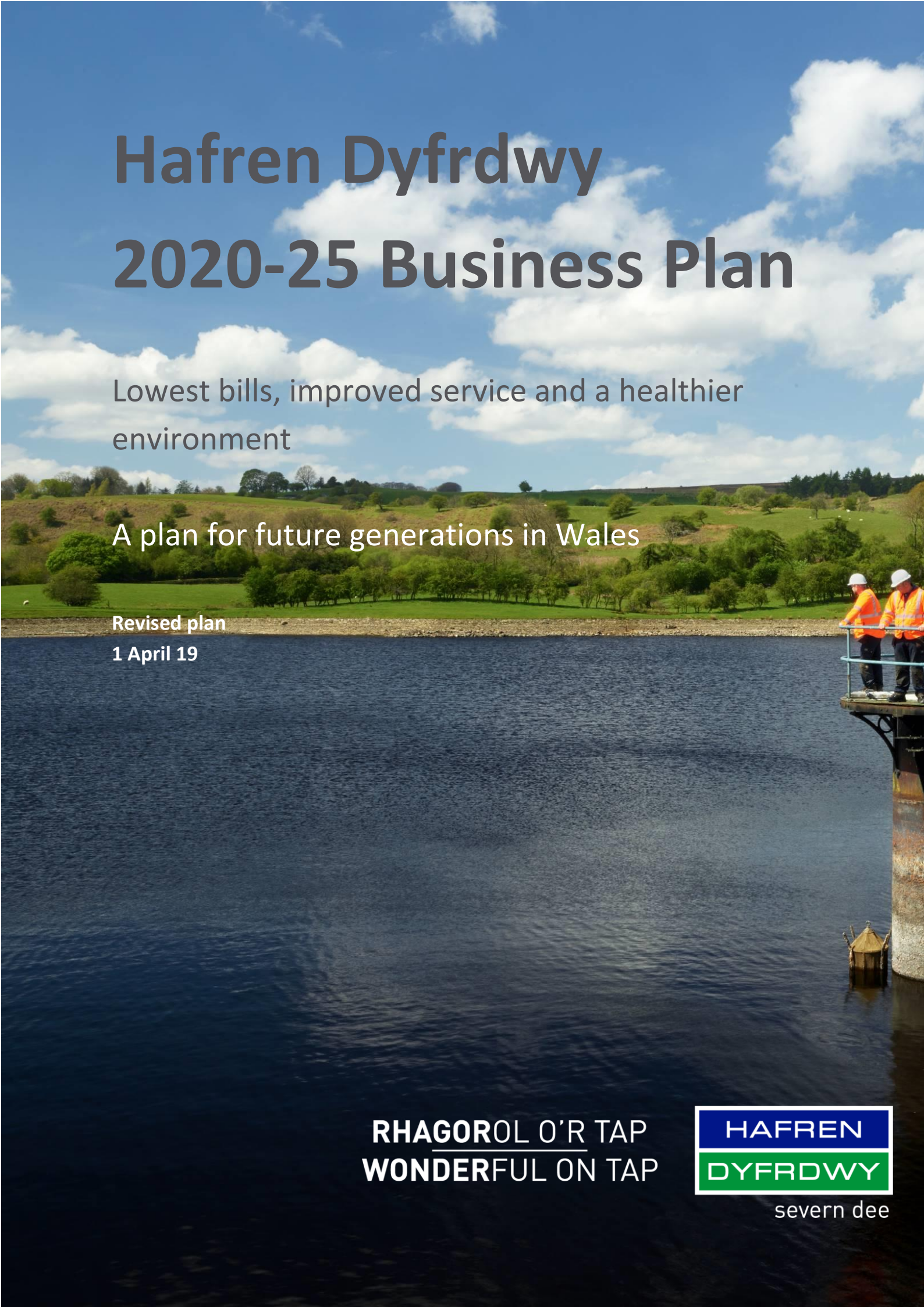
Hafren Dyfrdwy 2020-25 Business Plan

Lowest bills, improved service and a healthier environment

A plan for future generations in Wales

Revised plan
1 April 19



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FOREWORD

I am delighted to submit our updated plan for serving customers in Mid and North Wales. This is a plan that every single colleague at Hafren Dyfrdwy stands proudly behind because it will make a real difference to our customers and communities, delivering:

- sector leading cost efficiency;
- the third most stretching package of performance commitments across all companies;
- some of the most innovative measures in the sector – for example affordability and resilience;
- outcome delivery incentives that align the interests of our customers and investors; and
- all underpinned by the most extensive customer engagement programme in our history.

While our September submission had much to be proud of, notably leading efficiency, we have fully embraced every aspect of feedback from Ofwat, and seized this further opportunity to deliver more for our customers in an updated plan.

This decision started with our Board (who have been actively involved in its development) through weekly calls, challenging us to adopt best practice and attending customer focus groups. And it's on their behalf that I am delighted to introduce this revised plan.

Our updated plan has been built on three new areas of customer engagement that allow us to understand: the value our customers place on service improvements; how we balance charges over time; and the overall acceptability of our new proposals. With this additional insight, and by challenging ourselves against the ideas and plans put forward by other companies, we've further increased the improvement we're committing to make in some areas; and have strengthened the design of our outcome delivery incentives.

We've also responded to Ofwat's specific feedback across a number of areas. For example we have

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Rwyf wrth fy modd o gyflwyno'n cynllun sydd wedi'i ddiweddaru ar gyfer gwasanaethu cwsmeriaid yng Nghanolbarth a Gogledd Cymru. Dyma gynllun y mae pob un cydweithiwr yn Hafren Dyfrdwy yn ei gefnogi â balchder oherwydd fe fydd yn gwneud gwir wahaniaeth i'n cwsmeriaid a'n cymunedau, gan ddarparu:

- effeithlonrwydd cost sy'n arwain yn y sector;
- y pecyn ymrwymiadau o ran perfformiad sydd y trydydd mwyaf ymestynnol ledled pob cwmni;
- rhai o'r mesurau mwyaf arloesol yn y sector – er enghraifft, fforddiadwyedd a gwytnwch;
- mentrau cyflawni canlyniadau sy'n cysoni buddiannau'n cwsmeriaid a buddsoddwyr; a'r
- cyfan wedi'i danategu gan y rhaglen ymgysylltu â chwsmeriaid helaethaf yn ein hanes.

Er bod gan ein cyflwyniad ym mis Medi lawer i fod yn falch ohono – yn nodedig effeithlonrwydd sy'n arwain y maes – rydym wedi llwyr dderbyn a chroesawu pob agwedd o adborth gan Ofwat, ac wedi bachu ar y cyfle pellach hwn i gyflawni mwy i'n cwsmeriaid mewn cynllun sydd wedi'i ddiweddaru.

Dechreuodd y penderfyniad hwn gyda'n Bwrdd (sydd wedi cymryd rhan weithgar yn ei ddatblygiad) drwy alwadau wythnosol, ein herio i fabwysiadu arferion gorau a mynychu grwpiau ffocws cwsmeriaid. Ac ar eu rhan nhw yr wyf wrth fy modd o gyflwyno'r cynllun diwygiedig hwn.

Mae ein cynllun sydd wedi'i ddiweddaru wedi'i adeiladu ar dri maes newydd o ymgysylltu â chwsmeriaid sy'n caniatáu inni allu deall: y pwyslais a'r gwerth y mae ein cwsmeriaid yn eu rhoi ar welliannau yn y gwasanaeth; sut rydym yn cydbwyso taliadau dros amser; a derbynioldeb cyffredinol ein cynigion newydd. Gyda'r ddirnadaeth ychwanegol hon, a thrwy herio'n hunain gyferbyn y syniadau a'r cynlluniau a gynigir gan gwmnïau eraill, rydym wedi cynyddu rhagor ar y gwelliant rydym yn ei ymrwymo

created a new performance commitment in relation to resilience. We have also provided additional evidence and assurance to show why some of our initial proposals remain right for our customers, such as our social tariff cross subsidy.

As a new company, with new boundaries and new reporting procedures, there have been some challenges, compounded by our very small size (106,000 customers). We have redoubled our commitment to producing a high quality plan with third party advice, assurance and peer review in critical areas including customer engagement, incentive design, resilience, financeability and data.

Finally, we are hugely grateful to the time our customers have given to us. We have met with around 1 in 20 of our customers and their insight has been instrumental in shaping our revised plan.

We now look forward to delivering it for our customers.

Liv Garfield

Chief executive

i'w wneud mewn rhai meysydd; ac rydym wedi cryfhau'r ffordd y cynlluniwyd ein mentrau cyflawni canlyniadau.

Rydym hefyd wedi ymateb i adborth penodol Ofwat ledled nifer o feysydd. Er enghraifft, rydym wedi creu ymrwymiad newydd o ran perfformiad yn gysylltiedig â gwytnwch. Rydym hefyd wedi darparu tystiolaeth a sicrwydd ychwanegol i ddangos pam mae rhai o'n cynigion gwreiddiol yn dal yn iawn ar gyfer ein cwsmeriaid, megis croes-gymhorthdal ein tariff cymdeithasol.

Fel cwmni newydd a chanddo derfynau newydd a gweithdrefnau adrodd newydd, mae yna rai heriau wedi bod, heriau a gymhlethir gan ein maint bychan iawn (106,000 o gwsmeriaid). Rydym wedi ailddyblu'n hymrwymiad i gynhyrchu cynllun o ansawdd uchel, gyda chyngor gan drydydd parti, sicrwydd ac adolygiad gan gymheiriaid mewn meysydd hanfodol, yn cynnwys ymgysylltu â chwsmeriaid, cynllunio mentrau, gwytnwch, cyllidadwyedd a data.

Yn olaf, rydym yn hynod ddiolchgar am yr amser y mae ein cwsmeriaid wedi'i roi inni. Rydym wedi cyfarfod â thuag 1 o bob 20 o'n cwsmeriaid, ac mae'u syniadau wedi bod yn hynod allweddol wrth lunio'n cynllun diwygiedig.

Edrychwn ymlaen yn awr at ei gyflenwi ar gyfer ein cwsmeriaid.

Liv Garfield

Chief executive

A service to be proud of, for you and your community

Introducing our revised business plan

It's been just seven months since we submitted the first ever Hafren Dyfrdwy business plan, which set out how we intended to provide water and waste water services that you and your community could be proud of.

Our new business plan retains all those things that were so liked in the original plan - and adds in a series of revised commitments and objectives that will make sure that Hafren Dyfrdwy customers enjoy high standards and low bills for the five years from 2020-25.

But firstly, and before we outline our ideas and aims, we'd like to thank all those of you who generously gave up your time to help us make sure that this business plan accurately reflects the views of our customers in Wales. Although our initial plan was ambitious and would have delivered a series of important improvements, we've now been able to take the opportunity to make it even better. We've done this by engaging with even more customers and also by comparing our plan to that of other companies that were published last September.

This revised plan sets out clearly how we'll continue to get better, challenging ourselves to do a lot more to improve performance on a wide range of measures, including supply interruptions.

Secondly, we're making a firm promise to you, your neighbours and local communities from Wrexham and Bretton in the north to Llanidloes and Knighton in the south: we're going to give everybody living in this wonderful part of the world the service, the standards and the value-for-money you deserve.

How are we going to do this? Read on...

A unique company serving a unique region

Setting up your brand new water company has been both a privilege and a challenge. A privilege because it's given us the chance to raise standards and make a real difference for you, our customers. And a challenge because the creation of Hafren Dyfrdwy came at a time when all the other water companies in England and Wales were well down the road towards completing their business plans for 2020-25. Working closely with our Customer Challenge Group (CCG), we had to cover a great deal of ground during the early months of our existence. For the most part, we achieved more than could reasonably be expected - but it's fair to say that together we've welcomed the opportunity to improve still further.

Hafren Dyfrdwy has been established to firmly align with national boundaries, with no crossover between the two countries. This has brought clarity to the legal position regarding the applicable laws in Wales and England, and supports the findings of The Silk Commission on Devolution in Wales. From the very beginning, we've been totally committed to helping to deliver the bold ambitions outlined in the Welsh Government's Water Strategy for Wales, as well as the goals set out in the Well-being of Future Generations (Wales) Act:

- 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

Hafren Dyfrdwy is now a fully functioning, completely new company serving a mixture of former Dee Valley Water customers and former Severn Trent customers. We're by far the smallest water company in England and Wales, serving around 106,000 customers compared to the 4.3 million customers of Severn Trent.

As a small, locally-based company, we can get to know and serve all of our customers. That's important because the needs of those of you who live in the more heavily populated north of our region, around Wrexham for example, can be very different to those in the more rural areas further south. We can get closer to you wherever you live, and stay in touch with what you want, what you think we're getting right and where you want us to improve. And it means we can make faster decisions and react more quickly when things go wrong.

But at the same time we can also access the advantages that come with being part of a much larger group that includes Severn Trent. So when we need expert advice on matters such as biodiversity or hydrology, access to innovative technology like robot leakage detectors or just want to take advantage of the financial benefits that large scale procurement can bring, support is always close at hand. That's good for us, good for you and good for the environment.

A chance to step up? Or a stumbling block?

Great customer service is all about attitude. And if you honestly care about doing the right things in the right ways - if putting a smile on faces is really important to you - then you have to take every opportunity to learn and to be better than ever before. Delivering great customer service is a never-ending quest - one that means setting the bar higher and higher while constantly striving to reach it.

So even before receiving Ofwat's initial assessment of our business plan, we'd already been hard at work evaluating, refining and in some cases changing our goals and how we would deliver them. For example, we've continued to engage with you and your neighbours, listening in Welsh and in English, through telephone conversations, face-to-face meetings and via text, email and social media. As promised, we completed the customer research to test the acceptability of our proposed bills. And we've forged ahead with taking the investment decisions, and in many cases starting the work, that will ensure the long-term resilience of our assets.

Now, following Ofwat's initial assessment, we're pleased to submit our revised business plan. We've seized the opportunity to revisit our proposals with both hands, including looking at best practice in other plans. It's been a great chance to step up and work with customers, with Ofwat itself and with our CCG to dot the i's, cross the t's and make sure the plan has you and your needs right at its heart.

So what's new?

We've used Ofwat's feedback to address the gaps in our plan and make sure we strengthen protection for customers.

We've carried out even more customer engagement activities in both Wrexham and Powys - and have now contacted approximately one in 20 customers to get your views. This has helped us redesign our Outcome Delivery Incentives (ODIs) - the mechanism that rewards us for further improvements in service and protects you against any deterioration. Our new ODIs better reflect your preference for reputational and financial incentives, and incorporate stronger incentives where you've requested them.

We've also challenged ourselves to be more ambitious in terms of service improvements. For example, we've challenged ourselves to match the improvements being proposed by other companies in the plans published last September. And we've increased our estimate for the number of people on the Priority Services Register. Our initial plan proposed a very significant improvement, which at the time felt very stretching. However, in light of Ofwat's sector-wide feedback we've embraced an even greater target.

Finally we've introduced new performance commitments covering the resilience of our services and the number of vulnerable people we're going to support.

We've also taken the opportunity to do more work to understand how we can best keep you informed of what we're doing, when, why and what progress we've made - so you can hold us to account if we slip up or just get more involved if you're interested in the work we're doing in your communities.

And what's remained the same?

Although we've addressed the issues that Ofwat raised about our initial plan, it's important not to lose track of the many positives that Ofwat identified. And our new plan continues to incorporate these elements.

Our performance on cost efficiency, for example, was demonstrated to be sector leading. Our proposed total expenditure for the period 2020-25 is 3% more efficient than Ofwat's expectations. As Ofwat noted, this will have a substantial benefit for you by helping to keep bills affordable - and we're delighted that you're going to continue to enjoy low bills and despite the extra investment bills will only increase by 1.9% in real terms over the entire 5 year period.

We've retained our strong environmental commitment that will see us deliver the largest environmental programme for 20 years. This includes investing £2.5m to improve 46 km of river and almost £2m to enhance biodiversity and well-being. We're also pleased to confirm that we've maintained our commitment to an extensive asset resilience programme, particularly regarding dams and treated water reservoirs which will be supported by a £19 million investment. And our drive to provide better water and waste water services remains firmly in place: for example, we're targeting a 15% reduction in leakage by 2025 while ensuring that your water is good to drink, always there when you need it and that we take waste away safely every day.

In addition, we're continuing to support the Welsh Government's long-term ambition of a lead-free Wales. Over the next five years, we'll protect around 230 homes and schools by replacing their lead pipes.

And we're maintaining our commitment to bring forward a new social tariff to help our most vulnerable customers, funded by a £3.50 cross subsidy included in your bill. This level of subsidy - which is a massive step up from the current 0.50p subsidy - is supported by 83% of customers. We recognise that this support is only possible because of your generosity - so to ensure this money drives real change, we're introducing the water industry's first performance commitment that will track the effectiveness of the subsidy.

But underpinning all these important and challenging commitments is one further factor that will stay the same - the hard work, commitment and customer-focused attitude of our people. The Hafren Dyfrdwy name may be new, but we're fast learners. And many of our team have been working in this region for many years - for several generations, in some cases - and they bring great experience and knowledge to our team. Together, we believe we're already on the way to giving you the high quality, affordable services you deserve.

Our new plan: revisited, revised and ready to give you the best possible service

For a company that was just six months old, our original plan was a good starting point. Now, following further input from you, valuable and very welcome feedback from Ofwat and continuing challenges from the CCG, we believe our plan has been improved immeasurably. Our latest customer research which shows that 73% of customers view our revised bill profiles as acceptable and 70% regard them as affordable.

It's a plan that has the full support of our Board, which has been engaged in its detail as well as its headline commitments, including benefiting from expert assurance on matters such as economic regulation, financeability and resilience. Board members personally visited an impounding reservoir in order to fully understand the challenges. And they also attended several customer engagement sessions, where they were able to learn about your concerns and needs on a huge range of issues - from our investment in environmental improvements to the acceptability of our long-term bills.

The result is a plan that's more comprehensive, more stretching and more robust - one that we can all be proud of and that will give the people of north- and mid-Wales the best possible water and waste water services at the best possible price.

Gwasanaeth i fod yn falch ohono, i chi a'ch cymuned

Cyflwyno'n cynllun busnes diwygiedig

Dim ond saith mis sydd wedi bod ers inni gyflwyno'r cynllun busnes cyntaf erioed gan Hafren Dyfrdwy, a amlinellodd sut roeddem yn bwriadu darparu gwasanaethau dŵr a dŵr gwastraff y gallech chi a'ch cymuned fod yn falch ohonynt.

Mae ein cynllun busnes newydd yn dal gafael ar yr holl bethau hynny a gaent eu hoffi cymaint yn y cynllun gwreiddiol – ac mae'n ychwanegu cyfres o ymrwymiadau ac amcanion diwygiedig fydd yn gwneud yn sicr bod cwsmeriaid Hafren Dyfrdwy yn mwynhau safonau uchel a biliau isel am y pum mlynedd o 2020 i 2025.

Ond yn gyntaf, a chyn inni amlinellu'n syniadau a'n hamcanion, fe hoffem ddiolch i bawb ohonoch a fu'n ddigon hael i aberthu'ch amser eich hunain i'n helpu i wneud yn sicr bod y cynllun busnes hwn yn adlewyrchu barn ein cwsmeriaid yng Nghymru yn gywir. Mae yna rai agweddau o'n cynllun cychwynnol nad oeddynt mor uchelgeisiol neu mor gynhwysfawr ag y byddem wedi hoffi. Roedd yna bob math o resymau am hyn. Er enghraifft, nid oeddem yn deall faint o waith ychwanegol y byddai ail-lunio'r ffiniau rhwng y ddau gwmni dŵr blaenorol yn ei greu... ac fe wnaethom gamfarnu'r amser y byddai'n ei gymryd i gael adborth wyneb yn wyneb gan gwsmeriaid.

Canlyniad hyn oll oedd ein bod yn gychwynnol wedi cael ychydig o bethau'n anghywir. Ond mae'r cynllun diwygiedig hwn yn rhoi sylw i'r materion hyn ac mae'n amlinellu'n eglur sut y gwnawn barhau i wella, gan herio'n hunain i wneud llawer mwy i wella perfformiad ar ystod eang o fesurau, yn cynnwys toriadau ar gyflenwadau.

Yn ail, rydym yn gwneud addewid pendant i chi, i'ch cymdogion ac i gymunedau lleol, o Wrecsam a Bretton yn y gogledd i Lanidloes a Threfyclo yn y de: rydym am roi i bawb sy'n byw yn rhan odidog hon o'r byd y gwasanaeth, y safonau a'r gwerth am arian rydych yn eu haeddu.

Sut rydym am wneud hyn? Daliwch i ddarllen...

Cwmni unigryw sy'n gwasanaethu rhanbarth unigryw

Mae sefydlu'ch cwmni dŵr newydd sbon eich hun wedi bod yn fraint ac yn her, fel ei gilydd. Braint oherwydd ei fod wedi rhoi'r cyfle inni godi safonau a gwneud gwir wahaniaeth i chi, ein cwsmeriaid. Ac yn her oherwydd y digwyddodd creu Hafren Dyfrdwy ar adeg pan oedd yr holl gwmnïau dŵr eraill yng Nghymru a Lloegr wedi gwneud cynnydd mawr tuag at gwblhau'u cynlluniau busnes ar gyfer 2020-25. Gan weithio'n agos â'n Grŵp Her Cwsmeriaid (CCG), roedd yn rhaid inni weithio'n galed i ennill tir ar gwmnïau eraill yn ystod misoedd cynnar ein bodolaeth. Gan mwyaf, fe wnaethom gyflawni mwy nag y gellid fod wedi'i ddisgwyl yn rhesymol - ond mae'n deg dweud bod y CCG a'n tîm ninnau wedi bod dan bwysau mawr ar brydiau.

Sefydlwyd Hafren Dyfrdwy i gysoni'n bendant â ffiniau cenedlaethol, gyda dim gorgyffwrdd rhwng y ddwy wlad. Rhoddodd hyn eglurder i'r sefyllfa gyfreithiol o ran y deddfau sy'n gymwys yng Nghymru a Lloegr, ac mae'n ategu canfyddiadau Comisiwn Silk ar Ddatganoli yng Nghymru. O'r dechrau un, rydym wedi bod yn llwyr ymrwymedig i helpu i gyflawni'r uchelgais beiddgar a amlinellir yn y Strategaeth Ddŵr i Gymru gan Lywodraeth Cymru, yn ogystal â'r nodau a amlinellir yn Neddf Llesiant Cenedlaethau'r Dyfodol (Cymru):

- Cymru lewyrchus
- Cymru gadarn
- Cymru iachach
- Cymru fwy cydradd
- Cymru o gymunedau cydlynus

- Cymru o ddiwylliant bywiog ac iaith Gymraeg ffyniannus
- Cymru â chyfrifoldeb byd-eang

Mae Hafren Dyfrdwy yn awr yn gwmni llwyr weithredol, cyfan gwbl newydd sy'n gwasanaethu cymysgedd o gyn-gwsmeriaid Dŵr Dyffryn Dyfrdwy a chyn-gwsmeriaid Hafren Trent. Y ni yw'r cwmni dŵr lleiaf o bell ffordd yng Nghymru a Lloegr, yn gwasanaethu dim ond 106,000 o gwsmeriaid, o'i gymharu â'r 4.3 miliwn sydd gan Hafren Trent.

Fel cwmni bychan, wedi'i leoli'n lleol, fe allwn ddod i adnabod a gwasanaethu'n holl gwsmeriaid. Mae hynny'n bwysig oherwydd y gall anghenion y rheiny ohonoch chi sy'n byw yn y gogledd mwy poblog o'n rhanbarth, yn ardal Wrecsam er enghraifft, fod yn wahanol iawn i'r rheiny yn yr ardaloedd mwy gwledig ac ynysig ymhellach i'r de. Gallwn fynd yn nes at le bynnag rydych yn byw, ac aros mewn cysylltiad â'r hyn y mae arnoch ei eisiau, yr hyn rydych yn ei gredu rydym yn ei wneud yn iawn a sut rydych am inni wella. Ac mae'n golygu y gallwn wneud penderfyniadau cyflymach ac ymateb yn gyflymach pan fo pethau'n mynd o chwith.

Ond er ein bod yn gwmni cymharol fychan, fe allwn hefyd fanteisio ar y ffaith ein bod yn rhan o grŵp llawer mwy sy'n cynnwys Hafren Trent. Felly, pan mae arnom angen cyngor arbenigol ar faterion, megis bioamrywiaeth neu hydroleg, modd o gael at dechnoleg arloesol [canfodyddion gollyngiadau sy'n robotiaid] neu ddim ond eisiau manteisio ar y buddion ariannol a all ddod gyda chaffaeliad graddfa fawr, mae cymorth bob amser wrth law. Mae hynny'n dda i ni, mae'n dda i chi ac mae'n dda i'r amgylchedd.

Cyfle i wneud cynnydd. Ynteu faen tramgwydd?

Mae gwasanaeth gwych i gwsmeriaid i gyd yn ymwneud ag agwedd. Ac os yw gwneud y pethau cywir yn y ffyrdd cywir yn wirioneddol agos at eich calon - os yw rhoi gwên ar wynebau yn wirioneddol bwysig ichi - yna, mae'n rhaid ichi fod yn barod i fod yn onest, cydnabod pan fo pethau'n mynd o chwith gennych a dysgu o'ch camgymeriadau.

Roeddem yn gwybod o'r dechrau un nad oedd y cynllun y hwn y gwnaethom ei gyflwyno ym mis Medi 2018 yn berffaith, a bod hyn yn ddechreuad yn hytrach nag yn ddiwedd proses. Mae cyflenwi gwasanaeth gwych i gwsmeriaid yn orchwyl diderfyn - gorchwyl sy'n golygu gosod y safon yn uwch ac yn uwch tra ein bod yn ymdrechu'n daer yn gyson i'w chyrraedd.

Felly, hyd yn oed cyn inni dderbyn asesiad cychwynnol Ofwat o'n cynllun busnes, roeddem eisoes wedi bod yn gweithio'n galed yn gwerthuso, yn mireinio ac mewn rhai achosion yn newid ein hamcanion, a sut y byddem yn eu cyrraedd. Er enghraifft, rydym wedi dal i ymgysylltu â chi a chyda'ch cymdogion, gan wrando yn Gymraeg ac yn Saesneg, drwy sgyrsiau ar y ffôn, cyfarfodydd wyneb yn wyneb a thrwy negeseuon testun, e-byst a chyfryngau cymdeithasol. Fel yr addawyd, fe wnaethom gwblhau'r ymchwil cwsmeriaid i brofi pa mor dderbyniol yw'n biliau arfaethedig. Ac rydym wedi gwneud cynnydd sylweddol o ran gwneud y penderfyniadau ar fuddsoddi [ac mewn llawer o achosion, yn dechrau ar y gwaith] fydd yn sicrhau cadernid ein hasedau yn y cyfnod hir.

Yn awr, ar ôl asesiad cychwynnol Ofwat, rydym yn falch o gyflwyno'n cynllun busnes diwygiedig. Er ein bod, yn ddealladwy, yn siomedig ar y dechrau bod Ofwat wedi teimlo bod angen craffu sylweddol ar ein cynllun cyntaf, o ystyried pethau'n bwyllog, rydym yn croesawu'r penderfyniad hwn. Mae o wedi rhoi cyfle gwych inni ... cyfle i gamu ymlaen a gweithio â chwsmeriaid, gydag Ofwat ei hun a chyda'n CCG i gaboli, i gymhennu ac i fireinio ac i wneud yn sicr bod y cynllun yn eich rhoi chi a'ch anghenion wrth ei graidd yn llwyr.

Felly, beth sy'n newydd?

Rydym wedi defnyddio adborth Ofwat i roi sylw i'r bylchau yn ein cynllun ac i wneud yn sicr ein bod yn cryfhau amddiffyniad i gwsmeriaid. Rydym hefyd wedi gweithio'n agos â'r CCG, sydd wedi'n herio, ein profi ac wedi gofyn cwestiynau anodd iawn bob cam o'r daith er mwyn ein helpu i ddarparu cynllun sy'n unol â'ch

dymuniadau chi, ein cwsmeriaid. Yn ychwanegol, rydym wedi archwilio cynlluniau busnes yr [16] cwmni dŵr arall, wedi dysgu oddi wrth arferion da ac wedi archwilio sut y gallwn gwneud rhagor i fod mewn safle sy'n arwain yn y sector.

Rydym yn awr wedi rhoi gwedd gliriach ar faint yn union y bydd ein bil cyfunol yn cynyddu erbyn 2025. Bydd hyn yn 1.9%, neu'n [x%], pan fo chwyddiant yn cael ei ystyried. Fel y crybwyllwyd, rydym wedi cynnal hyd yn oed fwy o weithgareddau ymgysylltu â chwsmeriaid yn Wrecsam ac ym Mhowys, fel ei gilydd - ac rydym bellach wedi cysylltu ag oddeutu un o bob 20 o gwsmeriaid i gael eich barn. Dangosodd yr ymchwil hwn fod 73% o gwsmeriaid yn ystyried bod proffiliau'n biliau diwygiedig yn dderbyniol a bod 70% yn eu hystyried yn fforddiadwy. Ar yr un pryd, mae 83% o blaid £3.50 y flwyddyn o groes-gymhorthdal i helpu'r rheiny sy'n ei chael hi'n anodd talu'u biliau. Mae gan ein rhanbarth gyfran uchel o gwsmeriaid sy'n ariannol ddiymgeledd, ac er bod £3.50 yn gymharol isel o'i gymharu â chwmnïau dŵr eraill, mae'n adlewyrchu realitioedd cyllidau aelwydydd yn ein hardal ac mae hefyd yn gynnydd sylweddol o'r cymhorthdal [50 ceiniog y flwyddyn] sy'n weithredol ar hyn o bryd.

Ymysg y newidiadau allweddol eraill a gynhwysir yn y cynllun y mae Mentrau Cyflawni Canlyniadau (ODIs) diwygiedig, y peirianwaith drwy'r hyn y cawn ein gwobrwyo'n ariannol am berfformio'n well neu'n cosbi am fethu â pherfformio'n ddigon da.

Gwahaniaeth pwysig arall gyda'r cynllun newydd hwn yw ein bod wedi herio'n hunain i fod yn fwy uchelgeisiol. Er enghraifft, rydym wedi ail-wneud ein cyfrifiadau yn ymwneud â thoriadau ar gyflenwadau ac fe wnaethom greu targed llawer mwy ymestynnol. Ac rydym wedi cynyddu'n hamcangyfrif o nifer y bobl sydd ar y Gofrestr Gwasanaethau â Blaenoriaeth. Cynigiodd ein cynllun cychwynnol oddeutu 2,000% o welliant, a oedd ar y pryd yn ymddangos yn hynod ymestynnol. Fodd bynnag, nid oeddem wedi sylweddoli cymaint yn fwy roedd cwmnïau dŵr eraill yn ei wneud – ac roedd arnom eisiau gwneud yn sicr ein bod ninnau'n gwneud lawn cymaint drosoch chithau, hefyd. Yn ychwanegol, rydym wedi gwneud gwelliannau sylweddol i gyfanswm ac ansawdd y data rydym yn ei ddefnyddio i ategu cyfrifiadau ODI.

Rydym hefyd wedi cymryd y cyfle i wneud mwy o waith i ddeall y ffordd orau y gallwn eich hysbysu am yr hyn rydym yn ei wneud, pa bryd, pam a pha gynnydd rydym wedi'i wneud – fel y gallwch chi'n gwneud ni'n atebol os methwn neu ddim ond i gymryd mwy o ran os oes gennych ddiddordeb yn y gwaith rydym yn ei wneud yn eich cymunedau.

A beth sydd wedi aros yr un fath?

Er bod yna yn ddi-os rai o bethau negyddol yn asesiad cychwynnol Ofwat – ac fe gredwn ein bod yn awr wedi goresgyn y rhain – mae'n bwysig peidio â diystyru'r pethau cadarnhaol niferus y gwnaeth Ofwat eu nodi. Ac mae ein cynllun newydd yn parhau i ymgorffori'r elfennau hyn.

Dangoswyd fod ein perfformiad ar effeithlonrwydd cost, er enghraifft, yn arwain yn y sector. Mae cyfanswm ein gwariant arfaethedig am y cyfnod 2020-25 3% yn fwy effeithlon na disgwyliadau Ofwat. Fel y nododd Ofwat, fe ddaw hyn â budd sylweddol i chi drwy helpu i sicrhau bod biliau'n parhau'n fforddiadwy – ac rydym wrth ein bodd y byddwch yn parhau i fwynhau'r biliau isaf yng Nghymru.

Rydym wedi cynnal ein hymrwymiad cryf ar yr amgylchedd fydd yn ein gweld yn darparu'r rhaglen amgylcheddol fwyaf ers 20 mlynedd. Mae hyn yn cynnwys buddsoddi £2.5 miliwn i wella 46 cilometr o afonydd a bron i £2 filiwn i wella bioamrywiaeth a llesiant. Rydym hefyd yn falch o gadarnhau ein bod wedi cynnal ein hymrwymiad i raglen helaeth o wytnwch asedau, yn neilltuol yn ymwneud ag argaeau a chronfeydd dŵr wedi'i drin fydd yn cael ei hategu gan £19 miliwn o fuddsoddiad. Ac mae ein hymgyrch i ddarparu gwell gwasanaethau dŵr a dŵr gwastraff yn parhau'n gadarn ar waith: er enghraifft, rydym yn targedu 15% o ostyngiad mewn gollyngiadau erbyn 2025, gan sicrhau bod eich dŵr yn dda i'w yfed, ei fod bob amser ar gael pan fydd arnoch ei angen ac ein bod yn cael gwared â gwastraff yn ddiogel bob diwrnod.

Yn ychwanegol, rydym yn parhau i gefnogi uchelgais Llywodraeth Cymru dros y cyfnod hir o Gymru ddi-blwm. Dros y pum mlynedd nesaf, fe wnawn ddiogelu tua 230 o gartrefi ac ysgolion drwy newid eu pibelli plwm.

Ond yn tanategu'r holl ymrwymiadau pwysig a heriol hyn y mae un ffactor yn rhagor fydd yn aros yr un fath – y gwaith caled, yr ymrwymiad a'r agwedd o ganolbwyntio ar gwsmeriaid sydd gan ein pobl. Efallai bod yr enw Hafren Dyfrdwy yn newydd, ond rydym yn ddysgwyr cyflym. Ac mae llawer o'n tîm wedi bod yn gweithio yn y rhanbarth hwn ers blynyddoedd lawer – ers sawl cenhedlaeth, mewn rhai achosion – ac maent yn dod â phrofiad a gwybodaeth sylweddol iawn i'n tîm. Gyda'n gilydd, fe gredwn ein bod eisoes ar y llwybr i roi'r gwasanaethau fforddiadwy, o ansawdd uchel ichi rydych yn eu haeddu.

Ein cynllun newydd: wedi'i ailystyried, ei ddiwygio a'i wneud yn barod i roi'r gwasanaeth gorau posibl i chi

I gwmni oedd ond yn chwe mis oed, roedd ein cynllun gwreiddiol yn fan cychwyn da. Yn awr, ar ôl derbyn rhagor o fewnbwn gennych chi, adborth gwerthfawr ac i'w groesawu'n fawr gan Ofwat, a heriau parhaus oddi wrth yr CCG, fe gredwn fod ein cynllun wedi'i wella'n anfesuradwy.

Mae'n gynllun sy'n cael cefnogaeth lwyr ein Bwrdd, sydd wedi bod yn gysylltiedig â'i fanylion yn ogystal â gyda'i brif ymrwymiadau, yn cynnwys gallu elwa o sicrwydd arbenigol ar faterion megis rheoleiddio economaidd, cyllidadwyedd a gwytnwch. Fe wnaeth aelodau'r Bwrdd ymweld yn bersonol â chronfa ddal a chadw er mwyn deall yr heriau'n llwyr. Ac fe wnaethant hefyd fynychu amryw o sesiynau ymgysylltu â chwsmeriaid, lle roeddynt yn gallu dysgu am eich pryderon a'ch anghenion ynglŷn ag ystod enfawr o faterion - yn amrywio o'n buddsoddiad mewn gwelliannau amgylcheddol i dderbynioldeb ein biliau hirdymor.

Y canlyniad yw cynllun sy'n fwy cynhwysfawr, yn fwy ymestynnol ac yn gadarnach - cynllun y gallwn ni i gyd fod yn falch ohono ac a fydd yn rhoi'r gwasanaethau dŵr a dŵr gwastraff gorau posibl am y pris gorau posibl i bobl Gogledd a Chanolbarth Cymru.

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 made a statement of assurance to accompany the business plan submission in September, since then we have continued to engage with the development of our plan. We have reviewed the outcome of Ofwat's initial assessment of business plans (IAP) and applied the same risk based three lines of assurance approach to that of the original submission. We are therefore satisfied that we can reconfirm our initial Board statement of assurance and further we have reflected below the additional assurance work undertaken, and our confidence in this, as part of the redevelopment of our plan.

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.

Since our original submission we have continued to engage with the business to further enhance our understanding of certain elements of the plan, such as the significance of reservoir safety in the overall risk profile of the company. We consider this an important issue and have discussed this at three separate Board meetings including a site visit to our reservoir at Nant-y-Frith, review of our Company risk at the Board strategy day in January and a review of the annual Reservoir Inspection Report at our Board meeting in March.

"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)

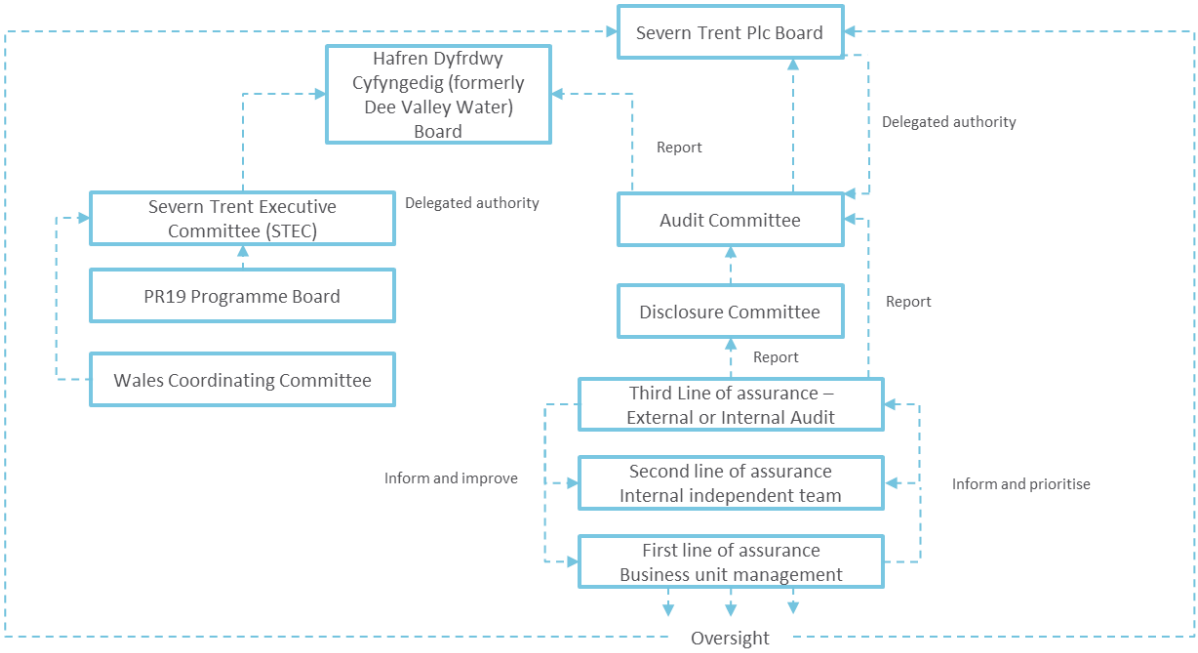
We worked constructively to develop our plan with our Customer Challenge Group who have provided extensive challenge to ensure we've taken account of our customer views.

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

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 framework[1] which is summarised in the diagram below:



We approved our PR19 plan assurance framework - built from the Ofwat methodology building blocks – in July 2017 and asked our Audit Committee to oversee its rigorous implementation over the last year or so, including to review and approve amendments following publication of Ofwat's final methodology in December 2017. We determined the areas of greatest risk by using a number of factors including the materiality of operational, financial and customer impact. The framework provides comprehensive coverage from both bottom-up and top-down analysis, and for areas that were assessed as medium or high risk, we appointed independent third line assurance providers to validate our proposals and associated data, including the data tables. Among others, this included comprehensive challenge and support from Black & Veatch, a global leader in engineering, procurement and construction services.

Our framework was managed by our internal Strategy and Regulation team. Updates were scrutinised by our Audit and Disclosure Committees, prior to us reviewing the findings at our Board, in line with our established governance framework. Further details of how our assurance approach was developed and will continue to develop and adapt to meet future needs can be found in chapter 10 'Securing Trust, Confidence and Assurance'.

"As a Board we recognised that we needed to continue to develop the assurance and governance framework we implemented over a year ago to provide confidence that our plan will deliver the high quality our customers expect. So we approved and monitored the delivery of a comprehensive assurance programme. Having our independent external assurers and our Internal Audit team report to us regularly, and in support of our early submissions, has been greatly reassuring as to the plan's high quality" (Andrew Duff).

As a Board we want to deliver the best outcome for our customers. We consider our performance commitments to be a critical part of this and will ensure transparency and confidence in our data by remaining fully engaged in monitoring our performance and providing challenge. We will continue to apply our established governance to monitor performance commitments 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. Our governance includes the reporting of our wastewater performance commitments following the establishment of Hafren Dyfrdwy and the inclusion of a wastewater licence.

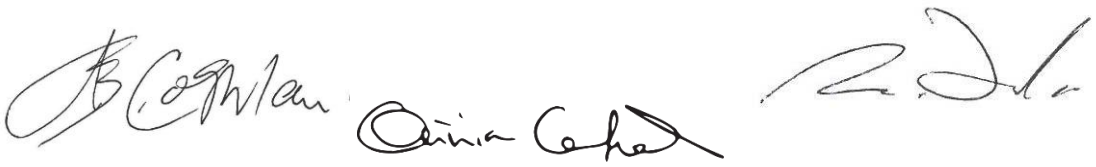
Having approved the assurance framework, reviewed the assurance findings and management's response, and considered the Customer Challenge Group (CCG) challenges, we have collectively satisfied ourselves that the assurance undertaken demonstrates that our business plan:

- Has been informed by customer engagement and by feedback from the CCG about the quality of that customer engagement and how this has been incorporated into our plan.
- Is affordable for our customers, including in the long term and including appropriate assistance for those struggling, or at risk of struggling, to pay.
- Can deliver our outcomes, performance commitments and outcome delivery incentives (ODIs) and we will continue to monitor delivery of them through our well established governance approach to ensure that we meet our relevant statutory and licence obligations.
- 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.

We confirm that we have completed all of the IAP actions in accordance with Ofwat requirements and appropriate assurance has been undertaken to ensure that the data provided in the resubmission is consistent and accurate.

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

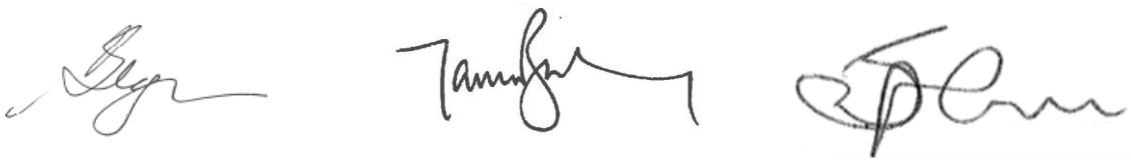
Non-Executive Chairman

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

Response to the IAP

1.0 Overall response to the IAP

1.1 Overview

We are fully committed to responding positively, learning from the feedback and best practice from across the sector and beyond. This section of our revised plan explains how we have approached the revised submission and the steps we have taken to ensure that the changes we have made to our September submission remain driven by – and for – our customers.

In Ofwat's assessment it judged that we are the most efficient company in the sector and that our investment plan was in the main efficient and in the interest of customers. There were however a number of challenges, the most fundamental relating to outcomes and in particular the quality of the evidence from customers to support our proposed package of outcome delivery incentives (ODIs).

To address this feedback we have embarked on two significant pieces of additional customer research; quantitative and qualitative customer engagement to better understand our customers' views on incentive design.

We also had challenges on our approach to long term bill profiles and how we used the financial levers. We therefore undertook additional research to understand customers' views on a fair balance of charges over time and specifically long term bill profiles.

Finally we also note that other challenges either required additional evidence or better utilisation of existing material. To ensure that our response to all these challenges is robust and grounded in delivering the right outcomes for customers we have ensured:

1. Extensive and open engagement with our Customer Challenge Group (CCG) following the IAP; and
2. Regular discussion and review by our Board (see Section 10).

We also recognised that to deliver the best outcome for our customers it would be critical to get early challenge and provide Ofwat with the right levels of assurance. This is because assurance helps ensure:

- that our commitments, incentives, totex and other elements of the revenue requirement deliver the best outcome for our customers; and
- stakeholders are provided with reliable, accurate and complete information.

For this reason we chose to go beyond the IAP requirements and obtained additional assurance across a number of areas to first ensure and second demonstrate that the information we are providing is of a high quality, reflects customer views and is consistent with the PR19 methodology. In undertaking this assurance we have utilised specialists in their field so that we get the best possible feedback. The areas subject to additional assurance include:

- Quality of customer research – by Mike Stevens, Managing Director of What Next Strategy & Planning (recommended by Research Chair of Severn Trent CCG)
- Use of customer research and triangulation – Frontier Economics
- Designing ODIs – Frontier Economics
- Interpretation of social tariff and acceptability research – Frontier Economics
- Resilience – Arup
- Financial modelling and financeability – Jacobs
- Tax – PWC
- Past performance – Black and Veatch
- Data tables – Black and Veatch and our Internal Audit team (tick and tie for data that hasn't changed)

The findings from all of these approaches are set out in the relevant sections.

1.1.1 Engagement with our customer challenge group

Engagement with our CCG has been key in ensuring that all changes are based on sound customer engagement and reflect the legislative and policy framework that is specific and often unique to our region of Wales. Responding to the challenges within an eight-week window has required massive commitment from our CCG, which has made our revised submission better. A full log of the specific challenges and our response to these challenges is set out in appendix 2.12 and this additional period of engagement with the CCG now means that there are no unresolved challenges to our plan. During this period we have held two key meetings, held conference calls and exchanged emails to ensure we are clearly setting out the actions we have taken and then subsequent decisions to ensure the CCG has every opportunity to make robust challenges.

Date	Issues discussed
12 February (meeting)	• IAP Ofwat Feedback • Our proposed approach to responding to feedback • Our proposed approach to seeking expert assurance to review the validity of our original submission • Share and discuss the results of the additional research we had done on acceptability testing and through our 6 monthly customer survey
18 February (call)	• Discuss the changes we had made to the ODI choices research to address their feedback
12 March (meeting)	• Share the initial findings from the quantitative ODI research • To share the approach to qualitative ODI research • To share the findings from the long term bill research • To set out and seek challenge on proposed changes to PCs

We have also sought feedback through bilateral meetings with CCWater and Welsh Government.

Board engagement and Assurance is set out in Chapter 10 of this revised plan.

