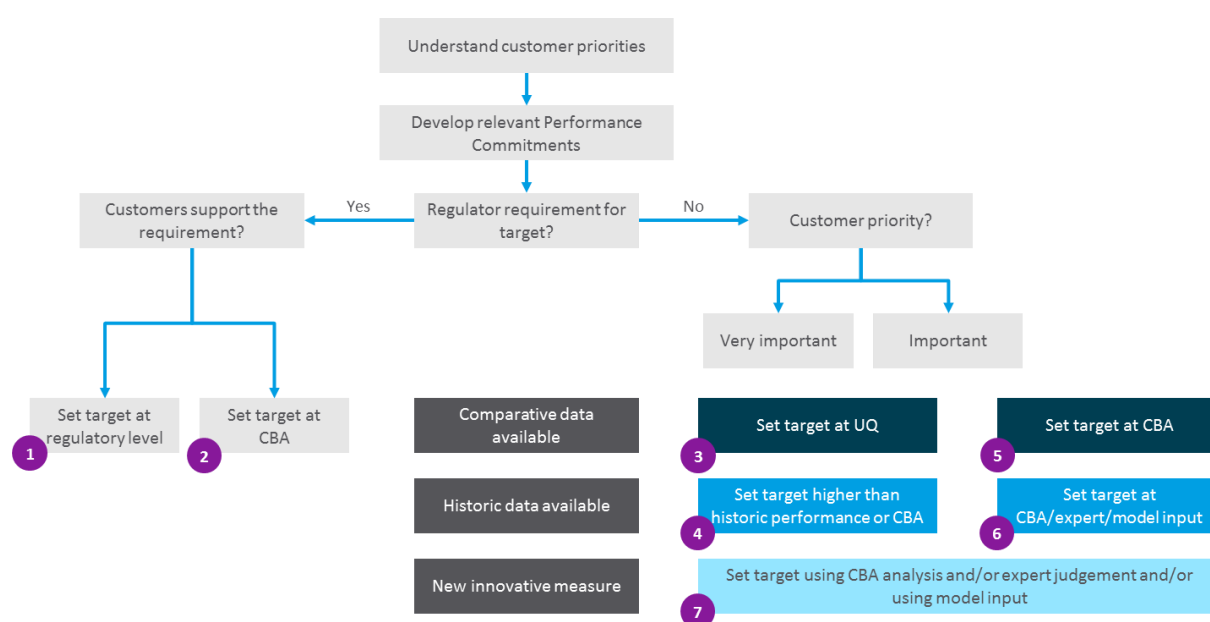
This process has resulted in 28 performance commitments, which are summarised below. We use many more than 28 measures to run our business and we will continue use a wider set of metrics to track performance through our internal monitoring and reporting processes. We have tried to strike a balance between fullness of the suite of measures and limiting the number to ensure the PCs focus on the things that are most relevant to our customers. As we publicly report on our performance throughout AMP7 we will include updates on other measures if they help provide a more complete and transparent explanation of our performance. We also commit to providing additional information to stakeholders to assist in their review and reporting of industry performance. This includes data submissions to CCWater and Discover Water.

Setting performance commitment targets

We're ambitious about what we can achieve for our customers and we want our targets to reflect this. We've developed a framework to make sure that we set targets that are stretching, using multiple data sources that allow transparent discussion with our customers and stakeholders. We have ensured that when talking to customers about our targets they are given context about our current performance and relative performance across the industry.

The framework we've developed includes the approaches Ofwat suggests companies should consider for target setting (comparative upper quartile performance, customer evidence, cost-benefit levels, maximum and minimum performance, and expert judgement). The framework allows these approaches to be systematically applied, and makes sure that wherever possible our customers have a direct impact on the targets set. For example, through the degree to which customers view the area of service a priority for improvement, or by using the value they place on improvements in cost-benefit assessments. Our framework is summarised below.

A framework for target setting



One of the key advantages of this approach is that we have been able to use a range of different methods to calculate our targets which can be compared. We summarise below the range of methods used.

Method	Performance commitment	Performance commitment					
		Regulatory	Customer	Historical	Comparative	CBA	Expert
1 regulatory with customer support	PCC, risk of severe drought, treatment works compliance, CRI, satisfactory sludge disposal, river quality improved	✓	✓	✓	✓	✓	✓
2 regulatory without customer support	None						
3 very important – we have comparator data	Supply interruptions, CMEX, internal sewer flooding, pollution incidents, drinking water quality complaints	✓	✓	✓	✓		✓
4 very important – historical data	Risk of receiving low pressure, help to pay when you need it		✓	✓	✓		
5 important – we have comparator data	Sewer blockages, sewer collapses, mains bursts, DMEX	✓		✓	✓		
6 important – historical data	Reducing void properties, unplanned outage		✓			✓	✓
7 new / innovative measure	Hectares managed for biodiversity, supporting our priority services customers during an incident, lead pipes replaced, inspiring our customers to use water wisely, risk of sewer flooding in a storm, effectiveness of financial support	✓	✓			✓	✓

Meeting our obligations and regulatory expectations

For a number of measures either Ofwat, DWI or Natural Resources Wales (NRW) have set stretching expectations of the target that companies should deliver. This will stretch us to delivering performance levels significantly above historic levels, for example a target of 15% reduction on leakage.

Triangulating sources of customer insight

Our insight programme has enabled us to develop a rich understanding of our customers. We've used this for two purposes in our framework. First, we've used willingness to pay and other valuation data to inform our cost-benefit analysis. Secondly, the extent to which customers regard the service area as a priority for improvement informs the level of stretch we are proposing in our performance targets. Our view on customers' relative priority is informed by our rich evidence base. As we have triangulated the evidence for each outcome, we have considered the extent to which customers regard each performance as a priority for improvement, defining each one as "low importance", "important" or "very important". In addition to customers' relative priority, one of the basic principles of our insight framework is the concept that not all customers' needs are equal – in order to bring this to life we have allocated each performance commitment to a level in the hierarchy. Chapter 2 Customer insights discusses our insight framework and triangulation approach further, and Appendix 1: Customer insights compendium presents the customer evidence for each outcome, including the rationale for the relative priority for each performance commitment.

Historical performance

Creating a historical view for Hafren Dyfrdwy has been a challenge, in particular for new measures that neither company has previously reported on (such as unplanned outage). For data that does exist historically we have

reviewed and either calculated or made assumptions to create historical performance split between North Wales and Mid Wales. We have reviewed differences and shown those differences to our customers when seeking their views on appropriate targets. We have applied the following principles:

- We have a combined PC that targets the better performance of the two former regions.
- We ensured that forecast performance locks in improvements made in this and previous periods.
- We have forecast performance to the end of AMP6. These forecasts are consistent with the July submission to Ofwat, which reflect our best estimate of the outturn performance.

We have used historical performance to inform the appropriateness of annual or end of AMP targets. We have applied annual targets except where, as part of the CCG challenge, we moved to five year targets (which have then been prorated back to an annual target for reporting purposes). This is particularly the case on our waste water targets where the absolute numbers of incidents are very small and a reduction in one incident per year is very challenging. Moving to a five year total was a fair way of adding additional stretch but also finding a fair balance of risk given the scale of the operation.

Comparative analysis

Where it exists we have used comparative data to calculate the industry upper quartile. For the three comparative PCs - internal sewer flooding, total pollutions and supply interruptions - we've proposed a target based on our forecast of what upper quartile will be for the industry in 2025. For all other measures, where we are not sighted on the improvement other companies might make we have just forecast upper quartile by 2020. The details of how we have done this can be found in appendix 2.

Cost benefit analysis

Due to the difficulty in isolating the costs at this level of granularity from the historical DVW costs and SVT costs, combined with the fact that in many cases the target has been set on a different basis (customer acceptability or regulatory expectation) we haven't used cost benefit as the primary target setting method. The only exception to this is reducing void sites as this is an economic balance, and the cost beneficial level is key. However it is important to understand the cost benefit ratio of our commitments and so in many cases we have used Severn Trent Group cost information.

We have also benchmarked our data against actual historic data, the expected AMP7 efficiency and other company data, where available.

Applying expert judgment

We considered our targets in light of expert judgement and information, where available, on other companies' proposals. In some cases, where our commitments are new and innovative, and there is limited comparative or historical data, we have given expert judgement more weighting.

Forecasting to 2045

We used the same framework to define our long term ambition, taking account of wider regulatory and stakeholder expectations – that is, we have been most ambitious where customers and stakeholders expect improvement. In cases where there isn't enough information to develop a robust long term forecast we have followed two approaches:

- Where there is a long term issue but there is insufficient data to robustly estimate the target to 2045, we have held the AMP7 target flat and will continue working on the long term plan throughout AMP7. For example the % of properties at risk of sewer flooding in a storm.
- Where we have a new and innovative measure and we need to test whether the measure is effective and transparent to customers, it would be misleading to include such long term targets. For example the effectiveness of our affordability support – clearly we have a long term aim to keep improving

effectiveness, but until we can establish the best way of measuring this we cannot commit to fixed values into the future. In these cases we have left the cells data table App1 blank.

Customer Challenge Group (CCG)

We worked with the CCG to ensure customer insights were being used to inform the level of stretch proposed. The key challenges and our responses are set out in the table below:

Challenge	Response
The company should ensure that comparative data is used and clearly displayed when testing performance commitments with customers.	We included comparative data in our initial willingness to pay and subsequent choices research.
The company should ensure targets addresses worst served customers (not just average).	Where our data allows us to do this we have set targets which include assumptions about reducing repeat failures. This is the case for properties receiving low pressure, internal sewer flooding and pollution incidents. Through the improvements we are making to the real time data collection we can develop plans to extend this approach across all service areas.
The company should be using comparative data for forecast UQ in 2024-25 on all measures.	Following publication of all companies' Annual Performance Reports (APR) we updated our analysis of forecast UQ to reflect the latest data for the three comparative measures (internal flooding, supply interruptions and pollution). We reported back to the CCG on our findings. We cannot estimate with a high degree of confidence the forecast UQ for all measures as we are not sighted on other company plans. Wherever possible we have extrapolated the historical performance trend out to 2024-25 to generate an estimate. This is set out in full in appendix 2.
The company should have separate targets for Mid and North Wales.	We separated performance so that we could have bespoke conversations with our customers. In many cases performance is similar, where it is not similar we will continue to track it separately and will indicate the split in the customer facing APR, but we are not proposing to have multiple targets for the same measures – this would be burdensome and reduces our ability to manage our programme and emerging risks.
The performance forecast for 2019-20 (which is where improvement is being measured from) should be based on recent actuals not final determination (FD) where performance is better than the FD. A specific example of this is pollution incidents.	In some cases we had used the FD as the forecast values for 2018-19 and 2019-20. In cases where actual performance suggests forecast would be lower/ better than the FD then we have replaced our estimate to reflect the more likely actuals.

A summary of our targets is set out below. The contribution of the PCs to delivering the outcomes is explained in each outcome chapter 6.1 – 6.9 and chapter 8 for our commitments to our business customers. The detail setting out the application of the framework for each PC is included in appendix 2 'Rationale and evidence for PCs and ODIs.'

Summary of our performance commitments

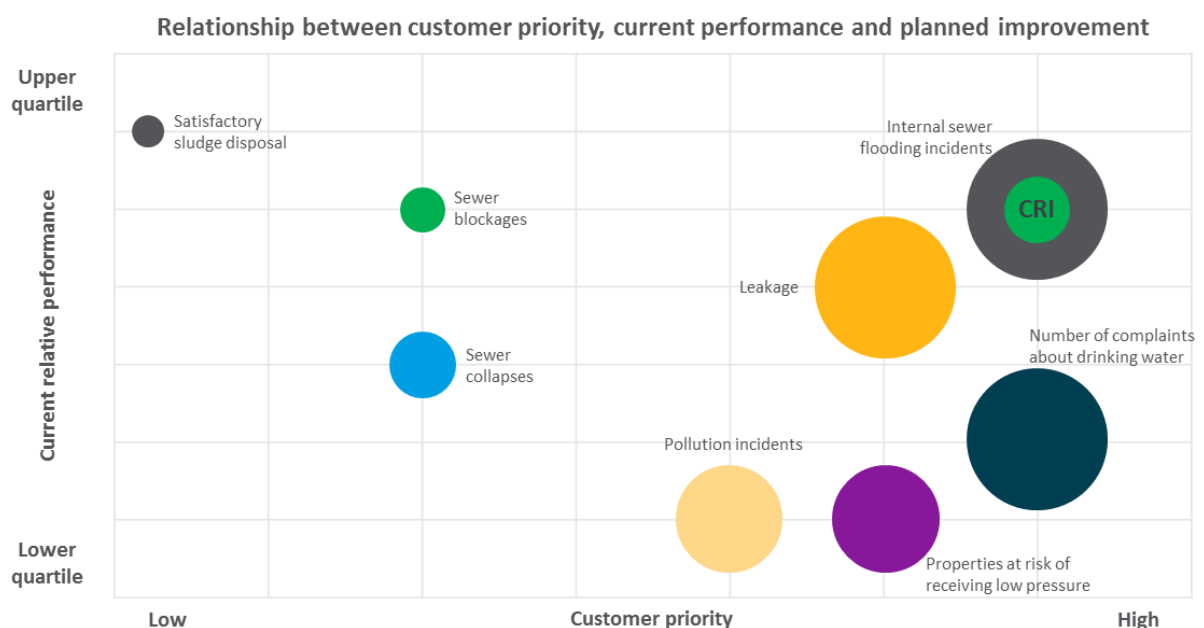
We have developed 28 performance commitments covering the breadth and depth of things that matter to our customers and stakeholders. We have updated the definitions in light of the Ofwat feedback (received on the 13 July) and included them in appendix 3.

The figure below shows how the measures will help us track delivery of the customer outcomes:

Outstanding experience	C-MeX	D-MeX	Non-household customer experience				
A service for everyone	Affordability	Service vulnerability	% compliance with Welsh language scheme	Effectiveness of affordability offering			
Lowest possible bills	Voids						
Good to drink	CRI	DWQ complaints	Number of lead pipes replaced				
Water always there	Interruptions to supply	Mains bursts	Risk of low pressure	Leakage	PCC	Resilience – drought	Unplanned outage
A positive difference	Inspiring customers						
Thriving environment	Length of river improved	Satisfactory Sludge Disposal	Hectares managed for Biodiversity	Treatment works compliance			
Wastewater safely taken away	Sewer flooding internal	Pollution	Sewer blockages	Sewer flooding – extreme storms	Sewer collapses		

Key:
 Green = common industry definition
 Blue = bespoke definition but mandatory inclusion
 Black = bespoke (company specific)

The overall package of targets that we are committing to is incredibly stretching and we have ensured that targets are most stretching where it matter most to our customers. Not all 28 of our measures are comparable but where comparisons are possible the figure below shows that the most stretching targets (represented by the largest circles) are in high customer priority areas and where our performance needs to improve compared to our peers or where customers or policy makers want future improvement across the industry (e.g. leakage).



It is important to consider that the targets are only part of a stretching package to improve service for customers. A stretching and ambitious outcome for customers seeks to balance bill level, risk exposure and performance. Whilst upper quartile performance is not a mandatory standard it is an often used way of comparing performance and therefore we are using this to set out the balance of our targets. The table below shows that for almost 65% of the measures we estimate to be within the upper quartile by the end of AMP7.

Proposed comparative performance at the end of AMP 7

Lower quartile	Average	Upper quartile
Properties at risk of low pressure (25% improvement)	WQ complaints (35% improvement)	CRI (maintaining the c80% improvement on recent average)
Pollution incidents (18% improvement)	Supply interruptions (27% improvement)	Drought resilience (stable)
	Burst mains (stable)	Leakage (15% improvement)
	Treatment works compliance	Internal sewer flooding (23% improvement)
		Sewer blockages (stable)
		Sewer collapses (stable)
		Satisfactory sludge disposal (stable)
		Bill level
		CMeX
		DMeX
		NHH

Our targets are stretching but we have also challenged ourselves to ensure they are deliverable and that we have a credible plan for achieving these targets within what is a very stretching cost envelope. A summary of our targets is provided below.

The Stretching targets, forecast to 2045

Outcome	Performance commitment	Unit	2020	2025	2045
Lowest possible bills	Reduction in number of void properties	Nr	0	72	c.3.5% of total properties
A positive difference	Inspiring our customers to use water wisely	Nr	0	3986	Based on WRMP
Thriving environment	Treatment works compliance	%	100	100	100
	Length of river water quality improved	km	0	22	Based on future NEP
	Biodiversity (water)	Hectares	0	450	Based on future NEP
	Satisfactory sludge use and disposal	%	100	100	100
An outstanding experience	Customer measure of experience (C-Mex)	score	n/a	UQ	UQ
	Developer Services measure of experience (D-Mex)	score	n/a	UQ	UQ

	NHH customer experience	score	n/a	equivalent to UQ	equivalent to UQ
A service for everyone	Help to pay when you need it	%	65	73	100
	Supporting our Priority Services customers during an incident	%	n/a	100	100
Wastewater safely taken away Wastewater safely taken away	Internal Sewer Flooding	Nr incidents/10000 connections	1.7	1.2	0.7
	Pollution incidents (Category 1-3)	Nr incidents/10000 km of sewer	158	116	70
	Sewer collapses	Nr/1000 km of sewer	8.1	8	8
	Risk of sewer flooding in a storm	%	6.64	6.64	improved
	Sewer blockages	Nr	293	276	stable
Water always there	Water supply interruptions	Time (mins:secs)	13:00	08:00	02:00
	Leakage	Megalitres/day	12.3	-15%	-50%
	Per Capita Consumption (PCC)	Litres/head/day	144	-2%	-12.5%
	Mains bursts	Nr/1000 km of mains	126	110	Stable
	Unplanned Outage	%	baselined	Stable	Stable
	Risk of severe restrictions in a drought	%	0	0	0
	Properties at risk of low pressure	Nr property	57	41	0
Good to drink	Water quality compliance (CRI)	Score	2	0	0
	Water quality complaints	Nr	490	317	200
	Number of lead pipes removed	Nr	0	460	10,000

Part 3 - Outcome delivery incentives (ODIs)

The Severn Trent Group have long been supporters of applying financial and reputational incentives to heighten companies' focus on delivering performance commitments. This is because they believe they work for customers. The CCG and stakeholders in Wales have mixed views and have raised concerns that our approach must only offer rewards if customers support it and there is demonstrable evidence that it is driving performance that is over and above the day job.

Understanding our customers views

In light of the above challenge we have talked to customers about the principles of ODIs and set out the range of possible outcomes (in terms of service and overall bill impact) that could be seen as a result of them. The details of our research are provided in chapter 2 and appendix 1, but in summary 76% of our residential and business customers agreed that it is acceptable to link up to £8 of their bill to incentives. Eight pounds was selected in this research as it represents 3% of RORE. The likely range of bill impact will be smaller than this (-£1.69 to +£0.87). Chapter 9 'Aligning risk and return' includes more detail about the appropriateness of this range.

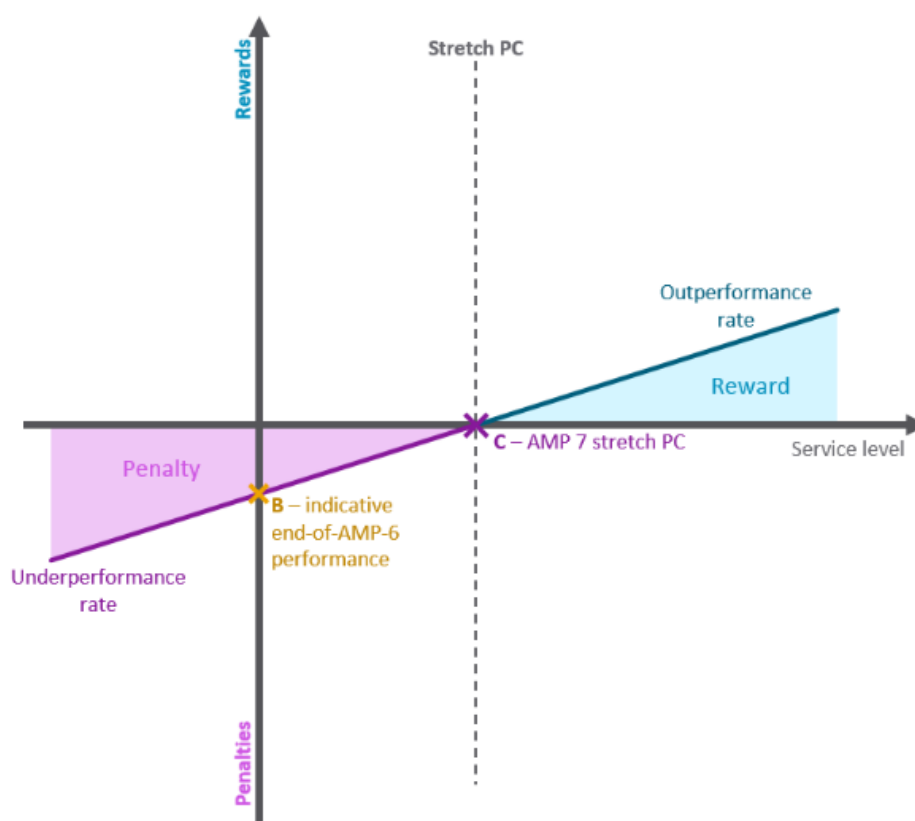
To establish the ODI rates, we have used a range of results from multiple stated preference WTP research. Valuations were obtained separately for residential and business customers, with separate surveys focusing on each of the Mid Wales and North Wales areas. We have also taken account of the Dee Valley assessment from PR14, to provide an additional point-of-reference.

We have developed an ODI framework

Penalty and reward principles

The figure below shows how incentives only apply once we have exceeded the already stretching target.

Figure 1 – Standing still means penalty



We are adopting symmetry between upside and downside incentive rates, given the advantages of this approach that include:

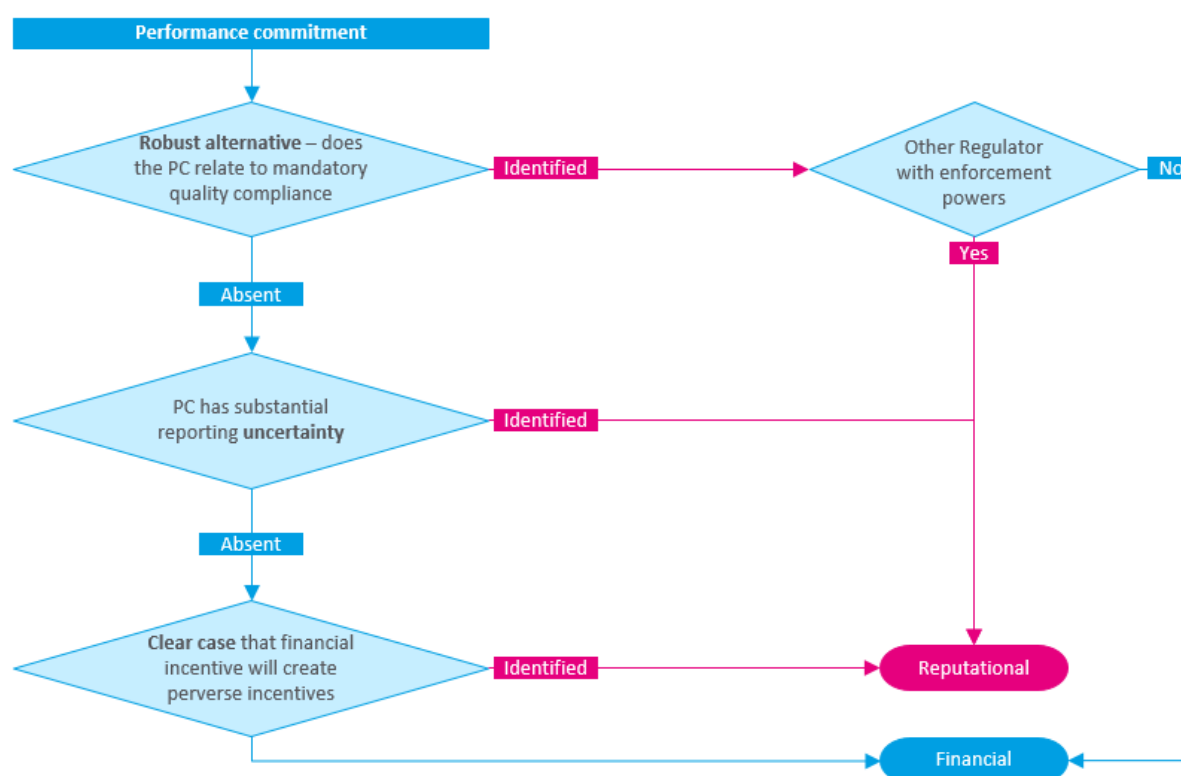
- symmetric incentives will benefit customers, as they are likely to be more effective in encouraging innovation and a shift from risk-averse behaviour than asymmetric incentives;
- symmetric incentives align well with Ofwat's call for balanced incentives;
- where stretching targets are set, there is an equal balance between risk of underperformance and potential for outperformance; and
- a symmetrical approach has greater simplicity, both computationally and for the understanding of customers.

The exception to our approach is where the ODI is required to be penalty only (such as for PCs targeting 0% or 100%) or reward only.

Determining the case for reputational or financial incentives

We've created a robust framework to make sure that we're only using reputational incentives in specific circumstances and when justified, in line with Ofwat's methodology.

Criteria for financial or reputational ODIs



Of the 28 Performance commitments, 18 have financial incentives. Both penalties and rewards will be available for 16 of our ODIs, which will make sure we will be appropriately rewarded for outperformance and suitably penalised for underperformance. For the two other PCs with financial ODIs, one will be penalty only and the other reward only.

- Treatment works compliance will be penalty only, because, although penalties are appropriate for non-compliance, the expectation is for full compliance. This means that rewarding full compliance is not appropriate.
- The ODI for voids is set to be reward only, because void properties have a very high debt rate (around 85% on latest trials) and billing them incurs extra bad debt costs that result in a negative net position. Our reward-only proposal is designed to remove this negative effect and make the net position neutral.

Importantly, although they are revenue-only the combination of the ODI and WRFIM means that, even if we earn a reward, bills will fall.

The ten PCs identified for having reputational ODIs, were decided for the following reasons.

Water Quality Compliance (CRI) – we are conscious that Ofwat has proposed that companies put forward deadbands to deal with the uncertainties arising from this measure. At present, we see that these uncertainties are significant, not least because the DWI has yet to provide sufficient details to fully understand the implications of this PC. Given this uncertainty, we are concerned that using deadbands to offset the risks would necessitate these deadbands being so large that they would effectively make the incentive reputational-only. Were this to be the case, this could lead customers to further question trust and confidence in the sector, on the basis that the companies are gaming the system to their advantage.

Accordingly, we believe that the appropriate approach is for CRI to be reputational only for AMP7, with a clear commitment to making it financial from AMP8 onwards – the DWI is an effective water quality regulator with enforcement tools that are more than adequate to ensure compliance. In the absence of financial incentive in AMP7, we will attach no less of a priority to this service element than customers would expect. The combined effects of reputation during AMP7 and the need for performance to be at a level that puts us in a strong position going into AMP8, will give us the incentive, focus and drive to perform and continually improve on this metric during AMP7.

Per capita consumption – if this were set on a financial basis, it would create a set of incentives that would appear counter-intuitive to customers. This is because in return for using less water, which should save the customers money, the companies would earn a reward that it would then pass on to customers in the form of higher prices. A further consideration is that, in the current climate, such an agreement would not be conducive to building trust and confidence in the sector. Nevertheless, we see that the incentive to perform on this measure will remain strong. Not only do we want our comparative performance to improve, we also see that lowering PCC will drive other potential benefits, such as reducing the need to develop new resources.

Resilience, drought risk – this common PC is one of the resilience PCs that are at relatively early stages of development and, as identified in Ofwat's methodology, may not be ready for financial incentives. Accordingly, it is appropriate that the incentive should be reputational, at least for the duration of AMP7.

Asset health, unplanned outage – this is a new and emerging resilience measure where there is ongoing uncertainty on reporting. Given this uncertainty, it is appropriate that the ODI is set as reputational, thereby avoiding the risk of windfall, unearned gains or penalties for the company. Consideration will be given to making this a financial incentive going into AMP8.

Satisfactory sludge disposal – this is a statutory obligation that is enforced by NRW, which means that the drive for compliance and protection against non-compliance is already built-in without the need of financial incentives. Consequently, it is set as a reputational PC.

Sewer flooding, extreme storms – this is another resilience-focused common PC that is at a relatively early stage of development, hence it is to be set as reputational.

Welsh language services – as this is a statutory obligation, it is automatically a core part of our business. In addition, its statutory nature means that there is both sufficient drive for compliance and sufficient protection for customers against non-compliance. Consequently, it is set as a reputational PC.

Supporting our Priority Service customers during an incident – as with 'help to pay when you need it,' we see that financial rewards could give an unfavourable impression to customers and that penalties could act to create perverse incentives. Hence, our plan for the incentive to be reputational-only.

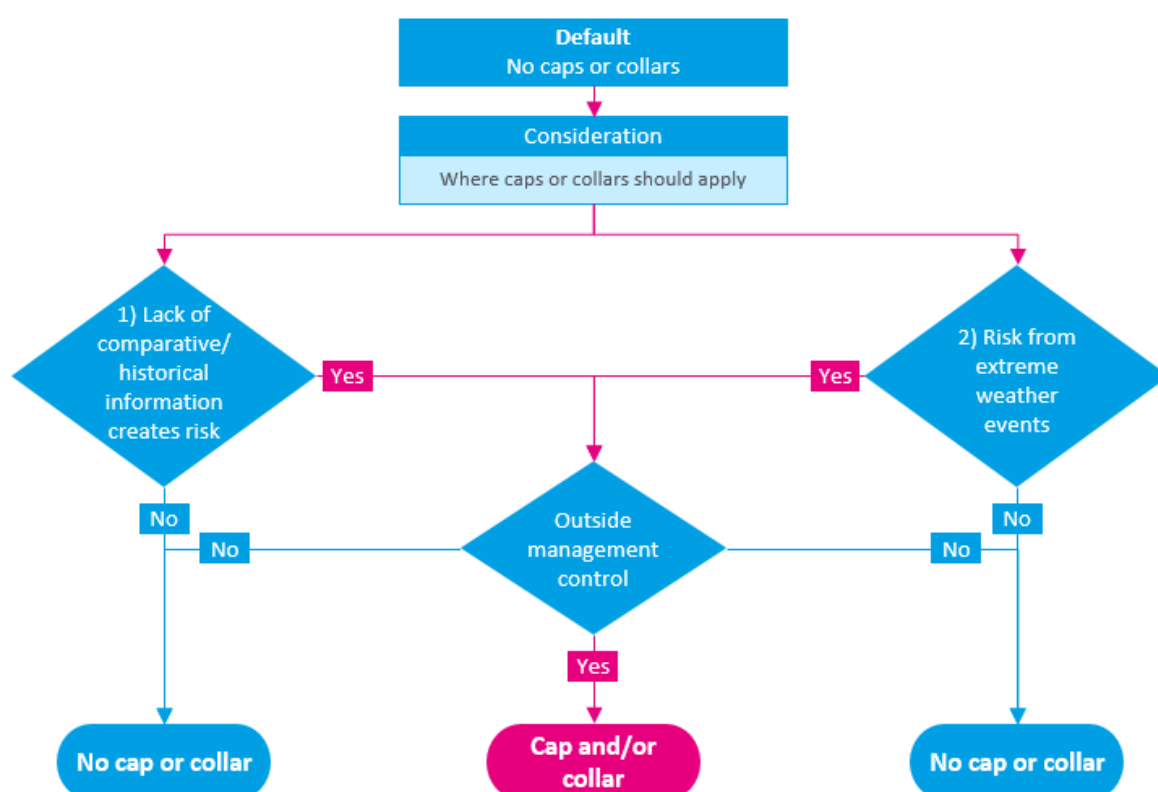
Help to pay when you need it – supporting vulnerable customers is a critical to maintain trust and confidence in the water sector. We see that there is a significant risk that, should we seek reward from helping those struggling pay bill, it could appear to customers that we are profiting from vulnerable customers. We are also concerned that the presence of penalties could create perverse incentives to ease-off on the qualification criteria in order to meet targets. As result, our view is that this PC should be reputational only.

Effectiveness of the affordability support – as with Help to pay when You need it, this is part of our support for vulnerable customers, which means it also has an important role to play in maintaining trust and confidence in the water sector. Therefore, it is essential that we should not look for financial reward from helping those struggling with affordability, lest it appear to customers that we are profiting from vulnerable customers.

Proportionate use of caps and collars

Ofwat expects companies to take steps to protect customers from extreme outcomes. We have made sure that caps and collars are only used following careful consideration. Importantly, when it comes to performance-reporting, unlike the current AMP, there will be no exclusions for extreme weather in the next AMP. So, following Ofwat guidance, we have included an option for collars to be applied only for those measures affected by this performance-reporting change. Specifically, this provides protection from extreme weather jeopardising financeability.

Caps and collars decision tree



Following the application of this framework, we are setting only one reward cap and two penalty collars.

One PC, lead pipes, will have a reward cap as there is a lack of historical information, meaning there is real uncertainty over the potential for under and outperformance. The amount included within our base plan for replacing lead pipes is £2.93m. On the basis of the proposed ODI, the expected number of lead pipes replaced over the AMP would be 460. While a penalty collar would be expected to accompany the reward cap, one is not necessary given that the penalty will naturally max out if zero pipes are replaced. To ensure a fair balance between risk and reward, and to make sure outperformance doesn't cause bills to become unaffordable, we've set a symmetrical cap on rewards. Consequently, the reward cap will be set at 920 lead pipes over the AMP.

Both internal sewer flooding and water supply interruptions will have penalty collars to address the risks of extreme weather, in line with Ofwat's guidance on this matter. We considered whether we should have symmetrical reward caps for extreme weather, but concluded against this for two reasons. Firstly, extreme weather does not favour the company and always poses significant challenges for continuity of service.

And, secondly, the best possible performance is bounded by zero in all three cases – it is not possible to have fewer than zero flooding incidents or fewer than zero minutes of water supply interruptions.

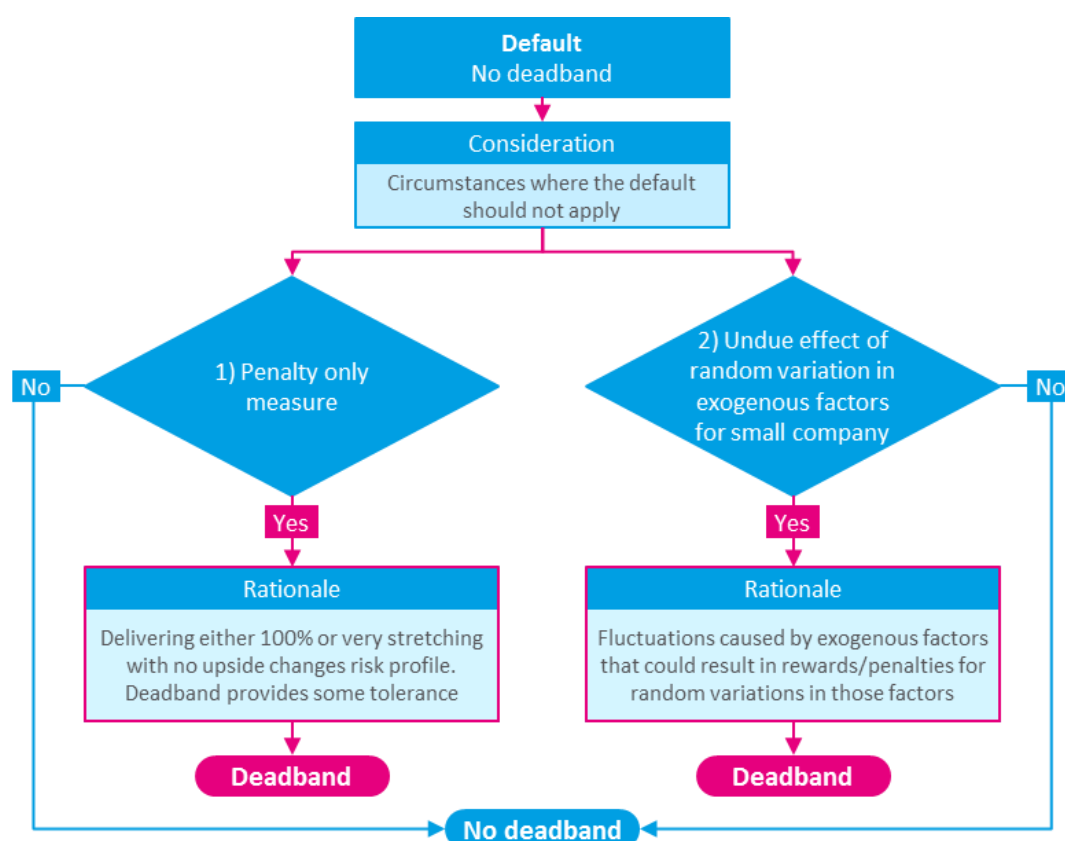
For internal sewer flooding, we have set the penalty collar with reference to Wastewater Network RoRE, which we expect to be £4.4m in 2024/25. We have taken 0.5% of this value (£22,008), which, if the proposed ODI was on an in-period basis, would cap the number of incidents at 18 in any one particular year. However, as the ODI will be applied end-of-AMP, we have combined these 18 incidents with the end-of-AMP target of 23 incidents to give an overall end-of-AMP penalty cap of 41 incidents. In terms of Ofwat's normalised metric for internal sewer flooding, this gives a penalty collar of 12.16 incidents per 10,000 sewer connections.

We've set the penalty collar for water supply interruptions according to the worst non-extreme-weather performance across AMP6, which occurred in 2016/17. This strikes a good balance between protection from undue risk, whilst making sure the company is exposed to the consequences of poor performance – we note that the performance seen 2016/17 was not only the worst in AMP6, but also in AMP5. Accordingly, the penalty collar for water supply interruptions is set at 21 minutes.

Deadbands applied only where there is a strong case

Ofwat has stated that, "For PR19 we are discouraging companies from proposing deadbands because they remove the incentive for companies to improve their performance, require judgement and reduce transparency to customers." In response we've developed a simplified framework for deadbands that reflects Ofwat's concerns. This means that deadbands would only be proposed on a limited basis, and only where there is a case for doing so.

Robust criteria for choosing deadbands only selectively



There is only one PC, mains bursts, that is at risk of undue effect from random variation in exogenous factors. This is particularly notable when we take account of our relatively small size.

The penalty and reward deadbands for mains bursts

Incidents	2015-16	2016-17	2017-18	2018-19	2019-20	Average
Total actual bursts	263.00	268.00	290.00	334	334	297.80
Absolute deviation from AMP6 average	34.90	29.90	7.90	36.20	36.20	28.96

The PC will have both reward and penalty deadbands. Having assessed historic and expected performance over AMP6, we have found that actual performance varies between +36 and -35 burst. This suggests that money would pass backwards and forwards between the company and customers, creating a significant likelihood of bill volatility.

The penalty and reward deadbands for mains bursts

	2020/21	2021/22	2022/23	2023/24	2024/25
Penalty deadband	124.30	123.85	123.40	122.96	122.52
PC	112.05	111.60	111.15	110.71	110.27
Reward deadband	99.80	99.35	98.90	98.46	98.02

Accordingly, we propose that the deadbands should be set in line with average of the mean absolute deviation of 28.96 bursts. Clearly, as bursts arise in only whole numbers, the correct point-of-reference is 29 bursts. In terms of Ofwat's normalised metric for mains burst, this gives a penalty and reward deadband of 12.25 bursts per 1,000 km of mains deviation from the PC. The specific deadbands that will apply each year are set out in the table below.

For treatment works compliance, a penalty-only deadband will apply. If performance drops below that level, then penalties will apply on an incremental basis. We have set the penalty only deadband at 97.9% to reflect the fact that a single treatment works failure would result in a compliance score of 97.9%.

Gated and trigger ODIs

Taking note of Ofwat's preferences in its methodology, we've not used either gated ODIs or trigger ODIs.

Turning customer valuations into meaningful ODIs

For ODIs to work effectively for both companies and customers the key is to ensure the ODI rates reflect the value customers place on that service improvement. In undertaking these valuations we are conscious of challenges from Ofwat, CCWater and our CCG. The key challenge relating to Ofwat's concerns that at PR14 there were wider variations in company valuations. This suggests some weakness with the data set which needed to be improved. A number of options were proposed by Ofwat including using a broader data set and trying different techniques.

The challenge from CCWater was similar but more focused on how companies might use different data sources. In its paper Defining and applying 'triangulation' in the water sector¹, a number of recommendations were put forward to inform companies' approaches:

- specify research objectives for individual areas and describe existing hypotheses or questions;
- identify possible data sources and analyse the data;
- identify key findings from each evidence source;
- weigh-up evidence and compare and contrast findings;
- assess existing hypotheses and research questions against the weighted evidence; and
- communicate and test findings, coordinate with business planning.

¹ <https://www.cewater.org.uk/wp-content/uploads/2017/07/Defining-and-applying-triangulation-in-the-water-sector.pdf>

As explained in chapter 2, we've created a strategic customer insight framework. This underpins how we developed our customer engagement, the tools we have used and our sampling approach.

Setting meaningful ODIs by triangulating and testing valuations

As mentioned above, we have undertaken two different valuation research projects to obtain stated preference WTP valuations by customer-type and by region. Part of our Severn Trent England WTP research we included a small but representative sample in Mid Wales. These customers were presented with Severn Trent average service levels and bills. Following challenge from the CCG, we commissioned a further WTP survey for both Mid and North Wales, with bespoke measures and service levels tailored to the our region, as well as ensuring aspects such as the Welsh language were catered for. In order to expand our evidence base, we have also referred back to the WTP research that Dee Valley undertook as part of their PR14 programme.

As a result, this programme of work has produced a set of WTP valuations that require triangulation into a single value. The benefit of this approach is that it reduces the weight placed on any potential outliers and helps achieve a rounded view of customer preferences. We have used the same technique Ofwat adopted when it triangulated its three econometric cost models at PR14 by taking an average across the models.

We designed our triangulation process, for determining a single set of values, to make sure our valuations underwent comprehensive analysis and testing and were fully-considered with reference to a wide-range of comparator results. To do so we combined the results of our 2017 WTP studies into a single metric, and then sense-checked the 2017 combined results against those of other companies to identify possible outliers.

The options for deriving a single aggregate WTP values for each service were:

- A – the minimum WTP value across all studies;
- B – weighted-average participant-based – according to number of participants in the two study areas (Mid Wales & North Wales);
- C – straight-average all results – no weightings applied, as all studies considered to be equally statistically valid;
- D – weighted-average by customer numbers by region (Mid Wales or North Wales) and by customer class (residential or business); and
- E – max – the maximum WTP value across all studies.

In choosing the most suitable forward, we considered the important criteria identified in CCWater's paper Defining and applying 'triangulation' in the water sector, which were:

- transparency of approach and robust rationale for any weights applied – so no 'black box';
- flexible to different needs and different situations – avoiding inflexible weights of calculation methods that negate the advantages of evidence gathered from a wide and diverse range of sources; and
- avoids confirmation bias.

Following discussion and consideration, we chose Option (D) – weighted-average by customer numbers by region. This reflects the fact that it:

- makes sure that no single method of WTP assessment dominates individual values;
- allows for all the various WTP results to be considered in the final valuation;
- makes sure the different regions are given due weight in the valuations;
- minimises the number of assumptions made thus reducing the chances of any "tailoring" of the WTP valuations which would benefit the company the most; and
- is a relatively simple method which can be easily explained and understood.

We have used multiple data sources to calculate the ODI rates

Through the application of the framework we have derived the following ODI rates:

The WTP results and the triangulated values

Service attribute			Mid Wales study 1	North Wales	Mid Wales study 2	DV PR14	Triangulated values
Water	Appearance of tap water	1 complaint	435	332	1	301	291
	Taste and smell of tap water	1 complaint	4,005	3,338	26	n/a	2,996
	Number of lead pipe replaced	1 pipe	47,027	155,670	n/a	n/a	127,585
	Water supply interruptions	1 property	19	14	1	64	32
	Leakage	1 MI/day	948	5,161	673	7,103	4,756
	Properties at risk of receiving low pressure	1 property	2,120	2,180	165	n/a	1,912
Waste	Length of river water quality improved	1 mile	1,860	n/a	35	n/a	245
	Internal sewer flooding incidents	1 incident	18,604	n/a	208	n/a	2,431
	Pollution incidents	1 incident	9,880	n/a	328	n/a	1,319
	External sewer flooding incidents	1 incident	5,928	n/a	48	n/a	772

Setting ODIs where customer valuations could not be established

There are service attributes where identifying customer valuations is not straightforward. This is because some attributes do not have a direct interface with the customer, such as treatment compliance. In other cases, such as replacing lead pipes, the service area is difficult to express to customers in a sufficiently meaningful and tangible manner for drawing out coherent valuations. In these circumstances, we considered two different options for identifying valuations.

We have used marginal cost valuations to set ODIs

Our preference is to use short-run marginal cost values derived from the incremental cost of improving the service area by one increment. On the basis that these marginal costs are used as a proxy for the benefit valuation, these marginal cost values are then multiplied by 50% in the same way that they would be if they were benefit valuations. This ensures consistency with the totex cost sharing element of Ofwat's methodology. We also consistently followed Ofwat's approach that would apply in the event marginal cost was used to set an AIM incentive², such that an uplift of 20% is made to provide an incentive beyond cost recovery.

We have adopted PR14 valuations, uprated to PR19 prices, to set ODIs

For certain measures, such as compliance, marginal cost information is not readily available. For example, given that compliance should be the status quo and non-compliance a deviation from that status quo, it is difficult to identify the incremental service changes necessary for estimating marginal cost. In such cases, our framework adopts the PR14 valuations, uprated for inflation, given these are already successfully driving desired performance outcomes.

Where possible, we have sought to use Dee Valley PR14 ODIs as the basis for this approach. However, as Dee Valley did not have PCs in all the areas that we are proposing for PR19, we have also drawn on Severn Trent valuations from PR14. In these instances, to make sure we attribute an appropriate proportion to Hafren Dyfrdwy, by adjusting the amount according to the RCV of Hafren Dyfrdwy's relevant business, as a proportion of Severn Trent's corresponding business.

² Ofwat (Dec 2017), "Delivering Water 2020: Our methodology for the 2019 methodology price review Appendix 2: Delivering outcomes for customers," p 37.

In a variation to the above approach, if a financial ODI did not exist for either Dee Valley or Severn Trent at PR14, then we have used the Severn Trent value for PR19. We then adjusted this for the relative difference in RCV valuations, similar to our approach when using PR14 Severn Trent valuations.

Ensuring ODIs represent a fair balance

One consequence of incentive based regulation is that it creates the risk of greater bill volatility, depending on how the company performs. Looking forward to PR19, our customers have demonstrated support for ODIs (performance payments). However, this also means we have a responsibility for continuing to manage bill volatility. Accordingly, we will factor this into our annual in-period ODI submission to Ofwat and annual charges process.

CCG scrutiny and challenge

Throughout the process for developing ODIs and the associated framework, CCG has played a vital role in scrutinising our plans and proposal and challenging areas requiring either improvement or clarification. We tailored our engagement approach in response to guidance and challenge from our CCG, including by:

- ensuring engagement material and interviews are available in both English and Welsh;
- targeting Welsh speaking communities and targeting additional locations such as cattle markets to get a better cross section of views;
- ensured the engagement material was specific to the bill and performance seen in each area – especially where there is divergence between former DVW and STW areas;
- asking customers about a likely ODI scenario with a mix of underperformance and outperformance, rather than the extremes; and
- asking customers about acceptability of the bill in both real and nominal terms.

Testing for outliers

We have tested our ODI rates, where comparable with those applied for different companies at PR14. On first inspection, these often appear to be noticeable lower than those applied elsewhere. However, once we take account of the number of households across different companies, the rates we are proposing for Hafren Dyfrdwy are much more comparable.

The case of sewer flooding provides a good demonstration of this. As shown in the table below, the proposed ODI rate is substantially lower than the rates applied for the WaSCs at PR14. All rates are shown in 2017/18 prices. However, on a per customer basis, the marginal benefit (measured at two times the ODI rate) on a per household basis shows that our valuations fall within the range for the other companies.

	PR19 (£)	Accounts (HH only)	Marginal benefit per customer (£)
ANH	40,443	2,469,284	0.032757
NES	14,604	1,114,097	0.026217
SRN	81,142	1,761,843	0.092111
SVT	53,702	3,937,914	0.027274
SWT	76,392	651,785	0.234410
TMS	61,788	5,184,063	0.023838
WSH	69,652	1,269,794	0.109706
YKY	64,593	1,994,538	0.064770
HDD	2,431	26,000	0.187037

One ODI did stand out as an outlier – length of river water quality improved. The reasons for intervention and the specific actions taken are set out in appendix 2 Rationale and evidence for PCs and ODIs.