1.2 Structure of our response

Our response to the IAP is structured around the nine IAP tests, consistent with how the 1 April actions have been framed. In each chapter we broadly follow the same structure, which is:

- Recap of the IAP challenge
- Summary of the approach we have taken to address the challenge/ action
- Our response and key supporting evidence to justify the response
- Sign posting to the detailed appendices to evidence our response

We note that each of the appendices uses the same labelling as the chapters, so the supporting evidence for Chapter 4 Outcomes will be found in Appendices starting with a 4.

The data tables have been updated and a change control log sets out all the changes we have made.

Chapter 2
Customer engagement

2.0 Customer engagement

2.1 Overview

In the research that shaped our original PR19 plan, we consulted with 3,831 customers (or 1 in 20 in our region). Since submitting our plan in September we have increased the number of customers we have engaged with by 12% to 4,309. In contrast with customer engagement conducted by some other water companies, all of ours has taken the form of high quality quantitative and qualitative research, completed either face to face or on the telephone.

In the initial assessment of our plan (IAP), Ofwat found our customer engagement to have fallen short of high quality with insufficient evidence in the following areas:

- insufficient evidence of the use of a range of research techniques, in particular for use in setting incentives;
- insufficient evidence of systematic and on-going engagement insufficient information about how that insight is used to inform the plan;
- insufficient engagement with vulnerable customers (aside from those struggling to pay) or that the interests of these groups shaped the plan;
- insufficient evidence in the four areas of action set out in Ofwat's *Tapped In* report, particularly the Action theme;
- unresolved CCG concerns about the acceptability research not being repeated in both of the discrete geographic regions (including concerns about the presentation of bill profiles); and
- insufficient engagement with future bill payers.

Whilst the IAP did not indicate any actions across our programme of customer engagement (see page 2 of the IAP summary table) we think it's important to address the points raised in the feedback. This is because our plan has been designed for customers in North Wales and Mid Wales and it is important that we provide robust evidence and assurance that this has been the case. Please note that throughout this chapter, we use Wrexham as shorthand for North Wales and Powys a shorthand for Mid Wales.

We also agree there are three key gaps in our original PR19 customer research; on long term bill profiles and on a fair balance of charges; research on incentive design and rates; and the incomplete status of our acceptability research at the time of submitting the plan. We have worked hard to address these gaps. In the other areas of insight, we failed to articulate sufficiently the work we had done, and so in these areas we have provided clearer description and more comprehensive evidence to demonstrate the engagement we have completed.

To help address some of the concerns raised about insufficient evidence, we have provided some of our primary customer research reports in full, please see Appendix 2. These are:

- Acceptability research wave 1 (Powys and Wrexham)
- Acceptability research wave 2 (Powys)
- **Acceptability research wave 3 (Wrexham)**
- Asset health, resilience and intergenerational fairness
- Assurance statement research
- Customer needs
- **Fair balance of charges**
- Helping customers who struggle

- **ODI Choices (deliberative workshops)**
- **ODI Choices (quantitative)**
- PCs and ODIs
- Social tariff cross subsidy
- Willingness to pay

Bold type above indicates new projects (which we have completed since September). The other reports listed above are referenced in this chapter.

Since the IAP we have also commissioned Mike Stevens, Managing Director of What Next Strategy & Planning, a high profile independent market researcher, to conduct a robust peer review of three of the key customer research projects which informed our original plan and two of our new projects. Mike was recommended to us by Nick Baker, Chair of the Severn Trent Water Forum's market research sub-group, and Board member of the Market Research Society. The purpose of this peer review is to give Ofwat assurance that our research is of a high quality and has been conducted in line with market research best practice.

2.2 The range and robustness of research techniques

2.2.1 Range of techniques

A range of qualitative and quantitative research techniques was used in the customer research which informed our original plan. Our new research also comprised a range of qualitative and quantitative methodologies: deliberative workshops, a face to face CAPI survey and telephone interviews.

Unfortunately in neither the original plan nor the new research have we been able to conduct *any* of our research using online surveys, which is a staple methodology in the market research industry. This is because our region is so small that there are not enough of our customers on online research panels to make this feasible.

The Consumer Council for Water also faces this issue when conducting research amongst our customers and those of the other very small water companies. When they test acceptability of Ofwat's Draft Determination in our region they have told us that they will also have to conduct the survey face to face, rather than online.

"The [customer research] supplier we selected for acceptability testing of Ofwat's Draft Determinations is doing all 500 of their surveys for Hafren Dyfrdwy face-to-face. Although a couple of other suppliers said they could deliver a small online sample, the experience of our supplier is that the numbers achievable are 'minimal' in this region. So we chose to plan for the certainty of face-to-face interviews, knowing what we are aiming for in the short timescales available to us, rather than having the uncertainty of an online sample and having to boost and balance this up with face to face interviews later. It's fair to say it isn't possible to get a large online sample in Hafren Dyfrdwy region, and what would be achieved wouldn't be representative because of the self-selecting nature of respondents."

Liz Cotton
Research & Insight Manager
Consumer Council for Water

In the tables below we summarise our research projects against different methodologies to show the broad spectrum of approaches used to inform our plan.

Techniques used in our original plan

	Qualitative research						Quantitative research			
	In-home depths	Telephone depths	Focus groups	Deliberative workshops	Co-creation workshops	Online community	Online survey	Telephone survey	Face to face CAPI survey	Data analysis
Customer needs										
Customer priorities										
Acquisition of Dee Valley Water (NAV research)										
Customer tracker survey										
Helping customers who struggle										
Social tariff cross subsidy										
Insight from customer facing employees										
Willingness to pay										
Asset health and resilience										
PCs and ODIs										
Acceptability wave 1 (Powys and Wrexham)										
Acceptability Powys (wave 2)										
Water trading										
Customer complaint data										
PR19 stakeholder research										

Techniques used in our new research

	Qualitative research						Quantitative research			
	In-home depths	Telephone depths	Focus groups	Deliberative workshops	Co-creation workshops	Online community	Online survey	Telephone survey	Face to face CAPI survey	Data analysis
Acceptability Wrexham (wave 3)										
ODI Choices quant										
ODI Choices qual										
Fair balance of charges										

We now have three different sources of customer insight on ODIs: our original PCs and ODIs project which comprised both qualitative and quantitative research plus our new quantitative and qualitative ODI Choices projects. These have been used in triangulation - please see Chapter 4 Delivering outcomes for customers, where we set out exactly how we have applied the findings from the research.

ODI Choices deliberative workshop, Newtown

2.2.2 Robustness of techniques

We commissioned Mike Stevens, Managing Director of What Next Strategy & Planning, a high profile independent market researcher, to conduct a robust peer review of three of the customer research projects which informed our original plan and two of our new projects.

The three original projects peer reviewed by Mike Stevens were Willingness to Pay, Social Tariff Cross Subsidy research and Acceptability research. The two new projects which Mike reviewed were: Fair Balance of Charges and ODI Choices (quantitative). Mike conducted an in depth review of each project. He had sight of all key project documents, including reports, questionnaires, stimulus materials, discussion guides and so on.

In his peer review, Mike Stevens concludes that:

"The company has satisfactorily addressed all of Ofwat's challenges regarding the above shortcomings in its original PR19 plan. In summary this is because:

- Acceptability research had not been conducted in both its regions prior to submission of its original plan. This has now been completed.
- The two new projects deliver the missing customer insight which Ofwat requires. A wide variety of research techniques has been deployed, including deliberative workshops, large scale surveys and sophisticated price modelling.
- All five projects have been well designed and carried out to a high standard and in line with market research best practice.
- Sample sizes on surveys have been very robust, particularly considering the relatively small population served by Hafren Dyfrdwy, and the fact that online research is not feasible in this part of Wales. All projects have included a suitable sample of customers from both Wrexham and Powys.
- The company has conducted research with customers in vulnerable circumstances, including the health and wellbeing vulnerable; this is now documented in the research reports.
- Ofwat's Tapped In principles have been adopted where appropriate"

Despite the short timeframe within which we have had to complete our three new research projects, we have taken care to listen and respond to the views of our customer challenge group regarding research design. At CCG meetings held on 12 February and 12 March 2019, as well as in between and afterwards, we have shared our project outlines, and invited challenges and suggestions regarding the specific questions asked of customers and regarding the stimulus materials we used. Many edits were suggested by CCG members, and most of these were incorporated in our final research materials. A full record of the challenges and suggestions made by the CCG, and our response to each one, is included in Chapter 2.12. We have also shared with the CCG the findings of all of our new research projects.

2.3 Systematic and on-going customer research and engagement

We use multiple channels to gather insight from customers. Our voice of the customer tool, Pipe Up, is particularly valuable; every customer who has had dealings with us is sent a text message, asking for a satisfaction rating (0-5), plus a verbatim comment. We regularly analyse these data, and further, we call back every customer who scored us a 3 or below, to see how better we could meet their needs.

We also run a twice yearly customer tracker survey, to quantify brand awareness and monitor KPIs such as satisfaction, affordability and value for money. We also use it to ascertain awareness of our services and to gather insight on other hot topics. Results from the most recent wave of this survey showed that some customers in North Wales were still unaware about the change from Dee Valley Water to Hafren Dyfrdwy, and that we needed to adopt more localised engagement to help get the message across. We are in the process of considering how best to respond to this insight. One immediate action has been to make greater use of Dolly, our community engagement bus around the main billing period. This has enabled customers to speak to us face to face and reduces the need to rely on written communications, which we know not everyone reads.

This survey also showed that awareness of our dedicated non-household customer team and services was low, so now we are investigating ways to remedy this using existing business networks.

On an ongoing basis we also analyse the root cause of complaints we receive. We have done the same for poor SIM scores, and will continue to do this with CMeX.

Alongside these formal pieces of engagement, we undertake *bespoke* customer research on an ad hoc basis to help shape business decisions. These can often arise in response to changes in our operating environment, for example:

- When preparing our licence variation we undertook extensive engagement with potentially affected customers to understand their views about creating a Welsh company aligned to national boundaries.
- We undertook extensive engagement with customers to inform and develop our new brand in Wales.
- Prior to writing our Assurance statement, we conducted qualitative workshops in Wrexham and Welshpool, exploring customers' views on the things we could do, including the types of assurance that would engender most trust in us. We also explored what customers want to see in our annual report, as well as their views on renationalisation and executive pay.
- Our insights and analytics team has conducted two small surveys in-house about bursts on private pipes (BOPPs), both amongst customers in Powys. One was conducted amongst a general sample of this customer base, about their awareness of BOPP liability. The second survey was sent to a sample of customers who had experienced a BOPP during March 2017 – March 2018. This survey asked about how the leak was found, who fixed it and whether they would like more information about liability for BOPPs.
- The insights and analytics team has also done some deep dive analysis across our lowest scoring SIM areas; they have created dashboards for key job types such as leakage, water quality and stop tap traces.

Our other methods of engaging with customers include proactive and reactive Facebook and Twitter posts and regular 'pop ups' in the community. Our staff visit community groups.

This ongoing engagement is important because it helps reveal insight that drives operational decisions. For example:

- We understood from customers that they placed a high value on the customer portal (the 'hatch') at our Wrexham office (we believe Hafren Dyfrdwy is the only company to offer this service). We therefore have chosen to retain the portal to provide customers with another channel to engage and pay their bills.
- We set up our "track my job" app in response to feedback from across our "Pipe-up" tool which revealed customers wanted easy access and up-to-date information.

2.4 Engagement with vulnerable customers

In much of the research which informed our original plan, we included a sample of customers who were in financially vulnerable circumstances and/or in health and wellbeing vulnerable circumstances. However, we failed to articulate this explicitly in our original plan. Several of our key projects included a robust sample of these key customer groups, and the detail is now provided in our full research reports which can be found in Appendix 2.

- Customer needs (qualitative research) – 5 out of 50 were financially vulnerable, 10 out of 50 were health and wellbeing vulnerable;
- Willingness to pay – 108 out of 505 were low income, 140 out of 505 were health and wellbeing vulnerable;
- Acceptability wave 1 – 75 out of 380 were low income, 77 out of 380 were health and wellbeing vulnerable;
- Acceptability wave 2 Powys – 38 out of 200 were low income, 54 out of 200 were health and wellbeing vulnerable;
- Acceptability wave 3 Wrexham – 27 out of 216 were low income, 48 out of 216 were health and wellbeing vulnerable; and
- Helping customers who struggle – all 203 customers consulted were in water debt or were financially vulnerable.

The Helping customers who struggle research which informed our original plan helped us to identify four key customer groups for whom we need to provide support in different ways, due to their different circumstances. We call these groups 'Longstanding', 'Sudden and Severe', 'Borderline' and 'Struggles with finances'. We are now working to ensure we help all four of these groups with both in-year bills as well as arrears.

2.4.1 We continue to find new ways to make people aware of what help we can provide

We recognise that we have much work to do to catch up with the level of support that other companies offer their customers, but we have ambitious plans to improve this.

In our original business plan submission we committed to increasing the number of customers on the PSR by a factor of four, albeit from a low starting point of around 350 customers (in 2017/18), to 1500 at the end of AMP6. In the IAP, Ofwat has challenged us to go further and sign up 7% of our household customers to our PSR – see Chapter 4, Delivering Outcomes for Customers. That means we need to identify around 6,500 customers who need our support and make them aware of the support we can give them. To do this, we have been working hard to arrange events across the region so that we can promote the schemes and services we have on offer to our HD customers including the Priority Services Register. Some of the events we've attended include:

- Children's first – Parent advice session – Hafren School, Newtown;
- Community Café drop-in – Newtown;
- Avow carers Group drop-in Wrexham;
- Wellbeing Advice day – Penley;
- Castle ventures drop-in – Powys; and
- Forum and drop-in – Bradley Village Hall Wrexham.

Also, as part of our recent main billing activity, we recently went out on the road to speak face to face with our customers on our community engagement bus, 'Dolly'. We are looking to do this more often as the reaction from customers was very positive.

We are also working with partners across the region to hold some shared events. We are speaking with Scottish Power Energy Network and The Open Newtown Project to arrange these over the coming months. In addition, we are setting up agreements with partners to help us share information about our schemes and services including:

- Warm Wales – one stop application for schemes and PSR;
- Fire and Rescue service – Signposting to PSR;
- North Wales Energy Advice Centre – Signposting to PSR; and
- Avow hospital facilitators – Promoting PSR through posters in local hospitals and doctors surgeries.

We are also looking at a data share with Scottish Power Energy Networks from 1st April and using their website to promote our schemes and services.

Our Brand and Marketing team have developed a strategy for promoting the PSR to our customers and bring to life the benefits of being on the register. We have been sharing this on our website and on social media, for example: https://www.hdcymru.co.uk/my-account/help-with-account/how-the-priority-services-register-can-help-you/. We are developing posters to promote the PSR, which will be displayed in GP surgeries and hospitals. We have also provided organisations such as the Fire Service with cards promoting our PSR, which they can give out to our customers.

We use all channels as part of overall approach to helping customers in vulnerable circumstances, see Chapter 3 Affordability and Vulnerability for more details.

2.5 Tapped In

The creation of Hafren Dyfrdwy has given us the opportunity to build on existing strong relationships, and foster new ways of engaging with our customers. We have set out below how our approach aligns to the four elements of customer participation referred to as the FACE model – Futures, Action, Community and Experience in Ofwat's March 2017 publication *Tapped In*. Our original plan was not explicit about these.

Futures: Customer participation to improve the current and future sustainability of water in the lives of customers

The timing of the creation of Hafren Dyfrdwy at a key stage of the price has given us the unique opportunity to engage with our customers about the future of their water company, from its very inception. Our customers have helped to co-create and design:

- the name of their company – Hafren Dyfrdwy – and the visual presence we have in their communities;
- our approach to asset health, resilience and intergenerational fairness – including co-creation sessions with a mix of current and future customers;
- our social tariff – at this co-creation session we also developed a text message reminding customers to pay an overdue bill, and we developed our payment matching scheme;
- our approach to issues that are important both to customers and the wider policy context in Wales, including co-creation sessions on lead pipes and education; and
- how we can achieve a fair balance of charges for today's customers and future generations, with deliberative sessions held for this updated plan.

Action: Customer behaviour change actions, including saving water and helping to reduce sewer blockages

We'd like our customers to be satisfied, active and engaged participants in their service. We use a range of tailored approaches to involve our customers and encourage them to get more out of the service they pay for and the infrastructure they invest in:

- social media, press and PR campaigns to promote water efficiency and responsible sewer use across our customer base;
- water efficiency checks and audits, including bespoke assessments for high consumption customers;
- better use of bad debt data to distinguish between our customers who can't pay and won't to tailor our contact with them;
- promotion of our expanded support for financially vulnerable customers including press, PR and using our community vehicle to meet customers in person and discuss their needs;
- active membership of the River Dee consultative committee, who work with farmers towards better catchment management; and
- launching the Refill campaign in our area of Wales in partnership with the Welsh Government.

Community: Community ownership of particular aspects of water as an essential resource

With 106,000 customers, Hafren Dyfrdwy has inherited a strong community legacy from Dee Valley Water. This is something we want to retain and build on with initiatives including:

- our Community Champions volunteering programme, where by employees can volunteer two paid days a year to local causes;
- involving local communities in our plans at Clywedog to provide opportunities for local businesses;
- working with the local community at Lake Vyrnwy to shape our biodiversity plans and help to attract Heritage Lottery Funding, developing a shared sense of ownership and involvement in delivery; and
- working with community initiative Open Newtown to develop sustainable drainage schemes as part of their development work.

Experience: Increasing customer control of water in the home or of the customer service experience

We're developing multiple channels that give our customers greater control of their service, for example:

- an enhanced Web Self Service where customers can manage their own account online anything from moving house, setting up a payment plan to applying for a water meter;
- 'Report a Problem' is available on line where customers can report issues to us without the need for calling;
- 'Track my Job' will keep our customers updated about any jobs they have raised so they don't need to contact us for updates as it's all sent to them proactively; and
- 24/7 webchat so customers can talk to us any time that suits them rather than be constrained to opening hours.

And we've retained those elements of service that seem simple in a digital world, but can make all the difference for our customers. For example, we know that some really value having the opportunity to come into our offices, speak to one of us in person or pay their bill directly, so we've kept open the 'hatch' at our Wrexham office, enabling our local customers can pop in during office hours.

2.6 Engagement on the acceptability of our plan

In our Acceptability research (waves 2 and 3), 81% of Powys customers interviewed and 70% of Wrexham customers interviewed find our plan acceptable (informed acceptability, without inflation). As a weighted average across both regions (because we have many more customers in Wrexham than Powys), the acceptability result is 73%. The full research reports can be found in Appendix 2.

In their report to Ofwat on our customer research and engagement process for PR19, our customer challenge group (CCG) notes one concern about our Acceptability research:

> *"The CCG urges the company to ensure that the repeated acceptability testing for the revised bill profiles is extended to BOTH Powys and Wrexham customers and to examine any differences carefully. As before, the testing should continue to be both quantitative and to include bill profiles with and without inflation."*

Now that we have completed our Acceptability research in Wrexham (wave 3), as well as in Powys (wave 2), we are confident that we have demonstrated a good level of acceptability for our plan in *both* of our geographical regions. At the most recent CCG meeting, held on 12 March 2019, we presented to the group the methodology and results of our this final tranche of the project; they were satisfied that this research addresses their earlier concern, as demonstrated in this quote from Clare Evans, the chair of the CCG:

> *The CCG welcomed Hafren Dyfrdwy's extension of their 'Acceptability Research' to re-test the company's revised bill profiles following the submission of its initial business plan to Ofwat to include the previous Dee Valley Water customers in Wrexham. The company sought further contribution and assurance from the CCG in relation to the structure and format of the research prior to the re-test and its comments were largely taken on board by the company. The CCG are satisfied with the company's process and practice when undertaking this research in both Powys and Wrexham.*
>
> *The CCG was interested to note some considerable differences in the responses to the plan between the two distinct areas that make up Hafren Dyfrdwy, that of Powys and Wrexham.*
>
> *In Wrexham the overall acceptability of the proposed plan in nominal terms was disappointingly low at 51%. Nominal affordability was also disappointingly low at 51%. The CCG were particularly concerned with the very low figures in Wrexham for acceptability and affordability for the Just About Managing cohort of customers (JAMS). The CCG welcomed a further deep dive undertaken by the company of these figures to gain a better understanding of the impact of the plan on this group of customers.*

Waves 2 and 3 of our Acceptability research were peer reviewed by Mike Stevens. Mike says that this was "*a well designed survey that reflects best practices for engaging customers in complex topics. The sample frame is representative across both Wrexham and Powys, and robust sub-groups of vulnerable customers are included in the analysis.*"

2.7 Engagement with future bill payers

Ofwat's initial assessment of our plan states that we conducted insufficient PR19 engagement with future bill payers. The Asset health, resilience and intergenerational fairness research project which informed our original plan included two deliberative workshops of 39 consumers; these sessions comprised a mix of both future bill payers and current bill payers.

Our new Fair balance of charges project comprised two deliberative workshops with current bill payers (at a range of ages and life stages), rather than future bill payers *per se*. However, we asked these customers for their views on two different potential bill profiles (with and without levers) up to the year 2035. This meant we

were asking these customers to *imagine themselves as future bill payers,* since many of them are likely still to be living in the Hafren Dyfrdwy region in 20 years' time.

In our new ODI Choices (quantitative) research, we also specifically sought to include the views of some future bill payers in our research; our interviewers targeted students near the Student Union building at Glyndwr University in Wrexham, where a number of CAPI interviews were achieved.

Fair balance of charges deliberative workshop, Wrexham

Chapter 3
Affordability and vulnerability

3.0 Affordability and vulnerability

We serve some of the most deprived areas of the UK. Across our regions of North Wales and Mid Wales we have worked hard to understand and respond to our customers' needs. We want to ensure that our bills are affordable for all, and that we meet the needs of customers in all types of vulnerable circumstances.

The actions raised by Ofwat in this area and our summary response are set out in the table below. Our responses typically take two forms: undertaking new research to address gaps identified; and providing further, more detailed evidence to show the rigour of our approach and the conclusions we have drawn.

This means that for some of the actions we have undertaken additional customer research after the IAP results were published. In others we have revisited existing research. In either case, given the timeframe involved we have had to move at considerable speed. We have engaged with and sought assurance from our CCG, however, we appreciate that the turn-around time for feedback has been very tight.

Therefore, we have also engaged Mike Stevens, Managing Director of What Next Strategy & Planning, who is an expert in customer insight. Mike has provided assurance that our key customer engagement, both our existing and new research, was consistent with best practice, while helping to identify potential points that we recognise warrant further explanation in our revised plan.

Overall we believe our approach of engaging experts in the field and specialist assurance means that we have delivered a robust, proportionate approach.

Action	Summary response and reference
HDD.AV.A1 Hafren Dyfrdwy should provide sufficient and convincing evidence that it has engaged with its customers on affordability and acceptability of its proposed bills and bill profiles for the 2020 to 2025 period. Hafren Dyfrdwy should demonstrate that its customers find its proposed bill and bill profiles acceptable and affordable. This should include testing its proposed bills and bill profiles for the 2020 to 2025 period with both the regions it serves. Hafren Dyfrdwy should confirm that testing has been assured by its CCG and conducted in line with social research best practice	**Complete.** We have since completed the acceptability and affordability research in both Powys and Wrexham: • Powys 81% acceptability (Sep 2018) • Wrexham 70% acceptable (Feb 2019) • Weighted average 73% acceptability Note our starting bill in 2019/20 is a little higher than assumed in our plan (reflecting 19/20 charges published in January). This means the actual change in bills is 1.9% over the AMP (i.e. there is no change to actual projected bills in AMP7, it's just the final year in AMP6). This doesn't impact the acceptability testing as we presented the absolute bills and the change. The final acceptability research in Powys and Wrexham (waves 2 and 3) has been peer reviewed. The research has also been assured by the CCG which confirms there is no outstanding action See Appendix 2.2 – *Acceptability Wave 2 Powys (slide 7);* Appendix 2.3 – *Acceptability Wave 2 Wrexham (slide 14)*
HDD.AV.A2 Hafren Dyfrdwy should provide a long-term bill profile for the 2025-30 period.	**Complete**. This is discussed in the Risk and Reward Chapter and in App4.
HDD.AV.A3 Hafren Dyfrdwy has not provided evidence to demonstrate that it has tested bills or bill profiles beyond 2025, particularly for the 2025-30 period, with customers. Hafren Dyfrdwy should undertake customer engagement on long-term bill profiles for the 2025-30 period and provide sufficient evidence to demonstrate customer support for each of the profiles tested. Hafren Dyfrdwy should confirm that testing has been assured by its CCG and conducted in line with social research best practice.	**Complete.** Following the IAP we tested long term bill profiles up to 2030 with customers in deliberative research. This was to help us understand customers' preferences about bill volatility and how we use the financeability levers. This research was carried out by Britain Thinks in both Wrexham and Powys. The design of the research and the findings were shared with the CCG and peer reviewed. **See Section 3.1.2; Risk and Reward Chapter**; ***Appendix – Balance of Charges research***

HDD.AV.A4 Hafren Dyfrdwy has not provided sufficient evidence on the level of cross-subsidy for social tariffs in its business plan. Hafren Dyfrdwy has also not provided sufficient evidence on support for this cross-subsidy across its customer base. Hafren Dyfrdwy should provide evidence on the level of cross-subsidy proposed and the support level for this cross-subsidy across its customer base.	**Complete**. We have included the primary research report in our submission that shows 83% of customers in Wrexham and 82% of customers in Powys support the cross subsidy. This subsidy is: • £3.50 in Powys for the combined bill • £1.75 in Wrexham for the water bill **See Section 3.2; *Appendix Social Tariff Research (slides 16-17)***
HDD.AV.A5 We propose to introduce a Common Performance Commitment on the Priority Services Register (PSR): Hafren Dyfrdwy should include a Performance Commitment to increase its PSR reach to at least 7% of its customer base (measured by households) by 2024/25. It should also commit to checking at least 90% of PSR data every 2 years via its Performance Commitment.	**Complete**. We have adopted the new performance commitment to (i) increase the PSR reach to 7% of our customer base by 2024/25; and (ii) check at least 90% of PSR data every 2 years. **See App 1.**

The remainder of this chapter considers in turn:

- the acceptability and affordability of the plan;
- the evidence base to support our social tariff cross subsidy; and
- supporting customers in vulnerable circumstances.

3.1 Acceptability and affordability of the plan

In this section we discuss:

- the conclusion of our acceptability testing, and the basis on which we believe it is of high quality;
- customers' views on the affordability of bills; and
- the outcome of the new, deliberative research we've undertaken to understand customers' views on the acceptability of bills in the longer term.

3.1.1 Acceptability

We have undertaken an extensive programme of acceptability testing to both understand and improve the acceptability and affordability of our plan.[1] As we conducted our research we sought to ensure that we were responsive to our customers' views and CCG challenge. This means it has been undertaken iteratively, as we have updated our bill profiles:

- Wave 1, concluded for both North Wales (Wrexham) and Mid-Wales (Powys) prior to our September plan submission:
- Wave 2, concluded for Mid-Wales prior to our September plan submission; and
- Wave 3, concluded for North Wales post submission and in time for this IAP response.

Below we update on the results of each wave, before addressing concerns raised in the IAP about the quality of the research.

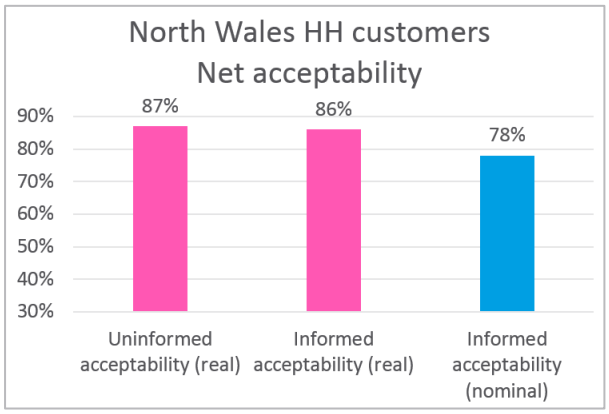
[1] Acceptability research typically takes customers on a "journey", introducing the future proposed bill in real terms (uninformed acceptability), before presenting the business plan and bill profile (informed acceptability (real terms)), and finally showing the future bill in nominal terms (informed 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.

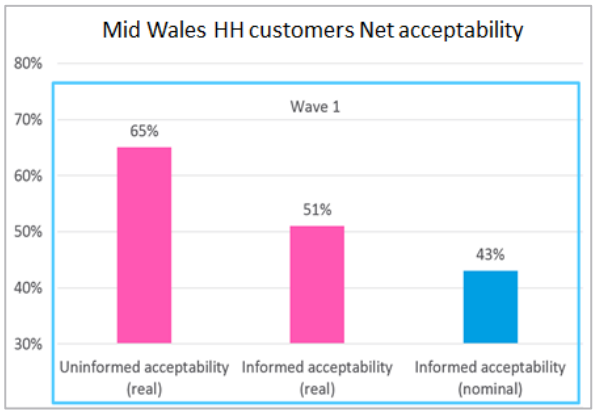
Wave 1 results

In the first round of acceptability resting (referred to as Wave 1), we engaged with 380 customers to understand if our proposed plan was acceptable and affordable. This engagement was across North Wales and Mid Wales.

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. This is the likely cause of the significant difference we initially saw in regional customers' views:

- The results in North Wales were extremely positive, arguably reflecting the fact that the bill is the lowest in the UK. Despite the modest increase in bills, we found that 86% of household customers and 85% of non-household customers, found our proposed plan acceptable, when presented with the service plan and bill in real terms (informed acceptability (real)). When presented in nominal terms (informed acceptability (nominal)), 78% of household customers and 83% of non-household customers, found our plan acceptable.
- This contrasts with customers in Mid Wales who were less likely to find the place acceptable. When asked about the bill increase alone (uninformed acceptability), 65% of household customers found 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.





Wave 2 research: Mid Wales

In response to the feedback in Powys and from our CCG and CCW Wales, we revised the bill profile in our plan. Ahead of our September plan submission we took a risk-based approach to research, and focused our acceptability testing on Powys initially as this was the area: i) with the lowest acceptability levels from Wave 1; and ii) most impacted by our revised bill profile. We retested in Powys a revised bill increase of 2.5% (combined bill). A significant majority of customers (81%) found this revised proposal acceptable.

Wave 3 research: North Wales

We did at that time, however, also commit to undertaking the same research for North Wales post-submission. This was undertaken before the results of the IAP and before our charges for 2019/20 had been set. The result was that we tested a bill increase of 3% over AMP7, which achieved 70% acceptability.

Bills proposed in this submission

In this, our revised submission the actual change in the bill is lower at 1.9%, due to a change in the AMP6 closing position. This means that for Powys, the actual change in bill is lower than the 2.5% tested. For Wrexham, the actual bill change will also be less than the 3% tested (however, the absolute average bill levels in AMP7 are unaffected).

We recognise that we could have undertaken further testing of the bill in both regions in a fourth wave to reflect this. However, we have chosen not to on the basis that:

- the increase in bills is lower than that tested in waves 1, 2 and 3;
- the outcome of waves 1, 2 and 3 suggests this should improve acceptability, not detract from it; and

- we do not believe that the size of the change from waves 2 and 3 would justify incurring costs for a fourth wave which would – all else remaining the same - increase bills by at least 0.1% given the absence of online research panels in North and Mid Wales.

On this basis, we believe the headline results from the second and third waves of acceptability testing provided clear and sufficient support for our revised plan:

- **Powys - 81% of customers found the proposal acceptable, when presented in real terms;**
- **Wrexham - 70% acceptable; and**
- **Weighted average - 73% acceptability**.

Understanding the views of different customer groups

Alongside the headline results, we also analysed whether some customer groups are less likely to find our proposals acceptable.

In both Powys and Wrexham we found that low income groups and those who defined themselves as "just about managing" (JAMs) financially in both waves of testing do have a materially different view compared to those who are not.

These results help underscore the importance of the additional activities we are undertaking to help improve the affordability of our plan. This includes a significant increase in our social tariff, but just as importantly as the increased coverage, the improved design (eligibility criteria and discount percentage) that we co-created with customers along with other initiatives such as SMS payment reminders and payment matching.

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.

Concerns about the quality of our research

We noted concerns expressed in the IAP results that our engagement appeared to be of low quality.

We recognise that at the point at which we submitted our plan, our second wave of acceptability research did not include Wrexham and therefore we did not provide complete coverage. However, the requirement for testing items in specific regions is unique to HD, as other companies are not required to undertake research in designated towns and *counties*. We believe it was important that we used the insight from the first wave to change our plan, but because we had insufficient time retest in both regions, we instead took a risk-based approach by focusing on the area where the change was most pronounced and the acceptability lowest.

We also recognise that we could have done more to make the detail of our research accessible to Ofwat (in many cases we only provided summary results rather than the full research report), but we do not believe that the underlying quality was low. This is principally because:

- The engagement on acceptability was applied consistently with CCWater's best practice and all actions were addressed.
- In terms of sample size, our acceptability waves involved just under 800 customers in total, which is approximately 1% of our entire household customer based. This means the margin for error from the results in very low and we are not aware of any other company having close to this level of accuracy.
- In the light of Ofwat's concerns, we have had the second and third waves of acceptability research peer reviewed and that confirms it is consistent with best practice:

  "The Acceptability project conducted by DJS Research is a well-designed survey that reflects best practices for engaging customers in complex topics.

  The sample frame is representative across both Wrexham and Powys, and robust sub-groups of vulnerable customers are included in the analysis."

3.1.2 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. Our latest set of tracker survey data in 17/18 shows that:

- 75% of customers explicitly state our bill is affordable; and
- only 10% of customers disagree.

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 acceptability testing has also given us further insight about the perceptions of affordability. As previously discussed, due to customers' views on the acceptability and concerns about the affordability of the plan we revised the bill profile so that it better reflected customers' preferences. In the second wave of testing, approximately two thirds of our customers find our plan affordable:

- affordability in Wrexham – 73% in real terms;
- affordability in Powys – 63% in real terms; and
- weighted average 70%.

These results underscore the importance of continually working to improve the overall affordability of our services and providing targeted support to those customers who struggle to afford their water bill. Our revised PR19 plan proposes a number of important activities to deliver this outcome, including:

- overall affordability – we have challenged our costs and proposed the sector leading cost efficiency based on the PR19 cost models, and we didn't include a small company premium to the WACC;
- targeted support:
    - by 2024/25, we are committing to increase the number of customers we help to pay their bills by over 200% from the level today (18/19).
    - we also have one of the most innovative affordability measures in the sector that is designed to focus on outcomes rather than inputs or outputs – this is our effectiveness of support PC. Through AMP7 we will be using this measure to shine a light on our approach, which will help drive improvements in AMP7. Importantly, given this is a brand new measure, we don't have a baseline or understand the driver tree for this measure. We therefore can use AMP7 to develop this knowledge to support an even stronger measure in AMP8. This is something our CCG has been very supportive of in terms of scope and target.

3.1.3 Acceptability of long term bills

We accept the challenge that we had a gap in relation to customers' views on long term bill profiles. Therefore following the IAP we commissioned Britain Thinks to undertake additional qualitative (deliberative) research with customers in Powys and Wrexham on long term bill profiles. This research was attended by a member of the HD Board and a member of the CCG.

The aim of the research was to test customers' preferences for bill profiles and the use of financial levers. In particular, we wanted to understand if our approach of a small increase in year 1 following by flat bills was appropriate in the context of customers' preferences regarding:

- Inter-generational balance. Given that we have used the levers to reduce AMP7 revenues and bills, with the consequence that the RCV is higher, and therefore bills will be higher in AMP8 than they would otherwise be.
- Bill volatility. Whether customers prefer a more gradual increase.

Fair balance of charges deliberative workshop, Newtown

In the box below we set out the basis for how we developed our long term forecast.

Box 1 – Developing bill profile for AMP7 and beyond – key assumptions

For AMP8 and beyond we have assumed a steady state totex - that is, totex continuing at the same levels as AMP7 for the whole of the forecast period. We can reasonably make this assumption as we have not deferred any significant investment (e.g. we have a large reservoir safety investment programme) but at the same time, we recognise that there will be key drivers for investment in AMP8 and beyond – for example, the Welsh Government is looking at changing the legal requirement regarding lead pipes. A stable totex programme, which assumes we would become more efficient, provides us with the capacity to respond to new challenges without requiring a material increase in totex.

We have also adjusted the expenditure in our plan to take account of Ofwat's Initial Assessment. Given that Ofwat assessed efficient totex and retail costs to be somewhat higher than our plan, we have adjust the PAYG lever in order to offset these effects.

Our modelling also takes account of other known changes since the submission of our original plan – the main one being the publication of 2019-20 charges. These were the first Hafren had published under revised price limits established after the border variation. Since the business plan, we have done further work to refine our split of customer data between England and Wales. We have also taken account of Ofwat's determination for in-period Outcome Delivery Incentives, forecast levels of income from developers and the November RPI to generate a more accurate view of the opening bill in 2019-20. The opening bill in this modelling is aligned with our final charges as published in January, and consistent with the annual submission for average bills to Ofwat. As such the bill will differ from that calculated in the Ofwat financial model, where different denominators are used for retail and wholesale bills.

We have taken account of taxation changes announced by Government, but these have no impact on the Hafren plan. Our modelling suggests that – at an appointee level – Hafren will make taxable losses and therefore pay no tax during AMP7.

Finally there will be downward movement in bills after 2025 primarily due to the effect of incentives (ODIs). The share of Severn Trent deferred ODIs which was allocated to Hafren Dyfrdwy drops out of the price control at the end of AMP7 and we make no assumption that there will be an equivalent reward in future.

Having defined the key parameters the variables we flexed were those relating to the financeabilty levers. This involves varying them to deliver two profiles: (i) profile based on the natural rate; (ii) profile based on adjustments to deliver a moderately higher bill in AMP7 and flat bills thereafter.

The details of our research are set out in the Britain Thinks report *Appendix 2.4 – Fair Balance of Charges*. This research involved taking a deliberative approach. This is important as water tends to be a low saliency issue, with customers often engaging little with their water and wastewater services and having relatively low levels of knowledge of what is involved in the provision of these. By exploring first spontaneous views and then building up the level of information and understanding we can better understand informed views about long term bill profiles.

In terms of insight, we sought customers' spontaneous views and prompted views on our overarching principles when developing long term bill profiles. The prompted principles were:

- bills should be stable over time, avoiding big fluctuations up or down in charges to customers;
- there should be a fair balance of charges over time; and
- the balance of charges over time should support a credit rating that allows for low cost borrowing to fund future investment.

Overall there was widespread agreement that these principles were appropriate and sensible. The most important prompted principle was stability; customers wanted us to avoid big fluctuations either way. This was also a point customers raised spontaneously. On the fair balance of charges, most customers saw themselves as customers today and tomorrow and were supportive of this consideration. The final principle was regarded as less important. Given that we are deferring revenues as opposed to bringing them forward to support credit ratings this is consistent.

In considering bill profiles over the long term, customers were shown two profiles, one reflecting the financeability levers set at the *natural rate* and an alternative reflecting a profile targeting a more stable bill trajectory (with revenues deferred to future AMPs via higher RCV growth). The key findings included:

- almost universally customers preferred a stable bill profile over the levers being set at the natural rate (which would give rise to an increase in bills in AMP7 before falling away);
- most customers were sceptical that the reduction in bills that comes from a lower RCV would actually occur in practice; and
- most customers want stable bills even if it means bills increase sooner.

Overall the results help validate our decision to use the financeability levers to reduce AMP7 revenues by setting the levers below the natural rate. This helps create a stable profile from AMP6 to AMP7 and beyond and limits the increase in bills in AMP7 to 1.9%.

3.2 Social tariff cross subsidy

One piece of feedback from the IAP was that we didn't provide sufficient evidence to support the level of cross subsidy in our plan.

We recognise that our plan did not include the full research reports and we could have better explained the results as they apply across our region. We have engaged with our CCG on this issue and they agree that it is one of presentation, rather than lacking customer support as they have no outstanding challenges. Therefore we have not commissioned any new research but rather better presented the evidence which shows there is very strong support for our approach.

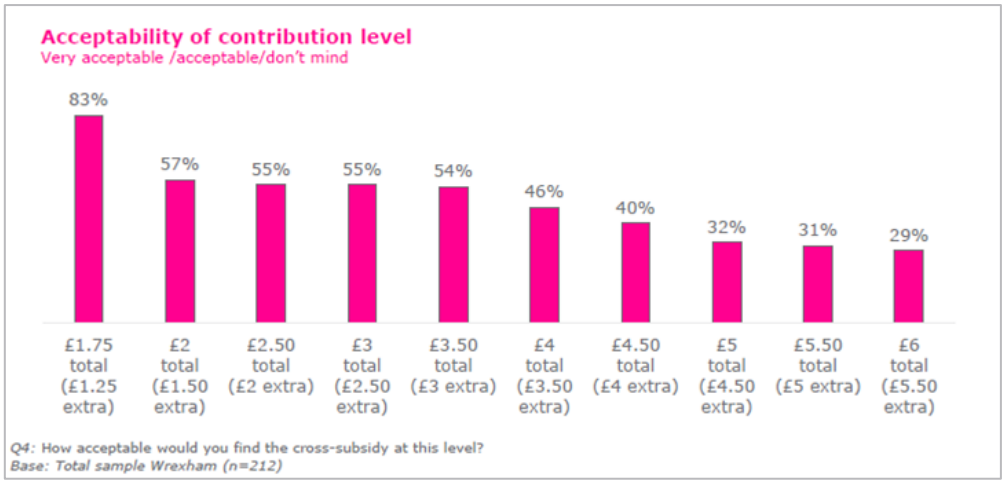
We also note the challenge that *"the low quality engagement on acceptability also reduces the confidence in this customer support".* As discussed earlier, we do not believe that it is the case that the research was of low quality (but agree that it should have been made more accessible to Ofwat) or that it should necessarily affect the confidence in the separate research we undertook for the social tariff.

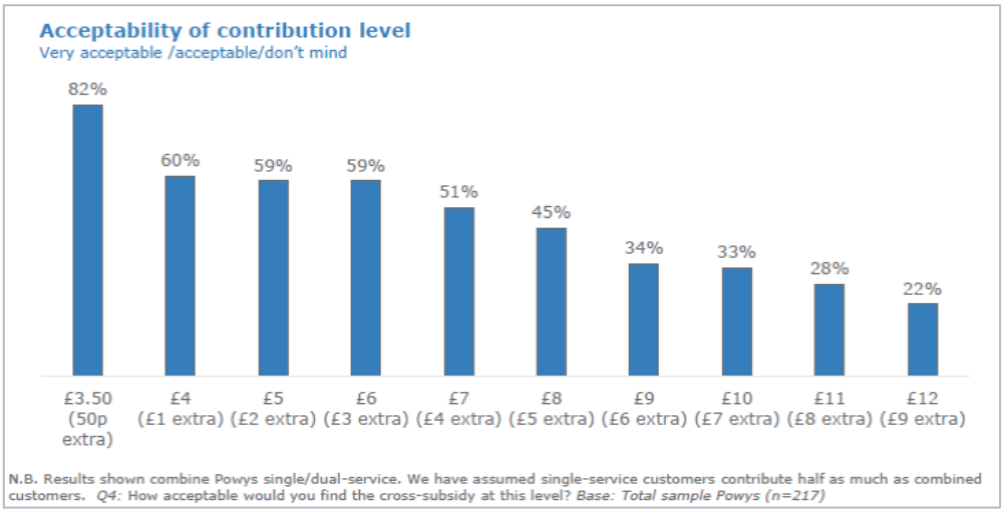
Support for the level of cross subsidy proposed

In terms of specific challenges from the IAP, we were challenged on the level of support for the final decision on social tariff. As our research reports show and in the figures below, we have very strong support with shows 82% of customers in both regions support the cross subsidy. This subsidy is:

- 82% of customers in Powys supporting a contribution of £3.50 (combined bill); and
- 83% of customers in Wrexham supporting a contribution of £1.75 (water bill).

This is a significant increase from the AMP6 value of c~50p and given the high proportion of JAMs in our region is lower than that achieved in other companies. The research was completed equally and consistently between our two main regions and there results were unanimous. The full report is included in Appendix 3.1 but the key findings are summarised below:





The quality of the research and results can be demonstrated from the fact that:

- we applied CCW best practice – for example ,including inflation in our testing;
- we sought challenge from our CCG and had no unanswered points;
- we had the research and results peer reviewed by an expert in the field, which noted the survey was "well designed" and did not raise any material concerns that would have impacted the outcome.

Engaging customers who are struggling to pay

We also note that Ofwat challenged the evidence of high-quality engagement with customers who struggle to pay. Alongside the high quality evidence regarding our social tariff, we also undertook research to help improve our offering of support. Given customers in Powys were in receipt of support from Severn Trent branded schemes and Wrexham from Dee Valley Water branded schemes, this research in Wales explore the effectiveness of both. The specific aim of this research were to:

- understand how Severn Trent's and Dee Valley Water's existing social tariff schemes are viewed by recipients, exploring the application process; impact of the help received;

- establish how customers find out what help is available and determine the appeal of the Big Difference Scheme and Here2Help schemes amongst non-recipients;
- understand the journey to water debt, exploring the circumstances that lead to arrears; how customers view playing water bills; how they view the attitude and approach of Severn Trent/Dee Valley;
- explore views on approaches to preventing arrears and encouraging debt repayment; and
- identify a range of solutions to be developed further in a co-creation workshop.

This research has been used in both the design of our support schemes (i.e. sometimes we don't need to offer the 90% subsidy in Powys that was available under the existing Severn Trent scheme) but also how we engage with customers to help them on the journey out of debt.

Creating a new, innovative PC

We also note that Ofwat challenged the robustness of the data to support the bespoke PC on effectiveness of affordability. We recognise that the data to support this measure is in its infancy. This is because in response to the PR19 methodology and our CCG challenge we tried hard to think about new innovative PCs for affordability support – one that would encourage us to think about customers who are struggling to pay as individuals with different needs – as opposed to taking a blanket input based approach. This resulted in coming up with a new measure without a historical baseline (a consequence of innovation).

On one hand we could have adopted a simple input measure like other companies, however, that wouldn't help reveal whether our efforts were being effective. We therefore included the new measure in our plan on the basis that it would:

- reveal the extent to which our support was helping customers stay out of debt; and
- create a baseline for which we could target future improvement at PR24.

The latter is particularly important. Given that this measure has not been a focus for HD, which is itself a new company, there is no time series with which we could reliably and robustly target improvements over AMP7. Therefore, with support from our CCG we had included this innovative measure and target. We do not believe it is appropriate to set a target beyond our original plan as it means companies that try to innovate are effectively being penalised (i.e., we should have just proposed an input measure). We are therefore maintaining the same target as our original plan and we have strong CCG support for this approach who recognise its innovative nature. Finally it's important to view these changes in the context of improvements already made since the creation of Hafren Dyfrdwy. We haven't chosen just to continue the existing Dee Valley support options but already made changes which will continue and grow into AMP7:

- a social tariff with discounts of between 10-90% (compared to the 30% offered previously) tailored to individuals' circumstances and extended eligibility with individual assessments that reflects people's disposable income;
- introduction of individual water health checks and access to a specialised care and assistance team;
- a continuation of Water Direct and WaterSure schemes;
- extended payment plan options; and
- a new payment matching scheme, to be trialled in 2019/20.

3.3 Supporting customers in vulnerable circumstances

We are embracing the new vulnerability PC, our original target was based on significant improvement from the current baseline, which we see now compared to the rest of the industry should be even more stretching. We have therefore embraced the two elements of the new PC – expanding the PSR and checking its data.

- increase the PSR reach to 7% of our customer base by 2024/25; and
- check at least 90% of PSR data every 2 years.

Chapter 4
Delivering outcomes for customers

4.0 Delivering outcomes for customers

4.1 Overview

A key feature of the Business plan submitted in September, was delivering the service priorities for customers in North and Mid Wales. We developed a package of measures that directly target those aspects of service where our customers want to see improvements. The customer engagement that we had carried out indicated that customers only wanted a very small proportion of their bill linked to incentives (both penalties and rewards). Therefore to minimise the cost of engagement we decided not to carry out detailed customer engagement with customers on the specific design or rates that should be placed on individual performance commitments and instead use the results from the willingness to pay research.

In the IAP feedback, it was clear that this approach did not meet Ofwat's expectations. Having carefully considered the feedback and reviewed other companies' plans, we recognise we can further improve our offering through three sets of changes:

- Increasing the performance stretch for a small number of measures and address data confidence concerns;
- Improve our customer engagement on incentives and robustness of the application of the engagement to ensure the design and incentive rates reflect customer preferences and better align the interests of customers and investors; and
- Test the targets and incentive rates against different performance scenarios and then apply any necessary caps and collars to ensure that customers are adequately protected.

We have carried out a series of activities to address these challenges and the specific actions set out in the IAP feedback. This chapter sets out the changes we have made to our plan to address the concerns and is structured in the following way:

Test Area	Test questions	Action ref	Key/ material changes	Relevant narrative
Delivering Outcomes for Customers	OC1 – well evidenced and stretching performance commitments	HDD.OC.A1 – A2, A12, A15, A18, A21, A25-26, A31, A35, A38, A42,A49-50, A52, A53-55 (18 actions)	Bespoke resilience PC included	Section 4.2, Chapter 5 and Appendix 5.3
			Supply interruptions target increased to match UQ challenge with deadband or incidents cap	Section 4.2 and appendix 4.3
			PCC and leakage data corrected	Section 4.2
			Increased stretch on Pollution incidents	Section 4.2
			Updated PSR PC to align with Ofwat guidance	Section 4.2 and Chapter 3
	OC2 – well evidenced incentives for individual PCs and overall package	HDD.OC.A3 – A11, A13-14, A16, A17, A19, A20,A22-A24, A27-A30, A32-34, A36-37, A39-41, A43-48, A51 (37 actions)	CRI – reflecting the UQ target but with a wider deadband	Section 4.3.4
			New approach, research and design of ODIs	Section 4.3, Appendix 4.1, Chapter 2 for research
	OC3 – aligned incentives between customer and investor with necessary protections		Improved triangulation of results	Section 4.2.1 and appendix 4.1
			All incentives set to in-year	Section 4.2.1 and appendix 4.1
			Caps and collars applied to individual PCs	Section 4.3.4 and appendix 4.1
			Improved scenario testing	Section 4.4 and appendix 4.1

In responding to these actions we have made changes to data tables App1 and have provided the additional information requested in tables App1a and App1b. A comprehensive log of the changes is provided to ensure full transparency of the changes that have been made. The assurance and peer review that has been conducted on both the customer engagement approach (appendix 2.11) and the technical application of Ofwat's methodology in designing incentives (appendix 4.2) is summarised in the relevant sections throughout this chapter.

4.1.1 Summary of changes to our performance commitments

Our revised plan includes 29 performance commitments (PC) to cover the breadth and depth of the things that matter to our customers and stakeholders. This is one more than the original submission. The IAP included eight actions relating to PC **definitions**, which have been addressed and explained in section 4.2. In the majority of cases this has resulted in further narrative being provided, but there are two key changes which are set out in this resubmission:

- We have replaced our PC on supporting priority customers during an incident to align with the industry measure which is growth of the Priority Service Register (PSR). The industry target of achieving 7% of household customers on the register by 2025; and
- We have introduced an additional bespoke resilience PC, called Source Resilience.

There were nine PCs where Ofwat challenged the level of **stretch** in our targets. We have carefully reviewed our original submission, the stretch being offered by our peers and the evidence we have from our customers to understand their priorities. As a result of this we are increasing the ambition in our plan on four of the measures – supply interruptions, pollution, blockages and internal sewer flooding. However we also propose a small deadband on the supply interruptions PC to reflect the different operating circumstances of a company like HD, namely operating in a rural hilly region. For the remaining five (PCC, drought risk, unplanned outage, lead pipe replacement and effectiveness of affordability) we have provided more evidence to address the IAP actions, but have made no change to the PC targets.

In addition to the key challenge areas outlined above, Ofwat raised one action about performance **data integrity** and clarity of the basis of the data, especially historical data between our two regions. We have set out the basis of the data and the steps we have taken to assure this information in section 4.2, but this will be ongoing focus throughout AMP7.

We have also provided more commentary to set out how the PCs fit into our wider performance reporting landscape and how we use this information to manage performance and drive continuous improvement. This is set out in Chapter 9, Accounting for past delivery.

4.1.2 Summary of changes outcome delivery incentives (ODIs)

Within the eight week window we had to respond to the IAP feedback we have utilised a combination of quantitative and qualitative research methods to better understand customers views about how our ODIs should be designed and calibrated. Our aim was to engage with customers and give them meaningful and clear information from which to make informed choices. Our revised plan reflects those choices, both an independent peer review and our Customer Challenge Group (CCG) have confirmed that the approach we have taken is robust and in line with market research best practice. The research approach and engagement with the CCG are set out in chapter 2 of this resubmission.

The results of this research have been shared with our CCG and utilised in the creation of the revised incentive design and package that is set out in this chapter and the accompanying appendix (4.1). The key steps we have taken include:

- Creating a new framework to design our ODIs, which builds on the IAP feedback but also looks at best practice across the sector (notably South West and South East);

- Redesigning our ODIs, creating a much stronger foundation for decisions about incentive type and rates; and
- Using the evidence from across the sector to test the design of our ODIs to ensure customers have strong levels of protections.

This updated and improved approach means that we have changed the entire design and valuation across all PCs, but we have also set out the specific changes relating to the 37 IAP actions. The challenges fall into five categories, covering:

- Incentive types
- Incentive rates
- Incentive timings
- Protection mechanisms
- Overall package

The key changes associated with these categories are summarised below.

We received 11 actions about the **type of incentive** but we have refreshed the incentive type for all PCs using the findings from the research and have made the following changes:

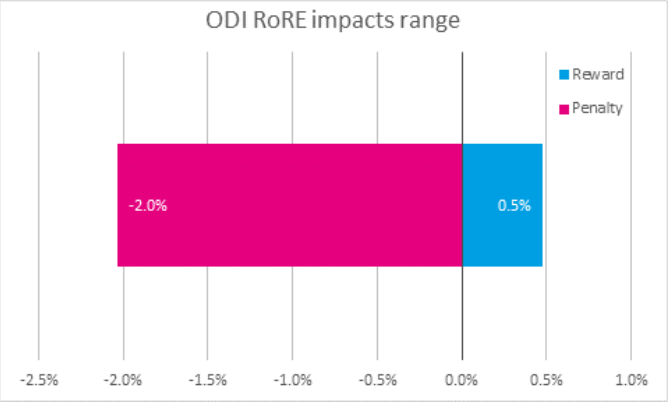
Incentive type	Sept 18 Business Plan	April 19 Resubmission
Financial (penalty and rewards)	16	9
Financial (penalty only)	1	10
Financial (reward only)	1	0
Non-financial (reputational)	10	10
Total number of PCs	**28**	**29**

We have also revised the methodology used to triangulate between information sources to calculate the **ODI rate**. The revised approach addresses the 12 actions we had about **ODI rates**, but has also been used to update the rates used for all financial ODIs. A summary of the approach is set out in section 4.3 of this chapter and more detail is provided in appendix 4.1. We now have individual rates for each performance commitment that directly reflects the views of our customers. We have also cross checked our rates (on a per incident per household basis) to ensure that they are within a reasonable range defined in Ofwat's IAP appendix 2.

To ensure the outputs of our work are of a high quality and consistent with the methodology and IAP feedback we asked Frontier Economics to assure our approach. The full report is included in appendix 4.2 and key findings are as follows:

> *We consider this approach to be appropriate. First, it results in an outcome whereby HDD's ODI rates do increase, which addresses one of Ofwat's key challenges that HDD's rates were too low, and it does so in a way which can still be linked to industry benchmarks, using an appropriate normalisation which expresses results on a meaningful basis. Frontier Economics, Mar 2019.*

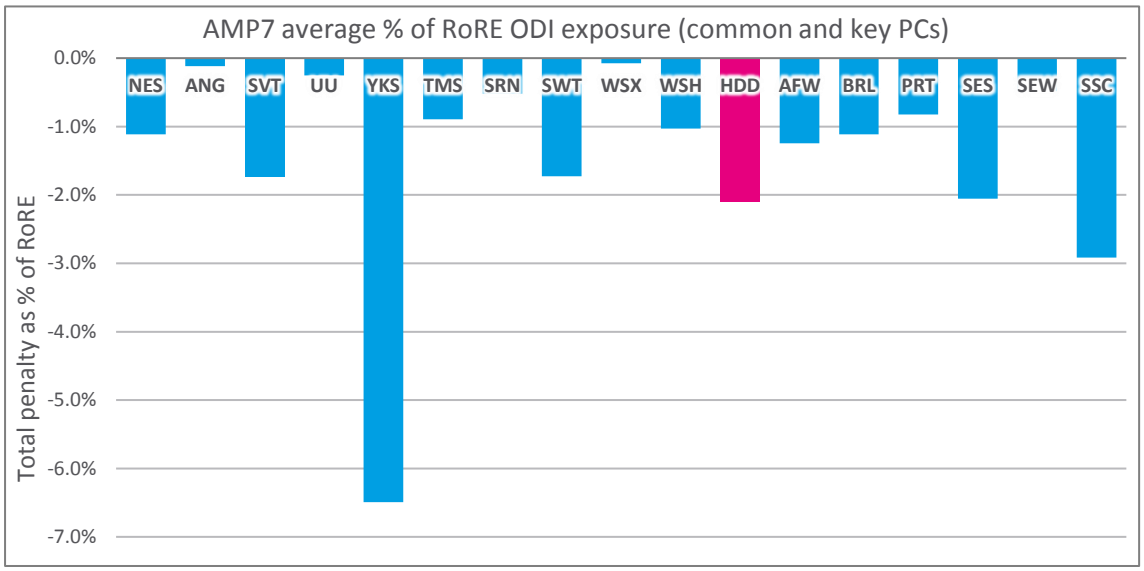
The updated RORE range is summarised in the figure below.



We have considered the **timing** of the incentives and reviewed the five actions in the IAP. We have updated them all to apply in period (except for Length of River Water Quality Improved, given NEP uncertainty). This does increase company risk in several areas, particularly where activity to meet the commitments has complex overlaps with other organisations, but we do believe that incentives are more powerful if they apply at the time of the service delivery (or failure).

Due to the response from customers about incentives, we have introduced a series of **customer protection** measures, through the use of caps and collars on all financial ODIs[1]. Section 4.3 sets out how our revised approach addresses the six specific actions received on the use of deadbands, caps and collars.

We have also tested the level of stretch in our **overall package** and how it aligns customers' interests with those of investors. We adopted a quantitative approach to the testing, which has involved calculating the average annual RoRE impact for AMP7 based on; (i) for measures with existing data, performance does not improve from 2017/18 levels and (ii) for new measures or where current performance in unavailable, AMP7 performance is at the P10 level. According to this stretch test, we'd face underperformance payments worth -2.2% of RoRE for each year of the AMP7 period, predominantly from our common and key PCs. This is the third most stretching package when compared to other (September) business plans as shown in the chart below.



4.2 Well evidenced and stretching performance commitments (IAP test OC1)

Our September plan included a package of extremely stretching performance targets, which were focused on the areas that customers told us mattered most to them. We were transparent with customers about how our current performance compared to the rest of the industry, so we still feel their views are valid. However, there are two main reasons why we have carried out a comprehensive review of the stretch in the PC targets that we submitted in September:

1. Since submission we have been able to review other proposed plans. We think it is right to reflect on this and look at service areas where we could be doing more, to keep up with our peers. The biggest area of change in this revised plan is on our supply interruptions ambitions.

[1] The exception is satisfactory sludge disposal, as historic performance has been 100% back to the start of AMP5.

2. We have also spent the last six months completing the analysis to align our performance to the national boundary in order to produce the final water resource management plan. This means we have a much more localised understanding of past and current performance (particularly for PCC, leakage and drought resilience measures).

This section sets out the changes included in our revised plan as a result of this new information.

4.2.1 Complying with the PR19 methodology – PC definitions

We have eight actions on PC definitions that are addressed in this section.

In response to action HDD.OC.A1 (and closely linked to action HDD.LR.A1), we have now included a bespoke resilience PC. Full details of this performance commitment and how it relates to our resilience challenges and wider basket of measures is explained in Chapter 5, Securing long term resilience and appendix 5.3.

There were seven areas where we were challenged to demonstrate progress in our ability to report performance (for common measures against the standardised definition and for bespoke measures against our definition). This chapter addresses each in turn.

- Leakage (HDD.OC.A15)
- Unplanned outage (HDD.OC.A25)
- Sewer flooding – extreme storms (HDD.OC.A38)
- Inspiring customers to use water wisely (HDD.OC.A49)
- Compliance with Welsh language services (HDD.OC.A52)
- Supporting vulnerable customers (HDD.OC.A53)
- Effectiveness of the affordability support (HDD.OC.A55)

Leakage – HDD.OC.A15

Concern: In APR18 shadow reporting table 3S included assessments that were assessed as 'Amber' or 'Red'. The company has not provided sufficient evidence to demonstrate that plans and timetables are in place to achieve compliance by 2019/20

Action: For all 'amber' or 'red' sub-components, provide details on the actions needed to comply with the standard definitions and its timetable for completing them

Several of the issues we have been dealing with are due to the timing of the licence change and the extent of the work needed to realign water resource zones (WRZ) to the national boundary. In both the NAV and September plan, each component of the water balance - distribution Input, distribution and trunk mains leakage, measured consumption, property numbers and populations had been split based on the specific component data at Water Resource Zone level, i.e. zones in Wales and zones in England. This high level split comprised 80% of Llandinam WRZ and 4% of Shelton WRZ. The Wrexham WRZ was 100% allocated to HDD and Chester 100% to STE.

For the Final Water Resource Management Plan (WRMP) we have completed a bottom up analysis based on DMA location, which means HDD is now made up of four WRZ. Llandinam, Wrexham and two new Water resource Zones where the main source is bulk import from England. Full details are set out in the Final Water Resource Management plan, which will be published in May 19, the outcome of this bottom up analysis means that HDD four WRZ comprise:

- 100% of Llandinam
- 10% of Shelton (for new Llanfyllin zone)
- 95% of Wrexham; and
- 11% of Chester (for the new Saltney zone)

This analysis has also resulted in an updated assessment of leakage that reflects leakage in these zones, rather than a pro-rated assumption based on high level splits of the former Dee Valley and Severn Trent leakage. These updates have been reflected in data tables App2 and App1 to ensure complete consistency between PR19 plans and final WRMP. The updated leakage and breakdown between WRZ is set out in the table below.

Final Water resource Management Plan Leakage (pre-consistency)

WRZ	Actual		Forecast		AMP 7				
	16-17	17/18	18-19	19-20	20-21	21-22	22-23	23-24	24-25
Wrexham	6.35	6.83	6.82	6.80	6.60	6.40	6.19	5.99	5.78
Saltney	0.50	0.31	0.31	0.31	0.30	0.29	0.28	0.27	0.26
Llandinam	4.82	4.80	4.78	4.76	4.62	4.47	4.33	4.19	4.05
Llanfyllin	2.70	2.68	2.66	2.64	2.56	2.48	2.40	2.32	2.24
Company	14.37	14.62	14.57	14.51	14.08	13.64	13.21	12.77	12.33

Now that we have completed this split it means that we have made progress towards reporting against the standardised definition. An updated assessment (APR table 3S) is included in appendix 4.5 along with a timetable for completing the outstanding activities needed to ensure we can report in line with the definition. This assessment has been assured as part of our half year performance and will be reviewed again at the end of the year as part of our APR reporting process. It is important to note that it will take several years before the data from the instrumentation we are currently installing is robust enough to report 'Green' against all aspects, but we are setting out all of the assumptions we are making in the absence of measureable data. These assumptions will be set out in our APR documentation and are subject to the rigorous three lines of assurance approach.

We confirm that these changes do not alter the ambition in our plan and we are still committed to making the 15% leakage reduction over AMP7 (this is also included in the Final WRMP).

Unplanned outage – HDD.OC.A25

Concern: In APR18 shadow reporting table 3S included assessments that were assessed as 'Amber' or 'Red'. The company has not provided sufficient evidence to demonstrate that plans and timetables are in place to achieve compliance by 2019/20

Action: For all 'amber' or 'red' sub-components, provide details on the actions needed to comply with the standard definitions and its timetable for completing them

In addition to this we also had an action to produce the data for 2018-19 performance, which should be submitted to Ofwat by 15 May 19. We are making progress in gathering this data and have updated the shadow reporting assessment, which is included in appendix 4.5. This assessment has been assured as part of our half year performance review, a progress review has been completed by Black & Veatch for this resubmission and will be reviewed again at the end of the year as part of our APR reporting process.

Sewer flooding in extreme storms - HDD.OC.A38

Concern: The company provides insufficient evidence that its presented risk is determined appropriately

Action: The company should adopt the standard definition in full, providing details of any assumptions in its measurement and reporting methodology, including all the information set out in section 3.6 of Developing and Trialling wastewater Resilience Metrics, Atkins.

We confirm we are reporting against the standard definition as defined by Ofwat. Whilst this is not a shadow reporting measure, in order to provide Ofwat with evidence to support our assessment that we are on track to reporting against the standard definition, we have completed a RAG assessment. We are fully committed to working with the industry to improve the clarity of the definition. However, the amber assessments are a reflection of the current lack of maturity in the definition and ongoing work needed to improve the consistency.

A full update on the method and assumptions we have used is included in appendix 4.6 and RAG assessment is included in appendix 4.5.

Inspiring customers to use water wisely -HDD.OC.A49

Concern: The company provides limited information on the rationale for the selection of this PC.

Action: The company should consider how the proposed PC will impact per capita consumption. The company should clearly set out what the outcome of this PC is and its evidence and rationale for the proposed targets.

The rationale for including this performance commitment is that customers care about education and particularly about water efficiency. The desire for more education came up in all of the research we did. The reason why we think this is an appropriate measure is because we are in water surplus so don't have any mandate to include demand side investment in our WRMP so the key way we are going to achieve the reduction in PCC is by engaging and inspiring our customers. We think a sustainable and effective way of doing this is through educating young people, who can influence whole family behaviours.

Our plan assumes that from an engagement with around 17,000 young people, we are likely to achieve around 4000 pledges to save water. This is based on the 2009 UKWIR report that studied different types of engagement to create a behaviour change, which concluded that effective engagement results in 18% of the people who participated actually changing their behaviour. We have been more ambitious (targeting 23% success rate) than this standard assessment on the basis that we are working with schools to develop a really engaging programme – for example by using artificial intelligence.

In terms of the correlation between this activity and our PCC target we have based the assessment on findings of the UKWIR report (09/WR/25/04), which includes a water efficiency calculator. This shows that depending on the effectiveness of the engagement customers are likely to reduce usage between 7 litres/ person/ day and 20 litres/person/day. Our AMP7 target is to reduce PCC by around 6 litres/person/day. This activity will contribute between 5 – 13% of the overall approach to achieve PCC reduction. This activity is part of a broader water efficiency programme, which include activities such as:

- Giving customers information on how to save water, providing free water saving products and discounts on water butts and water efficient showerheads. All part of our proactive water efficiency audits and install water efficient products in our customers' homes (HWEC).
- Visiting schools and community groups as part of a wider education programme.
- Developing partnerships with local organisations – for example we have started working with Wrexham Council and Open Newtown to see how we can promote water efficiency and to retrofit water efficient devices
- Installing approximately 1,000 water meters per year as part of our free meter optant programme and providing water efficiency advice and access to free water saving devices during installation

More detail can be found in Appendix B of our Final Water Resource Plan which is due to be published by the end of May 2019.

Finally our education PC is now non-financial and PCC is penalty only. This means customers are not exposed to any potential risk of double counting.

In conclusion we are retaining the PC without any change to definition or targets but we are changing the incentive type from penalty and reward to non-financial.

Compliance with Welsh language services -HDD.OC.A52

Concern: The PC relates to the availability of Welsh language services and is as such correctly allocated to the residential retail control. However, the company does not explain why there is no partial allocation to the business retail control as well.

Action: The company should consider whether this PC should be allocated across price controls and include business retail. The company should include sufficient information to justify its decision.

This was an oversight in data table App1, we should have allocated the Welsh language performance commitment to both household and business retail price controls. Investment had already been allocated correctly across tables R1 and R4.

We have received correspondence from the Welsh Language commissioner that confirms that the regulations apply equally to household and non-household customers. The key evidence in this letter is:

In section 1.6 of this document the term 'public' is defined as:

"The term "public" extends to individuals, legal persons and corporate bodies. It includes the public as a whole, or a section of the public, as well as individual members of the public.

Our Non-household customer base are a mixture of individuals (e.g. self-employed), charities, public sector organisations and business and therefore it is clear that our performance commitment should cover both price controls. Data table App1 has been updated accordingly.

Supporting vulnerable customers -HDD.OC.A53

Concern: The company does not provide a sufficiently clear definition of this PC.

Action: The company should clarify which incidents are covered under this PC and justify how the support provided to customers through this PC goes above and beyond what is expected of companies during an incident.

We have carefully considered this challenge and have decided to withdraw our existing PC and instead adopt the industry wide definition on growth of the priority services register. We accept the challenge that the original PC did not go beyond business as usual service expectations. For commentary on this PC and our overall approach to supporting customers in vulnerable circumstances is set out in response to action HDD.AV.A5 in Chapter 3 of this resubmission document. We confirm we will use the standard and commit to re-contact at least 90% of customers on the register at least once every 2 years. We confirm the target will be to achieve the 7% of household customers by 2025. Data table App1 has been updated to reflect this change.

Effectiveness of the affordability support - HDD.OC.A54

Concern: The company does not propose which price control this PC should be allocated to in the data table App1

Action: The company should propose which price control this PC should apply to in table App1.

Data table App1 has been updated to confirm this applies to the household retail price control. It does not apply to the business retail price control as affordability support is not provided to business customers.

4.2.2 Ensuring targets are sufficiently stretching

There were nine PCs where Ofwat challenged the level of **stretch** in our targets. We have carefully reviewed our original plan, the stretch being offered by our peers and the evidence we have from our customers to understand their priorities. Here is a summary of the changes and then detail is provided for each one in turn.

Performance Comittment	Action ref	Change	Further detail
Supply interruptions	HDD.OC.A12	Increased ambition to UQ of 3 mins with either deadband or incidents cap	Appendix 4.3
Pollution	HDD.OC.A35	Increased stretch but not to UQ	Detailed below
Internal sewer flooding	HDD.OC.A31	Minor adjustment to target reset to UQ	Detailed below
Blockages	HDD.OC.A50	Applied improvement over AMP7	Detailed below
PCC	HDD.OC.A18	Data improvement but stretch aligned to Defra ambition retained	Detailed below
Resilience - drought risk	HDD.OC.A21	Target is 0 so not possible to increase stretch. More evidence provided to support calculations	Appendix 4.4 Chapter 5 Securing long term resilience
unplanned outage	HDD.OC.A50 Due 15 May 19	Data will be provided by 15 May	Definition covered in 4.2.1 above
Lead pipe replacement	HDD.OC.A42	More evidence (including comparative) presented to explain why target is already stretching	Detailed below Also covered in chapter 7 update on cost adjustment claims
Effectiveness of affordability	HDD.OC.A55	More evidence presented to explain why precise targets cannot be set	Chapter 3 Affordability and vulnerability

Supply interruptions (HDD.OC.A12)

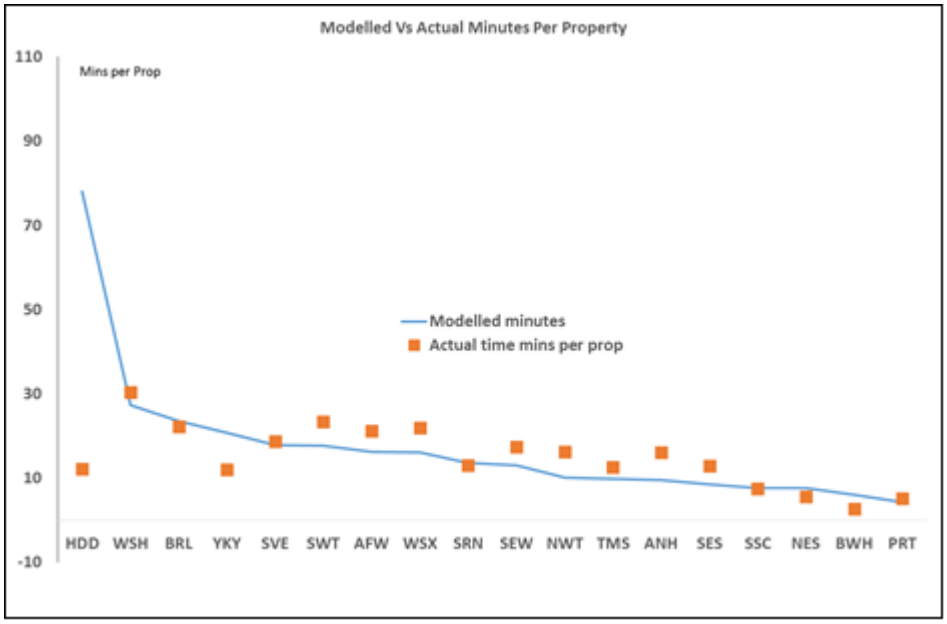
Our September plan included a 27% improvement in supply interruptions, which equates to a target of 8 minutes (from a current average of 11 mins). Ofwat has said there is insufficient evidence to justify a target of anything less than 3 mins by 24/25 which is upper quartile performance.

Our updated plan does include the more stretching target, in line with the proposed upper quartile performance, but we have also included a penalty deadband to ensure a fair balance of risk between company and customers. We agree that in the normal course of events all companies should be aspiring to deliver a target of 3 minutes (meaning a score of 3.5 seconds per week). The biggest challenge to delivering this result is responding to complex incidents – something that impacts all companies. Recent examples of incidents from our experience include:

- a farmer exposed and damaged a trunk main;
- loss of bulk supplies from other companies; and
- power loss on remote assets impacting the supply of water to customers.

Although incidents impact all companies, the ability to respond is significantly influenced by factors outside management control, such as type of failure, population density, topography and accessibility. The best performing companies are those that can easily re-route supplies (eg city based) and weaker performers are those with large proportions of their populations in rural regions with very hilly topography due to factors such as; longer pipe lengths with fewer valves, less interconnectivity, higher water pressure and reduced accessibility to assets.

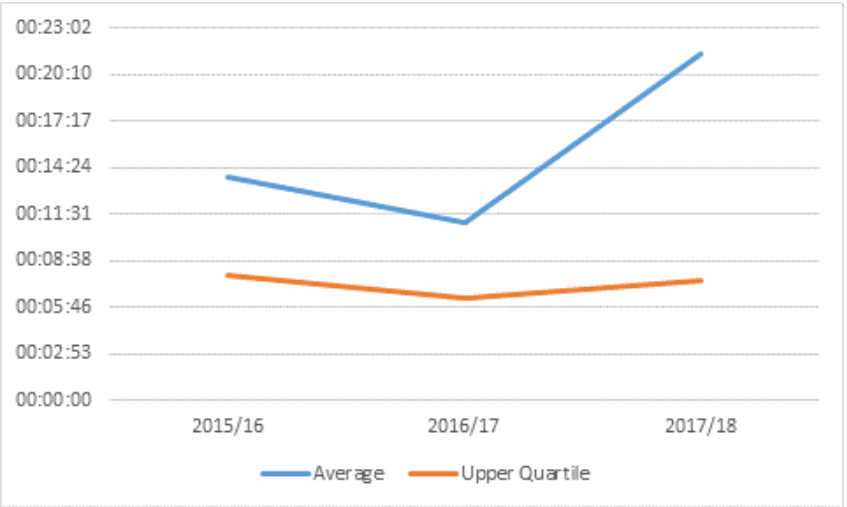
The graph below shows the relationship between population density and pumping head and supply interruptions which explains that companies with lower population density and hilly topography are more likely to have more supply interruptions. Full details of this analysis are set out in appendix 4.3.



What this means is that companies with large rural areas cannot consistently deliver the same performance without either duplicating large parts of the network (to improve interconnectivity) or having more extensive response and recovery plans, such as a permanent fleet of tankers on active standby, ready for action if the burst cannot be fixed quickly. Neither is an efficient solution and the latter is likely to have knock on impacts for our customers such as traffic disruption.

It is for these reasons that the impact of complex individual incidents has been capped in the past, as they can excessively skew underlying performance.

Whilst ambitious plans drive step changes in service it is important that targets are achievable. Across the sector the UQ has not come close to the PR19 average target of 3 minutes. In the current AMP, the average is in excess of 10 minutes and the UQ has never fallen below 5 minutes 45 seconds, as illustrated in the figure below.



A step change at PR19 to the 3 minute target with no individual caps on incidents feels unrealistic and may even deliver a poorer outcome for customers, due to lack of confidence and increased disruption.

In business plans many companies made a pitch for what seem to be highly optimistic targets as opposed to realistic, sustainable (year on year target) improvement. For example Wessex, which has set the UQ in year 1 of AMP7, has said it can reduce interruptions by two thirds compared to its most recent year.

These ambitious targets are then being mandated on the rest of the sector, with no regard to the individual circumstances and characteristics. This makes it very difficult for companies to meet the target and have an adverse impact on public confidence, should the mandated target not be met. This would then undermine the improvement that will have been made.

We saw with recent leakage coverage that media commentators do not focus on the quantum of improvement but the simple concept of hitting a target or not – and so it's likely that these "failed" targets would undermine confidence in the sector, even if, we had made a 70% improvement but marginally missed the target.

This of course doesn't mean a target shouldn't be stretching, but it is important that the target is realistic. With supply interruptions there are limitations to what can be done in the short term and it is not realistic or efficient to expect extensive improvements to interconnectivity of networks. The cost / benefit for laying infrastructure to allow dual sources of supply is often much more challenging in a rural / hilly region compared to an urban region. Whilst other forms of resilience are possible they are also less effective and more costly in rural areas compared to urban areas. Further evidence is included in appendix 4.3 to illustrate this.

Perhaps of more concern is that there is a risk that if incidents are not capped (as they are today) and one or two complex incidents mean that the annual target is exceeded, then companies may focus efforts elsewhere.

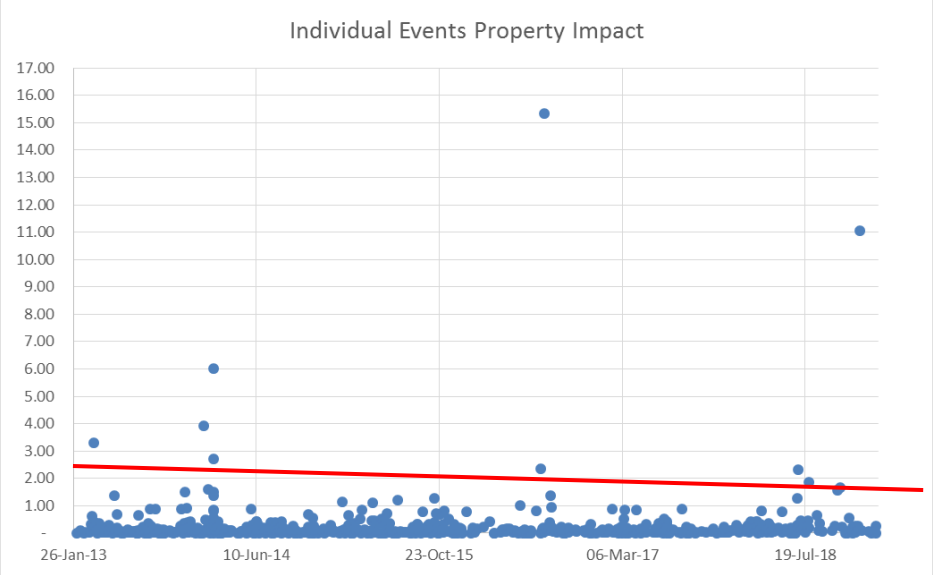
We recognise the challenge confronting Ofwat – how do you get companies to do everything possible so that every customer has water every day? We have identified four potential options:

- Option 1 - Set city versus hilly-rural targets –we appreciate this would be challenging as it implies a lower standard of service for some customers and most companies have a combination of these topographies;
- Option 2 - Apply a more realistic target given current sector performance for example using actual UQ rather than optimistic forecasts of future UQ made in company plans;

- Option 3 – Apply a deadband if a company can demonstrate their circumstances make it materially more difficult to achieve the target; or
- Option 4 – Retain the 3 minute target but incorporate an incident cap as well – this would only apply for large complex events. To further protect customer this cap (i) could not apply to the same customer twice, thereby providing companies with the incentive to continue to prevent incidents in the first place; and (ii) if triggered would prevent any outperformance payments being earned for this measure as we don't think it would be right to have outperformance if we have had a material supply interruption event.

Our preference would be to apply option 3 and/or 4 on the basis that it maintains strong incentives for continual improvement and would help enhance the reputation of the sector.

To achieve a fair balance of risk we are therefore proposing a cap on the impact that any one single incident can have on the annual performance. We think the cap should be set at 50% of the annual target. As shown in the figure below, historical performance for HDD would have resulted in the cap being applied around 10 times in the last 6 years, which shows that this is only applied in extreme circumstances.



In line with option 3, we have also set out the evidence to support a penalty deadband that reflects the specific challenges we face. The evidence to support this position is summarised below and included in full in appendix 4.3.

We have examined the end to end process associated with a supply interruption, benchmarked it against available data and then identified the difference in our ability to respond relating to the specific characteristics that are outside management control. It is clear that our network configuration and population distribution in North Wales (Wrexham) is conducive to network interconnectivity and the target of 3 minutes is achievable. However it is also clear that the network configuration and topography in Powys means that a 3 minute target is incredibly stretching.

As a result of this analysis, we think that a penalty deadband of 3 mins tracking above the annual target is appropriate to reflect the circumstances in Powys on the overall company target. The component parts are summarised in the table below:

phase	Typical factors influencing interruption likelihood and duration	Average impact on performance per event	Key reasons
A Initiation	Mains failure rates (material, age, ground and pressure variance)	The impact is covered in the factors below	Powys has a higher proportion of Asbestos Cement (AC) and PVC mains, (51% compared to STE 21%) and AC and PVC mains cause 3 times and 1.5 times respectively more supply interruptions.
B Pin-point cause	Connection density, rurality, remoteness from depot	+32 mins	For the number of customers served, our region covers a disproportionately large area, making travel times much longer. It is also much quicker to locate bursts in urban areas with street lighting and more customers to spot and raise issues
C Isolate	Valve frequency, volume to drain down	+7 mins	On average there is a greater distance between valves in rural areas increasing number of valves to be operated and drain down time.
D Rezone/ alternate supply	Rezone constraints	11% less customers can be rezoned which equates to 1 min on the annual target	Our communities are situated along the river valley so pipes are long and not a ring main configuration, which means rezone options are very limited
E Repair	Repair type, complexity, health and safety	+22 mins	AC and PVC mains take longer to repair because the break longitudinally – so instead of a 1m3 dig and collar repair we have to replace 6m lengths
F Recharge	Frequency and number of valves, volume to recharge	+ 4 mins	The distance between valves and volume of water to recharge the system are longer

This means that an average interruption in Powys will be 65 mins longer than an average incident in normal operating conditions. We have applied these impacts to individual historical events which shows that it adds between 1.7 and 2.2 minutes to the annual target. When you then factor in the rezone constraints of 1 minute that results in an appropriate deadband of between 2.7 and 3.2 minutes, we have selected the mid-point of 3 minutes.

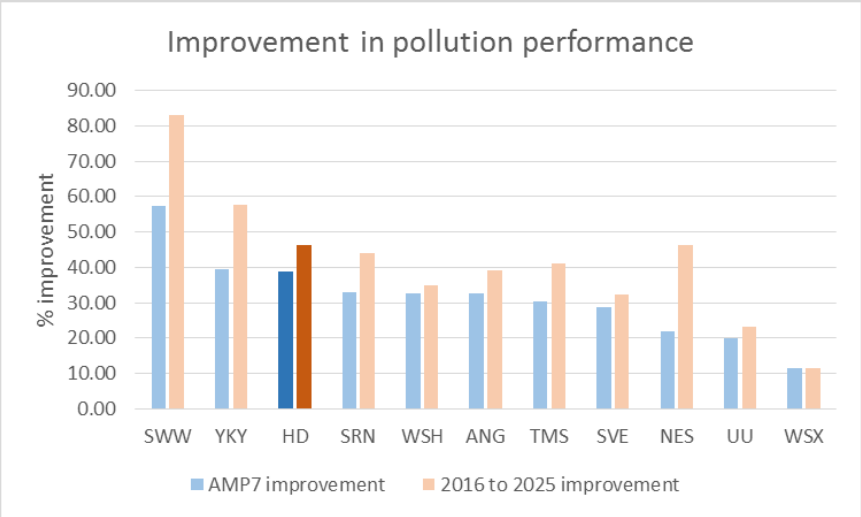
Pollution incidents (HDD.OC.A35)

Our September plan included a 27% improvement in pollution/ km of sewer and the absolute number of incidents is very low (currently averaging 8 incidents/ year). However the UQ for this measure would require that we have no more than 1 incident per year – a target which we believe is unachievable. This issue is unique to HDD due to our very short sewer length. Our sewer network is efficiently designed and reflects the small localised catchments, which means that for the number of customers we serve our sewer length is very low.

In response to the challenge we have reviewed the improvement included in our plan compared to the rest of the industry to ensure the level of stretch is ambitious. As a result of this analysis, our revised plan has increased our 2024/25 target by 1 incident/ year. This is stretching for the following key reasons:

- Our proposed AMP7 improvement and stretch is one of the highest in the industry (improvement is now 40% across AMP7, compared to an industry average of 31%)

- Joint guidance from EA and Natural England (WISER) expects water companies in England to target at least a 40% improvement in pollution incidents by 2025 compared to their 2016 actual performance. There is no equivalent challenge set by NRW. Our revised target would mean HDD would be delivering a 46% improvement, which exceeds the expectation and performance by most of our peers.



The degree of improvement is also a function of the scope for improvement, which means companies with the worst performance have the greatest scope for improvement. As mentioned previously the number of incidents that occur each year are very small (average 8/year) and the target of 5 / year means there is very little scope for error, particularly when you consider that 1-3 incidents/ year are caused by customer misuse. However, we are not complacent and we reviewed our performance to look for any evidence of worsening performance in particular asset groups or geographic hot spots. Review of our historic performance shows that both the cause and locations of incidents over the last 3 years shows no trend or evidence of systematic failure.

We have discussed this target and evidence with NRW, who are supportive of our approach and level of ambition.

Internal sewer flooding (HDD.OC.A31)

Ofwat have based their UQ calculation for each year of AMP7 on the targets submitted by each company. See the table below which has been taken from Ofwat's Technical Appendix 1: Delivering outcomes for customers (https://www.ofwat.gov.uk/wp-content/uploads/2019/01/Technical-appendix-1-Delivering-outcomes-for-customers-final.pdf).

Company	Internal sewer flooding (Number of incidents per 10,000 connections)				
	2020-21	2021-22	2022-23	2023-24	2024-25
Anglian Water	1.64	1.55	1.46	1.38	1.31
Dŵr Cymru	2	2	2	2	2
Hafren Dyfrdwy	1.69	1.65	1.61	1.25	1.22
Northumbrian Water	1.97	1.92	1.87	1.82	1.77
Severn Trent Water	1.66	1.62	1.58	1.54	1.51
South West Water	1.78	1.69	1.65	1.53	1.37
Southern Water	1.83	1.78	1.73	1.69	1.65
Thames Water	1.89	1.87	1.8	1.73r	1.66
United Utilities Water	2.203	2.185	2.173	2.159	2.138
Wessex Water	1.54	1.47	1.41	1.34	1.24
Yorkshire Water	1.72	1.64	1.57	1.5	1.43
Upper quartile	**1.68**	**1.63**	**1.58**	**1.44**	**1.34**

The IAP assessment stated that the HDD proposed targets were less stretching than the values stated in the table above. In responding to this challenge it is important to consider what these targets mean in absolute incidents, as we have very few incidents and targets need to be set in whole numbers of incidents before converting into the normalised targets. The table below sets out the converted targets using the September plan and Ofwat's forecast.

Internal sewer flooding incidents	20/21	21/22	22/23	23/24	24/25
September Business plan	5	5	5	4	4
Ofwat calculation of UQ	5.1	5.1	5.0	4.7	4.5

The Ofwat target is actually less stretching than the target that we proposed in the Business plan, but in reality they mean the same thing as we can't achieve fractions of incidents – sewer flooding incidents occur in whole numbers. We have updated data table App1 to align with Ofwat's UQ calculations, but in reality the only way we can achieve those targets is if we deliver in line with our original submission.

Sewer blockages (HDD.OC.A50)

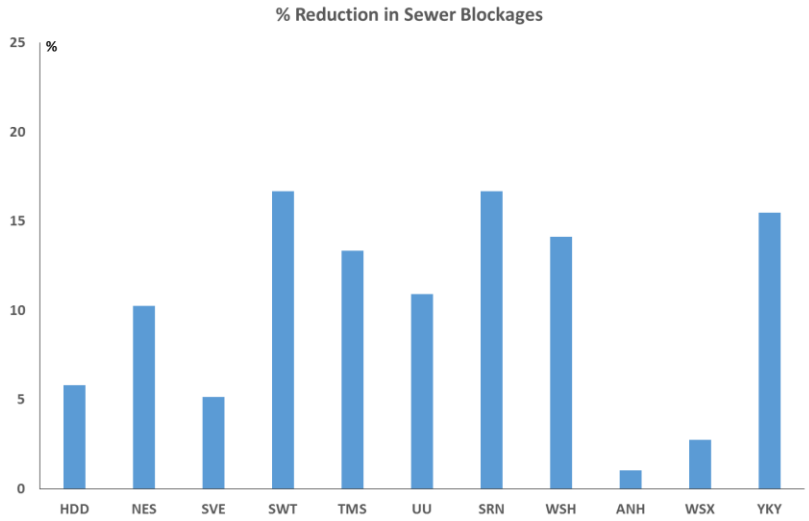
The IAP stated that the company should reconsider its proposed service levels and ensure that they are stretching. The company should clearly set out the evidence and rationale for the revised targets.

The targets included in the September plan, were based on application of the former serviceability methodology. We identified our best year historically and then took the average between the best performance and the following year. This resulted in 6% improvement from the AMP6 average. We applied the stretch of 6% all in year 1 and then held it flat to maintain that step change throughout the AMP.

It is clear that most other companies have profiled their improvement throughout the AMP, which is what the revised target included in data table App1 (and set out below) is based on.

Blockages (number of)	20/21	21/22	22/23	23/24	24/25
September Business plan	276	276	276	276	276
Revised targets	290	287	283	279	276

This is a bespoke measure (i.e. optional) and six of the 11 companies did include it, but all companies report blockages in data table WWn3. To compare the degree of stretch across companies we have normalised the number of blockages by the number of properties connected as shown in the chart below. The level of stretch in our plan is towards the industry average and we note that several companies with less stretch have not been challenged on the level of stretch in their plan.



It should be noted that almost all blockages in our region have limited direct effect on our customers, for example we have had no reported odour complaints in Wales during AMP6 (as shown in data table WWS4 line 9). Our AMP7 plan will look to target areas where a customer facing issue or external sewer flooding has occurred in the past to eliminate blockages that could cause a direct customer impact or minimise the likelihood of a blockage causing an issue. Given the pressure on bills and the importance of focusing efforts where improvements will have the biggest impact on customers, we consider the proposed stretch is appropriate. We will, over the AMP, improve our data and understanding of the linkage between blockages and problems affecting the customer.

Long term stretch

In the September plan we proposed holding the improved AMP7 level stable over the long term. This was based on the assumption that we are likely to be at or close to the economic level of blockages (given how few customer facing issues we see as a result). However, we do not have sufficiently robust data linking the other impacts of blockages (like odour) to know this categorically. Therefore, we have updated our long term forecasts to continue the AMP6- AMP7 rate of improvement over time. Table App1 has been updated to reflect this additional long term ambition.

Per Capita Consumption (PCC) - HDD.OC.A18

The IAP stated that the company provides insufficient evidence that its proposed service levels for 2020 to 2025 are stretching. It has proposed high service levels for PCC at 151 litres/head/day in 2024-25 and a relatively low percentage reduction of 3% over the period. This is despite strong and clear feedback from customers that want a PCC reduction. The company should reconsider its proposed service levels and ensure that they are stretching. The company should clearly set out the evidence and rationale for the revised targets.

We have re-assessed the PCC using two methods to address Ofwat's concerns;

1. Using Final Water Resource Management Plan assumptions for the new Water Resource Zones of Saltney and Llanfyllin whilst retaining the Dee Valley methodology unmeasured PCC estimate for Wrexham and Saltney WRZs.

2. As above but instead of using the unmeasured Saltney and Wrexham WRZs, unmeasured per capita set using Small Area Monitor (SAM) data as currently used for Severn Trent England.

We propose to adopt option 1 for the following reasons;

- We have not had sufficient time to develop and assure a robust statistical method to apply SVE data to HDD and for example we are uncertain whether the data for Severn Trent in England with a 40% meter penetration is applicable to North East Wales with a 60% meter penetration.
- It aligns our Business Plan performance commitment to our Final Water Resource Management Plan

In AMP7 we will investigate the cost and benefit of installing specific small area monitors to generate unmeasured per capita consumption estimates.

	PRE CONSISTENCY, NORMAL YEAR, 3 year rolling average									
	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25
Draft Business Plan	149.90	144.50	146.50	144.8	145.2	144.80	143.90	143.00	142.10	141.20
Final WRMP	137.58	132.80	134.66	133.12	131.98	130.84	129.70	128.55	127.49	126.53
	POST CONSISTENCY, NORMAL YEAR, 3 year rolling average									
	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25
Draft Business Plan	160.40	154.60	156.70	154.90	155.40	154.90	153.90	153.00	152.00	151.00
Final WRMP	147.2	142.1	144.0	142.4	141.3	140.0	138.7	137.5	136.4	135.3

The relationship between the pre and post convergence values is unchanged from the September 2018 business plan submission. This means we are still using a conversion factor of 7% to represent the likely impact of applying the standard PCC definition. Data tables App2 and App1 have been updated to reflect the above data.

Due to the change and level of assumptions needed to derive this data, the above figures have been through 1st, 2nd and third line assurance as part of our WRMP process.

We believe that our long term ambition, a 4% reduction in AMP7 and a 20l/p/d reduction over the longer term are still reasonable and appropriate for a company where all WRZs are in surplus and a relatively high meter penetration rate.

Resilience – drought risk (HDD.OC.A21)

The IAP stated that the company provides insufficient evidence that its proposed service levels for 2020 to 2025 are stretching and that evidence should be presented to demonstrate that the risk has been determined appropriately and that the target is stretching. The action also requires the intermediate calculation outputs as shown in the common definition guidance published on Ofwat's website for the drought resilience metric.