Summary of ODIs

	Frequency	Type	ODI rate	Unit
Water Quality Compliance (CRI)	rep	NFI	rep	index
Number of complaints about drinking water quality	In-period	Out & under	566	# of customer contacts
Number of lead pipe replaced	End of AMP	Out & under	9,555	# of lead pipes
Water supply interruptions	In-period	Out & under	6,002	Minutes
Leakage	In-period	Out & under	2,464	Megalitres per day (ML/d)
PCC	rep	NFI	rep	Litres per head per day
Resilience - drought risk	rep	NFI	rep	% at risk of level 4 drought
Asset health - burst mains	In-period	Out & under	6,138	# of mains bursts per 1,000 km of mains
Asset health - unplanned outage	rep	NFI	rep	% outage compared to company peak week production capacity
Properties at risk of receiving low pressure	In-period	Out & under	987	# of properties
Length of river water quality improved	End of AMP	Out & under	41,567	km
Hectares managed for biodiversity	End of AMP	Out & under	4,455	hectares
Satisfactory sludge disposal	rep	NFI	rep	% of total sludge
Treatment works compliance	In-period	Under	2,053	% of compliance
Inspiring our customers to use water wisely	In-period	Out & under	8.90	# of people
Internal sewer flooding incidents	End of AMP	Out & under	17,482	# of incidents per 10,000 sewer connections
Pollution incidents	In-period	Out & under	29.00	# of incidents per 10,000 km of waste network
Sewer blockages	End of AMP	Out & under	15.24	# of blockages
Sewer flooding - extreme storms	rep	NFI	rep	% of total population served
Sewer collapses	End of AMP	Out & under	6,405	# of per 1,000 km of sewers
Number of void supply points – combined bill (rate 1)	In-period	Out	114	# of supply points
Number of void supply points – water only bill (rate 2)	In-period	Out	78	# of supply points
CMeX	In-period	Out & under	Ofwat	CMeX score
DMeX	In-period	Out & under	Ofwat	DMeX score
Non household customer experience	In-period	Out & under	Ofwat	Satisfaction score
Welsh language services	rep	NFI	rep	% compliance
Supporting our Priority Service customers during an incident	In-period	NFI	rep	% of customers
Help to pay when you need it	rep	NFI	rep	% of customers
Effectiveness of the affordability support	rep	NFI	rep	% of customers

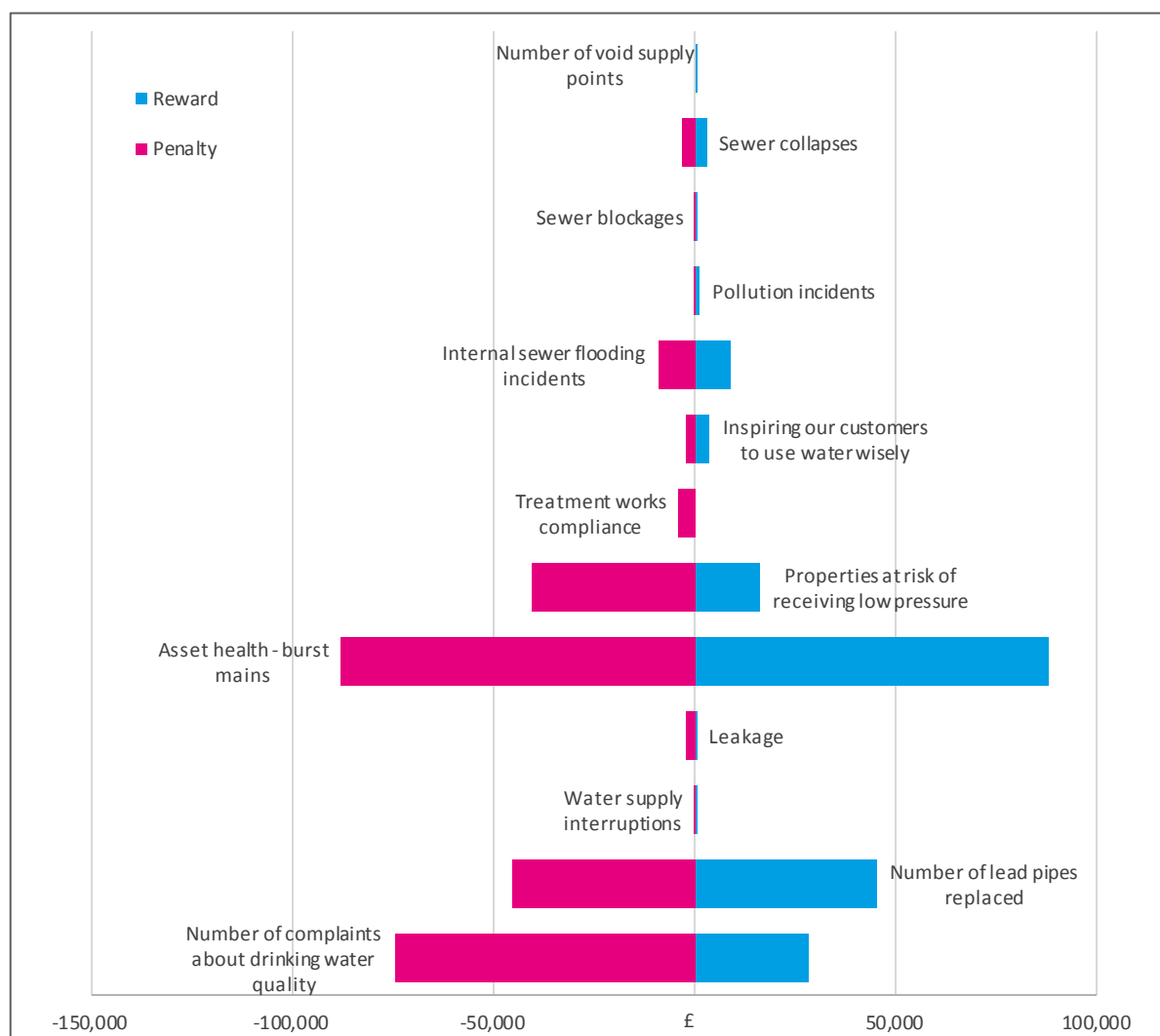
We have analysed the possible performance outcomes, in terms of the aggregate range for the company as a whole and the individual P90/P10 ranges. The overall picture is penalties and rewards that will likely equate to

+0.24% and -0.46% RoRE. This view is based on an aggregate out and under performance of 75%, with an expected impact on bills of -£1.69 to £0.87.

Bill Impacts (£)	75% outperformance scenario	75% underperformance scenario
Reward	1.61	0.54
Penalty	-0.74	-2.22
Total combined bill impact	0.87	-1.69

In terms of bill impacts, this is consistent with the feedback gained from customers and the consensus view of CGG, in that there is not an expectation for notable rewards and penalties. A further consideration is our relatively small geographic area and a relatively low number of accounts, which means that we do not see the diverse views, WTP values and priorities that larger companies experience. For small companies, such as ourselves, this creates the potential that our triangulated WTP values, on individual basis, could differ notably from those in larger companies and thereby results in greater-than-expected or, as in our case, lower-than-expected RoRE range impacts.

On an individual P90/P10 basis, the ranges are as set out in the figure below.



Part 4 – Overview of expenditure and structure of the outcomes narrative

This section provides a guide to the total expenditure in the plan. To ensure we are safeguarding future services our plan includes an increase in expenditure compared to the past; we have worked to find the optimum level of investment that balances risks and service and we have sought challenge internally through our governance processes and externally through the CCG and from other stakeholders to make sure the scope of our plan is right for customers now and in the future. We have also challenged ourselves to ensure that we deliver the plan in the most efficient way and our plan includes immediate and sustained cost reduction across all price controls, which equates to a 9% efficiency challenge. We know there's no silver bullet – it's about identifying solutions that drive multiple benefits and working effectively with other organisations. More detail about the efficiency challenge we have set ourselves is included in appendix 5 and table 24a.

In this section we explain:

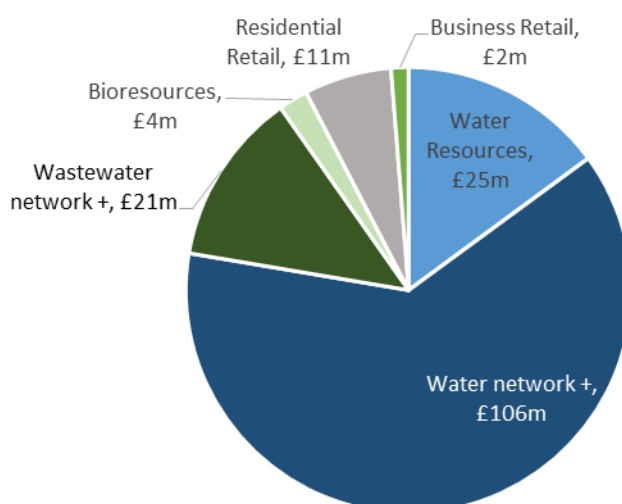
- How expenditure has been allocated and is reflected in the data tables
- The structure of the narrative on our nine customer outcomes and how that links to other chapters in our plan.

Overview of totex in our plan

This section summarises the totex in our PR19 plan, linkage to the data tables and breakdown between price controls, outcomes and regulatory drivers (maintenance and enhancement).

At the highest level our plan includes £169 million totex (net of grants and contributions), £156 million of which relates to wholesale activities. £156 million wholesale totex: £131 million (84%) is allocated to Wholesale Water (Water Resources and Water Network Plus price controls), with the remaining £25 million (16%) to Wholesale Wastewater (Bioresources and Wastewater Network Plus price controls).

£11 million (6% of all totex) is related to residential retail and £2 million (1% of all totex) is business retail.



The table below provides the reconciliation between Wholesale totex and tables WS1 and WWS1.

Table WS1 Wholesale Water £m	AMP7 Totex	Table WWS1 Wholesale Wastewater £m	AMP7 Totex
Operating expenditure (Line 11 minus Line 5)	71	Operating expenditure (Line 11 minus Line 5)	14
Maintaining the long term capability of our assets (Line 5 plus Line 13)	44	Maintaining the long term capability of our assets (Line 5 plus Line 13)	9
Capex enhancement expenditure (Line 14, 15 and 16)	20	Capex enhancement expenditure (Line 14, 15 and 16)	3
Other (including pensions, grants and contributions)	(4)	Other (including pensions, grants and contributions)	(1)
Totex (Line 36)	131	Totex (Line 36)	25

We've used driver trees to link outcomes with activities and resources, recognising an element of shared costs:

Outcome £m	Wholesale Water	Wholesale Wastewater	Wholesale totex
Good to Drink (Chapter 6, section 6.3)	28	-	28
Water always there (Chapter 6, section 6.4)	76	-	77
Wastewater safely taken away (Chapter 6, section 6.5)	-	20	20
A thriving environment (Chapter 6, section 6.6)	3	3	6
Shared costs	24	2	26
Total	131	25	156

Wholesale totex can also be split between maintaining service and enhancement, with the latter driven by factors such as population growth and new statutory obligations. The tables below show the splits between maintenance and enhancement totex.

Wholesale Water £m		AMP7 Totex	Wholesale Wastewater £m		AMP7 Totex
Base	Opex	70	Base	Opex	14
	Capex	44		Capex	9
	Other	(4)		Other	(1)
	Sub-Total	111		Sub-Total	22
Enhancement expenditure (Table WS2)	Opex	1	Enhancement expenditure (Table WWS2)	Opex	0
	Capex	19		Capex	3
	Sub-Total	20		Sub-Total	3
Totex		131	Totex		25

The enhancement values align to tables WS2 (Water Service) and WWS2 (Wastewater service). We have provided additional commentary in the data table line commentary document which is a supporting document to the data tables.

Ensuring costs are efficient

In appendix 5 – efficient costs, we’ve explained how we are planning to build on our strong AMP6 efficiency performance to deliver 9% efficiency on wholesale costs and around 12% efficiency on our retail average cost to serve. We conducted a number of external benchmarking studies to build and test the efficiency of our costs including construction contract costs, construction on-costs and support costs. The range of studies helped to ensure we avoided potential bias from not comparing costs on a like-for-like basis and, as we also repeated some PR14 benchmarking, provided a consistent analysis. The analysis proved useful to help us to identify efficiency opportunities which have been baked into our plan. The results of our benchmarking analysis are summarised in appendix 5.

We also tested our plan against updated econometric benchmarks including a challenging set of catch-up (UQ) and frontier shift (1% per annum) assumptions. We consider that our size and regional circumstances make it challenging to derive robust expenditure forecasts from industry wide econometric models, however we did use these as a guide in our plan development. This approach provided a holistic view of efficiency which recognised there may be further scope for efficiency beyond that captured by a bottom up cost assessment.

This evidence demonstrating efficient costs applies across all our activities. This is because we operate our business holistically, with many of the cross-cutting efficiency initiatives flowing through the price controls.

Customer outcomes and linkage to other chapters in the plan

This section is intended to assist the reader navigate through the plan. Chapters 6.1 to 6.9 describe each of our customer outcomes, summarising why they are important to our customers, what we will be delivering and how we have developed the programme to ensure it offers best value to customers, including how we have responded to challenges from the CCG. There are several documents that are common across all of the outcomes and others that are specific, the sign posts below:

Common across the plan

- Customer insights – chapter 2
- Resilience in the round – chapter 5
- Appendix 1 Customer insights- a compendium
- Appendix 2 Rationale and evidence for PC targets and ODIs
- Appendix 3 Bespoke PC definitions

The remainder of this chapter is structured by customer outcome:

- 6.1 Outstanding customer service
- 6.2 A service for everyone
- 6.3 Water that is good to drink
- 6.4 Water that is always there
- 6.5 Waste safely away
- 6.6 Thriving environment
- 6.7 Lowest possible bills
- 6.8 Making a positive difference
- 6.9 A company you can trust

6.1 An outstanding experience

We consistently exceed our customers' expectations and deliver a stand-out experience.

6.1.1 Summary

Everything we do, every day, contributes to our customers' experience of us and we want that experience to exceed their expectations. As such, we aim to create an excellent customer experience which builds trust and confidence in our services.

Whether our customers see us in their community, contact us in person, online, or we contact them, they'll receive a service that is personable, receptive and seamless. We'll create lasting relationships that are underpinned by warmth, empathy and respect.

We support the introduction of C-MeX and D-MeX as more comprehensive, complete and comparable measure of our performance. We aim to continuously improve customer service, through innovation, technology and learning from other organisations and these new measures will further sharpen that focus.

This outcome considers our customers in three parts:

- residential household customers;
- non household customers; and
- developers and customers who want to connect to our network.

Our household customers will benefit from:

- a multi-channel, more personalised service;
- more tailored information about the choices and services available to them;
- focus around education and awareness;
- proactive contact if we think there's an issue that affects them, through varied channels;
- an expert team to support them, who are receptive to their issue and strive for a seamless timely resolution;
- a new Social Tariff co-designed with our customers to make the process easy and the support meaningful; and
- creation of a dedicated Care & Assistance team, to retain the local focus and who are trained in assisting customers with both service and financial vulnerabilities.

Non-household customers will benefit from:

- a dedicated phone line;
- a dedicated customer service team; and
- a dedicated section on our website for help and support on water efficiency.

Developers, no matter what their size or needs, should expect:

- tailored support to guide them through our simplified processes;
- improved contact availability and channels;
- further innovation in our tariffs; and
- increasing online support, payment options and self-service facilities.

Over the AMP7 period, we'll continue to drive down our costs to serve (residential retail)

	2020/21	2021/22	2022/23	2023/4	2024/5
Costs to serve (£)	29.78	28.91	27.08	23.80	23.40

Our customers will also benefit from performance improvements

Performance commitments	2020	2025	2045
C-MeX (household customers)	Median	Upper quartile	Upper quartile
D-MeX (developers)	Median	Upper quartile	Upper quartile

This section focuses on our household and non-household customers.

6.1.2 Our household customers and communities

Our customers' expectations of us should be just as high as their expectations of any other service provider

We recognise that, for many of our customers, their experience of dealing with us is limited to the few times they are required to contact us to open accounts, pay bills or inform us of a change in circumstance. These are therefore opportunities to build relationships and aim to exceed our customers' expectations.

In a digital world, customers expect to contact us through a wide range of channels at a time which suits them and with the ability to control their experience online. In a competitive environment, the success or failure of these offers could be a reason that drives them to change supplier. We need to approach customer service as if we are in a competitive market, to understand, adapt to, and meet our customers' expectations in order to ensure we would be their supplier of choice.

We've used a range of different sources of customer insight to better understand our customers' needs of us and we've also looked beyond these expectations to other sectors, recognising that customers compare us to other organisations they engage with.

The range of insight we've used

Approach	Purpose
Customer needs research	Improves our understanding of customers' needs and the role that we play in meeting them (including customers whose circumstances could make them vulnerable)
Customer tracker survey	Explores views of customer service over time
NAV research	Explores customer views on the acquisition and licence change
PC and ODI research	As well as the main objectives of this project, we used the workshops with NHHs as an opportunity to understand what they expect in terms of customer service
Insight from customer facing employees	Tells us what our customer facing employees feel are the most important sources of customer dissatisfaction

What our customers expect from us

We have reviewed the evidence from our customer research, feedback from customer facing employees and contact analysis. Four themes on what customers expect consistently stood out:

- **Personalised service** – delivering a great customer service which is easy to access.
- **Caring support** – providing friendly and empathetic support for customers.
- **A local identity** – retaining a local identity and being involved in the local community.
- **Innovation and forward thinking** – ensuring we keep pace with our customers' changing habits and expectations.

Learning from the competitive non-household market

The opening of the non-household market has given us the opportunity learn more about what customers expect from their wholesaler and retailer. Retailers and customers expect consistency in service as well as common language and terminology to make customer journeys easy.

Customers want clarity, for example during an incident. One specific area highlighted since market opening is the provision of alternative supplies during a water supply event. For example, during one incident, farmers were receiving mixed messages from retailers and wholesalers and were unsure where to go for support – they just wanted clear messaging and expectation setting.

Market opening in England has driven an increase in accuracy of bill queries – highlighting that this is a key area of importance for customers, something we see as relevant for both non-household customers in Wales and for the household market.

We will use all this learning to ensure we improve business customers' experience and also to take into our residential customer journey improvement thinking.

Our plan responds to our customers:

Synthesis of customer views	How we're responding
Customers not always aware of contact channel and payment options and wider activities we do	Introduced a variety of new communication channels and making wider use of technology to promote digital options such as self-serve
Simplifying the process	Promoting options and wider value through web chat, digital campaigns and existing touchpoints such as the bill
Understand individual customer needs and circumstances and act accordingly	Bills that are easier to understand, making our service accessible to all, and meeting the needs of our multi-lingual and multi-cultural customers
A personalised service	Use insight and analytics to personalise our service and communication aligned to customer preferences

6.1.3 By 2020: where we're starting from

The creation of our new Welsh business has allowed us to take a whole new approach to customer engagement, allowing us to build on what is important to customers and what they feel we already do well. Customers appreciate their local water company and 94% of customers are satisfied with their service. Customers told us that bills are seen as reasonable and the payment facilities and arrangements we have on offer are acceptable. Our customer tracker tells us that 89% of those surveyed associated "great customer service" with their water company.

However, with a focus on customer experience, we recognise that there is always more that more can be done and that customer needs are regularly changing.



6.1.3.1 Our service

We've adopted a new customer journey approach to create a truly customer-centric culture and to ensure we put customers at the heart of everything we do. This will contribute to making our service more accessible by expanding our contact centre opening hours and digital channels so that our customers have more options to contact us at a time, and through a channel that is convenient for them. We now maintain eight different customer communication channels, including webchat.

Extended contact channels and opening hours make our service more accessible

Extended contact channels and opening hours make our service more accessible						
	2014/15	2015/16	2016/17	2017/18	2018/19 (planned)	2019/20 (forecast)
Contact centre opening hours	Billing: Mon-Fri 8am-8pm & Sat 8am-1pm Emergency: 24/7		Billing: Mon-Fri 8am-9pm & Sat 8:30am-5:30pm Emergency and key billing queries: 24/7			
Contact channels offered	4 (phone, email, letter, website)	8 (phone, email, letter, website, Twitter, web chat, Instagram, Facebook)				

Opportunities to be refreshingly different

We know that focusing on the basics alone is not enough to increase customer satisfaction – we want to do something more than our customers might typically expect from a water company. We aim to create a positive service experience by continuing with webchat, the introduction of new opening hours and using digital campaigns, together with learning how a tailored incident response can make a real difference. This will further build trust with customers.

We've adopted a new bill format that was co-designed and trialled with Severn Trent's English customers. This new, simpler format focuses on the information customers tell us is most important to them. Through the introduction of the new format, contacts during the 2017 main billing period in Severn Trent's area in England fell by 17,000 in the first year of roll out. We're hoping to see similar results and are confident our customers will see the benefits.

Finding the right balance between service and costs

One of the biggest challenges we face, like any retailer, is finding the right balance between service and costs. For example, our customers tell us they appreciate having a local call centre so we haven't realised potential savings that could be achieved from sending our contact centres off-shore. But we have challenged ourselves to deliver improvements like expanded contact channels and extended contact centre opening hours.

6.1.3.2 Our current performance – Service Incentive Mechanism

Billing performance – compared to last year there has been an increase in complaints for 2017-18. Root cause analysis has been carried out and no trends have been identified. The highest area of complaint was Payment Facilities and we are hoping with the upgrade to our new billing system this will deliver increased flexibility for our customers and we should see a decline in these for 2018/2019. We have also implemented a new free meter option (FROPT) process which has shown an improvement in customer experience and reduced the amount of time it takes for the installation of the meter. Additional work has been done to streamline the process which means that accounts are put into void when relevant preventing properties being brought into charge in error. Other issues raised were around communication and to resolve this we've been contacting customers prior to any appointments which has also had a positive impact.

Alongside the launch of our new Welsh business we have launched our new website, offering additional contact channels such as 'Track my Job', we hope this will help to reduce any issues with communications. The website has other online self-service offerings to further improve satisfaction levels, these new increased offerings will work alongside our more traditional methods of contacts, as we recognise these are still a preferred channel of choice for some of our customers.

SIM	2014/15 (actual)	2015/16 (actual)	2016/17 (actual)	2017/18 (actual)	2018/19 (forecast)	2019/20 (forecast)
Dee Valley					n/a	n/a
Hafren Dyfrdwy	n/a	n/a	n/a	n/a	Median	Upper quartile

6.1.3.3 Our operating environment

Rapidly changing (and increasingly diverse) customer expectations

Customers' needs and expectations are changing at an increasingly rapid pace, creating both uncertainty and opportunity for us. One example of this is SMS messaging. In 2009, in research undertaken by our English company, customers said they couldn't foresee ever wanting to receive text messages; almost a decade later SMS is a channel of choice for many and other messaging platforms including webchat are being regularly used by customers.

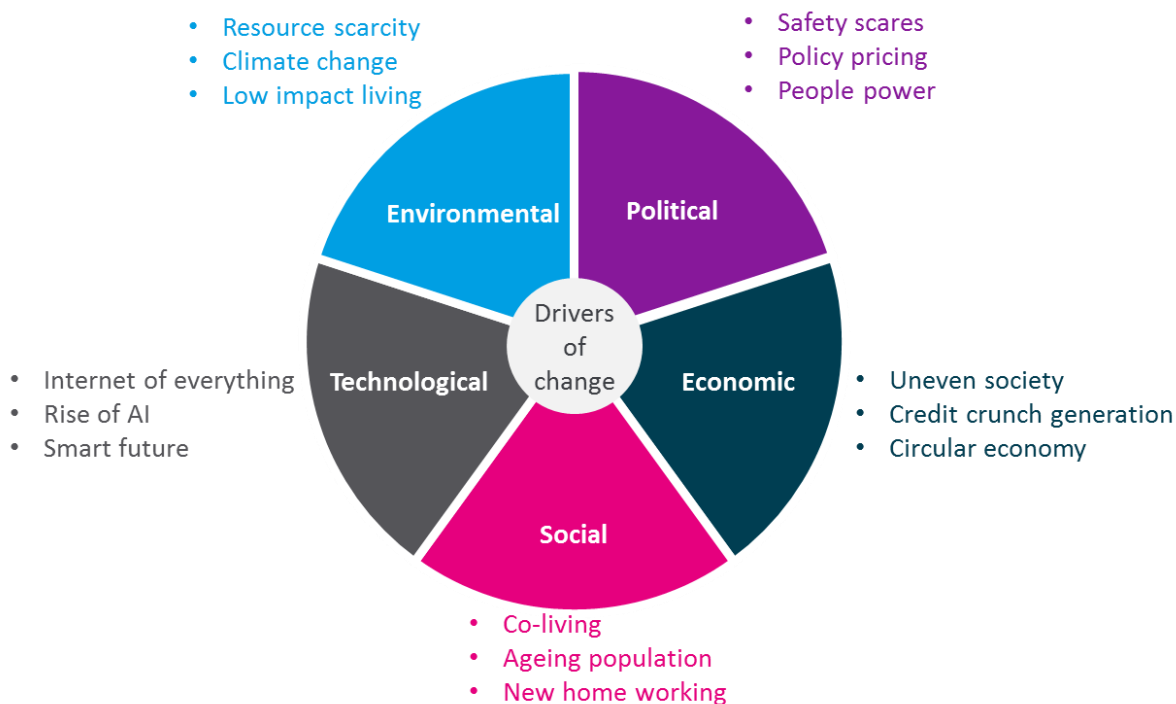
These channels are widely used by our Welsh customers. However, our customer research tells us that some customers in rural areas may not have the facilities to contact us through our digital channels. For example our research finds that that 15% of customers in North Wales and 20% in Mid Wales have no access to the internet, primarily due to lifestyle choice followed by cost.

In our tracker the majority of those who say they have contacted us have done so via telephone. However, there is scope for an increase in other forms of contact - whilst 87% select the telephone amongst their preferred contact methods, 16% are telling us they would prefer email. Some customers prefer to deal with us face to face with 8% of our customers telling us that this is their preference. We will continue to offer choice to all customers and recognise that these more traditional contact methods are likely to be the first choice for our Welsh customers.

6.1.4 Our long term strategy

Our long term strategy focuses on making sure we remain a adaptable and agile in a sector – retail – where the wants and needs of our customers are constantly changing. We believe this means taking a data-led approach to understanding our customers, underpinned by a technology strategy that allows for constant change. It also means protecting our customers, and ensuring our service remains resilient to potential shocks and stresses.

6.1.4.1 Predicting an unpredictable future?



While the future may be uncertain, we cannot stand still. We've researched changes in consumer strategy to identify key trends that are expected to influence customer service in the future. Working with an external agency, we've looked at drivers of change that would have the biggest impact on consumers' home lives, their behaviour and the brands, products and services they might choose.

How we're already adapting for the future

Trend	Examples of how we're adapting
Multi-channel, fast response	Expansion of communication channels and instant response options including webchat, Twitter and Facebook
Personalisation	Increasing segmentation and tailoring of our channels and communication
Smart data use	Trialling the use of smart meters to drive data and insight to help influence customer behaviour to reduce water usage
Flexibility and control	Introducing new tools that provide greater control, including live job tracking on our website
Blending automation and the human touch	Combining greater automation in our processes, with bespoke teams to deal with complex customer issues

Since the acquisition we have been looking to share best practice with our English business. One of the areas we are looking at is the use of robotics/automation to reduce the amount of time our teams need to spend on simple, manual, repetitive tasks which involve little decision making. This would allow our Customer Contact teams to spend more time on providing a great customer experience by focussing on the more complex issues.

6.1.4.2 An insight driven service

We want to use data to the benefit of our customers and take a leading position in customer experience and innovation. Our analytics strategy includes three areas –this will be a key enabler for our improvements in the next five years.

- Predictive technologies allow us to quickly develop new ways to support our customers, helping improve their experience and pre-empt potential issues. This means using tools to gain value quickly or using the latest predictive model and deploying them to our front line people through integrations with our customer relationship management platform.
- Interaction analytics can drive improvements in contact centre customer experience while delivering tangible efficiencies that can be passed back to our customers. Advances in sentiment analysis, natural language processing and auto-scoring mean that we can use a variety of ways to improve the service that we provide.
- Behavioural analytics have the potential to both make our sector more resilient and help our customers get more from their service. By expanding our current tools we can collect more data on customer behaviours and preferences and are already using different trials to explore what triggers changes in behaviours.

6.1.5 By 2025: our five year plan

Over the 2020-2025 period we'll continue to redefine our relationship with our customers focusing on our new brand and awareness of this to increase trust for the new business. To become more than 'just my water company' we'll build lasting relationships built on warmth, empathy and respect. We want our customers to receive a service that is receptive to their issue and seamless in its resolution. They'll have more options tailored to their needs, be more aware of those choices and know how their bill is spent.

We will maintain our eight channels of communication, work to resolve any issues in a timely and caring manner and keep customers at the heart of our thinking and actions. We will learn from best practice across the sector and in other markets, to ensure we're providing the best possible service and experience to all customers.

We're making nine pledges to our customers

You will:

1. Know the service options and choices available to you.
2. Have a clear, accessible bill with a range of payment options to choose from.
3. Be able to do everything online, if you'd like.
4. Find it easy to talk to us - how you'd like to, when you'd like to.

And we will:

1. Let you know if there is an issue, or we think there is something that we could do to help you.
2. Resolve your queries quickly, with a friendly and caring service.
3. Learn more about you, and personalise our service to your preferences.
4. Make our service accessible to all, meeting the needs of our multi-lingual and multi-cultural customers.
5. Act fairly and promptly if we let you down. And we'll learn from our mistake so it doesn't happen again.

To drive further improvements to the customer experience, we're introducing eight initiatives that will draw on the technologies and capabilities we have in place and the expertise of our people and a customer driven

culture. We'll also expand our use of behavioural techniques to help our customers get the very best from our service.

Relationships built on warmth, empathy and respect

1. Understanding our customers. Our customers want caring and empathetic support. We will work to understand more about them so that we can ensure we engage with them in a way that suits them. This includes capturing preferences for contact channels and which areas of service interest them.

2. Customer culture. We know that the capability of our people, and their behaviours can make a real difference for our customers. We will continue to build a customer culture in our organisation by embedding a customer journey mind-set, measuring the performance of our people on outcomes not measures such as handling times, and use interaction analytics to understand our customers' sentiment towards us.

Engaged

3. Better information. Our customers aren't always aware of the choices available to them. They'd like more information but don't want blanket communications. We'll use this, and our growing insight, to promote our services and the value our customers receive, in a way that works for them, i.e. a focus on doing more in local communities, introducing our Community Champions programme where we volunteer in our local communities, and increased education and awareness in schools and through engagement for our External Relationships team.

4. Personalised service. Our customers want to receive information that is relevant to them, via a channel that suits them and in the language of their choice i.e. Welsh or English. We'll use behavioural insight, analytics and segmentation to personalise our service for our customers.

Receptive

5. Pre-empting issues before they impact our customers. Our customers have a higher level of satisfaction if we proactively identify issues and inform them, for example, about unusually high consumption impacting their bill. We'll do more to proactively contact our customers, using analytics to identify what the triggers of issues for customers may be.

6. A multi-channel service. When personally affected by a water issue, our customers' instinct is often to call. Few are aware of live chat and social channels, but feel both are appropriate and relevant. We'll continue expand our channel offering as new channels become relevant, provide live level of service information and expand the scope of our digital journeys so that they become an end-to-end service option.

Seamless resolution

7. Customer journeys. Customers want us to provide realistic timescales and not over promise. They expect to be regularly updated. We'll continue to tackle cumbersome processes with better workflow management and automation to make journeys quicker, with an emphasis on right first time resolution – but retaining the human touch at critical moments, all of which will contribute to reducing the number of escalated complaints. We're looking to trial billing cycles and payment plans to align with our customers' lifestyles. And we'll expand the capability of tools like 'track my job' so our customers feel better informed and more empowered.

8. Service recovery. Our customers are often surprised and delighted when we contact them following a service issue or respond to their feedback. We have created a dedicated team of agents based in our Wrexham office who deal with all aspects of complaints and service recovery. This will continue to embed a culture of taking personal ownership for problems and make sure we learn from them. We'll respond to voice of the customer feedback quickly and introduce a new quality based performance framework for our people.

6.1.6 The commitments we're making

Our performance commitments are designed to hold us to account for the improvements we've promised to our customers, and track progress against our outcomes.

Evaluating our current commitments

Currently, SIM is used to evaluate our performance in this area. This will be replaced with a new industry-wide common performance commitment, C-MeX. We're supportive of this change. With the widening of this common commitment to include surveys of all customers, C-MeX will ensure the experience of all our customers is represented, not just the customers who have contacted us.

Including the experiences of customers who have not directly contacted us will test the impact our brand is having on our communities and customers. We will work to improve our customers' perceptions of us through our work with stakeholders and communities and through continuing to build our brand as a caring, local company.

6.1.6.1 Developing our new brand

It is well known that brand can be used to drive trust, improve customer sentiment, achieve greater relevancy and can be a foundation to embed behavioural change with customers. As part of the creation of our Welsh business, we invested in the creation of a new brand to help drive our business objectives, support our ODI's and build better relationships with our customers.

Our ambition is to ensure that every customer, community and colleague has a better day because of what we do and how we do it. Therefore, our plan is to use this new brand to help us deliver against our key metrics including trust, C-MeX and ODIs.

6.1.6.2 Our new commitments for 2020 onwards

From 2020, we're proposing to focus on C-MeX as a more comprehensive, complete and comparable measure of our performance. As C-MeX covers both customers who have contacted us and those who have not, we believe it will provide a good overall indicator of the level of service companies provide as well as our ability to effectively handle complaints.

6.1.6.3 Setting stretching targets

As a common, industry-wide measure, we have set our targets at upper quartile, based on linear projections of industry performance.

We believe that the work we've begun since setting up our new Welsh business will hold us in good stead as we move into AMP7. Our proposed activities will move us to upper quartile performance and our focus on providing an excellent customer experience will keep us there.

The incentive rates will be defined by Ofwat, more detail is included in appendix 2.

6.1.7 Providing a service and experience to our non-household customers

Our non-household customers' expectations of us should be just as high as their expectations of any other Retailer. Our bespoke performance commitment shows we are committed to providing excellent quality services to our business customers.

Whilst for the most part the expectations of our non-household and household customers align, we acknowledge that in some areas their priorities may differ and we think it important that we recognise these differences and that, alongside the Service Incentive Mechanism, we measure levels of satisfaction amongst this group separately. Information on this can be found in chapter 8.

6.1.8 Providing a superb service and excellent experience for our developer customers

Every year we connect hundreds of new properties and install and adopt new water and wastewater pipes. Whether we're working with an individual self-build, a national homebuilder constructing a new 200 house estate or a farmer wanting a connection for a new cattle trough, we want the experience to be great and the process to be as simple and cost effective as possible. This is often the first experience a customer will have of us so it is important to get it right first time.

We've worked hard to drive change across our sector and ensure that it evolves to deliver what matters most to our customers. We've achieved this through proactive engagement with key stakeholders and our customers, supporting Ofwat working groups, Water UK, home building federations and self-lay forums. We've also held specific customer engagement sessions where customers have shared their key desires and differences and we've met with Welsh Government.

Our ambition is to be at the forefront of the Developer Services market by being easiest to deal with and value for money.

6.1.8.1 Where we're starting from

Leading the Developer Services market

With the commencement of Hafren Dyfrdwy our priority has been to ensure that our customers have been welcomed. Importantly, we've ensured that customers know who to contact and how to connect to our network.

Providing a great customer experience and consistently meeting our service level commitments is really important to us. We're also striving to reduce costs, ensure charges are stable and predictable and drive down resolution timescales to deliver a faster, more efficient service for our customers. Our overarching ambition is to deliver upper quartile performance in D-Mex by 2020/21.

We will be introducing tariffs that encourage developers to build sustainable properties which save water and reduce the amount of surface water going into the public sewer; a discount scheme that allows developers to receive significant discounts on their charges.

During this AMP there's been significant regulatory change across the water industry where we've been actively leading and supporting under the umbrella of Water UK. An example of this is where we jointly led a national review of the Self-Lay Code of Practice. We are also an active member of the D-Mex working group and the Codes for Adoption Programme.

We have proactively engaged with the Welsh Government and Dwr Cymru to fully understand the differences and opportunities presented by Welsh legislation compared to English legislation and Code changes, for example the mandatory adoption of sewers and lateral drains, the importance of Welsh Ministers standards, the introduction of Sewerage Adoption Bodies, the mandatory requirement for sprinklers to be installed within all newly built homes. We also continue to proactively support the planning consultation process in Wales.

Being easy to deal with

We have utilised our group level research with developers to understand their priorities. During these conversations it became clear that there were five customer types whose customer experience and service needs differed. One off builders & homeowners, Builders, Developers, Self-Lay providers and NAVs.

We've re-organised to align with these customer segments. Because we understood what was most important to each customer segment we developed tailored service offerings to compliment the fundamental aspects of customer service expected by all developer customers.

This year we're reviewing our customer contact strategy; analysing all of our customer touch points and designing a model which serves our customer's differing needs. We are refreshing our existing website, making the information easier to understand and tailoring the messages for each of our customer segments. We will be publishing 'how to' guides in different formats to help one off developers through their journey with us. Webchat is also a facility we are exploring with our customers.

The human touch remains critical and throughout our customers journey we will be ensuring that our customers are kept informed. For Builders we will provide the right advice and support to guide them through the duration of their works. For Developers and Self Lay Providers we operate an account managed service with dedicated resource enabling us to build strong and effective personal relationships.

Providing value for money

We recognise the importance of our charges and the effect they have on our customers. Our aim is to lower costs and ensure charges are both simple and predictable. Each of our customer segments have shared with us the ways in which they wish value for money to be brought to life for them. For builders and homeowners it's about providing transparent costs with comparable charges to other utilities. For Developers, Self-Lay Providers and NAVs it's about a simplified charging framework and predictability of charges to assist future planning.

We are currently in the process of implementing our new scheduling and construction operating model for new connection activity. Our new model brings the capability in house through dedicated teams focused on consistently delivering right first time. In addition this approach will help us to reduce the cost of a connection for our customers.

6.1.8.2 Our five year plan for AMP7

Over the next five years we truly want all customers to feel that they pay a fair price for the products and services they receive; therefore providing great value for money. We may be one of the smaller water companies however we will be aiming for upper quartile performance as reported through the D-Mex. Some of the things we will be focusing on are listed below:

- investing in and promoting the use of self-serve options through an improved digital experience;
- greater tariff simplification and innovation;
- reducing customer journey time through improved end to end processes;
- trialling new technologies to help with fittings so more inspections pass first time; and
- working in partnership with developers to pilot water efficient homes.

6.2 A service for everyone

We want every customer to access our service and enjoy its benefits, regardless of their circumstances.

6.2.1 Summary

We believe that water should be affordable for all. While we work to keep our bills as low as possible for all customers, we know that for some the issue of affordability is more acute. We therefore want to do all we can – with the support of all our customers – to take away the worry for those who are genuinely struggling with their bills.

We also believe water should be accessible for all. For some customers, their personal, social or environmental circumstances can make them more vulnerable if there's a problem with our service. Others may struggle to access our service at all. Customers tell us that providing excellent services for customers in vulnerable circumstances is something they support.

We continually strive to improve the service we provide to everyone. The acquisition of Dee Valley Water, and licence change, has given us the opportunity to build, develop and extend our existing services across our business.

Our service for everyone outcome therefore takes into account two focus areas:

1. Affordability
2. Vulnerability

These two areas are closely related but we will set out our plans separately. We are committed to better supporting customers who can't pay their bills and those in vulnerable circumstances who need extra help and support, particularly during an incident. We have developed three bespoke performance commitments to hold ourselves to account in delivering our plans.

6.2.2 Customers have defined our ambition

6.2.2.1 Our customers have a wide range of needs, but affordability is important for all

Research shows many of our customers are broadly happy with the affordability of their water bills. In latest wave of our customer tracker survey (17/18) tells us that 75% of customers in Mid Wales find their bills affordable or very affordable, compared to 85% of customers in North Wales.

While this is good news, our research also tells us that some customers find their bills unaffordable. The latest wave for example, finds that 10% of customers in Mid Wales, and 7% in North Wales, find their bills unaffordable. This is similar to CCWater's research (Water Matters 2016/17) which found that 11% of customers in Wales find their water bill unaffordable and the Welsh Statistics, published by the Welsh Government, that suggests that 24% of people in Wales were living in relative income poverty between 2014/15 and 2016/17, although water is only a small proportion of customers' overall bills.

The vast majority of our customers (95%) agree that it is essential that we keep bills affordable for everyone, and 83% agree that we should support those who are genuinely struggling to pay their bill. Our CCG also challenged us on whether we are doing enough to identify and understand the views of the customers who are just about managing.

The numbers of customers finding bills unaffordable is likely to continue its upward trend. There are numerous drivers that affect the socio-economic landscape and therefore customers' ability to afford their water bill and whether they pay it. These include:

- wider social and economic climate: interest rates, Brexit, types of employment contract i.e. gigeconomy, roll out of Universal Credit or future changes to benefits;
- customer attitudes and behaviours: perception of hierarchy of bills i.e. Sky, mobile phone;
- customer experience: service failures on behalf of water company; and
- customer circumstances: customers' ability to manage their own finances.

Wider social and economic trends towards 2025 show that society is likely to become more uneven with living costs rising and more people struggling to pay these. There will be increasing pressure on real incomes. Affordability will continue to be important for all customers, and even more so for some. Understanding how these factors will change and what customers want has helped us take into account these external factors, plan how we can better engage customers to help them and further develop and improve our offering.

We are focusing on rehabilitation and meaningful help now, which, by setting our customers on the right footing for the future, will be more sustainable in the long term. Our planned approach of working with third parties will enable us to provide more holistic support for customers' wider debt issues. We have worked to find flexible solutions that can adapt to the future and our customers' changing needs. For example, our support provision for customers who are struggling with finances can help future customers who are new to paying bills and help them develop the right habits.

6.2.2.2 Our customers are altruistic when it comes to supporting others

Our social tariff cross subsidy research found there is a strong sense of perceived altruism across our total customer samples, however this is tempered by an equally strong sense of individual responsibility being important when it comes to an individual's finances.

After customers were shown details of our current social tariff for their area, most customer described them positively, with their main concern being that our customer have to be adequately means tested.

"It's acceptable if people are genuinely short of cash"

"Water is something you can't do without. It should be made fair for everybody"

The majority (83%) of our customers find £3.50 (in total, on a combined bill) per year an acceptable level of contribution for the social tariff, and increase compared to research undertaken for the previous price review.

Read more: in Appendix A1: Customer insight compendium we summarise the research findings.

6.2.3 By 2020: Where we're starting from

Since the acquisition of Dee Valley Water, we have undertaken a full review of how we support both customers with affordability concerns and those in vulnerable circumstances, to align services for all our customers in Wales. This includes work in the following areas:

We make it easy for customers to pay

We understand that flexibility about how and when bills are paid can help customers better manage their budget and improve the affordability of services.

In AMP6, we've successfully launched numerous payment channels, with various frequencies, to make it easy for customers to pay. We have done this whilst retaining features that our customers value, notably the payments portal at our Wrexham office. And our customers tell us we are doing a good job – 96% tell us that it is easy to pay the bill.

Payment channels		Payment options
Office portal		Half yearly
Credit – debit card	Payment booklet	Monthly
BACS	Watercard/Paypoint	Four weekly
Standing Order	Cash	Fortnightly
Giro	Web self-serve	On-demand
IVR – Card payment	Cheque	
Deductions from benefits	Direct Debit	

We understand the customers who need support

The journey to water debt is complex but typically relates to health, unemployment or income reduction and significant life events. Through our customer research and stakeholder engagement we have identified five key customer groups we need to support in different ways due to their different circumstances. We need to ensure our support offering helps all five of these groups with both in year bills as well as arrears.

The five customer groups we have identified are:

Long Standing – those in long term unemployment or reliant on benefits; potentially with wider vulnerabilities such as poor numeracy or literacy, mental or physical health issues and disabilities

Borderline – Employed but on a low to average income; life event may have caused reduction in income for a short term period e.g. lost job or ill health; or general overall finances tight but not severe

Sudden and Severe – Previously employed with average or higher income, now experienced serious unexpected life event e.g. major injury; sudden loss or severe drop in income – particularly acute if self-employed, immediately unable to pay wide range of bills including water

Struggles with finances – Household income low to average; often busy and chaotic lifestyle. May find managing finances and bills confusing and difficult which could accumulate and cause anxiety

New to Country - or for whom Welsh/English is not the first language. These customers might have different attitudes to paying water bills or may have come from countries where they didn't have to pay for water and therefore could get in to debt without realising. In particular this group:

- may not have the same access to benefits and support (public funds);
- might have difficulty engaging due to language barriers;
- might have difficulty setting up bills; and
- often believe that rent includes all bills – meaning there is a need to promote/advise via social/private landlords

We deliver a range of support options

Customers have told us they value the support we provide. Although water bills are of comparatively low concern to many (other utilities & mortgage/rent being more important), being on a reduced tariff clearly leads to positive outcomes for recipients. The financial support provided improves customers' short and long-term financial situation and improves general wellbeing.

We have a range of existing support available for customers who are struggling to pay, varying from payment plans allowing the customer to spread the bill making the amounts more affordable, to reduced charges through the Watersure scheme or our social tariff.

In 2016 we introduced our Social Tariff in addition to extended payment plans and the Watersure scheme. We have since introduced Water Health Checks. As of 1 July 2018, we offer concessionary payment plans where the plan amount can be negotiated and reviewed regularly, allowing the customer to spread the bill over a longer period with the added benefit of being monitored and reviewed by us. With the introduction of a Social Tariff and Water Health Checks we have seen a significant increase in the number of customers we've helped. We have more than tripled the number of customers on our social tariff since it was launched – at the end of 2015/16 there were 127 customer benefiting from the scheme, by 2017/18 the figure has rose to 468.

We have recently made some changes to our Here2Help Scheme by increasing the possible discount from 30% up to 90% (bringing it in line with the Severn Trent offering in Mid Wales). We have also made some changes to the qualification criteria – moving from a total household income threshold to disposal income. We believe that this will increase the numbers of customers that are eligible for help. For example, people who have a relatively high household income but their total outgoings are high, meaning they have a very low disposable income or in some cases none at all, will now also benefit from the scheme.

But there are still some areas for improvement

We have made big steps forward over the last year but we have identified that we still have some gaps, for example ensuring customers are aware that support is available if they need it.

We're currently in the process of agreeing contracts with third party organisations to administer our social tariff and possibly other schemes which will bring us in line with our English business and enable us to deliver a more holistic service to our customers. This process has been effective for Severn Trent customers and will allow us to further identify more financially vulnerable customers, by using data more effectively to reach and help those who are at risk.

Our customer research also highlighted we could further improve elements of our existing scheme, for example balancing the right levels of social tariff support so we can help as many customers as possible. Many customers in Mid Wales stated the level of reduction exceeded their expectations. Reducing the discount for some, not all, groups would enable more customers to get assistance. However, it is clear from our research, that some customers would still require the greatest level of support.

We also identified a gap with supporting customers with high arrears as Watersure and our social tariff can reduce the current year's charges but do not address or reduce debt built up over a number of years. We believe that the payment matching scheme we are looking to trial in 2018 will bridge this gap.

Expanding services for customers in vulnerable circumstances

We care about our customers and want to deliver the best service for everyone. We have reviewed our current approach through external benchmarking, guidance from other industries and experts, as well as customer research and internal feedback. Through this we have identified gaps, as well as opportunities for improvement and development.

As part of our research and benchmarking we have identified and validated seven triggers which may make customers vulnerable in the context of our service. We've built on the five potential service triggers suggested by Ofwat with two additional triggers derived from our own operational experience and validation with experts. To ensure we deliver the best experience of our services for all customers we need to better understand how these triggers may affect them.

Seven triggers of vulnerability	
1	Vulnerable during supply interruptions.
2	Vulnerable during actual or potential drinking water contamination incidents.
3	Vulnerable as a result of a private and/or wastewater issue.
4	Vulnerable as a result of our work in the community, for example, roadworks.
5	Problems in communicating or receiving information in the formats that we usually use.
6	May need help to read their meter, understand their bills, or to make arrangements to pay.
7	Vulnerable to fraudulent activity, for example, bogus callers.

We identified that our focus should extend to include better understanding of both transient and multiple vulnerabilities. This was validated through recently identifying customers whose combination of vulnerabilities would alter the support they need from us, for example the combination of dyslexia and autism.

We have created customer personas in order to help bring to life our customers' need and understand how they could be impacted by our service, or a change in it, how best to identify them, and how to respond to those needs. We've mapped these personas against the triggers above in order to develop our future service offering. The findings from this illustrate areas where we can improve our understanding of the needs of these customers, and opportunities where we can offer tailored support.

Seven personas to better understand customer needs and multiple vulnerabilities

Our customer	Their circumstances
Alun, 75 years old from Llangollen	Alun has recently been diagnosed with dementia. He is living at home with his wife. Both Alun and his wife are partially deaf.
Bethan, 28 years old from Newtown	Bethan lives with her husband Tom, 29, two daughters aged 5 years old and 4 months old. Bethan was recently diagnosed with breast cancer and is currently receiving treatment. Water is priority as the family need to sterilise and prepare their daughter's bottles.
John, 36 years old from Welshpool	John has type 1 diabetes and has been on and off dialysis for the last 5 years, currently having it at the hospital 3 times a week. John has recently had ileostomy surgery. He needs to regularly clean his wound and bag and take medication. He is also partially sighted. John lives between two addresses with his girlfriend.
Ethel, 77 years old from Wrexham	Ethel is housebound and has low mobility. She has a carer coming in once a day to support. Ethel has no internet access.
Dafydd, 92 years old from Powys	Dafydd is very frail after a number of falls and partially deaf. He lives with his son who is 69 and partially sighted and receives no help from external carers.
Randeep, 28 years old from Machynlleth	Has autism and lives alone. Due to his condition, Randeep finds it difficult to socialise with people, particularly strangers and feels extremely anxious if he experiences changes to his routine.
Rhiannon, 29 years old from Monmouth	Is a bi-polar sufferer and is a full-time mum of two teenagers. There are times when she feels she could be considered vulnerable.

Better identification of customers who might be vulnerable

We have looked at industry best practice and the energy sector to deliver some improvements to our existing Priority Service Register (PSR) and we have promoted the register through a number of different channels.