We have completed our Water Resource Management Plan analysis including new analysis to determine drought risk (at a 1 in 200 year return period) across our four new water resource zones. The basis for this work is a report by Atkins which used a stochastic approach to develop low rainfall sequences to be run through an updated Aquator model. The report and overall calculation spreadsheet is included in appendix

4.4. This appendix also includes the intermediate calculation outputs (in line with the common definition guidance), but given these calculations are all being applied to a risk of zero it is not relevant.

The output from this analysis has then been analysed using the Ofwat methodology to produce a drought risk score for each water resource zone and the company. The outputs of this work are also being used to update our statutory drought management plan.

Therefore we confirm that the risk of restrictions in a 1 in 200 year drought has been modelled, using the correct and full methodology and has been found to be zero for all of the years up to 2035.

WRZ	Drought risk score		
	2020 to 2025	2025 to 2030	2030 to 2035
Saltney	0	0	0
Wrexham	0	0	0
Llandinam	0	0	0
Llanfyllin	0	0	0
HDD total	0	0	0

Based on the updated risk assessment and evidence that the methodology and calculation is robust and that the risk is zero, we consider the challenge about the degree of stretch to be no longer a relevant challenge. As such the targets set out in table App1 are unchanged from the September submission.

Lead pipe replacement (HDD.OC.A42)

The IAP stated that the company provides insufficient evidence that it has proposed stretching service levels.

The company should provide further evidence that the service levels are stretching including by benchmarking itself with the service levels proposed by Dŵr Cymru.

We have reviewed Dŵr Cymru plans to benchmark our proposals to understand if our plan is stretching. Their plan states that:

> "Our proactive approach will enable us to dramatically increase our rate of lead pipe replacement in AMP7. We also aim to demonstrate the value of our collaborative, cost effective approach to lead pipe replacement, and will raise awareness of lead pipes with local authorities and housing agencies. We expect to receive a notice from the DWI requiring the replacement of up to 7,000 customer supply pipes and/or communication pipes in AMP7"

And goes on to set out the long term ambition in terms of pipe replacement rates. We have compared both companies' programmes below.

Period	DCWW		Hafren Dyfrdwy	
	Number of pipes (cumulative)	% of total customers	Number of pipes (cumulative)	% of total customers
AMP 7	7,000	0.48%	460	0.38%
AMP 8	14,000	0.97%	2,000	1.67%
By 2050	50,000	3.45%	10,000	8.33%

The HDD replacement rates in AMP7 are slightly lower than those of DCWW, but given this is a multi-AMP problem it is important to consider the ambition over the longer term and the table above clearly shows our plan is considerably more ambitious in the following two AMPs.

This is a reflection of our strategy to gather the evidence needed to identify which properties have lead supply pipes and a high risk of failing the 5ug/l standard, through physical surveys and water quality sampling. Having this data and the certainty it provides will allow us to accelerate replacement rates ahead of those proposed by DCWW and do so in a cost effective and carefully phased way. This approach also allows sufficient time to engage with customers and put in place any legal agreements necessary.

We considered accelerating our AMP7 programme to match DCWW 0.48%, but we are concerned about the implications on our customers. This first phase during AMP7 is targeting schools and our most vulnerable customers. We only have the 6 week window during summer holidays in which to carry out the work as it is much too disruptive for schools to permit this sort of intrusive work during term time and 1 week during half terms is insufficient time to carry out the work. There is therefore little opportunity to compress this activity in order to escalate our ambition. The other area is relating to lead hot spots across social housing stock. We have discussed the social housing programme that we will be partnering Wrexham Council with to understand their timescales and programme. Working in partnership is better for customers as it both reduces the cost and the level and duration of the disruption. We have worked with the council to bring forward the activity as much as possible so that customers get the benefit sooner, but it is not possible to increase the overall levels of activity in the next 5 years. We have reviewed the delivery profile following discussions with Wrexham Council and other potential partners and have updated the annual targets in data table App1.

Revised APP1 Profile

	20/21	21/22	22/23	23/24	24/25	Total
Number of pipes replaced	100	150	70	70	70	460

The IAP also challenged the basis of the end of AMP timing (**HDD.OC.A44**). Data table App1 has been updated to move to an in period ODI adjustment. We were originally nervous about committing to in-year incentives because the timing of the work is not completely within our control for two main reasons:

a. digging up customers drives is very disruptive and we have to be sensitive to their needs and will have to work our programme around their requirements
b. to deliver this programme in a cost effective way we have to work with partners and again their timescales and considerations are outside of our control.

However, we agree that incentives are more powerful if they closely relate to the service/ activity carried out so despite our reservations we are content to move to an in period incentive.

Effectiveness of affordability support (HDD.OC.A55)

In our September submission we included a new performance commitment – *Effectiveness of Financial* Support. The aim of this new PC was to change the focus away from inputs (like the number of customers on a social tariff) to outcomes – specifically helping customers stay out of debt after we support them.

Our new PC sought to look beyond the short term and shine a light on whether the schemes have a sustained, lasting effect – helping those customers to make changes to their lives that mean they can stay out of debt in the future.

The challenge with this PC is that because it is new and hasn't had any historic focus like other PCs, there is no data to set a baseline or target. Some of the schemes we are offering are also new, both in the remainder of AMP6 and throughout AMP7 which means the impact of those schemes is not yet understood. Whilst we are

confident that they will all help customers reduce their level of debt, we cannot, at this point, demonstrate how successful they will be at embedding a sustained change.

Therefore working with our CCG, in our September plan we:

- committed to introduce a new performance commitment for AMP7 that would track the number of customers who manage to remain debt free for a 12 month period after they have completed a payment support scheme;
- the performance commitment would be developed further over the remainder of AMP6 with our customers and stakeholders to ensure the final definition gives a real reflection of how effective our support schemes are; and
- once the definition is confirmed, we would use the first year of AMP7 to set a baseline level of performance, from which we had committed to show year on year improvements.

IAP Feedback

In assessing our proposal on this measure Ofwat provided the following feedback:

- *General - Its approach to helping people that will struggle to pay their bills is poor*
- *Specific - The company should propose specific targets or percentage improvements to ensure that service levels are clear and stretching.*

Our response

The creation of a new bespoke measure that focuses on outcomes associated with affordability is a big move for a company as small as HDD. With only around 90,000 household customers and leading emphasis on cost efficiency in the sector (we had the most efficient plan) we don't have the capacity like other companies to engage on a wide range of activities.

However we felt that given the high levels of deprivation in our region, it was important to try to do something different in relation to affordability. It was for this reason that we came up with a new measure.

The most important thing about our PC was not the target but rather the measure itself that helps shine a light on this critical issue and would thereby drive improvements in our approach in future.

The role of information in driving change (rather than through targets) is a point that has been recognised by Ofwat. For example the decision to create separate wholesale and retail price controls was first undertaken to reveal more cost information between wholesale and retail, thereby driving further performance improvements. Our approach in relation to this measure is the same – reveal performance on something that, to date, has not been a focus in the sector so that it can lead to positive change.

This emphasis on creating greater visibility about performance rather than setting targets is particularly relevant in the context of this PC where no performance baseline exists. The purpose of the PC is to understand how customers manage their payments in the 12 months after they have received support, we are currently monitoring this, but 12 months will have to elapse for us to have conclusive data from which to set the target. We cannot simply create a baseline in the short space of time since plans were submitted and the IAP results were announced. In short, we cannot robustly set a target level of improvement and confidently assert that we will deliver an improvement without first understanding the baseline and drivers.

Given these facts and the feedback from Ofwat we have considered three potential options:

- remove the PC from our AMP7 list;
- remove the PC from our AMP7 list and apply shadow reporting to support AMP8 targets; and
- retain the PC but set a baseline of stable performance.

Having reviewed the other plans, it is apparent that of the 17 other companies, only one other has proposed bespoke measures that focus on affordability outcomes. However, our measure is the only one that focuses purely on outcomes in the long term - Southern Water's measure focuses on outcomes but only in the short term during the time that a customer receives financial assistance. The other companies have measures which

count the number of customers receiving support. This suggests that we could move in line with the rest of the sector and change our PC to be input focussed. However given the levels of deprivation in our region, we don't think it is in customers' interests to avoid innovation in this area. We think that understanding our performance in this area by revealing the effectiveness can only be a good thing for our customers.

To address the Ofwat feedback that we need an absolute or percentage target we have decided to set the performance commitment at 0% improvement from the baseline. We note that **there is clear precedent from the IAP results for setting a 0% improvement for innovative bespoke measures**.

In the table below we summarise how some of the bespoke measures for Affordability and Vulnerability were assessed in the IAP. This appears to reflect the view that where companies have innovated, intervening to set more challenging targets would effectively penalise the company and discourage innovation in the future. Or put another way, there is recognition that visibility of performance is a critical first step to driving better services for customers.

Other innovative bespoke measures	Input or outcome	Target improvement	Ofwat feedback
Successful applications for assistance received by the independent advice sector/third parties (Wessex)	Input	0%	PASS
Addressing Vulnerability (Portsmouth)	Perception	0%	PASS

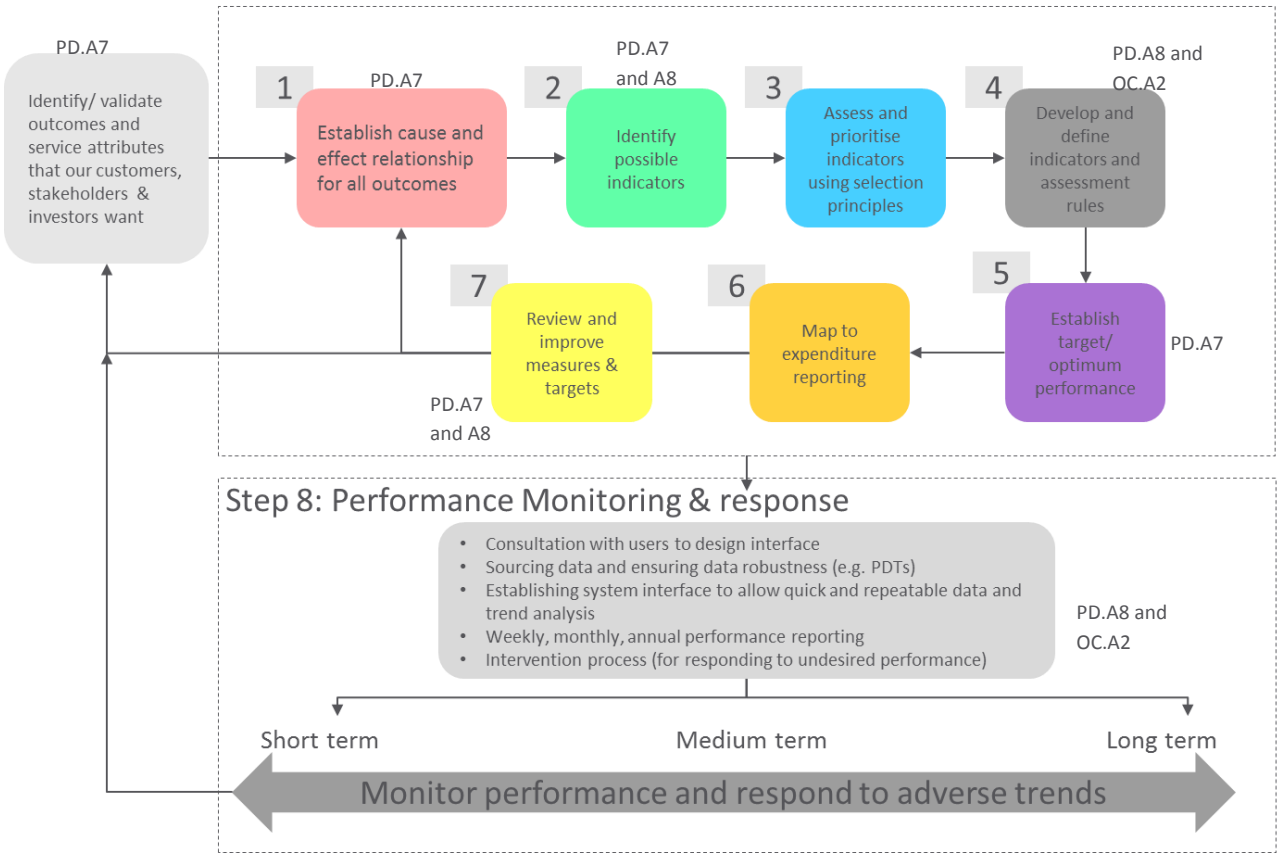
Given the precedent from the IAP results and the fact that the HD affordability measure goes the furthest in targeting outcomes in the long term, we are proposing stable performance in AMP7. Clearly we will target an improvement in this space, however it is important to recognise that customers' wider financial circumstances are impacted by many more factors than their water bill which means that delivery of this PC is not within our control. Furthermore, given that this is a new measure, without a baseline or clear evidence about what drives the measure we cannot simply propose a number and then sign off on the plan being deliverable. This approach will help inform our plans for PR24 and beyond.

4.2.3 Process for reporting performance

The IAP stated that there is insufficient evidence to allow Ofwat to understand whether the company will take a robust approach to PC reporting and enhancing the reputational impact of its ODIs.

Overview

There is significant overlap between IAP actions HDD.OC.A2, HDD.PD.A7 and HDD.PD.A8. All three actions relate to how well we understand past, current and future performance, the robustness of the process for reporting and assuring data and then how we make that transparent to customers. The following flow chart summarises our approach to understanding performance and continuous improvement. It overlays which steps in our process relate to the various elements of the three IAP actions.



Specifically addressing actions within HDD.OC.A2

Capturing performance

For all of the performance commitments we have a robust performance reporting process. This is set out in detail in the Company Monitoring Framework Annual assurance plan which is published annually on the Hafren Dyfrdwy website – the 18/19 version can be found here.

For each PC we have a process description template (PDT) which sets out the process for extracting data from our systems and then carrying out any analysis and calculations needed to comply with the PC definitions. The data is logged against the current and former licence boundary, as shown in the example below:

Severn Trent Water APR18 Data Submission Spreadsheet

S-A4 Asset stewardship - blockages

Description	Units	dp	2017/18	Confidence Grade
S-A4 Asset stewardship - blockages (actual)	nr	0	45401	A2
S-A4 Asset stewardship - blockages (actual) England	nr	0	45090	A2
S-A4 Asset stewardship - blockages (actual) Wales	nr	0	311	A2

Assuring performance

The PDT is reviewed by our third line assurance partners at half year (around September) to review the quality and completeness and whether any suggested improvements from the previous year have been actioned.

Then at year end, the data provider follows the PDT and produces the data. First and Second line assurance checks are then carried out by named internal staff and then third line checks are carried out by our

independent assurance partners, which for HDD is Black & Veatch. The findings from the third line assurance are set out and published. The 17/18 findings can be found here.

As part of our engagement with the CCG, they specifically noted that there has been considerable improvement in the rigour behind annual performance since the acquisition, which we explained to customers in the 17/18 customer summary, an extract is provided below for convenience.

> The CCG were reassured by the additional rigour and assurance that has been carried out to ensure the performance is reported accurately and transparently. They reviewed performance and found both the trend and comparison to the committed levels encouraging, including the way in which the company were able to respond to the UK-wide freeze thaw event in March 2018.

Reporting performance

As part of our customer engagement

As part of the PR19 research we went to great lengths to give customers comparative and historical context tailored to their specific geographical areas, which we don't think other companies did (despite their being known regional differences across all water company areas). When talking to our customers about performance we showed them the current performance (specific to their region) and then the proposed target, so that they were equipped to make meaningful choices, which our CCG commended us for.

Annual reporting

As a minimum we produce a voluntary customer facing annual performance summary, which we also did following 17/18 performance, despite not having a separate licence at that time. In this document we aim to make our performance transparent, but using customer friendly language to explain how we have performed against our commitments and also compared to other companies. This document is published in both Welsh and English to ensure it is available to all customers in their preferred language. We are continuously trying to improve this document to ensure it is interesting, informative and addresses the issues our customers want to hear about.

Other engagement channels - to keep customers informed

We have been engaging with customers about how they want to be kept informed and engage with us throughout delivery stages and on different topics. We have talked to customers about a wide range of subjects including:

- A fair balance of charges over time and what information customers want to ensure we are being transparent
- Performance and how they want to be kept up to date
- The services we offer – especially services that offer wider community benefit such as our education programmes and support for customers in vulnerable circumstances.

We have also included an additional question in our 6-monthly tracker where we talk to customers about our performance, trust in us and value for money, which we will consider as part of our continuous improvement plans.

In general customers prefer written communication so that they can read it at their convenience and also want information in simple, clear and bite size formats – they do not like long reports, but think it is important that we sign post where full details can be provided should customers want to review information in more detail. They also say they want information to be tailored to them and their local communities.

In the last 6 months we have created an on-line presence with a Facebook and Twitter account and are using third parties to promote events such as our tour during main billing to increase the reach of the communication. We have also established a new website and will be using that as a way of issuing information but also getting feedback on what customers read and find useful.

4.3 Well evidenced and aligned incentives (IAP test OC2)

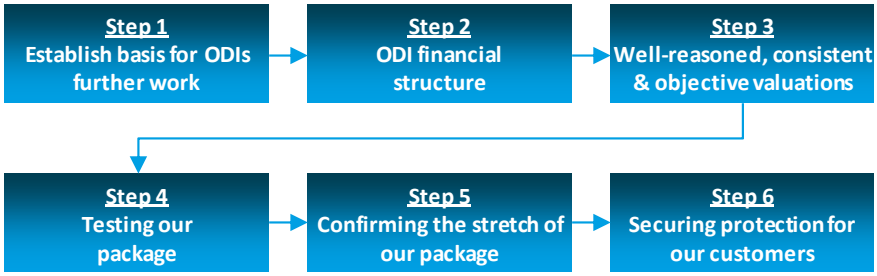
In responding to the IAP we have chosen to look beyond the direct feedback from Ofwat and learn from the best practice, evident by those companies that scored highlight in this area (notably South West and South East).

The consequence is that we have developed a substantially revised ODI package that we believe aligns with Ofwat's requirement and our own customer expectations.

Approach – the framework is based on the following:

- **Preparation – review feedback and best practice** to develop a revised ODI design framework.
- **Step 1 – establish the basis for further work on ODIs** – if concerns and actions have been identified through the IAP process, the ODI will be identified for revision. These will then be taken through the remaining five steps alongside the other ODIs (which will be retested for consistency).
- **Step 2 – determine the appropriate financial structure** – whether the ODI should be financial or not, and if it is financial, whether the arrangement should be penalty-only, reward-only or have both penalty and reward.
- **Step 3 – ensure well-reasoned, consistent and objective ODI valuations** – making sure we use triangulated customer valuations where possible and where alternative valuations are require, that we've appropriately calculated these using uprate PR14 values, marginal cost date or sector normalised valuations.
- **Step 4 – testing our package** – will make sure ODI rates are consistent with sector normalised ranges. We will also review individual P10/P90 impacts to make sure these are appropriate, and we'll ensure that the RoRE ranges are appropriate in aggregate and across asset health measures.
- **Step 5 – confirming the stretch of our package** – by assessing the amount exposure in AMP7 should performance standstill either at 2017/18 levels or at the forecast levels for 2019/20.
- **Step 6 – securing protection for our customers** – ensuring there will be sufficient protections for customers in the event we significantly outperformance our PC targets.

Figure 1.1.1 – framework summary

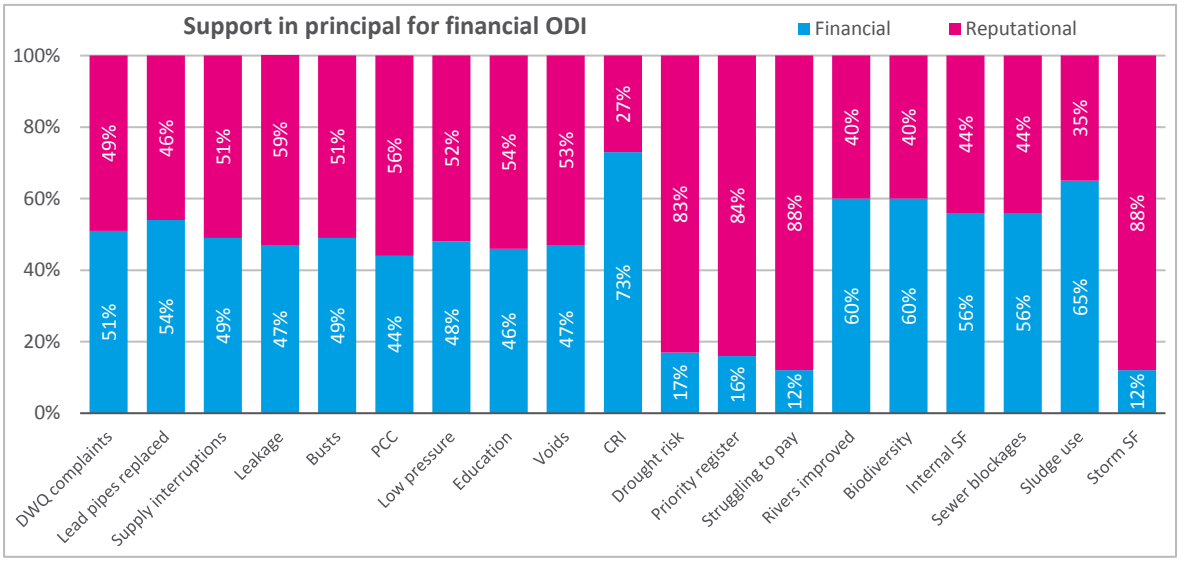


4.3.1 ODI research

Following the IAP feedback we have undertaken additional qualitative and quantitative customer research on ODIs in both Powys and Wrexham. This research was informed by our review of South West's plan which revealed the benefit in engaging with customers on the specific design of each ODI. This would allow us to obtain robust customer evidence about the level of support for:

- Reputational incentives;
- Penalty only incentives; and
- Reward and penalty incentives.

In this research (referred to as Choices Research, which is included in full in appendix 2.5) we explicitly sought customer views about how specific ODIs should be designed. We also used the opportunity to gain insight about calibrating incentive rates given the additional information from the published ODI ranges. Below we summarise the headline views for how ODIs should be designed.



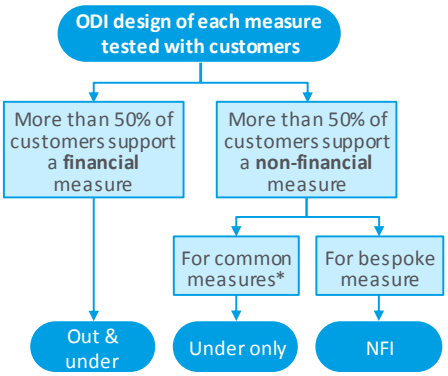
Alongside this research we have also utilised evidence from our customer ODI research to form a view about how ODIs should be structured.

The results from our research show quite mixed views about ODIs. Conceptually, a small majority of customers initially prefer the concept of reputational incentives. However this falls away as they are better informed. This was evident as customers progressed through the Choices research, the result being that for a small number of PCs customers actually expressed a preference for financial incentives (as illustrated in the figure above) and typically calibrated incentives within the Ofwat range (rather than the bottom which would have suggested opposition to financial incentives).

This finding is reinforced by our deliberative focus groups on ODIs and our ODI design project (as discussed in more detail in Appendix 2.6).

4.3.2 Incentive type

The triangulated results of our different customer engagements gave us a clear set of tram tracks that inform when and how financial incentives should be used.



*Unless Ofwat guidance is for a common measure to have non-financial incentives

Where more than 50% of customers supported out and underperformance payments financial incentives for a specific measure from our Choices research, such measures will have out and under performance payments.

In the event the majority support non-financial incentives, we have taken a more nuanced approach. If customers made this judgment about a bespoke measure, we concluded that it is appropriate to make the incentive reputational only.

Where such views have been expressed for common measures, we have determined that underperformance payments should still apply, in order to adequately protect customer interests and make sure there are strong incentives to achieve our stretching targets. However no outperformance payments would be applied.

To manage the cognitive load in the surveys, it was necessary to omit certain measures from this survey (and given feedback from research field agents the survey could not have been made any longer). This means we do not have evidence of customer support for financial ODIs for some measures. For simplicity, we have treated these measures in exactly the same way as those measures where the majority of customers would prefer non-financial incentives (ie, reputational or penalty-only).

In addition to our logic for common measures, we've also taken note of Ofwat's exception for the two resilience common PCs (because they are at relatively early stages of development). These two measures will be set as non-financial along with our new resilience measure (note we have excluded C-MEX and D-MEX from this table).

PC	Customer support	Common or bespoke	Incentive type	Reason for decision
Good to drink				
Water Quality Compliance (CRI)	73% financial	Common	Under only	Common PC, with majority support for financial ODI. Incentive for underperformance only, in line with Ofwat approach for the sector
Drinking water quality	51% financial	Bespoke	Out & under	Bespoke measure, with majority support for financial ODI. Incentive for out and underperformance.
Number of lead pipes replaced	54% financial	Bespoke	Out & under	Bespoke measure, with majority support for financial ODI. Incentive for out and underperformance.
Water always there				
Supply interruptions	51% reputational	Common	Under only	Common PC, with majority support for reputational ODI. Incentive for underperformance only
Leakage	59% reputational	Common	Under only	Common PC, with majority support for reputational ODI. Incentive for underperformance only
PCC	56% reputational	Common	Under only	Common PC, with majority support for reputational ODI. Incentive for underperformance only
Drought risk	83% reputational	Common	NFI	Common PC, with majority support for reputational ODI. Set as NFI, in line with Ofwat exception for this measure.
Mains bursts	51% reputational	Common	Under only	Common PC, with majority support for reputational ODI. Incentive for underperformance only
Unplanned outage	n/a	Common	Under only	Common PC, without majority support for financial ODI. Incentive for underperformance only
Low pressure	52% reputational	Bespoke	NFI	Bespoke measure, with majority support for reputational ODI. Incentive will be NFI
Source resilience	n/a	Bespoke	NFI	Set as NFI consistent with other resilience measures
Thriving environment				
Length of river improved	60% financial	Bespoke	Out & under	Bespoke measure, with majority support for financial ODI. Incentive for out and underperformance.
Biodiversity	60% financial	Bespoke	Out & under	Bespoke measure, with majority support for financial ODI. Incentive for out and underperformance.
Satisfactory sludge disposal	65% under only	Bespoke	Under only	Bespoke measure, with majority support for under only ODI. Incentive for underperformance only
Treatment works compliance	n/a	Common	Under only	Common PC, without majority support for financial ODI. Incentive for underperformance only
Making a positive difference to our communities				
Inspiring customers (education)	54% reputational	Bespoke	NFI	Bespoke measure, with majority support for reputational ODI. Incentive will be NFI
Wastewater safely taken away				
Internal sewer flooding	56% financial	Common	Out & under	Common measure, with majority support for financial ODI. Incentive for out and underperformance.

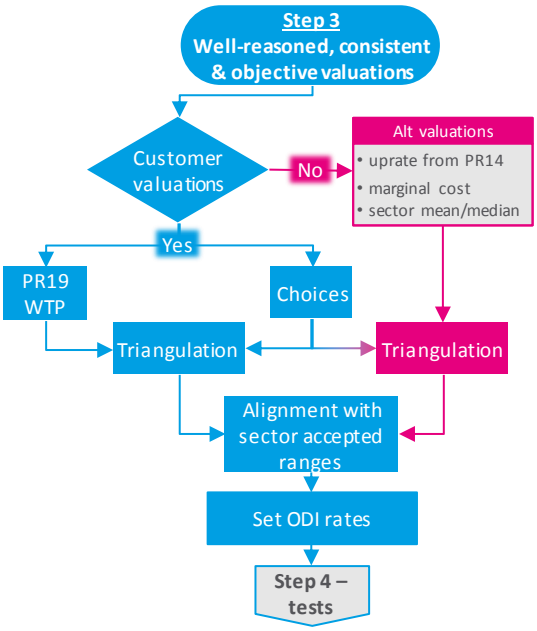
PC	Customer support	Common or bespoke	Incentive type	Reason for decision
Pollution	n/a	Common	Under only	Common PC, without majority support for financial ODI. Incentive for underperformance only
Sewer blockages	56% financial	Bespoke	Out & under	Bespoke measure, with majority support for financial ODI. Incentive for out and underperformance.
Extreme flooding	88% reputational	Common	NFI	Common PC, with majority support for reputational ODI. Set as NFI, in line with Ofwat exception for this measure.
Sewer collapses	n/a	Common	Under only	Common PC, without majority support for financial ODI. Incentive for underperformance only
Lowest possible bills				
Voids	53% reputational	Bespoke	NFI	Bespoke measure, with majority support for reputational ODI. Incentive will be NFI
An outstanding customer experience				
Non-household customer experience	n/a	Bespoke	Out & under	Matched to expected CMeX arrangements
Compliance with Welsh Language scheme	n/a	Bespoke	NFI	Bespoke measure, with majority support for reputational ODI. Incentive will be NFI
A service for everyone				
Priority Service PC	84% reputational	Bespoke	NFI	Bespoke measure, with majority support for reputational ODI. Incentive will be NFI
Help to pay when you need it	88% reputational	Bespoke	NFI	Bespoke measure, with majority support for reputational ODI. Incentive will be NFI
Effectiveness of affordability support	88% reputational	Bespoke	NFI	Bespoke measure, with majority support for reputational ODI. Incentive will be NFI

4.3.3 Incentive Rates

We have responded to the IAP feedback by commissioning (through the Choices research) additional insight about customers' valuation. Accordingly when calibrating ODIs we have been able to apply a more robust and extensive process.

- The starting point was the valuations that we already had available to us from our earlier work on the Business Plan published in September last year (which have been further assured by independent market research expert, Mike Stevens – full report is set out in appendix 2.11). These valuations included our customers' willingness to pay valuations for changes in service levels, and marginal cost valuations where needed, and the baseline PR14 ODI valuations, uprated to PR19 prices, for ODIs where customer and marginal cost valuations are less readily available.
- We then introduced the valuations from our latest round of research – the Choices research – undertaken specifically for this revised Business Plan.
- We then triangulated our existing valuations with the new additional insight from customers, to arrive at our final set of valuations for PR19.
- Finally we checked these rates were aligned with the accepted ranges for the sector, before setting our final ODI rates.

This approach is illustrated in the figure to the right.



In Appendix 4.1 we discuss in detail the method and results applied at each step. For ease of reading we have summarised in the table below the data sources use to calibrate our key ODIs.

Service attribute	Initial valuation					Post IAP valuation
	WTP	Marginal cost	DVW PR14	SVT PR14	SVE PR19	Choices
Appearance of tap water	✓	–	–	–	–	✓
Taste and smell of tap water	✓	–	–	–	–	✓
Number of lead pipe replaced	✓	✓	–	–	–	✓
Water supply interruptions	✓	–	–	–	–	✓
Leakage	✓	–	–	–	–	✓
Length of river water quality improved	✓	–	–	–	–	✓
Internal sewer flooding incidents	✓	–	–	–	–	✓
Pollution incidents	✓	–	–	–	–	–
Hectares managed for biodiversity	–	✓	–	–	–	✓
Inspiring our customers to use water wisely	–	✓	–	–	–	✓
Number of void supply points – combined bill	–	✓	–	–	–	✓
Number of void supply points – water only bill	–	✓	–	–	–	✓
Asset health – burst mains	–	–	✓	–	–	–
Treatment works compliance	–	–	–	✓	–	–
Sewer blockages	–	–	–	✓	–	✓
Sewer collapses	–	–	–	–	✓	–
PCC	–	–	–	–	–	✓

By undertaking the Choices research, we have been able to create triangulated customer valuations in conjunction with our earlier WTP Research/initial valuations. This has involved a simple averaging approach where both sets of valuations are given equal weighting, on the basis that the views for each customer group are equally valid. So, balancing the two through averaging is appropriate in this circumstance.

Having set the incentive rates we have undertaken an extensive process of testing against that published by other companies.

To compare incentive rates for different ODIs we have utilised the headline methodology from Ofwat's IAP feedback. This involves comparing rates on a household basis (we refer to this as the ODI comparison methodology).

For the most part this comparison is a relatively straightforward and involves dividing the incentive rate by the number of households across each measure.

However there is an element of complexity where the PC measure has been normalised[2]. Dividing the normalised incentive rates by the number of household customers **will produces results that create the appearance of low incentive rates for small companies, because the denominator is inevitably lower**. However if we were to apply the ODI comparison methodology by first calculating the incentive rate per incident and then converting it to a household rate, we get a more balanced picture (which is the approach we have adopted). **We discuss this issue in detail in our Appendix 4.1 and include examples to demonstrate the issue and solution**.

Having tested the triangulated rates against the appropriate comparative ranges, we applied further interventions to seven incentives. This saw higher than excepted values brought down to the upper bound of the sector acceptable range. Lower than expected values were increased to the lower bound of these accepted ranges.

[2] The normalisation of PCs is helpful because it allows service performance of small and large companies to be compared on a consistent basis.

Below we summaries the final incentive rates.

PC	Common or bespoke	Incentive type	Cap or collar	Final incentive rates
Good to drink				
Water Quality Compliance (CRI)	Common	Under only	Collar	33,118
Drinking water quality	Bespoke	Out & under	Cap and collar	177
Number of lead pipes replaced	Bespoke	Out & under	Cap and collar	5,839
Water always there				
Supply interruptions	Common	Under only	Collar	19,871
Leakage *(normalised)*	Common	Under only	Collar	4,591
PCC	Common	Under only	Collar	14,206
Drought risk	Common	NFI	NFI	NFI
Mains bursts *(normalised)*	Common	Under only	Collar	1,837
Unplanned outage	Common	Under only	Collar	23,037
Low pressure	Bespoke	NFI	NFI	NFI
Source resilience	Bespoke	NFI	NFI	NFI
Thriving environment				
Length of river improved *(end-of-AMP)*	Bespoke	Out & under	Cap and collar	40,183
Biodiversity	Bespoke	Out & under	Cap and collar	833
Satisfactory sludge disposal	Bespoke	Under only	Collar	907
Treatment works compliance	Common	Under only	Collar	2,052
Making a positive difference to our communities				
Inspiring customers (education)	Bespoke	NFI	NFI	NFI
Wastewater safely taken away				
Internal sewer flooding *(normalised)*	Common	Out & under	Cap and collar	11,141
Pollution incidents *(normalised)*	Common	Under only	Collar	149
Sewer blockages	Bespoke	Out & under	Cap and collar	13.72
Extreme flooding	Common	NFI	NFI	NFI
Sewer collapses *(normalised)*	Common	Under only	Collar	153
Lowest possible bills				
Voids	Bespoke	NFI	NFI	NFI
An outstanding customer experience				
Non-household customer experience	Bespoke	Out & under	TBC	TBC
Compliance with Welsh Language scheme	Bespoke	NFI	NFI	NFI
A service for everyone				
PSR growth	Bespoke	NFI	NFI	NFI
Help to pay when you need it	Bespoke	NFI	NFI	NFI
Effectiveness of affordability support	Bespoke	NFI	NFI	NFI

4.3.4 Customer protection

In the IAP we had five actions relating to the mechanisms (deadbands, caps and collars) to protect customers. The detailed response to each of these actions is set out in appendix 4.1 and the changes have been reflected in data table App1 and App1a but the outcome of our response to the actions is summarised in the table below:

Action ref	PC	Summary of action	Summary of response
HDD.OC.A11	CRI	The industry deadband of 1.5 and collar of 9.5 should be applied, if a financial incentive is applied	Financial incentive applied and evidence presented in appendix 4.1 to set out basis of a deadband of 4. Industry collar has been applied
HDD.OC.A14	Supply interruptions	Evidence needed to justify a collar	Industry average collar of 14min40sec has been applied. Evidence for deadband of 3 mins has been presented in section 4.2.2 and appendix 4.3
HDD.OC.A24	Mains bursts	Remove deadband or provide convincing evidence to justify	Deadband removed
HDD.OC.A30	Treatment works compliance	Revised deadband to 99% or justify why this is not appropriate	Deadband of 97.9% retained and evidenced provided to explain that it is linked to our small number of works
HDD.OC.A33	Internal sewer flooding	Provide further evidence to justify the collar	Penalty collar has been updated to reflect P10 and evidence provided in Appendix 4.1

We are acutely aware that from an uninformed basis our customers do not overwhelmingly support financial ODIs – either as a general principle or on an individual PC basis. In fact, there are only eight PCs where customers have shown a preference for financial ODIs in our latest piece of research. A further consideration is the fact that we've applied underperformance incentives for the common PCs even when customers preferred non-financial ODIs.

Overall, the balance of these views means that we need to do more to make sure we've taken full account of this insight from our customers. To do this, we think our approach at PR19 needs to go further than the methodology and IAP feedback by strengthening the caps and collars arrangements. Therefore, we have taken the decision – after much consideration – that it is necessary to apply caps and collars in this manner to all measures with financial ODIs.

We are putting in place additional protection for customers. In the event our performance sees us earn rewards beyond the 3% upper bound of Ofwat's acceptable RoRE range, we would share this additional income with customers on a 50:50 basis via their bills. This is in line with best practice.

4.4 Well balanced package (IAP test OC3)

One of the key improvements we have made to our package of outcomes is demonstrating that the package is balanced, aligns the interests of customers and investors and is coherent across different measures. This is set out in detail in our appendix 4.1 however we summarise here two key outputs that demonstrate the balanced nature of our outcomes package:

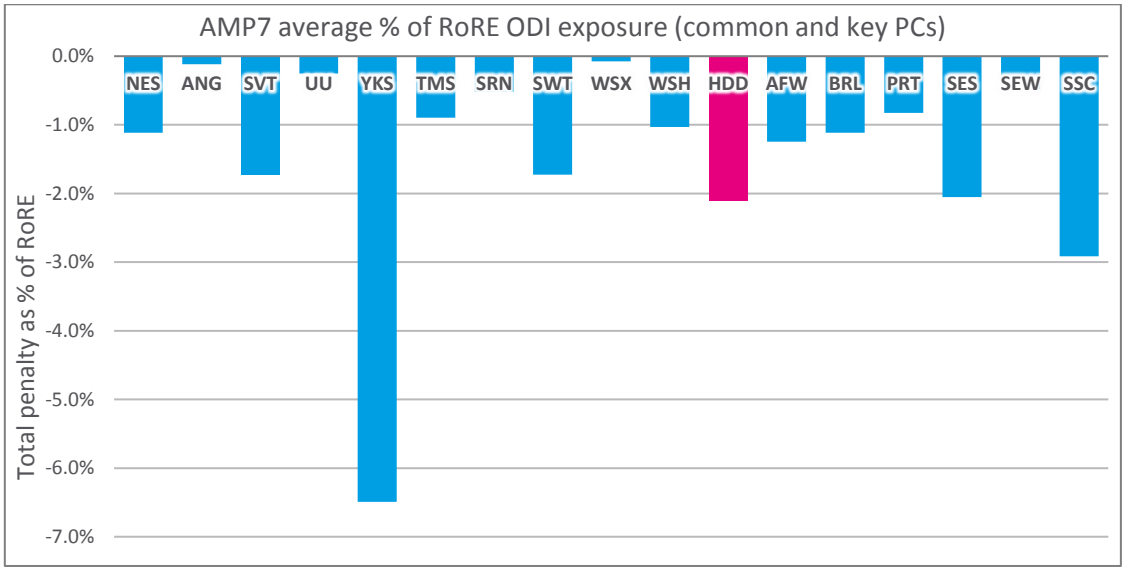
- the P10 and P90 ranges across the controls; and
- the consequence of holding performance flat from 2017/18.

Under the aggregate P10/P90 scenarios, our risk and reward package is worth -2.0% to +0.5% of RoRE, which, on the underperformance side compares well with Ofwat's expectation that the RoRE range should lie

between 1% and 3% of RoRE. The potential for upside does look constrained, but it's important to keep in mind that views from our customers have led us to set a number of our common PCs as underperformance only. Had the majority of customers favoured financial ODIs for these common measures, this would have given scope for additional upside, increasing the aggregate upside RoRE valuation.

Our ODI package will also deliver balanced and consistent incentive across our business and thereby will drive performance improvements for customers. This is evidenced by the disaggregated RoRE ranges for the water and waste price controls. For the water businesses, the package is worth -2.1% to +0.4% which is similar to the overall RoRE range and also compare well with Ofwat's indicative range of RoRE. For the waste businesses, the expected range is worth -1.3% to +1.3% of RoRE and reflects that there is more scope for outperformance payments in waste, largely because the majority of customers favoured financial incentives for the common PCs in this area.

We've looked to assess the overall level of stretch of the package, with reference to current performance. As discussed earlier, we'd face underperformance payments worth -2.1% of RoRE for each year of the AMP7 period if we don't improve. This represents the third most stretch when compared to other business plans. As illustrated in the chart below.



Chapter 5
Securing long term resilience

5.0 Securing long term resilience

5.1 Overview

The Ofwat feedback outlined the following areas as having insufficient evidence:

- Insufficient demonstration of a commitment to resilience in the round;
- Little or no evidence of an understanding of the current level of resilience, the process for identifying risks and mitigation options; and
- Insufficient evidence that we have engaged with customers about the risks and mitigation options.

At the time of initial PR19 submission, as a newly formed business, we were working hard to manage and integrate from Dee Valley and Severn Trent Water into Hafren Dyfrdwy. Integration was multi-staged, and covered teams, systems, processes, cultures and working conditions. Asset-focused processes, including design standards and maintenance regimes were also brought into alignment. We established a new Board, to provide robust governance for our customers in Wales.

We are actively working towards integrating the best of the established processes from the two companies, building on previous lessons and development, where aligned and practicable. This has provided a unique opportunity for us to refresh and develop our approach to resilience in AMP7 and beyond.

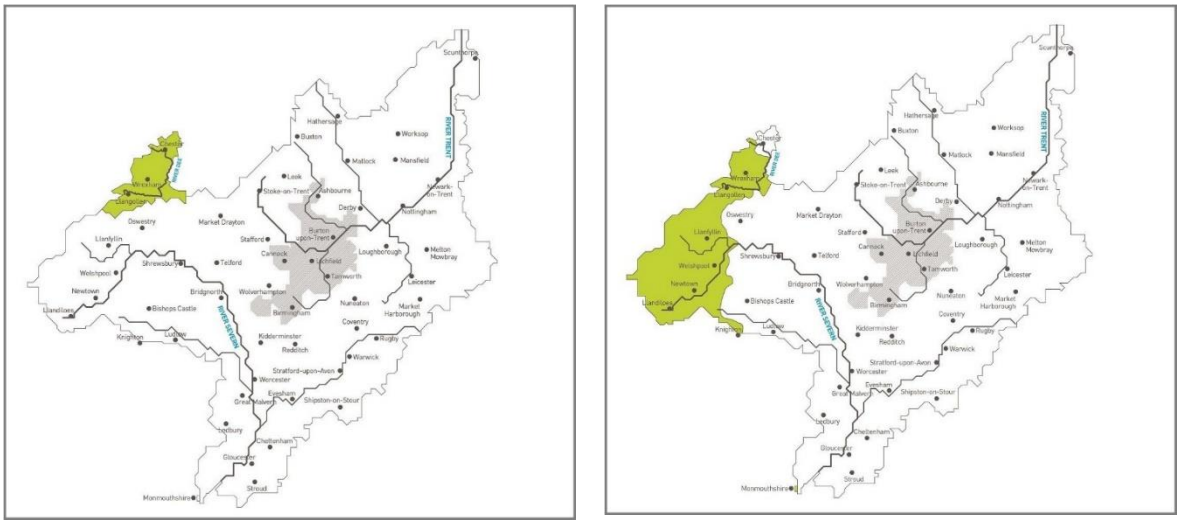


Figure 1: Dee Valley and Severn Trent boundaries, 2017, compared to Hafren Dyfrdwy and Severn Trent Water

5.1.1 Ofwat's Initial assessment

The recent formation of Hafren Dyfrdwy meant that we delivered our AMP7 plan to a 'compressed timescale'. As a new company, we recognise that we have a great opportunity to not only continue what we're already doing well, but also continuously improve the way we do things in terms of our operations and processes. This will help to ensure that our customers have a resilient water supply both now and in the future.

Ofwat's initial assessment of our plan has provided us with several key areas to focus on including:

- **Providing more evidence** of our current approach to ensuring resilience in the round.
- Developing a **systems-based approach**.
- Articulating the work that we have done to **prioritise risks, implement mitigation actions and proposing new performance commitments**.

5.1.2 Scope of response

The scope of this response is to provide additional detail on our activities since our September submission, and how we plan to strengthen our approach in the remainder of AMP6 and into AMP7 and beyond; this is summarised in Figure 2.

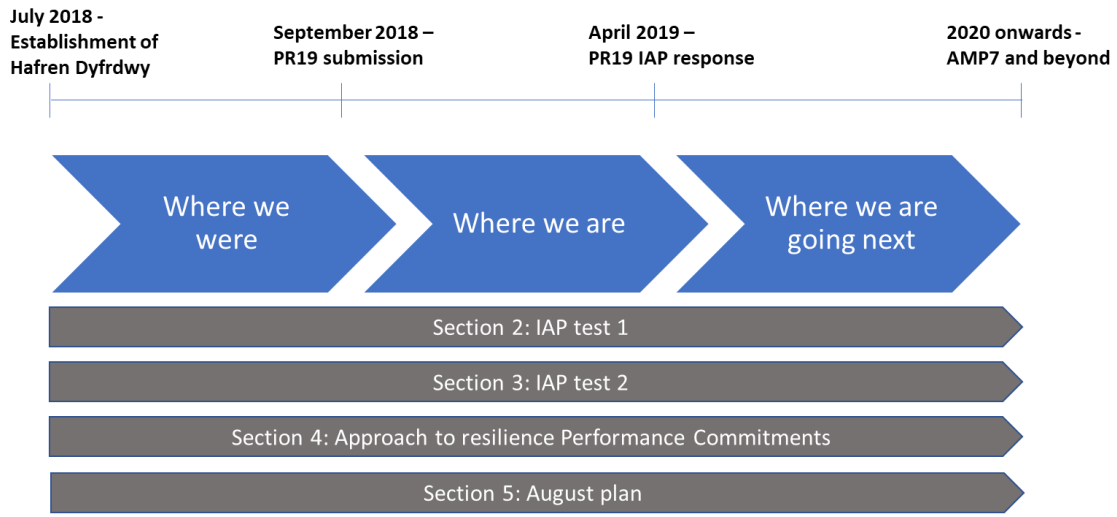


Figure 2: Focus areas of our response

The actions that Ofwat wanted us to focus on, as part of the test area '*Securing long-term resilience*', are detailed in Table 1 below. This table is designed to direct the reader to the relevant parts of this response that addresses these required actions.