Through researching our region's demographics, we believe that the potential number of customer in vulnerable circumstances (CIVC) is much greater than our PSR currently captures. Our new aligned range of services will assist our CIVC further, particularly if we work more closely with partners, especially local groups with visibility of their communities. Through our customer needs research, CIVC told us that they often don't view themselves as having different needs, and don't want to be treated differently. We therefore need a balance between raising awareness of our support without appearing intrusive and condescending – a clear area where partnership working with trusted organisations would enable us to provide a 'service for everyone'.

The joint cross-sector data share, (Water UK) which includes gas and electricity companies with the aim of creating a singular PSR across utilities, will be key for the future of identifying CIVC. This technology and methods in development will mean CIVC will only have to contact one utility providers to register for this service across all.

Proactively promoting the services we offer

The majority of customers (including some who would require help during an incident) are unaware of our priority services support, in line with our internal qualitative assessment of our services.

Customer feedback has highlighted that, once aware of our services, customers thought they were great, with many surprised that their water company offers such a range of assistance.

We are working on better understanding our CIVC and proactively promoting our services to them. In previous years the Priority Service Register was not something that was proactively offered and only focused on customers who were undergoing dialysis treatment. We have recently carried out a thorough data cleanse of the register by contacting all customers on the PSR to ensure the register was up-to-date. We have also upskilled our staff to ensure the service is proactively offered where required. This has given us a clear focus on supporting CIVC, ensuring we have a platform to build on for AMP7.

As part of our current process, if a customer was to mention they were in receipt of a certain benefit type that would suggest they have some sort of medical condition such as DLA, agents proactively promote the PSR. This process also applies when agents are promoting or completing applications for Watersure and Water Direct.

In the next few months we plan on targeting customers who are currently not on the register, but are on Watersure or Water Direct. We'll do this through targeted mailshots promoting the service and the benefits, ensuring this information is sent in dual language to the relevant customers.

We also have existing and new partnerships that we can continue to develop, such as with local resilience forums (LRFs), food banks and local councils. Developing these and creating further partnerships will be a key opportunity for the next AMP. In addition, with the launch of Hafren Dyfrdwy we now have a dedicated Care and Assistance team for our customers with a Freephone number direct into the team in Wrexham. They will focus specifically on supporting our CIVC, to give holistic support relating to both financial and service offerings. These advisors will be trained specialists from expert partner organisations including key charities specialising in vulnerability, allowing them to case manage some customers, as well as providing advice and support.

We predict that due to the work we have been doing, the 326 customers on our PSR currently will have risen to 1,500 by the end of AMP6.

Year	Target	Estimated no. of customers on PSR
2017/18		326
2018/19	100% but not an official PC	1000
2019/20		1500
2020/21	100%	1650
2021/22	100%	1815
2022/23	100%	1997
2023/24	100%	2196
2024/25	100%	2416

When we deliver an updated PSR system in 2019, this will allow us to:

- be more flexible and adaptable, allowing us to proactively manage our data;
- better understand the needs of our customers in vulnerable circumstances, through having clear visibility of the support and assistance they require;
- use categories that have been benchmarked across the utilities sector and validated by expert and charity partners;
- ensure we comply with GDPR, enabling us to effectively protect our customer data;
- give full comprehensive training to our employees on the system changes;
- clearly promote our PSR on our website and improve awareness of the service; and
- have a platform for future improvement.

6.2.4 By 2025: our five year plan for affordability

Our plan focuses on improving and extending services to customers while making sure we keep bills as affordable as possible by collecting payment from all customers (as detailed in the Lowest possible bills chapter). We will build on the platform we've put in place since the acquisition of Dee Valley, work in partnership with others, adopt new technology when appropriate and continue to listen to our customers.

6.2.4.1 We've challenged ourselves to be ambitious against Ofwat's themes for PR19

Innovation	Resilience	Affordability	Great customer service
We will adopt new techniques and technology to support customers, for example predictive data analysis and new outbound diallers	Ensuring processes are documented to reduce reliance on individual staff members	We will increase in the number of customers who are struggling to pay that we support through a variety of support options, including the new Matching Plus scheme	Our new Customer Care team in Wrexham will deliver an expert service to vulnerable customers and those struggling to pay their bills.

We make it easy for customers to pay

We will continue to offer the range of channels and options available today to ensure customers can easily pay their water bill. We will continue to be 'early majority' adopter for new payment methods where it makes it easier for customers to pay. We will carry out trials for new payment options and identify the right time to introduce these if we can demonstrate a benefit for our customers. This will ensure we optimise our cost to serve whilst delivering what customers want.

We will use segmentation and behavioural nudge techniques to make customers aware of the best options available to them and make the payment journey as easy as possible.

We will send proactive text messages to customers to inform them if they have missed a payment, initially as a trial.

We support customers who are struggling to pay in an effective and efficient way

We have asked customers their willingness to cross subsidise other customers through the social tariff and found that they are increasingly generous and willing to support those in need. 83% of customers in North Wales are willing to contribute £1.75 (compared to 44 pence at PR14), and 82% of customers in Mid Wales are willing to contribute £3.50. Although there is a considerable drop in support for higher amounts, a slim majority of customers are willing to pay up to £3.50 in North Wales and £7 in Mid Wales, suggesting that we might be successful in getting support for a higher amount once we have met current targets. We propose to take the lower level of cross subsidy up, supported by a significant majority, mindful that there is a challenge in terms of uptake of the tariff and raising awareness of the assistance available.

As well as the social tariff, customers tell us that they value other forms of assistance, such as having a variety of flexible payment plans. We have therefore counted all support schemes in our performance commitment, including payment plan concessions which represent the majority of those supported. Through our research and listening to the customers we support today, we have identified a number of improvements we can make to these schemes, as well as a new scheme (Payment matching).

Scheme	Improvements
Here2Help	62% of Dee Valley customers told us they found the existing Here2Help discount of 30% helpful to their household's long term financial situation, compared to 26% finding it made no difference. To combat this we have already increased the amount of discount offered to 90%, bringing it in line with the previous Severn Trent scheme which operated in Mid Wales. 90% reduction will only be offered to those in exceptional circumstances, we anticipate the average discount will be 70% Improved qualification criteria to ensure we offer the right level of support to the right customer groups.
Water Sure	This is a Government scheme so no improvements are proposed.
Water Health Checks	We intend to include this measure again but will introduce new measures of effectiveness such as contact profiles, debt position, amount saved, payments received.
PPCs	We currently support customers through non-standard payment plans (PPC) where customers can't afford the standard payment plan amount. We propose that we continue to class PPCs as support as they will help with short term vulnerability.
Payment matching (NEW)	We recognise our social tariff helps customers reduce current and future charges but not with arrears built up over several years. Payment matching is a debt write off scheme for which addresses historical debt. This can provide customers with a fresh start and can also rehabilitate them into paying again. A customer would sign up to a payment plan which works over manageable 13 week instalments, which if maintained will clear all >2 year debt. Customer research feedback shows that this scheme would be a positive addition to our range of support.

There is additional support provided that does not form part of the scope of the performance commitment, for example Water Direct scheme, free water efficiency products and fixing leaks for free for vulnerable customers.

6.2.5 By 2025: our five year plan to support customers in vulnerable circumstances

Our plan focuses on improving and extending the support we provide to customers to ensure our services are accessible for all.

A ten point plan to respond to the needs of our customers

By using a combination of the seven triggers and the customer personas we've developed, we've built a 10 point plan to respond to the needs of our customers in vulnerable circumstances. These propositions focus both on better identification of CIVC, a better response across a range of circumstances and better education and awareness of our services.

We have validated and benchmarked these propositions with expert organisations from a range of sectors.

Action	Customers and Experts said	What this will look like
Promotion of our services		
<i>Accessible advertising</i>	We need to proactively promote the PSR, especially to those who can't always access normal channels.	Infographics/Pictures Tailored advertising linked to PSR categories e.g. key messages in British Sign Language (BSL) and ensuring we're in line with Welsh Language legislation. Highlight and educate about transient vulnerability examples to encourage self-identification.
<i>Proactive partnerships</i>	Local groups are key for identifying vulnerable people in communities	Use local groups like housing associations to deliver key messages and promote our PSR. Utilise partnerships in incidents to relay messages to a wider network.
<i>Culture change</i>	All employees should have awareness of the services and promote them.	Continuation of ongoing cultural change focusing on awareness and understanding of CIVC. Engagement with contractors to ensure continuous and consistent messages. Wider soft skills training and upskilling.
Proactive identification of customers in vulnerable circumstances		
<i>Data share</i>	We would be mostly happy to pass information of vulnerabilities to one utility if it meant a consistent tell once priority service	Explore trial data share with Western Power to identify demographics of CIVC in our region. Explore further data sharing opportunities with relevant trusted organisations. Continue involvement in the water and energy 2020 PSR project for a single utilities PSR.
<i>Partnership working</i>	Work with trusted organisations who are good at identifying customers and educate them on our schemes	Continue to develop partnerships and identify organisations for future partnerships. Build awareness of key local community organisations e.g. Dementia Cafes as key contact points in incidents, alongside the LRFs.
<i>Empowering frontline staff</i>	All employees should have awareness of Priority Service customers and be able to register anyone that needs support.	Simplify process for field teams to proactively flag customers who should be added to the PSR. Continue to develop PSR process and accessibility.
Channel accessibility		

Action	Customers and Experts said	What this will look like
<i>Range of channels</i>	Introduce a range of customer channels	Promote and offer our wide range of channels, enabling customers to choose channel of choice – key for CVC as circumstances may limit choice.
<i>Digital access</i>	Recognised not everyone has internet access.	Ensure non-digital options are available where possible.
<i>Digital innovations</i>	Want us to be majority adopters, rather than too innovative with technology that people won't use	Continue to evolve digital channels to meet accessibility needs of customers and trial channels that will support our CVC e.g. British Sign Language
Accessibility to written information e.g. bills and leaflets		
<i>Key written communications</i>	For many vulnerabilities all written information would have to be their chosen format, not just bills	Propose to offer all key written communications in alternative formats for customers including bills, water quality notices, debt letters, GSS compensation letters and water efficiency material.
<i>Application forms</i>	Not all forms are accessible online	We will ensure that our PSR registration form is available and accessible online, but also that there is support via other channels to register.
<i>Our supply partners</i>	When supply partners are working on our behalf they are seen as Hafren Dyfrdwy	Expectation that partners will work to the same standards in terms of both access and promotion. Include supply chain partners in cultural change programme and awareness.
<i>Innovation</i>	Do your formats meet everyone's needs?	Continue to evolve current bill and explore innovative formats, for example changing audio bill from CD to MP3/USB to ensure it is compatible with devices and more up to date.
Advice and support for CVC when contacting us		
<i>Expert support 24/7</i>	Support for CVC should be available at all times	CVC will be able to reach advisors across all channels 24/7 that will be able to provide advice and support or register them on the PSR.
<i>100% awareness</i>	All staff should be aware of our Priority Services	Driving cultural change across the company so all staff across contact centres and operations will have awareness of vulnerabilities and the PSR.
<i>Proactive support</i>		Trial proactive engagement with new customers to ensure everything is ok following a move or setting up a new account and advice on CVC support.
Advice and support for CVC when we visit a customer property or are working in the community		
<i>100% Field awareness and training</i>	What if it is not a phone contact centre contact?	Provide specialist training to field teams across the region, including supply chain partners. Have vulnerability experts within the field teams.
Proactive communication during an incident		
<i>Proactive notification</i>	Timescales are key when updating customers, especially if needing to rearrange appointments.	Proactively notify CVC of an incident through their channel of choice, whether this be in writing or through tailored text messages.
<i>Partnership working in the community</i>	Local groups have a key insight into the needs of their communities and could really help	We will work with our LRFs and community organisations to provide additional support during incidents for CVC, following the example of some of our recent incidents and the support offered.

Action	Customers and Experts said	What this will look like
Provision of alternative supplies during an incident		
<i>Bottled water</i>	Seen as a good service, but need to ensure everyone needing water delivery gets it in the right way	We will deliver bottled water to CIVC that have registered for this service during incidents within 24 hours, recognising social responsibility e.g. no late night deliveries.
<i>Supporting customers with babies / children</i>	I have a young child, would I be eligible for anything in an incident?	We provide bottled water that complies with NHS guidelines for mineral content. Our supplies are lower sodium and potassium any other bottled water. NHS guidance confirms our bottled water supply is safe from a sodium and potassium content, with advice to boil and let cool to ensure total sterility.
Support with an issue on my property		
<i>Help to fix</i>		Where a CIVC's health is at risk as a result of a private issue we will fix it or support them to find a contractor who can fix it for them. For customers with mental or emotional vulnerabilities we will support them through the process of getting a private issue resolved and where required fix it for them.
<i>Help with a waste issue</i>		We will help prioritise fixing waste issues if they are putting a CIVC's health and safety at risk in their home and support them through the insurance process where appropriate.
Helping prevent fraudulent activity and giving customers reassurance		
<i>Consistent messaging</i>	Customers should be able to see communication or visits are from you	We will ensure customer messages (on the phone, written and in person) are consistent to help customers recognise genuine communication.
<i>Assistance in event of a bogus caller</i>		We will train contact centre staff to provide assistance in the event of a real bogus caller so they can support and reassure the customer.
<i>Encourage questioning</i>		We will encourage customers to question our staff if they have concerns, and implement a reliable service to prove legitimate visitors where needed.
<i>Regulatory challenging</i>	Customers would prefer to be given prior notice before visits as it helps to prevent against fraud	We will look to flag to the DWI potential risks of the process of water quality samplers providing no notice before visits, focusing on CIVC and risks around fraud and bogus callers.

6.2.6 The commitments we're making

For this outcome we are proposing three bespoke performance commitments:

- Helping to pay when you need it
- Effectiveness of the affordability support
- Supporting our priority service customers during an incident

All three have reputation ODIs - this is about delivering a service for everyone and it would not be right to incentivise performance financially. In addition to these we have a performance commitment relating to the number of void supply points, captured under the Lowest possible bills outcome. Appendix 2 – Rationale and evidence for PCs and ODIs sets out further details on the justification for the target.

Help to pay when you need it

We have made steps forward in supporting customers who are financially vulnerable. With money becoming tighter for more and more customers in the future it is vital we keep this focus. We need to support this group of customers effectively and efficiently as it is core to delivering trust and a service for everyone, therefore we are proposing to continue to have a bespoke performance commitment for financial vulnerability.

Our performance commitment is defined as the volume of customers supported through schemes, including the following five schemes, with flexibility to add additional support schemes 2020-2025, as a proportion of the customers who find their bill unaffordable.

Help with...	Scheme	Measurement
Future charges	Social tariff	Number of customers on scheme at 31 March
	Watersure	
	Water Health Checks	
Previous charges	Matching Plus	Number of customers helped in 12 month period (financial year)
Short term challenges	Payment Plan Concession	

We have included schemes to address legacy debt which proves a burden to customers, and short term affordability assistance, which may contribute to customers falling further into debt.

We have used a combination of historical and comparative data to help us estimate the total number of customers who are likely to struggle to pay their bill. Our performance commitment assumes that 11% of customers fall into this category, which is the average of the results from our research, and national research commissioned by CCWater. We plan to review unaffordability levels after year 3 of AMP7 to assess whether our forecast levels of unaffordability remain on track. Should there have been a significant change we will undertake a full review of our service offering and performance commitment to ensure we are still meeting the expectations of both customers and regulators.

Proposed targets

Performance commitment		Incentive type	Unit	2020 forecast	2025 target
Help to pay when you need it	Affordability - % of struggling to pay customers support through a payment scheme	Reputational	Percentage	66%	73%

Effectiveness of the affordability support

Challenged by the CCG, we have explored a number of potential options for ensuring our measure is effective and drives the right outcome for customers. We want an outcome based measure that demonstrates the impact our support has on customers – lifting them out of water poverty and demonstrating a long lasting benefit to customers.

We propose to measure the percentage of struggling to pay customers supported through tailored schemes who continue to pay their bill 12 months after the scheme has completed.

Proposed targets

Performance commitment		Incentive type	Unit	2020 forecast	2025 target
Help to pay when you need it	Effectiveness of affordability support	Reputational	Percentage	19/20 baseline	Improving trend

Supporting our priority service customers during an incident

We believe that an AMP 7 PC will help to drive improvement and underpin our focus on cultural change and awareness. We are focusing on incidents to measure the support we provide to our Priority Service customers as customer research, both focussed on CIVC and with our wider customer base, has told us that this is where the service we provide is most visible and necessary.

Customers told us that they want a more tailored service for vulnerability, as a large proportion of our customer base may need support in the event of an incident, but in the form of contacting a nominee, or a different format of communication, rather than with a bottled water delivery.

We explored a range of options in the process of creating this bespoke PC. We explored focusing on promoting our services, and the awareness our customers have of our Priority Services. We also explored focusing on the percentage of CIVC we were helping through the PSR. However, following research and feedback we decided that a performance commitment focussed on incident management and the support we provide to our PSR CIVC in these situations would be both challenging and worthwhile.

Performance Commitments explored	Comments
Percentage of customer base on the PSR	A purely number based commitment may drive the wrong focus. We will continue to measure and report on the numbers on our PSR, however we don't feel this performance commitment reflects the cultural change and focus we want to drive.
Awareness of our assistance and support for customers in vulnerable circumstances	This would encourage proactive promotion of the PSR, and ensure we work harder to reach those customers who may not necessarily identify themselves as vulnerable. This promotion would also enable us to raise awareness of our assistance and support to our wider customer base, who could use their networks to reach additional customers to support. As part of our common metrics we will be reporting on awareness and promotion. We decided not to move forwards with this PC as, following feedback, we felt it was best to have an outcome focussed PC.
We support all of our identified Customers in Vulnerable Circumstances on the Priority Service Register in the event of a no-supply incident - see appendix 2 for the definitions for all PCs.	Through the new PSR and sharing best practice we believe our incident support is set to be the most established and visible area of our support for customers in vulnerable circumstances. Most notably bottled water delivery, but also alternative methods of communication and alternative format notices (e.g. water quality). Will need to clearly define 'incident' and whether it is specifically no-supply. We would need to use the data from the updated PSR and the alternate supplies team.

Our performance commitment is defined as the percentage of our customers in vulnerable circumstances (CIVC), who are registered on our Priority Service Register (PSR), that we provide support to during an incident. This performance commitment will use the widely recognised company definition of 'incident' – a water quality (in line with our company triggers (excluding discolouration)) or supply interruption incident. The support we will provide will be tailored to customers' needs and will be detailed within the PSR categories. The support will be in the categories of bottled water delivery, tailored communications and nominee communications.

Proposed targets

Performance commitment		Incentive type	Unit	2020 forecast	2025 target
Supporting our priority service customers during an incident	Service vulnerability - % of customers in vulnerable circumstances supported during an incident	Reputational	Percentage	100%	100%

6.3 Water that is good to drink

6.3.1 Overview

This is an important outcome for customers

Customers take it as a given that their drinking water is safe and this view is justified in the context of our drinking water being 99.97% compliant against the very strict legal standards. This means that customers don't judge quality on the basis of compliance with technical standards. They judge it on how it looks, smells and tastes and are particularly concerned by changes in any of these characteristics. Our day to day contact with customers shows us that if there are changes to their water composition then they rightly expect to be informed as customers often find these changes unsettling.

This has been a key customer facing issue for several years particularly in North Wales. DVW had already made great strides in improving discolouration and the number of complaints has already dropped by 44% between 2015 and 2017. This is as a result of a twin track approach to ensure the treatment processes can remove the extremely high manganese levels naturally found in the sources and also to carry out an extensive mains cleaning programme using innovative techniques to maximise efficacy whilst minimising the impact on customers. This AMP6 commitment has been delivered and the results are being seen by customers. But there is more to do and it is clear that our customers expect us to continue to improve performance across all areas of drinking water (taste, smell and colour).

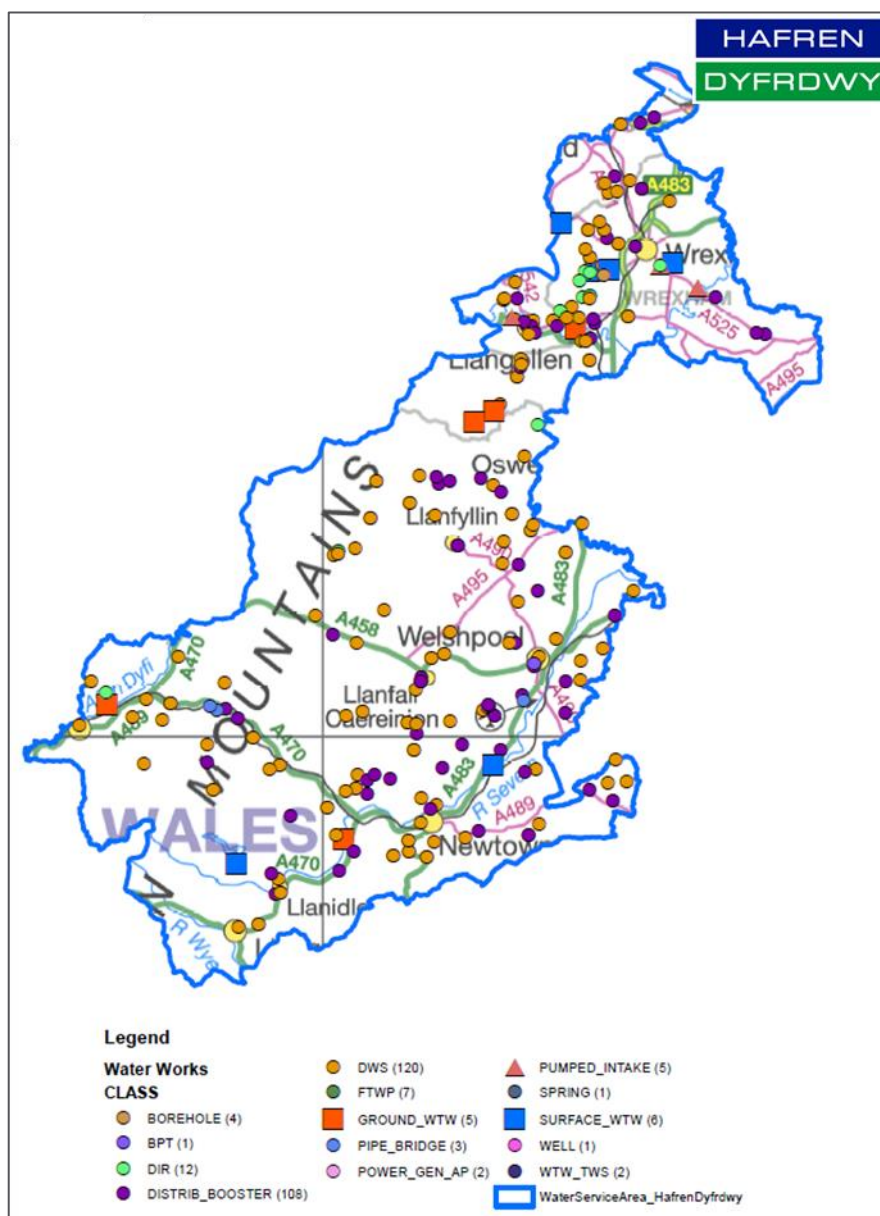
Perhaps unsurprisingly, customers regard all of the proposed performance commitments in this outcome as fitting into the basic category in our hierarchy of needs and all of the highest priority. More detail can be found in chapter 2 Customer insights and appendix 1 Customer insight compendium.

Performance commitment	Relative priority	Hierarchy of needs	Rationale
Water quality compliance (CRI)	Very important	Basic	Water quality is always a top concern, and a fundamental expectation, although customers do not necessarily distinguish between compliance/whether the water is safe to drink and aesthetics.
Number of complaints about drinking water quality	Very Important	Basic	Drinking water is a key customer concern, with taste and smell emerging at the top priority in WTP, and appearance as a medium priority.
Number of lead pipes replaced	Very Important	Basic	Our customers perceive lead pipes – regardless of mitigations in place - as a health risk and support tackling the issue.

6.3.1.1 Context

We provide around 65 mega litres of water every day to serve 102,000 homes and businesses in Flintshire, Denbighshire, Wrexham and Powys, covering a geographical area of 2,858km².

Map of Hafren Dyfrdwy water supply area



60% of the water we abstract is from the River Dee, 35% from three ground water sources and 5% collected in our catchments across 12 impounding reservoirs (we own 14 reservoirs, but two of them do not serve our customers). This means a high proportion of our water is surface water and has naturally occurring manganese within it. Manganese is very difficult to remove by conventional treatment, which means in the absence of correct treatment it passes through and into the network, coats the pipes and then any changes in flow can cause deposits to be disturbed which creates discolouration.

We have two primary catchments in our area, the Dee which covers the former Dee Valley area and the upper Severn that covers the old Severn Trent Mid Wales area. Catchment management is part of our long term approach to ensuring a sustainable water supply but we are fortunate that we don't have any significant risks in our either catchments. In the Dee catchment we work with United utilities, NRW and Dŵr Cymru Welsh Water (DCWW) to manage the rising levels pesticides, MCPA (2-methyl-4-chlorophenoxyacetic acid) and

Metaldehyde, and their potential impact on our treatment works at Llwyn Onn, and those at Boughton (now owned by Severn Trent) and Huntington (owned by United Utilities). Our ground water abstraction points in Mid Wales are high up in the catchment with limited farming or agriculture up stream. These means that our catchment management programme is modest in scale and largely preventative. We are keeping track of issues use as and use change or potential sources of pollution, but this is not driving significant investment in the next 5 years.

We operate a total of five water treatment works comprising three ground water and two surface water treatment works. The two surface water treatment works have had significant investment in recent history to ensure they meet modern standards, particularly Llwyn Onn which now treats the vast majority of water serving our North Wales area. The ground water treatment works have also had investment in recent years and are all maintained to a high standard. Our performance on the new Compliance Risk Index, a measure designed to illustrate the risk from treated water compliance failures, is testament to the hard work and focus made by both DVW and Severn Trent in the past. We are continuing this trend and achieved a CRI score of zero in the North Wales region and 0.06 in Mid Wales, which we are exceptionally proud of.

We have 87 storage reservoirs, which is disproportionately large for the number for customers we serve. This creates a challenge in terms of ensuring investment keeps pace with the rate of deterioration. Starting in 2015 investment has increased in this asset group and our risk analysis demonstrates that this needs to continue into the future. More details on the challenges and investment needed in the next five years are set out in the cost adjustment claim in appendix 4.

Due to the rural and undulating topography we also have a relatively large number of distribution pumping stations (100) and around 2,600 km of water pipes.

We optimise the whole system across all of these assets to ensure we deliver service at an efficient cost. We also ensure we understand the potential changes in the standards that we are required to operate to and one area where the evidence is overwhelmingly compelling is that as an industry we need to do more to remove lead pipes from our systems. Policy makers in Wales are being particular ambitious in this area of compliance. Our current performance is excellent with 100% compliance at the current standard, but we need to prepare to performance at a much tighter standard for lead. This is a key part of our good to drink strategy and we need to do more to prepare for a change in legislation to make sure we can deliver these improvements at a cost our customers can afford. More details on the challenges and investment needed in the next five years are set out in the cost adjustment claim in appendix 4.

6.3.1.2 Key facts

We have included three performance commitments under this outcome which are summarised in the table below. Full details on the rationale behind these targets can be found in appendix 2 - Evidence and justification for PC targets and ODIs and a summary is included below.

Performance commitment	Description	2019-20	2024-25	Long term aim
Water quality compliance (CRI)	The DWI's compliance risk index. It is a measure designed to illustrate the risk arising from treated water compliance failures. It aligns with the current risk based approach to regulation of water supplies used by the Drinking Water Inspectorate	0	0	0
Number of complaints about drinking water quality	Total number of complaints about appearance, taste and odour per year.	490	317	200
Number of lead pipes replaced	Number of lead communication and supply pipes replaced	0	460	10000

We will be investing a total of £28 million under this outcome to deliver our performance commitments and other statutory obligations. There is a lot of overlap between this outcome and 'Water that is always there'. Several areas of investment and activity contribute to both of these outcomes and we have not attempted to proportionally allocate the base service costs (opex, IRE and MNI).

6.3.1.3 We've challenged ourselves to be ambitious against Ofwat's PR19 themes

Innovation	Resilience	Affordability	Great customer service
There are two key innovations that we will be adopting in AMP7, the first is rapid bacteria detection technology – giving results in minutes not hours the second is the use of real time information on pressure transients which reduces bursts which in turn reduces discolouration.	We will continue to embed catchment management into our long term approach to ensure high quality water sources. This is becoming more important as the changes as a result of Brexit emerge as we track the impact of land use changes on our raw water quality.	We have talked to customers about intergenerational fairness, in particular when spreading the cost of meeting the future, tighter lead standard. Customers understand and agree that this is a priority but they also expect us to find the most cost effective way of addressing this issue to ensure bills remain affordable for all.	The smell, taste and appearance of water is one of the most important customer facing measures. We are continuing the hugely ambitious rate of improvement into AMP7 and are committing to make a 38% improvement in DWQ complaints.

6.3.2 We are delivering stretching performance

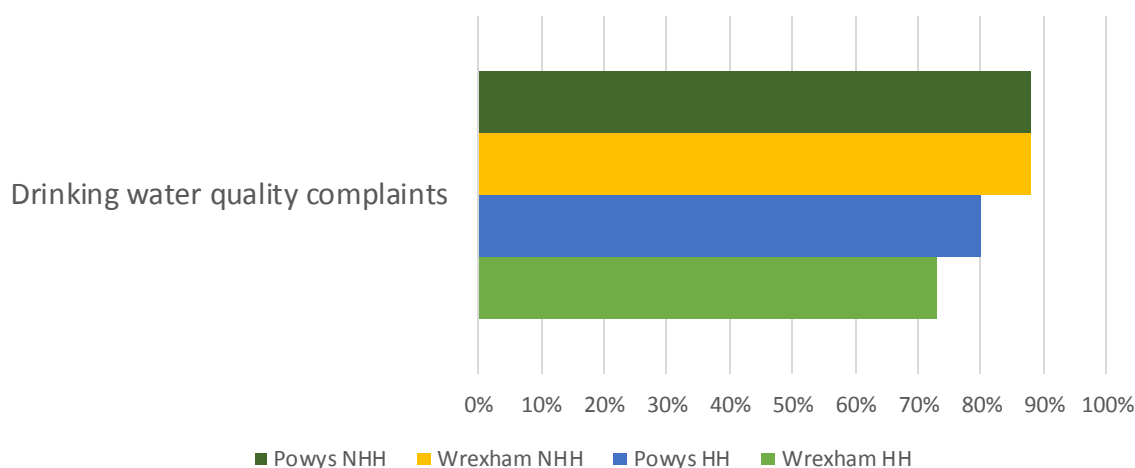
6.3.2.1 We have talked to customers

We have used a range of techniques to gather insights and our research shows that delivering safe drinking water is customers' priority and part of their core expectations from their water company, and a basic need in our hierarchy. Full details are set out in Appendix 1 Customer Compendium. In summary customers expect a good quality and consistent product every time they open the tap, and whilst they do not necessarily see the need to improve the safety of their drinking water, anything which alters customers' perception of the safety of their drinking water can drive dissatisfaction, cause complaints and negatively impact on their perception of us as a company. This can include changes in appearance and taste due to the treatment process, different sources of water, or movements around the network.

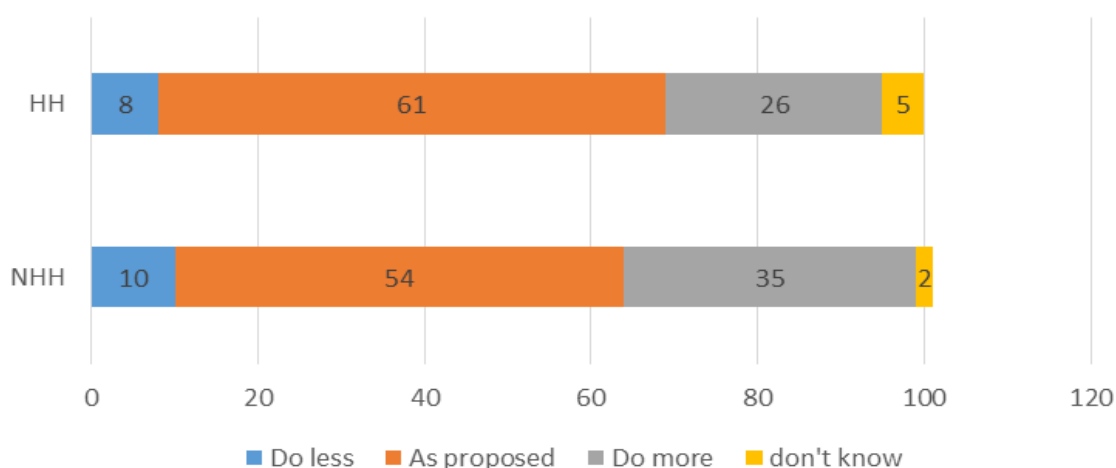
We have explored customer views on both appearance and taste and odour of tap water, as well as how we should tackle the issue of lead in drinking water, using a range of insight sources ranging from deliberative research to insight from customer facing employees and analysis of complaints data. Whilst we have not discussed CRI specifically with customers, we can infer customers' relative priority from our evidence base.

We are committing to extremely stretching targets to ensure our customers get improvements to service where they matter most or that are current high standards are maintained and customers have confirmed the acceptability of our proposal.

Acceptability of performance commitments



Customer views on proposals to reduce lead in drinking water



6.3.2.2 Current performance and setting stretching targets

As shown in chapter 4: Accounting for past performance, the levels of service we provide are on track to deliver our PR14 commitments by 2019/20. Our customer research also shows that customers are very happy with the service they receive.

This chapter sets out the approach we have used to derive performance commitment levels. The specific analysis for each PC is provided in appendix 2 which covers PC targets and ODIs. A summary of the overall basis for the targets is provided below.

CRI

The target is based on the regulatory expectation of CRI of 0 (100% compliance). This represents a stretching target for the following reasons:

- Our historical performance is volatile and we have not yet removed the lime dosing in our Mid Wales region which was the cause of high turbidity in previous sites, which caused the spike in performance in North Wales in 16/17.
- We are proposing a deadband relating to a CRI of two. We have considered the challenge we received from the CCG to ensure our deadband doesn't go beyond the performance that represents upper quartile. Given the UQ calculation is based on only one year (which means it's not possible to forecast future UQ with any certainty), the immaturity of this measure and the volatility seen across most of the smaller companies we think this is a fair balance of risk.

Drinking water quality complaints

The proposed target is 317 complaints, which equates to 20.6 per 10,000 customers. We think this is an incredibly stretching target for the following reasons:

- It will cost around 0.5% of water service to test that is not assumed in customer bills. But we are committed to finding more efficient ways of delivering this for customers.
- We need to improve in this area but targeting the industry UQ (current or forecast) is not achievable largely because of the composition of our raw water.
- We have targeted the forecast 2024-25 frontier of the companies with similar raw water composition ('western' companies). We want our customers to receive performance equivalent to the best possible for our given water source.
- A target of 317 represents a 38% improvement compared to 2017-18 performance which is incredibly stretching.
- In North Wales's discolouration performance will have improved by 40% during AMP6, the forecast performance continue improvement at broadly the same rate.
- The other work that we need to do in AMP7 to maintain our treated water reservoirs, is activity that can often cause DWQ complaints, this adds to the risk level that we are exposing ourselves to.

Reducing lead in drinking water

The target is proposed at 460 pipes (or 230 properties). This is based on the following information:

There are around 300 primary schools across our region. But based on the AMP6 surveys carried out in North Wales we anticipate less than 10% (30 schools) will have lead communication and service pipes, giving a total of 30 pipes. We will commit to working with these schools to replace these pipes.

We have identified several localised areas which would not meet the tighter 5µg/l standard. We will target these areas with a communication campaign to promote the option of replacing the lead pipes if they are detected. Based on trials run across Severn Trent we anticipate approximately 10% hit rate. This gives 150 homes where we will replace both the service pipe and the communication pipe – a total of 300 pipes.

We will also be working with Wrexham Council who are planning a c£4m infrastructure replacement programme where we will look to find a further 50 homes, a total of 100 pipes.

This will utilise all the investment. However, in addition to this activity we are going to undertake the following, funded through efficiency savings:

- Increased sampling
- Investment in R&D
- Increased communications
- Improved data capture and analysis to better target future activity and investment

6.3.2.3 We have responded to CCG challenges

Our customer challenge group made several challenges that have contributed to these targets. We have welcomed their challenge and feel that we have responded positively.

CCG flagged the ongoing concerns with our comparative performance on drinking water complaints and welcomed the inclusion of it in our bespoke PC suite. They also challenged why we could not achieve performance equal to industry upper quartile (even though this is not an official comparative measure). We set out the evidence including the study we have commissioned at group level to understand the evidence to support the hypothesis that surface water source in the west of the UK is more prone to manganese and therefore DWQ complaints. They also welcomed the analysis that we have done to attempt to forecast future UQ and frontier for the western companies so that the target could be as stretching as possible given the characteristics of our water sources. The report on water composition across the UK is included in appendix 10.

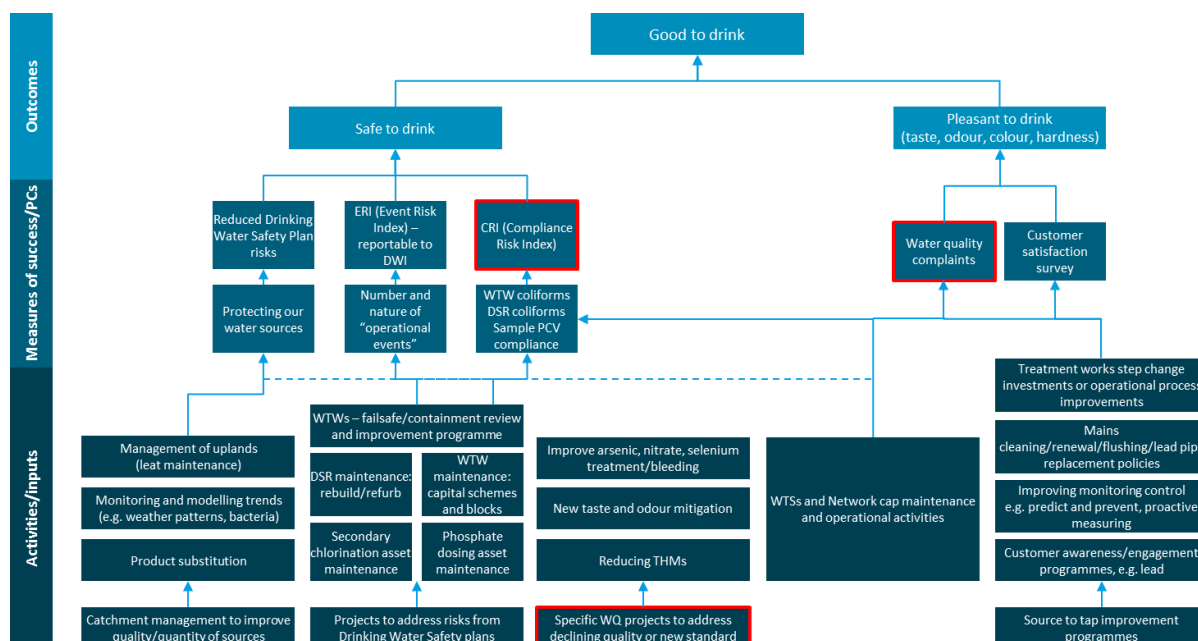
The challenges on the lead cost adjustment claim are set out in the business case in appendix 4.

6.3.3 Our plan is based on a robust asset management approach and efficient costs

We have mapped out the key activities that will contribute towards successful delivery of this outcome in the 'driver tree' below. This ensures there is a clear line of sight between outcome, activity and performance commitments. This has three key benefits:

- It is a critical step in our proactive management approach to ensure we have a good balance of lead and lag measures to help us understand trends in our performance and therefore refine and reprioritise activity.
- It enables us to identify synergies and therefore further efficiencies across the programme.
- It gives customers, stakeholders and our board confidence that the performance commitments cover the breadth and depth of issues but also that we have a robust monitoring framework as part of our business as usual activities.

The driver tree below shows all of the factors, with the performance commitments outlined in red. It shows we have identified an appropriate breadth and depth of measures to protect customers. Note the PC on lead is one factor within the highlighted box “Specific WQ projects to address declining quality or new standard”.



We have a well-established asset management approach that we use to understand past performance and use historical relationships to target improvement. There is considerable overlap between the measures in this outcome and we have sought to identify the package of activity that drives the most benefits. The key activities in our plan to drive improvements are:

- Continue with long term mains cleaning programme
- Introduce a programme of air valve maintenance to reduce air complaints
- Investigate the potential to use catchment management techniques to address taste and odour – potential for working with DCWW who are also looking at this due to having similar water composition.

Our costs are based upon a triangulation between actual costs being experienced this AMP, the cost models that have also been used to develop Severn Trent Water’s plan (which include assumptions about future efficiency) and the costs previously used by DVW, which gives us confidence that the costs are both robust and challenging. Our plan includes significant improvement in performance in many areas at a lower cost than the equivalent outcome in AMP6. Fuller details of our approach can be found in A5: securing cost efficiency.

6.3.4 Part of a long term plan

We have set out the long term ambition across all of the performance commitments and target rationale in appendix 2, supported by customer insight for each outcome in appendix 1. In order to deliver these long term ambitions it is vital that we have a dynamic (i.e. how they are changing over time) understanding of the shocks and stresses that could disrupt our supply system. Our overall approach to resilience in the round is set out in chapter 5. We have also submitted a report to the DWI setting out our approach to long term risk management of drinking water quality risks. This is included in appendix 9.

As part of our risk management approach we have established the key areas and the main activities where we need to focus in the next five years to ensure we both understand and enhance our resilience. A summary is provided below.

Drinking water quality complaints

Having removed the key source of raw water discolouration during AMP6 with the closure of the Legacy treatment works, our future ambition will rely on improving the operational effectiveness of our flushing programmes to prevent accumulation of sediment in the network.

As such we are forecasting incremental improvements across each AMP as we work to calm the network and improve the operational flushing programme. By 2045 we are expecting to have reduced the total number of complaints by 60% from the 2019/20 position.

	AMP6	AMP7	AMP8	AMP9	AMP10	AMP11
Forecast number of complaints (in final year of each AMP)	490	317	269	229	206	200
North Wales Key activity to drive performance improvements	Legacy WTW decommissioned, trunk main cleaning and mains flushing Mains renewal	Trunk main cleaning and mains flushing Mains renewal	Complete trunk mains cleaning and mains flushing Mains renewal	Mains flushing Mains renewal	Mains flushing Mains renewal	Mains flushing Mains renewal
Mid Wales	Mn optimisation and mains flushing Mains renewal	Enhanced Mn optimisation and mains flushing Mains renewal	Possibly Mn treatment if optimisation not sufficient Trunk main cleaning Mains flushing Mains renewal	Trunk main cleaning Mains flushing Mains renewal	Finish Trunk main cleaning Mains flushing Mains renewal	Mains flushing Mains renewal
External	Over this period we would explore innovative means to reduce Mn levels for lower cost in catchments and WTW. We would also continually optimise the corrosivity of our water to reduce mains corrosion and optimise chlorine levels with a longer term view of significantly reducing chlorine to improve taste complaints. We would also explore new ways of replacing or lining cast iron pipes to reduce costs associated with iron risk reduction and would continue to support a change in policy for supply pipes that would allow us to tackle iron issues from galvanised pipes and tastes from black alkathene.					

6.4 Water always there when you need it

6.4.1 Overview

This is a critical outcome for our customers

A reliable supply of tap water is a basic customer expectation voiced in almost all of the research that we have conducted. A piped supply of high quality drinking water at a good pressure is integral to modern life and our customers tell us that, for the most part, they take their water supply as a given. While customers know and accept things can go wrong from time to time and that supply interruptions or reductions in pressure may occur, they are increasingly intolerant of even short term interruptions to service.

This outcome is not just about ensuring water comes out of the tap at a good pressure and when our customers want it – it is also about addressing the increased expectation that we’re taking steps to abstract water in a way that is not harmful to the environment. It is also very clear from this years’ exceptionally dry weather that a number of customers expect to be able to use as much water as they want, whenever they want it – we’ll need to make sure we have a long term plan which takes account of and suitably mitigates the impacts of climate change.

Customers recognise this is a complex issue and they’re willing to play a part in the solution, such as using water more wisely as long as we do more about leakage. Our customers do understand the economic arguments that justify some leakage, but they also see it as wastage. While customers have indicated a very low willingness to pay to reduce leakage (zero in Mid Wales), our deliberative research has shown that this is because they are expecting us to find more innovative and cost effective ways of achieving what they want rather than them not feeling strongly about leakage per se.

Unsurprisingly, customers regard all of the seven proposed performance commitments in this outcome as fitting into the basic category in our hierarchy of needs. More detail can be found in chapter 2 Customer insights and appendix 1 Customer insight compendium.

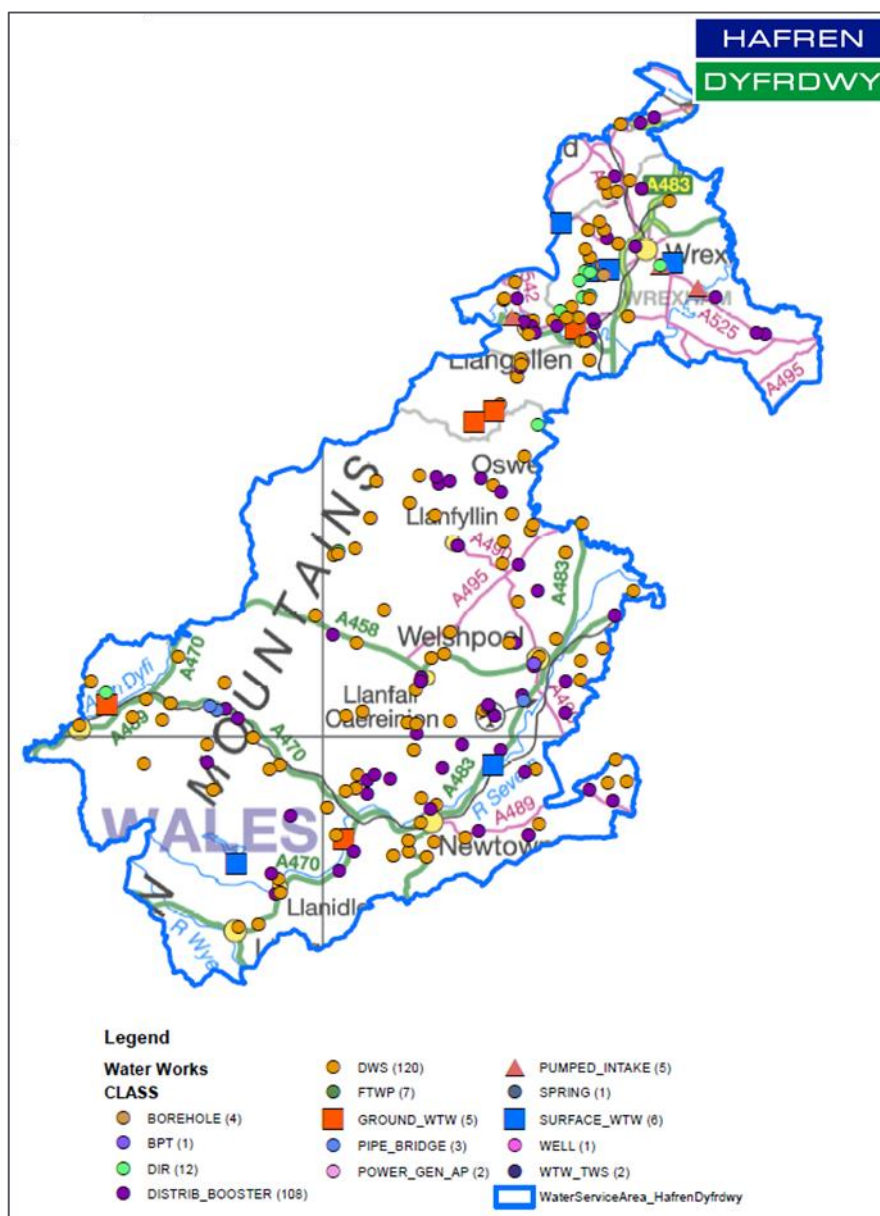
Performance commitment	Relative priority	Hierarchy of needs	Rationale
Leakage	Very important	Basic	Customers want us to reduce leakage and it is a high priority, although willingness to pay is low. The proposed target is acceptable.
Water supply interruptions	Important	Basic	Interruptions to supply appear to be a low priority for customers in willingness to pay research, however the proposed target is acceptable.
Per capita consumption	Important	Basic	Customers feel water should be conserved and some take steps to do so, some motivated by saving money, some by the environment. Leakage is a more important issue to them.
Properties at risk of receiving low pressure	Important	Basic	Whilst low pressure is not a high priority for improvement, customers report high levels of experience of low pressure, which causes dissatisfaction.
Asset health - mains bursts	Important	Basic	Customers recognise the link with interruptions and traffic disruption. Both can cause dissatisfaction.
Asset health – unplanned outage	Low importance	Basic	Inferred priority – not a customer facing measure.
Resilience – drought risk	Low importance	Basic	Inferred priority as no improvement required.

6.4.1.1 Context

We provide around 65 megalitres of water every day to serve 102,000 homes and businesses in Flintshire, Denbighshire, Wrexham and Powys, covering a geographical area of 2,858km².