Table 1: Ofwat Actions summary table for Hafren Dyfrdwy: Securing long-term resilience

Test Area	Action Reference	Action	Relevant narrative section
Securing long-term resilience	HDD.LR.A1	The company should ensure that the common performance commitments associated with operational resilience are clearly defined, sufficiently demanding for the period from 2020 to 2025 and the long term, and supported by the right incentives. We expect the company to satisfy the relevant actions set out in relation to the outcomes areas ensuring a line of sight between risks to resilience and package of outcomes. The company should propose direct bespoke resilience performance commitments linked to its resilience challenges and strategy.	Section 5.4 (and appendix 5.3)
	HDD.LR.A2	By 22 August 2019, the company should provide an action plan to deliver resilience in the round, reflecting upon our assessment of the business plan. This should include working to develop and implement a systems-based approach to resilience that considers a broad range of factors within and outside the water sector. The action plan should provide a clear baseline of operational, financial and corporate resilience and show how the actions will improve understanding of resilience or deliver improvement in resilience, progressing towards an integrated resilience framework that underpins the company's operations and future plans.	Section 5.2; Section 5.3; Section 5.5 (and appendices 5.1 & 5.2)
	HDD.LR.A3	The company should also provide a commitment to work with the sector to develop robust forward-looking asset health metrics and provide greater transparency of how its asset health indicators influence its operational decision making.	Section 5.4
	HDD.LR.A4	The company's assessment of financial stress scenarios extends only to 2025. The company should commit to demonstrating that its assessment of financial resilience extends beyond 2025 in its next Long Term Viability Statement	Section 5.2

5.1.3 Proposed approach

We have worked with resilience experts at Arup to review our current approach, and we are currently developing and implementing a systems-based approach that considers resilience in the round, covering corporate, financial and operational resilience. As a small company, we are particularly mindful of our role within the wider systems we operate in. We want everything we do to improve resilience for our customers and the environment.

As a new business we have a great opportunity, as we continue to develop our organisational approaches, to make resilience integral to everything we do. We have already begun to develop the evidence that we need to support this approach.

Our proposed approach is set out in Figure 3. This systems-based approach reflects, to a significant extent, what we are already doing to ensure a resilient supply for our customers. However, we recognise that our current practices can be qualitative or simplistic. We will strengthen our approach by developing better information, systems, and being more clearly focused. Increasing our focus will include robust risk assessment,

clearer decision making and accountability to deliver resilience in the round. Ultimately, this will provide us with a stronger evidence-base from which to inform our actions and investment, with our customer and stakeholder views remaining at the core of what we do.

We have already made progress, or have plans in place, to implement the approach set out in Figure 3. This response summarises where we were at the September submission, our progress since this time, and our plans going forward.

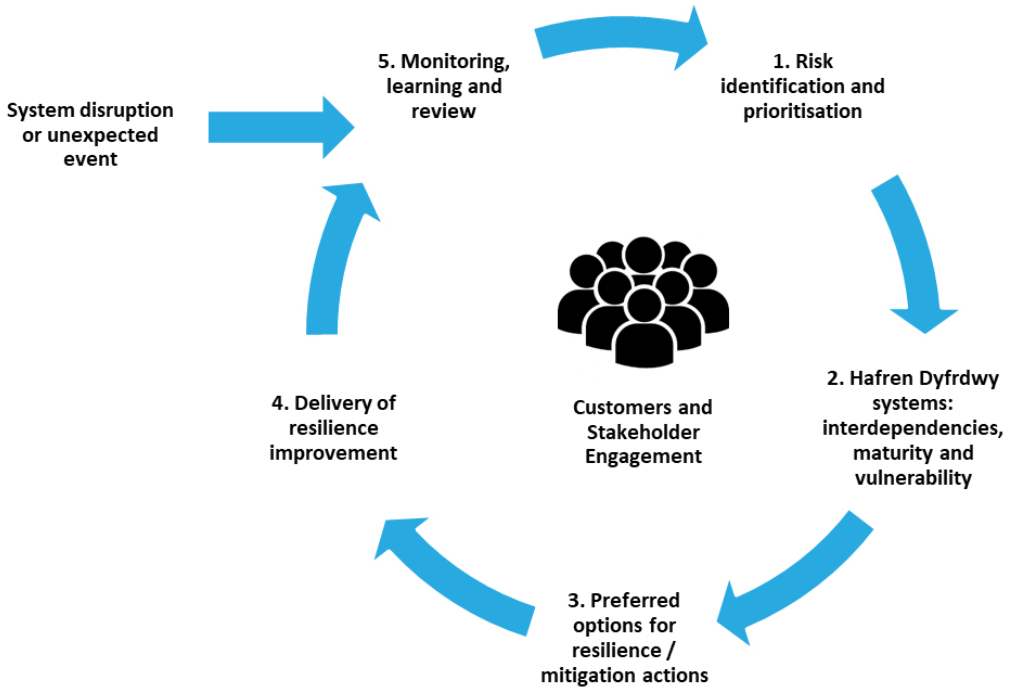
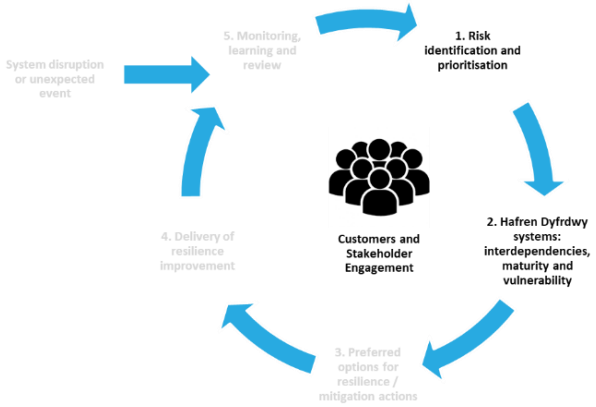


Figure 3 – Our systems-based approach to delivering resilience in the round. ***We will develop an action plan to deliver this and share it with Ofwat by 22nd August 2019.***

5.2 IAP test 1 (Resilience risks)

"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?"



5.2.1 Where we were in September

Stage 1 of our resilience in the round approach (Figure 3) requires us to identify the risks that could potentially impact on our systems and service to our customers. Stage 2 then requires us to develop an understanding of our assets, systems and their internal and external interdependencies. Taking a systems-based approach will provide us with an improved understanding of the vulnerability of our system to the risks identified in Stage 1.

As set out in our September submission, we had reviewed the potential shocks and stresses that could impact on our services to our customers. We had approached this by reviewing a diverse range of data sources and through multiple workshops.

We initially identified 28 shocks and stresses (e.g. climate change, customer expectations and environmental) which were considered in the context of our value chain, that represents our systems and services across water and wastewater (figure 4), to identify potential risks.

Overall, 100 risks were identified that could impact services to our customers which cut across corporate, operational and financial contexts. Identification of these risks was informed through a series of workshops with Dee Valley and Severn Trent Water colleagues along with intelligence from several other sources (our Asset Strategy team, previous iterations of the ERM, Welsh Government concerns and our Operational Risk Register).

We summarised our risks as falling into the following themes;

- Maintenance
- Legislation/Policy
- Standards/Compliance
- Resilience
- Data Quality/Information

Through this process it was discovered that our risks relating to waste were significantly lower than water risks, therefore the remainder of this document is focussed on water-related risks.

Figure 4: Hafren Dyfrdwy Value Chain

We had engaged with our customers about our biggest long-term challenges, and the potential impact on their bills to inform and prioritise our AMP7 plan; Ofwat commended the design of our customer-focused research on asset health and resilience. Our customer engagement was strengthened by the formation of our *Wales Customer Challenge Group*. We also had the opportunity to learn from other research carried out in Wales around the *Well-being of Future Generations (Wales) Act 2015*[1] and are embracing the wider thinking from this legislation.

External resilience expertise was sought from Arup, who undertook an initial high-level independent review of our corporate, financial and operational systems' maturity following our acquisition; this draft resilience maturity assessment is shown in Figure 5 (with more detail in Appendix 5.2).

This water resilience framework is designed to enable us to think about short-term management of risks, alongside longer-term trends and lower likelihood risks. It does this by considering how systems can be strengthened to respond to any risk, rather than simply focussing on risk mitigation. The framework will enable us to become truly resilient for the benefit of our customers and the environment.

For each sub-theme considered as part of the resilience maturity assessment, a rating from 1-5 was given. Table 2, below describes each rating level in more detail.

Table 2: Resilience in the round scoring methodology

Level 5: Leading	The company has a best practice approach to this goal with cutting edge actions and responses currently in progress. There is significant horizon scanning for future changes and clear methods to including these within plans and strategies. Regular reviews and updates are part of business as usual.
Level 4: Response actioned	The company has created a response and actions to meet this goal which is being applied in practice across most of the company. The company is focused on proactive actions to prevent issues before they arise.
Level 3: Response developed	The company set a clear goal around this and has developed a response around most elements. This response has yet to be widely actioned, though some pilots may have been undertaken.
Level 2: Aware	The company is aware of the need for this goal but has not yet been formally adopted into process, plans, strategies and operational activities. There has been very limited response to these gaps. In general the company reacts only to issues that arise as they arise
Level 1: Unaware	The company has not determined this as a goal. There are significant gaps in understanding, processes, plans, strategies and operational activities to achieve this goal.

The resilience maturity assessment was carried out based on documentation and interviews, at a time when we were relatively new as an organisation. We will update this assessment to inform our August submission, and will use the findings of this review as evidence to inform where we need to take action. Indeed we have already started to implement changes to respond.

[1] This legislation in Wales requires public sector organisations to produce analyses of future trends. A report is produced both by Welsh Government and by Public Service Boards every few years.

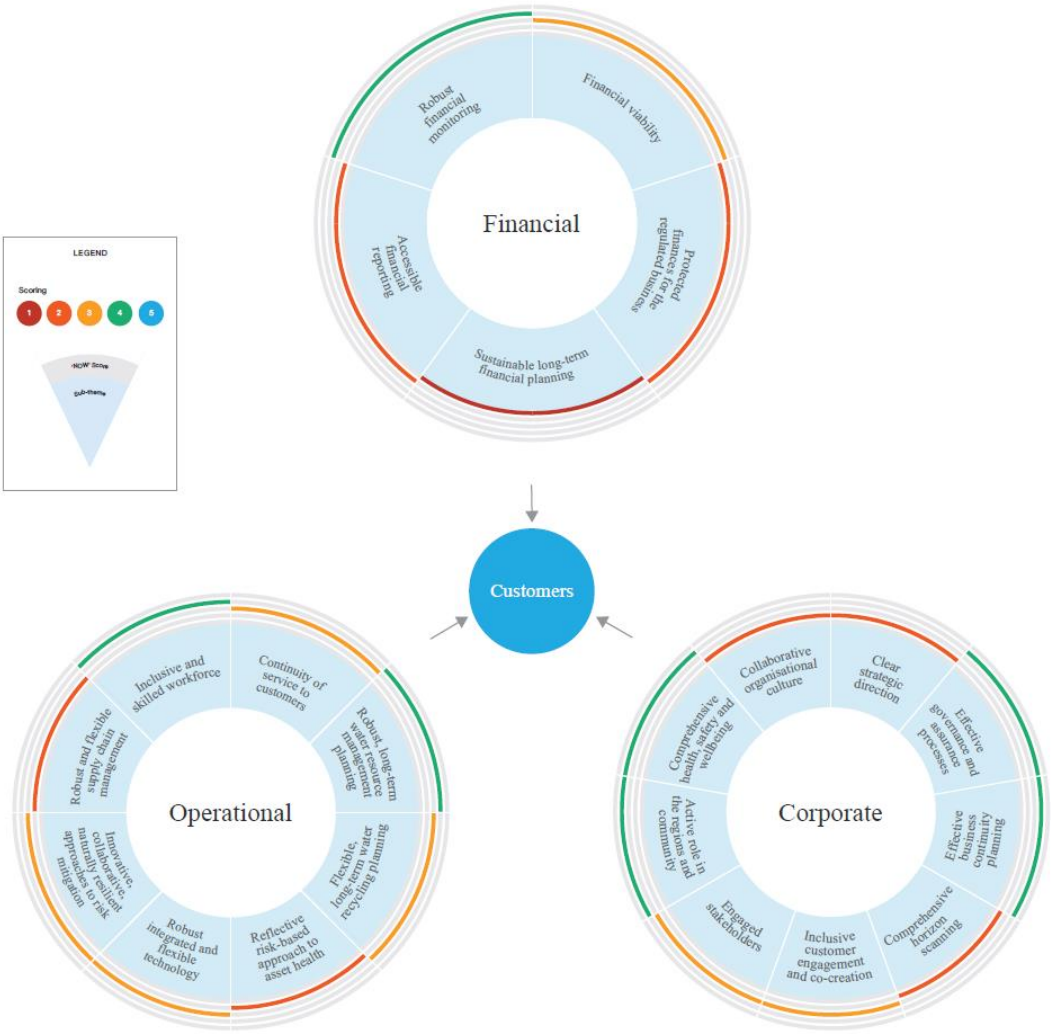


Figure 5: Our draft resilience in the round maturity scores for current practice (Arup, See Appendix 5.2)

Specifically looking at our operational resilience, we had assessed the criticality of our assets to identify those assets and sites that could significantly impact our services. This led us to subsequently complete 'what-if' scenarios for the deterioration of long-life assets, alongside FMECA analysis of our identified key sites (e.g. water treatment works). The FMECA included an understanding of potential hazards as identified in workshops, and associated failure modes which were used to identify the potential consequence of disruption to our systems and services across our value chain (as described as in figure 3 above). We also considered mitigations that are currently in place to understand any residual risks to inform our response.

One example of a corporate risk that we had recognised was the importance of our workforce to help us to deliver a resilient service to our customers (see Box 1). We had worked hard to ensure that knowledge was retained through the integration of Dee Valley Water and Severn Trent Water into Hafren Dyfrdwy, and had mapped our network into a GIS system.

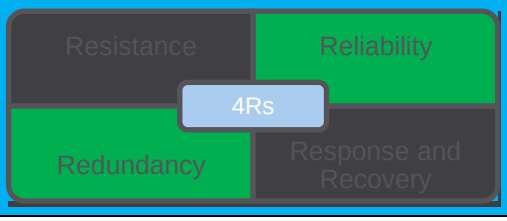
Box 1 – Case study: ageing workforce

One of our greatest assets is our people. Their diverse collective knowledge and experience is a key feature of our ability to provide high levels of service to our customers. We embed a culture of continual learning to keep our knowledge up to date. However, this asset is also a risk for us as this expertise can only be of value to us if it is available and current.

We have recognised that we have an ageing workforce, and there is a risk to us that, as our people retire, a lot of the expertise they possess will leave with them. This risk was further exacerbated by knowledge not being fully documented.

Following our formation as Hafren Dyfrdwy, we underwent a process of team integration between Dee Valley and Severn Trent Water staff, this helped to ensure a better balance of ages and pool of knowledge going forward. Using GIS, we mapped our network, making this knowledge available and accessible across the business.

We will also benefit from a £10m investment, made by Severn Trent Water, to establish a training academy to provide technical training and development for our employees throughout their careers as we bid to make our workforce the most technically skilled in the industry.



With respect to evaluating the financial impact of risks specifically, we performed and presented our annual review of our financial resilience and viability which is published in our annual report and accounts. This involved stress-testing our forward looking financial plans up to 2025. We modelled both plausible and severe scenarios which were generated from Ofwat's 'Putting the sector back in balance' document along with further scenarios developed from the principal risks included in our Enterprise Risk Management (ERM) process.

In our September submission, we had focused on identifying and prioritising risks that would require additional expenditure to mitigate through as no regrets measures. The basis for our decisions were typically made on judgement, rather than quantified approaches. Non-the-less, our approach conformed broadly to stages 1 and 2 as set out in our proposed approach (Figure 3).

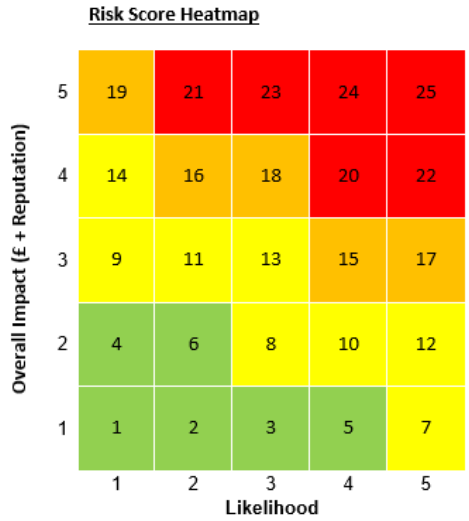
There are a number of resilience enhancing interventions already underway as part of BAU under AMP6. This will improve our wider resilience baseline as we move into AMP7. These include;

- Moving a distribution service reservoir due to a DWI quality requirement at Berwyn. Re-siting the asset will reduce stresses and reliance on Berwyn Bridge, a single point of failure on the network.
- Installation of a booster pumping station at Wrexham road which will reduce resilience risk by improving the robustness and scope of a second source of supply.
- Rebuilding our Oerog pumping station to improve asset reliability and further reduce resilience risk
- Investigations at Llandiman as detailed in Box 4, below.

5.2.2 Where we are now

We have recently established a new Enterprise Risk Management system to improve the way in which we assess and manage our significant risks, which are linked to our corporate objectives, core processes, key dependencies, stakeholder expectations and legal and regulatory expectations. Our ERM system allows us to

consistently assess operational, financial and operational risks, based on their impact to our systems and services alongside their likelihood of occurrence, as well as the interdependencies between them. We use the risk score heat map, as set out below. This means that high impact, low likelihood risks are prioritised.



From our initial qualitative assessment of risks, we have now prioritised these. The Hafren Dyfrdwy Board has signed off, and owns, our top nine principal strategic risks (appendix 5.1). The remaining shortlisted ERM risks (discussed in appendix 5.1) will be tracked by the appropriate risk owner, and the risks reviewed periodically or escalated as necessary. The remainder of our identified non-strategic risks are managed by the business, and are currently tracked manually.

We have also set out our assessment of the financial risks we may face; this is described and presented in Chapter 8 “Risk and Return”, Section 8.8.2.

Further evidence of our future developments for risk management are set out in Section 5.2.3.

5.2.3 Where we’re going next

We are developing our Enterprise Risk Management (ERM) approach and methodology to align with the well-established and robust process for Severn Trent Group; an overview of our ERM process is provided in Figure 6. This includes six-monthly reporting of significant Hafren Dyfrdwy specific risks to the Hafren Dyfrdwy Board and the processes that underpin that, including:

- Standardised quantification of financial and reputational impact;
- Horizon scanning to identify and monitor emerging risks;
- Establishing Risk Owner, Risk Champions and Risk Coordinators.

Our operational risks, managed by the business, will be tracked through implementation of a new operational risk management system, STORM.

Through developing our systems-based approach, we will have a greater understanding of our own systems and their interdependencies (both internally and externally). This will allow us to propose mitigations that provide wider benefits to

Figure 6: The HDD ERM process

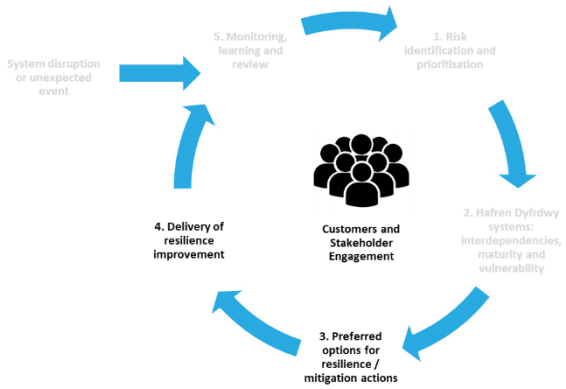
the resilience of our systems for our customers and the environment.

We are developing asset health and resilience measures, alongside service now measures (Figure 9), to track the condition of our assets and systems, alongside the performance of mitigations; these measures will inform our approach to risk. This also includes the creation of a bespoke resilience metric in this response; see Section 5.4 for further information.

We will continue to engage with our customers on the risks that are important to them and embrace the challenge from our *Customer Challenge Group.* We will also maintain dialogue and engagement with our diverse range of stakeholders. This will further support our understanding of interdependencies.

5.3 IAP test 2 (Resilience mitigations)

"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?"



5.3.1 Where we were in September

Stages 3 and 4 of our resilience in the round approach (Figure 3) set out our preferred options for resilience and/or mitigation actions, and the delivery of resilience improvement, respectively. Our options are based on the risks identified that could impact on our systems and our services to our customers, as identified in Stages 1 and 2 (Section 2).

Our customers' views are central in defining our proposed options and then implementing them. Our customer engagement told us that our customers expect the following 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**

Some of our risks were long-standing, and we knew urgent action was needed to mitigate them. Some of these have been made more immediate as a result of legislation change (i.e. reservoirs), where we have a statutory duty to comply (see Box 2). We therefore focused our September PR19 submission on where we needed enhancement investment. However, we recognise that we hadn't fully articulated the range of actions already underway as part of our base costs.

Some of our risks are being managed within existing AMP6 BAU activity; these relate to adoption of Severn Trent Group standards and ensuring customer experience levels are maintained during our transition period. Other risks, such as failure of the Wrexham ring mains and Inability to provide a wholesome supply for the Vyrnwy cottages, are being monitored with investigations of potential solutions underway. A series of case studies is presented in this response to highlight some of our key resilience challenges, what we are currently doing well, and where lessons have been learnt to develop our systems and processes to provide a more resilient water supply to our customers.

As a business, we have prepared '*What-if*' scenarios for all of our assets, to document response and recovery processes if an incident does occur. We also have documented response plans for all of our service reservoirs, providing detail on how tankers can support during an incident. We are also part of the North Wales Local Resilience Forum, and regularly take part in exercises and engagement with 'Blue Light' services.

With regards to mitigation of financial risks (tested as part of the process for preparing our long term financial viability statement), 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 identified mitigating actions.

Box 2 - Case study: reservoir safety

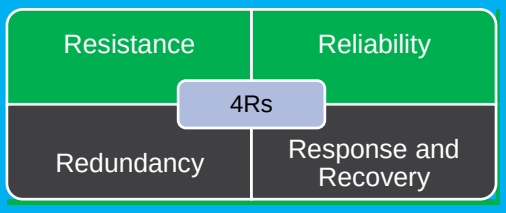
The safety and quality of our reservoirs is of the utmost importance to us and our customers. As a Welsh company we have been affected early by the phased introduction of The Flood and Water Management Act (2010) which amends The Reservoirs Act (1975).

Within the Act is a legislative change, unique to Wales, to reduce the volumetric threshold of reservoirs falling under the Act. As a result of this change, the number of our reservoirs falling under the act has increased by 5; 12 of our reservoirs will have to undergo their Statutory (section 10) inspection during the next five years, an increase of 55%.

The required interventions identified so far, which total £7.5m over the next five years, represent a significant increase above the historical average of £0.42m and a step change in ensuring we remain fully compliant with the Act and meet the expected level of asset stewardship.

In developing our approach to ensuring the ongoing safety and resilience of our reservoirs we have considered several solutions and have adapted our proposed approach in response to our customers concerns about affordability.

Our long-term plan ensures we are monitoring, refurbishing and rebuilding our reservoirs at a pace that balances risk with affordability and will ensure that the reservoirs are upgraded and maintained to a safe and serviceable condition.



5.3.2 Where we are now

Following on from our September submission, we recognise the need to reflect and consider our options for action in a more rounded way. This will require looking at the whole system and considering options across that span the Cabinet Office's four box model (Figure 7), alongside the qualities required in a resilient system that we had identified in our original submission (Figure 8).

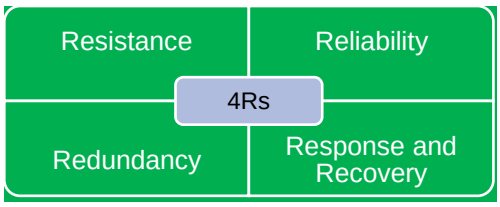


Figure 7: Cabinet Office Four Box Model

We consider a range of approaches when seeking to reduce potential risks to our resilience:

- **Redundancy:** Interventions to reduce the non-resilient population as identified in our "source resilience" metric – e.g. removal of single points of failure and enhancing connectivity.
- **Resistance:** Managing the probability of failure of critical assets – managing risk rather than removing it – interventions of this nature enhance our "asset health" measures.

- **Response and Recovery:** Improving our contingency capabilities – the ability to rectify a problem before a customer impact is felt – resilience enhancing measures in this area have a positive impact on our "service now" measures.
- **Reliability:** Ensuring that our infrastructure assets and systems are inherently designed to operate under a range of conditions, and therefore reduce the potential impact of an event.

The interventions that we are planning in response to each of our ERM board risks are set out in appendix 5.1.

In addition, using the qualities of a resilient system as defined by 100 Resilient Cities (Figure 8), we are working to improve our resilience maturity. This is the institutional capacity of Hafren Dyfrdwy to deliver a resilient service to our customers.

Figure 8: Qualities of a resilient system (100 Resilient Cities/Arup[2])

In our response to the 2018 freeze/thaw event, we have updated our weather-related triggers and have prepared seasonal preparedness plans. When required as part of an incident, we are able to draw on resources from Severn Trent Group as required to assist with our response, referred to as 'Mutual Aid'.

We are working with the sector more broadly both directly and through Water UK to share best practice. There is ongoing dialogue with Welsh Water and United Utilities around staffing levels and network preparedness. We've recently invested in Water Direct's Nationwide Bottled Water Bank to ensure our customers have a continued water supply should an incident occur.

We have been in consultation with the Consumer Council for Water on potential water trading options, recognising that we are a net importer of water in Northern Powys and Wrexham. This includes continuing to work with Dwr Cymru on mutual resilience issues in mid Wales. More information on our water trading and resource trading is shown in Box 3.

[2] https://www.arup.com/perspectives/publications/research/section/city-resilience-index

Box 3 - Case study: share resources with other companies: water trading

As a result of climate change, droughts and floods will likely become more frequent and severe, putting water supplies at increased risk in the future.

We recognise that we cannot deliver a response to this risks alone; we need to recognise our role in a wider system.

To mitigate these potential risks, reduce their impacts on our customers and enhance resilience of the water supply system, we have been engaging in water trading activities as follows:

We are a net importer of treated water in our Llanfyllin and Saltney water resource zones (7Ml/day) and are exploring opportunities to reduce our reliance on these imports, which will also potentially;

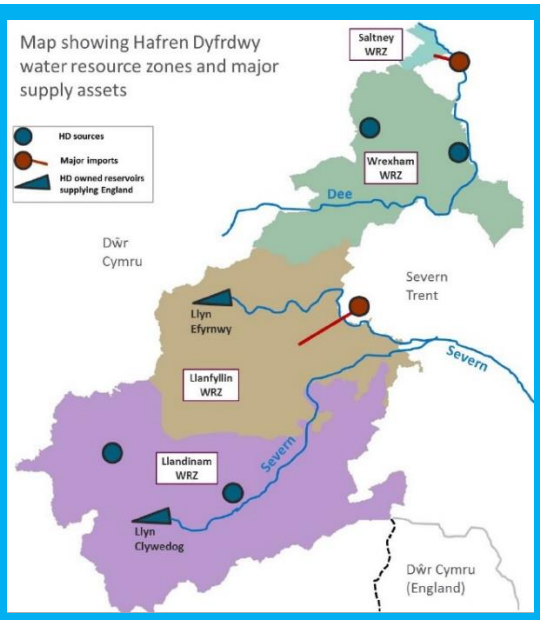
- Reduce our costs over the medium term
- Provide greater resilience
- Enhance our flexibility in terms of addressing private supplies issues

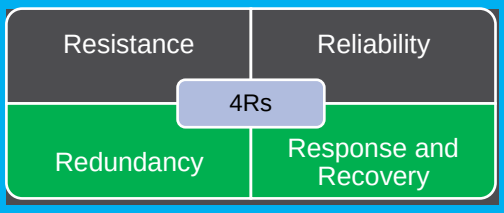
We have an agreement in place with Welsh Water to share water in case of an emergency, ensuring resilience of supply for customers.

We are also exploring longer term opportunities to increase capacity of our reservoirs in order to export into other areas experiencing supply issues in future.

We are working with our partners to restore approximately 450 hectares of upland peat bog around Lake Vyrnwy to move the SSSI status to 'Favourable' which will provide greater resilience for the local ecosystem. Lake Vyrnwy is a critical asset for our water trading activities with United Utilities. This activity will help us to achieve multiple benefits at this site, "a resilience dividend".

Water trading is a key driver of value for money for our customers whilst enhancing the resilience of our water network and the broader region.





5.3.3 Where we're going next

We will be developing a more comprehensive approach to mapping our systems' interdependencies, both within our organisation and externally, building on our previous 'what-if' scenarios and FMECA analysis. We will use this evidence to refine our processes and plan. This will enable us to assess and refine the actions and mitigations required to improve our resilience and to enable us to achieve the ***resilience dividend.***

We will develop new and map our existing Performance Commitments to help us to track performance of our assets, systems and mitigations; see Section 5.4 for further information.

We have begun to develop the evidence base that we need to develop an action plan to deliver resilience in the round.

Based on our prioritised risks, we are looking to improve the resilience of our dams and treated water service reservoirs; which reflects support from our customers on our resilience issues[3]. We will also invest in mitigating single points of failure (e.g. Box 4) and continue to build upon and strengthen our processes and

[3] Asset Health, Resilience & Intergenerational Fairness, DJS Research, May 2018

procedures to respond to incidents. We are also looking for opportunities to increase capacity, storage and interconnectivity.

Box 4 - Case study: managing a single point of failure at Llandinam

Llandinam is the main water source in Powys, serving approximately 37,000 customers. This is a single source supply and represents a significant resilience risk for us going in terms of ensuring continuation of supplies. Tankering of supplies to customers in the area following disruption is also challenging, due to its rural nature.

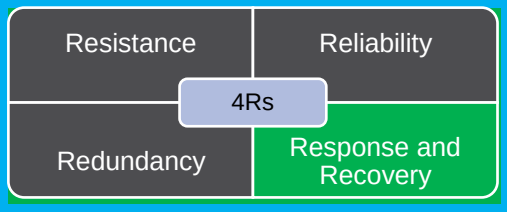
A period of heavy rainfall in the area resulted in a landslip in December 2012, which led to the failure of the 18" trunk main from the Llandinam distribution supply reservoir and the widespread loss of supply to a number of our customers in the region.

Initial work to explore the option of drilling additional 'resilience' boreholes has been undertaken. These boreholes represent an option to maintain short-term supply to the community in case of a future pollution event at the main borehole.

We are undertaking further feasibility work to assess the costs and timelines associated with delivery of the resilience boreholes. This will be compared with other options in order to ensure the final solution represents the best value for our customers in the long term.

In the meantime, we have been working with key stakeholders to monitor and improve our planning for ensuring continuous supplies, enhancing the short-term resilience of the region.

As part of this effort we recently joined Water Direct's Nationwide Bottled Water Bank, as a way of assuring the shortest available response time for our customers in the event of water supply interruption.



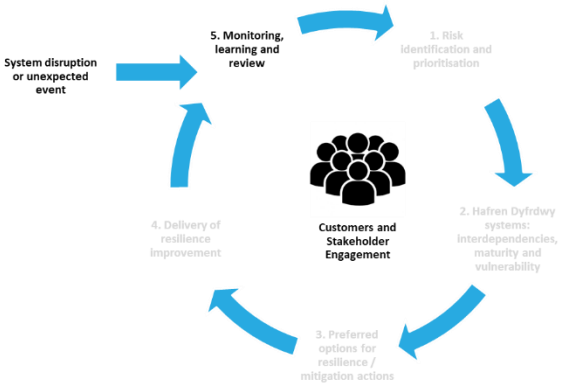
We recognise that we need to improve the understanding of our systems' interdependencies, both internally and externally. We have made good progress to date in terms of incorporating our network into GIS.

To provide early detection of issues, leakage detection, and incident response we are:

- Upgrading telemetry systems to provide information on the performance of our assets.
- Installing loggers and pressure sustaining valves across our pipe system to detect leaks and prevent storage reservoirs being drained during a leak.
- Developing plans to implement a 'situational awareness' model combining advanced data analytics and real-time network models to enable demand predictions and 'what-if' scenario planning.

5.4 Learning and Monitoring, incorporating our approach to resilience performance commitments

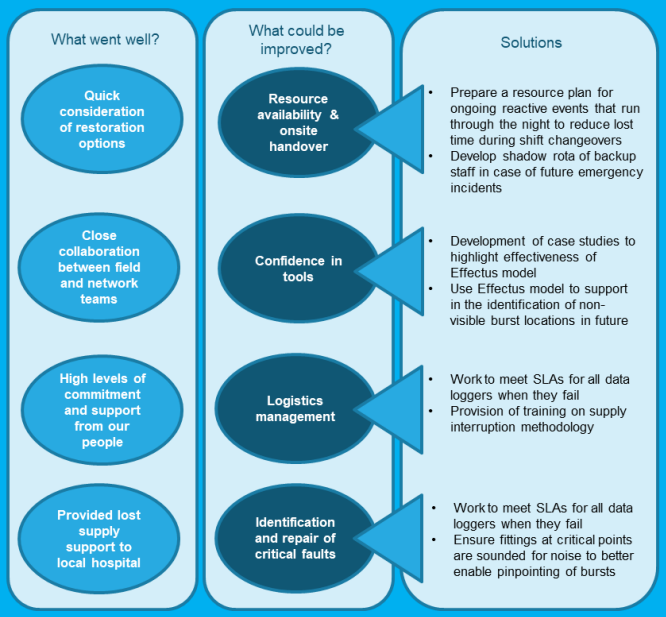
Stage five, *monitoring, learning and review* of our resilience in the round approach (Figure 3) ensures that we are able adapt effectively to any developing resilience risks. Our performance commitments relate to monitoring and understanding our day to day, short term and long-term issues.

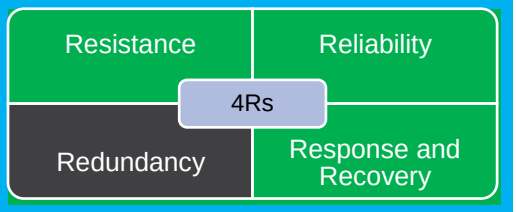


We are constantly monitoring our asset health and our resilience measures, which then allows us to understand the best options in support of what our customers are asking for, putting us in a good position to intervene and mitigate using the four-box approach as defined in Section 5.3.2.

Following disruptive events, we ensure that we undertake a deep-dive to understand what we're doing well, what could be improved and the solutions required to increase our resilience; a recent example of a burst main in Newtown is presented in Box 5. We've also reviewed our performance following the 'Beast from the East' event, where although we operated in a 'business as usual' context, we have nevertheless reviewed carefully the plans and preparations that we had in place, circumstances we faced, and how we responded to those circumstances.

Box 5 - Case study: continual learning and review: lessons from December 2018 burst





We have a number of performance commitments that are sensitive to the resilience of our service which inform our wider resilience thinking in combination with our new source resilience metric. Consideration of all relevant performance commitments and metrics must inform our systems-based approach to resilience in the round (Figure 3).

Given the diverse and interdependent nature of our customer facing risks that we have identified through our ERM process (see Section 5.2.2 and appendix 5.1), a single metric is undesirable. As set out in Figure 9, there is a gradation between service now, asset health and resilience metrics.

Responding to what our customers expect from us (see Section 5.3.1), we have developed and adapted four specific resilience performance commitments:

1. Source resilience (this is new since September 2018, see more detail in appendix 5.3)
2. Drought risk
3. Hectares of biodiversity improvements
4. Sewer flooding – extreme storms

The source resilience metric provides assurance on resilience levels inherent within our existing asset configuration and is a valuable tool for us to understand how best to enhance resilience for our customers.

Our 'service now' metrics measure and makes us accountable for our current performance. The present performance of our operations can be viewed as a measure of resilience risk within the system. Our performance commitment on supply interruptions is a good example of this.

The health of our assets is a significant contributor to the delivery of resilient services. Our asset health measures indicate the level to which our asset base is able to offer intended levels of service. We are working with UKWIR and other water companies to ensure that we develop best-practice asset health measures.

When developing a complete understanding of our resilience it is important to consider all of these measures together in order to make effective decisions to enhance our resilience in the round. The key metrics that must drive our decision making are set out in the figure below.

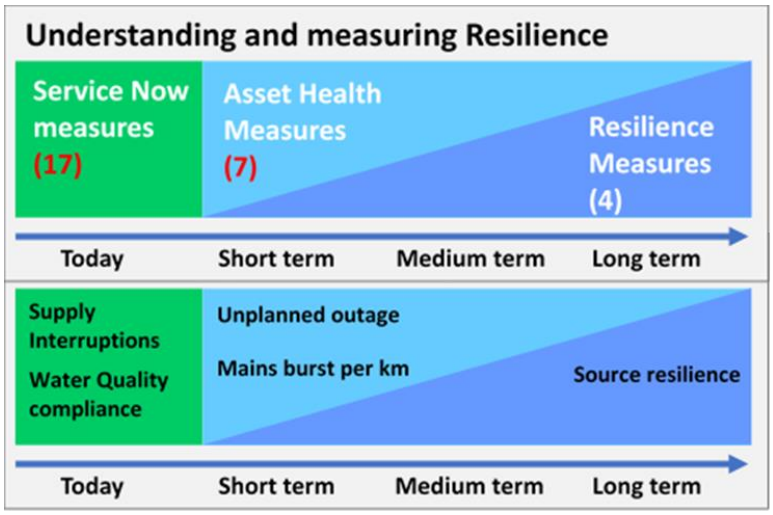


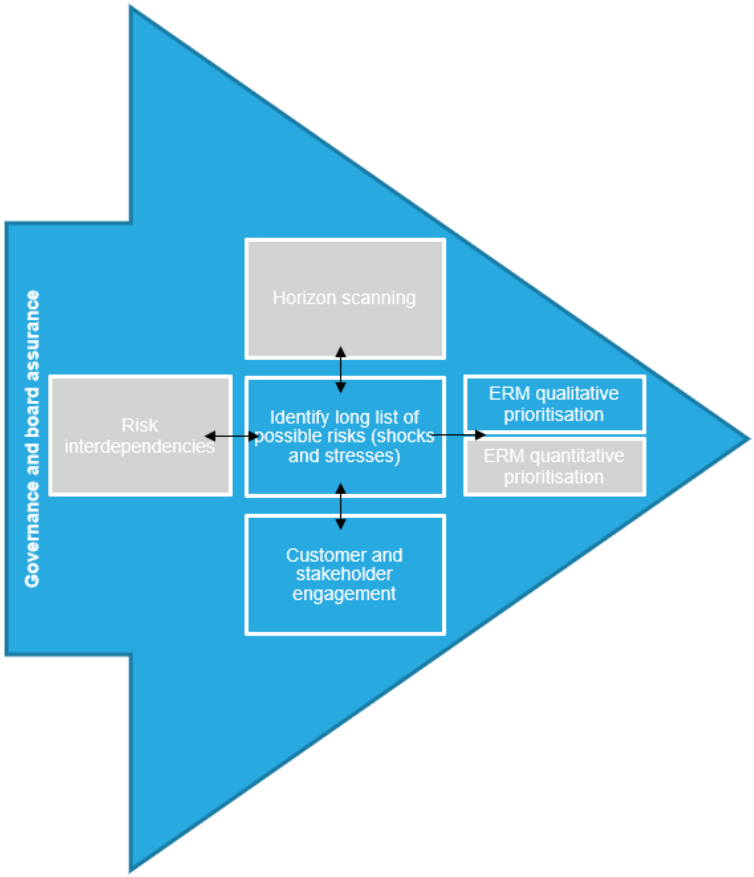
Figure 9: Understanding and measuring resilience

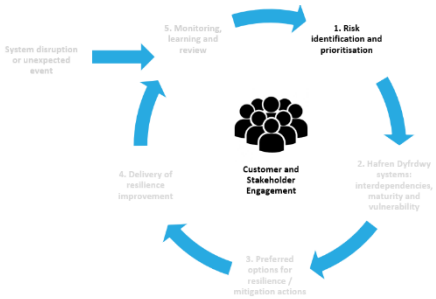
5.5 Summarising our developing systems-based approach

5.5.1 Overview

We are beginning to develop a systems-based approach and plan for resilience. We are not starting from scratch, and have already begun to integrate good practice from Dee Valley and Severn Trent. This section summarises how we plan to build on this to develop our systems-based approach for and with customers, which we will share with Ofwat in August (Our "August Plan"). This will be reviewed and owned by our Board. It will set our direction for the short, medium and long-term. It will be an adaptive plan to respond to the ever-changing environment we operate in.

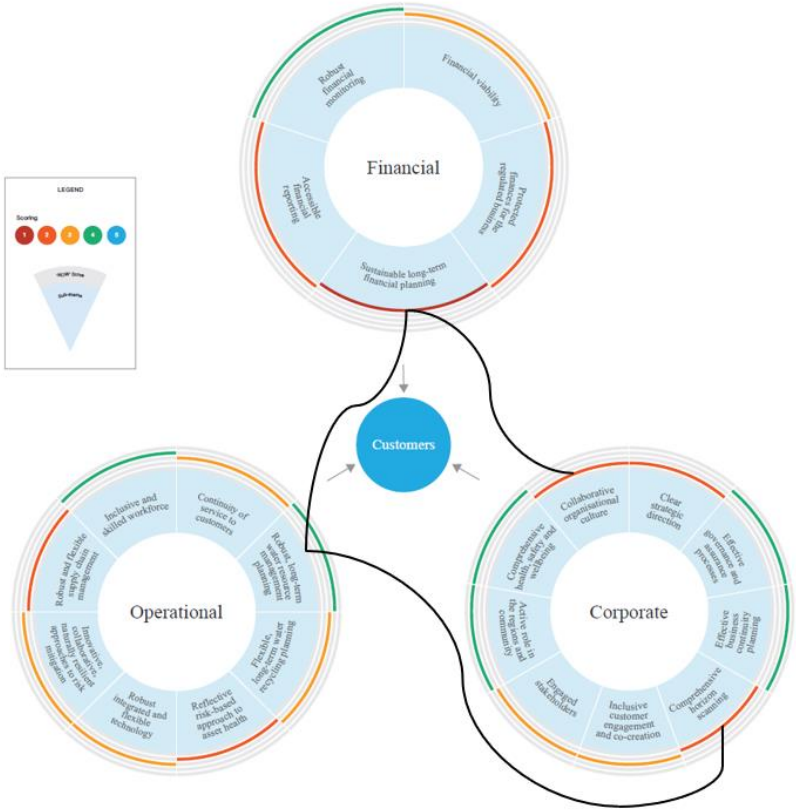
Step 1: Risk identification and prioritisation

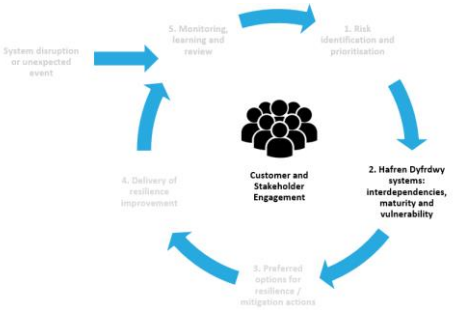




In step 1, we have identified both our existing approach and opportunities for improvement, in our risk identification and prioritisation step. Our approach will be further developed in our August 2019 Plan. The elements in grey will be further explored and articulated.

Step 2: Hafren Dyfrdwy systems: interdependencies, maturity and vulnerability

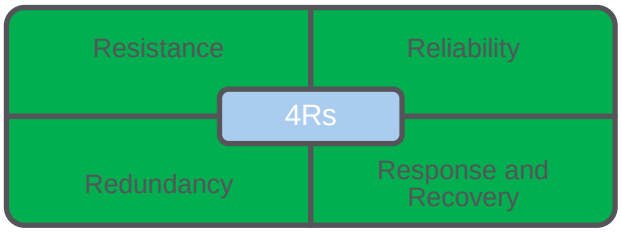


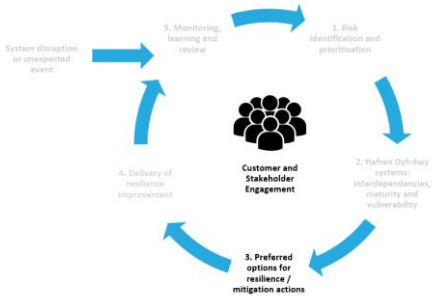


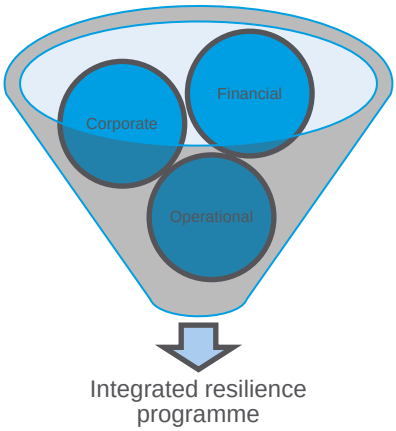
The figure above sets out an example of how we will begin to map the interdependencies of our systems as per step 2. We will build on this further by understanding our own systems within the context of other systems (such as power and transport, for example) and carrying out an update to our maturity assessment to be included in our August Plan. We will build on our knowledge and understanding from our role in the Local Resilience Forum. We will use the risks identified in step 1 to stress test the resilience of our systems.

Steps 1 and 2 will be developed and periodically reviewed by the Board to form our dynamic baseline understanding.

Step 3: Preferred options for resilience / mitigation actions

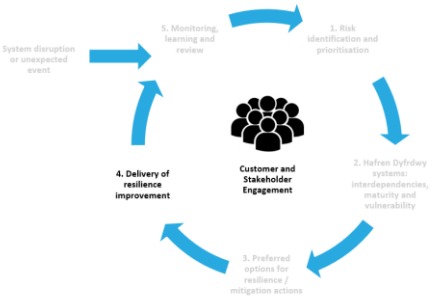






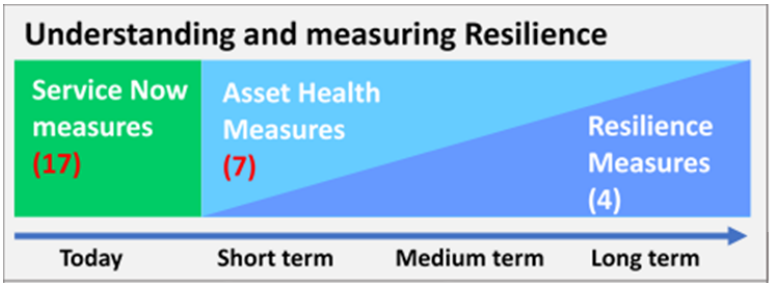
In delivering step 3, we use a combination of techniques, and decision-making processes to assess and prioritise our resilience interventions and risk mitigation actions. In our August Plan, we will articulate how these can be better considered together to develop a holistic and integrated programme. We will use our understanding of systems interdependencies to identify how we can deliver smart resilience (i.e. multiple benefits).

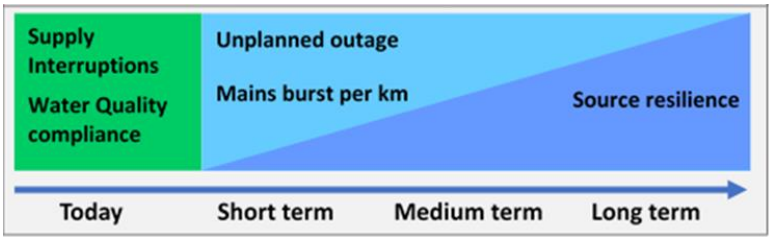
Step 4: Delivery of resilience improvement

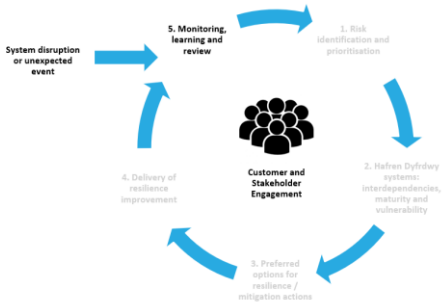


Step 4 sets out how we will continue to deliver the resilience improvements and interventions identified. We will work with stakeholders and customers to do this, and continually learn from our experiences. Our August Plan will set out how we will continue to build on the foundation we have laid in AMP6 and the evidence as identified in steps 1 and 2 of our approach.

Step 5: Monitoring, learning and review







We have set out both how we embed lessons learnt, and how we will use performance commitments to understand and measure resilience. We have determined that, given the multifaceted nature of customer facing resilience risk, it is neither appropriate, nor desirable to be considered in one metric. Step 5 makes sure that we consider resilience in the round.

Our August Plan will set out how we will continue to evolve our approach to improving measurement and understanding resilience. It will highlight our systematic approach to integrating lessons learnt.

Chapter 6
Targeted controls, markets and innovation

6.0 Targeted controls, markets and innovation

In its IAP, Ofwat noted some areas of high quality, but found five of the seven tests falling short of demonstrating high quality. This chapter addresses the areas that Ofwat identified as requiring further evidence and specifically addresses the two mandatory and one advisory action relating to this test area. This chapter is structured in the following way:

Test Area	Test questions	Action ref	Relevant narrative
Targeted controls, markets and innovation	CMI 1 – Demonstrate the right culture for innovation to deliver results for customers and the environment	HDD.CMI.B1	Section 6.1 Culture for innovation Appendix 6.1 Example of collaborative innovation
	CMI 2 – engaging with markets to deliver efficiency and enhance resilience now and over the long term	HDD.CMI.A1	Section 6.2 Drainage and waste water management plans Appendix 6.2 Draft plan
	CMI 3 – evidence of a long term strategy for securing resilient and sustainable water resources (consider both supply and demand side solutions and third party options where necessary)	No Actions	Section 6.3 Water Resources Update
	CMI 6 – quality of the bid assessment framework	HDD.CMI.A2 (due 15 July)	Section 6.4 Bid Assessment framework
	CMI 7 – robust consideration and where appropriate application of Direct Procurement	No Actions	Section 6.5 Direct Procurement for Customers

Test questions CMI 4 and 5 were assessed to be sufficiently well evidenced and not applicable respectively and therefore no further evidence has been provided.

6.1 Innovation

6.1.1 Innovation through partnerships

In our business plan we described how innovation plays an important part of meeting our stretching cost efficiency targets and performance improvements. The IAP feedback identified gaps in the evidence to demonstrate how we are enabling a culture for innovation. Advisory action HDD.CMI.B1 requested that we set out how we can collaborate with other companies to deliver innovation.

Since formation of Hafren Dyfrdwy in July 2018 we have sought to develop a culture of innovation appropriate for the organisation and focussed on customer priorities and Welsh Government policy priorities as expressed in their Water Strategy, Area Statements and Wellbeing goals. The Business Plan Submission in September 2018 gave an early snapshot of the position at that time.

Collaboration is a key aspect of how we are going to deliver the stretching performance whilst also meeting cost challenges. Over the last six months, since submitting our plan we have continued our engagement with

Welsh Government and local community organisations, for example Wrexham Council, OpenNewtown, to develop a distinct innovation programme that links to the challenges we face. These emerging projects are an efficient and effective way of focusing on the areas our customers think are important (such as environmental improvements), seek out well-being opportunities and address Welsh Government policy concerns (such as the 2018 drought affecting private supplies).

Where possible, our aim is to deliver this in partnership with local organisations, leverage grant funding from other sources and draw on Severn Trent Group expertise (for example in green energy). This will enable us to do more for less. The emerging programme is set out below.

Project	HD goal	Wider goals	Stage	Partner organisation
Small scale renewables to power pumping stations	Lower cost more resilient energy supply	Diversify local economy	Started	OpenNewtown
Low cost treatment for private supplies	Lower cost solution to improve reliability and water quality of Vyrnwy private supplies	Potential low cost option to address the wider private supply vulnerability exposed during the 'agricultural drought' of July 2018	Started	Potential for local councils, Welsh Government and Local resilience Forums
Pilot supply pipe adoption at individual properties	Efficient achievement of lead and leakage targets	Customer affordability Overcomes Competition Act concerns over free pipe repair and replacement	In planning	Wrexham council, Welsh Government, Severn Trent
Co-digestion of organic waste at a refurbished anaerobic digestion at Newtown STW	More efficient sludge treatment, energy generation	Economic Development. Lower risk of pollution	In planning	Cwm Harry Land Trust (potential for Welsh Government Support)
Creation of SuDS to replace existing piped surface water drainage	Improve bio-diversity and lower risk of surface water flooding	Biodiversity, recreation biodiversity goals	Started	Open Newtown and NRW

Appendix 6.1 includes an example of a project brief that has been jointly developed to generate further interest and community involvement.

6.1.2 Managing gap sites and voids

In the IAP Ofwat raised concerns about how we are managing gap and void sites and specifically the lack of reasoning for not offering financial incentives to third parties.

We have reviewed other companies' plans to see what lessons we can learn and the main area where companies are looking to put in place incentives is through relationships with water retailers. The legislation in Wales means that other than large users (over 50Ml/year) there isn't a retail market so this approach is not appropriate. We note that similar to HDD, Welsh Water are also looking at partnerships rather than incentivising their retail functions. However the lack of retail competition in Wales, doesn't mean we won't be looking for innovative and collaborative ways of reducing the number of incorrectly categorised as void sites.

This is an area we will be focusing on over the next few years, not least because it appears HDD has a higher percentage of void properties than others across the industry. Whilst it is possible that our region has a higher proportion of genuinely unoccupied buildings it is unlikely that HDD is that far away from the rest of the

industry. Our main focus in the short term is to ensure the robustness of our data and will include the following activities:

- Internal data cleanse and cross referencing of data between the two former systems and other data systems such as meter readings and leakage data;
- Once the data has been cleansed we will align HD to the full data sharing process which gives access to the credit rating data for all properties;
- Improving our CHOR (Change of Responsibility – when customers move home) processes to improve the accuracy of customer information when there's a change of occupier;
- Using every contact with our customers as an opportunity to validate and update the relevant data we hold about them and their properties;
- Utilising the data held in the Landlord portal, which requires all rented properties to have up to date information about its occupancy; and
- Using analytics tools to correlate various data sources (e.g. meter readings, leakage) to identify potentially incorrectly coded properties.

Once we have improved the robustness of our data we will work with third parties to start reducing the number of incorrectly coded void properties. Specifically:

- Working more closely with third parties who can help us identify occupied properties that we've recorded as void, in the first instance this will be through credit checking processes earlier in the process.
- Using third party organisations to do visits, building on the success achieved in the wider group

We will also investigate the potential for in-house incentive schemes to improve data sharing, such as from our meter reading ground staff.

6.2 Drainage and waste water management plans

In response to action **HDD.CMI.A1**, we confirm that by the 31 August 2019 we will submit a work programme explaining how we will deliver an appropriate draft DWMP by 2022. We are taking an active part in the industry collaborative work to develop these plans. To demonstrate the progress made since submitting our plan in September, appendix 6.2 includes our working draft and next steps.

It is important to note that the HD plans will be prepared in tandem with STE plans, since drainage areas cross company boundaries and the data and analysis needs to be carried out consistently.

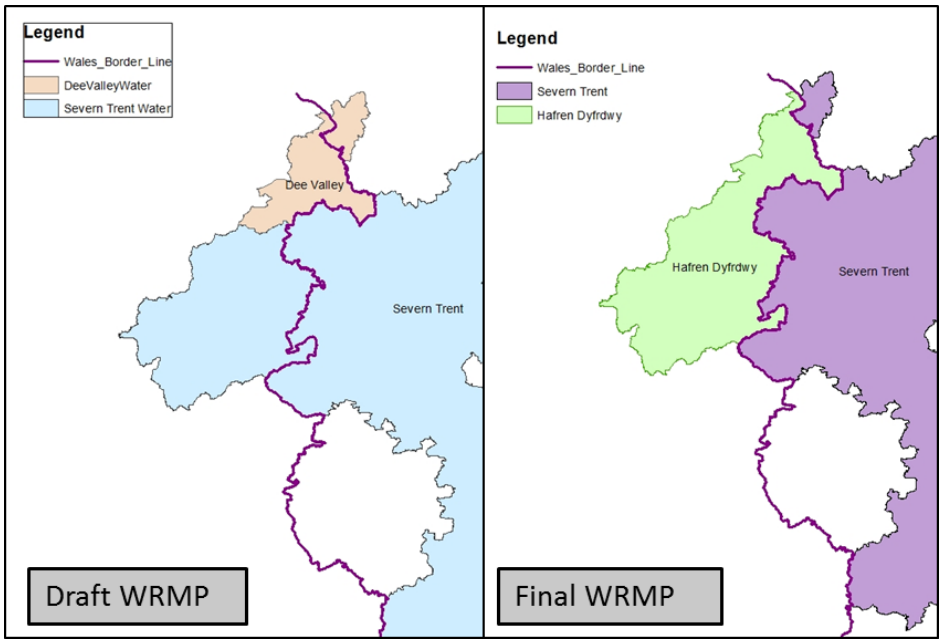
We plan to identify, consult and take into account the views of relevant stakeholders including customers as part of the plan development. We will also consider the possibility of working with the local authorities and the Public Service Boards relevant to our waste water region during the development of the plan.

6.3 Water Resources update

We based our draft Water Resource Management Plan (WRMP), published in January 2018, on Dee Valley and Severn Trent boundaries, and made a commitment to align to the national boundary between England and Wales for the final WRMP once Hafren Dyfrdwy had been established. This approach was agreed with both Natural Resources Wales and the Environment Agency.
Our agreed approach meant that some key business plan performance commitments, for example Per Capita Consumption and Leakage, were derived on old Water Resource Zone boundary basis and then apportioned in line with NAV assumptions. These assumptions were based on apportioning values using high level metrics like customer numbers and mains length.

For the Final WRMP, due to be published in May 2019, we have amended our water resource zones to reflect the new company boundaries. Parts of the former Dee Valley area in Chester and Wrexham WRZs now lie in the Severn Trent England plan and parts of Shelton zone and all the Llandinam zone now form part of the Hafren Dyfrdwy WRMP. These changes have been made to reflect the national boundaries and are not because of changes to connectivity in our supply system; customer's water supplies will remain the same and a legal agreement is in place between the two companies for the import and export of water. Figure 1 shows the original Dee Valley Water and Severn Trent Water boundaries and new Hafren Dyfrdwy and Severn Trent Water company boundaries.

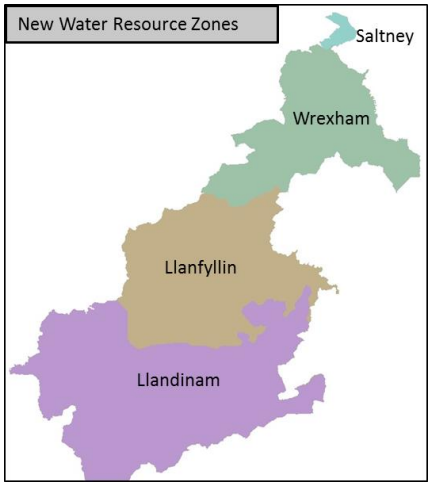
Figure 1 – Company boundary changes



Detailed analysis of the water resource zones affected by the company boundary changes has been undertaken to define new zones. This included a review of the company boundaries, sources of supply, customer connections, estimated leakage and risk of supply failure of service (drought risk).

These changes have been through three lines of assurance and were agreed with Natural Resources Wales in October 2018. Our Final WRMP reflects the changes and reports on the four new WRZs; Wrexham, Saltney (previously part of Chester WRZ), Llanfyllin (previously part of Shelton WRZ) and Llandinam & Llanwrin as shown in figure 2.

Figure 2 - Hafren Dyfrdwy water resource zones



The creation of these zones has provided better estimates of the AMP7 starting levels for Per Capita Consumption and Leakage and a comprehensive reassessment of Drought Risk. Details of these changes are detailed in chapter 4 delivering Outcomes for Customers.

In its IAP assessment Ofwat raised concerns that we had included insufficient evidence of engagement with third parties to investigate how they could be part of efficient delivery of demand side solutions such as water efficiency, metering or leakage. This is a fair challenge, but it must be recognised that there is no investment in our plan to drive demand side solutions, but instead our plan looks for overlap between other service areas of the plan where investment can drive multiple solutions. For example our programme to reduce lead pipes will include looking for partnerships, such as with Wrexham council, to drive multiple benefits from the same investment. As explained in response to action HDD.PD.A9 and 10 we are also currently setting up service level agreements (SLA) across our business where we are providing in-house services, this will include services such as meter maintenance and meter readings. These internal contracts will also be used in our programme of benchmarking where we will look for local supplies to bid against the same SLAs to see if other parties can offer the same (or better) services at a lower cost.

6.4 Bid Assessment framework

In IAP action HDD.CMI.A2, Ofwat requires us to revise our bid assessment framework to address their concerns around the lack of detail on the bidding process and lack of transparency.

Notwithstanding our water resource position is in surplus, we accept that our draft Bid Assessment Framework fell short of expectations and recognise that some other companies' approaches were better.

We are developing an improvement plan and will ensure its implementation by the 15th July 2019. Our high level plan is illustrated below and is based on some initial benchmarking with United Utilities and the Canal and Rivers Trust. We welcome further feedback from Ofwat to refine our plan throughout the process.

Bid Assessment Framework Improvement Programme							
	January	February	March	April	May	June	July
Review Feedback from Ofwat							
Benchmark against leading proponents							
Development Improvement plan							
Internal review, assurance and sign off							
Submit improvement plan to Ofwat			✦				
Review, redraft and test information requirements							
Develop and align evaluation criteria with internal WRMP rules							
Develop detailed process with Internal Procurement Team							
forms							
bid assessment (evaluation)							
Feedback process							
appeals process							
Develop and test dedicated inbox to handle queries and applications							
Develop website interface documentation and guidance							
Launch website and forms							✦
Complete improvement Ofwat feedback session							✦

6.5 Direct procurement for customers (DPC)

Ofwat's assessment stated that we had applied a detailed approach to assessing our investment programme for DPC suitability and that we did provide some justification why no scheme would meet the £100m totex threshold, which was supported by third party assurance. However, they are concerned that we did not provide the whole life totex of each scheme to support this conclusion.

As stated in our business plan, the entire programme for AMP7 is just over £150m for all activities across all price controls and within that we expect the total enhancement spend 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. However, we accept the challenge that we did not include the supporting evidence to prove this.

We have analysed the Business Plan costs for major programmes of work. The whole life costs are confirmed to be significantly below the Direct Procurement threshold and are set out in the table below.

Investment Programmes		Capex / Infra renewals expenditure £m	Inferred future Opex £m per annum	WLC (NPV, 80 years, 60 year asset life, WACC of 2.3%) £m	Notes
Infra renewals		20.7	0.17	22.3	Multiple projects at different locations to renew or maintain assets
Non Infra Maintenance		27.3	0.23	29.4	
Cost adjustment claims	Supply Resilience (DSRs)	11.3	0.09	7.6	
	Reservoir Safety	6.0	0.05	4.0	
	Lead	2.9	0.02	3.2	
	Biodiversity	1.8	0.01	1.2	
Other enhancement including NEP and Developer services		6.4	0.05	6.9	Various small programmes

In deriving these WLC values, we have made the following assumptions:

- That the identified investment programmes are discrete projects that could be logically isolated and delivered through direct procurement. In practice, this is not likely to be the case as they typically represent many small scale interventions across the breadth of our region.
- The capex values reflect Ofwat's IAP assessment of Totex. For the Infra renewals and Non-Infra maintenance components, the headline values are derived by prorating business plan values to reflect the IAP assessment of Botex expenditure
- The Cost Adjustment Claims include both enhancement and base expenditure (which will also be reflected in the top two lines). Consequently, this table cannot be considered as additive.
- Inferred future opex has been derived by isolating ongoing asset related opex from the business plan (Total opex minus rates, abstraction costs, expensed infrastructure renewals and 3rd party costs). This has been prorated to reflect the IAP assessment of Botex expenditure. For each capex programme, the % of the MEAV of the asset base has been calculated to expose the size of the programme relative to the existing asset base that we currently incur opex against. The current asset related opex is then scaled to the relevant capex programme using this percentage.
- The Capex and Inferred future opex are then used as inputs for WLC calculation. We assume an analysis period of 80 years and a capex asset life of 60 years. We have also assumed the Treasury green book discount rate and a WACC of 2.3%. The crossing of the DPC threshold is not at all sensitive to appropriate variance of these core assumptions.

Chapter 7
Cost efficiency

7.0 Cost efficiency

7.1 Overview

We are very pleased that the cost efficiency of our AMP7 proposals has been recognised through Ofwat's IAP Totex baseline. This means Hafren Dyfrdwy's (HDD) AMP7 cost efficiency is the best in the sector. We were the only company to outperform the regulatory baseline in all three services (Wholesale water, Wholesale Wastewater and HH Retail, see figure 1). This efficiency, combined with the fact that our customers have the lowest combined bill in the sector is a really important part of ensuring our bill remains affordable.

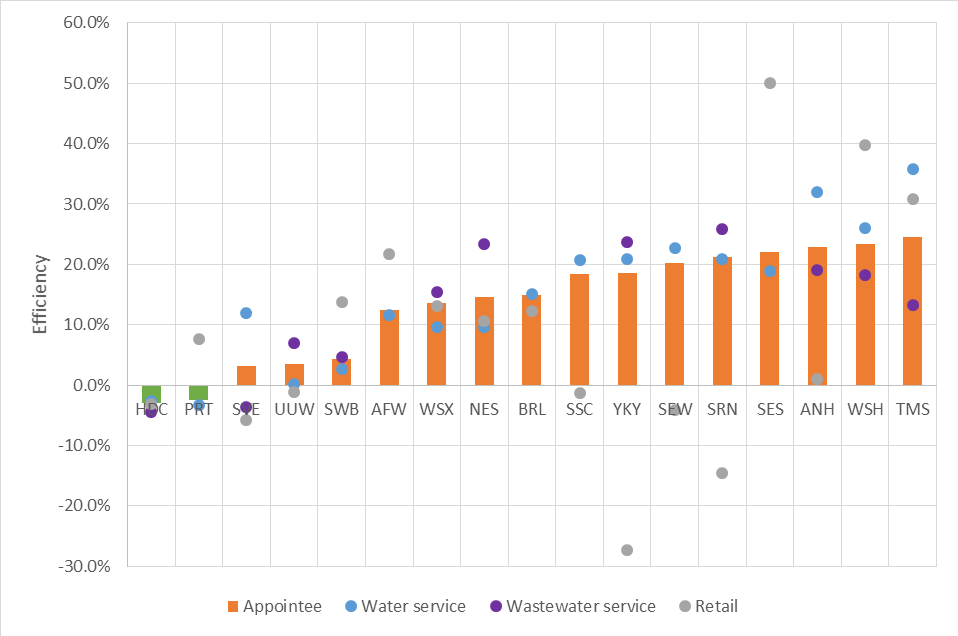


***Figure 1**: PR19 Cost efficiency as calculated by Ofwat in the IAP*

In this chapter we provide an update on our totex programme and we address the two specific actions that were raised through the IAP, the first to provide updated evidence on the cost adjustment claims and the second to confirm changes as a result of the metaldehyde ban. It is structured in the following way:

Section heading	Action ref	Key investment areas	Relevant appendix
7.2 Cost adjustment claims	HDD.CE.A1 (part1)	7.2.1 reservoir safety	Appendix 7.3 to 7.7
		7.2.2 lead reduction	Action response HDD.OC.A42-44 in Chapter 4 Outcomes
7.3 Water investments	HDD.CE.A2	7.3.1 Metaldehyde	
	n/a	7.3.2Developer services	Appendix 7.1
7.4 Waste water investments	HDD.CE.A1 (part 2)	7.4.1 NEP obligations	Appendix 7.2 Also Action HDD.OC.A47
		7.4.2 Other	

7.2 Cost adjustment claims

In September we submitted four claims (Reservoir safety, Lead reduction, Supply resilience and Biodiversity and well-being). In the IAP Ofwat has:

- fully accepted one claim (Lead);
- partially accepted two claims with the addition of an efficiency challenge (Reservoir safety and Biodiversity); and
- considered that one claim is fully allowed for in its modelled baseline (Supply resilience).

Prior to submitting the claims, we did not have visibility of Ofwat's cost assessment models, which resulted in our claims including an estimate of the amount of investment that might be included within the modelled allowance. Consequently, we have updated the cost adjustment claims to reflect both the modelled allowance and to provide further evidence to address the challenges as set out in Ofwat's IAP assessment. The key changes in our revised submission are listed below.

- Provision of more evidence to justify the reservoir safety claim. We have reduced the adjustment claim to £4.3m (from £7.05m) to reflect the confirmed amount that falls within the modelled allowance.
- Acceptance of Ofwat's adjustment for biodiversity and well-being and lead reduction, although additional commentary is set out in 7.2.2 to address the specific challenges on Lead reduction.
- Withdrawal of the supply resilience claim as it is covered by the modelled allowance.
- Confirmation of withdrawal of the density modelling claim.

Data tables Wr6 and Wn8 have been updated to reflect these changes and a changes log is provided as supporting information to the data tables.

7.2.1 Reservoir safety

The table below summarises the changes to this claim:

HDD September claim	Ofwat IAP assessment	April Resubmission
£7.5m	£5.54m	£7.5m
Made up of:	Made up of:	Made up of:
£0.5m modelled allowance	£3.23m modelled allowance	£3.23m modelled allowance
£7m adjustment claim)	£2.310m adjustment	£4.27m adjustment)

The reservoir safety cost adjustment claim received a partial pass overall but was subject to a £1.97m efficiency challenge, which was primarily based on gaps in the evidence to demonstrate:

- that there is a confirmed statutory obligation;
- that we have identified the optimum solution for customers; and
- that costs are demonstrably efficient.

All of the information presented in September is still valid and pertinent to the claim, therefore the revised submission below specifically addresses the IAP challenges, but should be read in conjunction with the original business case. We consider the information below addresses the concerns and should enable Ofwat to remove the efficiency challenge applied at IAP stage.

Need for the adjustment - Evidence to demonstrate the statutory status of the reservoirs

Ofwat feedback stated

> "… the changes under FWMA 2010 puts the statutory burden on undertakers only for those reservoirs which are deemed to be High Risk. There is insufficient evidence that all of the 14 reservoirs associated with this claim are High Risk. …"

NRW guidance on risk designation is set out on their website. If the assessment shows there is a risk to life then the reservoir is classed as high risk. If it is not high risk then it does not fall under the Reservoir Act 1975 and none of the risk mitigation activities (such as Section 10 (ten-yearly inspections) or Section 12 (annual inspections) would apply. The nine HD reservoirs (i.e. that are greater than 25,000m^3) are all classified as high risk reservoirs and have been inspected under Section 10 of the Act every 10 years since the Act began. Whilst the NRW formal classification of the 5 reservoirs that newly fall under the act (those with capacities between 10-25,000m^3) is not complete, we present below the evidence to explain why this uncertainty poses minimal risk to customers.

The letter in appendix 7.3 provides confirmation that the reservoirs are subject to regulation by NRW under the Reservoir Act 1975 (including the 5 not yet formally designated reservoirs). The letter refers to 16 reservoirs (which covers all reservoirs greater than 10,000m^3 capacity), but the costs associated with the two reservoirs (Llyn Clywedog and Vyrnwy) that do not serve HD customers are not included in our claim.

In the unlikely event that NRW designate the 5 reservoirs as "Not high risk", we still think the risk to customers of non-delivery is very low. This is because the total investment proposed at these 5 newly classified reservoirs is £250k in AMP7 (around 3% of the total programme). Of this, £180k is required at one site (Pant Glas). The remaining 4 sites account for less than 1% of the total cost of this programme and therefore no further evidence to prove their likely designation has been presented, but could be if required.

For the remaining reservoir (Pant Glas) where some investment, albeit small, is planned in the next 5 years, we consider the following evidence explains why we do not think this poses a risk to customers.

1. The Atkins study suggested that a total of £510,000 (construction only costs) are likely to be needed at Pant Glas as a result of the Section 10 inspection, but given the uncertainty around this we have excluded elements of that scope that we view might not be necessary if it does not fall under the Act. This predominately relates to investment to improve access, as our experience is that the space restrictions can be managed with careful planning and site management and therefore our plan only includes £180,000, for the elements which are likely to be needed irrespective of designation (covering surveys, valve testing, water level monitoring, spillway investment). This equates to around 2% of the total programme costs.
2. The reservoir at Pant Glas is 7.6km south west of Wrexham town centre. Pant Glas outflow feeds into the Nant yr Crogfin stream which flows to the south east towards Penycae. Due to the on-going classification, the NRW reservoir flood risk map has not been completed (figure 2, below). Whilst no flood inundation is shown on the official map, we know that in the event of a reservoir failure, flooding will occur in Top-y-tai-nant, Tai-nant and then further downstream in Penycae (as per the flooding already shown from the Penycae reservoirs in blue below). It is clear from the proximity of the settlements downstream (shown within the dashed oval) that it is highly likely to be categorised as a high risk reservoir.
3. Reservoir experts at MWH and separately at Atkins both consider it will be classed as high risk.

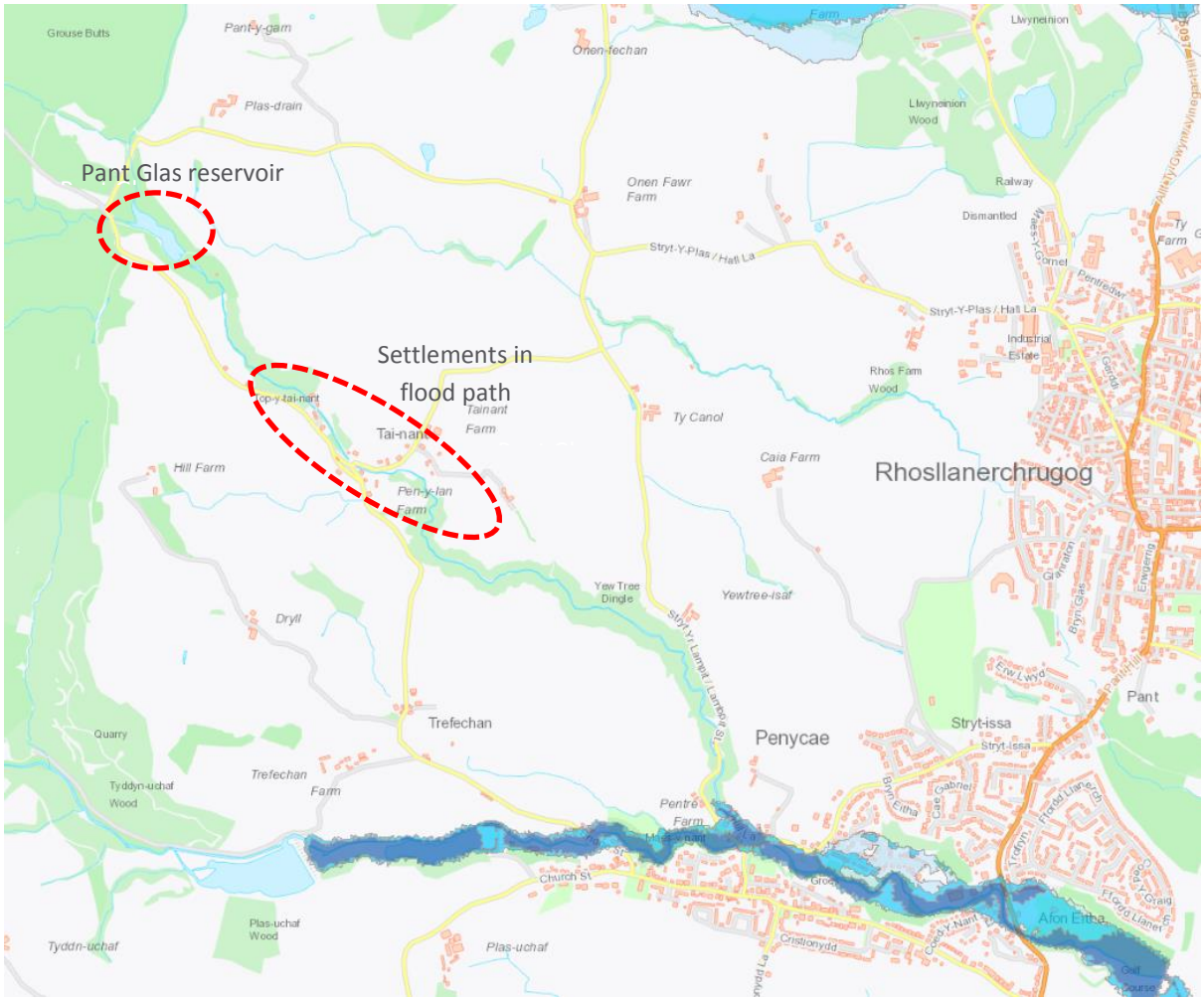


***Figure 2**: Extract from the NRW Reservoir flood map showing locations were that would be at risk of flooding in the event of a failure of Pant Glas reservoir.*

Best option for customers

The Ofwat IAP raised the following concern:

> …some level of optioneering is presented on p85 but these are more of technical solutions for each site, and what appears to be a limited assessment of the wider resilience options for the water resources system. … we would expect to see values for these costs of alternative infrastructure, for example the costs of importing water from its neighbours. With regards the pumping costs, it would have been expected that the company showed evidence of exploring some renewable energy options.

Wider resilience considerations

Reviewing our initial submission, we appreciate that the business case quickly drew the conclusion that reservoir discontinuance and finding an alternative source is not a viable option. Page 85 included the following paragraph.

"We first considered if these reservoirs are needed at all and whether it would be possible to replace the capacity e.g. through increased abstraction elsewhere or increased storage at other sites or through a water trading option. Due to the location and strategic importance and cost of the alternative infrastructure (pipelines and pumping costs) this was discounted."

There are two key points that have led us to this conclusion:

1. Our raw water reservoirs play an important (and growing) part of our overall water balance and resilience strategy. We are heavily reliant on river abstraction from the River Dee (which accounts for 60% of HDDs water resources) and whilst there is extensive monitoring and controls on the river it is a single point of failure and part of our forward looking resilience strategy is about maximising the yield from the reservoir stock to reduce the impact if the river source was not available. The drought scenario planning shows these assets are key to our ability to ensure 0% risk of restrictions during a 1 in 200 year drought. This will become even more critical in the future given that NRWs catchment abstraction management strategy for the River Dee states that there is no further water available for abstractions.
2. The cost associated with discontinuance is high and in most cases higher than the maintenance costs of keeping the asset in service. We have benchmarked Severn Trent group costs with other water companies who have recently undergone discontinuance work. Furthermore, there is a significant risk to the final outturn cost of discontinuance due to the the lack of experience so far in the UK. Details are presented below.

Raw water resilience

Based on expert judgment the following assessment was made to decide if the system could operate without each reservoir (or be replaced by an alternative source).

Reservoir	Discontinuance possible	Reason
Cae Llwyd	No	Large volume, strategic storage, no obvious alternative supply. Also provides settlement against dirty water entering Ty Mawr and thereafter the treatment process
Pant Glas	Yes	Small (c 0.5 day storage) could be replaced/ rebalanced from other reservoirs
Ty Mawr	No	This is the key reservoir which balances flows from other reservoirs and would require excessively costly and disruptive changes to the entire network. Would also require Cae Llwyd to be discontinued. The reservoir provides significant storage and is the major secondary supply
Marchwiel	No	This is the key reservoir which balances flows from river abstraction and the other reservoir systems and would require excessively costly and disruptive changes to the entire network. It also provides pollution protection for the River Dee and efficiently breaks the head of all upland supplies to Llwyn Onn.
Penycae-Lower	Possible but discounted	Limited storage (1 day) so volume could be replaced/ balanced from other reservoirs but required under peak year drought plan conditions to augment abstraction on the River Dee.
Penycae-Upper	No	Useful storage (2 day) but volume could be replaced/ balanced from other reservoirs but this is required under peak year drought plan conditions

Pendinas	No	No obvious alternative supply, significant pumping would be required (c280m lift from river to this reservoir) would increase operating costs by c.105k per year It is also needed for blending of poorer quality water at Nant-y-Ffrith.
Nant-y-Ffrith	Possible	Seasonality linkage to poor quality water but always required in dry weather conditions and has proven key to continuous supplies during extended periods of hot weather.
Llyn Cyfynwy	No	Important storage, and key part of our drought resilience (and was a contributing reason why supply interruptions were not experienced during the hot weather in 2018) Alternative supply would be costly due to topography (c260m lift from river to this reservoir) would increase operating costs by c.100k per year.
Pen-y-Gwely	Yes	Currently not in service
Nant –y-Geifr	Yes	Currently not in service
Esgaireira	Yes	Currently not in service

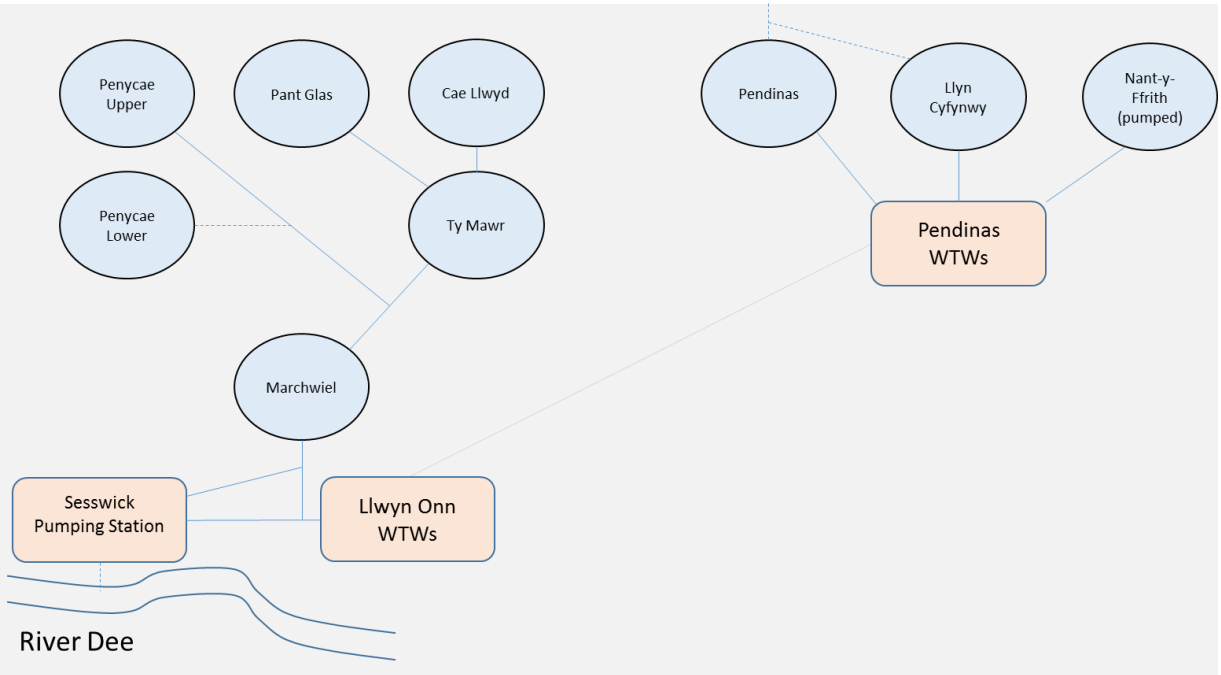


***Figure 3**: Configuration of Hafren Dyfrdwy raw water reservoirs*

Of the 5 reservoirs where discontinuance is an option, three of them have only minor investment associated with normal inspections included in the plan therefore no further consideration has been made for discontinuance. We have carried out costing comparisons for the remaining two reservoirs where discontinuance is a potential option.

Construction costs at each reservoir	Cost included in plan to address risks to ensure compliance	Cost of discontinuance
Pant Glas	£0.18m	£0.530m (see appendix 7.5 Atkins report section 5.8.4)
Nant-y-Ffrith	£2.4m	£3.1m *

**this estimate is based on Atkins assumption that the volume of the notch excavated in the dam, is a function of the dam height squared, which has then been multiplied by the unit cost of £46.47m^3.*

The full scope and costing report is included in the Atkins report in appendix 7.5. Atkins have benchmarked our estimate of discontinuance costs (which is based on £46.47 per m^3 of earth removed) and in section 6.3.2 of the report in Appendix 7.5, states:

> "Consultation with other water companies who have undertaken discontinuance has been undertaken. High-level outturn costs and earth quantities to be removed consulted. Comparing by m^3 of earth to be removed this ranged from £62.50 per m^3 to £86.67 per m^3, this is significantly more than the Atkins estimate for British Camp which equates to £46.47 per m^3."

This shows that in both cases (Pant Glas and Nant-y-Ffrith), maintenance is a lower cost solution than discontinuance, even before you consider the additional costs of alternative sources to replace either the required volume or level of resilience. Which is why the analysis of these additional network and pumping costs have not been included. Discontinuance will be an ongoing consideration, particularly for the three reservoirs in Powys which are not currently needed as part of our day to day operations.

Peer review of optioneering

A subsequent concern was also raised:

> A peer review of the optioneering by Atkins is mentioned, but this has not been presented within the appendices. It is therefore not clear if the optimal solutions are being proposed. The business case does not convey a sufficient level of detail of third party technical assurance, and provides a limited assessment on the wider resilience options for the water resources system (costs, technical complexities etc.)."

We have carried out three levels of optioneering:

1. Risk review and high level optioneering, by Mott Macdonald (appendix 7.4)
2. Site specific optioneering and costing (including benchmarking), by Atkins (appendix 7.5)
3. Contractor scope and cost development as part of benchmarking by NMC (appendix 7.6)

The risk assessment (item 1) was included in the September submission but erroneously appended to the wrong cost adjustment claim. All three documents have been appended to this submission (see references above).

The cost adjustment claim also followed our three lines of defence assurance process, which means it was reviewed by another member of the reservoir team who is familiar with the evidence base and asset group, then had a 2nd line review to assess if the evidence meets the Ofwat assessment criteria and then it had a final independent review by Black & Veatch our third line assurance partners. The checks and findings carried out in the 3rd line review are included in appendix 7.7 (covering all cost adjustment claims).

Robustness of costs

The IAP assessment indicated a partial pass and included the following statement:

"Some outline costs assessment are given per site and some efficiency challenges applied but we find insufficient evidence for benchmarking and external assurance of these costs.

As outlined above, we have worked with experts to develop robust costs and carried out benchmarking. Although benchmarking is notoriously difficult to undertake given reservoirs have their own unique characteristics and activity tends to be related to both the design and geography of each site. There is also limited publically available cost information for benchmarking as major refurbishment or new reservoir construction is carried out infrequently. We therefore sought expert advice from consultants, as they have access to cost data from other companies. The Atkins and NMC reports show that the costs we have submitted are comparable to similar activity undertaken by other water companies. The table below summarises this analysis for three comparable activities extracted from section 6.3 of the Atkins report.

Activity	Estimate used in our plan (Atkins estimate)	Comparisons from other companies/ contractors	Insight
Spillway reconstruction	£2.35m	£2.20m - £2.46m (based on NMC quote and Welsh Water actual costs)	The costs used in our plan fall within the range
Discontinuance	£46.47 / m^3 of earth moved	£62.5/m^3 - £86.2/m^3	Our costs are efficient compared to others
Siphon installation	£610k - £710k for varying sizes between 250 and 400mm diameter pipe	£613k - £627k adjusted for comparable diameters	Our costs are broadly within the range, but direct comparison is difficult because installations vary from site to site.

The evidence presented in the three documents demonstrates that we have established robust costs that are more or equally efficient compared to relevant comparators. However, we note that there are insufficient data points to prove categorically that our costs represent upper quartile efficiency.

The biggest opportunity to ensure best value for customers is to ensure we have identified the most efficient solutions. Therefore the process of optimising the design that occurred between our Reservoir Engineers and experts at Atkins is where the most value has been added. The following table summarises the different costs of options to address the significant design risk of pressurised pipe running through the body of the dam at 4 of our reservoirs. Our plan is based on the siphon design which is clearly the lowest whole life cost solution.

Option	Capex	Consideration	Whole life cost*
New dam to modern design and standards	£60m	Biggest reduction in risk and remove the need for any significant maintenance for c80years. All routine maintenance could be carried out easily and would be minimal	Not assessed as clearly too expensive
Replacement valve tower	£20m	Reduce the pressure in the pipe and therefore the likelihood of failure of the pipe and improve isolation. But the pipe would still be operational and inspection not possible without complete draw down	£23m

Siphon solution to enable decommissioning of pressurised pipe	£2.8m	Removes the need for and therefore risk of the pressurised pipe. Reduces construction risk as no modifications would be required to the body of the dam.	£8.5m

*Discounted over 80 years

Customer protection

Ofwat assessed this criteria as a partial pass and made the following comment:

> "… we consider that there is insufficient protection for customers if the company fails to deliver the proposed interventions, especially as the number of sites actually subject to the changes in the Act are still to be confirmed, based on the risk category. … We therefore consider that the company needs to further detail how it will ensure that the stated benefits are delivered efficiently and how customers will be protected in situations where costs and scope of work may increase or decrease. ..."

Based on the evidence set out above, we think there is sufficient evidence that the statutory undertaking is sufficient protection to ensure the activity is carried out. In addition, we note that 97% of the investment is associated with reservoirs that have long been classified as high risk reservoirs. We have also taken advice from industry experts and consulted with NRW to assess the likely scope of the Section 10 undertakings.

Given that we have already removed all aspects of the scope where there is uncertainty (which resulted in a c20% reduction when comparing the Atkins cost of £11m and the plan assumption of £7.5m), we consider that the scope for outperformance is minimal.

Board assurance

Ofwat assessed this criteria as a partial pass and made the following comment:

> "The overall board assurance statement in the full business plan document emphasises resilience, which this claim is part of, but does not mention the cost adjustment claims. … the company would have strengthened its case by providing a specific board sign-off statement."

A specific board sign-off statement has now been provided. It is important to note that the Board have engaged with the risks associated with this asset group on three occasions since submitting the plan in September. This illustrates its significance in the overall risk profile of HD. They include:

Dec 2018	An all-day site visit and meeting to better understand the risks and action plan
Jan 2019	Updated risk position as part of the ERM (corporate risk register update) at the Board Strategy day
March 2019	The Board meeting included review of the annual Reservoir Inspection Report

7.2.2 Lead reduction

Ofwat assessed this claim as a partial pass. We have retained our claim and investment is unchanged from the September plan.

We received three actions associated with this cost adjustment claim, which are set out below.

- that either the DWI or customers fully support this need – specifically to ensure that the incentive type is supported by customers with clear benefits for them (action **HDD.OC.A43**);
- that the service levels are stretching (**HDD.OC.A42**); and
- the timing of the incentive is appropriate (**HDD.OC.A44).**

All of the information presented in September is still valid and pertinent to the claim, therefore the revised submission below specifically addresses the IAP challenges, but should be read in conjunction with the original business case.

Need for Investment

The Ofwat feedback stated:

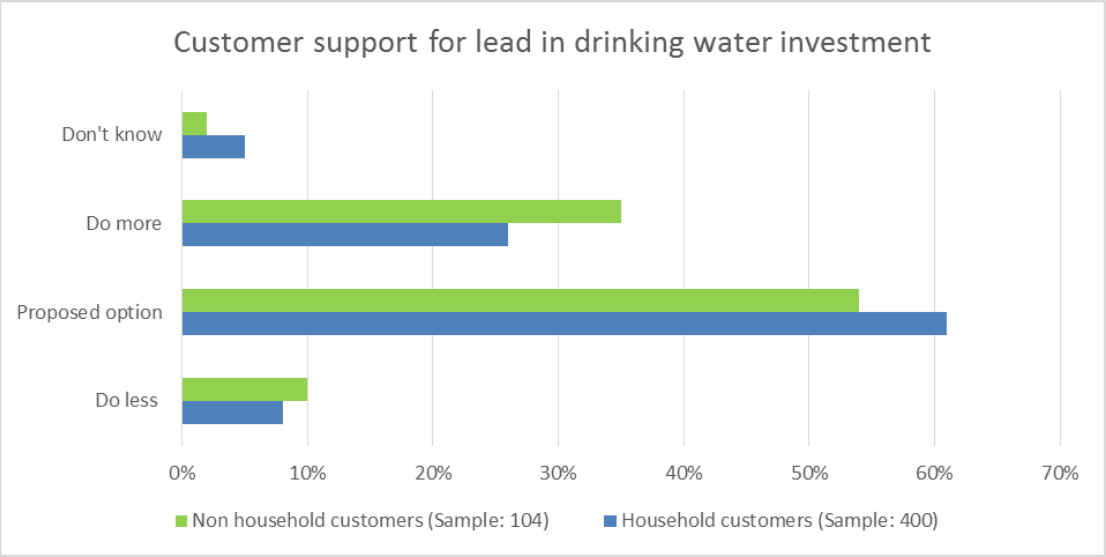
> "The company provides some evidence to show that there is a need for investment to reduce lead. However, we consider the claim goes beyond current statutory requirements and appears to be a discretionary improvement, even though it could be considered to address a particular concern of the Welsh Government with ensuring drinking water quality and reduce lead exposure. We would, therefore, expect the company to demonstrate DWI and/or customer support."

As Ofwat have noted, the lead standard has not actually been changed and although there is a clear policy position, there is no statutory protection for customers to hold us to this improvement. We have therefore carried out several types of customer research to understand customer views on this topic to inform our plan. As stated in the September business plan we carried out the following customer research.

Approach	Purpose
Willingness to pay research (with 500 household customers split evenly between Mid Wales and North Wales and non-household customers)	To understand if customers value us funding customer owned lead pipe replacement rather than just the company owned part.
Customer needs research - deliberative workshops in Newtown and Wrexham (with around 35 household customers)	To establish if customers' views change when they have more time to discuss, and greater information about, the topic.
Customer needs research - in-home, detailed interviews with customers in vulnerable circumstances (with around 15 customers)	To understand if customers in vulnerable circumstances have different views.
Co-creation session in Wrexham	To seek views on how customers want us to engage them on this subject. It is a notoriously difficult subject to engage on and in many cases the barrier to solving the problem.
Asset health and resilience deliberative research	To explore in a deliberative approach how we should tackle the issue of lead in drinking water

PCs, ODIs and investment choices	To explore in a quantitative way what investment choice on lead customers would prefer
Joint CCWater and company research from 2017	To understand views on supply pipe ownership.

In the initial research we found extremely strong support from customers for us to help them address lead pipes on customer owned pipes. With 87% of household and 89% of non-household customers supporting the proposed plan or wanting us to go further.



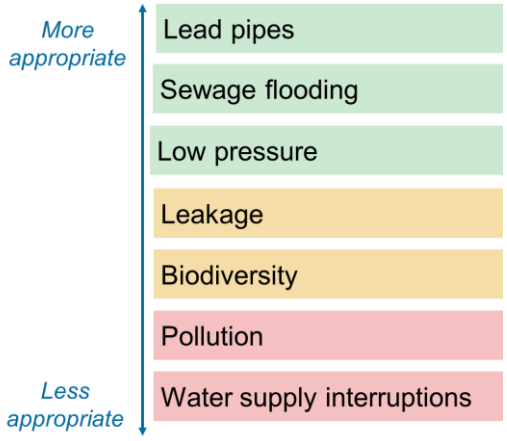
Since submitting the plan we have carried out the following additional research to understand customer views:

Approach	Purpose
ODI choices quantitative research (see chapter 2 customer engagement for full details)	To obtain customer views on the type of incentive for each measure and the value they would like to attribute to penalties and rewards
ODI deliberative research	To establish if customers' views change when they have more time to discuss, and greater information about, the topic.