60% of the water we abstract is from the River Dee, 35% from three ground water sources and 5% collected in our catchments across 12 impounding reservoirs. We operate a total of five water treatment works comprising three ground water and two surface water treatment works, 87 storage reservoirs, 100 distribution pumping stations and around 2,600 km of water pipes. We optimise the whole system across all of these assets to ensure we deliver service at an efficient cost.

Map of Hafren Dyfrdwy water supply area



Our track record is solid and we're on target to deliver the performance commitment levels made for 2015-20. While we've been able to consistently manage our systems to avoid long duration (over 12 hour) interruptions, our performance on shorter duration interruptions has been inconsistent. Our performance has ranged from 4 minutes to 21 minutes per property, which is in part due to the rurality of our region. The scale of our operation also means that one complex incident could have a disproportionate impact and be the difference between UQ and LQ performance. While we've increased system interconnectivity and improved resilience of

single points of failure, we've had to consider all options to provide a resilient service, especially in our more rural locations – this is covered below.

6.4.1.2 Key facts

The targets for the seven performance commitments under this outcome are summarised in the table below. Further information on the rationale behind these targets can be found in appendix 2 - Evidence and justification for PC targets and ODIs. Our customer research revealed a high level of acceptability of the targets ranging from 71% for leakage to 81% for supply interruptions. We have used a variety of information sources such as industry comparative data, our own historical performance and the long term ambition set out by government and other policy makers to really challenge ourselves. We are committing to extremely stretching targets to ensure our customers get improvements to service where they matter most.

Performance commitment	Description	2019-20	2024-25	Long term aim
Leakage	The total level of leakage in MI/d reported as a three-year average	13.66	-15%	-50%
Water supply interruptions	Average supply interruption greater than three hours (minutes per property)	13	8	2
Per capita consumption	Average amount of water used by each person (litres per head per day). Reported as a three-year average	144	-2%	-12.5%
Properties at risk of receiving low pressure	The total number of properties that have received, and are likely to continue to receive, pressure below the reference level	57	41	0
Asset health - mains bursts	The number of mains bursts per thousand kilometres of total length of mains	126	110	stable
Asset health – unplanned outage	Unplanned outage. The annualised unavailable flow, based on the peak week production capacity (or PWPC)	baseline	stable	stable
Resilience – drought risk	Percentage of the population that would experience severe supply restrictions in a 1-in-200 year drought	0	0	0

We will be investing a total of £77 million under this outcome to deliver our performance commitments and other statutory obligations. Given our interconnectivity, many interventions impact both this outcome and 'Water that is good to drink' and we've not attempted to proportionally allocate the base service costs (opex, IRE and MNI). There are also contributory benefits from other enhancement investment (such as the reducing lead cost adjustment).

6.4.1.3 We've challenged ourselves to be ambitious against Ofwat's PR19 themes

The table below summarises how we have challenged ourselves to be ambitious against Ofwat's four key themes.

Innovation	Resilience	Affordability	Great customer service
We are looking at how we can apply customer analytics as part of a trial to use nudge theory to change people's	The majority of our water comes from one abstraction point and whilst we do already have robust and effective	We are making step changes in performance in four of the seven measures relating to this outcome, this is	Improving water pressure was including in the suite of PCs as a direct result of our customer engagement –

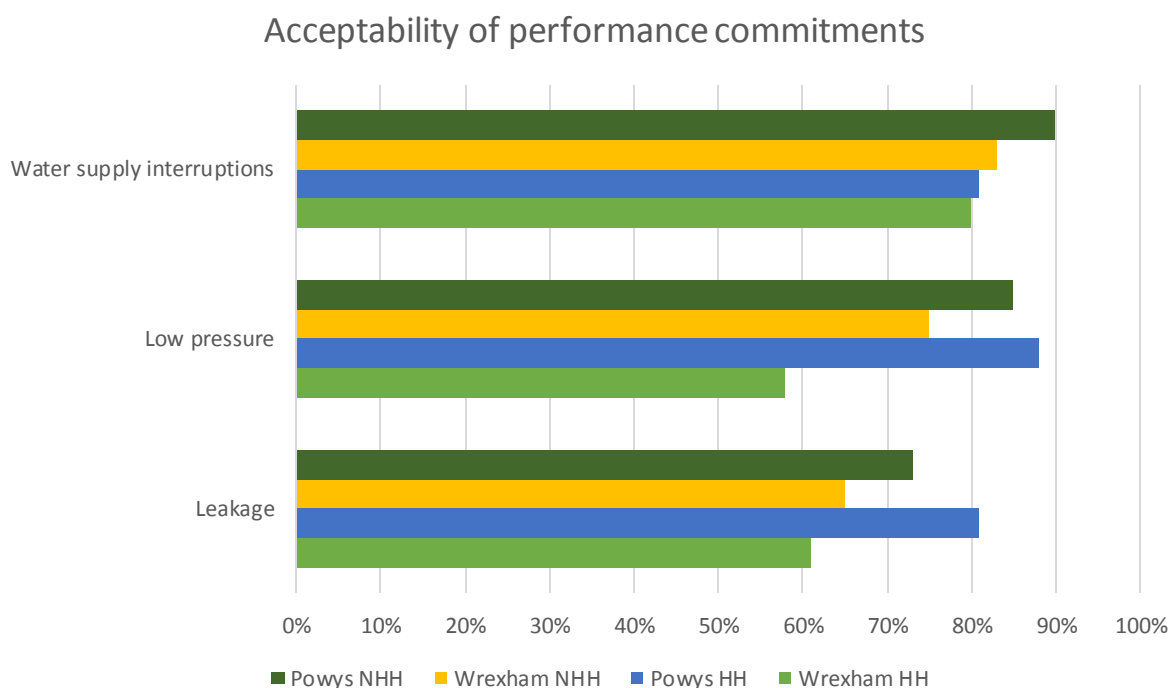
behaviour about water efficiency.	pollution monitoring and raw water storage it is still a concern as we consider changes driven by climate change. Therefore our plan includes cost effective maintenance of upland leats (ditches that channel the flow) which has supply resilience, and ecosystem resilience benefits.	being delivered for no additional costs. This is helping us to offset cost pressures as a result of crucial investment needed to ensure the safety and long term serviceability of our dams.	whilst we are meeting our obligations it is clear we are not meeting customers' expectations for water pressure. We are making nearly 30% improvement in AMP7 but also installing the instrumentation and telemetry that will enable us to improve our understanding of the problem and causes.
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6.4.2 We are delivering stretching performance

6.4.2.1 We have talked to customers

We have explored customer views on the main performance commitments which underpin this critical outcome - including leakage, interruptions to supply and low pressure - using a range of insight sources. We have also reviewed complaints data as many of the service issues in this outcome are amongst the top causes of complaints, including leakage, pressure and loss of supply. We haven't talked to customers explicitly about the performance commitment level for per capital consumption, burst mains, unplanned outage or drought resilience. However customers' views, drawn out of other research, have been considered and these measures are essentially warning measures for the service areas most impacting customers (and, as such, are covered in our research).

Overall acceptability of the targets was high as shown below:



6.4.2.2 Current performance and setting stretching targets

As shown in chapter 4: Accounting for past performance, the levels of service we provide are on track to deliver our PR14 commitments by 2019/20. Our customer research also shows that customers are largely very happy with the service they receive. The majority of customers have never been inconvenienced by a loss of

supply lasting longer than three hours, which equates to a service availability of 99.998% of the time. We currently perform in line with the top quarter of the industry on leakage, bursts and are in a strong position regarding drought resilience. But we are not complacent and have challenged ourselves against the very best companies, regardless of their operating circumstances, to ensure our customers receive the best possible service. This is particularly the case on interruptions and low pressure, where we are proposing a step change improvement compared to our historical performance.

This chapter sets out the approach we have used to derive performance commitment levels. The specific analysis for each PC is provided in appendix 2 which covers PC targets and ODIs. A summary of the overall basis for the targets is provided below.

Leakage

Our supply /demand balance means that we are forecasting surplus supplies for at least the next water resource management plan (WRMP) period. In Mid Wales we are operating at the economic level of leakage and in our North Wales region we are beyond the economic level. Our leakage performance is around upper quartile and we're forecasting to deliver our AMP6 leakage commitments.

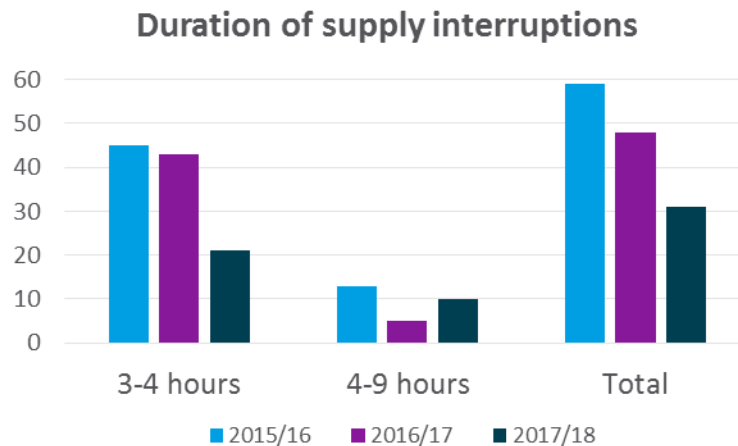
We originally proposed a target of 15% reduction phased over two AMPs, using this in our research and the draft WRMP. The feedback has been clear. Our customers, stakeholders and policy makers challenged this target and we've now doubled this and included a 15% leakage reduction in AMP7. This is an incredibly stretching target as all the additional activity, that is not required in itself to meet the supply/demand balance which is in surplus, must be delivered within the existing investment and affordability constraints that our customers have agreed to.

We're committed to delivering this stretching target and will be looking for ways of deriving multiple benefits from other investment areas - for example within our lead, pressure management and mains renewal plans. We believe the additional investment that we are making in 2018-19 and 2019-20 in monitoring, control, metering and systems will also help us targeting improvements in a cost effective way. The target will be achieved by the end of AMP7 with a straight line glide path as we need to integrate leakage activity into our business as usual approaches to maximise cost efficient delivery.

Water supply interruptions

We have considered the information and consider a target of eight minutes (presented as 00:13:00 in decimal hours) is a stretching target, based on the following key reasons:

- We have worked hard to identify efficiencies to deliver a target of eight minutes which represents an almost 30% improvement compared to AMP6.
- Given the volatility in this measure just one complex burst would result in us not meeting the target.
- Customers found our target acceptable and had relatively low willingness to pay to improve performance further.
- As shown below we have very few longer duration supply interruptions, in fact none over 9 hours, which reduces the scope for making step change improvements.



Per capita consumption (PCC)

We are proposing to achieve the 19l/p/d reduction in PCC by 2040, which is in line with national policy. If this rate of improvement is extended to 2065 it is within the ranges considered within the Aertesia Consulting report for Ofwat. This results in a reduction of 2.5% in the next five years and will bring PCC down to 141l/p/d by 2025. This is stretching given we already have quite high meter penetration, especially for a company with no supply demand deficit. Given this, we'll need to achieve our stretching target without recourse to an aggressive demand side programme.

Low pressure

Dissatisfaction with water pressure was an issue that came out strongly in our research. Our current performance of having only 57 properties at risk of receiving low pressure (0.05% of household properties) is clearly masking a change in expectation compared to our obligations. The proposed 2024-25 target is to reduce the number of properties at risk of receiving low pressure from 57 (in 2019-20) to 41. We are proposing one year glidepath to the improved level to reflect the requirement to have at least 12 months' robust data which will be gathered from the additional 200 loggers that we are installing around the network during 2018-19. This target is stretching as it represents a 26% improvement and just as importantly the planned activity during AMP7 will result in much better data that will allow us to target a more customer facing PC in AMP8 and beyond.

The target has been established by applying the Ofwat serviceability methodology. This means we have identified the best historical performance (which occurred in 2016-17) and then taken the average between that year and the following year, which was the previous regulatory methodology ([Ref Ofwat PR09/38](#)) for accounting for some natural variation. This is stretching as it means the target (41 properties) is 20% lower than the long term average (51 properties).

Mains bursts

We are proposing a target of 298 bursts (which equates to around 111 bursts per 1,000km over the AMP) based on the average actual performance. This is on the boundary of upper quartile performance (but could be moving towards average if some companies push the frontier).

Whilst we acknowledge that we are not proposing an ambitious improvement, we think this is appropriate and stretching because:

- It represents a 14% improvement from the reference level previously set by Ofwat.
- It locks in the improvement that has shifted the average actuals during this 10 year period.
- This level represents a stable asset base which means we are not storing up problems for the future.
- Customers will not be funding the 14% improvement which means it increases company risk.

Unplanned outage

We are proposing to maintain stable asset health performance on this measure. Stable performance indicates that we have identified an appropriate balance between investment activities and performance to ensure we are not storing up problems for the future. Our plan focuses on understanding single points of failure where an unplanned outage is most likely to result in a service failure.

Further analysis of this data over time will enable us to assess the efficacy of our maintenance strategy and help us to ensure we get the greatest benefit for our investment. Until we better understand our performance against this measure, our target for AMP7 is to maintain stable performance.

Drought resilience

For AMP7 we will ensure that the level of resilience does not deteriorate and will develop plans to ensure that we are sufficiently monitoring the lead indicators that will help us understand if the risk is changing over time (e.g. because of climate change). This is in line with both government policy and customer expectations.

6.4.2.3 We have responded to CCG challenges

Our customer challenge group made several challenges that have contributed to these targets. We have welcomed their challenge and feel that we have responded positively.

On leakage the CCG were very disappointed and requested to see the evidence used to set the target that was lower than the Ofwat guidance of at least 15%. We provided an overview as part of the discussion we were having with stakeholders on the WRMP and then gave a further update in June 2018. Whilst they acknowledged the evidence they felt that it is important to respond to the industry wide challenge and that wider customer research such as that carried out by CCWater does show that customers expect the industry as a whole to be doing more on leakage. We agree with that sentiment and have included a commitment to reduce leakage by 15% in the next five years. The CCG welcomed this change.

The CCG also challenged the water supply interruptions target. They reviewed our evidence and long term plan to work towards the industry upper quartile, which they welcomed, but they wanted us to go further in the next five years. We carried out an extensive review of all of our historical interruptions performance and shared the following key findings with the CCG, which showed that by improving our processes and installing additional monitoring equipment we could improve performance by 27%. We applied this improvement to the proposed target, resulting in the commitment to reduce interruptions to eight minutes per property.

The CCG also challenged the degree to which we had discussed our WRMP with stakeholders on the issues specifically affecting customers in Mid Wales. This was an issue that arose due to the timing of the licence change which meant that the Mid Wales WRMP issues were discussed as part of the overall Severn Trent WRMP. To correct this we provided an update and discussed the particular circumstances in Mid Wales during a stakeholder workshop held in Welshpool in April 2018. The CCG had representatives at this session and welcomed our response to this challenge.

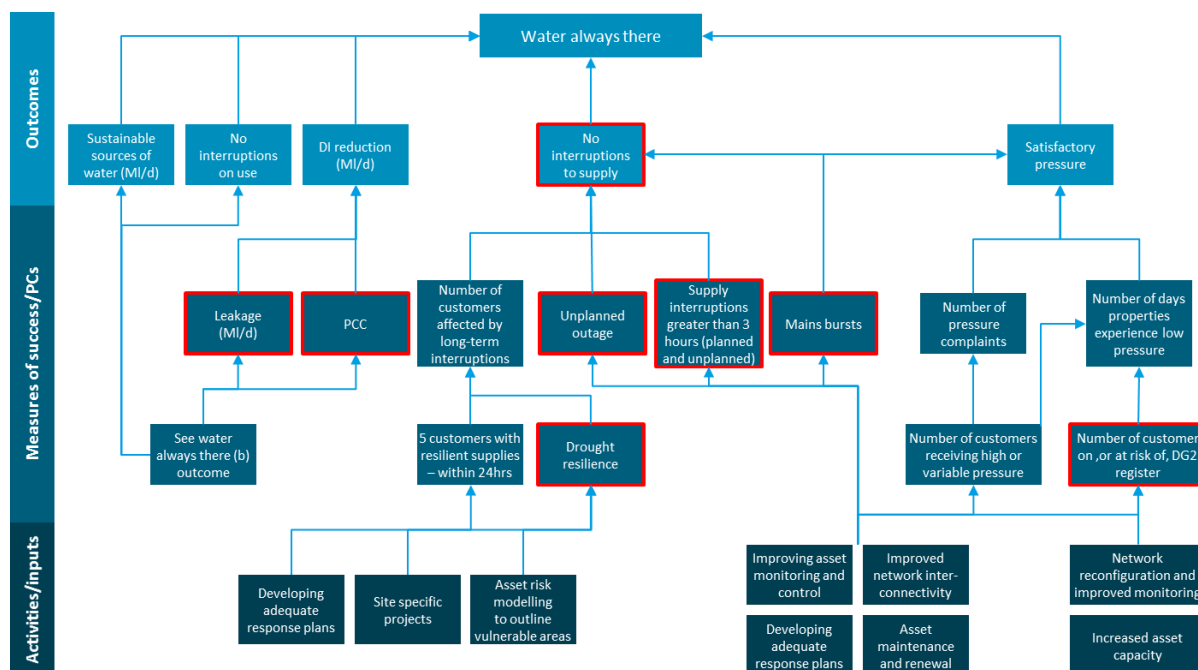
6.4.3 Our plan is based on a robust asset management approach and efficient costs

We have mapped out the key activities that will contribute towards successful delivery of this outcome in the 'driver tree' below. This ensures there is a clear line of sight between outcome, activity and performance commitments. This has three key benefits:

- It is a critical step in our proactive management approach to ensure we have a good balance of lead and lag measures to help us understand trends in our performance and therefore refine and reprioritise activity.
- It enables us to identify synergies and therefore further efficiencies across the programme.

- It gives customers, stakeholders and our board confidence that the performance commitments cover the breadth and depth of issues but also that we have a robust monitoring framework as part of our business as usual activities.

The driver tree below shows all of the factors, with the performance commitments outlined in red. It shows we have identified an appropriate breadth and depth of measures to protect customers.



We have a well-established asset management approach that we use to understand past performance and use historical relationships to target improvement. There is considerable overlap between the measures in this outcome and we have sought to identify the package of activity that drives the most benefits. The key activities in our plan to drive improvements are:

- Increase the instrumentation and telemetry across our network to ensure we have accurate and real time information (this will support all of the commitments in this outcome).
- Improve our processes and behaviours when reacting to a burst main. There are several areas where we have been sharing learning between the former DVW and STW areas to ensure we respond to bursts quickly and effectively to prevent them from causing a supply interruption. As shown in the table below there is a wide variation in the percentage of interruptions occurring on the main distribution network as a result of unplanned asset failure (between 11% and 52% of interruptions). This indicates that there is opportunity for us to improve consistency through a more systematic use of techniques such as under pressure connections and use of overland pipework during the repair which will mean we can better manage asset failure.
- Improvements to communication and processes during planned work. The table below shows that significant improvements have already been made to reduce the number of interruptions caused by planned work, but there is scope to improve this further and our target reflects this.

Cause	% of total mins attributed to each cause		
	15/16	16/17	17/18
burst non-strategic main	23	11	52
burst strategic main	1	82	7
defective stop tap			
defective valve or fitting	1	1	4
mains rehab (planned work)	37	3	8
new connections	37	2	20
other		1	8
3rd party action	1		1
Total	100	100	100

Our costs are based upon a triangulation between actual costs being experienced this AMP, the cost models that have also been used to develop Severn Trent Water's plan (which include assumptions about future efficiency) and the costs previously used by DVW, which gives us confidence that the costs are both robust and challenging. Our plan includes significant improvement in performance in many areas at a lower cost than the equivalent outcome in AMP6. Fuller details of our approach can be found in appendix 5 efficient costs.

6.4.4 Part of a long term plan

We have set out the long term ambition across all of the performance commitments in appendix 1 and the rationale is explained in appendix 2. In order to deliver these long term ambitions it is vital that we have a dynamic (i.e. how they are changing over time) understanding of the shocks and stresses that could disrupt our supply system. Our overall approach to resilience in the round is set out in chapter 5, some examples of the main activities we are focusing on in the next five years to ensure we both understand and enhance our resilience are set out below:

Sustainable water sources

We have reviewed the applicability of AIM to our abstraction regime and sought expert review of our data and assumptions. This has concluded there is no need to include any AIM sites in our PR19 plan. However we are undertaking two key activities to ensure long term sustainability of our raw water sources.

First, we will be working with Severn Trent to improving our data capture and analysis of the salinity of the river Dee (specifically the intake in England). The salinity is dependent on tidal changes which is in turn linked to climate change. This will impact the volume of water available for Severn Trent to abstract and/or the cost to treat this source in England, which then has a knock on impact to our customers through the Chester/Wrexham bulk supply agreement. We need to better monitor the rate of change and improve our ability to predict the future trend so that we can develop mitigation and adaptation plans. We will be looking to partner with organisations who are already studying this trend.

Secondly we are looking at the balance between source volumes and initial analysis shows that we are not maximising the potential run off from the land into our impounding reservoirs. Our PR19 plan includes £0.5 million to maintain the upland leats. This activity drives benefits in terms of increasing the volume of water capture and biodiversity benefits as part of the maintenance activity as removing invasive species of bracken which will also reduce localised flooding of farmland.

All of this activity will also contribute to the development of our long term plan relating to our role in the national water trading debate.

Enhancing reliability of our assets

There are two key areas where historical investment is not keeping pace with the rate of deterioration. These are in our raw water reservoirs and treated water reservoirs. These two asset groups play a major part in the overall system that allows us to ensure “water is always there”. Our plan includes investment to ensure the assets are structurally sound and can continue to support our supply systems. Details can be found in appendix 4 – business case on reservoir safety and supply resilience.

Enhancing resistance of our assets

To better inform our long term mains renewal strategy we will be improving the data and analysis to understand how well our systems recover after a shock or disruption. For example we have been reviewing how different pipe materials performed during the recent freeze thaw conditions both during the period but also in the weeks following it. This has shown us that under normal conditions we get the highest failure rate on asbestos cement pipes but during the freeze thaw these assets performed the best.

Novel approaches to system resilience

Landslips are prevalent in our area and we are looking at innovative approaches to mitigate the impact of these events on our water mains network. We are looking at the feasibility of planting willow trees to improve ground stability, an approach that may also have wider flood risk mitigation benefits, as tree planting can reduce surface water run-off rates.

Population growth and private supplies

We will have to deal with two future extremes - our urban areas are forecast to see substantial population growth but some of our rural areas may see a decline in population. This is compounded by the forecast that 30% of the properties in our region have private supplies. Changes in legislation or customer expectation could mean we have significant changes to the number of customers we need to serve over the long term. Our plan does not include any investment relating to this, but we will be developing our understanding of the issue and establishing tools and metrics that we need to track to help us understand when action will be needed. We are ensuring this is considered as part of our approach to sustainable water sources.

6.5 We will take your waste safely away

6.5.1 Overview

This is an important outcome for customer and stakeholders

Taking wastewater away safely is a core area of service. Our needs research tells us that customers expect waste water to be taken away safely and reliably, with no negative impacts on the environment. Few customers give much thought to their wastewater services; they tend to “flush and forget”.

Whilst service failure is relatively rare, when the service does fail, the impact can be devastating, often resulting in a discharge of sewage either to the environment or into customers’ homes and gardens. This is a significant driver of dissatisfaction and distrust amongst customers who experience service failure.

We’ve used a range of insight to understand our customers’ views on the main performance commitments which underpin this outcome, including internal sewer flooding incidents, sewer blockages and pollution. Based on our research we have triangulated our customer evidence to determine relative priority for each of our performance commitments.

There were two areas where we did not feel it was appropriate to explicitly discuss the targets with customers – sewer flooding due to extreme storms and sewer collapses. On the former, we’re not proposing any service improvements and have inferred a relative prioritisation based on the customer facing sewer flooding measure; on the second, we know that customers expect and rely on us to maintain our assets over time to provide wastewater services.

We have statutory duties under section 94 of the Water Industry Act 1991 to provide and maintain systems of public sewers, and further duties under article 3 of the Urban Wastewater Treatment Directive (article 3 and annex 1a) to provide sewage collection systems and limit pollution of receiving waters due to storm water overflows.

Perhaps unsurprisingly, customers regard all of the proposed performance commitments as fitting into the basic category in our hierarchy of needs.

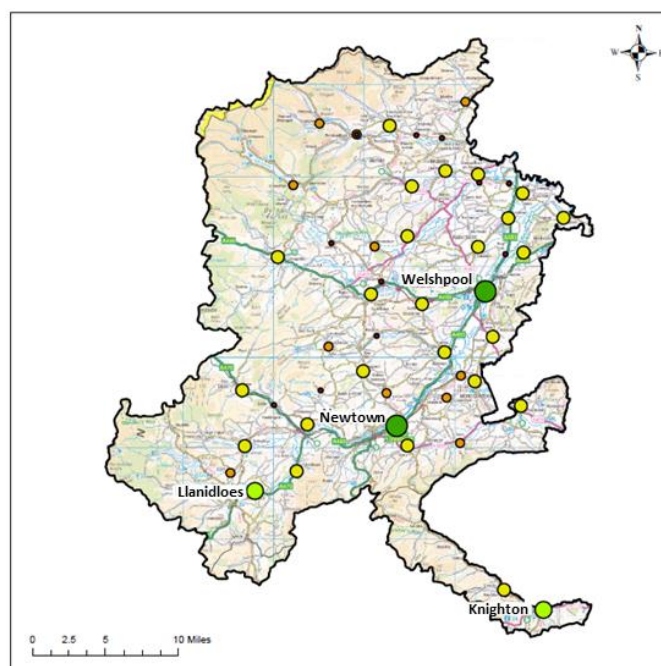
Performance commitment	Relative priority	Hierarchy of needs	Rationale
Internal sewer flooding incidents	Very important	Basic	Although experience is rare, reducing sewer flooding is one of our customers’ top priorities. Customers are altruistic and empathise with those who have suffered.
Sewer blockages	Important	Basic	Customers recognise the link to the service they see such as flooding and pollution. There is a need and appetite for more education around responsible sewer use.
Sewer collapses	Important	Basic	Customers recognise the link to the service they see such as flooding and pollution.
Sewer flooding – extreme storms	Important	Basic	Inferred priority due to link to high priority measures of flooding.
Pollution incidents	Important	Basic	Reducing pollution is a priority for customers – the environment is becoming increasingly important in their everyday lives.

6.5.1.1 Context

We provide wastewater services to an area of Mid Wales covering approximately 1920km², comprising the upper reaches of the river Severn catchment and a small section of the river Teme. Mid Wales has the lowest population density out of the 22 Principal Areas in Wales, at just 25 people per km² (the next lowest density is

Ceredigion with 48 people per km²). Consequently our assets are generally small scale and geographically dispersed and a significant percentage of the population within our area are not connected to the public sewerage system. The scale of our operation means that our customers experience a very low number of absolute failures on the service we provide.

We operate a total of 50 sewerage systems comprising 502Km of public sewer, 88 sewage pumping stations and 55 combined sewer overflows. The total sewered area comes to 15km². Just four of these sewerage systems serve more than 2,000 people and these account for more than 50% of the total population served – this underlines the extremes our systems need to operate between.



Map of Hafren Dyfrdwy wastewater area

We have proposed five performance commitments under this outcome which are summarised in the table below. Further information on the rationale behind these targets can be found in appendix 2 - Evidence and justification for PC targets. Our customer research has revealed a high level of acceptability of the targets proposed.

Performance Commitment	Description	2019-20	2024-25
Internal sewer flooding incidents	Number of internal sewer flooding incidents per year, per 10,000 sewer connections	1.74	1.22
Pollution incidents	Number of category 1 - 3 pollution incidents per 10,000km of sewer network	158	116
Sewer blockages	The total number of sewer blockages	293	276
Sewer flooding - extreme storms	Percentage of the population served that are at risk of sewer flooding in a 1-in-50 year storm	6.6	6.6
Sewer collapses	The number of sewer collapses per 1,000 kilometres causing a reported impact on service to customers or the environment	8.15	8

Note: We have opted not to include a specific performance commitment on external sewer flooding. However we will continue to track performance and report on this to CCWater.

We will be investing a total of £4.16m for this outcome to deliver our performance commitments and other statutory obligations.

Investment	Objectives	Amount £m
Sewer infrastructure maintenance	Maintain system Deliver PCs on blockages, collapses, pollutions & flooding	2.25
Sewage pumping station maintenance	Maintain system Deliver PCs on pollutions and flooding	1.6
CSO investigations + 1 new EDM monitor	Deliver statutory obligations Inform PR24 enhancement programme	0.10
New development	Statutory requirement Avoid adverse impacts from new housing	0.21
Total		4.16

6.5.1.2 We've challenged ourselves to be ambitious against Ofwat's PR19 themes

Innovation	Resilience	Affordability	Great customer service
We plan to investigate innovative methods of protecting our infrastructure from damage caused by landslips. This would entail planting willow trees in areas vulnerable to ground movement to enhance stability.	<p>We are currently developing our Drainage and Wastewater Management Plan, which will link into wider flood risk and water quality issues. We have also reviewed our existing asset base against the 1:1000 flood maps and concluded that we don't have any at risk key infrastructure assets.</p> <p>Flood risk is a key design consideration at sewage pumping stations. Vulnerable assets such as control panels will be relocated above the flood level when replaced. Our preferred approach is to integrate enhanced flood resilience into our business as usual maintenance programme.</p>	<p>We have challenged ourselves to keep this outcome affordable and have identified two areas where investment levels have reduced relative to AMP6.</p> <p>Environmental enhancement investment in AMP7 is reduced relative to AMP6. The CSO investigations required in AMP7 will cost less than the AMP6 event duration monitor.</p> <p>We have identified some efficiency opportunities within our sewer maintenance programme, resulting in a smaller provision in AMP7, relative to AMP6.</p>	We will be seeking to improve our customer education work on sewer misuse. This will drive down our blockage numbers relative to AMP6 and will also contribute towards meeting our flooding and pollution reduction targets.

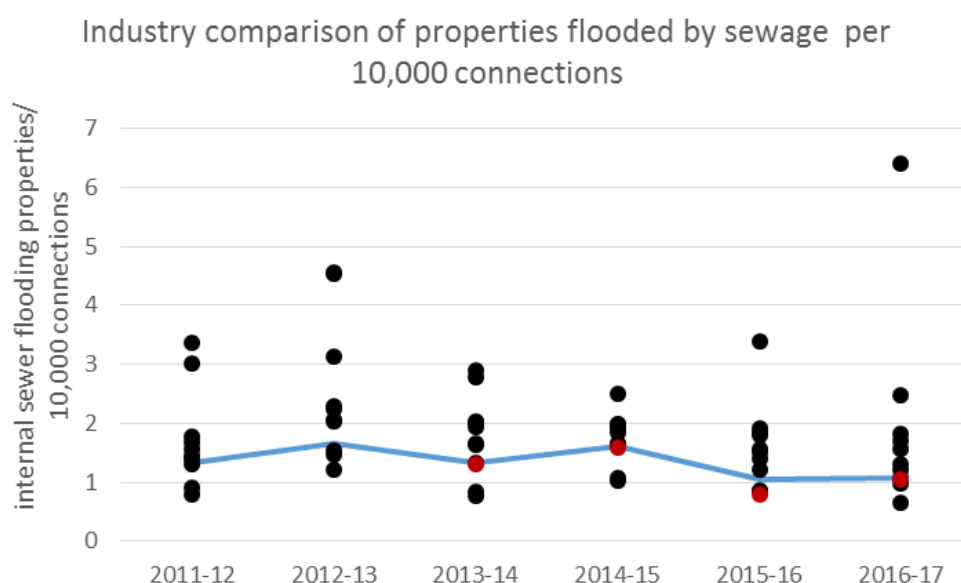
6.5.2 We are delivering stretching improvements to service

6.5.2.1 Current performance and setting stretching targets

Sewer Flooding

Our historic average performance over the last 5 years is relatively static at six incidents per year, with a range of +/-2. None of these incidents have been caused by lack of hydraulic capacity. We have compared this performance against the rest of the industry and concluded that it is consistently upper quartile.

However, we are not complacent about our current performance and have proposed a challenging target of reducing the number of incidents by 38%. This will be delivered by an enhanced proactive sewer cleansing programme coupled with more customer education on sewer misuse.



Industry comparison: red dots denote Mid Wales performance; blue line represents UQ performance.

Pollution Incidents

We are currently on track to meet our PR14 commitment of having fewer than 10 category 3 pollution incidents per year, and none of the more serious category 1 and 2 events. Current performance over the last five years averages out at eight per year with a range of +/-1.

Although customers have indicated a willingness to pay for further reductions relative to the PR14 target, this is not sufficient to get down to our forecast for upper quartile by 2025 (which would require <2 incidents per year). Root cause analysis of the seven events in 2017 reveals that more than half are attributable to sewer misuse.

Achieving upper quartile would mean eliminating all incidents caused by asset failure and successfully pre-empt more than 50% of the incidents caused by misuse. Relative to other performance commitments in this outcome, this is seen as being of lower priority by our customers and between 77% and 81% are happy with a target of seven per year.

Sewer blockages

We are proposing an AMP7 target of 544 blockages per 1,000km (which equates to 276 blockages based on 2017-18 sewer length) and represents a 6% reduction on the forecast position at the end of AMP6. We are not able to target upper quartile performance against this measure given the level of customer willingness to pay for this measure. Instead, we have proposed the maximum improvement that can be delivered at no extra cost

to our customers. Due to the fact that our asset base exclusively comprises small population centres, we believe that our networks have a higher than average proportion of smaller diameter sewers. Smaller diameter sewers are statistically far more prone to blockages arising from sewer misuse than larger pipes. This is partly due to the smaller pipe diameter and partly because they are closer to the properties where misuse occurs. This will make it more difficult for us to achieve UQ performance.

Appendix 2 provide more detail on our rationale and evidence to support the proposed PC targets and ODIs.

6.5.2.2 We have responded to CCG challenges

Our customer challenge group made several challenges that are equally applicable to our sewer flooding and pollution reduction performance commitments. These are to:

- Improve our understanding of hotspots of poor performance
- Improve our understanding where repeat failures occur
- Assess how effective and extensive mitigation efforts are (e.g. to prevent sewer misuse)

We have responded as follows: The improvement in our performance commitments is predicated on preventing any repeat failures as a result of our assets or our actions/inactions. There are on average two repeat incidents that are caused by sewer misuse (not repeat incidents, a different two every year) and we will be doing three things to try to prevent this happening in the future:

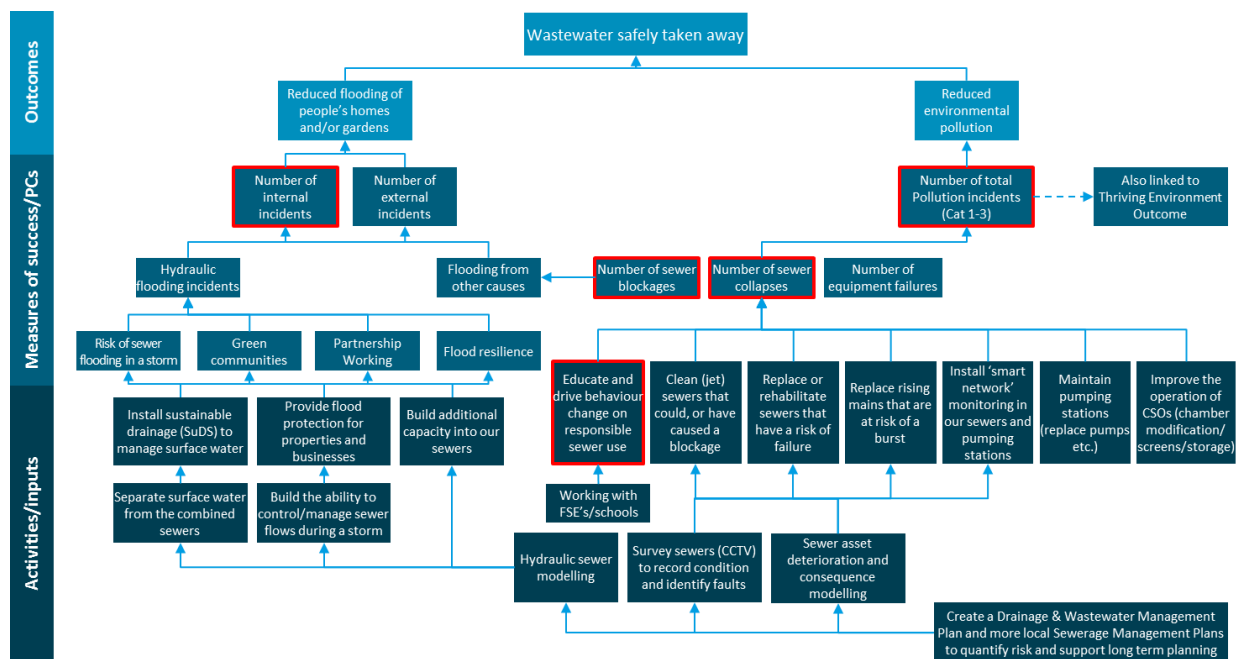
1. Automatically putting any misuse event on the sewer cleansing programme
2. Developing a multi-AMP approach to improving our data and real time control to improve our predictive capabilities
3. Reviewing our education and engagement with customers to reduce the chances of misuse – this is challenging given the extremely low numbers.

CCG also challenged our pollutions target, particularly with regard to our approach to tackling pollution incidents. Our root cause analysis of pollutions has identified that sewer misuse is a significant factor, so the measures outlined above will help to eliminate repeat incidents.

6.5.3 Our plan is based on a robust asset management approach and efficient costs

Our costs are based upon the cost models that have also been used to develop Severn Trent Water's wastewater plan, which we believe to be upper quartile efficiency relative to the other sewerage companies. We have also undertaken a detailed bottom up review of our investment requirements and believe that we can deliver the same basic level of service, plus the enhancements supported by our customers, at lower cost than the equivalent outcome in AMP6. Fuller details of our approach can be found in A5: securing cost efficiency.

We have mapped out the key activities that will contribute towards successful delivery of this outcome in the 'driver tree' below. This ensures there is a clear line of sight between outcome, activity and measure so we can demonstrate that our performance commitments offer customers an appropriate breadth and depth of protection, and has enabled us to identify gaps and develop bespoke performance commitments where needed. For example, we have identified that reducing sewer misuse is key to improving performance on sewer blockages, which in turn impact upon flooding and pollution. We have therefore proposed a bespoke performance commitment on customer education.



6.5.4 Our proposals are part of a long term plan

We have a long term plan to ensure we are resilient to shocks and stresses and make the most of opportunities.

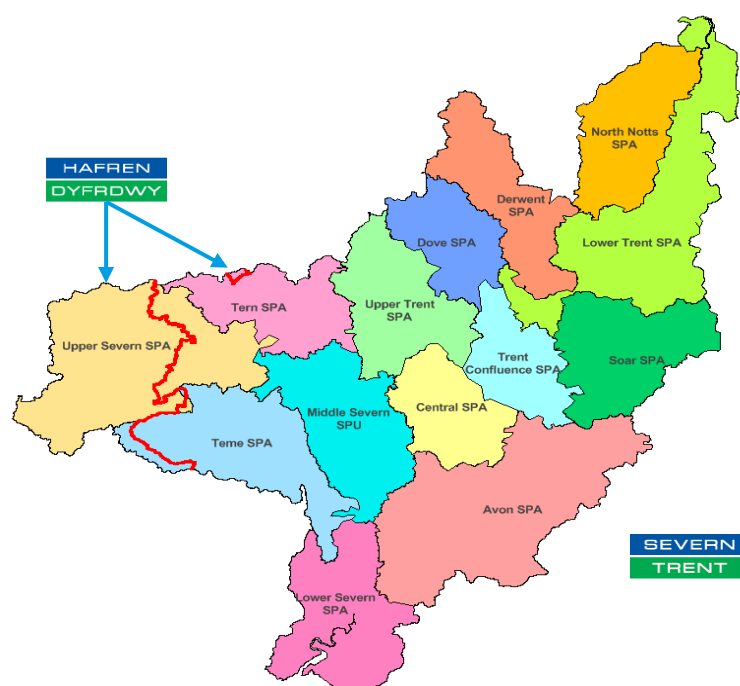
Reducing the environmental impact of combined sewer overflows

We are nearing completion of our AMP6 programme to install event duration monitors on most of the CSOs in our area. AMP7 will see the completion of this programme with installation of event monitors on the partially treated stormwater discharges at our sewage works. We will also be implementing the industry standard SOAF (storm overflow assessment framework) to quantify the impact of that frequently spilling overflows are having on the environment, the results of which will be used to bring forward cost beneficial interventions in AMP7.

Drainage and Wastewater Management Plans

We are in the process of developing our first Drainage and Wastewater Management Plan (DWMP), which is due to be published in 2022-23. This plan will set out our 25 year strategy for delivering a sustainable and resilient drainage system, capable of catering for population growth and the effects of climate change. To develop our DWMP, we have opted to align the Level 2 Strategic Planning Areas (SPAs) with the existing River Basin Management Catchments. This is to ensure close alignment with other drivers such as water quality and flood risk. It will also enable us to make use of the existing catchment based partnerships that are running in these areas. This has resulted in cross-border SPAs, with Hafren Dyfrdwy largely falling within the upper Severn SPA, with small areas in the upper reaches of the Teme and Tern catchment areas (the latter currently doesn't include any sewered settlements). We will be producing separate DWMPs for Hafren Dyfrdwy and Severn Trent Water, cross referenced where necessary.

Map of showing how the strategic planning areas cover the Hafren Dyfrdwy wastewater area



Unsewered settlements

Due to the rural nature of Mid Wales a high proportion of the population are not served by public sewerage systems. We are mindful that changes in legislation and/or the application of section 101a could result in Hafren Dyfrdwy being required to extend our service provision into settlements currently on private systems or septic tanks. We will be seeking to engage with the Welsh Government in respect of any policy changes that may be enacted to address the impacts of such systems.

Novel approaches to system resilience

Landslips are prevalent in our area and we are looking at innovative approaches to mitigate the impact of these events on our sewer system. We are looking at the feasibility of planting willow trees to improve ground stability, an approach that may also have wider flood risk mitigation benefits, as tree planting can reduce surface water run-off rates.

6.6 Thriving environment

6.6.1 Overview

Why is this an outcome?

Our research shows that customers place a high value on the natural environment. The environment runs through all levels of the hierarchy of needs, reflecting the fact that some of our activities deliver a basic need (such as complying with statutory obligations) and other activities can satisfy wider needs, such as enhancing biodiversity which creates opportunities for wider fulfilment. Our plans look for opportunities for solutions which deliver value at each level of the hierarchy of needs, for example by delivering wider benefits.

We have developed four performance commitments for this outcome, and have triangulated our evidence base to determine customers' relative priority

Performance commitment	Relative priority	Hierarchy of needs	Rationale
Hectares managed for biodiversity	Very important	Fulfilment	Improving biodiversity is a high priority compared to other fulfilment services, and is the investment area most customers would like to see additional investment in
Length of river water quality improved	Important	Basic	This emerges as a medium priority from the research
Satisfactory sludge disposal	Low importance	Basic	Inferred priority – this is a compliance measure. Customers want, and trust us, to be compliant with standards and there is no spontaneous driver to improve
Treatment works compliance	Low importance	Basic	Inferred priority – this is a compliance measure. Customers want, and trust us, to be compliant with standards and there is no spontaneous driver to improve

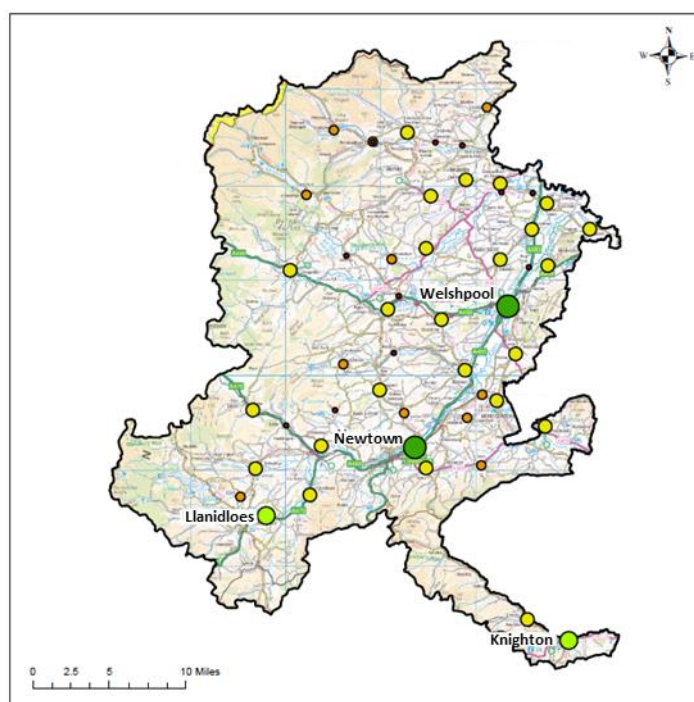
6.6.1.1 Context

Hafren Dyfrdwy provides wastewater services to an area of Mid Wales covering approximately 1,920km², comprising the upper reaches of the river Severn catchment and a small section of the river Teme. Mid Wales has the lowest population density out of the 22 Principal Areas in Wales, at just 25 people per km² (the next lowest density is Ceredigion with 48 people per km²). Consequently our assets are generally small scale and geographically dispersed. Part of the area is mountainous which can present accessibility challenges to some of our more remote sites in adverse winter conditions.

We operate a total of 50 sewage works in Mid Wales, all but two of which discharge into the upper reaches of the river Severn, with the remaining two feeding into the headwaters of the river Teme. Just four of these sewerage systems serve more than 2,000 people and these account for more than 50% of the total population served. The median population served by our works is 296, and over 40% sit within size band 1 (<250pe.)

River water quality within our area is generally much better than for the UK as a whole, with 38% of WFD waterbodies at good ecological status in the 2015 classification data. This is in part a natural consequence of the low population density – small and dispersed sewage works will generally have a small environmental footprint. Of the 45 river sections that currently don't achieve good status, Reasons for Not Achieving Good status (RNAG) data produced by Natural Resources Wales has only indicated three where failure is probably due to our activities. Investigations were included in our AMP6 programme and the results underpin our proposed AMP7 programme, full details of which can be found in our NEP business case. We have conducted our own thorough review of the evidence and have not found any other instances where failure is likely to be due to our activities, although it is to be expected that the AMP7 CSO investigations will identify some localised issues.

Over 60% of our total landholding has some form of protected area status (Special Area of Conservation, Site of Special Scientific Interest (SSSI) etc), and the river Teme into which we discharge is also an SSSI. We therefore have an obligation to safeguard these habitats and preserve them for future generations. This outcome therefore includes significant biodiversity investment.



Map of Hafren Dyfrdwy wastewater area

The targets we have set for the proposed four performance commitments under this outcome are summarised in the table below. Further information on the rationale behind these targets can be found in appendix 2 - Evidence and justification for PC targets. Our customer research has revealed a high level of acceptability of the targets proposed.

Performance Commitment	Description	2019-20	2024-25
Length of river water quality improved	The length of river benefiting from quality improvement work to meet Water Framework Directive (WFD) objectives.	0	21.9km cumulative
Hectares managed for biodiversity	Hectares managed for biodiversity to maintain or enhance SSSI status, extend the presence of a priority species (Environment Act), extend a semi-natural habitat or build/ maintain a high wildlife value structure on third party land (that also improves raw water quality or resilience).	0	450ha cumulative
Satisfactory sludge disposal	Compliance with sludge use and disposal standards as per the Environment Agency's* EPA measure.	100%	100%
Treatment works compliance	Water and wastewater treatment works compliance as per Environmental Performance Assessment (EPA) definition	100%	100%

*Note that although we come under the jurisdiction of NRW, our plan entails transferring sludge to Severn Trent Water for treatment and disposal in England.

In respect of sewage sludge disposal, our business plan assumes a continuation of the current arrangement of exporting liquid sludge to a facility operated by Severn Trent Water for treatment and disposal. We have engaged with DCWW to investigate alternative outlets and they have indicated that they expect to have additional capacity coming on line in 2019-20, but are not in a position yet to share prices. We will keep this under review to ensure that Hafren Dyfrdwy customers can take advantage of new sludge trading opportunities.

We will be investing a total of £9.71m under this outcome to deliver our performance commitments and other statutory obligations.

Investment	Objectives	Amount £m
Sewage treatment capital maintenance	Asset maintenance Deliver PC on permit compliance	4.79
Sewage treatment growth	Provide capacity to cater for growth Comply with statutory duty	0.38
Wastewater NEP (excluding CSOs)	Deliver Performance commitment Deliver statutory obligations Inform PR24 enhancement programme	2.52
Biodiversity (waste)	Deliver Performance commitment	0.13
Biodiversity and Wellbeing (water)	Deliver Performance commitment	1.89
Bioresources	Export sludge to another company for treatment and disposal.	0
Total		9.71

6.6.1.2 We've challenged ourselves to be ambitious against Ofwat's PR19 themes

Innovation	Resilience	Affordability	Great customer service
The rural nature of Mid Wales presents significant challenges in respect of delivering an efficient service to small, dispersed communities. We have therefore been developing new treatment technologies that are better suited to the needs of our area.	We have given careful consideration to the resilience of our wastewater treatment asset base and have not identified any significant risks to service continuity.	<p>We have challenged ourselves to keep this outcome affordable.</p> <p>Our NEP business case outlines the steps we have taken to keep our enhancement programme affordable and further information on how we have minimised the cost of our biodiversity programme can be found in the business case in Appendix 4.</p>	<p>River quality in Mid Wales is already amongst the best in the country and we will be delivering further enhancements in AMP7 where we have confirmed with NRW that our activities are a cause of failure.</p> <p>We have also proposed an ambitious programme of biodiversity enhancement, largely focused on our Vyrnwy estate. This work will also provide an enhanced visitor experience, contributing to the objectives of the Well-being of future generations (Wales) act.</p>

6.6.2 We are delivering stretching improvements to service

6.6.2.1 Current performance and setting stretching targets

Length of river water quality improved

There is no AMP6 equivalent to this performance commitment as there were no Water Framework Directive improvement obligations in the previous NEP. The AMP7 commitment of 21.9km matches the length of river improvement specified in NEP3, as issued by NRW in March 2018.

Biodiversity

This is a new performance commitment with no AMP6 equivalent.

Our Customer Needs Research told us that customers place great value on the environment and have a significant connection with the natural environment. This can be through close proximity to rural Wales, through active involvement in rural life or simply by a desire to see the environment protected for future generations. We also have statutory duties under the Environment (Wales) Act to protect and enhance biodiversity.

The commitment that we are making is largely covered by our biodiversity cost adjustment claim (which largely relates to activity on our Lake Vyrnwy estate), with a smaller contribution coming from our wastewater NEP obligations (covered by our NEP business case).



Lake Vyrnwy Estate

Treatment Works Compliance

Our historic treatment works permit compliance record is industry leading for the last three years at 100% compliance, with a single failure incident recorded prior to that in 2014.

Premise type	2014	2015	2016	2017
Sewage treatment discharges	43	43	43	43
Water treatment discharges	6	6	6	6
Sewage treatment compliance failure	0	0	0	0
Water treatment compliance failure	1	0	0	0
% compliance	97.78%	100%	100%	100%

There is a regulatory expectation that our performance target will be set to achieve 100% compliance with our discharge permit conditions. NRW were explicit on this in their feedback to Ofwat on our proposed PR14 environmental compliance performance commitment. We are therefore proposing to set our PC at 100%, with a penalty deadband at 97.4% (equivalent to a single works failure).

Satisfactory sludge disposal

As with treatment works compliance, we see this as a basic regulatory obligation and therefore propose to set the PC at 100% compliance. We have achieved 100% compliance in each of the last 4 years.

Appendix 2 provides more detail on our rationale and evidence to support the proposed PC targets and ODIs.

6.6.2.2 We have responded to CCG challenges

Our customer challenge group has made a number of challenges to the measures covered by this outcome. These challenges and our responses are summarised below.

Q. Are we working collaboratively with NRW?

A. We have worked collaboratively with NRW on the development of NEP3. They have been very supportive of our open approach.

Q. Can we defer investment?

A. We have given careful consideration to deferring investment and have agreed with NRW that one potential WFD improvement be excluded from NEP3 as there is currently insufficient evidence to support intervention. Given the 2027 deadline on WFD, coupled with anticipated investment in AMP8 arising from some AMP7 CSO investigations, we consider that further deferrals will create undue pressure on customer bills in AMP8.

Q. Are we sure the people who benefit from the improvements are the ones paying?

A. Given the cross border nature of the river Severn catchment, we have given this careful consideration. One project included in the Hafren Dyfrdwy NEP will be paid for by Severn Trent Water customers as the measure is included at the request of the EA to deliver an environmental outcome in England.

Q. How will we measure the biodiversity outcome?

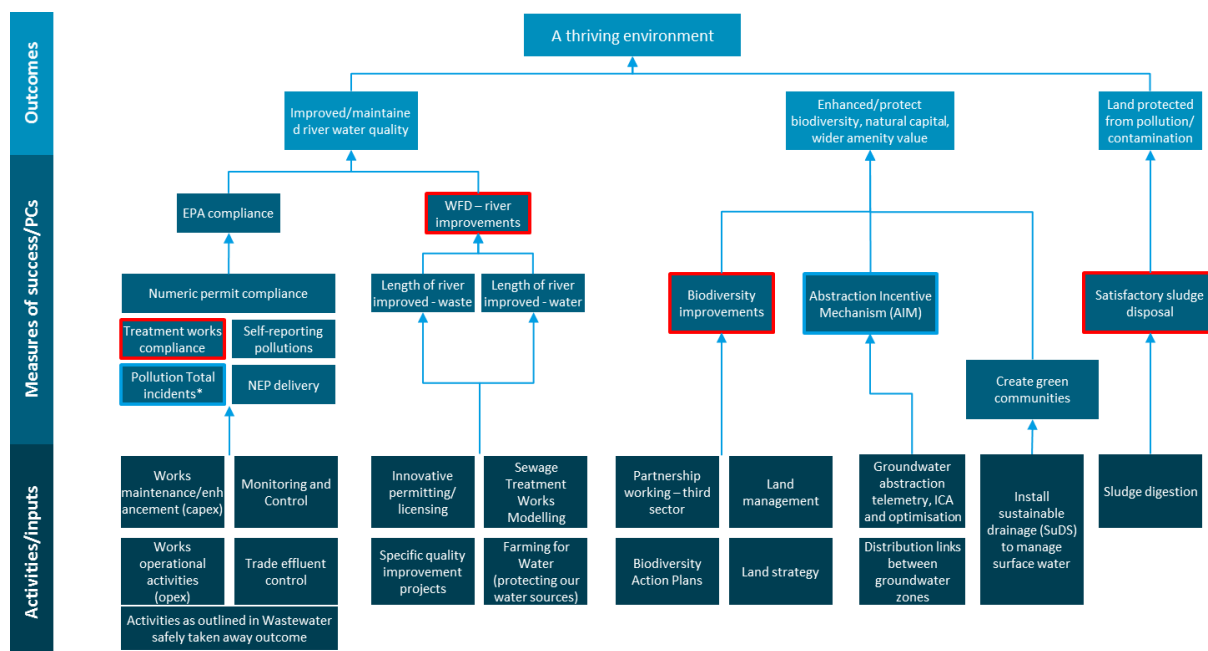
A. This is covered in the biodiversity PC measure specification form.

6.6.3 Our plan is based on a robust asset management approach and efficient costs

Our costs are based upon the cost models that have also been used to develop Severn Trent Water's plan, which we believe to be upper quartile efficiency relative to the other water and sewerage companies. We have also undertaken a bottom up review of our investment requirements and believe that we can deliver the same basic level of service, plus the enhancements supported by our customers, at lower cost than the equivalent outcome in AMP6. Fuller details of our approach can be found in A5: securing cost efficiency.

All of our NEP3 capex interventions have been subject to initial process design and feasibility work and the solutions have been individually costed using our standard project estimating tool.

We have mapped out below the key activities that will contribute towards successful delivery of this outcome in the 'driver tree' we have developed. This ensures there is a clear line of sight between outcome, activity and measure so we can demonstrate that our performance commitments offer customers an appropriate breadth and depth of protection, and has enabled us to identify gaps and develop bespoke performance commitments where needed.



*Reducing pollution incidents is also a contributor to this outcome, but is included as a performance commitment under our wastewater safely taken away outcome.

6.6.4 Our proposals are part of a long term plan

We have a long term plan to ensure we are resilient to shocks and stresses and make the most of opportunities.

Access to remote sites in extreme weather

In The Severn Trent PR14 plan the long term strategy set out the approach for rural sewage treatment works. Under this strategy, we are developing more sustainable treatment technologies that are better suited to the needs of more remote communities.

Key features of our rural strategy include:-

- Removing dependence on mains power (which can be unreliable in remote areas)
- Reduced operator input (opex efficiencies)
- Eliminate regular sludge tankering (capex savings from no requirement for access roads)

These features are especially valuable in Mid Wales, where we have the added problem of accessibility to our more remote sites in adverse winter conditions. The most effective way to manage this risk is to build works with very low operator input requirements and that don't require regular desludging.

We have recently completed our first 'off grid' sewage treatment works at Llys Rhysant. This works comprises three carefully engineered ponds that can deliver the required effluent quality with no moving parts, greatly reducing maintenance requirements and the risk of asset failure. A small renewable power source supplies the small amount of energy required to power flow and final effluent monitors and a telemetry outstation. Sludge production is very low, mean that desludging is only required on a five yearly basis and can be planned to avoid adverse conditions. More detail is included in Chapter 7 Markets and Innovation.



Llys Rhysant STW

Flooding Resilience

We have assessed all of our key wastewater treatment assets for resilience against a 1 in 1,000 year fluvial flooding event. As a result of this exercise, we have identified one sewage treatment works at Carno where there is a significant risk of asset damage under these extreme conditions.

This is a relatively small facility serving a community of just over 500 people. As such, the volume of sewage generated is too small to adversely impact upon the volume of floodwater that would be present in a 1:1,000 year event. We have therefore opted not to make a capex intervention in AMP7. Our resilience strategy for this site will be one of recovery. In the short term, we will tanker flows away in the event of flood damage. In the medium term, we will replace vulnerable electrical & mechanical equipment, under our business as usual capital maintenance programme, with flood resilient assets (either immersible equipment or relocate to a raised area).

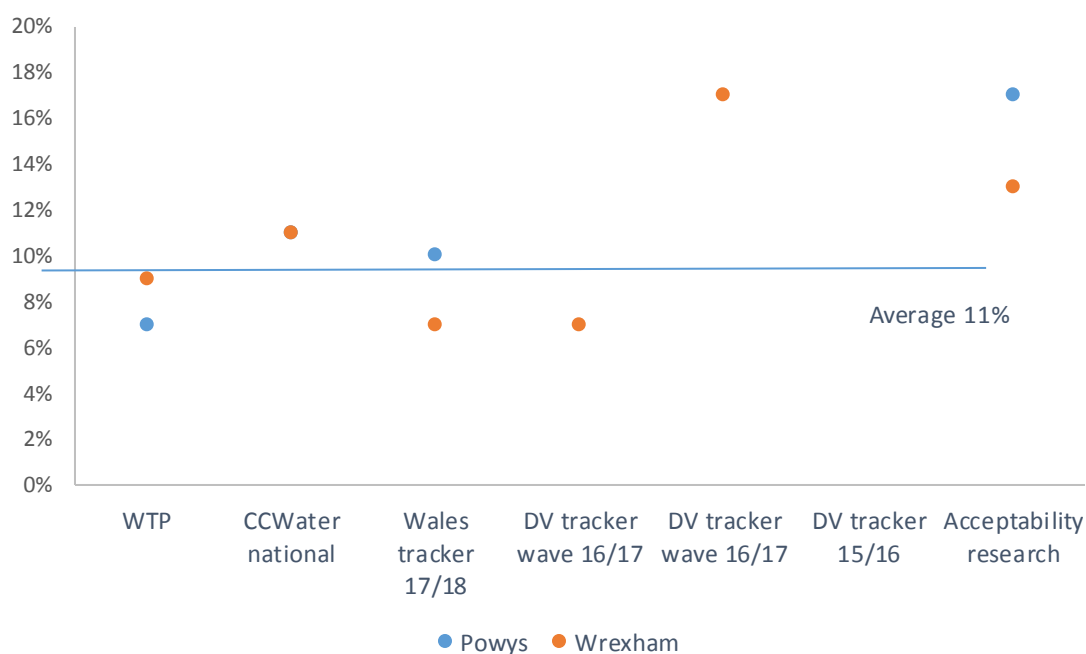
6.7 Delivering lowest possible bills

We pride ourselves on delivering a high quality and reliable service at the lowest price across England and Wales. Our customers strongly value this - the majority of customers are happy with the affordability of their bill, and are satisfied with the value for money and the services we provide. For example our latest set of survey data in 17/18 shows:

- 94% of our customers are satisfied with us overall;
- 75% of customers in Mid Wales, and 85% of customers in North Wales explicitly state our bill is affordable; and
- 87% of customers in Mid Wales, and 83% in North Wales, rate us as good value for money.

Despite our low bill and strong affordability results, we recognise that a small proportion of our customer base does not find bills affordable. We estimate that approximately 11% of customers fall into this category based on our own internal research, and national research commissioned by CCWater.

Figure 1 - Percentage of customers who find their bill unaffordable



This results really emphasise the importance of continuing to deliver affordable bills for customers today and in the future.

Our PR19 plan delivers these goals by focusing on four key activities:

- optimising our costs through targeted investments and ensuring our costs are efficient;
- making it easy for customers to pay;
- using our levers to balance bills in the short and long run; and
- ensuring our bills are fair by spreading costs across all eligible customers.

In this chapter we discuss how we have approached each activity.

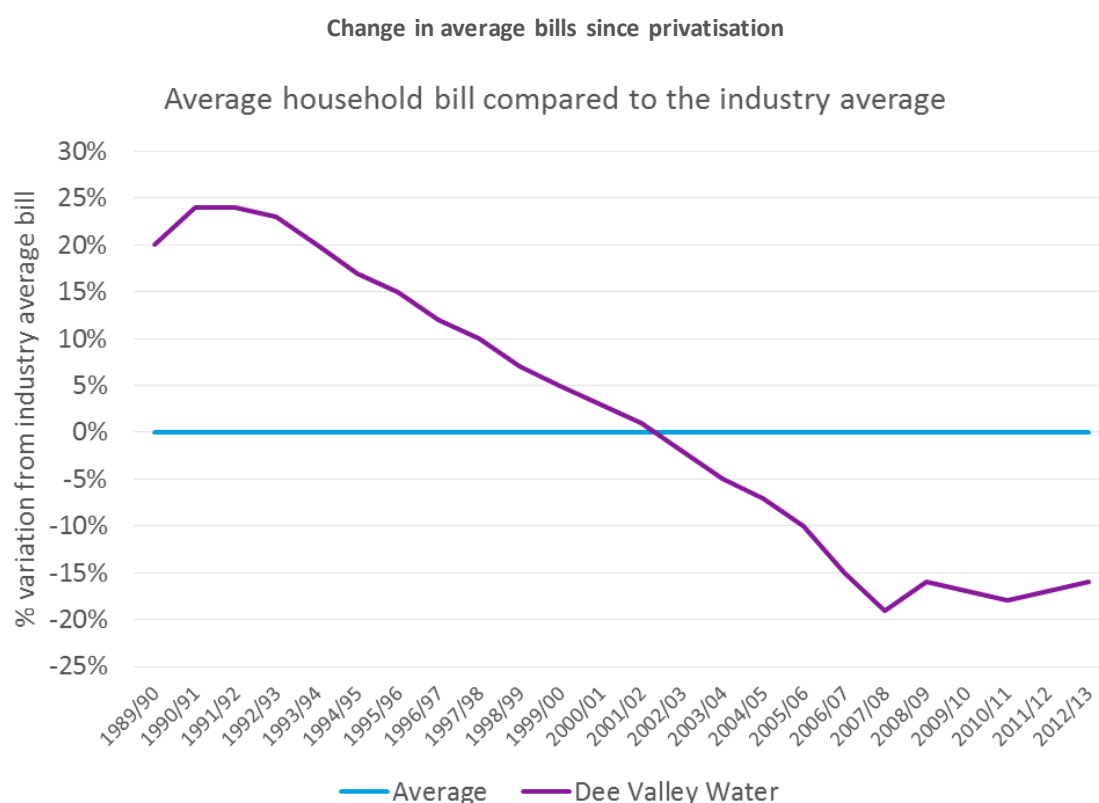
6.7.2 Optimising our costs

The most effective way to deliver affordable bills for our customers is to make sure that bills are as low as possible whilst ensuring they enable the right level of investment to maintain high quality services in the future. Our customers have told us they do not want reduced service in exchange for lower bills.

We deliver this outcome by optimising our costs such that investments are targeted and our costs are efficient.

Targeted investment

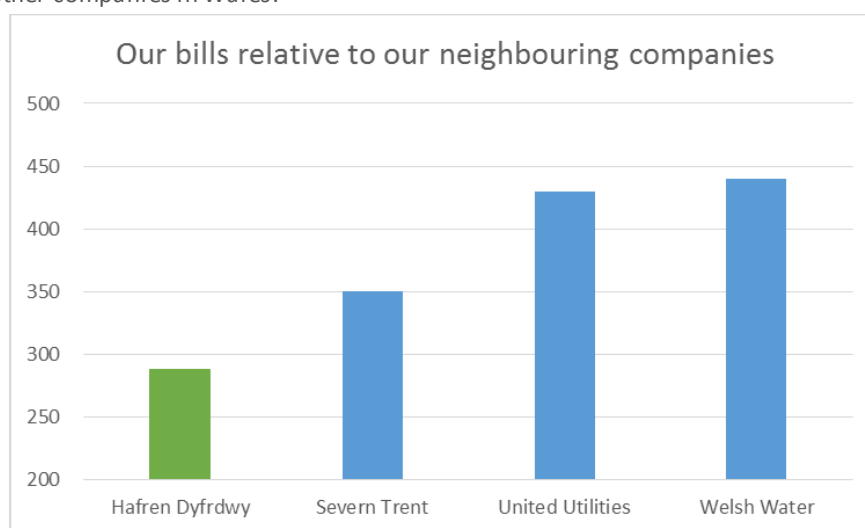
We have a strong track record and culture of targeted investment. When the sector was privatised our bills were amongst the highest in England and Wales. By only investing when there has been a strong and compelling need, we have progressively reduced bills relative to our peers, as illustrated in the figure below.



The acquisition and establishment of Hafren Dyfrdwy as a Welsh water and sewerage company has enabled us to further embed a culture of affordable bills. For example we:

- transferred the Clywedog and Lake Vyrnwy reservoirs to Hafren Dyfrdwy – these reservoirs generate income which helps to keep bills low as it reduces the revenues we need to collect from our customers;
- allocated a small amount of RCV to the licence to keep bills low – this means that our financing costs are much lower than other companies since the RCV per customer is approximately £900 versus sector average of £2,500 (although it also means that any reduction in the WACC has a much lower impact – i.e. 75% less).

The consequence of these changes, is that we have by far the lowest bill in England and Wales, particularly compared to other companies in Wales.



In developing our plan for PR19 we are conscious of the need to increase investment to improve the resilience of our services in Wales. This includes additional investment in the safety of existing reservoirs, supply resilience and the environment. These were strongly supported by our customers, as discussed in appendix 1 customer insights compendium.

Although customers are very supportive of the outcomes that our investment programme delivers, we recognise that due to our small size and very low bills, this could have a large impact on bills when compared to other companies.

To resolve the dilemma of needing more investment whilst limiting the impact on bills we have challenged the scope of our investment programme. This has involved using independent third parties to review the scope of our large investments and identifying ways that we could minimise expenditure. For example, we have found innovative ways of managing risks associated with extreme flooding to avoid a cost exclusion claim and similarly we've found a way of delivering the additional scope associated with Welsh language requirements within the existing cost envelope.

Overall we have considered a wide range of options to meet these challenges and have reduced the costs associated with our cost adjustment claims by around £17m (more than 10% of totex), predominantly as a result of optioneering of the Reservoir safety options.

Our targeted approach also extends to how we fund improvements, and where possible we have sought to utilise funding outside of the regulatory model. For example, we will be investing £4m in environmental improvements around Lake Vyrnwy, to improve 22km of river and deliver other benefits including restoring 450 hectares of upland peat bog to deliver SSSI favourable status. Our customers strongly support this improvement investment - 92% of household customers, and 97% of non-household customers either support our proposed biodiversity improvements or going beyond these. To minimise the bill impact on customers we have worked with local partners to secure £1.5m Heritage Lottery Funding, which brings down the cost to our customers by 40%.

The second way we have sought to reduce the impact of increased investment is by challenging the efficiency of the expenditure.

Delivering efficient costs

Where we do need to invest to enhance services, we have ensured that our expenditure is efficient, so that the impact on bills is as low as possible. We have done this by using both bottom-up approaches and applying a top down efficiency challenge. Appendix 5 sets out how we have ensure efficient costs.

When we developed the projection of totex for our business plan, we employed a rigorous approach to test and improve our cost estimates. This involved benchmarking our costs against other companies and sectors, undertaking options appraisal that uses totex thinking and independent third party assurance.

In the box below we have illustrated how we have applied the process to our reservoir safety programme, which is our largest driver of costs in our PR19 plan.

Developing our estimate of reservoir safety costs

We have carried out a thorough technical risk assessment which has been peer reviewed for both scope and cost. In doing so we have:

- reviewed the findings of the independent review of the proposed scope;
- carried out cost benchmarking (internal and external) to assess if our costs are efficient;
- carried out whole life cost comparisons where there are solution choices;
- worked with our property portfolio and potentially partnering organisations to understand the scope for visitor experience improvements;
- explored catchment solutions to better manage surface water runoff into the reservoirs; and
- consulted with industry experts and appraised options to mitigate the key risks associated with ageing, under pressure pipework through the body of the dam.

Through this process we identified a preferred, lower cost siphon solution (£11m) over two alternatives - new reservoirs to modern standards (£60m) and replacement of valve towers (£20m). The added benefit of our approach is that it also include significantly lower construction risks as it is based on a non-intrusive design on the dam structure.

This bottom-up approach ensures that our plans are based on the best estimate of efficient costs. However, we recognise that one potential shortcoming of bottom-up assessments is that they do not necessarily capture scope for innovation since they are typically based on tried and tested methods. We have therefore incorporated an additional top-down efficiency challenge to help drive a culture of innovation and keep bills low.

For PR19 we have set ourselves an on-going efficiency challenge of around 9% in wholesale and 14% in retail. against our bottom-up cost estimate. This helps ensure that both the scope and cost of our programme is aligned to our objective of keeping bills affordable for customers today and tomorrow.

6.7.3 Making it easy for customers to pay

We understand that flexibility over how and when bills are paid can help customers better manage their budget and improve the affordability of our services.

In AMP6, we've successfully launched numerous payment channels, with various frequencies, to make it easy for customers to pay. We have done this whilst retaining features that our customers valued, such as the payments portal at our Wrexham office. And our customers tell us we are doing a good job – 96% tell us that it is easy to pay their water bill.

In AMP7, we're committed to keeping pace with changing customer expectations and technology to maintain our high customer satisfaction scores in this area. Our payment options are summarised below.

Table 1 - Payment options

Current channels		Current payment options
Office portal		Half yearly
Credit – debit card	Payment booklet	Monthly
BACS	Watercard/Paypoint	Four weekly
Standing Order	Cash	Fortnightly

Giro	Web self-serve	On-demand
IVR – Card payment	Cheque	
Deductions from benefits	Direct Debit	

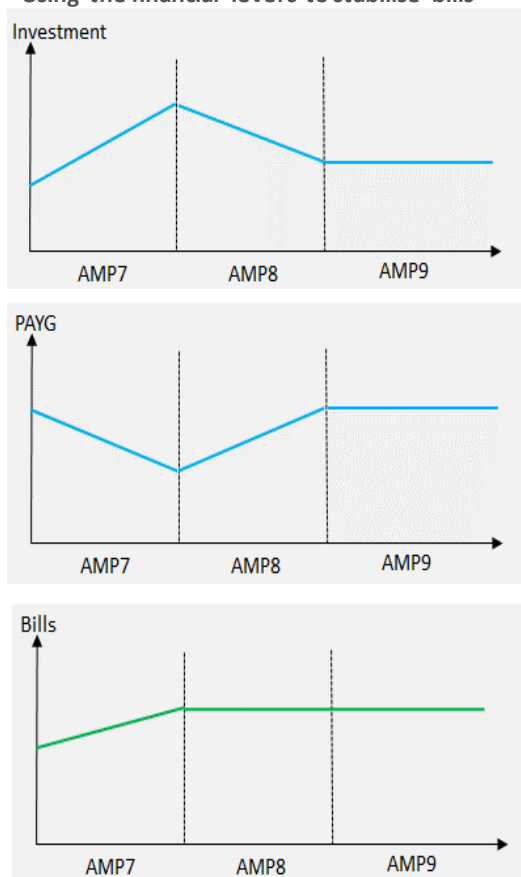
6.7.4 Balancing short and long run bill profiles

Over the 2020-25 period we are using our financeability levers to help mitigate the impact on customers' bills of our investment programme in Wales. When we established Hafren Dyfrdwy we committed to using the levers to reduce revenues by £1m over the AMP (for the waste control), to reflect the implied rate in Mid Wales. This is because over 2015-2020 the operating costs and IRE in Mid Wales exceeded the totex collected as revenue (referred to as Pay As You Go) by £1m, implying that the PAYG rate was set £1m below the natural rate.

Our investment programme means a 4% increase in totex expenditure relative to AMP6, which has required the use of financial levers to keep bills down. These levers have reduced the growth in revenue by £27, through a corresponding increase in the RCV.

In using the levers in this manner we have responded to feedback from our customers and Customer Challenge Group. Originally we had proposed a 6% increase in the average combined bill. However in our acceptability testing in Mid Wales, a significant minority of customers found this unacceptable (whereas customers in North Wales were supportive of the 1% increase in water bills). Following further challenge from our CCG, we revised our approach by increasing our top down efficiency challenge and using the financeability levers to increase the water bill and hold the waste bills flat.

Using the financial levers to stabilise bills



We retested the resulting 2.5% change in bills with customers in Mid Wales, given the low acceptability in our first round of testing. In the revised assessment acceptability increased from 51% to 81%. We have not retested our acceptability research in North Wales given that the change in bills is small and 86% of customers found a 1% bill increase acceptable.

The use of the financeability levers in this manner has the potential to put upward pressure on future bills, as the higher RCV is depreciated. However by 2025 we expect that investment in Wales can be reduced relative to our PR19 plan, given that we will have replaced two of four long life asset classes that require immediate investment. For our pipes and DSRs, we are deploying the long term strategies and investment which has a less peaky profile. We can therefore use this reduction in future investment to normalise the position on RCV run-off without creating upward pressure on bills. This is illustrated in the figure on the left.

In the figure on the left we have illustrated the step up in investment that we are proposing to undertake next AMP. This allows us to improve the safety of our existing reservoirs, enhance supply resilience and deliver better environmental outcomes. This enhancement investment is expected to tail off after 2025.

To manage the impact on bills in AMP7 of this increased investment, we have used the financeability levers (RCV run-off and PAYG) to reduce AMP7 revenues. We will return these levers to a more sustainable level after 2025 when there is less upward pressure on bills due to a smaller investment programme.

The net impact of these factors is that we expect to be able to deliver flatter bills from AMP8 onwards, thereby supporting long term affordability.

6.7.5 Ensuring bills are fair

To keep bills low for everyone we need to ensure we bill and collect payment from as many customers as possible. We are doing this through our strategies for voids and debt.

Debt strategy

Our plan needs to deliver against three areas to ensure we can deliver upper quartile bad debt performance and support our customers:

- pre-empt and prevent customers going into debt;
- support customers in debt to get out of it; and
- collect from those who can pay but won't

To do this we will focus on:

Data sharing: We are currently in the process of a legal review of our data share policy, privacy statements have been updated pending a final decision in data share. We are looking at full data share alongside our English business who are currently trialling how they use it, with the view to implementing solutions in AMP 7. This will allow us to better distinguish between those who are struggling to pay and those who won't pay and therefore target actions accordingly.

Predictive analytics: We have plans in place to work on data share and predictive analytics, which will enable us to pre-empt a problem and identify/support customers before they go into debt.

New enabling technology capability: We will combine this with the outbound dialler which we are looking to introduce in autumn 2018, email and messaging capability to proactively engage customers if they miss a payment or start to slip into debt (today reminder letters are often our first engagement with customers). We will also be able to identify erratic payers which are often warning signs for customers who are struggling to pay.

Increased digital offering: We will proactively offer flexible payment options, payment plan concessions or payment breaks to customers registered for our Web Self Serve (online account management).

Personalised journey: We will know more about our customers so will be able to develop more personalised offerings – we can choose the right debt management journey to align to customers' actual circumstances.

We are currently performing well in terms of bad debt and have robust plans to maintain this performance. As a business it is a key focus and we will report on our performance through our annual performance reporting. With the uncertainty in the future social and economic climate the drivers of bad debt performance are going to be increasingly influenced by factors that are outside of our control, for example the impact of Brexit on the wider UK economy potentially impacting the cost of living.

Voids strategy

We're also improving overall affordability and reducing our average bill by targeting household and non-household void properties. These are properties connected to our network that receive water and wastewater services from us, but are not charged. As our total revenues are fixed, the remainder of our bill-paying

customers are paying extra to subsidise these non-paying customers. By reducing voids, we can spread the cost of services across a wider customer base, thereby reducing bills.

In a recent report for Ofwat, PwC highlighted that the number of voids had increased across the sector since 2012. We are starting from a position at 2017/18 where we have seen the number of residential voids increase over the last 2 years in Dee Valley. In the last 2 years of AMP6 we plan to stop the increase as shown in the table below.

Void properties over the current AMP

Number of void properties	15/16	16/17	17/18	18/19	19/20
Dee Valley Wales	3845	3723	4161	4161	4161
Severn Trent Wales (Mid Wales)			3062	3062	3062
Hafren Dyfrdwy			7223	7223	7223

To help provide a stronger incentive to reduce voids, whilst ensuring any activity helps reduce average customer bills, we have introduced a new performance commitment and ODI for bringing household and non-household voids into charge. This ODI helps to offset the dis-incentive that currently exists for bringing voids into charge, due to the application of the wholesale revenue cap and the high rate of bad debt associated with voids.

We are proposing that over the next 25 years we will reduce voids to 2.5% of billed customers. At PR19 we will start the journey by setting our performance commitment to reduce voids by 1%. Although this is a modest reduction, due to the high cost of debt associated with these properties when brought into charge, we would need to outperform the PC by 1,637 voids to break even (23% of current void pot). This reflects the fact that:

- for the 1% reduction in voids associated with the PC in AMP7, we estimate approximately 85% will result in bad debt based on our latest trial (meaning customer bills will decrease however we will incur the cost);
- although we will continue to work to reduce this bad debt cost, we have designed the ODI to offset the bad debt risk and allow a small upside.

In AMP7 we will also look to improve our understanding of these properties and improve the efficiency of bringing them into charge. Assuming a large proportion of these properties are incorrectly recorded as voids and are occupied then we will take a phased approach to realign to the industry average and upper quartile.

Table 2 – Our long term ambition to reduce void properties

	AMP6	AMP7	AMP8	AMP9	AMP10	AMP11
% of voids	6.6	6.5	5.5	4.5	3.5	2.5
Number of void properties	7223	7151	5922	4919	3800	2700

We are not proposing a performance commitment for gap sites because of the difficulty in establishing a robust and reliable measurement method. We have reviewed how other sectors approach this problem and the most viable approach is to compare the number of billed supply points between utilities, adjusted to reflect the same supply area. This approach is problematic for Hafren Dyfrdwy due to the high proportion of customers that have a private water supply, but don't have a private gas or electricity supply.

6.8 Making a positive difference

6.8.1 Overview

While we focus on providing a consistent, reliable and affordable service to customers, we know our ability to positively impact our communities extends much further, and believe we have an important role in contributing to the broader societal, environmental and well-being goals.

Summary

One of the main advantages of Hafren Dyfrdwy is that we are a small company, albeit one with the benefit of being part of a wider group, and can therefore take a very local approach to making a positive difference to the communities we serve. The Well-Being of Future Generations Act helps us think more about our wider impact on the communities we serve and encourages us to incorporate aspects of the long-term needs of the community and inter-generational fairness into our plans. We believe it is not just what we do that counts but that by working collaboratively we can also add that little bit extra to the communities we serve. Our contribution to local communities already extends beyond essential water and wastewater services.

With the support of our customers, we want to use our local focus, our ethos for social good and our resources in their broadest sense – our people, our knowledge, our land, our supply chain and our networks – to make changes that will add up to a bigger positive difference for our communities.

We've created a suite of commitments to measure and hold ourselves to account for this ambition to deliver an even broader contribution to our community. As these commitments are spread across our value chain, we've explained them in greater detail in the other outcomes, and have included a summary here.

The one performance commitment not covered elsewhere is our commitment to our new education programme. Focusing mainly on primary school children, we want to inspire the next generation of water users to think differently about water and wastewater, use tap water to improve their personal well-being and to enthuse them about potential future careers in the water industry. Below we set out details our commitment to offer every primary school in our area the option of a water-related educational session delivered by one of our education experts.

We've challenged ourselves to be ambitious against Ofwat's PR19 themes

Innovation	Resilience	Affordability	Great customer service
Our education programme is innovative, using technology such as virtual reality and experiential learning to have a bigger impact.	By focusing on the well-being of future generations we will make communities, the environment and therefore our own business more sustainable and resilient.	We are delivering many parts of this programme through partnership working and we have accessed new investment through the Heritage lottery funding, which keeps customer bills lower.	Many aspects of this outcome are about provider wider benefits to communities, over and above the day to day water and waste services.

6.8.2 Our current position and track record

We are a newly brought together company, formed from parts of the legacy Dee Valley and Severn Trent businesses, and are therefore born from a wider group with a strong heritage of seeking to maximise our contribution to the communities we serve. Examples of achievements at the group level include;

- Generating 40% of our energy from renewable sources (including regulated and non-regulated activities), with an ambition to get to 50% self-generation in the next few years;

- Being within the only water group included in the first two social mobility indices and the highest ranked UK utility;
- 32 suppliers signing up to our sustainable supply chain charter to improve sustainability and community contribution. This includes volunteering time, tackling modern slavery and reducing embedded carbon in construction design.
- 40% of employees participating in company volunteering, focussed on improving waterways and biodiversity and charitable support
- Supporting over 50,000 customers who struggle to pay their bill
- Becoming the 1st utility to gain membership of the slave free alliance. We are working with Hope For Justice to eradicate modern slavery in our business and supply chain
- Being rated in the Top 20 employers for apprentices and the Top 100 for graduates

We are determined to build on this strong heritage and align it to the particular priorities of Mid and North Wales. In the short time we have existed we have;

- Recruited the first apprentices in the area formerly served by Dee Valley Water in more than 20 years.
- Developed a strategy to improve the environment and the well-being of the local community at our Vyrnwy and Clywedog sites, and have already started investment in infrastructure this year to ensure early benefits in AMP7.
- Begun work with the Welsh Government about how we can help roll out Refill, a scheme to encourage people to fill their reusable drinking water bottles free of charge throughout our area to help reduce single use plastic consumption and promote personal well-being through hydration.
- Started to identify more renewable energy opportunities for example in hydroelectric power generation at our upland reservoir sites.
- Rolled out our Community Champions volunteering programme that allows employees up to two paid days off a year to volunteer in their local community to support the local environment and biodiversity.

Our task now is to build on our group heritage and these early initiatives over the next five years and beyond.

6.8.3 What customers and other stakeholders have told us

To develop a way forward we have spoken with numerous experts, stakeholders and – critically – more than one in every 20 of our customers. We're likely to have engaged with at least one person on most streets. This engagement has been overseen and constructively challenged by an independent Customer Challenge Group.

The insight we have gained has been invaluable. One of the main things we have learnt is that our customers are very enthusiastic about educational visits. They see our role as being to promote the benefits of water for personal health, explain where their water comes from and the need to preserve it, and provide advice about what can't be disposed of down sinks and toilets. They believe that children should be our main target audience because there is a greater opportunity to shape behaviours of a lifetime.

"I think it's a good thing. Kids turn on the tap and run a bath to the top, and they need to think about where their water comes from" - Customer needs research, Mid Wales

We have also learnt that customers welcome the broader benefits of our visitor sites. We heard from many customers who had visited one of our reservoirs and saw them as community spaces to relax, exercise or spend time with family – contributing to their personal well-being. There was a feeling that we should do more to promote these sites for the benefit of the community.

Whilst our customers in Mid and North Wales support our aim of going beyond our 'conventional' services to contribute to broader societal and environmental well-being goals, their support is qualified. Customers

believe that making a broader contribution to society or the environment should never distract us from delivering what they see as our core functions. Nor should it incur significant additional cost.

The approach we have taken reflects this direction. We will strive to deliver outstanding water and waste water services at an affordable price but in a way that also gives something back to our community.

6.8.4 By 2025: Our five year plan for making a positive difference

The heart of our five plan sets out how we will deliver first class water and waste water services at the lowest prices in Wales. Throughout our plan we've also set out other initiatives which contribute to the broader societal and environmental well-being goals, without taking our eyes off our core responsibilities.

We have included these significant initiatives in our business plan:

1. Biodiversity and well-being

Improving our Vyrnwy estate that sits on the edge of the Snowdonia National Park for the benefit of customers and environment. We propose to make major improvements to this estate for the benefit of the environment and the well-being of our community. Our plan is to:

- Restore 450 hectares of upland peat bog to full health and therefore improve biodiversity and help achieve favourable status for the Berwyn SSSI
- Improve the estate to encourage more visitors and increase their dwell time by providing better facilities and activities for younger people and school children
- Involve the local community in delivering the above improvements to build community cohesion and well-being

We also plan to improve the environment and engage with local communities at other sites in partnership with local wildlife trusts. These sites include Esgaireira and Clywedog reservoirs, and Newtown sewage works. We know our customers like these sites and want to be able to make better use of them. Our planned investment will not only enhance visitor experience, it will promote and improve the local economy through additional tourism to the area.

The detail on our strategy is set out in the *Thriving Environment* outcome chapter 6.6 along with other Water Framework Directive linked investments to improve river quality improvement.

2. Lead in drinking water

Supporting the Welsh Government's long term ambition of a lead free Wales by undertaking a trial to replace customers' lead pipes in 230 homes and schools. This will not resolve the issue fully but will make a start and protect those most vulnerable.

The detail on our strategy is set out in the *Good to drink* outcome chapter 6.3.

3. Vulnerable customers

We are committed to better supporting customers who can't pay their bills and those in vulnerable circumstances who need extra help and support, particularly during an incident. We have developed three bespoke performance commitments to hold ourselves to account in delivering our plans.

The detail on our strategy is set out in the *Service for Everyone* outcome chapter 6.2.

4. Education

This is an area in which we can make a huge positive difference. The details of the commitment that offers every primary school in our region an innovative water-related education session delivered by our experts is set out below.

In addition we will continue and strengthen business as usual activities that will make a positive difference to our communities:

1. Encouraging colleagues to spend two days a year volunteering, on company time, in their local communities. Our colleagues are skilled, community minded and motivated to make a difference. We will be encouraging them to help make a difference in their local communities, supported by us.
2. Providing first class local jobs and training opportunities. We pride ourselves on being a good employer and we will always seek to create local opportunities, directly with us, through our local contractors and working in partnerships.
3. Support our corporate charities including WaterAid, Comic Relief, Sports Relief and Children in Need, through various fundraising and awareness raising projects, for example by using our call centres.
4. Helping to achieve the Welsh Government's ambition to make Wales the world's first 'Refill Nation'. We will do this by working in partnership with Welsh Government, DCWW and founding organisation City to Sea to successfully rollout 'Refill' across Wales. We will further engage with local communities to own grass roots Refill schemes, and promoting the various benefits of tap water – plastic reduction, health benefit of hydration and value for money.
5. We will also continue to contribute to other community based initiatives such as the All Wales Water Safety Group that aims to prevent drowning, and Renewable Energy in Newtown, an exciting community based initiative to help Newtown go green.

We have not developed performance commitments for the above initiatives but will track them with internal measures. We know that the customers' concerns and issues will change over time and so we will adopt an agile approach and continue the open dialogue we have had in creating the business plan so that we can respond to new customers' needs and approaches from community groups.

6.8.4.1 Our education performance commitment

For this outcome, we're also proposing a further performance commitment relating to our education programme, using a measure which is bespoke to us. We play an essential role in our communities and believe we can further contribute by engaging with the next generation of water users at primary school because they will be at an age when there is a higher propensity for us to embed behaviours for a lifetime. They can also have a huge influence of the rest of their households based on taking home the lessons they learn at school.

This approach has been strongly backed by our customers, who are really passionate about the value of education.

Our plan is to use equip our education team with our new equipped touring buses, to deliver high quality and engaging educational content to primary school children in our area. We will focus on three themes; why water is good for you, where your water comes from and how to use it wisely and what you can safely flush away.

Not only will our education programme benefit our communities today but they will also leave a positive legacy for the future. Today, it will help to reduce operational issues that arise from higher demand for water and to prevent sewer flooding caused by flushing inappropriate objects. They will also build engagement between us and our customers and ultimately help customers to save money. It will positively impact the future by shaping the behaviours of the next generation of water users which will help to mitigate the impacts of water scarcity due to population growth and climate change.

Research by the UK Water Industry Research suggests that on average 18% of people will change their behaviour as a result of educational engagement

We will be offering our new educational programme to every primary school in our patch. Our target is to get 3,986 people to change their behaviour as a result of this intervention. (For this Performance Commitment “a change in behaviour” has been defined as: 1 person making a behaviour change commitment to live by against one of our three core messages (as defined above), after a minimum 30 minute face-to-face engagement session that utilises comprehensive sets of teaching and learning support materials aligned to the principles in the UKWIR guidance.) The full definitions for all bespoke performance commitments is in appendix 3.

Proposed target

	Incentive type	Unit	Current	2020 forecast	2025 target
Inspiring our customers to use water wisely	Financial	Number	-	0	3,986

6.9 A company you can trust

It's our vision to be the most trusted company in the sector. While delivering a great service is vital to this, we know our customers expect more. This is particularly relevant at Hafren Dyfrdwy (HDD), whereby as a new water and sewerage company dedicated to serving customers in Wales, we need to earn our customers trust and deliver on the commitments we made when establishing the new licence.

We also consider that there is a wider need to address concerns from society about the behaviour of businesses, including water companies. It is critical that our policies in relation to tax, executive remuneration, debt and dividends deliver the best result for customers and that we are transparent about how this occurs.

In this chapter we discuss our approach to being a company customers can trust. We do this by focusing on five levers that complement our operational performance, which we discuss in turn below.

- delivering on the commitments we made when we created Hafren Dyfrdwy;
- board leadership;
- culture and values;
- engagement with customers and stakeholders; and
- aligning incentives between customers, investors and our people to drive the right long term outcomes.

6.9.1 Creation of Hafren Dyfrdwy – commitments

In July 2018 we established Hafren Dyfrdwy by varying the licences of Severn Trent and Dee Valley (which was acquired in 2017).

The purpose of the licence variation was to establish a water and sewerage company operating wholly in Wales. Alongside the benefit of creating a much stronger Welsh focus, this approach also meant that our services in Wales are subject to Welsh Government policy. This was a first for customers in Mid Wales who previously were part of Severn Trent and governed by English regulations.

In establishing HDD we have delivered upon the Commission on Devolution in Wales (the "Silk Commission") recommendation that the boundary for legislative competence for water should be aligned with the national border. We believe this can only occur if the licence is aligned to national boundaries.

The benefit of our approach is that it allows us to deliver significant operational synergies between the two companies, which will help reduce customer bills. At the same time, border alignment increases the focus on Welsh issues, removing the so-called democratic deficit in policy decision making that would otherwise exist, which can undermine trust and confidence in the sector.

In our customer engagement associated with the licence change and variation, our customers expressed support for aligning the licence to national boundaries. However we also identified a number of concerns raised by customers and stakeholders. To allay these concerns and protect the interests of customers we made a number of commitments. The headline commitments were as follows:

- customer bills, performance commitment targets and incentive rates would be unchanged for the remainder of AMP6;
- future customers' bills and services will reflect the specific requirements of our customers in Wales, along with the specific legislative and operational requirements in Wales;
- there would be no negative bill impact for customers arising directly out of the licence change, and we would deliver this by keeping the wastewater revenue requirement in Mid Wales £210k per year below the level implied by the natural PAYG rate; and
- we would establish a dedicated HDD Board with a majority of independent directors.

In delivering these commitments the two licences are run utilising the benefits of an integrated business to ensure we can deliver synergies that lead to lower bills. This is supported by strong control over the costs allocated to each business, with division maintained through for example separate annual reports and separate bespoke Customer Challenge Groups.

6.9.2 Board governance underpins public trust

Oversight of the delivery of the outcome, a company you can trust, starts with our Board.

Our Board is responsible for setting our strategic and operating plans across Wales. This allows the Board to define both what we do, and importantly, how we do it. Our governance structure explains the respective authorities and matters reserved to our Board, and to the executive. We're also very clear about the matters reserved to our Plc holding company so that the licensed holder, Hafren Dyfrdwy, has meaningful control of its business, with freedom to set the strategy, within a Board approved framework of a clearly defined set of Group wide Purpose and Values supported by common listed company standard policies, procedures and systems of internal control.

Our Board is also responsible for reviewing performance and the extent to which we are (or not) delivering on our strategic and operational plans with a particular focus on making sure that we deliver for our customers in Wales.

To support this assessment our Board draws on insight from across the business and wider community. For example, the Chair of our Customer Challenge Group has been invited to meet with the Board and share their views. This, combined with their own attendance at customer research sessions, allows Board members to hear first-hand how we're responding to the expectations of customers and wider society, recognising that we are a monopoly provider of an essential public service in our region.

Alongside our strategy and operating plans, our Board is also responsible for oversight of other strategic issues, notably:

- ensuring the company responds to Welsh Government policy, including the Future Generations and Wellbeing act
- the company's strategic and operating plans and review of performance;
- monitoring the company's culture and ethics
- financial reporting and controls;
- effective risk management
- major acquisitions and disposals; and
- the application of the Group Authorisation Arrangements which govern commitment authorities throughout its business.

6.9.2.1 Composition

Our current Board members bring a wide range of different areas of expertise: from international and regulated businesses; to finance; and from the energy industry to the insurance, telecommunications, and local government.

We've made great strides in promoting female representation on our Board and Executive Committee (42% and 40% respectively), nonetheless the Board remains focused on promoting broader diversity and creating an inclusive and diverse organisation in line with the Parker and McGregor-Smith reviews.

6.9.2.2 Holding ourselves accountable

We've adopted the UK Corporate Governance Code as it applies to FTSE 100 listed companies, but our Audit, Remuneration, Treasury and Corporate Responsibility Committees operate at Parent company level as they have group wide remit.

Given our responsibilities as a private company providing a public service, and the privileged role we play in our communities and protecting our environment, we intend to go beyond the UK Corporate Governance Code by providing more detail in our annual performance report to show how our social purpose is at the forefront of all of our decisions and how we are helping contribute to the Well-being of Future Generations.

Our annual performance report will also include an explanation of how we've acted fairly to all our stakeholders - while the law only requires that we act fairly to our shareholders.

6.10 Embedding culture and values – Doing the Right Thing

At Hafren Dyfrdwy, we have embraced a new code of conduct, *Doing the Right Thing*, that moves us away from a stale corporate document to a way of operating.

Doing the right thing quite rightly starts at the top of the company, but it's the responsibility of every single person. We're all accountable for demonstrating our values every day, in everything we do. It's important to us that everybody who places their trust in us understands that we will consistently be Doing the Right Thing.

Every day our people have to make choices about what they do and how they do it. Most of the time it is clear what the right thing to do is, whether it is about doing what's safe, doing the right thing for customers, doing what is right ethically – and indeed what is right legally.

But sometimes it's not so clear, and *Doing the Right Thing*, by detailing the principles we work by, helps to guide our people through those grey areas when there are no legal obligations or hard rules in place.

So we've firmly embedded the code and our values in our business. We used a range of channels, from weekly newsletters for over 6 months, to face-to-face meetings with our Chief Executive Liv Garfield and other senior management. This covered a range of topics, including vision, values, whistleblowing, Health and Safety, our policies and we implemented our ways of working.

6.10.1 Engagement

Our industry has long worked on the premise that we can have a 'trusted silent partner' relationship with our customers. But with rapid changes in how our customers engage with their other service providers, and with scrutiny on our industry that typically only tells one part of a much narrower story, it's difficult to see how this could be sustainable.

The 2019 price review, and the licence change to bring all our customers in Wales under one company, have marked a new approach to the way we have engaged with customers about water. Our extensive customer insight programme has engaged with over 3,800 customers throughout Mid and North Wales. We've used a range of techniques, from telephone surveys and face to face interviews to deliberative research and co-creation. Our research has been specifically tailored to our audience – we did fieldwork at the Welshpool Cattle Market to gather the views of the farming community, and we targeted Welsh speaking communities with bilingual interviewers. Bearing in mind the demographics of our customer base, we have predominantly used face to face research, ensuring harder to reach groups like those digitally disenfranchised and in more vulnerable circumstances are not excluded. We've also analysed customers' contacts and reviewed research done by other organisation from within our sector, and outside.

And throughout our research programme one message is clear – our reliable service and good communication and customer service when issues arise mean that the vast majority of our customers trust us to provide their water and wastewater service both now and in the future, and rarely have to think about it or the challenges

we face. In our customer tracker 88% of customers told us they trust us to balance looking after our assets, investing in the short and longer term and keeping bills manageable. At the same time, customers are really engaged when we do talk to them about water, and deeply appreciate of “having their say” on a local level, particularly in Mid Wales where customers assumed they might be a forgotten corner of Severn Trent.

We’ve heard some very clear messages about customers’ expectations for the functional aspects of the service we provide. And through hours of deliberative research, we’ve also heard something more nuanced from them – that the bigger picture of what we do, the reasons we do it, and the contribution our customers themselves make via their bills, is often lost. This suggests we have huge untapped potential to create value for our customers, and the encouragement we take from our conversations with customers is that they’d like this to change as much as we would.

Across many of our qualitative research sessions customers have told us the importance of being transparent. Uncertainty over the role of shareholders and profits repeatedly comes up as a concern, and we know that this can lead to distrust.

It’s important that we try and change this relationship in a balanced way. It is clear that, for many customers, as a company we are expected to operate ‘at arm’s length’ on a day-to-day basis - none of us are usually interested in self-serving communications from the companies we buy services from. But we can help our customers to get more from their service and a better sense of value for what they pay for, by providing them with the right information, at the right time, in a way that works for them.

Our plan will go a long way to changing this – our customers told us that education, particularly with young children is a high priority. We are responding by significantly expanding our education programme, which will engage and inspire the next generation of water users and building on our successes on nudging behavioural change in other areas of our business.