We have used this research to address the concerns raised by Ofwat in action **HDD.OC.A43,** which stated:

> The company should provide further evidence to justify the use of an outperformance payment for this PC, including evidence of customer support. The company should demonstrate how this ODI will benefit customers.

The two new pieces of research further demonstrate customer support for this activity and for a financial incentive. From the deliberative research there was clear expectation that we should be doing more to remove lead pipes. The following extract summarises the results from the deliberative workshops that we held in both Wrexham and Powys. Customers were asked to rank which measures they thought were most appropriate for a financial incentive. See appendix 2.6 for the full report.



This research also showed that customers don't understand the ownership boundary between company and customer pipes, which also emphasises the importance of the communication and education elements of our plan. Customers also thought that there should be stronger legislation in this area.

The ODI quantitative research showed that 54% of customers supported a penalty and reward ODI and 46% preferred a non-financial incentive (NFI). Whilst this is not a strong majority of customers it is clear that it would not be appropriate to link this activity to a reputation only incentive, due to the lack of statutory protection at the tighter, 5ug/l standard. When you compare the value customers placed on lead pipe reduction in this new research it was much higher than the value they placed on it in the original willingness to pay, moving from £3822/pipe to £9767/ pipe, which does demonstrate customers value this service area, especially when they are given more context and information. Further information about the design of incentives and calculation of the rates is set out in Chapter 4 and appendix 4.1.

Customer protection

This assessment criteria was assessed as a pass, but we were asked to provide further evidence relating to the level of stretch in the target, our response to this action is explained in Chapter 4 section 4.2.2, and repeated below for convenience.

Lead pipe replacement (HDD.OC.A42)

The IAP stated that the company provides insufficient evidence that it has proposed stretching service levels.

The company should provide further evidence that the service levels are stretching including by benchmarking itself with the service levels proposed by Dŵr Cymru.

We have reviewed Dŵr Cymru plans to benchmark our proposals to understand if our plan is stretching. Their plan states that:

> "Our proactive approach will enable us to dramatically increase our rate of lead pipe replacement in AMP7. We also aim to demonstrate the value of our collaborative, cost effective approach to lead pipe replacement, and will raise awareness of lead pipes with local authorities and housing agencies. We expect to receive a notice from the DWI requiring the replacement of up to 7,000 customer supply pipes and/or communication pipes in AMP7"

And goes on to set out the long term ambition in terms of pipe replacement rates. We have compared both companies' programmes below.

Period	DCWW		HDD	
	Number of pipes (cumulative)	% of total customers	Number of pipes (cumulative)	% of total customers
AMP 7	7,000	0.48%	460	0.38%
AMP 8	14,000	0.97%	2,000	1.67%
By 2050	50,000	3.45%	10,000	8.33%

The HDD replacement rates in AMP7 are slightly lower than those of DCWW, but given this is a multi-AMP problem it is important to consider the ambition over the longer term and the table above clearly shows our plan is considerably more ambitious in the following two AMPs.

This is a reflection of our strategy to gather the evidence needed to identify which properties have lead supply pipes, and a high risk of failing the 5ug/l standard, through physical surveys and water quality sampling. Having this data and the certainty it provides will allow us to accelerate replacement rates ahead of those proposed by DCWW and do so in a cost effective and carefully phased way. This also allows sufficient time to engage with customers and put in place any legal agreements necessary.

We considered accelerating our AMP7 programme to match DCWW 0.48%, but we are concerned about the implications of this on our customers. This first phase during AMP7 is targeting schools and our most vulnerable customers. We only have the 6 week window during summer holidays in which to carry out the work as it is much too disruptive for schools to permit this sort of intrusive work during term time and 1 week during half terms is insufficient time to carry out the work. There is little opportunity to compress this activity in order to escalate our ambition. The other area relates to lead hot spots across social housing stock. We have discussed the social housing programme that we will be partnering with Wrexham Council to understand their timescales and programme. Working through this partnership is better for customers as it both reduces the cost and level and duration of the disruption. We have worked with the Council to bring forward the activity as much as possible so that customers get the benefit sooner, but it is not possible to increase the overall levels of activity in the next 5 years. We have reviewed the delivery profile following discussions with Wrexham Council and other potential partners and have updated the annual targets in data table App1.

Revised APP1 Profile

	20/21	21/22	22/23	23/24	24/25	Total
Number of pipes replaced	100	150	70	70	70	460

In action **HDD.OC.A44** The IAP also challenged the basis of the end of AMP timing. Data table App1 has been updated to move to an in period ODI adjustment. We were originally nervous about committing to in-year incentives because the timing of the work is not completely within our control for two main reasons:

a. digging up customers drives is very disruptive and we have to be sensitive to their needs and will have to work our programme around their requirements
b. to deliver this programme in a cost effective way we have to work with partners and again their timescales and considerations are outside of our control.

However, we agree that incentives are more powerful if they closely relate to the service/ activity carried out so despite our reservations we are content to move to an in period incentive. More information about the overall changes to incentives is set out in Chapter 4 and appendix 4.1.

7.3 Water investment

We have reviewed the assessment covering water resources and network plus price controls and overall accept the challenges Ofwat have made, specifically on the enhancement claim on taste/ odour and colour and our Eels obligation under the NEP.

There are two areas where we are providing further information:

1. Metaldehyde – in response to Ofwat's specific query
2. Developer services costs – outlining concerns with Ofwat's IAP approach to cost assessment

7.3.1 Metaldehyde

In action **HDD.CE.A2** Ofwat state that there may be significant impacts in terms of investment or type of investment as a result of the Metaldehyde ban. The company should investigate and agree with the DWI the scale and timing of any potential changes compared to its submitted plans.

We do not have an undertaking for Metaldehyde and did not include any investment at our treatment works to mitigate Metaldehyde risk. Our catchment management investment (£450k totex) covers multiple drivers as well as Metaldehyde. Around 40% of the investment is related to raw water deterioration, which covers other pesticides for example MCPA (2-methyl -4-chlorophenoxyacetic acid) and wider diffuse agricultural pollution. The Metaldehyde related element is notionally 20% of the total totex investment, however, the activity cannot be isolated.

We did not propose a PC or ODI for this investment area in our September submission. We have revisited our analysis and believe the change in legislation to ban Metaldehyde does not remove the need for proactive catchment management or reduce the number of farm visits required to meet multiple drivers.

We have written to the DWI to clarify that the Metaldehyde Undertaking relating to Boughton water treatment works in Chester is a Severn Trent asset and therefore, no cost is borne by the Hafren Dyfrdwy customers.

The scale of the Metaldehyde related investment is relatively small (notionally £90k over 5 years) and the Metaldehyde ban will not alter our catchment management proposals. This is because the activity cannot be isolated from the activity needed to address other issues in the catchment. Therefore, we do not feel a new specific ODI is necessary or appropriate.

7.3.2 Developer Services

Across every price control we were classified as efficient and outperformed the regulatory baseline by 3%. However for one sub-set, developer services, we are classified as 50% inefficient. On review, it is apparent that, largely because of **inconsistent cost and volume data submitted by companies**, the resulting unit cost models do not fairly represent the costs that we will incur. This issue affects all three of the key activities in Developer Services – new connections, requisitions and network reinforcement.

The evidence set out in this section and supporting detail in appendix 7.1 explains our concerns with the unit cost models that Ofwat has used to derive its efficiency view and proposes changes that could be made to improve the robustness of the models. This approach will preferably require more information from all companies. Therefore, we cannot definitively conclude how efficient our costs are compared to the rest of the industry. Consequently, we have not made any changes to our original totex submission for developer services costs.

Cost inconsistencies

We have undertaken a detailed review of the data used in the unit cost models and it is apparent that the costs reported by companies vary substantively.

For example, when we compare gross Developer Services costs against gross revenues we should expect broad alignment, particularly in light of the new charging rules. However we can observe very significant differences that cannot be readily explained, as illustrated below.

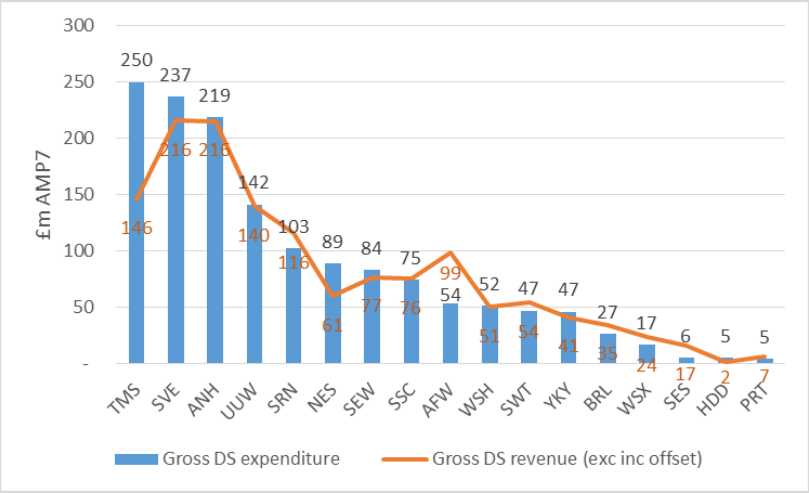


Figure 4: *Recovery of Developer Services expenditure from Developer revenues (removing AVP transition costs, income offset to infrastructure revenue and diversions revenue) – Source: APP28 and WS2*

Figure 4 shows costs significantly exceeding revenues, but also revenues exceeding costs. Ultimately this suggests companies are not reporting these costs (and revenues) on a consistent basis, making the derivation of appropriate unit costs very challenging.

We have analysed the three types of Developer Services costs and have identified a range of issues:

- **New Connections** - (i) a number of companies report zero expenditure for new connections capex (in Table WS2) and (ii) opex is excluded from the growth model. Where gross costs have not been included, this will distort cost models. Welsh Water are one of the affected companies. They are the median company in Ofwat's forecast unit cost effectively driving the IAP Developer Services efficiency values.
- **Requisitions** – The change in charging at the start of AMP7 (from asset payment to income offset) means that any use of historic costs is unlikely to consistently reflect future spend. Furthermore we know companies are responding to these changes in different ways which comes across in the information provided. Finally companies are reporting contestable costs and volumes very differently. Taken at face value, this implies that some companies have zero contestable activity (which is internally inconsistent in light of other business plan tables).
- **Network reinforcement** – Network reinforcement varies dramatically across the industry. This is in part expected due to the lumpiness of 'deep' reinforcement activity. However, it may also be due to cost allocation inconsistencies (as evidenced by Ofwat's transfer of expenditure into Developer services from multiple enhancement lines).

Volume Inconsistencies

Similar issues can be identified in relation to the volume driver, *total new connections,* currently used in the IAP growth model. For example a number of companies are reporting new connection volumes that are identical to new billed properties, suggesting that no flats are built in those regions (highly unlikely) and that there will be no change in voids (which is also unlikely given the focus on this measure at PR19).

We recognise that choosing one volume driver will be problematic as the three types of developer service activities have different cost drivers. However, this can be simply addressed by disaggregating developer services into the three constituent parts and using a volume driver relevant to each activity.

Whilst total new connections as a denominator has some appeal, it ignores the interaction with the contestable market. This market has the potential to materially skew any modelling, given the uneven uptake of self-lay activity across the country.

Issues with reporting going forwards

Historically, when companies undertook activity on new developments, they reported this as a cost, and any developer contribution as income set off against that cost. If Self Lay Providers (SLP) undertook the work, incumbents bought the assets off them (an "asset payment"). We believe that this asset payment should have been reported as a cost, but it appears that other companies may not have done so.

Going forwards, in England (but not Wales) the asset payment will not be paid. Instead, in England, "income offset" for on-site costs is being set off against the infrastructure charge for deep reinforcement. It is important that requisition activity undertaken by SLPs is reported as a cost to the business. If it is not, there will be a loss of comparability to historic periods. This has two consequences.

1. Any comparisons of efficiency relative to historic periods will not be on a like for like basis; and
2. Importantly, it will be impossible for companies to demonstrate that they are maintaining the balance between developers and customers (as per the Government guidance).

From what we can see in other company plans, we think that there is a variety of approaches and accounting treatments. Where the "income offset" exceeds the infrastructure charge, some companies have set the charge to zero – this will not maintain the balance between developers and customers. Other companies may have preferred to treat the cost as a cash transaction on the balance sheet or as an operating cost. All of this makes comparison with the past, and demonstrating compliance with the Government's guidance, extremely difficult.

Solution

Even before we get to the data issues, the assessment of developer services costs is a very challenging area given the interaction with the charging rules. To ensure a fair approach is derived we think the most pragmatic solution would be to:

- Disaggregate the IAP water growth model into three – New connections, Requisitions and Network Reinforcement (to make sure that costs can be compared to comparable volumes).
- For each activity, request that companies resubmit both cost and volume data so that efficiency is being assessed on a like for like basis.

Our detailed findings and potential remedies are set out in **appendix 7.1**

7.4 Wastewater investment

There are two aspects of our revised submission:

- Allowance for the NEP
- Data correction

7.4.1 Wastewater NEP

In the IAP Ofwat has disallowed the investment needed to comply with our flow to full treatment obligations and costs associated with NEP investigations.

For WINEP / NEP ~ Schemes to increase flow to full treatment driver, Ofwat has modelled expenditure using six simple models. However, as part of the deep dive assessment, all expenditure (£0.374m) has been removed, with the following comment:

"For HDD, we undertake a deep dive assessment as there is no scheme with the appropriate driver code in HDD's NEP for 2020-25."

We think this misunderstanding might have arisen because HDD has two NEP documents, one relating to the former Dee Valley area (called SvT DvW NEP3 WR) and another relating to the former Severn Trent Area covering Powys, which has both waste and clean water obligations in it (called SvTW NEP 3 WQ). This is because the final NEPs were issued by NRW on March 29th 2018, prior to the HDD licence change. NRW were therefore not in a position to combine them into one document.

As set out in Appendix 4 (p35) of the September plan (extracted below) we have two flow to full treatment obligations [driver code W_U_IMP5 - schemes to increase Flow to Full Treatment (FFT) to 3PG+Imax+3E].

Unique ID	Scheme Name	Name of Waterbody	Waterbody ID	Confirmed (Green)
7CST0124	MONTGOMERY (STW)	Camlad - conf Caebitra Bk to conf R Severn	GB109054049380	W_U_IMP5, W_U_IMP6
7CST0135	TREWERN (STW)	Pwll Trewern - source to conf R Severn	GB109054049660	W_U_IMP5

Likewise the £0.099m for NEP investigations has also been rejected on similar grounds - "HDD does not have any wastewater WINEP investigation lines". The following extract from NEP3 (below) shows all investigations are either green or amber status and on that basis we understand that Ofwat should make an allowance for these obligations.

Unique ID	Scheme Name/Name of Discharge/Investigation	Status
7CST0114	LADYWELL CULVERT (NEWTOWN - SHORTBRIDGE STREET CSO)	Green
7CST0121	LONG BRIDGE - OUTLET 3 (LLANIDLOES - SHORTBRIDGE STREET CSO)	Green
7CST0128	PENYBONTFAWR (CARNO CSO)	Green
7CST0130	PENYBONTFAWR (LLANFAIR CAEREINION RAILWAY STN (CSO)	Green
7CST0131	PENYBONTFAWR (LLANFYLLIN - FFORDD Y CAIN CSO)	Green
7CST0137	An investigation into scales and types of habitats on DVW/STW owned land, including SSSIs & incorporating an audit of Section 7 priority species on major operational sites.	Amber
7CST0139	EDM Investigations	Amber
7CST0142	INNS surveillance and risks analysis on DVW/STW assets (pathway assessment)	Amber

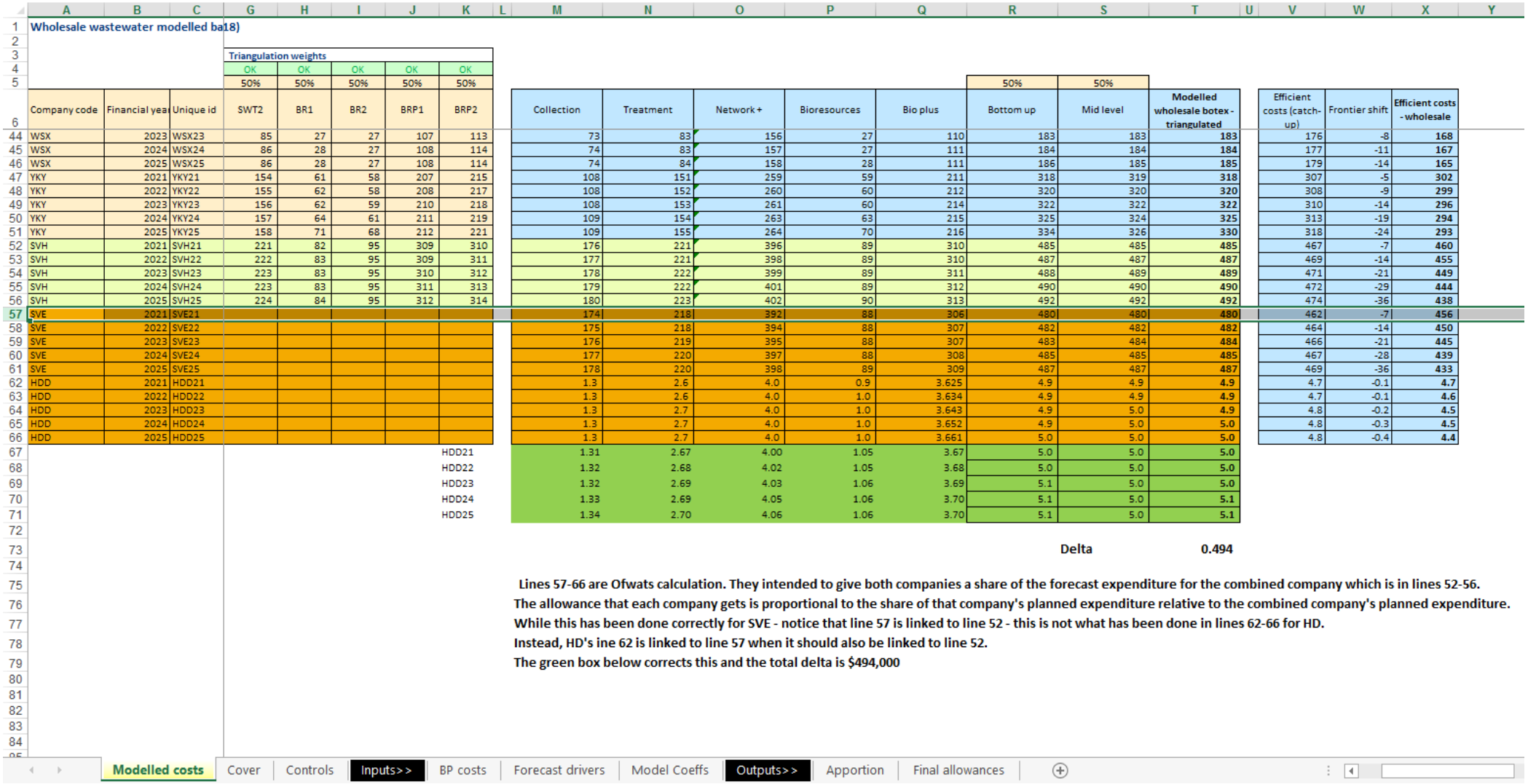
Since submitting our plan in September, NRW has issued corrections associated with the length of river water quality improved in the NEP. The changes are set out below but also link to our response to action HDD.OC.A47. In line with the Ofwat guidance the river length included in September directly matched the lengths supplied by NRW and specified in the NEP. Correspondence from NRW, included in Appendix 7.2, received in December 2018, sets out revised calculations of the total river length improved. In summary this means the total length is now 46km not 22km, as set out in the following table.

Unique ID	Scheme Name/Name of Discharge/Investigation	Environmental Outcome river length improved (km)	Length included in September submission (in km)
7CST0107	CHURCH STOKE (STW)	19.3	1
7CST0111	GUILSFIELD STW	7.8	1.6
7CST0123	MONTGOMERY (STW)	4.4	4.6
7CST0126	NEWTOWN (DOLFOR LOCK) STW	No change	14.5

Our plan was based on the correct lengths and therefore this change has no impact on the plan or investment needed to meet the obligations. The lengths used in the September plan ensured compliance with the data table guidance that the river lengths should be the ones supplied by our environmental regulators. The issue arose largely because of the confusion over the England/ Wales boundary and where the benefit of the improvement is seen. The length has been updated in data tables App1 and WWS18.

7.4.2 Wastewater data correction

In reviewing the IAP assessment we believe there is an error in the spreadsheet Ofwat use to calculate the wastewater final allowances. In order to make sure that STE and HDD don't get a higher combined allowance than if the companies were a single entity Ofwat forecast costs for the group using combined cost drivers and then divide up the allowance based on the ratio of business plan spending. However, in doing this for HDD the reallocation appears to be linked to the wrong cell, which has resulted in the HDD allowance being £0.49m lower than it should have been. The STE allocation has been done correctly, which means at group level the final allowance is £0.49m lower overall. The error is in the "Modelled Costs" tab. At the bottom of columns M-Q we have set out our concern. This is shown in the screen shot of the spreadsheet below.



Wholesale wastewater modelled ba18)

			Triangulation weights																	
			OK	OK	OK	OK	OK													
			50%	50%	50%	50%	50%							50%	50%					
Company code	Financial yea	Unique id	SWT2	BR1	BR2	BRP1	BRP2	Collection	Treatment	Network+	Bioresources	Bio plus	Bottom up	Mid level	Modelled wholesale botex - triangulated	Efficient costs (catch-up)	Frontier shift	Efficient costs - wholesale
WSX	2023	WSX23	85	27	27	107	113	73	83	156	27	110	183	183	183	176	-8	168
WSX	2024	WSX24	86	28	27	108	114	74	83	157	27	111	184	184	184	177	-11	167
WSX	2025	WSX25	86	28	27	108	114	74	84	158	28	111	186	185	185	179	-14	165
YKY	2021	YKY21	154	61	58	207	215	108	151	259	59	211	318	319	318	307	-5	302
YKY	2022	YKY22	155	62	58	208	217	108	152	260	60	212	320	320	320	308	-9	299
YKY	2023	YKY23	156	62	59	210	218	108	153	261	60	214	322	322	322	310	-14	296
YKY	2024	YKY24	157	64	61	211	219	109	154	263	63	215	325	324	325	313	-19	294
YKY	2025	YKY25	158	71	68	212	221	109	155	264	70	216	334	326	330	318	-24	293
SVH	2021	SVH21	221	82	95	309	310	176	221	396	89	310	485	485	485	467	-7	460
SVH	2022	SVH22	222	83	95	309	311	177	221	398	89	310	487	487	487	469	-14	455
SVH	2023	SVH23	223	83	95	310	312	178	222	399	89	311	488	489	489	471	-21	449
SVH	2024	SVH24	223	83	95	311	313	179	222	401	89	312	490	490	490	472	-29	444
SVH	2025	SVH25	224	84	95	312	314	180	223	402	90	313	492	492	492	474	-36	438
SVE	2021	SVE21						174	218	392	88	306	480	480	480	462	-7	456
SVE	2022	SVE22						175	218	394	88	307	482	482	482	464	-14	450
SVE	2023	SVE23						176	219	395	88	307	483	484	484	466	-21	445
SVE	2024	SVE24						177	220	397	88	308	485	485	485	467	-28	439
SVE	2025	SVE25						178	220	398	89	309	487	487	487	469	-36	433
HDD	2021	HDD21						1.3	2.6	4.0	0.9	3.625	4.9	4.9	4.9	4.7	-0.1	4.7
HDD	2022	HDD22						1.3	2.6	4.0	1.0	3.634	4.9	4.9	4.9	4.7	-0.1	4.6
HDD	2023	HDD23						1.3	2.7	4.0	1.0	3.643	4.9	5.0	4.9	4.8	-0.2	4.5
HDD	2024	HDD24						1.3	2.7	4.0	1.0	3.652	4.9	5.0	5.0	4.8	-0.3	4.5
HDD	2025	HDD25						1.3	2.7	4.0	1.0	3.661	5.0	5.0	5.0	4.8	-0.4	4.4
							HDD21	1.31	2.67	4.00	1.05	3.67	5.0	5.0	5.0			
							HDD22	1.32	2.68	4.02	1.05	3.68	5.0	5.0	5.0			
							HDD23	1.32	2.69	4.03	1.06	3.69	5.1	5.0	5.0			
							HDD24	1.33	2.69	4.05	1.06	3.70	5.1	5.0	5.1			
							HDD25	1.34	2.70	4.06	1.06	3.70	5.1	5.0	5.1			

Delta 0.494

Lines 57-66 are Ofwats calculation. They intended to give both companies a share of the forecast expenditure for the combined company which is in lines 52-56.
The allowance that each company gets is proportional to the share of that company's planned expenditure relative to the combined company's planned expenditure.
While this has been done correctly for SVE - notice that line 57 is linked to line 52 - this is not what has been done in lines 62-66 for HD.
Instead, HD's ine 62 is linked to line 57 when it should also be linked to line 52.
The green box below corrects this and the total delta is $494,000

Modelled costs | Cover | Controls | Inputs>> | BP costs | Forecast drivers | Model Coeffs | Outputs>> | Apportion | Final allowances

Figure 5: *Screenshot showing error identified in the Modelled costs tab of Ofwat's Wastewater base IAP cost models*

Chapter 8
Aligning risk and return

8.0 Aligning risk and return

In this section we set out our response to the IAP feedback on aligning risk and return. We first set out the actions that we need to address before providing the additional evidence. This section is structured as follows:

- In Section 8.1 we set out how we have considered the bill profile for AMP7 and the balance between charges now and in the future. This is linked to the way we think about using the financeability levers, so this section also discusses the way we have established the appropriate rate of PAYG and RCV run-off, together with our customer research on bill profiling.
- Section 8.2 provides more information to support the financeability of our plan, describing the Board's engagement on financial resilience and revised RoRE analysis. It also deals with Ofwat's specific question regarding the allocation of our non-household retail margin.

Ofwat's IAP feedback on affordability risk and return

Bill profiles and acceptability

IAP Ref	Actions and response	Where
AV.A1 AV.A2 AV.A3 RR.A8	Actions: Ofwat noted that we needed to do more to demonstrate that we have engaged with our customers on the affordability and acceptability of our plan. We needed to ensure that our research used our final bill profile and show bill profiles for the longer term (to 2030). We needed to confirm that our testing has been assured by our CCG and conducted in line with Social Research best practice. Response: As noted in our CCG report, our engagement was compressed by the time of the merger and the border variation, meaning that we were still developing our plan when we started to test acceptability with customers. This meant that we didn't manage to test our final bill profile to 2025 in our research. We explain how we've tried to ensure a fair balance of charges over time in 8.1.1 and the factors we considered in the following sections. We have now developed a range of profiles extending to 2030 and beyond (section 8.1.5) and have shown customers some alternatives to gauge their views (section 8.1.6). We can confirm that our research has been conducted in line with best practice and has been reviewed by our CCG.	8.1.1 8.1.5 8.1.6
RR.A6 RR.A7	Actions: Provide further evidence on the starting points for PAYG and RCV run-off. Show that the adjustments are consistent with the objectives set out in the business plan and the commitments set out in the NAV application. Response: Our approach to using the regulatory levers is very much tied up with issues around affordability. Sections 8.1.2 and 3 set out more evidence to support our calculation of PAYG and RCV run-off rates, consistent with objectives of the business plan. We set out: our NAV commitments (section 8.1.4); how these are addressed within our plan; and how we have used the levers to make the plan affordable and financeable at an appointee level.	8.1.2 8.1.3 8.1.4
RR.A8	Actions: Address the concerns raised by the Customer Challenge Group and CCWater in relation to the final bill profile for water customers. Response: As noted above, we've now based our customer research on our final bill profile for water customers. In our NAV commitments, we said we would take steps to ensure that wastewater customers were not adversely affected by the border variation (8.1.4). We've considered how this can be achieved while ensuring that Hafren Dyfrdwy remains financeable at an appointee level. In Section 8.2.2, we discuss the financeability of the plan with our preferred bill profile.	8.1.4 8.1.6 8.1.7 8.2.2

Other actions on risk and return

IAP Ref	Action and response	Where
RR.A3 RR.A4	Actions: Set out the steps taken and assurance obtained by the Board to assess the financeability of the business plan. Clarify the target credit ratings for both the notional and actual company structure. Response: Section 8.2.2 provides further details on our assessment that business plan is financeable (including relevant credit metrics, with the relevant targets), and on the processes through which the board obtained assurance. We've provided more clarity around our financing arrangements and the implications of our plan given the company's group borrowing arrangements.	8.2.1 8.2.2
RR.A1	Action: Justify the proposed a net margin of 1.20% for non-households using less than 5 Ml/a per year or limit this to the 1% cap from PR16. Response: We've provided further narrative explaining our approach and demonstrating: (i) that our overall retail margin for customers outside the market is below the 1.0% cap and (ii) that it is consistent with PR16.	8.2.3
RR.A2 RR.B1	Actions: Provide evidence that the our exposure to revenue variance is as wide as suggested within our RoRE analysis. Provide detail of how our risk management and mitigation are taken into account in our RoRE assessment. Response: An amended assessment of the revenue variance in our RoRE risk analysis is included in Section 8.2.4. Our assessment of the potential revenue impact within our initial RoRE analysis was based the largest actual variance that has taken place and we've provided some analysis to show the level of variation for Dee Valley and Severn Trent since the start of AMP6. Although there are protections within PR19 methodology, for the RoRE analysis in our plan we considered that they were broadly the same as for PR14. However, Ofwat has since published further details of its proposed Revenue Forecasting Incentive (RFI) for AMP7, and we have revised our view and lowered the assumed revenue variance. We have reflected this revised revenue variance in the RoRE assessment provided in Section 8.2.4, which also provides further explanation of how our risk management and risk mitigation measures have been taken into account.	8.2.4
RR.A5	Actions: Ensure that the correct assumptions are being used for the notional company (including for the cost of debt) in assessing key financial ratios. Response: Now that Ofwat has issued supplementary guidance to the instructions within the financial model, we have adjusted our inputs to ensure that the nominal cost of debt has been deflated with RPI to provide a real rate for index linked debt.	Financial Model
CA.B1	Action: Reflect the wholesale cost of equity within our dividend yield and growth rates for the wholesale control. Response: With the further clarification received from Ofwat around its expectations, we have adjusted our dividend calculations in the notional model to split the appointee dividend between retail and wholesale.	Financial Model

8.1 Bill profiles and acceptability

In this section we set out how we have developed the proposed bill profile for AMP7, and how we engaged with our customers on the acceptability and affordability of this and other potential bill profiles extending to 2030 and beyond. We first set out our approach and then we sequentially discuss how we have set the rate for

each of the financeability levers that impacts bills in AMP7 and beyond (RCV run-off and PAYG). We then describe how we engaged with our customers on potential bill profiles, and provide evidence that our customers that support our preferred bill profile.

8.1.1 Approach - Taking a long term view (AV.A2, AV.A3)

With the commitments that we made during the NAV process, our original plan sought to avoid sharp increases in bills for customers during AMP7. We recognise that we did not engage with customers on the long term consequences of this decision, so in our revised plan we have started from first principles.

When looking at bill profiles, we have four objectives:

- Managing bill impacts this period - avoiding unreasonable increases in this plan
- Intergenerational equity – making sure that there is a fair balance between charges in this period and customers in the future
- A fair balance between groups of customers – for example water and waste
- Financeability - ensuring the company can finance its functions at an appointee level

We also have a number of commitments that we made while undertaking the border variation (NAV) and deal with these specifically in section 8.1.4. For our PR19 submission we considered five profiles that could deliver a financeable outcome:

1. **Natural rates**: the bills that would result from the application of PAYG in line with opex and IRE, and RCV run-off in line with Current Cost Depreciation. Our analysis suggests that this would result in significantly higher bills than our original plan this period.
2. **NAV commitments**: this overlays the "Natural Rate" profile with a narrow interpretation of the specific commitment that we made on wastewater bills.
3. **Balanced plan profile**: this applies further reductions to the run-off rate for water and reduces the PAYG rate for waste such that average wastewater bills are flat in CPIH terms for the whole of AMP7. While credit metrics as used by the rating agencies are reasonable and gearing remains close to the notional structure, the company is projected to be loss-making in AMP7.
4. **Smoother profile**: this generates revenue with the same present value as the plan, but with a more progressive year on year movement in water bills. The result of lower bills in early years is higher bills by the end of AMP7 (and a bill increase larger than our September submission).
5. **Balance between services:** as with profile 4, the value of revenue in this view is equivalent to the plan but with similar rates of increase in bills for both water and waste.

A key feature of our revised approach is testing customer preferences for how we use the levers and bill volatility. To deliver this outcome we tested customer views on the intergenerational balance by asking for their views on two bill profiles – one set at the natural rate and one based on a balanced plan (profiles 1 and 3 above).

We recognise that we could have tested many more bill profiles with customers (there is an almost infinite range of options that we could have presented). In discussion with our market research agency, we considered that an array of options would prove confusing and cloud the intergenerational issue. Ultimately what is important is revealing views about volatility and intergenerational balance and the two profiles reveal the critical issues, namely:

- the choice of higher bills in AMP7 but lower bills thereafter or vice versa; and
- revealing different changes in bills which helps customers contextualise what is volatile.

8.1.2 Establishing the natural rate for RCV run-off (RR.A6)

In order to set the rate for the RCV run-off we first need to determine the natural rate. This is typically current cost depreciation, but we explain why this is not appropriate and why we have chosen to apply a backward-looking approach based on the amount customers were funding at PR14.

For Hafren Dyfrdwy there are some unique challenges which means the forward looking view of CCD is unlikely to be an appropriate basis to set the run-off. This reflects the fact that Hafren Dyfrdwy has had a reduction in RCV per customer (compared to DVW) whilst the asset value per customer has increased; all other things being equal this would increase RCV run-off and bills.

Below we set out the relevant issues and calculate both the forward looking natural rate and also the historical natural rate. We then set out the appropriate rate for our revised submission.

The border variation resulted in a complete change in the asset base of the company. Compared to the average asset values of the previous companies on any measure, the asset base of Hafren Dyfrdwy is quite different:

Figure 1: Gross asset value per customer[1]

	Severn Trent (SVT)		Dee Valley (DVW)		Hafren Dyfrdwy (HDD)	
	£m	£/cust	£m	£/cust	£m	£/cust
Water Resources	372.4	116	8.0	69	12.4	134
Water Networks	5,591.9	1,739	149.4	1,285	223.5	2,405
Wastewater Networks	6,672.5	1,770	-	-	23.4	1,284
Bioresources	789.9	210	-	-	0.0	1

The high asset value per connection is in direct contrast to the low Regulatory Capital Value that was allocated to Hafren Dyfrdwy on creation. In accounting terms, there was a large transfer of assets from Severn Trent to Hafren Dyfrdwy (£m), but there was a net RCV transfer of £27.6m from Dee Valley to Severn Trent as a result of the variation.

This illustrates the difference between the two methods of valuation. The RCV represents the accumulated private investment in a company since privatisation. It is a store of value upon which investors should be allowed to earn a return, which is paid through customer bills. It has always been significantly different from the value of the underlying assets, due to the discount at privatisation. However, for Hafren Dyfrdwy this discount is more extreme because we took a deliberate decision to keep the RCV low so that we could avoid bill increases for Hafren Dyfrdwy customers after the variation.

Figure 2: Regulatory Capital Value per customer – in 2020

	Severn Trent		Hafren Dyfrdwy	
17/18 prices	£m	£/cust	£m	£/cust
Water Resources	372.5	112	55.2	594
Water Networks	4,061.2	1,225	13.6	146
Wastewater Networks	3,913.7	1,028	0.5	26
Bioresources	504.0	132	-	-
Total	8,851.4	2,498	69.2	766

If we had allocated RCV to customers using an unfocussed approach based on asset values, this would have resulted in a RCV that was around 50% higher than Dee Valley's and more than double the value that existing customer bills would support. Our approach was to "back solve" the RCV that the company should have by looking at the return it would earn with its existing bills – that is, revenues less costs. This economic approach

[1] Historic costs at nominal value. Based on APR 18 for SVT and DVW and on the opening position in 2019-20 for HDD.

to valuation was fundamentally very similar to the way in which RCVs were established after privatisation. Companies were sold to investors, who placed a value on their shares by looking at existing and forecast profits.

A significant portion of the asset base relates to the two large reservoirs (Vyrnwy and Clywedog), which provide third party services to UU and the EA respectively. The costs and depreciation relating to these are included within the overall revenue requirement but this are offset by income (over 20% of HD's total revenue compared to 1% in Severn Trent). While the overall approach of including costs and deducting income is not an issue, it is a further point of difference between the overall asset base and the regulatory capital that customers should fund through their bills.

The traditional starting point for RCV run-off has been Current Cost Depreciation. Depreciation reflects the consumption of assets over time, and in Ofwat's original regulatory model CCD was used to make an allowance for maintenance on depreciating assets. The CCD values for the water service reflect the fact that – in terms of balance sheet values – there was a significant transfer from Severn Trent to Dee Valley when Hafren Dyfrdwy was created. A large portion of this related to the large reservoirs, which have extremely long accounting lives, but a natural rate based on CCD would still result in a high run-off compared to the level that customers were funding in AMP6 (as shown in figure 7 later in this section).

Figure 3: Build-up of accounting CCD

Current Cost Depreciation	Water Service	Wastewater Service
2020-21, nominal	£m	£m
Depreciation on existing assets	7.019	1.820
Work in progress (base service)	2.612	0.184
Work in progress (enhancement)	-	-
Abandonments	0.052	0.012
Depreciation on new assets	0.207	0.039
Total	9.890	2.055
£ per customer	106.41	112.78
CCD / opening RCV (run-off)	14.4%	429.1%

Current Cost Depreciation is based on accounting valuations. It is clear that if we reduce the RCV and increase the asset base, the resulting run-off rate will appear very high when expressed as a percentage of the RCV. This is certainly the picture on the wastewater service.

For wastewater networks, natural depreciation would start at around £2m per year, resulting in a run-off in excess of 100% because we have an opening RCV of only £0.5m. The whole of the opening balance would be charged to customers in the first year of the control, and would only be restored to a positive value by new investment.

For Bioresources, there is no run-off because we have allocated an RCV of zero; there are no sludge assets that are still operational within Hafren Dyfrdwy and therefore all sludge is exported. While there is no absolute link between the RCV and the physical assets in any control, it would appear strange to build up a regulatory asset where there were no operational assets at all. Accordingly, we have set an opening Bioresources RCV of zero and the PAYG rate for new totex at 100% so that no RCV is created.

Setting the RCV run-off at these levels is not something that we would undertake unless there was a compelling basis given the material impact that it would have on customer bills in the short run. The depreciation is a non-cash cost, based on the value of existing assets and investments; it is out of line with the level of maintenance that Hafren Dyfrdwy customers have been funding in AMP6 and the investment that Hafren Dyfrdwy expects to require over the course of AMP7.

Figure 4: Natural run-off rates compared to original plan[2]

AMP7 Average	Natural rate		Original business plan	
	%	£/cust	%	£/cust
Water Resources	13.6%	75.18	6.3%	40.57
Water Networks	7.7%	22.59	4.1%	12.77
Water Service	11.2%	97.77	5.4%	53.34
Wastewater Networks	14.6%	21.23	1.6%	1.13
Bioresources	-		-	
Wastewater Service	14.6%	21.23	1.6%	1.13

Figure 4 shows the average position over the AMP and hence the £/customer figures differ from figure 3 which is based on 2020-21 alone. The modelled position also reflects the fact that there is only £0.5m of wastewater RCV that is available to be run-off, rather than the £2m implied by accounting CCD.

Applying natural rates would require our customers to fund an additional £65 of depreciation within their bills, which is out of line with the level that they were funding at PR14 (as discussed later in this section). We considered substituting the natural rate for the legacy company (Severn Trent) which would produce a modest impact on bills but the small adjustment has to be set within the context of our NAV commitments (section 8.1.4) where we had specifically agreed to use the regulatory levers in order to reduce bill impacts on sewerage customers. Since we did not consider this acceptable, we applied a simple, uniform rate to the different categories within each service (RPI-linked, CPIH-linked, existing and new).

High levels of depreciation are reflected in the income statement of Hafren Dyfrdwy and as a result the company is expected to make an accounting loss over the course of AMP7. This position can be considered quite normal in a "growth business", where initial investment is required. This is quite unusual for the water industry, particularly where the nature of the business is not changing and there is not a rapid technological change – however, if we look at the scale of RCV growth (from Hafren Dyfrdwy's very low starting point), this does fit the picture.

Figure 5: Growth in Regulatory Capital Value

	Real		Nominal	
	%	£/cust	%	£/cust
Water Resources	-11%	(79)	-4%	(42)
Water Networks	185%	259	207%	1,527
Wastewater Networks	1834%	462	1980%	526
Bioresources	-	-	-	-
Total	40%	642	51%	2,011

There is a (relatively) modest decline in the value of the water resources RCV, though this still represents the highest allocation due to the unusual nature of Hafren Dyfrdwy's asset mix (resources declines from £594 to £515 per customer in real terms). In the other controls, there is large growth from a very low starting point – for example, in waste the opening value is only £26 per customer.

For Hafren's customers we do not think the high levels of RCV growth are a concern for three reasons:

(i) High percentage growth is a function of the very low starting point. Our modelling shows that cash flow is fairly strong and gearing is not rising, so this growth is sustainable.

[2] Aggregate run-off as a percentage of opening RCV, indexation and additions averaged over AMP7

(ii) RCV per customer in 2025 will still remain some way short of industry norms. Based on business plan data, the opening industry RCV per customer in 2020 will be in the region of £3,000 per customer compared to a 2025 value of around £1,400 for Hafren Dyfrdwy.

(iii) Our modelling does not suggest that there will be a significant increase in bills at the end of AMP7 if investment continues at a similar rate; in fact the reverse could occur unless there the value of incentives deferred from AMP7 to AMP8 is equivalent to the AMP6 position.

For all these reasons, we think that Current Cost Depreciation is not the right starting point for RCV run-off.

We consider that the values included within PR14 are a better representation of the amount that ought to be funded within customer bills. These were broadly in line with cash funding requirements for maintenance within the legacy areas of Severn Trent (SVT) and Dee Valley (DVW). If we combined the implicit values that were allocated to Hafren Dyfrdwy from each of the legacy companies, this would yield the following values:

Figure 6: Implicit run-off rates from PR14

PR14 RCV run-off	Legacy Companies			Hafren Dyfrdwy		
(12/13 prices)	£m	£m RCV	% RCV	£m	£m RCV	% RCV
Water: SVT Powys	144.3	3,879.6	3.7%	1.3	16.2	7.8%
Water: DVW Wrexham	4.5	89.3	5.1%	2.8	49.2	5.8%
Water: Combined	148.9	3,968.9	3.8%	4.1	65.4	6.3%
Wastewater: SVT	207.5	4,203.3	4.9%	0.1	1.2	4.3%

Note that these rates are the sum of the depreciation on the opening 2015 RCV and new assets created during AMP6, which was calculated on a straight line basis. All values are based on the opening RCV for 2020 plus half of the additions for the year (as this is the value of new capex that is depreciated). The values for Hafren are based on the amounts allocated to it when the territory was split.

There are reasons why a proportional allocation of PR14 may yield a higher result than CCD and therefore we think that a degree of triangulation could be appropriate. For example, there are no Bioresources assets in Hafren Dyfrdwy. Asset lives for sludge processing are relatively short and therefore one would expect higher depreciation in Severn Trent than Hafren Dyfrdwy (which will substitute operating costs for capital charges as it pays for exported biosolids to be processed). However, when we examined this we found the CCD-based rates to be higher than PR14 in all cases. In our re-worked plan we have taken account of the PR14 rates but have balanced this with adjustments to Pay As You Go in order to deliver a plan that is affordable for customers in AMP7 while remaining sustainable in the long term.

Figure 7: Final run-off rates (AMP7 average)

	Natural rate	PR14	Original Plan	Final Plan
Water Resources	13.6%		6.3%	6.3%
Water Networks	7.7%		4.1%	6.3%
Water Service	11.2%	6.3%	5.4%	6.3%
Wastewater Networks	14.6%	4.3%	1.6%	4.3%
Bioresources	-		-	-
Wastewater Service	14.6%		1.6%	4.3%

8.1.3 Establishing the natural rate for Pay As You Go (RR.A6)

We have set the natural rates for PAYG equal to the forecast levels of operating expenditure in AMP7, including Infrastructure Renewals Expenditure expensed to the income statement. As a cross check, we sought to compare these figures with historic levels for the legacy companies and estimates of the equivalent PR14 figures, based on the work we undertook at the time of the border variation.

Figure 8: Level of Pay As You Go expenditure in PR14

	Legacy Companies		Hafren Dyfrdwy	
	£m	% of Totex	£m	% of Totex
Water: SVT Powys	1,766	62%	13	70%
Water: DVW Wrexham	56	56%	13	83%
Water: Combined	1,822	62%	26	76%
Wastewater: SVT	1,506	55%	8	82%

The Legacy Companies are Severn Trent and Dee Valley in their original boundaries. The combined water service is dominated by Severn Trent, and the wastewater service average is based upon the whole of the operating region. This is one data point, but does not necessarily reflect the operations in Wales.

The PR14 figures show PAYG rates that are higher to some extent for both wholesale water and wastewater. In practice, however, as these PR14 figures are based on the split of expenditure at PR14 within the HD regions, they will be dependent on the relative size of the capital programme and for HD that can vary significantly over time (i.e. investment can relatively lumpy for a company the size of HD). Given this, as noted above, we set the natural PAYG rates in line with the forecast composition of expenditure for AMP7.

Historical averages are another comparator, although it is difficult to establish a series for Hafren Dyfrdwy because it did not exist in its current form until 1 July 2018. However, we can see the equivalent rates for the legacy companies in the table below.

Figure 9: Run-off rates for legacy companies

Company	2015-16	2016-17	2017-18	AMP6 Average
Water: SVT	49%	61%	55%	55%
Water: DVW	71%	63%	48%	59%
Wastewater: SVT	49%	55%	49%	51%

Of these two data points, we think the relevant rates from PR14 represent the better comparison. As discussed in section 8.1.2 above, we have reviewed the evidence around the natural rate of RCV run-off and decided that this would be the most consistent approach to use. Rather than adjust the run-off rate to moderate the impact on bills, we have used the PAYG lever to offset the impact on customers in this period, recognising our NAV commitments and our objective of ensuring a fair balance of charges over time.

For wholesale water, the overall PAYG average rate is in line with the natural rate, but we have made some small adjustments to provide for the bill profiling that - as set out in Section 8.1.5 - was supported by our customers. For wholesale wastewater, we have made a small downward adjustment to the average natural PAYG (as well as providing for some profiling within period). As set out in Sections 8.1.4-5, these adjustments reflected our NAV commitments and customer preferences on bill profiles.