However, we are not waiting until 2020 to respond. We are responding to the engagement we undertook through the licence variation and PR19. For example we have retained the customer payments portal at our Wrexham office, which is valued by many customers, who often struggle to use other communication channels.

6.10.1.1 We cannot earn trust if we only engage when we want to talk

Our engagement is not limited to the price review. Every single contact and touchpoint is an opportunity to learn more about our customers and listen to what they’re telling us. We’ve built a number of formal and informal channels across all levels of the business, from our Board to operational teams to engage with customers.

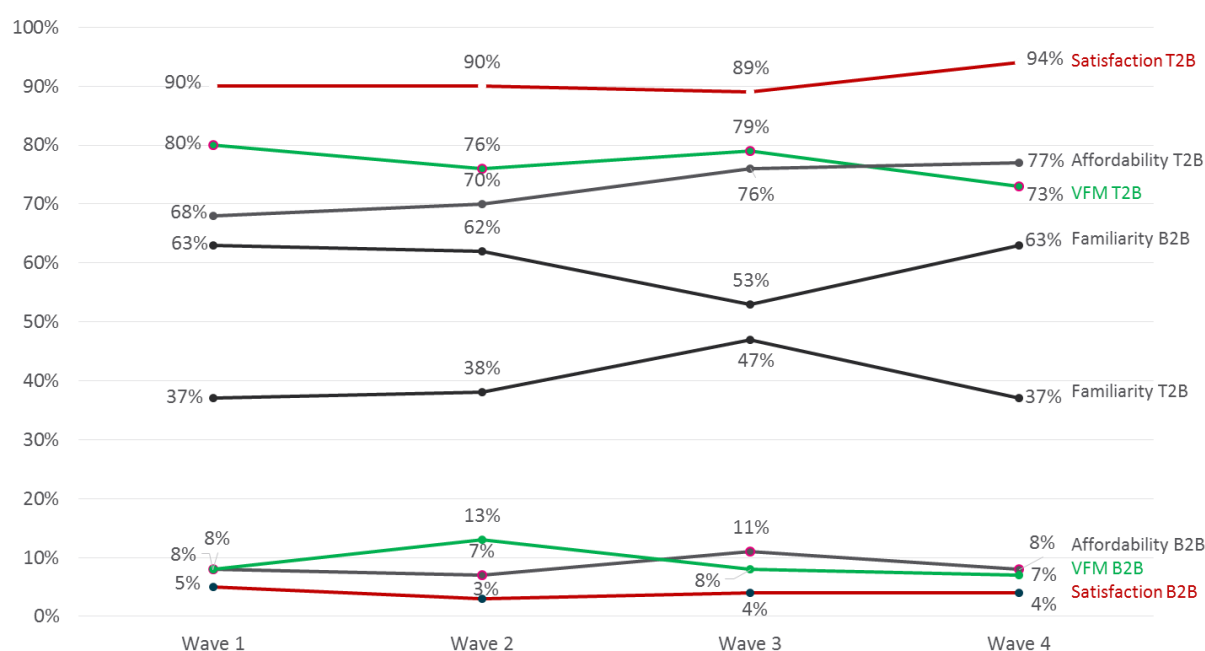
Our formal channels include our own Voice of the Customer programme, which uses a number of channels including our “rant and rave” survey ‘Pipe Up’. This survey is sent to every customer after they contact us via phone or email, so we can better understand their experience and improve our performance. We also use this tool following the completion of a job - and have recently started using Pipe Up after incidents, so that we can gain better insight into our performance.

In addition, we track our household and non-household customers’ perceptions across a range of metrics that underpin trust on a regular basis:

- value for money (VFM) – how customers rate the water and sewerage services they receive from us in terms of value for money;
- affordability – the extent to which customers agree that their water and sewerage charges are affordable;
- overall satisfaction – overall customer satisfaction with Severn Trent; and
- familiarity - who we are and what we do compared to other brands.

Performance across these metrics for Dee Valley is illustrated in the table below.

Figure: Customer perception trends (T2B = net percentage of customers who agree / are satisfied with the customer perception metric, B2B = net percentage of customers who disagree / are not satisfied with the metric)



This insight shapes how we will operate going forward. For example, whilst household customer satisfaction levels are very high (on a par with Amazon) we understood from the research that familiarity and brand recognition are low. We therefore will be using this insight to shape how we engage both broadly in Wales but also on specific areas such as our development of Lake Vyrnwy with our local partners (which will enhance the local region and provide greater opportunities for recreation).

In 2017/18 we extended the tracking survey to include customers in Mid Wales, allowing us to track perceptions of our customers for the first time. The results from our first wave provide a positive platform to build further engagement on, with 95% of customers satisfied with our service, 87% rating us good value for money and 75% finding our bill affordable. Familiarity is also higher than Dee Valley (51% compared to 37%).

6.10.2 Aligning incentives – sharing in long term success

The fourth pillar of being a company you can trust is ensuring that we align the incentives of investors, customers and our employees so that we focus on the things that matter most to our customers.

We do this by:

- aligning our employee and executive remuneration to customers' interests; and
- sharing success through a fair and balanced approach to dividends.

6.10.2.1 All employees share in the success when we deliver for customers

To realise the full benefit of the regulatory regime, it's critical that our remuneration framework – for every employee - is directly linked to customer performance.

In 2017/18, we introduced a new bonus scheme at Hafren Dyfrdwy which makes sure that all employees share in and receive recognition for the successes of the company. The scheme aligns our entire workforce at Hafren Dyfrdwy (and Severn Trent) behind common objectives and is based on performance against four measures – ODIs, customer experience, health and safety, and profit.

Across the Severn Trent group we are projecting total spend of around £60m by 2020 on company bonuses. The ongoing success of this scheme in driving better customer outcomes means that we intend to retain it in AMP7.

Our executive remuneration is transparent and focused on the right outcomes

As we explained earlier, Hafren Dyfrdwy is one of two regulated water and sewerage companies that is listed on the London Stock Exchange under Severn Trent Plc. The structure of Hafren Dyfrdwy is designed to deliver the best outcome for customers by promoting:

- synergies and other benefits associated with being part of a larger company (for example no need for a small company premium); and
- dedicated focus on the issues specific to Wales through a dedicated Board.

Our remuneration policy is designed to support this outcome. We operate a unified remuneration structure across the two regulated business. Every year we publish the details of Executive remuneration, including total remuneration and performance against target. Our two performance schemes – the annual bonus and Long Term Incentive Plan - align the interests of our executive with those of customers and the long term success of the organisation.

Our annual bonus scheme currently comprises six components - for the most recent year, less than half of the bonus was based on profitability (47%), with the remainder being against customer ODIs (20%), the health, safety and wellbeing of our people (8%), Customer Experience (8%), (customer orientated) personal objectives (7%) and non-regulated performance (10%). From any bonus awarded, 50% of the total value in any year is awarded in shares but only given to the Executive three years later.

Our long-term incentive plan is designed to capture the core drivers of performance – totex, ODIs and financing costs. It's based on RoRE performance against the base return over three years. To reinforce the long-term nature of this incentive, awards are made in shares after the three year period, with a further holding period of two years thereafter before they can be sold, even when an executive has left the company.

And we recently identified an opportunity to further improve the long term incentive plan by setting stretch targets based on delivering upper quartile RoRE performance across the sector. This change, along with our wider executive remuneration, was approved by shareholders at our public Annual General Meeting on 18 July. We note the following comments from one of our investors, Ashley Hamilton Claxton, Head of Responsible Investment at Royal London Asset Management:

“We are voting in favour of Severn Trent Plc executive pay this year. We had positive engagement with the company on changes to pay and we are pleased that the board was responsive to our feedback. While we recognise that pay in the water utilities sector is a divisive issue, and the sector has some way to go to restore stakeholder confidence, Severn Trent has struck the right balance between pay and performance. We are confident that the management team is well positioned to address recent concerns expressed by the regulator, Ofwat, about customer service during this winter's extreme weather conditions”

The long term nature of our remuneration framework is underpinned by a requirement that the CEO must hold the equivalent value of 300% of salary in shares, and the CFO 200%. This strengthens the link between executive remuneration and the long term performance of the company. Both performance schemes operate with malus and clawback provisions, meaning that any award already made can be taken back if new information comes to light.

6.10.3 Fairness and balance, and sharing long term success

In the current climate, concerns are increasingly raised about some companies' tax policies, executive remuneration, high levels of debt and dividends. We pride ourselves on our track record across these areas. We do not operate any offshore tax facilities and our executive remuneration policy is amongst the most transparent in the sector, with annual public reporting and a very strong link to customer outcomes.

With regard to concerns about the levels of debt held by some companies – particularly, in light of, recent high profile corporate failures such as Carillion - our position is clear. We will not engineer higher returns through

mechanisms such as securitised structures, shareholder loans or highly geared structures. Instead we place great importance on having a strong equity cushion, which is critical to maintaining financial resilience.

This is why since the purchase of Dee Valley we have sought to improve its financial resilience by:

- reducing its debt to 70% following the acquisition; and
- will be making a further equity injection this year to reduce debt to the notional level.

Alongside improving financial resilience, we have also made a number of investments to improve the resilience of services. Instead of taking a higher return by claiming totex outperformance, we have chosen to increase investment with a specific focus on operational resilience:

- replacing outdate IT systems, including the billing systems;
- enhancing our retail offering, so that customers can contact us 24/7;
- increasing monitoring of the network through installation of 200 pressure and flow loggers to reduce leakage & minimise low pressure; and
- equipping all front-line staff with new hand-held devices.

Our focus on reducing debt and increasing operational resilience is designed to supplement the existing mechanisms for sharing benefits with customers, namely the calibration of ODIs (50% sharing) and totex cost sharing (50% sharing).

6.10.3.1 AMP7 dividend policy

Looking forward to AMP7 our dividend policy is based on our belief that in order to deliver successful outcomes, all parties must share in success. This means customers benefiting from lower bills and better services, investors earning a reasonable return, and employees being rewarded for their hard work.

We'll provide much greater transparency about how we deliver for all our stakeholders. This includes adopting four core principles that guide how we make decisions about dividends.

- dividends will be fair and balanced. Customers need to see and understand how the HDD dividend policy supports them – through both the sharing of outperformance and greater transparency about what is paid to customers and investors. Investors should also be able to earn a reasonable return on the £50 million they contribute so that we can continue to make improvements to our services, consistent with the 5% base return identified by Ofwat;
- dividends should promote continued outperformance - it is in all parties' interests that we outperform so we reduce future bills and improve service levels. Our dividend policy will benefit customers, employees and importantly investors will continue to challenge us to deliver the best long term result for customers in Wales;
- dividends will support appropriate gearing – if we our debt rises to high level (70%) we will share financing benefits from this structure with customers; and
- dividends will be transparent - our annual performance report will explain how our dividend is consistent with our commitments.

Our Board will consider paying dividends following our full year results. In considering the dividend, the Board will have regard to:

- our dividend principles;
- results of our financial viability assessment, which takes into account scenarios such as increasing investment to manage large incidents; and
- performance across our obligations and ODIs.

Chapter 7

Markets and innovation

7.0 Markets and Innovation Chapter

Using Innovation and Markets to drive value for customers

We have been strong proponents of using effective competition to drive efficiency and innovation. As such we're supportive of Ofwat's move to introduce a price control for water resources and a revenue control for Bioresources, and believe that this will create value for our customers through efficiency, innovation and improved resilience. We intend to use markets and innovation where they provide customer benefit and is economically viable to do so.

In this section, we explain how we'll work with developing markets to create value for our customers through collaboration with third parties, in an open and transparent fashion without showing undue preference.

Creating the right culture for innovation through systems, processes and people, to deliver results for customers and the environment.

With the creation of Hafren Dyfrdwy we will be building on Dee Valley Water's reputation as being the perfect place to test innovation - small enough that suppliers can afford to put their technology into our systems, big enough to prove it works.

We know we have a huge challenge to deliver all of the service improvements whilst ensuring lowest possible bills - innovation is absolutely pivotal to achieving this. We'll learn from others where they've implemented novel solutions but also push beyond what is known now through innovative procurement models, use of shared services, technology and use of data (customer and asset).

We'll make use of all the resources available – essential given our size – listening to our colleagues and our customers who have the best understanding of the local improvement needs and what it will take to deliver our challenging targets. We will develop an 'anyone can innovate' culture where everyone has permission to try new approaches and, importantly for innovation, make mistakes – from which we can constructively learn. From a system perspective, we'll use the expertise of the technology team within the wider group to gain insight to develop our capability in this key area. And, of course, we'll do this within the cost allocation rules and spirit of the transfer pricing regulations.

We've already carried out a review of AMP6 innovation across the Severn Trent Group and identified opportunities for learning and implementation across Hafren Dyfrdwy. The table below sets out the key opportunities identified with the case studies in annex 1 providing further detail about how innovation is being used to deliver outcomes. The case studies are based on Group experiences and reference specific examples that are not within the Hafren Dyfrdwy boundary.

Case Study	Benefits being driven	Applicability to Hafren Dyfrdwy
Rapid bacteria detection	Enables detection of bacteria in matter of minutes not hours, allowing for early interventions	Just as applicable and beneficial at our treatment works. This is a key tool that will help us deliver zero CRI – the best outcome possible
Zero energy wastewater treatment	Reduced running costs, without compromising environmental compliance	This innovation is taking place at a sewage treatment works in Mid Wales. The main application is in rural areas and we will be introducing it in a phased way to align with maintenance programmes.
Unlocking the potential of drones	Enhancing the information we have about our assets and systems in a cost effective way,	Given our very low population density, this technology will be invaluable, enabling us to inspect

	also offering H&S benefits by replacing the need for human entry to challenging and sometimes dangerous locations	remote and often inaccessible assets. It will be particularly useful to help us achieve the stretching leakage target.
Tackling discoloured water at the source	Cost effective way of reducing discolouration	Dee Valley previously carried out extensive work to reduce discolouration and this work has been successful but to make a further step change we need to think differently. This innovation will help us deliver the further 38% reduction in drinking water quality complaints.

It's from this foundation that we'll address our 2020-25 innovation challenge – delivering better service and greater resilience, while keeping bills lower.

Engaging with markets to deliver greater efficiency and innovation and to enhance resilience and to support ambitious performance for the 2020-25 period and over the longer term.

We are a small part of a much bigger economy, ecosystem and community. Our plan leverages that position by maximising the support markets and other organisations can offer for mutual benefit.

In each outcome we set out how we will be working with partners to better understand the end to end systems and how to achieve more for less. As demonstrated in the Bioresource price control, we will engage with the market to provide the most economical solution to give our customers the service they expect.

In order to meet our challenging targets we intend to adopt an open innovation model. This collaborative approach enables us to actively seek and bring innovation to the water industry from academia and other sectors. We believe it is a more efficient approach for our customers too.

We will make an open call to existing suppliers, researchers and other sectors setting out our short and longer-term needs and the gaps we need to meet through innovation. We will lay out the outcomes in our business plan and the improvements we've committed to deliver. We won't constrain innovation to just these areas – we believe innovation should be encouraged anytime, from anyone, and anywhere it can bring benefit. However, having a central focus directly aligned to business plan outcomes ensures we're channelling innovation where it benefits our customers most.

We will leverage the global buying power of the group to procure services in a fair and transparent way but at the lowest cost. We'll also recognise the importance of local suppliers and providers, actively engaging with local businesses within our community to provide our customers with the best service and an affordable price.

Securing resilient and sustainable water resources

Our WRMP shows that we can maintain the supply demand balance over the long term without requiring new resources. It is our responsibility to ensure we safeguard this balance.

While we've not routinely used water transfers and have no trades currently under development, transfer capacity does exist within the water resource zone for limited, short duration events. Despite our size, we recognise that we could play an important role in water trading – we'll continue working with others where trades make environmental and economic sense, and will be of benefit Hafren Dyfrdwy's customers.

At present there are no plans to develop new water resources but were this to change and to ensure customers are protected from the risk of over-building capacity we have also developed a set of principles for long-term risk-sharing in line with Ofwat's guidance.

We've summarised the arrangements that we have in place to ensure resilience and maintain our supply demand balance below.

Inter-zonal transfers

There is limited connectivity between our Llandinam and Wrexham water resource zones due to the topography of the region.

Bulk supply agreements

We have existing bulk supply agreements with United Utilities, Severn Trent and Dŵr Cymru Welsh Water (DCWW). The largest number of bulk supplies are with Severn Trent:

- [REDACTED] in Chester supplies [REDACTED]
- [REDACTED] in west Shropshire supplies the northern part of Powys.
- [REDACTED] in Wrexham supplies [REDACTED]
- [REDACTED] in Powys supplies a small number of rural communities along the Shropshire border.

The net transfer from Severn Trent to Hafren Dyfrdwy of all these cross border supplies is approximately 7.5ML/day.

New bulk supply agreements

Recent dialogue with DCWW has resulted in an agreement for an additional bulk supply import of 4ML/d from their [REDACTED] to provide supply resilience to approximately 12,000 properties south of the river Dee. This will not be used on a day to day basis.

We have explored opportunities for new bulk supplies agreements with all our neighbouring companies during the WRMP process. As a result of this, we're in discussions with DCWW on providing a small bulk supply to the Corris near Machynlleth.

We are mindful of the opportunities that may exist to provide strategic supplies to the south east of England in future. We have not offered any supplies to the Water Resources in the South East or Thames Water but we will continue to monitor the situation and consider the value that might be generated for Hafren Dyfrdwy customers from future trades using surplus water resources. We will liaise with NRW and Welsh Government before becoming active in this area in future.

Reducing Leakage

Reducing leakage is very important to us and our customers, and is an integral part of our thinking on achieving resilient and sustainable water supplies. However, our customer research has also clearly demonstrated that the cost of any interventions needs to be carefully managed and phased to minimise impacts on customers' bills. Over the next 5 years we be aligning our maintenance and enhancement plans, particularly our efforts to reduce lead in communication and service pipes. We will do this by ensuring the benefits on leakage, interruptions, low pressure and water quality (including lead reduction) are considered together for each potential investment – using a multiple service improvement approach should be significantly more affordable than making stand-alone investments. We believe that bringing together these different criteria to prioritise our activities over the next five years will create sustained improvements in leakage at an affordable price for our customers.

Using catchment schemes to manage surface run-off and water quality

We are taking steps to better manage surface run off in our uplands as this should improve resilience and could reduce the cost of treatment compared to river abstraction. In order for water quality issues to be tackled effectively we recognise the need for collaborative, co-ordinated partnerships and will therefore continue to engage with external stakeholders through the catchment based approach - including agriculture, industry, NGOs, central and local government to tackle catchment issues at their source.

The primary objective of our catchment management programme is to protect and improve water quality and to increase the amount of water stored in the catchment. On the river Dee, we will deliver these objectives through our continued partnership with United Utilities and Severn Trent – the Middle Dee Trust. We will also extend the catchment management approach into Mid Wales to protect the water quality of our groundwater sources. Both elements of our catchment management scheme will include a 50% capital grant scheme to help farmers and landowner invest in structures to improve water quality and quantity.

We are also aware of recent land use changes in our region, particularly with respect to poultry farming which produces waste containing high levels of ammonia - we'll investigate the potential for a catchment based scheme to help improve water quality and address this issue. We will also consider the way in which we can work in partnership with United Utilities and Severn Trent on such issues to ensure that any costs are appropriately apportioned to the beneficiaries of improved water quality.

Bioresources services

We have a very small Bioresources price control - the sole Sludge Treatment Centre (STC) in our region, Newtown, is not currently operational. We have reviewed how the market could benefit our customers through lower cost trading by how the costs of bringing the Newtown facility back on-line compare with the costs of exporting sludge to a neighbour. Based on this analysis, we've decided to export 100% of our sludge to Severn Trent on a cost plus basis at least until 2021.

In the longer term two key options are under consideration:

- Exporting liquid sludge for treatment to a combination of Severn Trent, DCWW and any new entrants based on the most cost effective solution.
- Developing our own raw sludge dewatering plant, probably taking imports from DCWW and exporting raw cake to a combination of Severn Trent, DCWW and any new entrants based on the most cost effective solution.

We recognise that a subset of option (i) is continuing the sludge exportation arrangement with Severn Trent, which is acceptable if it remains the best value option for our customers. We anticipate that option (ii) will be broadly similar in net cost to exporting to Severn Trent and much cheaper than building treatment facilities at Newtown.

We are engaging with the market as an exporter now and more complex market trades could develop in the longer term

As explained above, we are expecting to export 100% of our sludge for the next 3 years and are considering export and import options thereafter. In the longer term we will explore the potential of different contracts with our neighbours for transportation, treatment and disposal.

We have undertaken high level cost analysis for the development of a raw sludge dewatering plant at Newtown. This investment is likely to be conditional on others trading sludge into our facility for dewatering and out of it for treatment and disposal. The business case assumptions around input volumes and costs need to be refined which will be possible after the market trading opportunities with DCWW become clearer. The concept of dewatering other companies' sludge to cake and then the cake either going to their Cardiff THP plant or Severn Trent's Minworth THP plant are being discussed.

Engagement with the market gives us improved innovation, efficiency and resilience

Ofwat's creation of the new Biosresources price control paves the way for market driven efficiency and innovation creating value for our customers.

By virtue of being geographically positioned between Severn Trent and DCWW, we are able to consider two recipients for our exported sludge. We are able to choose the most efficient supplier – whether this has been achieved by operational or technical innovation - and leverage this to the benefit of our customers. Having two suppliers also provides operational resilience.

We'll consider building a strategic dewatering site if it delivers the greatest efficiency for our customer and those of neighbouring areas. Our long term strategy seeks to maximise the benefit of our rural area to see how we can work with farmers to find local solutions to benefit environment and customers (through efficiency savings) - by providing an economic source of fertiliser from traded biosolids for example - and we'll also keep on under review the potential to use our abandoned assets to treat farm slurry, providing a possible future income stream to support our customers' bills.

Pre-2020 RCV allocation between water resources and water network plus and between Bioresources and wastewater network plus.

We received positive feedback from Ofwat on our January 2018 RCV submission. "We are satisfied that this allocation is in line with our guidance and that the company has provided sufficient evidence to support it...the allocation is in line with that proposed in connection with the planned changes to area that we intend to implement from 1 July 2018"

Since then, we've reviewed and improved the data used in the approved methodology. This improved analysis has resulted in a small increase (0.6%) on the figure submitted in January 2018. Full details of this change are set out in the Water Resources RCV allocation update contained in our Business Plan submission.

For the Bioresources RCV separation, we have a very small price control. As our Newtown sludge treatment centre is out of operation, and our sludge processing is being managed through the traded market, we have no RCV allocation to Bioresources.

Bid assessment framework for water resources, demand management and leakage services

Although there are currently no identified needs for new water trades within our region, we have developed a series of safeguards for potential future trades. We are committed to ensuring that our water resources procurement process is transparent, non-discriminatory and have created a level playing field against which all bids are measured to ensure third parties are not disadvantaged. In order to make the process and documentation understandable and transparent to third parties we consulted with the Canal and River Trust and incorporated their feedback.

There are three components to our water resource procurement governance:

A structured process for bidding into our WRMP plan

Our bid assessment framework sets out how we assess solutions for consideration into our plan and is our commitment to transparent and non-discriminatory procurement and is published alongside our PR19 submission. The process seeks to deliver confidence to third parties that there is no bias against external solutions, with all bids assessed against four key principles to ensure the highest standards are upheld:

Our bid assessment framework is based on the four key principles

Transparency

All bidders have visibility of the award criteria and decision-based rules for solution selection

Equality

Everyone has a equal opportunity competing for contracts, including when bidding against our own options

Proportionality

Measures third parties need to take to deliver successful bids are not beyond what is absolutely necessary

Simplicity

Our framework is straightforward, reducing the bidding costs for third parties

Commitment to a clear trading and procurement code

We shared our Ofwat approved trading and procurement code with the market in November 2017. The code clarifies the policies, principles and requirements we will apply when other water companies and third parties enter into trades with us. It covers transparency and audit, contract durations, ending trades, assessing costs, relationship with WRMP, economically rational trades, and environmentally rational trades.

While the code is optional, it further reinforces our commitment to collaborating with third parties in assessing water resources, demand management and leakage services.

Market information (portal)

We've submitted our water resource zone level data to the market information portal, setting out our supply/demand balance projections to 2045. We welcome the input of water companies and other third parties to identify and share new, innovative, cost effective and environmentally sustainable resource options with us.

Note: Our draft WRMPs were based on the Dee Valley / Severn Trent boundaries and so the Llandinam WRZ tables are on the Severn Trent website. Our final WRMP will be based on the new Hafren Dyfrdwy boundary and so all WRZs will be in the same place.

Direct procurement for customers

We're supportive of the use of DPC where it benefits customers. We've developed a high level approach to assess which projects would create better value for customers if they were delivered through DPC. This process uses Ofwat's key criteria for a project where DPC can be applied:

- Value chain (all projects from across our value chain excluding bioresources)
- Totex threshold (greater than £100 million)
- Type (discreteness) of project
- Value for money for customers.

Projects qualifying for DPC

We currently have no projects planned for AMP7 or within our WRMP that reach the £100m TOTEX threshold and, as such, none have been deemed as appropriate for application of the DPC.

During AMP7, we expect the total enhancement spend for our entire programme of works to be less than £30m, significantly below the scale that would make DPC practical and advantageous for customers. We have also looked at potential multi-AMP activities but these do not reach the TOTEX thresholds required.

We have concluded that DPC is not an appropriate model for a programme of activity of the scale seen within Hafren Dyfrdwy during AMP7, but have noted the potential benefits. In future, should any projects be proposed that could qualify for a DPC approach, we will develop and apply a more detailed framework.

Annex 1: Innovation case studies

1. A UK water industry first - rapid bacteria detection technology

This case study showcases the benefits of using global scouting to find the best technologies from around the world as we seek solutions to one of the water sector's longest standing problems.

Challenge

Our water treatment processes are designed to provide high quality drinking water.

The sector uses coliform bacteria to indicate an issue with drinking water quality. However, standard methods of detection typically take 18-24 hours for results following sampling - too slow for proactive interventions at water treatment works. We targeted finding real time measurement in our 'Innovation Needs' document to enable a proactive response.

Solution

We're testing and developing new processes to enable us to predict when an issue may occur at a water treatment works or in our network - to help us to respond rapidly.

Recognising the need for new technology, we've used worldwide scouting to explore possibilities. Following due diligence evaluation and independent testing, we selected four technologies for further evaluation on-site.

We're evaluating two online monitors which can take 16 to 24 samples a day and provide results 15 to 40 minutes after processing. We're the only water company in the UK to have secured these prototypes for trial. We're also evaluating two technologies which can be used for 'grab samples', with a potential application to support investigation into water treatment works failure and other operational issues.

Implementation

Our progress to date hasn't been without challenges. The two online monitoring systems were developed in countries where potable water is not routinely chlorinated, so we're working with the developing companies to transfer the technology to work in chlorinated water. This requires a different approach for each party but is potentially a very worthwhile development.

Following successful piloting at two of our sites, we will start deployment in late 2018, focusing on our key water treatment works that supply around six million of our eight million people.

An example of monitors installed on site



Benefits so far

Using flow cytometry we've developed a new lead measure of total cell counts for identifying the risk of failure – enabling us to address issues before they become a water supply problem.

We're able to measure the presence of coliforms - at the water treatment works itself- in a few hours, and our operators can quickly be made aware of potential contamination, allowing them to respond appropriately.

As the only water company actively evaluating predictive modelling tools, by working closely with the developers (performance testing the machines and software under different conditions), we're shaping the future look, feel and deployment of online monitors for future use within the sector.

And we're sharing our experiences with other companies and the DWI through the Water Industry Flow Cytometry Group. Our work is being presented at worldwide conferences

2. UK firsts for zero energy wastewater treatment in our rural communities

This case study shows that innovation doesn't always have to be high-tech to get the greatest benefit for our customers and communities – and we've saved up to 40% on totex.

Challenge

In our 2015-20 business plan, we set ourselves the challenge to make a step change in how we deliver our wastewater services by 2050.

We wanted to find more sustainable approaches to delivering wastewater services in our smaller rural communities – at lower cost to our customers – but without compromising on the environmental compliance they expect. This means finding alternatives to capex and carbon intensive treatment processes, and so we set out a challenge through our 'Innovation Needs' document to halve the totex of small wastewater treatment works.

Solution

We've worked with our supply chain to identify technologies and catchment management approaches that are capable of providing reliable treatment, require little operator intervention and facilitate community involvement.

Our first off-grid facultative pond system

Llys Rhysnant is our first off-grid wastewater treatment works. It delivers robust treatment to environmental discharge permit standard for a small catchment of 26 houses in Mid Wales.

Treatment is delivered by a series of ponds, not conventional processes



Treatment is delivered by a series of three facultative ponds that operate without energy input or the need for regular desludging. Performance is observed by online flow and quality monitors powered by renewable energy to ensure the work is truly 'off-grid'.

This bespoke, community based solution also gives us the opportunity to engage our communities in their service - we're planning to install off-grid rainwater harvesting solutions including rain butts and rain water reuse systems for the local community which demonstrate the benefits of storm water control.

Using vertical flow reed beds

Hulland Ward is the UK's first two stage vertical flow reed bed system for municipal wastewater treatment. It delivers robust treatment against an ammonia permit standard for a village of 910 people in Derbyshire.

The reed beds minimise the carbon footprint of the works by operating with extremely low energy input and avoiding the need for regular desludging. The overall design will deliver a significant reduction in whole life costs when compared to the standard small population treatment works solution.

Vertical flow reed beds provide low carbon treatment



Implementation

Both Hulland Ward and Llys Rhysnant are undergoing long-term assessments in order for us to develop a thorough understanding of their performance envelope and operational risks. This assessment will allow our dedicated 'community of practice' to identify opportunities to optimise the design of potential passive treatment systems and embed the technologies in our design standards for deployment in our AMP7 capital programme.

Emerging opportunities

Our horizon scanning has also identified other opportunities including trial small scale anaerobic treatment systems, new technologies for nutrient removal at rural sites, and exploiting wetlands to achieve high quality effluents and enhance biodiversity. We'll be trialling them to explore their potential with a view to embedding them in design standards for AMP8.

Benefits so far

Adopting technologies that work well in other countries can cause operational challenges so we've worked closely with Cranfield University and ARM, a local reed bed supply company, to redefine the overseas design guidance for vertical flow reed beds for UK conditions.

Our trials at Hulland Ward and Llys Rhysnant have revealed significant potential benefits for our customers and rural communities:

- lower whole life cost (potentially 40%);
- effluent quality monitors powered by renewable sources;
- natural resilience to mains power failure;
- very low need for operator intervention; and
- more opportunities for community engagement.

We've shared our experiences through the publication of the Hulland Ward reed bed system academic research and the presentation of the rural strategy design philosophy at industry conferences.

Our supply chain partners have gained first-hand experience of the design, construction and commissioning of these low carbon solutions and now have the capability to offer them as solutions for other clients.

3. Tackling discoloured water at source: an international award-winning approach

This case study shows that by pushing the boundaries around manganese removal and exploring the link between manganese and customer complaints, we can directly benefit our customers' daily lives

Challenge

Providing water that is both safe and good to drink is our customers' most fundamental requirement. And while discoloured water may be safe to drink, it can cause concern for customers and detract from their enjoyment of our product.

Discolouration occurs due to small iron particles accumulating in water. Under normal circumstances, accumulated iron will remain attached to the pipe wall. However, when water flow increases above the normal level, deposits can be disturbed, giving rise to visibly discoloured water. We therefore included a specific challenge in our 2015 'Innovation Needs' document to reduce discoloration.

The sources of these deposits are the accumulation of low levels of iron in water leaving water treatment works and the degradation of unlined cast iron pipes.

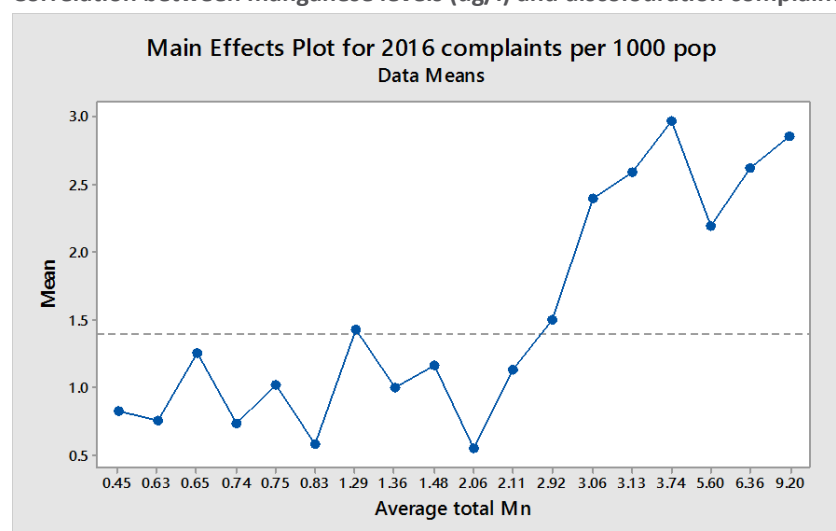
Traditionally, we've attempted to reduce complaints by replacing or relining water mains and by mains cleaning programmes. However, despite significant investment, complaint levels have not significantly improved, as materials continue to be deposited after cleaning. Research from the University of Sheffield has shown it only takes 12 to 24 months for a pipe to begin depositing to pre-cleaning levels.

Furthermore, analysis of industry-wide complaints suggests the presence of cast iron mains alone cannot account for all discoloration. For example, Thames Water has the highest percentage of unlined cast iron mains and the lowest rate of discoloured water complaints, suggesting the sources of water is a strong contributory factor. Our focus therefore has been at the treatment works.

Solution

We've investigated a potential link between levels of manganese and discoloured water complaints, and whether manganese entering the distribution system catalyses the build-up of iron deposits on pipe walls. Our analysis found a strong correlation between manganese and discolouration complaints.

Correlation between manganese levels (ug/l) and discolouration complaints



After further investigation, we identified natural variations in the amount of manganese present in the raw water and in the lime used for pH control at our water treatment works. We've therefore trialled low manganese lime at four sites including our two largest treatment works.

Our investigation also revealed that for most sites:

- the major source of manganese was a by-product in our coagulant (ferric sulphate); and
- manganese was being removed by adsorption and oxidation processes in our existing sand filters.

Implementation

We've built a pilot plant to inform how to optimise manganese removal using existing processes, and monitored the impact on complaints.

Benefits so far

These changes have significantly reduced the amount of manganese entering our network resulting in a reduction in complaints, our ODI for number of drinking water quality complaints and indirectly our ODI for customer service satisfaction.

We're continuing to assess the effect of manganese reduction at the pilot sites. Roll out to further sites should then follow and bring about significant reductions in customer complaints.

To date, we've:

- reduced water complaints for discolouration at our trial plant from an average of 2.32 per week to 0.15 per week within four months of reducing manganese levels;
- negated nearly 1,500 complaints per year in the Birmingham area water treatment supply zone;
- made savings to date across all sites amounting to over £1.8m; and
- contributed to the 12% reduction outturn for our water quality complaints ODI for 201

4. Bid Assessment Framework for Water Resources

Introduction

Our bid assessment framework (BAF) supports the bidding market for water resources, demand management and leakage services only. For these markets, third parties submit bids to help incumbents meet their future water needs. Third parties can be independent entities or other incumbent water companies.

Our BAF demonstrates our commitment to providing the best value solutions to meet our customers' future water needs by encouraging third party bidders through removing bidding barriers.

This document makes clear the procurement process and principles we will follow when evaluating bids. It should therefore give assurance that we will act in a non-discriminatory and transparent way, and not have a bias towards in-house solutions.

The BAF sits alongside our market information for water resources. The market information includes the key assumptions and economic data used to underpin our water resource management plan (WRMP). This will help third parties identify potential opportunities to provide innovative new solutions.

We developed our BAF in accordance with Ofwat's guidance provided in their final methodology for the 2019 price review: [appendix 8: company bid assessment frameworks – the principles](#).

Principles

Our BAF has been developed based on the four key principles we commit to deliver against:

Simplicity

We have designed our BAF to be straightforward, so that making bids into our water resources and demand-side management markets will be as efficient as possible for all parties involved, reducing bidding costs and stimulating participation in these markets.

Transparency

All potential third party bidders will have visibility of the award criteria rules involved with selecting solutions. This approach will give bidders confidence that they are not facing information asymmetries with respect to other bidders. We hope this confidence will lead to more participation in the bidding market.

For all bids we will prepare an audit report showing the processes followed at each stage of the bid assessment. These audits will be kept and made available for Ofwat to review, to demonstrate we have complied with our BAF.

Equal treatment / non-discrimination

All third party bidders will have an equal opportunity for competing for contracts. This principle also applies when third parties are bidding directly against our in-house options.

All third party bids will be reviewed by a separate procurement team that will not be involved with the development of our own in-house options.

The water resources market information we publish will be available to all third parties on our website – this will mitigate the potential information barriers faced by some third parties.

Proportionality

We require third parties to only provide the relevant information. For example, we will not over specify data requirements, as this could increase bidding costs which may result in some or all of the potential bidders withdrawing.

Application of principles

A separate in-house water resources procurement team will oversee the third party bidding process. The purpose of the team will be to:

- Protect against potential conflicts of interest;
- Carry out an assurance review of the bidding process;
- Ensure there is no bias; and
- Safeguard against the misuse of commercially sensitive information disclosed by third parties as part of their bids.

The separate water resources procurement team will apply our four key principles when assessing third party bids against each other and when assessing bids against our in-house solution(s).

The procurement process will be documented as part of the wider compliance audit that will be retained and made available to Ofwat – should they request it. The process will include the reasons for accepting/rejecting bids.

Compliance

Our BAF is based on the key principles of procurement and competition law, the requirements of water resource management planning, relevant Welsh Government guidance and Ofwat's regulatory framework.

Procurement law

The [Utilities Contracts Regulations 2016](#) (UCR16) set rules about the procurement of goods and services by water companies. The application of these regulations are dependent on the nature and value of the contract, we will adhere to all relevant principles and requirements.

Competition law

We will comply with all aspects of competition law. Most notably, during the tender process, companies must not:

- Artificially narrow competition, for example where the procurement process is made with the intention to unduly favour or disadvantage certain (or all) parties.
- Distort competition in the market by abusing a dominant buyer position.
- Facilitate collusion between third parties by disclosing confidential bid information.

WRMP processes

We have a statutory obligation to prepare WRMPs every five years that cover a planning horizon of at least 25 years. The WRMP:

- Shows how incumbent water companies plan to maintain supply/demand balance and levels of service over the planning period; and
- Highlights the options necessary to meet changes in the balance while providing an appropriate level of resilience.

The guidance for the 2019 WRMP stipulates that water companies should engage with third parties that have the potential to provide options at a lower cost, or better value than incumbents' own in-house solutions.

The WRMP guidance sets out a process for appraising all the supply-side and/or demand-side options. This involves developing an unconstrained list of options; identifying the feasible options from the list; and deciding on the preferred option(s). Incumbents are required to evidence that:

- Third parties have been able to propose options for appraisal;
- Third party options have been appraised;
- Consistent screening/evaluation criteria have been applied at each stage of the process; and
- A preferred option (if appropriate) has been identified – unless there is a clear explanation why third party options are not feasible.

The BAF compliments the WRMP process by clearly specifying the evaluation criteria that will be used to evaluate and appraise third party bids/options.

Regulatory framework

The regulatory framework for supply agreements between incumbent water companies and non-regulated third party providers of water resources has yet to be enacted. The Welsh Government will be able to enact such provisions under [section 12 of the Water Act 2014](#).

Trading and procurement codes

Ofwat's requirements for trading and procurement codes are set out in [appendix 3 of the 2014 price review methodology statement](#). Trading and procurement codes provide assurance that incentive payments deliver net benefits to customers and the environment. Ofwat have set out in [appendix 5 of the 2019 price review methodology statement](#) that water trading incentives will be maintained for the 2020-2025 period.

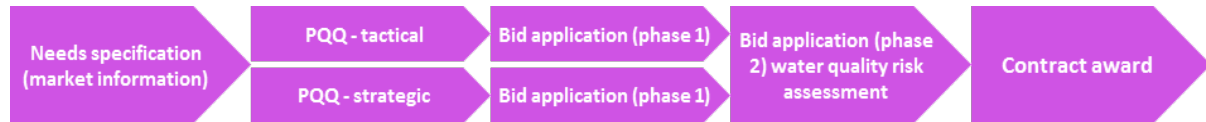
Our [trading and procurement code](#) is published alongside this document on our website.

Updating the BAF

We will update our BAF annually to reflect any changes to Welsh Government policy or Ofwat guidance.

Process

This section sets out each stage of the bid application process.



Bid application flow diagram

Prequalification

The prequalification screening stage sets out the basic requirements that need to be fulfilled to participate. This ensures third parties do not commit resources to a bid that will be rejected.

We have two versions of the prequalification questionnaire based on size:

1. Tactical; supply options with capacity of less than 1 million litres per day (ML/d).
2. Strategic; supply options with capacity benefit greater than 1ML/d and demand-side solutions.

Companies that pass the prequalification stage will be added to our list of approved potential suppliers. This status will last for five years.

Needs specification

Our future need for new water resources are set out, at a water resource zone level, in our water resources [market information data tables](#).

Note: for the final water resource management plan we will be producing a single set of Tables for Hafren Dyfrdwy.

Time limits and bid clarification

We will run an annual bidding cycle that coincides with our water resources market information refresh. This means that the bidding process will be open from January to September. During this time, approved potential suppliers that have successfully completed the prequalification screening will be able to submit bids.

We will acknowledge receipt of third party bids within ten working days, providing the third party has used our bid application form. This will be made available once the 2019 price review final determination has been made by Ofwat.

We will be happy to meet third parties face to face to clear up any ambiguities, data omissions and to clarify our requirements.

Bid application

We have designed a two-part bid application process. The first part captures the key scheme information needed for a pass/fail evaluation, which includes the following sections:

- Scheme overview
- environmental information
- Indicative contract information

The second stage is a scheme-specific water quality (WQ) risk assessment, this will be managed by our in-house drinking water safety plan (DWSP) team.

Evaluation

We set out our evaluation criteria in our bid application form. This transparent, rules-based decision making process ensures equal treatment and non-discrimination.

The WQ risk assessment is to ensure the WQ risks and their appropriate control measures are identified prior to any binding agreement to progress the bid further.

Governance

A separate water resources procurement team will oversee the third party bidding process. This is to ensure fairness, transparency and equal-treatment.

Compliance audit

During preparation for contract award, we will prepare our audit report on both parties compliance with the processes set out in accordance with our BAF, trading and procurement, procurement and competition law, and the requirements of the WRMP planning guidance. This audit will be made available to Ofwat, ensuring the validity of the overall conclusion.

Communication of decision

Our decision will be communicated to all bidders, including the reasons for acceptance/rejection of the bids within 90 days of the annual bidding cycle closing.

Disputes and complaints

In the event that third party bidders have reason for complaints or wish to challenge our contract award decisions, we have setup a complaints portal. We commit to responding to complaints within twenty working days.

Chapter 8

Business retail price control

8.0 Business retail price control

8.1 Summary

Hafren Dyfrdwy has over 7,000 business customers, who expect and deserve an outstanding customer experience. We are mindful that in most cases the services we provide are critical to the functioning of these businesses and we have therefore engaged with 580 business customers (around 7% of our customer base) to ensure we understand their needs and priorities and test the acceptability of how we have reflected those insights in our plan.

The customer experience is more important than ever due to the divergence in government policy. As one of only two companies operating in Wales our business customers are not eligible to enter the non-household retail market which operates in England. Our plan sets out how we are going to ensure our customers are not disadvantaged as a result of this government policy.

Our customers can expect from us:

- a multi-channel, personalised service;
- increased contact accessibility, with a 24/7 phone service;
- an expert care and assistance team to support them, who are receptive to their issues and strive for seamless, timely resolutions;
- simple and easy payment options; and
- help with saving water, thereby reducing bills.

We have included a bespoke performance commitment which will track customer satisfaction in a way that allows direct comparison with DCWW and as far as possible draws comparisons with the retail companies operating in England.

Performance commitments	2025	2045
Business customer experience survey	UQ (based on CMEX)	UQ

We have developed robust costs and carried out benchmarking. This suggests that our costs are relatively high per customer. However, given our small size, and the lack of comparative data (given most water companies have exited the retail market), we believe that these comparisons do not give a fair assessment of the cost of the great level of service we provide to those customers.

8.2 Context

8.2.1 We have taken time to understand the range of business customers we serve.

We plan to simplify the average revenue controls or “default tariffs” for Hafren Dyfrdwy, with three bands aligned to the existing controls within the Powys area:

- Unmeasured and up to 5MI measured (c. 99%)
- 5-50MI measured (c.1%)
- Over 50MI measured (c.0.2%)

Around 3,000 of these customers are in the Powys area - they returned from the open water market on 1 July 2018 (at the same time around 4,000 customers in the Chester region entered the open water market when they transferred to Severn Trent). The North Wales region of Hafren Dyfrdwy serves around 5,000 customers and here there are currently 6-bands for the water service, based on the Dee Valley structure at PR14. As there are no customer in one of these bands and very few in two more, it makes sense to harmonise around the Mid Wales structure.

The total customers in the relevant bandings are set out below.

Customers by usage band (forecast at 24/25)

Band (MI/year)	Water service	Waste service
Unmeasured and 0-5	7,086	948
5 – 50	85	22
50+	15	1
Total	7,185	971

8.2.2 Customers in Wales are not eligible to join the retail market

In England, the water retail market opened on 1 April 2017, allowing business customers to switch their water retailer from their default provider. This is not the case in Wales and Hafren Dyfrdwy will be the retail provider for all of the existing business customers in our north Wales region and customers in Mid Wales who did transfer to the market but have now switched over to us on the 1st July when the licence change occurred. We therefore need to ensure that the service our customers receive is excellent and that we can demonstrate they are no worse off as a result of this policy decision.

The level of service received by businesses across the market has been mixed. CCWater’s analysis shows that many business customers have experienced problems with their water retailers. Incorrect billing and poor customer service are common issues; complaints are up to 2,782 (from 824) in just one year. SMEs, which make up the vast majority of our business customers, also felt that the open market offered little benefits, with likely bill savings of 1-2% not worthwhile if they switched retailers.

However, the structure of our controls should help if there is a change in Welsh Government policy. Banding at 5 and 50 MI p.a. is in line with the neighbouring companies in England. It places the greatest protection around retail charges for smaller customers who are less likely to negotiate a favourable deal with a retailer.

8.3 We're starting from a strong foundation

8.3.1 Customer service score

Our North Wales customers, under Dee Valley, benefited from a consistent offering. Dee Valley's business retail Rant and Rave score has been improving each year in AMP6, whilst written complaints are few and far between.

This strong performance is something we aim to continue delivering, whilst building on any improvement areas our customer research identifies.

Rant & Rave performance (/5)	
2015/16	4.59
2016/17	4.60
2017/18	4.69

Written Complaints	2015/16	2016/17	2017/18	Improvement
Total NHH complaints	13	16	2	88%
Written complaints (incl. email)	13	13	2	85%
Stage 2 complaints	0	3	0	100%
CCW investigations	0	0	0	n/a

8.3.2 Customer research findings

Many customers' experience of dealing with us is limited to the few times they are required to contact us to open accounts, pay bills or inform us of a change in circumstance. These are opportunities to exceed our customers' expectations. But it also means we have little opportunity through day to day contact to engage with them, therefore we have developed our plan on the basis of insights gathered from six different types of research. In total we have spoken to around 7% (580) of our business customers.

Approach	Purpose
Customer tracker survey	Explores views of customer service over time for residential and business retail customers. The latest wave was undertaken pre licence change so only Wrexham business retail customers were included.
Licence variation (NAV) research	Explores customer views on the acquisition and licence change
Valuation research	Quantifies the importance of wholesale improvements in service
PC and ODI research	Explores customers' views on performance targets and incentives
Asset health and resilience research	Explores views on asset health, resilience and two case studies (reservoir safety and lead in drinking water)
Overall acceptability of the plan	Quantifies whether customers find our proposals acceptable and affordable and the reasons why

A key part of how we've understood our customer service for business retail customers is via our customer tracker. We regularly ask customers a wide variety of questions about service, trust and value for money, as well as their wholesale service. We've used the feedback from this tracker to help form our service offerings for the future. We've focused on areas that customers feel are important to them, and areas where our tracker shows that we can improve.

A key finding from this survey is that overall performance is very good but on some measures, business customers are less happy than our residential ones, as the below table outlines.

Variable	Residential % (Powys)	Residential % (Wrexham)	Business (%) (Wrexham only)
Satisfaction	95	93	96
Value for Money	87	83	74
Affordability	75	85	75
Trust	89	84	87
Great customer service	88	92	88
Happy with your water supplier	81	83	74
Leading service provider	92	86	87

We need to ensure that business customers have bills which are affordable and offer value for money, as well as being happy with their water supplier.

Furthermore, the vast majority of our business customers prefer to contact us by phone, rather than other contact methods. Therefore, our future plans will focus on ensuring that we provide our customers with the best possible phone contact service.

Through our research our customers have told us that the following are important to them:

- a prompt service;
- a human touch in the call centre;
- appreciation that time / disruption equals loss of income;
- quick information;
- ease of contact, particularly in an emergency, although not necessarily a named contact; and
- consistent service.

However, customers told us they are not particularly willing to pay extra for additional services, apart from offerings such as water efficiency if it could save them money.

In addition to our own sources of insight, we have reviewed third party research, for example that undertaken by CCWater. Since the opening of the non-household retail market we have been able to learn more about what customers expect from their wholesaler and retailer as the change has driven engagement in the market. Both retailers and customers expect consistency in service as well as common language and terminology to make customer journeys easy.

8.4 Our five year plan

Overall, our customers have comparatively low bills and we are delivering improvements at no extra cost, whilst ensuring a receptive, personal and local service.

8.4.1 We are making improvements and will continue to do so

HD will look to build on the current Dee Valley offering, whilst incorporating learnings from the open market in England. We want to ensure that business customers view us as a trusted, local company that provides fantastic customer service.

Since the licence transfer on 1 July 2018 we have already introduced the following services to improve the services:

- A **dedicated phone line** for business customers, based in Wrexham. This line will be open from 8am to 6pm Monday to Friday for regular billing enquiries. 24/7 contact will also be available for operational enquiries via Severn Trent's contact centre, allowing us to be constantly available for our customers.
- **Case management** for individual customers. We are offering a highly personalised service where customers in regular contact will know their HD contacts by name, ensuring that we maintain the local ethos of Dee Valley Water for our new brand.
- A **direct email address** for customers to contact if they wish, under the @hdcymru.co.uk email.
- **Water efficiency self-audits**, where our customers can download a printable form that allows them to identify ways to minimise water usage.
- **Simple and easy** payment options – online, telephone, direct debit and more.

We are also looking to offer the ability to provide free water efficiency checks for our business customers before the end of this AMP. This programme has been a success in Severn Trent residential retail areas, and we are looking to replicate this success for our business customers.

8.4.2 We have benchmarked our service offering

Our Welsh customers will be served by a dedicated team based in Wrexham. Our local offering means that all business customers will receive the kind of personalised approach which larger companies strive to create for their larger customers. For example, some other companies have a business customer team and “key account managers” who focus on a particular group of customers, providing them with a point of contact. With our local team, all our business customers should be able to contact a familiar agent if they have regular contact.

Retailer	Selling Points
Water Plus	Tailored contract options Account managers Water efficiency
Castle Water	Cost cutting Ease of switching and payment Independence from wholesalers
Anglian Water Business	Good value and track record Good customer service Water efficiency
NWG Business	Flexible contracts Quality service No early exit fees Account management Water efficiency
South West Water Business	Account management Flexible metering and billing Water efficiency

Water Plus

Given the low number of customers who switch suppliers in the open market, it is worth having a more detailed look at the offerings of Water Plus, the retailer who is the standard supplier for customers in Chester, and who previously supplied our Powys customers.

The key facets of Water Plus' service offering are their flexible contracts, account managers, and water efficiency. They offer a variety of 'tailored' tariffs especially for SMEs, ranging from 'flexible' tariffs, with no fixed term and no exit fees, to 'tracker' tariffs, where the wholesale fee can fluctuate.

For large businesses, a dedicated account manager is provided as a single point of contact for all service needs. However, our dedicated team will provide this type service to all customers, large and small, as every customer is important to us.

The water efficiency services offered by Water Plus are similar to those offered by us, with face-to-face audits which evaluate water usage, offer water reduction methods and devices, and repair leaks.

CCWater research

CCWater research stated that, before market opening, most SMEs were satisfied with the service of their incumbent provider. After the market opened, some of the SMEs in the sample who switched reported that their bills had increased at the time they had been transferred to the default retailer, while others had not achieved the level of savings they had hoped for. The suggestion that the changes might result in improvements in billing was met with low levels of interest among many SMEs in the sample, especially those with single sites and relatively low bills.

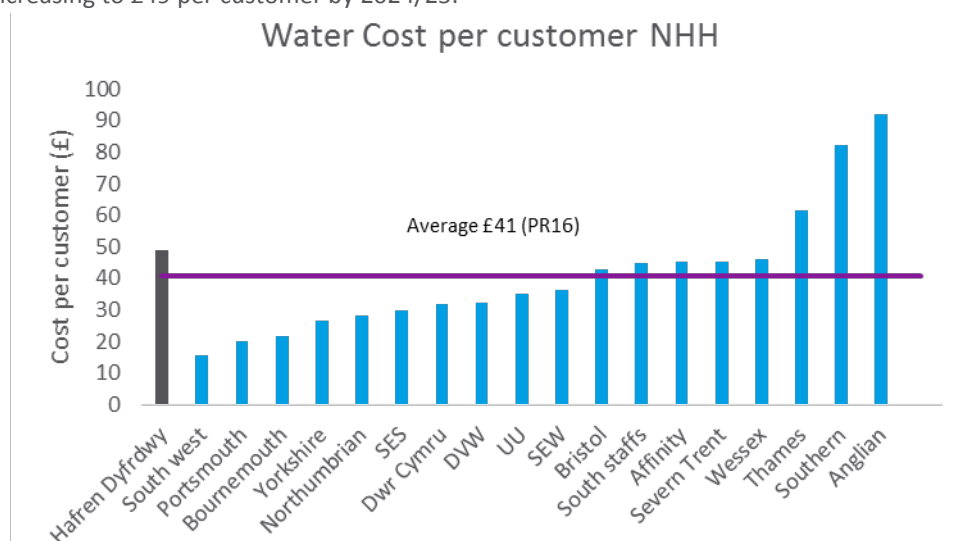
8.4.3 We are delivering significant cost efficiencies

Our plan delivers a step reduction in our water non-household retail cost base of around 11% in the first year of AMP7 after inflation. This is driven by reducing bad debt to 1.6%, and by a reduction in customer service costs as a result of investment in new technology in AMP6.

Given that our total water non-household retail operating costs are forecast to be less than £400,000 per year during AMP7, the opportunities for absorbing inflationary pressures are limited. Our plan delivers some additional real (CPIH) terms reductions in our cost base by 2024-25, but we forecast an after inflation increase in costs equivalent to around £2 per water customer between 2020/21 and 2024/25.

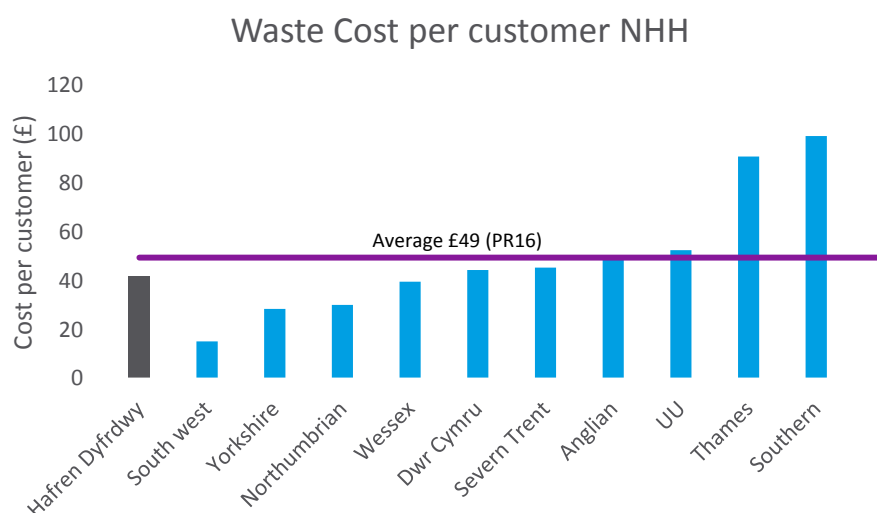
We have tried to benchmark our costs against those of other companies, for customers with a usage of 0-5MI, who make up approximately 99% of our business population. Company forecasts at PR16, when incumbents still offered business retail services are the last available comparative information for most companies. Since then, most companies have chosen to exit the retail market and as a consequence data on business retail costs has become less readily available.

We include the comparison below between PR16 data (from the Final Determination document published by Ofwat) and our HD 2024/25 forecast cost for the size band up to 5Ml. Our costs are c £47 per customer in 2020/21 increasing to £49 per customer by 2024/25.



While this suggests that our costs are a little above the industry average at that time (and we note that the latest APR data suggests a range of £30-£42 cost per customer for small business retail), in practice direct comparisons of this kind are limited by a number of factors. Comparability is directly hindered by the fact that companies do not all use the same bandings (for example, some exclude customers <1Ml; some exclude unmeasured water customers), and that comparisons are sensitive to the way in which different companies allocate costs between water and wastewater. It is also difficult to compare Hafren Dyfrdwy to other companies because even small WOCs have a significantly larger business retail customer base. Of the non-exited companies remaining, Bournemouth Water is the smallest comparator and it has around twice as many business retail customers as Hafren Dyfrdwy. This means that we have significantly fewer customers over which fixed costs can be shared, and the fact that we have so few larger retail customers means that only a limited portion of fixed costs is shared with customers in larger size bands relative to other companies.

Our plan delivers a small reduction in waste retail costs per customer between the end of AMP6 and the end of AMP 7, with costs starting at around £43 per customer and reducing to around £42 by the end of AMP7. This per customer reduction in costs is enabled by forecast increases in customer numbers over AMP7. Our planned waste retail non-household costs are below the average at PR16 of £49 (as shown below), and in line with Yorkshire's costs, which is the lower of the two waste companies (Welsh and Yorkshire) who published data in the 17/18 APR.



8.5 We are holding ourselves to account through a bespoke performance commitment

The performance commitment **Business retail customer experience** has been developed in collaboration with Dŵr Cymru Welsh Water (DCWW) and CCWater. As Wales is not in the open water market, we are the only two companies who are required to have a business retail customer experience measure. A directly comparable measure would be in both our interests, and those of our customers, so our performance can be clearly tracked and compared.

Performance commitment definition: Business retail customer satisfaction, as measured by a tracker survey, carried out by an independent party.

Business retail customers will be contacted by telephone and within a series of questions, including “How satisfied are you with the way that Hafren Dyfrdwy handle your account?” They will be given a range between 1= very satisfied and 5 = very dissatisfied.

The sample range will include both customers at random and those who may have had reason to contact us (in relation to either a query or complaint). If there are no business retail complaints or queries then the entire sample will be selected randomly.

We are working with CCWater to identify an appropriate sample size to get a statistically representative result whilst acknowledging the small business retail customer numbers. We will balance this with the frequency of the survey, but will carry out a minimum of two waves per annum.

The target will be set following the CMEX trials as we think that business customers should have the same level of service as residential retail customers. The incentive will be financial with rewards and penalties aligned to Ofwat’s approach on CMEX.

8.6 Our charges are balanced and fair

8.6.1 Approach to cost allocation

We have an established approach for ensuring that retail charges are allocated fairly between customer groups, building on the method applied at PR16. To allocate retail costs, we have used a three stage approach which takes account of our current cost base and the way we expect this to change in future.

1. Allocate historical costs using drivers for each type of activity
2. Apply proportion of costs for each activity to our forecast
3. Allocate cost allowance between customer groups

8.6.1.1 Allocate historical costs using drivers for each type of activity

Our starting point has been to build up the data in the non household retail table included in the Annual Performance Report.

The drivers we have used to allocate retail costs are broadly the same as we used at PR16. However, since Hafren Dyfrdwy’s business retail function will provide a localised service to all customers as described above, there is no direct equivalent to the Key Account Managers that were allowed for within the Mid Wales charges.

8.6.1.2 Apply proportion of costs for each activity to our forecast

Using cost drivers, we derive a proportion of each activity that should be allocated to each customer group. This is applied to our internal cost forecast, which is split by activity. In general, the expected mix of costs going forwards is not radically different to the way in which it is recorded now – we are not anticipating a further change in allocations that would impact on this split.

8.6.1.3 Allocate costs between customer groups

This has been allocated between customer groups based on our expected mix. In general there is less differentiation for large customers than would have applied in the previous Average Revenue Controls (ARCs) for the Mid Wales area. The legacy ARCs of Dee Valley applied very little differentiation between large and small users (or indeed between households and non-households). The main difference in the costs for larger customers is the level of outstanding revenue at any given time. This drives working capital requirements (considered within the margin) and potential bad debt. Although large customer defaults are rare, when they do occur the value at risk is high.

8.6.1.4 Retail activities have been split between several drivers to better reflect the cost to serve each customer group

Typically, the bulk of costs has been allocated according to a primary driver such as the share of total bills issued. However, costs associated with additional services have been picked out and allocated in line with the customers that receive them. This has resulted in an increase in the costs allocated to larger customers. While our Key Account Managers do look after some customers that have multiple sites – some of which are small – their activity is more weighted to the upper end of the scale.

Summary of cost drivers used

Cost	Driver (between consumption bands)	Between services
Billing costs	Share of Total Bills	Same
Meter reading	Number of meter reads	Same
Payment handling	Share of total payments	Same
Network calls	Share of customers	Share of network calls
NST first time visits	Share of customers	Water only
Other contact costs	Share of customers	Same
Debt management	Share of customers	Same
Bad debt charge	Share of write-offs	Share of income
Other direct costs	Share of customers	Same
G&S Costs	Share of other retail costs excluding doubtful debts and depreciation	Same

Billing costs

Although billing costs are fixed or semi-variable (such as systems and headcount), for the purpose of allocating this cost between customers the number of bills issued is the best driver. Small customers are typically billed twice per year and customers using more than 10 MI/a on a monthly basis. In terms of the bands, this means that some of our bi-annual customers will fall on each side of the 5 MI/a boundary.

As discussed, some customers require specialised services because they have more complex charges (such as those on standby tariffs and trade effluent) or receive consolidated bills. These costs are allocated separately to those customers.

Meter reading

This is allocated using a single driver – the number of meter reads. To bill them more frequently, we also read larger customers' meters more often, which weights cost slightly towards the upper end of the range. Ideally we would use the same driver as we use to split these costs between household and non-household. This takes account of the number of reads and the average time required; non-household meters are more widely dispersed, requiring additional travelling time. We do not currently collect the information necessary to differentiate reading time by consumption band. Commercial developments may include a mixture of large and small customers side by side, so it is difficult to say whether the use of this driver would make a material difference to the allocation of reading costs.

Payment handling

We allocate these costs based on the number of payments received. For customer groups where payments are received more frequently, costs are higher.

Contact costs (calls and correspondence)

Contact costs are heavily weighted towards the water service. General contact costs (relating to billing etc) are the exception and have been allocated based on the number of customers. For network calls, we split between water and waste based on the number and duration of calls received – tracked over a number of years - which are heavily weighted towards water; we have adjusted this to reflect the fact that the majority of our customer base is water-only. First time visits by Network Service Technicians are allocated wholly to water.

Debt management

Allocated on the basis of billed services.

Doubtful debts

At PR16 we looked at the track history of write offs by band stretching back to 2007, which gives a good view of the likelihood that customers in the lower band will fail to pay. However, even in an extended period such as this, the number of very large customers (50+ MI/a) is so small that there have been few defaults during the period (and none in some years).

When large customers do default the level of income written off is significant and this is a risk that needs to be recognised. In order to give a reasonable view, we have averaged the default rate for customers using more than 10 MI/a. This is still a small sample (1,250 customers using over 10 MI/a vs 216 using more than 50 MI/a), but an improvement in terms of any statistical test.

Other direct costs

Other direct costs are apportioned equally across the customer base.

General and support costs

General and support (G&S) costs are effectively allocated as a mark-up on other operating expenditure. The primary driver for the allocation of G&S costs between controls is the number of full time equivalent employees (FTEs). Most retail costs are employment costs, or are allocated between activities on the basis of FTEs, so the cost in other retail activities is a reasonable proxy for FTEs. Bad debt and the depreciation charges are an exception as they are not driven by employment costs and therefore G&S costs have not been loaded onto bad debt or depreciation.

Depreciation

Under the principal user approach non-household retail does not have any assets; all capital costs appear as recharges.

8.6.2 Retail margins

Working capital is covered from the margin on sales, but represents a cost to the retail business.

We treat the financing costs on working capital as a cost, which we deduct from allowed net margin to arrive at a residual value (equivalent to profit before tax). Working capital requirements are based on a review of the days to bill and days to pay across the customer base.

For financing working capital, we assumed the same interest rate as for the appointee; we consider that attempting to determine a separate WACC for a stand-alone retail business is not the correct approach. In the same way as costs, we looked at the number of days that we needed to finance at a granular level. The characteristics of some groups within the broad bands are quite different – for example, unmeasured customers now sit within the 0-5 MI/a band, but are quite different to measured customers in terms of days to bill and to pay. However, it is possible to aggregate the interest across the broad bands and convert this into an effective percentage of revenue that is required to fund working capital.

Once working capital has been deducted, we allocate the residual margin as a uniform mark-up on retail costs. This provides the same level of headroom against changes in retail costs within each band.

We applied a net margin of 1% to all customers that are outside the market and the standard gross margin of 3.3% (calculated as a mark-up on wholesale revenue) to eligible water customers. Once working capital cost is removed, we have a residual margin. We spread this as a uniform mark-up on cost, providing equal headroom in all bands.

Illustration of costs and margins (based on 2020-21)

Variable		Water			Waste		
		0-5 MI/a	5-50 MI/a	50+ MI/a	0-5 MI/a	5-50 MI/a	50+ MI/a
Customers	Nr	7,012	84	15	895	22	1
Net margin	%	1.2%	0.6%	2.6%	0.6%	0.5%	0.5%
Gross margin	%	15.9%	2.1%	3.3%	10.4%	2.8%	5.4%
Costs	£/cust	47	163	768	43	173	56
Wholesale revenue	£/cust	326	11,417	119,067	439	7,636	1,000

When looking at the spread of charges, it is important to note that customers are grouped according to their **water** consumption. Costs and margins are based on the composition of the small customer base so, for example, the single waste water customer in the 50+ category does not discharge a large volume of waste water to the sewer. By contrast, there are a number of trade effluent customers in the 5-50 MI/a band who have relatively high costs and high revenue relative to their consumption – this is because of the strength of the effluent they discharge.

Chapter 9

Aligning risk and reward

9.0 Aligning Risk and Reward

Our plan balances the affordability of bills with the steps needed to safeguard services and the environment for future generations.

Over 2020-25 we will be improving the resilience of our services and improving the environment in Wales to deliver long-term benefits. This will require significant investment, with a 4% increase in totex per customer in AMP7 compared with AMP6. Our improvements will include:

- A 15% reduction in leakage levels.
- Maintaining and upgrading our critical long-life assets including dams and reservoirs.
- Undertaking the largest environmental programme for over 20 years in this region.

Our plan delivers these enhancements while limiting the increase in the combined average bill over AMP7 to 2.2% in real terms (and maintaining flat average wastewater bills in real terms).

We have talked to our customers and between 85% and 92% (varying across four investment areas) of our customers either supported our proposed action or thought we should invest more to reduce some of the risks sooner. We have managed the effect of our planned improvements on bills through the use of Pay as you go (PAYG) and RCV Run-off levers, in line with our commitments at the time of the NAV.

Deferring some of the bill impact of our AMP7 programme reflects the extent to which our totex requirements can be lumpy: since we are renewing key asset classes during the period, we do not expect this level of expenditure to recur in AMP8 or AMP9. Using PAYG and (in particular) RCV run-off levers allows us to smooth and dampen the effects of our planned long-term improvements on bills in a reasonable manner in order to deliver affordable bills in AMP7 and thereafter.

The financeability of our plan is supported by an equity injection that was made to improve financial resilience as part of the NAV process. We plan to recapitalise in 2018-19 so that it will be able to end AMP6 at 60% - the notional level of gearing for AMP7.

Our plan provides a fair balance of risk and return that aligns our interests with those of our customers in an effective manner. Earning a RORE above Ofwat's base return on equity allowance would require us to outperform what are already very challenging targets, and our customers would share in the benefits of that outperformance. At the same time, our customers are protected if we fail to meet our stretching performance commitments. Our plan has an overall RORE range of around the allowed return of -4.63% to +2.08%.

9.1 Our plan includes a small increase in bills to support significant enhancements

Under our plan, the average waste bill remains broadly flat and the water bill increases by 3.7% before inflation as shown in the table below.

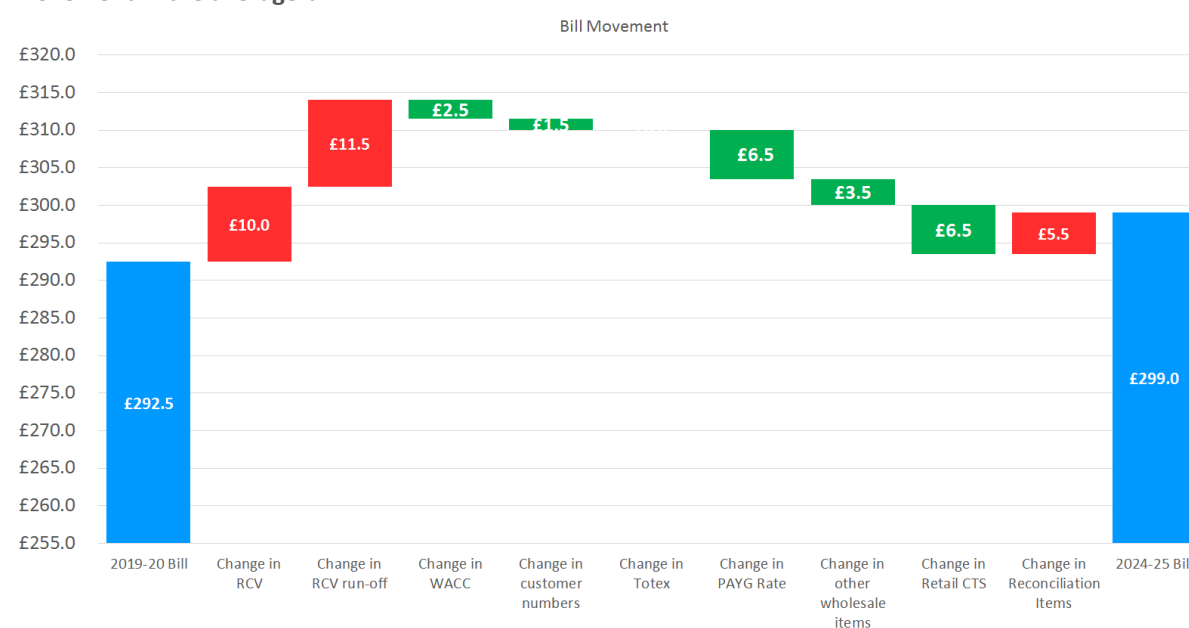
AVERAGE BILL	19/20	20/21	21/22	22/23	23/24	24/25
Average total bill ~ water	166.72	172.99	173.00	173.00	173.00	172.94
Average total bill ~ wastewater	125.78	125.84	125.84	125.84	125.84	125.95
Average combined bill	292.50	298.84	298.84	298.84	298.84	298.89
Ofwat "WaSC Bill" for HDD		286.92	287.37	288.37	289.80	290.07

The average combined bill here is calculated in the conventional way: that is, the sum of retail and wholesale revenue for each service divided by the number of customers who pay for the service. Ofwat's financial model has a new calculation which is different to this, and is shown separately in the table.

Ofwat's new calculation divides wholesale revenue by the number of customers for the service, but then adds the retail allowance for a combined service customer. This excludes charges for single service retail and has the effect of depressing average bills for WaSCs to some extent. The greater the number of single service customers a company has, the larger this effect is. We are the most extreme company in this respect since the majority of our customers are water only. As shown in the table, Ofwat's new calculation shows the average bill in 2024/25 as nearly £9 lower than under the conventional method, and using this approach could be understood as suggesting that bills are falling by 0.8%. We focus on the conventional method here, as this shows the 2.2% real terms bill increase that our customers will actually face.

The change in combined bills between the end of AMP6 and the end of AMP7 is shown below, with the underlying source of the bill change identified.

Movement in the average bill



We are unique in the sector in terms of our relatively low absolute customer numbers, low absolute cost-base and the mix of water and wastewater customers (we have a significantly higher proportion of water customers). This means that the overall combined bill is sensitive to even relatively small movements in any of the building blocks. A further consideration, in terms of the movement from the end of AMP6 to the end of AMP7, is the absence of a waste price control set specifically for our region before AMP7.

The scale of the improvements in resilience and the environment planned for AMP7 puts significant upward pressure on bills. The opening RCV per customer for HDD is very low. This means that the reduction in the WACC has a much smaller impact on bills than for companies on average. It also means that our planned increase in totex per customer, in order to improve resilience and environmental outcomes, drives rapid RCV growth. This has a material impact on bills given the relatively small customer base funding these investments.

Our plan provides for a partial shift from RPI to CPIH in order to adjust for general inflation, in line with Ofwat's transitional approach. Given that our plan involves a small increase in average prices, and that we are already using RCV run-off and PAYG levers to dampen the size of that increase, we have not sought to transition to CPIH more rapidly (which would have put further upward pressure on bills in AMP7).

9.2 Our financial assumptions and targets provide a sustainable framework for financing

Capital structure

We plan to operate at near the notional level of debt during AMP7. This is much lower than the level at PR14 (which was c70%), and is enabled by an equity injection that was made to improve financial resilience as part of the NAV process.

The WACC and retail margins

Our plan assumes Weighted Average Cost of Capital (WACC) and retail margin levels that are in line with Ofwat's early view as set out in its December 2017 Final Methodology.

	Nominal	Real (CPIH 2%)	Real (RPI 3%)
Cost of equity	7.13%	5.03%	4.01%
Cost of debt	4.36%	2.32%	1.33%
Appointee WACC (vanilla)	5.47%	3.40%	2.40%
Retail net margin	0.10%	0.10%	0.10%
Wholesale WACC (vanilla)	5.37%	3.30%	2.30%

We have not included a small company premium to the WACC in our plan.

Our base dividend policy

The base dividend level in our plan is consistent with a real (CPIH based) return on the equity RCV of 5%. Our actual dividends will depend on our performance and on future cash flow and balance sheet considerations. Our dividend principles are set out and discussed in Chapter 6.9, A company you can trust.

Our target credit rating

For our PR19 plan, our target credit rating is at least BBB+/Baa1, consistent with Ofwat's approach to the notional company and how it is setting the cost of new debt (using a 50:50 mix of A and BBB iBoxx indices for non-financial companies).

9.3 PAYG and RCV run-off rates

Pay as you go (PAYG) rates

PAYG rates determine the proportion of total expenditure (totex) that will be paid for by customers in the same year that the expenditure is incurred. The remaining proportion of totex (1-PAYG) is added to the RCV and paid for over a longer period. In arriving at our view of appropriate PAYG rates for this plan, we considered:

- What level of 'natural' PAYG rates should be applied; and
- Whether adjustments should be made to natural rates in order to manage bill impacts and/or financeability constraints that might otherwise arise.

In practice, given the size of HDD, these questions can be closely related. That is, the lumpiness of our totex programmes means that there can be substantial variations over time, and our plan involves such a variation for AMP7, with an increase in totex per customer of 4%. This level of totex variation (and the relatively lumpy nature of the investments that underpin it) complicates the assessment of what the natural rate should be. In particular, it makes it more difficult to compare cost structures over time, as those structures can vary significantly depending on the composition of the investment programme at the relevant point in time.

Given these difficulties, we have taken a relatively straightforward approach to determining 'natural' PAYG rates, and considered bill smoothing (and related inter-generational) issues when assessing the extent to which those base 'natural' rates should be adjusted. In particular, we have simply set natural rates equal to our forecast of (Opex + IRE) as a percentage of totex in each year. The table below shows the average PAYG rates in our plan by price control.

The PAYG and run-off rates in our plan are summarised in the tables below.

PAYG rates	20/21	21/22	22/23	23/24	24/25	Average
Before adjustment						
Water resources	58.4%	55.3%	70.5%	72.6%	74.0%	66.2%
Water networks	72.5%	70.9%	68.9%	69.5%	70.0%	70.4%
Wastewater networks	64.8%	59.8%	56.4%	44.6%	62.8%	57.7%
Bio-resources	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Adjusted						
Water resources	57.0%	56.5%	71.2%	74.9%	73.2%	66.6%
Water networks	71.1%	72.1%	69.6%	71.8%	69.1%	70.7%
Wastewater networks	66.1%	59.2%	55.8%	43.9%	60.0%	57.0%
Bio-resources	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

As can be seen, the changes in average PAYG rates compared to the natural level are very modest and have chiefly been done for profiling purposes, balancing off bill increases for water and wastewater customers given the commitments we made at the time of the NAV and our continuing engagement with customers and stakeholders. The PAYG rate of 100% for Bioresources reflects the fact that HDD has no operational assets, with all solids being exported.

RCV run-off rates

RCV run-off rates determine the proportion of the RCV that is 'paid down' each year. Our approach to RCV run-off rates involved considering:

- What should be understood as the 'natural rate' for RCV run-off?
- Are other adjustments to RCV run-off rates appropriate in order to address bill impacts and/or financeability issues that would otherwise be likely to arise?

As with PAYG rates, the lumpy nature of our totex spend means that significant smoothing issues arise in relation to both of these questions. That is, one would expect the 'natural' RCV run off to seek to provide a means of sharing costs over time before attention is turned to 'other' adjustments. In practice, though, our (very) low starting level of RCV per customer, and the planned scale of RCV growth over the AMP, complicate this kind of longer term assessment of natural rates (for the same reasons noted above in relation to PAYG rates).

Given this, as for PAYG rates, we have taken a relatively straightforward approach to the determination of 'natural' rates, and have set the RCV run-off rate for each control and in each year simply in line with our forecast of Current Cost Depreciation (CCD) as a percentage of the opening RCV level.

The RCV run-off rates in our plan are summarised in the table below.

Run-off rates		20/21	21/22	22/23	23/24	24/25	Average
Before adjustment							
Water resources	CPI	13.1%	14.8%	16.6%	14.3%	15.8%	14.9%
	RPI	13.1%	14.8%	16.6%	14.3%	15.8%	14.9%
	New	4.0%	4.0%	3.5%	3.4%	3.3%	3.6%
Water networks	CPI	13.1%	11.4%	9.7%	7.9%	7.5%	9.9%
	RPI	13.1%	14.8%	16.6%	14.3%	15.8%	14.9%
	New	13.1%	11.4%	9.7%	7.9%	7.5%	9.9%
Wastewater networks	CPI	5.0%	8.4%	7.1%	7.0%	5.8%	6.7%
	RPI	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
	New	5.0%	8.4%	7.1%	7.0%	5.8%	6.7%
Adjusted							
Water resources		6.5%	6.2%	6.1%	6.1%	6.5%	6.3%
Water networks		6.5%	6.2%	6.1%	6.1%	6.5%	6.3%
Wastewater networks		1.6%	1.6%	1.6%	1.6%	1.6%	1.6%

The natural run-off rates included within the Ofwat model are complex, split between old and new assets. The former is split between the RPI and CPI-linked elements of the RCV and is driven by a calculation of current cost depreciation on the existing asset base, taking account of expected abandonments during the period. The run-off of new assets takes account of the nature of our capital programme, and the useful lives of assets to be constructed.

Our adjusted rates are simpler and have been applied across all three types of run-off. We have lowered the level of run-off compared to our natural rates to take account of the affordability issues that would occur given the relatively high level of investment in period and the incidence effects on our small customer base. Since we are renewing key asset classes during the period, we do not expect this level of expenditure to recur in AMP8 or AMP9 so it is reasonable to capitalise more of the expenditure within the RCV, deferring the impact onto future periods.

The extent of our adjustment to the wastewater networks run-off rate reflects the relatively small size of wastewater customer base, and the scale and nature of our wastewater totex plans for AMP7, which will deliver major long-term environmental benefits.

The run-off rates for Bio-resources are not relevant because there are no functional sludge assets. We plan to recover all expenditure – payments to other companies - on a PAYG basis; while it would be possible to create a bio-resources RCV through new expenditure it would seem artificial to do so if there are no associated assets.

9.4 Our plan is financeable on a notional and actual basis

Our plan is financeable at the appointee level using a notional capital structure.

Notional structure

With our plan, gearing remains within the range of 60-65%. Adjusted interest cover and the ratio of Funds From Operations (FFO) to debt are consistent with the group's target rating of at least (Baa1 / BBB+).

Financial ratios (excluding the impact of incentives and other regulatory adjustments)

Key indicators - appointee	20/21	21/22	22/23	23/24	24/25	Average
Cash interest cover	4.9x	5.0x	4.9x	4.9x	4.6x	4.9x
Adjusted ICR (Ofwat)	2.0x	2.4x	2.3x	2.4x	2.0x	2.2x
FFO / Debt (Ofwat)	14.0%	14.5%	14.0%	14.2%	13.1%	14.0%
Gearing	62.4%	62.9%	63.2%	63.4%	63.1%	63.0%
Base RoRE	5.0%	5.0%	5.1%	5.2%	5.2%	5.1%

From a very low starting base, it is inevitable that growth in the RCV is rapid in percentage terms. This is to be expected; as the balance grows the percentage growth is bound to be smaller in future periods – even if we see capital programmes of similar size (which we do not think will be the case). Growth is concentrated in water networks and waste water networks in particular; the movement in water resources is small. Due to the unusual nature of our asset base, the bulk of the opening RCV sits within the water resource control but relates to two large reservoirs providing supplies to United Utilities and services to the Environment Agency; these are not changing or expanding so growth in water resources is muted.

Regulatory Capital Value by sub-control

RCV (nominal)	19/20	20/21	21/22	22/23	23/24	24/25	Av Growth
Water resources	58.1	58.1	58.6	57.8	56.8	55.8	-0.8%
Water networks	14.3	19.8	25.1	31.0	36.3	41.9	24.0%
Wastewater networks	0.5	1.8	3.6	5.7	9.1	10.9	84.9%
Bioresources	-	-	-	-	-	-	-
Total	72.8	79.7	87.3	94.5	102.2	108.6	8.3%

The majority of the investor's return is therefore being earned through capital growth during these early years. It is also inevitable that the cash return on investment will be relatively low. Again, our structure is somewhat unusual with the water resources control generating significant external income meaning that its small decline in value is balanced by positive cash returns. These help offset the charges to our customers meaning that the business can sustain negative returns in its networks while having a positive wholesale return overall. Bio-resources has no return because it has no capital value; its allowances cover the cost of external sludge processing. It is, however, possible for Bioresources to earn a profit if it outperforms.

Return on capital (pre-tax)

Return by control	20/21	21/22	22/23	23/24	24/25	Average
Water resources	8.8%	8.6%	8.4%	8.5%	8.5%	8.6%
Water networks	-23.5%	-13.2%	-8.9%	-5.3%	-5.2%	-11.2%
Wastewater networks	-102.2%	-44.8%	-25.2%	-15.1%	-11.3%	-39.7%
Bioresources	-	-	-	-	-	-
Wholesale	0.0%	1.1%	1.4%	2.0%	1.6%	1.2%

The key ratios for the sub-controls are set out below. Our position throughout the NAV process has been that it is acceptable for sub-controls to have weak financial ratios, provided the appointee is financeable. The ratios below are therefore more an illustration of the degree to which each control is providing financial support to the others or receiving financial support as we would never actually be required to raise finance on an individual control.

The ratios below have been calculated using the Ofwat model. We are unsure of the validity of these outputs for two reasons:

- Firstly, the Bioresources ratios appear to be incorrect given that the bioresources price control has no RCV, carries no debt and has positive cash generated from operations;
- Secondly, the ratios at a wholesale level – while still within tolerance for our rating on average - are significantly worse than those which the Ofwat model calculates for the appointed business. This would suggest that the retail controls are providing a very high level of free cashflow which seems unlikely.

We have not investigated these matters further since we do not consider ratios at the sub-control level to be fundamental to the financeability of the plan.

Adjusted cash interest cover (Ofwat measure)

Adjusted cash ICR	20/21	21/22	22/23	23/24	24/25	Av
Water resources	1.3x	1.5x	1.6x	1.8x	1.8x	1.6x
Water networks	1.6x	2.0x	1.7x	1.7x	0.9x	1.6x
Wastewater networks	4.6x	0.8x	0.4x	0.2x	-0.1x	1.2x
Bioresources	-59.0x	-19.0x	-10.9x	-7.7x	-6.1x	-20.5x
Wholesale	1.5x	1.8x	1.8x	1.9x	1.5x	1.7x

Funds From Operations to Net Debt (Ofwat measure)

FFO/Debt	20/21	21/22	22/23	23/24	24/25	Av
Water resources	12.2%	12.4%	12.9%	13.9%	14.8%	13.2%
Water networks	10.3%	13.3%	12.4%	13.0%	10.5%	11.9%
Wastewater networks	11.2%	3.7%	2.8%	1.9%	1.2%	4.1%
Bioresources	-176.2%	-65.9%	-41.3%	-30.6%	-24.5%	-67.7%
Wholesale	11.8%	12.3%	12.0%	12.2%	11.2%	11.9%

Actual structure

We have also assessed the financeability of our plan with its actual capital structure, and consider that it is consistent with maintaining at least a BBB+/Baa1 credit rating. We expect to be financed with gearing in line with the notional level. To this end, we intend to recapitalise Hafren Dyfrdwy in 2018-19 so that it will be able to end AMP6 at 60%. Even if we were not intending to reduce gearing, we would have needed to undertake some refinancing following the border variation, as its RCV is around 24% lower than Dee Valley's prior to the NAV. With this reduction in capital value, we could not sustain the same level of debt as Dee Valley.

9.5 Our plan provides a fair balance of risk and return

Ofwat provides a standard framework for assessing the balance of risk and return that involves identifying the extent to which changes to base assumptions can affect the Return of Regulatory Equity (RORE). The RORE analysis involves identifying a P10 to P90 range to investigate how returns would be affected by relative typical types of deviations, with the range excluding the more extreme top and bottom 10% of potential outcomes.

We have calculated RORE ranges for the following:

- i) Totex levels;
- ii) Costs of new debt;
- iii) Outcome Delivery Incentive performance
- iv) Revenue levels

The processes we have in place for managing and mitigating risks associated with these (and other related) levels have been integral to our assessment of RORE ranges.

Totex levels

For wholesale water, we have identified the following RORE range:

- Totex under-performance of 6.5% (i.e. we spend 6.5% more than planned)
- Totex out-performance of 2% (i.e. we spend 2% less than planned).

The main driver of this range is risk associated with the efficiency challenge we have set ourselves, and given the extent of efficiencies that are already factored into our plan the distribution of this is weighted towards the downside. This accounts for a range of around 4% totex under-performance to 2% out-performance. In addition to this, we have identified two external factors that could materially increase our level of totex: our statutory obligations may exceed those assumed in our plan; and our plan assumes the continuation of lottery funding that may not continue. When considered with other potential overspend pressures (including that some of our planned schemes rely on land acquisition which can often cause delays and increase costs) we think it appropriate to assume totex under-performance of 6.5%.

For wholesale wastewater, we have identified a RORE range of:

- Totex under-performance of 4.5% (i.e. we spend 4.5% more than planned)
- Totex out-performance of 1.5% (i.e. we spend 1.5% less than planned).

We have struggled to identify material out-performance opportunities given the scale (and number) of the individual projects that the wholesale wastewater totex relates to, but have identified out-performance of 1.5% as a possible up-side. Under-performance could arise if we are unable to meet the challenging efficiency improvements in our plan, but also if weather-related pressures necessitate a much larger sewer cleansing programme in AMP7 that assumed in our plan.

Cost of new debt

For the cost of new debt, we have identified a potential range of +/- 30 basis points relative to the iBoxx index as reasonable. Consistent with this, if Ofwat applies the 'halo effect' adjustment of 15 basis points to the iBoxx index (as referred to in its Final Methodology) then the potential for out-performance would be 15 basis points, and the potential for under-performance 45 basis points. This is the range we have included in our RORE assessment below. The level of downside we have included assumes that we are able to maintain a BBB+/Baa1 credit rating. A credit downgrade could easily result in further under-performance of more than 30 basis points.

Outcome Delivery Incentives (ODIs)

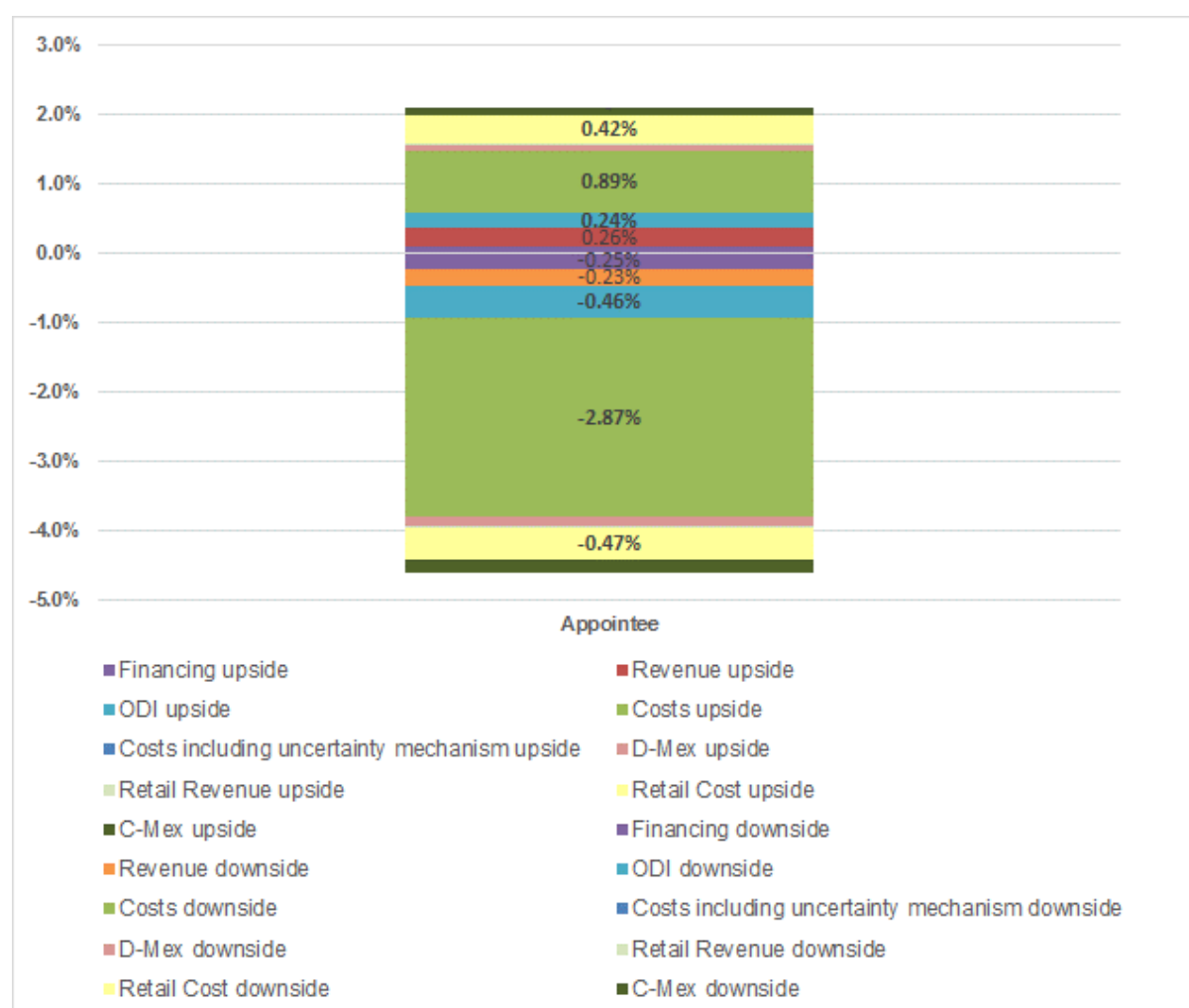
To understand the potential RORE impact of our package of PCs and ODIs we have modelled performance scenarios and taken a view that is based on an aggregate out and under performance of 75%.. This approach allows us to consider the potential rewards and penalties in a more nuanced manner than simply adding up all the rewards and comparing that to the total penalties. From this modelling, we have estimated a P10 and P90 range of -0.46% to 0.24%. The downside weighting is consistent with the fact that before any reward can be earned, stretching performance needs to be delivered.

Revenue

In practice, the scope for RORE impacts to arise as a result of revenue variations under the water and wastewater Network+ controls is relatively limited because of the neutral way in which revenue imbalances are addressed through the wholesale revenue forecasting incentive mechanism (WRFIM). Having considered this range of revenue risks, we have identified a P10 to P90 range of -0.23% to +0.26% of RoRE.

Overall RORE range in our plan

The overall RORE range for our plan is -4.63% to +2.08% and is shown below. The ranges are calculated by adding together the ranges for totex, finance costs, ODIs and revenue, and so assume that the highest (or lowest) levels of all four of the component ranges could occur simultaneously. A range for retail costs of -0.47% to +0.42% is also included, together with C-Mex and D-Mex ranges.



We developed and considered RORE ranges for each price control, but found these not to provide material assistance to our assessment of relevant risks. This follows from the somewhat unusual structure of Hafren Dyfrdwy that was highlighted above in our consideration of RCV and Return on Capital levels by control during AMP7. This includes a relatively large and stable RCV in Water Resources, but a relatively very small RCV in both water and wastewater networks that increases markedly over AMP7 (and no RCV in Bioresources). Given these factors, we focus our attention here on RORE at the appointee level as providing much clearer reflection of how our plan balances risk and return

We think our plan provides a fair and appropriate balance of risk and reward and aligns our interests with those of our customers in an effective manner. Earning a RORE above Ofwat's base return on equity allowance would require us to out-perform what are already very challenging targets, and our customers would share in the benefits of that outperformance. At the same time, our customers are protected if our performance falls short, as there is scope for a larger negative RORE effect if we fail to meet our stretching performance commitments.

We think the RORE ranges are appropriate, because they reflect risks that we are best placed to manage and the customers' willingness to pay valuations. They reflect a balance of risk and reward that provides us with incentives to continuously improve our performance in ways that will benefit our customers now and in the future.

9.6 Our plan is strongly supported by our customers

We have talked to around 4% of our customers in over 25 different locations, ranging from rural areas to small villages where the Welsh language is prevalent and larger towns. We've used a range of techniques, from telephone surveys and face to face interviews to deliberative research and co-creation. We have analysed contacts and considered research done by other organisations from within our sector (such as CCWater) and outside (such as the "The Wrexham we want" research which has informed the public service board's response to the Well-being of Future Generations Act). Between 85% and 92% of our customers either supported our proposed investment choices or thought we should invest more to reduce some of the risks sooner. Overall acceptability of our plan is 85%.

Chapter 10

Securing trust, confidence and assurance

A company you can trust

10.0 Securing trust, confidence and assurance

Our Board recognises that we have a privileged role providing a critical public service, with a duty to act in a responsible way for our customers of today and tomorrow. Given the essential role we play in our customers' lives, we developed a comprehensive assurance and governance framework to ensure our plan is driven for our customers, provides affordable bills, supports those who are vulnerable, embeds innovation and is resilient in the long-term.

In this chapter, we explain how our assurance framework provides confidence that we've created a high quality business plan that our customers can trust; demonstrating how our Board has challenged and engaged every step of the way, the effectiveness of our assurance processes, and how we will provide trust, confidence and assurance through to 2025 and beyond.

Read more: This chapter is best read in conjunction with the following items: aligning our risk and return and resilience in the round chapters, our Board's assurance statement (in section xx) and the assurance reports from our assurers, Black & Veatch and Internal Audit, are included in appendix 8.

10.1 Summary response to the Initial Assessment of Business Plan (IABP) tests

The key responses to the IABP tests are summarised in table 1 and the supporting evidence is set out throughout this chapter.

Headlines against IABP tests

IAP Test Area	Our summary
To what extent has the company's full Board provided comprehensive assurance to demonstrate that all the elements add up to a business plan that is high quality and deliverable, and that it has challenged management to ensure this is the case?	We designed our PR19 framework to deliver a risk based approach against a number of statements our Board wanted to make. Each statement had an associated proof point that was then reviewed and challenged by our Board to demonstrate that it had seen robust evidence that our plan was high quality and deliverable. Our Board's signed statement is included on page .
To what extent has the company's full Board been able to demonstrate that its governance and assurance processes will deliver operational, financial and corporate resilience over the next control period and the long term?	Our Board has looked at 'resilience in the round' as part of its Board Statement and reviewed evidence from our assurance framework that has allowed it to make the following statement '...we have collectively satisfied ourselves that the assurance undertaken demonstrates that our business plan: has been informed by a robust and systematic assessment of the resilience of the company's systems and services. has been informed by customers' views about managing resilience. has been informed by a comprehensive and objective assessment of interventions to manage resilience in customers' long-term interests." Further detail is provided in section 10.4 below.

<p>To what extent has the company's full Board provided assurance that the company's business plan will enable customers' trust and confidence, through appropriate measures to provide a fair balance between customers and investors (which include outperformance sharing, dividend policies and any performance related element of executive pay) and high levels of transparency and engagement, on issues that matter to customers (which extends to their ability to understand corporate and financial structures and how they relate to its long-term resilience)?</p>	<p>Our executive pay is linked to outturn on our performance commitments and will continue to be in future. Our risk and reward chapter details how we finance our company, our executive pay and our dividend policy in a fair and sustainable manner, which has been reviewed and endorsed by our Board as part of our assurance framework.</p> <p>Our corporate structure is published on our website and we're committed to complying with any current and future regulatory and statutory requirements relating to the publication of executive pay, dividend.</p>
<p>To what extent has the company's full Board provided comprehensive assurance to demonstrate that the business plan will deliver – and that the Board will monitor delivery of – its outcomes (which should meet relevant statutory and licence obligations and take account of the UK and Welsh Governments' strategic policy statements)?</p>	<p>Our Licence to Operate framework will continue to monitor our licence, regulatory and statutory obligations.</p> <p>To account for government policy in Wales where water and waste matters are entirely devolved to the Welsh Government, we created Hafren Dyfrdwy to help us address the unique needs of our Welsh customers and stakeholders. Further detail is provided in section 10.5.8 and 10.5.9 below.</p>
<p>To what extent does the company have a good track record of producing high-quality data, taking into account the company's data submission, assurance process and statement of high quality, and our 2018 assessment of the company under the company monitoring framework?</p>	<p>We were disappointed to remain in Ofwat's 'prescribed' category in last year's assessment but we're pleased that the improvements we had already made were acknowledged. We have worked hard throughout the PR19 process to continue to address Ofwat's concerns particularly in areas such as providing a transparent company structure to improve the levels of trust with our customers and stakeholders.</p>
<p>How consistent, accurate and assured are the company's PR19 business plan tables, including the allocation of costs between business units, information on corporation tax, and the assurance and commentary provided?</p>	<p>Our Internal Audit team have performed a check on our data tables to ensure our data is consistent between our plan and previously submitted data.</p> <p>Our established technical auditor, Black & Veatch have performed technical regulatory assurance on areas of the plan such as our performance commitments, resilience and our cost adjustment claims.</p> <p>Where areas of commonality existed between us and Severn Trent, Jacobs have examined the elements for both companies. For example, Jacobs have examined our cost allocation processes not only within Hafren Dyfrdwy but between Hafren Dyfrdwy and Severn Trent.</p> <p>PwC have performed an independent review on our tax plans including corporation tax.</p> <p>Further details of the assurance undertaken is provided in section 10.5 below.</p>

10.2 Our transparency and assurance journey: Dee Valley to Hafren Dyfrdwy

In February 2017, Dee Valley Water became part of the Severn Trent family and we started our journey to share best practice across both companies. We brought the benefits of best in class customer experience and service, while Severn Trent was able to share and implement its established and recognised assurance framework. The changes we made included:

- **Implemented Severn Trent's 'Doing the right thing' code of conduct.** The code of conduct, which is long established in Severn Trent Plc, enables our staff to feel confident about raising risks and concerns in a fair and transparent manner.
- **Three lines of assurance.** Recognised as a best-practice approach by audit companies and institutions world-wide for providing oversight on the accuracy of data, where the third line is independent from the executive of the company. We explain further below how we deploy this model.
- **Data owners.** We identified the key data we need to capture and report to deliver accurate information to our customers and our regulators. We then ensured that each area of data had an owner assigned to it to be responsible for accurate collation and reporting.
- **Process description templates.** Severn Trent shared its standardised process description templates with us to document each of our processes, providing us with an auditable methodology from producing our data. This also provides us with resilience in ensuring that new people can replicate our processes effectively and reduces risk of single points of failure.
- **Regulatory oversight function.** We have a dedicated team with accountability for our annual performance report with input from the business on the information.
- **Director sign-off.** We introduced annual disclosures from all Executive Directors to our Board on our key statutory and regulatory reporting. These disclosures require our Directors to confirm they have revealed all relevant material to our auditors and confirm their position on the accuracy of the data being reported.

10.2.1 Our assurance framework

The changes made above followed the Severn Trent group assurance approach, which is underpinned by four key principles:

- **Robust assurance** – we operate a three-lines of assurance model, targeted at areas of greatest risk.
- **Ownership and accountability** – we have clear lines of ownership for both the delivery of performance, and the accuracy of the data provided.
- **Effective governance** – provided by our Board, and the Audit, Disclosure and Executive Committees, and with additional challenge provided by the Customer Challenge Group.
- **Transparency and public accountability** – we publicly report on our performance, and hold ourselves to account where we do not meet our commitments.

Every year we publish our [annual assurance plan](#) and as part of this process we ask our stakeholders and customer challenge group for their views to make sure we've included the areas that are most important to them.

10.2.1.1 Our three lines of assurance

To further improve customer confidence in our performance delivery, we embedded first line activities within the directorates responsible for producing the data to ensure we had the right people with detailed knowledge of our processes performing assurance. Second line assurance oversight is provided by teams held within the delivery business areas but reporting to a separate senior manager to maintain independence. Our independent third line assurance is able to focus on the most important areas.

Our established three lines of assurance model

Line	Functions	Purpose	Typical Activities
1a	Business operations:	Responsible for the reporting of performance.	Provision of source information and reporting Monitoring and improving performance where required Defining and documenting methodologies and processes
1b	Embedded first line:	First line of assurance for ensuring high quality and robust submissions	In-depth quality checks and reviews Assisting with production of required documentation
2	Independent second line:	Second line of assurance ensuring that first line has undertaken its duties	Ensuring adequate first line checks undertaken Quality checks and reviews of systems and controls Coordination of assurance activities between first and third line
3	Independent challenge: Internal Audit, external assurance, Customer Challenge Groups	Provide independent challenge of levels of assurance provided by first and second line	Reviewing application of methodologies and processes and ultimate integrity of the data Reviewing completeness and appropriateness of assurance framework (Internal Audit) Providing challenge on expert areas (i.e. Customer challenge group on vulnerability, affordability and customer needs)

In 2015, Ofwat introduced the Company Monitoring Framework. We actively review Ofwat's feedback and reassess areas noted as requiring improvement. We were disappointed that we remained in 'prescribed' category (the lowest assessment group) last year, though pleased to see Ofwat acknowledging that we had made many improvements. For example, Ofwat noted our 'data assurance summary 2017-18' improved the format and increased the level of content from the previous year. We agreed however, that the reporting of our corporate structure was not clear as it could be, which could damage customer confidence in us and contributed to us remaining in the 'prescribed' category. So now, to help our customers and stakeholders understand how we operate within the Severn Trent group umbrella, and to increase confidence that we are protecting our customers interests, we've published a corporate structure, which details the relationship between Severn Trent plc, Severn Trent Water and us. We've also published details of our Board and its members.

10.2.2 The creation of Hafren Dyfrdwy

To meet the specific needs of our customers and stakeholders, and to ensure we could give proper consideration to the Welsh government's policy and current and future legislative requirements resulting from devolution, we decided to vary our boundary, and that of Severn Trent, to align to the national borders. At the same time, 1 July 2018, we renamed our company to Hafren Dyfrdwy Cyfyngedig (Severn Dee Limited) in recognition of the cultural significance and relationship that our customers have to the old Dee Valley brand, while also acknowledging the change in ownership and structure following the acquisition.

10.2.3 Our approach to risk and other obligations

Enterprise Risk Management

In 2017 we started to implement Severn Trent Plc's Enterprise Risk Management approach, in order to strengthen our processes to identify, assess and manage our significant risks – including risks to our corporate objectives, core processes, key dependencies, stakeholder expectations and legal and regulatory obligations. Significant risks feed into our company risk profile and are reported regularly to our Wales Coordinating Committee, and to the Severn Trent Plc Executive and Audit Committees, and our Board at least every half year. Specific risk topics are discussed with our Board as appropriate throughout the year.

We are continuing to implement the Enterprise Risk Management process and to ensure that the risks accurately reflect our new boundary. In this respect and in terms of resilience more generally, we want to go beyond traditional risk management, enabling us to respond to shocks, stresses and uncertainty as well as more quantifiable and understood risks. We will continue to take a holistic, systems level view of our business resilience and the environment we operate in.

Statutory, Legal and regulatory Obligations

In February 2017, we introduced our internal compliance assessment 'licence to operate' framework. This compliance assessment covers over 350 of our statutory and regulatory obligations - specifically in respect of our licenced business - and seeks to ensure there is clear ownership and accountability for each of our duties and obligations from director level, to accountable senior managers and their responsible managers. The framework includes existing obligations, and new statutory obligations yet to be commenced.

Each year, strategic leaders (senior managers) accountable for the delivery of obligations are asked to perform a 'self-assessment' against five key parameters – purpose, process, people, competency and controls. This assessment allows us to form a **probability** metric – to identify areas of compliance risk. We then use an **impact** metric based on the impact of a risk materialising to: public health and safety; the environment; customer service; competition; revenue; and market confidence (e.g. reputational impact). This helps us to prioritise areas for improvement during the course of the year. Where risks are identified, our 'second line of assurance' oversight teams work with the teams accountable for delivery to make process improvements. At the end of the financial year, strategic leaders carry out a further assessment to confirm whether there were any significant departures from compliance at the end of the year. A departure is an instance where we as a company believe that we are not entirely compliant with a duty within our licensing, and are making a clear statement of our awareness of this outstanding issue, what measures are in place to become fully compliant with this licencing requirement, and a planned target date to be fully compliant. We then assess the materiality of the issue i.e. either significant, medium or minor. This process helps to inform our Board's annual risk and compliance statement.

Transparency

As a public service we recognise that transparency on how we balance the needs of our customers, our strategic plans as a business and a fair return for our company is important to building and maintaining trust. We believe we are prudent in how we manage financial risk and even-handed in the way we share the returns from our outperformance with customers and our people; we pay our taxes in full and on time; we pay executive salaries that are reasonable and sustainable and linked to the delivery of outcomes to customers; we avoid complex offshore financial vehicles. Further details of how we demonstrate we are meeting these needs in a fair and robust manner can be found in our chapter on aligning risk and return [9].

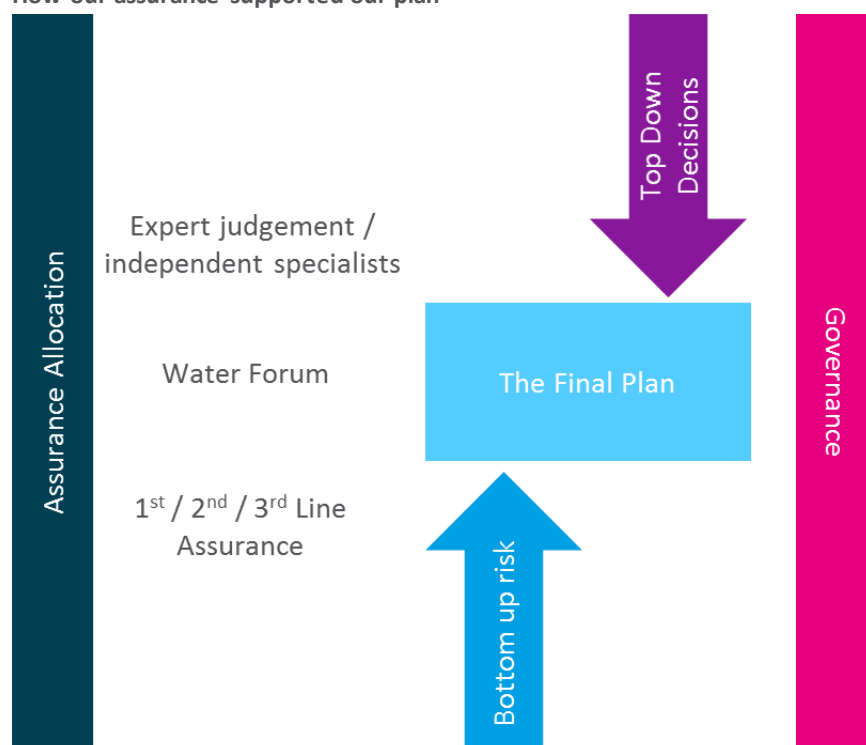
Hafren Dyfrdwy is part of the Severn Trent Plc group, which also publishes its own [annual report and accounts](#). We publish a history of our dividend payments for Severn Trent plc going back to 1990 and our dividend policy on [our website](#) to ensure clarity about how our investors are rewarded based on our performance through the group's activities. Again, this information is subject to third line assurance prior to publication. We recognise that these elements are growing areas of interest to our customers given the ongoing national debate around executive pay and re-nationalisation. We acknowledge that the information currently contained with the annual report and accounts is very detailed and may not be accessible to all segments of our customer base. So we now provide a summary of this information in our customer annual performance report and going forward, we'll consider how best to display this information while complying with current and future statutory and regulatory reporting requirements.

10.3 Our PR19 assurance framework

In order to give our Board full confidence in signing its assurance statement, we developed a robust assurance framework that built on our established processes, while taking into account the specific nature of risks associated with developing business plans. To achieve this, we continued to build on our established assurance framework and develop a bespoke, risk-based approach for our plan. We wanted to ensure that we also met our Board's expectations by delivering a high quality plan guided by our customers. The approach we developed contained four key components:

- a bottom up risk assessment;
- a top down board statement;
- assurance allocation aligned to risk; and
- oversight through robust governance.

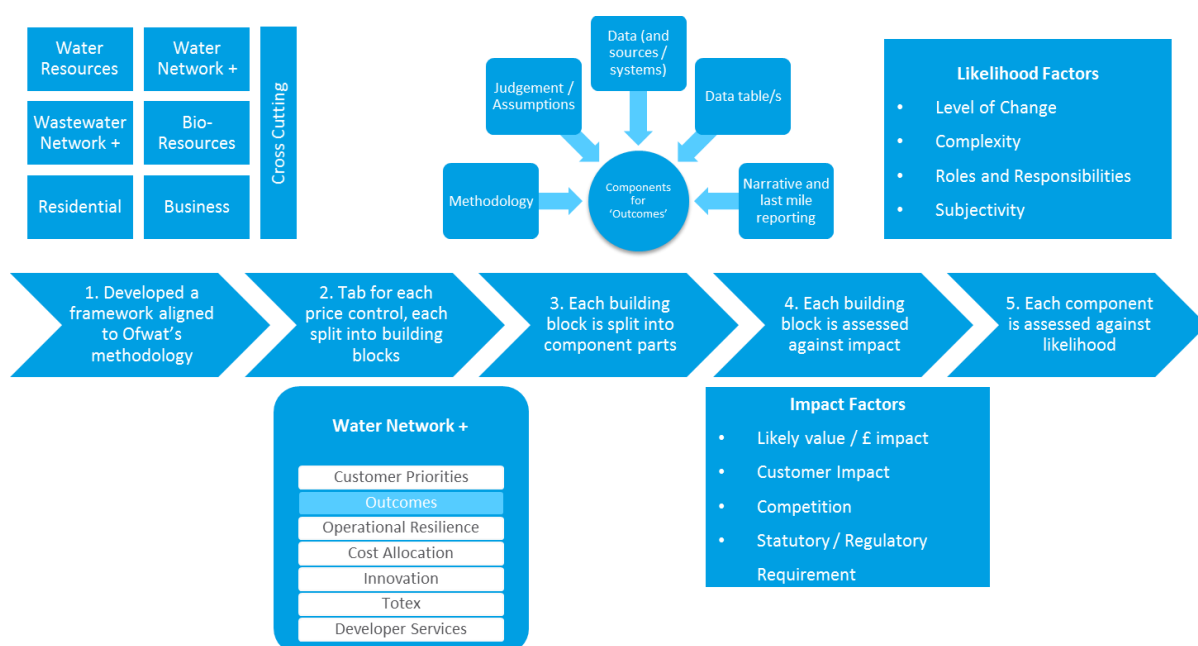
How our assurance supported our plan



10.3.1 The bottom up risk assessment

Our assurance framework determines the 'bottom up' risk of potential inaccurate reporting associated with each 'building block' in our business plan. We reviewed the risk within each price control by building block and then by component parts (methodology, model, data sources/systems, judgments and assumptions, data table, and narrative). We considered the materiality of risk using a number of factors including operational, financial and customer impact, while also considering our Board's strategy. We also identified associated risks based on, the degree of change and our usual business activity, the complex nature of each component, the level of ownership and accountability, and the level of subjectivity. This risk assessment formed the basis of our assurance allocation.

How we established bottom up risk



10.3.2 The top down approach led by our Board

As part of the assurance framework, approved by our Board in July 2017, we developed the statements a best-in-class company Board would wish to make using Ofwat's draft methodology and then updated them to align with Ofwat's final methodology. To support our Board in making these statements, proof points were devised with supporting evidence collected, these proof points drew from the bottom-up assurance, our wider assurance programme, our evidence of past performance, the Executive Committee's review and declaration of confidence in plan, and our Board's own engagement.

10.3.3 Allocation of assurance on a risk-basis

The risk assessment was used to allocate the appropriate level of assurance. As a minimum, first and second line assurance is carried out on all building blocks of our five year plan.

For areas, noted as medium or high risk, we employ a third line of assurance. We reviewed the building blocks and component parts to determine what type of third line assurance was required and assigned it to one of our assurance partners:

- **Engineering/technical** – where assurance required an expert engineering / water industry technical background.
- **Regulatory** - external expert assurance providers where challenge was required around the fundamental methodology and assumptions against our regulatory requirements; and adaptability to meet future requirements.
- **Data integrity and consistency** - performing checks across our regulatory reporting to understand and test areas for our plan for consistency with our wider reporting.
- **Financial** – used for areas requiring specific financial expertise, such as tax, where our Internal Audit team are not specialists.
- **Industry expertise** – used in particular specialist/niche areas to provide independent test, challenge and/or benchmarking to inform the development of our plan.

In addition to this:

- Our Customer Challenge Group provided challenge to areas where their customer focus and expertise would benefit the plan development, for example to our customer engagement approach and to areas of our plan such as education, vulnerability, affordability, cost adjustment claims and our performance commitments.
- We created an internal team known as the 'red team' who provided additional targeted support of the submission for compliance with Ofwat's guidance. This team existed in addition to our lines of assurance to provide focus to key areas such as our data tables.

Our risk assessment outcome showing compound risk that determined the level of assurance

Cross Cutting		<div><div>Key Level of Risk</div><div><div><div></div>High</div><div><div></div>Medium</div><div><div></div>Medium-low</div><div><div></div>Low</div></div></div>			
Financeability, risk and reward	Resilience in the round				
Outcomes	Tax allocation				
PR14 Reconciliation	Tax business rates				
Customer Engagement Strategy	Legal and Statutory Obligations				
Affordability	Vulnerability				
Efficiency	Direct Procurement				
Cost Envelope	Market Mechanisms				
Environmental and Social Governance	Consistency				
Price Control					
Water Resources	Water Network +	Wastewater Network +	Bio-Resources	Residential	Business (Wales)
Customer Priorities	Customer Priorities	Customer Priorities	Customer Priorities	Customer Priorities	Customer Priorities
Outcomes	Outcomes	Outcomes	Outcomes	Outcomes	Outcomes
Operational Resilience	Operational Resilience	Operational Resilience	Operational Resilience	Operational Resilience	Operational Resilience
Cost Allocation	Cost Allocation	Cost Allocation	Cost Allocation	Cost Allocation	Cost Allocation
Innovation	Innovation	Innovation	Innovation	Innovation	Innovation
Totex	Totex	Totex	Totex	Totex, inc inflation	Totex, inc inflation
RCV Allocation			Market Design	Revenue	Revenue
Market Design				Affordability / Vulnerability	Developer Services
Consistency with WRMP				Debt Management	
Revenue					
Data Tables					
Cost Exclusions					

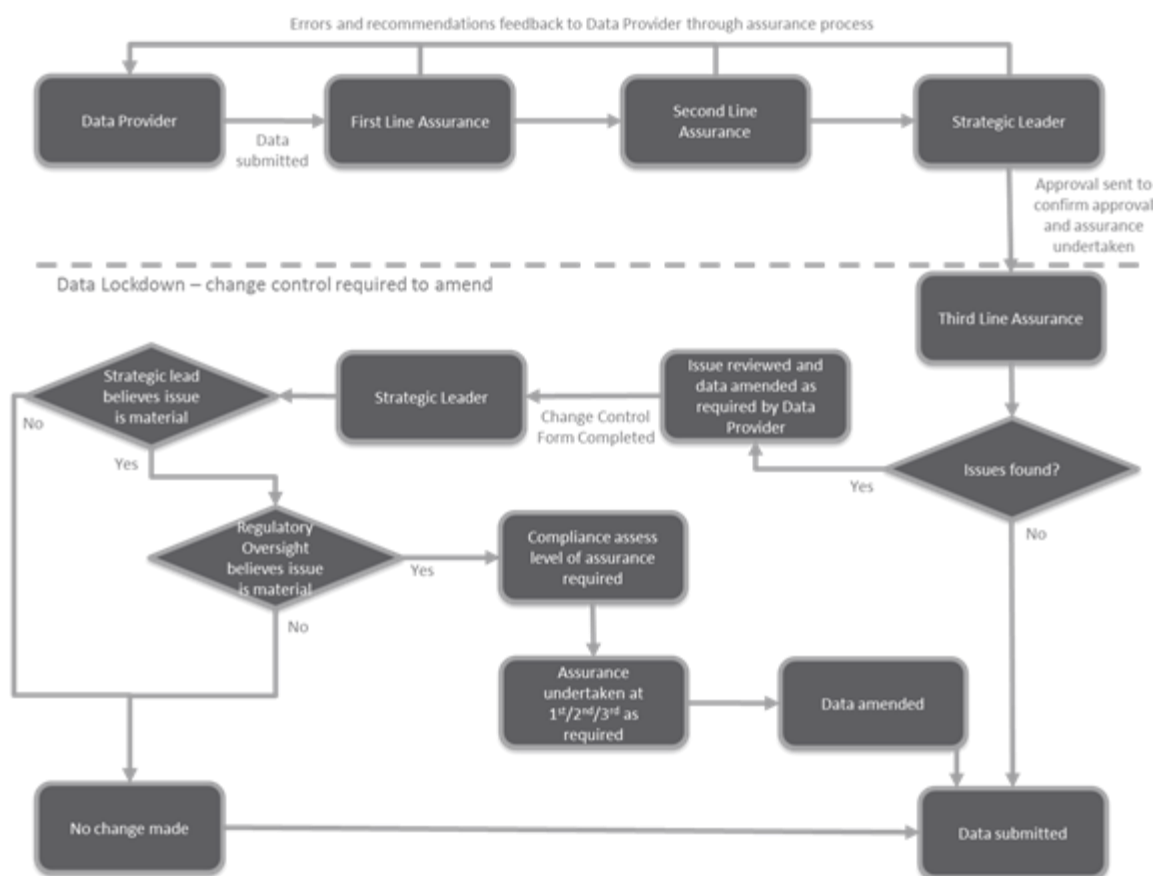
10.3.4 Ensuring high quality plan through high quality data

To maintain an appropriate level of control on our data tables and the numbers within them, we issued clear guidance to data providers and accountable managers.

To ensure that all areas received comprehensive first and second line checks, we produced a standard set of assurance templates to help guide the data submission process. These checks included accountable managers sending an approval email through to our central inbox to confirm that they had seen evidence of first and second line assurance.

We enacted strict controls to our data tables to prevent unauthorised changes once they were examined by third line. Any changes required were made through an authorised change control process where the accountable manager was made aware of the reasoning for the change prior to approval being sought.

The data submission and change control process



10.3.5 Ensuring a resilient plan

As described in our 'resilience in the round' chapter, we have a unique opportunity to take stock of the shocks and stresses that could affect our ability to provide services and to listen to and understand the expectations of our customers and stakeholders. This has allowed us to identify any gaps between the level of resilience inherent in our business and the optimum level of resilience.

We understand the importance of demonstrating our plan is able to withstand, and takes account of the risks associated with the challenges of an emerging political, economic, social, technological, legal and regulatory and environmental, technical, operational and health and safety risks. Furthermore, our extensive customer engagement asked our customers about what is important to them and the role we play in delivering it.

While risk identification is important, so too is our response. Within our plan we've sought to give a rounded view of how we're managing risks. For example:

- we've set up an independent Board and established robust governance and assurance processes;
- we've maintained the notional level of gearing in the range of 60% to 65%, and produced a seven year viability statement for this year's annual report and accounts to evidence our financial resilience. We're focusing on skills development, succession planning and the importance of fair and balanced decision making to support corporate resilience; and
- for operational resilience, while our plan builds on our existing tools to manage the risks, we equally recognise we need to make a step change in some areas such as reservoir safety and lead reduction.

As part of our assurance framework we took account of where we have previously undertaken independent assurance on some of these wider resilience factors which are reported separately through our annual report and accounts, annual performance report or our long-term water resource management planning.

10.3.6 Assuring our customer voice underpins our plan

During the development of our plan we've undertaken an in-depth customer engagement programme - as well as continuing to track customer sentiment. In addition to our business as usual engagement with our regulators, our customers, our communities and other political, societal and environmental stakeholders to create this plan, we have targeted our research and talked to more than 5% of our customers in over 25 different locations - including willingness to pay and deliberative research on strategic investment areas; this has had a major influence on the development of this plan. Our research has also helped us develop a better understanding of how we can provide more help to customers who are struggling to pay their bills. And to ensure that our customer views were accurately represented, we engaged independent Market Research Society accredited research agencies to conduct our research.

It is also important to us that our plan promotes our customers' trust and confidence through high levels of transparency and customer engagement on issues such as our corporate and financial structures, and sharing knowledge of our approach to how we pace investment over time helps to engender trust that we will behave in our customers' interests. So our plan continues to build on the transparent reporting we've made in these areas and shared as part of our annual report and accounts and our annual performance report.

The assurance framework and summary of assurance findings were presented to the customer challenge group jointly with Black & Veatch in August 2018.

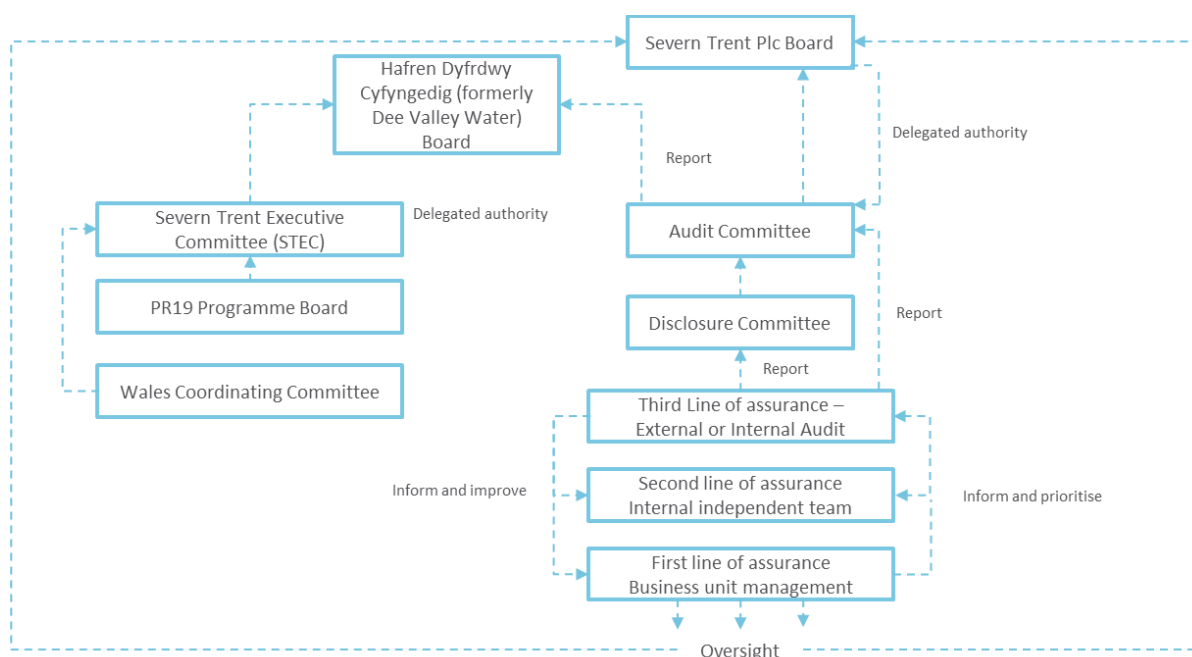
10.4 Our Board has challenged and engaged every step of the way

Our governance arrangements were used by our Board to guide and shape our plan, and provide challenge while reviewing our assurance evidence. We implemented a programme board reporting directly to the Severn Trent Plc Executive Committee with updates on progress and highlighting potential risks or issues for escalation.

10.4.1 Governance arrangements

Hafren Dyfrdwy was created on 1 July 2018. However we ensured that the plan had suitable challenge by the Board of Dee Valley Water Limited, supported by existing Severn Trent Plc governance arrangements prior to the new arrangements being implemented. To ensure a level of continuity between Severn Trent Plc and Hafren Dyfrdwy's Board members, in April we appointed three new Non-Executive Directors to specifically look after our business and provide independent challenge. The diagram below shows the governance framework.

Our assurance governance framework



Board meetings - The assurance framework and assurance findings have been reviewed through our established governance arrangements described above, which has enabled our board to provide robust critical challenge to, and shape, our plan at regular intervals.

Our Board collectively met 13 times to discuss our plan over the course of the programme with significant portions of the agenda dedicated to the development of our plan enabling our Board an appropriate opportunity to ask probing questions and rigorously challenge the key components and areas of risk. Our plan shows where the Board has shaped the direction of our plan, for example in moving our long term viability statement to a seven year period. Our technical and regulatory auditors, Black & Veatch, presented their findings on our plan directly to our Board in August 2018, which allowed Directors to directly ask questions on the work undertaken.

Committee meetings - In addition to discussion by the full Board, our Audit Committee and executive Disclosure Committee have met 11 times during the development of the plan and received regular updates on our assurance progress. They provide scrutiny of both our direct plan assurance – in line with our framework - and our wider assurance programme, taking into account where other decisions and work may impact on our future plan. For example, examining the outputs of assurance on preparatory cost allocation work ahead of our boundary realignment, the scenarios underpinning our long-term viability statement or our long-term planning on our water resource management.

As our plan developed, both Black & Veatch and Internal Audit presented their findings to our Audit Committee allowing members to ask questions directly and gain further insight into the work undertaken.

Customer Challenge meetings – The Chair of the customer challenge group has met with the Board collectively during the development of our plan, and with some members individually at events such as customer research workshops. This has provided the Board the opportunity to hear, first-hand, the views of the customer challenge group and for the group to ask questions of the Board.

Customer research workshops - Our Board was ultimately interested in the views of our customers. By attending our customer research workshops, individual Board members were able to hear directly from them, in their own words, about the areas that were most important to them. This has helped our Board to keep customers at the forefront of its decision making.

Ofwat non-executive director events – Our Board regularly engage with Ofwat at market-wide and company-to-Ofwat events. This engagement provides our Board an opportunity to use its wider experience to bring best-practice from other sectors to shape the industry for the better and to challenge management where choices are required to balance the direction of our regulators, the needs of our customers and the wishes of other stakeholders.

Welsh government events – Our independent Non-Executive Directors attended the Wales Water Forum in May 2018 to help engage with government on current and future areas of interest and concern.

10.5 The effectiveness of the process – our assurance findings

Our Board was provided with supporting evidence aligned to the proof points in the board assurance statement including: the outcome of reports and presentations from assurance providers, expert assessment, outputs and minutes from meetings, customer research workshops etc. In line with the key principles underpinning our established framework, our Board received a statement from each member of our Executive Committee demonstrating our management's level of engagement with, and commitment to delivering, our plan. To help us carry out this programme of assurance we engaged a number of external assurance providers and specialists to provide critical challenge to our plan.

10.5.1 Data table assurance findings

All of our data tables have been subject to three lines of assurance. Tables that contain more complex linkages have had an additional second line check by our internal regulatory specialists to ensure that data links had been made appropriately and that more complex information had been reported accurately, for example, where data has been split to reflect the change in boundary between us and Severn Trent. Following completion of these checks, the data tables were reviewed by either Black & Veatch, or Internal Audit.

Third line assurance has ensured that data produced is: consistent with the PDT and guidance, any deviations from this are identified and evidenced, the data can be traced back to source and is accurately reflected in the final business plan tables. In accordance with the framework the tables assured by Black & Veatch were generally technically complex or contained new requirements such as our performance commitments. Tables assured by internal Audit generally involved a tick and tie of the data back to source such as the annual performance report or annual report and accounts. Where any of our third line assurers made a recommendation, this was reviewed and responded to prior to submission of our plan. The findings from Black & Veatch and Internal Audit's assurance are included in sections 10.5.2.

Our judgements and assumptions made with respect to all elements of Tax have been assured by PwC, these assumptions are inputs into the financial model. The tables that are fed from the model have been assured (tick and tie) by Internal Audit.

Additionally, a consistency check between tables and our narrative has been undertaken.

10.5.2 Our Assurance Partners and their findings

Black and Veatch findings

Scope - Providing technical assurance on the plan by challenging methodology, and our processes and data, examining data tables, providing an independent review of our governance arrangements (including Licence to Operate), and how we've accounted for future government strategy and resilience in the round.

Summary of Findings – *‘The team has reviewed, challenged and provided assurance on aspects of the Plan chosen by the company, which the company assessed as being medium and high risk. The team’s role was to provide third-line assurance to validate Plan proposals and data tables, to support first- and second-line assurance carried out by the company itself, as part of the company’s assurance framework. Checks have been carried out by reference to company documentation and data, through interviews with the relevant company staff and with unrestricted access to data in the company’s data systems. Full cooperation was shown’*

You can find the complete Black & Veatch HD assurance letter in appendix 8, which includes the scope of work undertaken and its findings.

Internal Audit Findings

Internal Audit provided assurance on two elements of the plan: our future reporting processes and data tables. Any recommendations were responded to prior to the submission of the plan.

Future Reporting Processes

Scope - Internal Audit were asked to review evidence for the following statements:

“The business plan will deliver, and the Board will monitor delivery of, its outcomes and performance commitments.

The company's proposed approach to reporting on its performance commitments, ODIs and the projections of outcomes is robust”

Summary of Findings – *‘Hafren Dyfrdwy are proposing to continue with their current process of regular reporting through STEC and Board and half and full year assurance reporting of Performance Commitments and ODIs through Disclosure Committee and Audit Committee.*

Hafren Dyfrdwy’s approach to governance includes the Board, STEC and Audit Committee. The Customer Challenge Group are also a regular consultee and have been involved in the PR19 planning process and will continue to be consulted as part of future submissions.’

The full report can be found in appendix 8.

Data Tables

Scope - Checking that the data had been produced in line with the appropriate Process Description Template; that the data has been completed in the relevant data tables; and reviewing first and second line assurance processes. Internal Audit also reviewed our PR14 reconciliation submission.

Summary of Findings – *‘The supporting evidence provided by first and second line assurance to confirm their activities was reviewed for completeness.*

PwC carried out a cross check of consistency between the data tables and any errors were highlighted to the Compliance team in Strategy and Regulation. These are being addressed by the Regulatory Oversight team.

In addition, further independent data checks were carried out by IA.

All additional supporting evidence and answers to queries raised were provided.’

In addition, Internal Audit conducted a review to confirm that the assurance had been completed as outlined in our assurance framework.

10.5.3 Cost allocation

Jacobs assured our cost allocation methodology to confirm we had allocated costs correctly between price controls and between us and other group businesses, ensuring we are compliant with the regulatory accounting guidelines and our licence conditions. Jacobs noted: *'you have a satisfactory base level of documentation and processes in place to report data that are compliant with the principles and rules within the Regulatory Accounting Guidelines.'* They also examined areas impacted by the changes resulting from our boundary realignment between us and Severn Trent.

10.5.4 Evidence of a resilient plan

We asked Black & Veatch's to conduct an independent methodology review our plan against Ofwat's guidance and principles to ensure we had adequately addressed this. Black and Veatch concluded: *'We conclude that the company is following a very comprehensive approach to **Resilience**, which is appropriate to the scale and nature of the company's operations and geographic area.'* In addition, our approach has been informed by wider assurance on our resilience programme, for example:

- Cyber Security Resilience- Hafren Dyfrdwy's systems were migrated on the Severn Trent's systems on 1 July 2018. We asked Atkins to examine our cyber security plans to ensure we met our obligations under the Networks and Information Systems (NIS) regulations who found the following: *'the gap analysis conducted by STW against the NIS Regulations appears to be both realistic and honest. Whilst the current level of conformance with the majority of the NIS principles is poor, this is the case with many organisations we have reviewed. However, in several respects, such as governance and awareness training, STW is ahead of their peers.'*
- Long term water resource planning—we have undertaken assurance both as part of our draft Water Resource Management Plan (WRMP) submission and our statement of response following a period of consultation, we have considered the consultation responses and where appropriate have incorporated these into the plan.
- Long term viability statement - As part of our annual report we've provided our long term viability statement. This demonstrates that we are committed to maintaining long term financial resilience. Within Deloitte's audit of our annual report and accounts 2017-18, they reviewed our long term viability statement.
- Corporate resilience is regularly discussed at Board level. Black & Veatch reviewed our Licence to Operate framework and governance arrangements for the PR19 plan for Hafren Dyfrdwy. *'We conclude that the company is following a very comprehensive and rigorous approach to embedding HD into the L2O process as a means of **Meeting statutory and licence obligations**.'* and *'The company had governance arrangements in place for the preparation of all aspects of the Plan. These included written methodologies for the preparation of business cases and written procedures for the completion of data tables, internal first- and second-line assurance, and the third-line assurance provided by our work. A risk-based approach was used to select the Plan areas covered by third-line assurance. During the development of the Plan, we reported from time-to-time to the company's Disclosure Committee and Audit Committee and, at the stage of final approval, to the Board.'*
- Additionally, we asked our assurance partners, Jacobs, to review our Licence to Operate framework, our Enterprise Risk Management process and our governance arrangements at the Severn Trent Plc level to provide an independent review. *'We note that ERM is a Severn Trent plc process so DVW/HD (Dee Valley Water/ Hafren Dyfrdwy) is included in its scope, and that you have already introduced the LTO process to DVW.'* And *'Overall, for the documentation and processes we reviewed for LTO and ERM we found that you have a good level of documentation and that the processes are robust.'*

10.5.5 App 5 and App 6

As part of a listed group company we update the City regularly with performance forecasts and ODI expectations. We regularly report forecasts internally and use the weekly Executive Level Loopcell to review delivery and resource plans to challenge our ability to deliver for customers. The forecasts for 2018/19 and 2019/20 were additionally complex given the change in licence that took place on 1 July 2018. As such, to ensure we accurately forecast our performance commitments outturn position for the start of the 2020-25 period, including any potential penalty or reward, and in accordance with the framework, we undertook three lines of assurance on App5 and App6 with Internal Audit providing an independent view.

Specifically, Internal Audit were asked to:

- Check targets aligned with the NAV determination by Ofwat
- Review assumptions underpinning allocation of incentive rates where necessary
- Review allocation of 2018/19 forecasts between the new licence and the counterfactual position

First and second line audits focussed on accuracy of calculations, tracing input data back to source and alignment with developing performance commitments in App1. Below we include the list of recommendations and associated actions as a result of Internal Audits assurance review:

Table #	Notes Ref	Issue Details	Owner	Recommendations / Suggested Actions	Actions Undertaken	Date Action Taken	Complete?
App5	1	Cross-referencing columns Y to Z – STE and HD proportion splits	MP	Please can you send me the link as discussed, and add to PDT	Link sent	10/07/18	
App5	2	Cross-referencing columns AB to AE – New targets following NAV	MP	Please can you send me the link as discussed, and add to PDT	Link sent	10/07/18	
App5	3	WE1 – size of carbon footprint. Needs correcting and also revise the penalty rates that flow through	MP	Update analysis file and App 5	Changes made.	10/07/18	
App5/ App6	4	SC3 overall percentage – not matching between App 5 and App 6	MP	Align tables	Update App5 to match App6 for 2019/20	10/07/18	
App5	5	Lack of documentation on Regulatory oversight override on forecasts in PDT	MP	Add line by line commentary of all of the regulatory oversight adjustments on PDT (including update on SIM)	Not material to submission.		
App5	6	For the industry wide common PCs (lines 49-61) I can't see these in the Severn Trent specific PC outcomes.	MP	Please can you send the link for Incentive rates for these PC's, and add to PDT	These are not industry wide PCs, they are the DVW PCs that will still be reflected in Chester and Powys post 1st July. Link to DVW FD sent.	10/07/18	
App5	7	SD1 targets are not matching the FD targets (cells J41 & K41)	MP	Update SD1 targets	This should match to the corrigenda to the FD as we have formally updated our targets. Link sent.	10/07/18	
App5	8	SC5 and SD1 Incentive rates– There seems to be a calculation error of the magnitude x 10. This flows through to the calculated incentive rate on SD1	MP	Correct error	Error corrected.	10/07/18	
App5	9	RA2 (SIM) incentive calculation - $=((13/16)*AU44)+(0.995*((3/16)*AU44))$ - Should this be changed to 0.9942 as per the revenue split agreed? And also 0.0058 for HD?	MP	Correct proportion	No - different approach for SIM. No change	10/07/18	
App5	10	Where the targets have been apportioned for 18/19, why have they not been apportioned for 19/20 ? e.g. WA1 (Water quality complaints).	MP	Targets should be apportioned consistently	Because apportionment is due to the NAV licence change occurring part way through the year, it apportions the period up to 30th June.	10/07/18	
App5	11	Need to add the links in the PDT for the source data as discussed.	MP	Incentive rates, Ofwat website final determination - https://www.ofwat.gov.uk/wp-content/uploads/2015/10/pap_te201503odimenuvt.pdf FD PC targets - https://www.ofwat.gov.uk/wp-content/uploads/2015/10/det_pr20141212svt.pdf	Not material to submission.		

10.5.6 Cost Adjustment Claims

Our cost adjustment claims are covered by our framework as described in this chapter. Black & Veatch undertook a two staged review at various points in the programme to ensure we were able to capture any potential issues with our cost adjustment claims at an early stage before conducting a further check later in the plan's development cycle. Their findings are included in the table below.

Overall, Black & Veatch concluded: *'An effective process was used to identify potential challenges justifying Cost Adjustment Claims (CACs) which met Ofwat criteria and were material. These were challenged internally, by customers and by other stakeholders. The proposed CACs were justified, supported by customers and had been robustly costed.'* and *'Costs had been assessed for each CAC at an appropriate level of detail, based on similar work carried out by the company or estimates provided by others, and were as robust as possible at the planning stage. A proper assessment of options had been carried out and steps taken to optimise work scope and cost.'*

Any recommendations made by Black & Veatch have been responded to prior to the submission of our plan.

Jacobs reviewed the methodology elements of the cost adjustment claims that were common between Hafren Dyfrdwy and Severn Trent Water.

In addition to the assurance above, our Customer Challenge Group has challenged our proposals at its meetings. We have shared our assurance report from Black & Veatch, discussed the findings and our subsequent response. The Customer Challenge Group have confirmed they will include a section in their report on their assurance and challenge to the cost adjustment claims.

10.5.7 Embracing new markets and procurement

We have undertaken third line assurance for our Water Resources RCV and Market Information publications. We also submitted a board assurance statement alongside the Water Resources RCV publication to demonstrate that our Board had seen adequate evidence of assurance and endorsed the submissions.

Black and Veatch confirmed that none of cost adjustment claims would meet the qualifying conditions for direct procurement.

10.5.8 UK Government Policy

We reviewed the UK government policy document against our business plan. We noted that the key themes of the government's strategic policy mirror the main themes of Ofwat's PR19 methodology: securing long term resilience and protecting customers. In addition, the policy document emphasises the need to develop emerging markets and encourage competition in areas like water resources and bio-resources.

Below are some examples of where we have account for UK government policy and our statutory obligations:

- Long term resilience – our resilience in the round chapter details how we believe we've created a plan that addresses the needs of our current and future customers that can withstand long term shocks and adapt to changing conditions.
- Protecting customers – we've set ourselves stretching targets in our performance commitments to help as many people as possible to afford their bills through the use of social tariffs and promoting water efficiency. Our customer challenge group have provided huge challenge with an added level of assurance and customer research acceptability in this area.
- Continuing to meet our statutory obligations under the Water Act and other legislation – our licence to operate framework details all statutory obligations across our appointed business, risk assesses them and action plans are put in place for any areas requiring improvement.

10.5.9 Welsh Government Policy

Similar to UK government policy, the Welsh government is focussed on long term resilience and protecting customers whilst ensuring that we acknowledge that water and waste matters in Wales are entirely devolved to the Welsh government with unique customer challenges compared to England. The main goals of the Welsh government as set out in their policy statements are:

- A prosperous Wales
- A resilient Wales
- A healthier Wales
- A more equal Wales
- A Wales of cohesive communities
- A Wales of vibrant culture and thriving Welsh language
- A globally responsible Wales

We have always considered the needs and statutory requirements of the Welsh government within our business and have monitored the adherence through our licence to operate, and Enterprise Risk Management and assurance processes. For this plan we have also included proposals that will account for Welsh policy such as the examples below:

- We took the strategic decision to realign our boundaries along the Welsh / English geographical border. The subsequent creation of Hafren Dyfrdwy has meant we have created a separate Welsh business plan that gives us the opportunity to create a plan that is designed to meet the specific needs of our customers in Wales and the challenges of the geographical area (e.g. more rural).
- Ensuring customers were not impacted by the change in licence boundaries. We promised to keep the basis of charge for customers in North Wales, Chester and Mid Wales as they were prior to the boundary realignment to ensure that customers would not see an increase in their bills as a direct result of the acquisition and boundary realignment.
- Our licence to operate framework includes Welsh legislation. This ensures that we risk assess appropriately any statutory obligations specific to the Welsh government. For example the Welsh Language Act that requires us to make available to customers Welsh translated versions of our communications where requested. We produce a Welsh translated version of our annual performance report customer summary and publish this on website alongside the English language version.
- Working with and consulting Welsh regulators such as Natural Resource Wales and the Welsh government when developing our long term water resource management plan and business plan. For example we are partnering with the Welsh government, Dwr Cymru Welsh Water and the charity City to Sea to roll out the Refill Initiative, with the ambition for Wales to be the first refill nation. We strongly believe that it is important for us to promote the benefits of water for hydration.
- Undertaking customer research – we've talked to more than 5% of our customers in over 25 locations including areas where the Welsh language is predominantly spoken as part of our plan to understand what is important to our customers

10.6 Providing confidence and assurance through to 2025 and beyond

While we believe our processes are robust and effective, we are constantly striving for ways to develop our assurance processes further, innovate new methods and be the most trusted.

10.6.1A transparent approach to historic restatement

We are committed to continuously improving our data and information beyond the publication of our plan and other regulatory returns in two ways:

- Striving to improve our current reporting methods – we are constantly looking to develop slicker and better ways of reporting especially in areas where our information gathering process may still be maturing. For example, in emerging markets where we are always gaining further understanding of the requirements and our ability to report on them.
- Correcting errors in a transparent manner that doesn't penalise customers – while we believe our assurance framework prevents errors from occurring in the first place, we recognise that as we constantly review our historic performance retrospectively we may discover examples where we didn't get things right first time. In these small number of instances, we are committed to issuing clear and public corrections. For example, in our 2016/17 we reported that leakage had increased but remained within expected levels for the performance commitment. However, total leakage, as measured in million litres per day, was higher than assumed in the Water Resource Management Plan (11.31 MI/d compared to 10.17 MI/d). Having assessed the position, we concluded that the performance commitment in the 2014 Final Determination was based on household properties only, while Dee Valley Water appeared to be reporting actual performance based on all properties (household and non-household). While this is not certain, we have discussed our findings with the assurers, Black & Veatch and the Customer Challenge Group. We believe that our customers are best protected by taking a cautious approach and restating actual performance to be based on household properties only. This statement was included as a significant departure in our Board risk and compliance statement published in July 2018.

10.6.2 Our performance commitments

For our performance commitments, which we consider to be a customer critical area, our Board will continue to remain fully engaged in monitoring our performance and providing challenge where required through our established governance arrangements. Our usual governance arrangements will apply with performance being monitored regularly at the Executive Committee and Board, and at Disclosure Committee and Audit Committee at mid-year and year-end points in the reporting cycle. We have already started to understand what our future reporting and performance will look like through the shadow reporting measures. We asked Black & Veatch to review our initial shadow commitments submission to understand whether these were adequate and the level of risk of non-compliance associated. As a result of their review, two of the areas (unplanned outages and severe restrictions in a drought) was included in our year end compliance statement as non-compliant areas, which we are currently working on to improve. In addition to Black & Veatch, we also asked our Internal Audit team to review our plans for our wider performance commitment measures to ensure we had adequate reporting procedures in place for the future. The full report is in appendix 8.

From an external stakeholder perspective, we will continue to share our performance with CCWater on a quarterly basis and consult with our Customer Challenge Group on our both our assurance plans and year end performance to ensure we receive appropriate levels of customer challenge and scrutiny. Our communications and customer research teams will also continue to look at the best ways of sharing our regulatory reporting information in a transparent way that engages them.

We will continue to use our risk based three stage assurance approach for our performance commitments. To ensure we spot potential issues early, we will focus early on making sure our reporting methods for the new measures are robust. We expect all performance commitments, to go through both mid-year and year-end audits in the first year to be able to adequately assess areas for improvement and ensure we've the best data available to report our performance. As part of our business as usual process, our new performance commitments will also be added to our licence to operate framework with accountable managers assigned to ensure strong business ownership and to capture any risk of non-compliance with the measures. Any business critical risks associated with our performance commitments will also be captured through our Enterprise Risk Management systems.

We'll also continue to comply with our statutory and regulatory requirements when publishing information such as the annual performance report and the annual report and accounts to ensure we continue to be transparent about the areas of our business that matter most to all our stakeholders - including executive pay, corporation tax and dividend payments.

Trusted independent assurance is a critical part of providing confidence so we have already engaged our technical and regulatory assurance specialist to provide independent assurance, and act as our 'critical eye' on our regulatory reporting from 2019-25. We received and reviewed comprehensive bids from a number of external assurers through an OJEU tender process - an advertised tender with a scoring mechanism designed in advance of receiving full bids. As a result of this process, we've selected Jacobs as our technical auditor for the next period. They offered the strongest package of assurance while also demonstrating value for money.

10.6.3A future plan that demonstrates long term resilience

We'll continue to use both Enterprise Risk Management and our licence to operate framework to ensure that we manage our company wide risks and statutory obligations both now and in future. We believe that the combination of our established assurance processes, our governance approach, established systems and the work undertaken by assurance partners as part of our plan, enables our Board to have confidence that our plan demonstrates long term resilience in future and that we can deliver and finance it appropriately. The completion of our PR19 assurance framework combined with our Board's own engagement, has enabled our Board to have confidence in providing their assurance statement on page .

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