Figure 10: Run-off rates in our final plan

PAYG rates	PR14	Forecast Expenditure	Revised Plan	vs PR14	vs Forecast
	%	%	%	%	%
Water resources		68%	67%		-1%
Water network		67%	69%		2%
Water service	**76%**	**67%**	**67%**	**-9%**	**1%**
Wastewater network		58%	56%		-3%
Bio resources		100%	100%		-
Wastewater service	**82%**	**67%**	**62%**	**-20%**	**-4%**

As noted above, we do not consider that operating with PAYG below the natural rate for wastewater is an issue provided the appointee remains financeable. At the overall level, our plan projects that Hafren Dyfrdwy

will have robust cashflow metrics and stable gearing. We also demonstrate that the impact of maintaining flat bills for wastewater customers is marginal, and will deliver more stable bills in the long run (section 8.1.5).

8.1.4 Our NAV commitments (RR.A7)

During our engagement with Ofwat and other stakeholders on the border variation (NAV), we gave a commitment that we would work to ensure that there was no detriment to customers as a result of the change. This was a key requirement in Ofwat's approval process for New Appointments and Variations, which had been formulated to assess traditional NAVs – generally new appointments for unserved sites.

Our position was somewhat different to a typical NAV which has a relative price control; in essence the operator agrees to charge the same level as the incumbent. This is not something that we could promise, because our future prices are subject to regulation – they are determined by Ofwat based on an assessment of future expenditure and the framework for determining allowed revenue. However, we used the means at our disposal to try to ensure that those "building blocks" would deliver the same level of bills as customers were already paying. Our commitments are summarised below:

Summary of NAV commitments on bills

What we said	What we did / are doing
All else equal, customers would see no increase in bills as a result of the variation	We set the revenue "building blocks" so that – with existing levels of spend - customer bills would not increase. Critically, we reduced the RCV allocated to Hafren Dyfrdwy in order to keep bills down.
Future bills would depend on investment needs in Wales	This is reflected by the fact that our plan is focused on investment to improve reservoir safety, supply resilience and reducing lead in water
Wastewater bills: we would use financial levers to reduce bills by around £4, equivalent to £210k from wastewater revenue (in 17/18 prices)	We have gone further than this, keeping bills flat in real (CPIH) terms for the whole of AMP7. This is equivalent to around £556k of revenue per year in 17/18 prices.
Water bills: our indicative modelling suggested that after an initial reduction, water bills would then need to increase, ending up at broadly the same level as 2019/20.	Our plan proposed an initial increase followed by flat bills. Water bills projected to rise by 3.8% over the period.
Combined bills: NAV modelling indicated a rise of 4% compared to 19/20	Our plan proposed an increase of 1.9% over the period.

NAV modelling

Our indicative modelling at the time of the NAV suggested that there was scope for a one-off reduction in water bills, followed by increases to pay for investment. This was partly driven by the expected reduction in the WACC but also by expectations of efficiency. We always expected that the underlying costs would put pressure on wastewater bills. Our initial modelling suggested that this would result in real (RPI-deflated) increases of 0.8% per year and, in its consultation, Ofwat considered such changes did not represent a significant detriment to customers.

In its response to the NAV consultation, CCWater challenged the bill changes on the waste service and as a result we gave the commitment summarised above. Our assessment was that, even with all other measures we had taken to ensure that the revenue requirement in AMP7 would provide flat bills (such as setting a low RCV), Powys wastewater bills would end up £4 higher than under the counterfactual (remaining part of Severn Trent). We therefore committed to:

- Use the PAYG lever to reduce the bills to the point that they would remain flat (in real RPI-stripped terms) for the first year of AMP7. This would show that there was no immediate impact as a result of the variation.

- Lock that reduction into future years; at the time, we thought this would require an adjustment of £210k per year for each year of AMP7 (in 17/18 prices).

This would not have generated flat bills for the whole of AMP7 either in real or nominal terms. Ultimately the bill will reflect the underlying investment.

Given that Ofwat's framework for PR19 was still in development, we based our modelling on the PR14 approach - including the RPI index. The basic rationale was that the choice of a different index to inflate costs and revenues should not – in of itself – lead to any change in outturn revenues because: (i) we could use regulatory levers to offset the upward impact of a CPIH-deflated WACC; and (ii) costs would remain the same unless greater efficiency was assumed. This meant our real bills were also presented in RPI-deflated terms.

AMP7 bill expectations – indicative NAV modelling and Plan

AMP7 bill	NAV modelling (2020-25)		Business Plan (2020-25)
expectations	RPI deflated %	CPIH deflated %	CPIH deflated %
Water	-7.6%	-0.2%	+3.8%
Waste	+2.6%	+10.8%	+0.0%
Combined	-3.6%	+4.0%	+1.9%

The NAV profile presented here did envisage that water bills would fall quite significantly in the first year of the control, and there are numerous other ways in which our view has changed from that initial modelling notably our investment plan. **The point is that our proposed change in bills over the course of AMP7 is comparable to that indicative view, and in some instances lower.**

8.1.5 Bill profiles and modelling (AV.A1-3, RR.A8)

In this section we set out the multi-AMP bill profiles for the different scenarios set out at the start of the chapter.

To look at the impact that choices about financeability levers in AMP7 would have on longer term bills, we have assumed a steady state totex - that is, totex continuing at the same levels as AMP7 for the whole of the forecast period. For the purpose of testing this with customers, we adjusted the expenditure in our plan to take account of Ofwat's Initial Assessment. Given that Ofwat assessed efficient totex and retail costs to be somewhat higher than our plan, profiles 3-5 adjust the PAYG lever in order to offset these effects.

Our modelling also takes account of other known changes since the submission of our original plan – the main one being the publication of 2019-20 charges. These were the first Hafren Dyfrdwy had published under revised price limits established after the border variation. Since the business plan, we have done further work to refine our split of customer data between England and Wales. We have also taken account of Ofwat's determination for in-period Outcome Delivery Incentives, forecast levels of income from developers and the November RPI to generate a more accurate view of the opening bill in 2019-20. The opening bill in this modelling is aligned with our final charges as published in January, and consistent with the annual submission for average bills to Ofwat. As such the bill will differ from that calculated in the Ofwat financial model, where different denominators are used for retail and wholesale bills.

We have taken account of taxation changes announced by Government, but these have no impact on the Hafren Dyfrdwy plan. Our modelling suggests that - at an appointee level – Hafren Dyfrdwy will make taxable losses during AMP7. They would have an impact on losses that could be surrendered to the group, but this is outside the scope of the wholesale revenue requirement.

Long term assumptions

In profiles 1 and 2, we assumed that the natural rates would apply to water throughout the full period. In profile 2, the downward adjustment applies to the PAYG rate for wastewater only, in perpetuity.

In profiles 3-5 we have diverged from the "natural rate" to a much greater extent and this has consequences for longer term bills. To look at that impact, we assumed that the PAYG lever would revert to the natural rate beyond AMP7. However, for RCV run-off we have assumed that the percentage rate would remain the same as our plan. As we explained in section 8.1.2, we believe that a rate based on Current Cost Depreciation is so high that our adjusted rate is more representative of the cash maintenance figure that ought to be funded through customer bills.

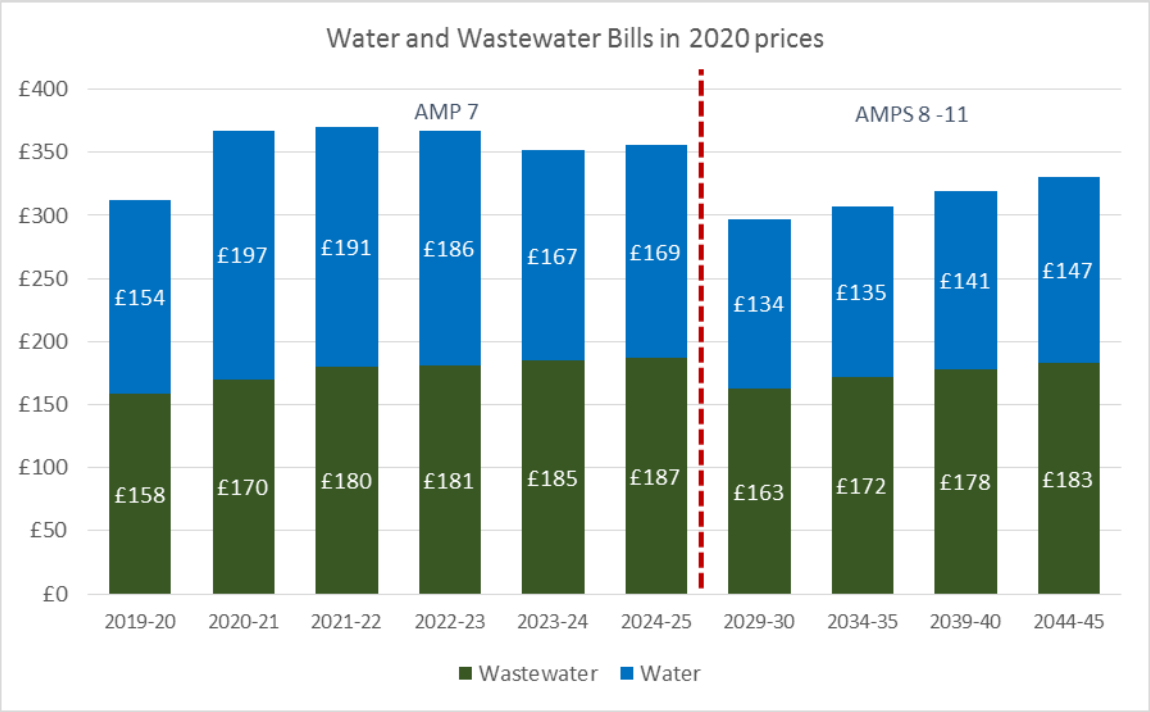
In most cases, there is a downward movement in bills after 2025 primarily due to the effect of incentives. The share of Severn Trent deferred ODIs which was allocated to Hafren Dyfrdwy drops out of the price control at the end of AMP7 and we make no assumption that there will be an equivalent reward in future.

Profile 1: Natural rates

This shows the bills that would result from the application of:

- PAYG in line with opex and IRE;
- RCV run-off in line with Current Cost Depreciation for water; and
- Run off in line with PR14 levels for waste.

As discussed in section 8.1.2, depreciation in line with CCD for waste would result in a run-off rate greater than 100% and run-off equal to the full opening RCV in the first year (a bill impact of circa £30). Our analysis is that even with a moderated position on wastewater, the use of a CCD-based rate would result in significantly higher bills than our original plan this period.



Our modelling suggests that there would be an immediate price shock of 28.3% on water and 7.5% on wastewater. From the year 1 peak, water bills would then fall but wastewater bills would continue to increase over AMP7. In the medium term:

- There would be a continuing reduction in water bills to the end of AMP8, followed by gradual rises as more investment replaced the depreciated assets.
- Wastewater bills would also fall in AMP8 and recover in time.

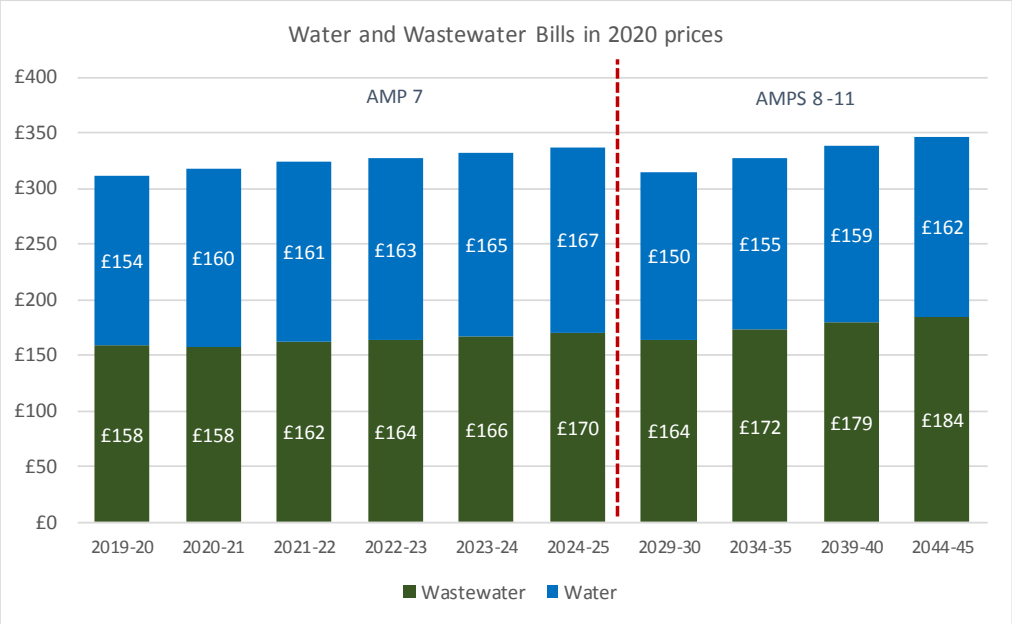
Profile 2: NAV commitments

This overlays the "Natural Rate" profile with:

- Run-off based on PR14 values (as discussed in section 8.1.2)
- A narrow interpretation of the specific commitment that we made on wastewater bills in the NAV (as per section 8.1.3)

To bring the narrow NAV commitment in line with the IAP view of costs and our current view of other variables, we've made an adjustment sufficient to offset any immediate impact on wastewater bills and locked that in for the remainder of the forecast period. At the time of the variation, we estimated that this would require an adjustment of £210k; in our revised modelling we assess this as around £300k.

As in the indicative modelling for the NAV, we rebalanced the present value of the adjustment to water charges. Even when run-off is reduced to PR14 levels, a raw application of the building blocks approach would lead to a real increase of 5.6% in 2020-21 water bills. To make this profile more comparable to our plan, we set the increase in the first year to be the same as originally proposed (i.e. 3.76%) so that the impact on the remaining years could be compared.



Even if we locked in a reduction of £300k per year in the wastewater revenue requirement, wastewater bills would still need to increase in the remaining years of the AMP. Taking this narrow approach to the commitments, water bills would also rise by 1.1% for the remainder of the period – we would need to either lower depreciation below PR14 levels or lower PAYG in order to keep bills lower. A combined bill would end the period 8% higher than 2020.

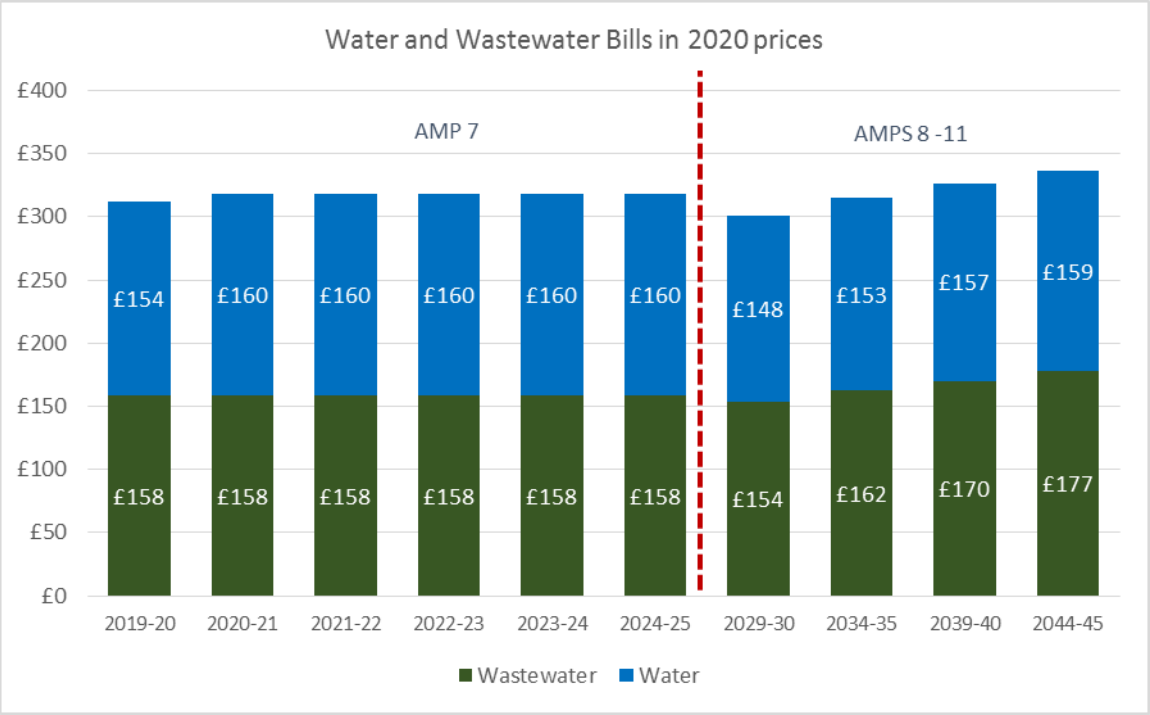
Profile 3: Business plan

This applies further reductions to the run-off rate for water and reduces the PAYG rate for waste such that average wastewater bills are flat in CPIH terms for the whole of AMP7. There is a one-off increase in water bills in the first year of AMP7, with bills remaining flat in real terms thereafter.

As can be seen in the graph below, we went beyond the commitments made in the NAV for both water and waste – bills are lower than a narrow interpretation of the NAV commitments because we have lowered PAYG below the natural rate for both services.

This is not an unsustainable approach. Medium term modelling suggests that:

- There would be a reduction in bills over the course of AMP8, all else equal – mainly due to AMP7 incentives dropping out of the revenue requirement.
- Water bills likely to end the period at very similar levels to AMP7.
- Gearing is stable and there is credit metrics remain comfortably above the level that would be required for a BBB+ / Baa1 rating.



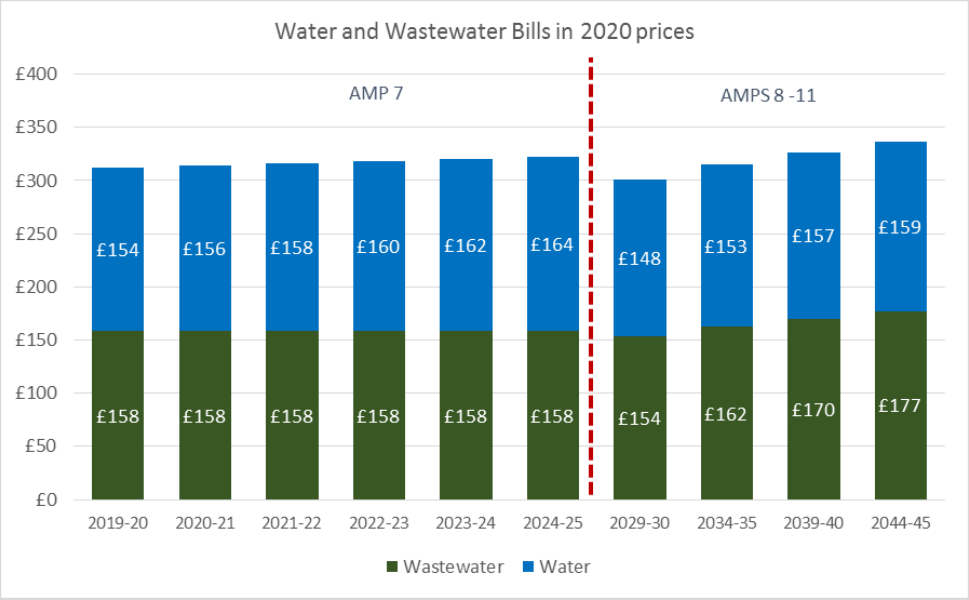
While wastewater bills would need to rise from their current levels in the longer term, these increases are modest and spread over a very long time (equivalent to real increases of 0.6% per annum over the 20 years between 2025 and 2045).

Profile 4: Smooth water bills

We recognise that a sharp increase in bills at any point in the cycle may not be desirable. This profile generates revenue with the same present value as the plan, but with a more progressive year on year movement in water bills. The result of lower bills in early years is higher bills by the end of AMP7. Over the course of AMP7, water bills would rise by 1.2% per year rather than the one-off increase of 3.76% as proposed in our plan (this profile assumes that wastewater bills would remain flat, in line with our broader approach to the NAV commitment).

- Water bills would rise by 6.4% over AMP7, compared to 3.76% in our plan.
- A combined bill would rise by 3.2% compared to 1.9%.
- Future bills would have very similar levels as in the original plan, but there would be sharper reductions in AMP8 given that bills in 2025 would end up at a higher point (6.4% compared to 5.2%).

While this is a viable profile, it does mean that customers would end the period with higher bill increase than our plan. In terms of optics, this alternative would look like an odd response the IAP – it would appear that we had asked for more revenue when the value is actually no different. In addition, we would be raising bills only to reduce them in 5 years' time – arguably introducing greater volatility by trying to smooth out increases.

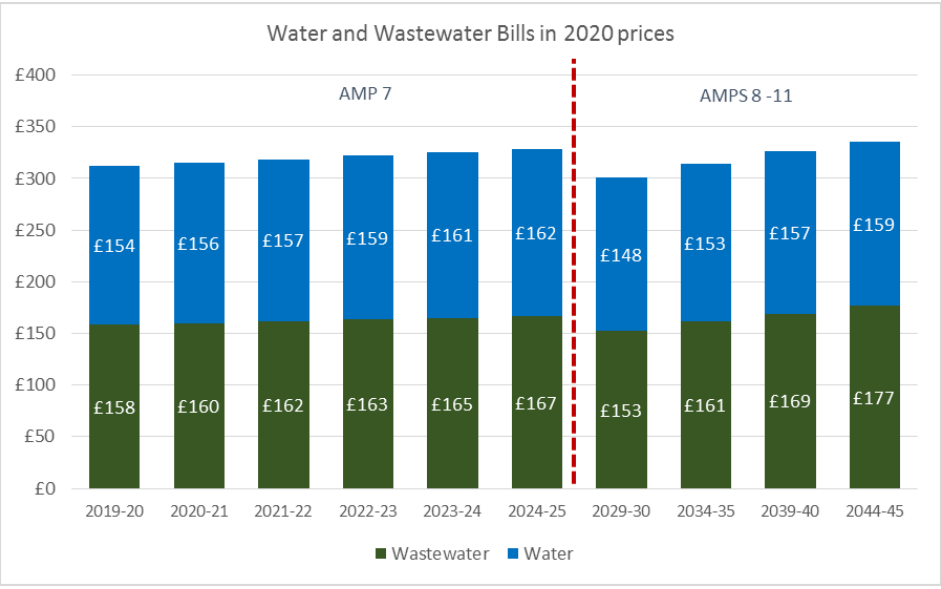


Profile 5: Balance between services

As with profile 4, the value of revenue in this view is equivalent to the plan but with similar rates of increase in bills for both water and waste. The profile of the wastewater bills would be more in line with our original projections at the time of the NAV (i.e. before CCWater's response to Ofwat's consultation).

In this profile:

- Water bills would rise by 1.1% per year (5.4% over AMP7), compared to 1.2% per year under profile 4.
- A combined bill would rise by 5.4% compared to 3.2% in profile 4 and 1.9% in our plan.
- As above, future bills would be similar but there would be more pronounced reductions in AMP8 (all services would reduce by 8-9% over 5 years).



While this option might be slightly more favourable to water customers (0.1% lower per annum), it is very marginal because there are around three times as many water customers as waste. We also think it is difficult

to square this with the commitments we gave in the NAV. The overall increase in a combined bill would work out to be higher than either profile 3 or 4 - for all these reasons, we do not favour this option.

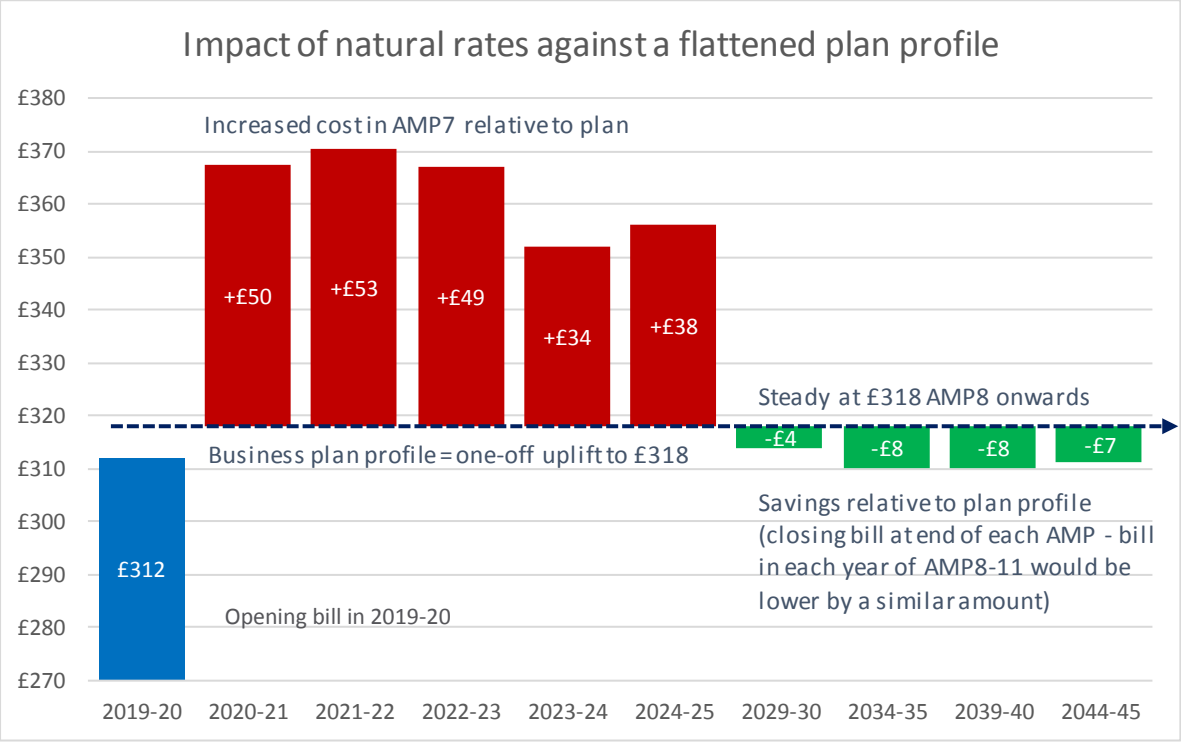
8.1.6 Engagement with customers (AV.A1-3, RR.A8)

A key feature of our response to the IAP feedback was to undertake further customer engagement to understand customer preferences for different bill profiles (along with customer engagement on ODIs). Ultimately we wanted to understand customer views on two important issues:

- the choice of higher bills in AMP7 but lower bills thereafter or vice versa; and
- revealing different changes in bills which helps customers contextualise what is volatile

To elicit this insight we tested two profiles with customers - profiles 1 (Natural Rates) and 3 (Plan). As discussed earlier, we did consider whether additional profiles should be used, however we considered that an array of options would prove confusing and cloud the issues that we wanted to explore. The key question revolved around intergenerational fairness – how much of the cost should be borne by customers now and how much deferred to future bills.

As discussed in section 8.1.5, our medium term modelling suggests that bills will fall over AMP8 for reasons that are largely unconnected to the way we use the regulatory levers – i.e. the fact that incentives drop out of the revenue controls. To ensure that there was a straightforward choice on the way that costs were shared over time, we flattened the profile of the bills beyond AMP7 and applied the impact of using natural rates as a variation on the final bill.

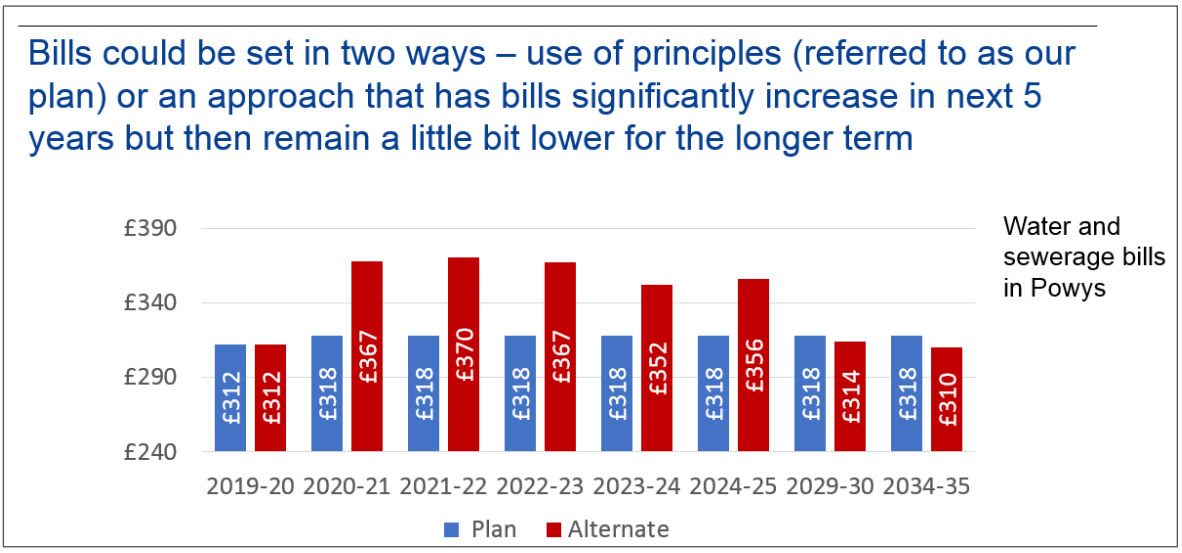


We engaged Britain Thinks – who conducted a similar project for Severn Trent's PR19 plan – to undertake this research. There were two half-day deliberative (qualitative) workshops, one in Wrexham and one in Newtown, with 12 customers per workshop. Customers in each area were shown a bill relevant to them (i.e. the Wrexham customers were shown a water-only bill while Powys customers were shown a combined bill).

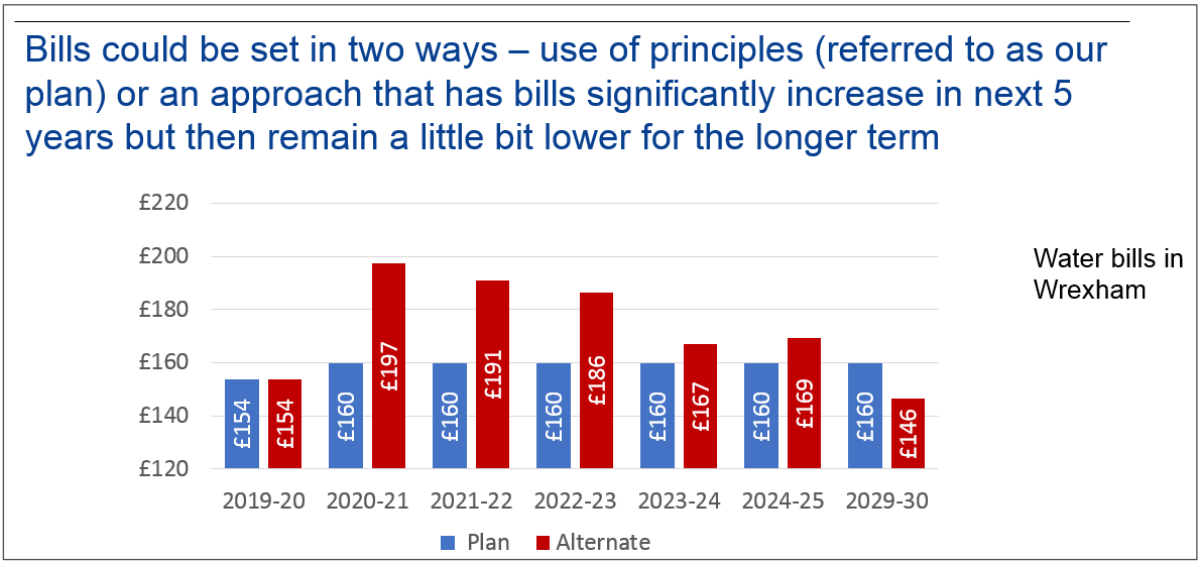
We explained our three principles as set out in section 8.1.1:

- Bills should be stable.
- A fair balance of charges over time.
- Charges should support low cost borrowing.

Powys group



Wrexham group



We took customers on a journey – exploring spontaneous views, then more informed views. Recruitment tried to ensure a mixed group based on characteristics such as age, gender, socio-economic group, life-stage, metered status, urban and rural customers.

Customers' reaction

Customers' primary concern was minimising bill volatility, and they showed a strong preference for the blue bill profile. There was some concern as to whether the future savings under the red profile would actually materialise. We were careful to explain that the value of expenditure under the two profiles was identical and the issue was all about the timing of payment.

Customers supported our three investment principles, especially 'Bills should be stable' and 'A fair balance of charges over time'. Although the only element that would have an impact on the overall amount that customers might pay in the long run is the cost of borrowing, the final principle was less important for some.

There was limited awareness of Hafren Dyfrdwy, which is not surprising considering we are a very new company. However, amongst some customers there was also limited awareness of the industry framework. When asked about future charges, they assumed that Hafren Dyfrdwy had full control over future levels, but they were reassured when they discovered that there was an industry regulator.

8.1.7 Conclusion – our revised plan

We have amended the way we apply the two main levers at our disposal, changing the balance between RCV run-off and PAYG. Our RCV run-off is now based upon a triangulating approach, informed by CCD and PR14 levels. These adjustments have been neutralised through the PAYG lever to deliver a reasonable bill profile that is affordable for customers and meets or exceeds our NAV commitments.

There are three pieces of research that demonstrates customers strongly support our use of the levers and the resulting bill profile of 1.9%:

Acceptability research

- At wave 1 we tested a 6% bill increase across AMP7 in Powys which generated acceptability of 51%. We also tested a 1% increase in Wrexham which generated acceptability of 86%.
- Given the low result in Powys, we made changes to our plan and tested a revised bill profile (wave 2), a 2.5% increase. This generated acceptability results of 81%.
- Post submission of our plan, we conducted a third wave of research, this time in Wrexham, testing a 3% increase across AMP7; this generated an acceptability result of 70%.
- Overall our acceptability research showed that across AMP7 customers prefer a smaller increase in bills compared to a larger increase. As a weighted average across both regions (because we have many more customers in Wrexham than Powys), the acceptability result is 73%.

Fair balance of charges

- The deliberative research we undertook with Britain Thinks following the initial assessment of our plan shows clearly that customers prefer stable bills in both the medium term and longer term (up to 2035). Almost all customers say they would prefer bills to stay stable over time, even if that means their bills increase sooner.

On balance we think this evidence shows that our bill profile of 1.9% (which is largely consistent with our September plan) delivers the best outcome for customers. A small step change in 2020-21 minimises the overall impact over the course of AMP7. A sharp increase in bills at this point would not be fair to customers and Hafren Dyfrdwy can sustain losses for a short period provided its credit metrics remain stable.

Smoother profiles would leave the bill at a higher level in 2025, leading to sharper bill reductions in AMP8 and thus mean a higher level of volatility overall. The existing profile also provides a clear and intelligible way to demonstrate that we are meeting the commitment on waste bills that we made in the NAV. A locked in reduction (as in profile 2) would be difficult to explain to customers or even informed stakeholders such as CCWater. Rebalancing from water to waste (profile 5) offers a £2 saving to water customers in return for a £9 increase in waste bills, which appears a poor return.

We also note that whilst our RCV is growing strongly (by going beyond our NAV commitments), it is from a very low base. Furthermore even with the high growth, the RCV per customer is well below other companies in the sector. This indicates that we are not creating a large liability for future customers.

8.2 Risk and return – other issues

In this section we set out our results from the revised financial modelling we have carried out alongside key changes to note to data tables (section 8.2.1) and then discuss our work performed in response to the IAP feedback on financial resilience and the related engagement with our Board (section 8.2.2).

8.2.1 Financial Modelling (RR.A3-A4, CA.B1)

Model submission summary

As part of this response, we have re-modelled Hafren Dyfrdwy's financials and have submitted Ofwat's financial model version 17z. We have submitted four models in total:

- Ofwat's model with our business plan totex – actual scenario
- Ofwat's model with our business plan totex – notional scenario
- Ofwat's model with Ofwat's IAP totex – actual scenario
- Ofwat's model with Ofwat's IAP totex – notional scenario

We have provided both the business plan totex and IAP totex view for comparison of the change in levers that would be required to maintain our bill profile should we spend the totex allowed by Ofwat.

For population of all versions of the Ofwat model, we have used our own internal financial model to forecast the financial position of Hafren Dyfrdwy up to 2025 and have then used this to populate the Ofwat model; the Ofwat model only extends to 2030 and we were not confident about our ability to use it for periods beyond 2025 correctly or modify it to present longer term results. All financials presented in this section showing forecasts, actuals and the results of our work on financeability have all been derived from our internal model. The results presented in this section showing notional forecasts are outputs from Ofwat's model with notionalisation switched on.

Summary of our financials (actual company)

We have modelled our business plan totex using our internal model. We present below a summary of key financials and metrics.

HDD Actual		18-19	19-20	20-21	21-22	22-23	23-24	24-25
1. Gearing	%	54.2	60.0	60.0	60.2	60.1	60.0	59.3
2. EBITDA	£m	6.3	6.7	8.8	10.0	10.6	11.7	11.7
3. EBIT	£m	(1.2)	(1.2)	(0.3)	0.6	1.3	2.3	2.0
4. EAT	£m	(1.9)	(1.7)	(1.4)	(0.7)	(0.4)	0.3	0.0

HDD Actual		18-19	19-20	20-21	21-22	22-23	23-24	24-25
Ofwat ratios								
1. FFO interest cover	Times	4.4	4.4	5.1	5.1	4.9	5.0	4.7
2. Debt:FFO	%	12.8	13.3	15.5	15.6	15.1	15.2	14.4
3. RCF/Debt	%	12.8	13.3	13.9	14.2	13.8	14.0	13.2
Moody's ratios								
4.FFO interest cover	Times	10.5	9.2	9.4	9.1	8.8	8.6	8.2
5. Interest cover ratio adjusted for charges	Times	6.4	5.5	3.0	3.0	2.8	2.7	2.6
S&P ratios								
6. FFO/Debt	%	16.9	12.0	13.8	14.0	13.4	13.5	12.7
5. EBITDA interest cover	Times	18.6	3.7	4.3	4.5	4.3	4.4	4.2

The above results show the company to be loss-making for the forecast period but in a strong liquidity position as these losses are non-cash in nature.

There are two key differences between the outputs from our model and the Ofwat financial model as follows:

- Current Tax (appointee) – Ofwat's model calculates a tax charge where the company is profit making but otherwise assumes zero tax. For Hafren Dyfrdwy, the company is forecasting losses which would be surrendered to the group and therefore the company would receive a tax credit. This improves the forecasted profit after tax position (reflected above) versus Ofwat's view. See further information on tax later in this sub-section.
- Pensions net finance income (appointee) – the Ofwat model doesn't account for net finance income (on the pension surplus) in the income statement which improves the profitability of Hafren Dyfrdwy.

The differences above explain the variances between the metrics presented above versus those in Ofwat's model.

One key difference between our current and September 2018 submission is the amount of dividends paid in the actual scenario. We have revised our dividend forecast such that we maintain our gearing level at c.60% for AMP7. Our revised AMP7 average gearing is 59.9%.

Summary of our financials (notional company)

We have used Ofwat's model to present a view on what the notional company would like financially for AMP7. We present below a summary of key financials and metrics from Ofwat's model.

HDD Notional		20-21	21-22	22-23	23-24	24-25
1. Gearing	%	60.0	61.4	62.3	62.9	63.0
2. EBITDA	£m	8.6	9.9	10.6	11.6	11.7
3. EBIT	£m	(0.4)	0.5	1.3	2.3	2.1
4. EAT	£m	(2.8)	(2.1)	(1.7)	(0.9)	(1.3)
Ofwat ratios						
4. FFO interest cover	Times	5.1	5.2	5.0	4.9	4.6
5. Debt:FFO	%	13.4	13.8	13.3	13.4	12.4
6. RCF/Debt	%	13.4	12.0	11.6	11.9	10.9

The two differences highlighted between our internal model and Ofwat's model (discussed in the subsection above) are also applicable here, which explains the significant difference between Earnings After Tax (EAT) between the actual and notional scenario.

We have used Ofwat's methodology for the notional scenario. Our method for calculating dividend yield and growth uses the wholesale cost of equity as opposed to the appointee cost of equity as per our previous submission (HDD.CA.B1). This allows the retail element of the business to pay out a dividend. We have paid out all profits earnt within retail in Ofwat's notional scenario as dividends with the balance being paid by the wholesale price controls.

Data table commentary: Tax

We are committed to managing our tax affairs in a responsible manner. This means paying the right amount of tax at the right time in compliance with UK tax rules and acting in accordance with the values set out in our corporate responsibility framework. Further information on our tax strategy can be found on the Severn Trent Plc website.

Our approach

All tax projections in our plan are based on our best view of our tax position, relying on both financial projections and UK tax legislation and practice in force, at the time of submitting our plan (March 2019). To

provide further confidence in our approach we have obtained independent assurance from PricewaterhouseCoopers LLP that our judgments, assumptions and methodology are in line with Ofwat's guidance, UK tax law and our tax profile.

Our tax allowances uses assumptions and principles based upon information and trend analyses of historically submitted tax computations, including:

- The tax classification of capital expenditure, where we have used a 4 year average allocation key to allocate expenditure across: (i) the main pool; (ii) the long-life pool; (iii) deferred revenue expenditure; and (iv) ineligible items. The 4 year allocation key is taken from past tax computations of Severn Trent Water Ltd, and not Hafren Dyfrdwy Ltd. We consider this approach to be a reasonable approach for the following reasons:
    - We expect the expenditure in AMP 7 to be representative of expenditure incurred by Severn Trent Water Limited in the past 4 years.
    - Our fixed asset policy has been aligned with Severn Trent Water Ltd following Severn Trent Water Ltd' s purchase of the business in February 2017.
    - The 4 year time period matches the period that Severn Trent Water Ltd has been using its tax classification software which we expect to use in analysing our AMP7 expenditure.
- The amount of non-deductible operating expenditure;
- The amount of expenditure included in the income statement which qualifies for capital allowances;
- The amount of profit arising on the sale of fixed assets which is taxable; and
- The extent to which infrastructure renewals expenditure is deductible.

Should any subsequent changes to the UK tax regime, take place which have a material impact on our tax position then we would expect to discuss these with Ofwat (other than changes to corporation tax and capital allowance rates which are covered by the tax true-up mechanism).

New Appointment and Variations ("NAV")

We have included the impact, in our opening capital allowance pools, of the asset transfers made under the approved transfer scheme with Severn Trent Water Ltd.

2018 Budget changes

We have reflected the changes to the UK's capital allowances regime which were announced by the UK Government at their October 2018 Budget, including:

- The removal of Enhanced Capital Allowances ("ECAs") from 1 April 2020. Capital expenditure which would have qualified for ECAs has been reallocated to our main pool.
- The rate reduction (from 8% to 6%) for long-life assets with effect from 1 April 2019. Our brought forward capital allowance pools and in-year tax relief reflect this change.
- The introduction of a new relief for capital expenditure on Structures and Buildings Allowances. We have assumed no benefit from this relief given that over 99% of our capital expenditure already qualifies for capital allowances and any benefit from this relief would be immaterial.

Tax losses

The Ofwat model calculates tax at a price control level which is inconsistent with UK corporation tax rules. Tax will be based on the appointed business' taxable profits and losses across all of its price controls – this will determine whether the business has an overall tax liability or not.

The Ofwat model shows an overall tax liability for the appointed business, representing tax on one profitable price control (retail) and ignoring the impact of the loss making price controls (the 4 wholesale controls). We do not expect the appointed business to have any liability to corporation tax in any year of AMP7, as we are forecasting taxable losses.

Income that we will receive from surrendering our tax losses to other group companies is also out of scope for the Ofwat model. We recognise that this is a function of Ofwat policy – each appointee is considered as if it was a stand-alone entity and the impact of group structures (positive or negative) are not considered. In this case the impact will be positive as Hafren Dyfrdwy will receive cash in exchange for the surrender of the losses, charged at the full rate of corporation tax. This means that Hafren Dyfrdwy will receive the benefit of the tax relief sooner than it would as a stand-alone entity (if group relief was not available the losses would be carried forwards).

Data table commentary: Pensions

In its IAP for Hafren Dyfrdwy, Ofwat included an advisory action relating to pensions (HDD.CA.B1). We have ensured consistency across tables and the Ofwat model included in this submission and provide further clarification on the app22 table below.

Accounting charge included in regulatory accounts for Defined Benefit schemes (block A)

For 2012/13 to 2014/15, the accounting charge has been allocated to price control based on the operating expenditure allocation in Table 2A of the 2017/18 APR. For other years, the allocation to price control is in line with the current Hafren Dyfrdwy cost allocation methodology being used for 2018/19.
The total DB pension costs in each year are the numbers in the regulatory accounts and will include any amendments for past service costs reflected in those years but exclude exceptional costs.

Accounting charge included in regulatory accounts for Defined Contribution schemes (block B)

The accounting charge for DC schemes has been allocated by price control on the same basis as the DB accounting charge in block A.

Cash contributions (DB schemes, ongoing) - actual and forecast (block C)

The cash contributions for the DB scheme have been allocated by price control on the same basis as the DB accounting charge in section A.

Cash contributions (DB schemes, deficit recovery) (block D)

The DB scheme is in surplus and is currently expected to remain so to the end of AMP 7. As a result, we have deliberately entered zero values in each cell of Block D.2.2

Data table commentary: Table R1 Changes

As part of the modelling inputs, we have updated our customer number forecasts from those submitted as part of the September 2018 business plan submission. The updated customer number forecasts are reflective of those used as part of our process for publishing a scheme of charges for 2019/20. The table below shows our forecasts for our business plan and IAP submission.

HDD Customer Numbers			18-19	19-20	20-21	21-22	22-23	23-24	24-25
Unmeasured Water Only	BP	000s	26.6	25.8	24.9	24.1	23.3	22.5	21.8
Unmeasured Water Only	IAP	000s	31.9	31.0	30.1	29.3	28.5	27.7	26.9
Unmeasured Waste Only	BP	000s	2.5	2.5	2.3	2.2	2.0	1.9	1.7
Unmeasured Waste Only	IAP	000s	0.9	0.9	0.7	0.6	0.4	0.3	0.1
Unmeasured Dual Service	BP	000s	8.1	7.9	7.4	6.9	6.4	5.9	5.4
Unmeasured Dual Service	IAP	000s	9.2	9.0	8.5	8.0	7.5	7.0	6.5
Measured Water Only	BP	000s	42.9	44.0	45.2	46.4	47.5	48.6	49.7
Measured Water Only	IAP	000s	44.4	45.4	46.6	47.7	48.9	50.0	51.1
Measured Waste Only	BP	000s	1.7	1.8	1.9	2.1	2.2	2.3	2.5
Measured Waste Only	IAP	000s	0.7	0.7	0.8	1.0	1.1	1.2	1.4
Measured Dual Service	BP	000s	9.2	9.5	10.2	10.9	11.5	12.2	12.9
Measured Dual Service	IAP	000s	7.3	7.6	8.3	9.0	9.7	10.3	11.0
Total	**BP**	**000s**	**91.1**	**91.6**	**92.0**	**92.5**	**93.0**	**93.5**	**94.0**
Total	**IAP**	**000s**	**94.4**	**94.5**	**95.0**	**95.5**	**96.0**	**96.5**	**97.0**

Our PR19 business plan customer number submission was based on data obtained from the Dee Valley structure and systems; to reach our forecasts at the time there was an element of apportionment required i.e. we took what we believed to be the Welsh customers from our STW billing system, and added on the Welsh customers from our Dee Valley billing system.

We have since progressed further in the migration of all customers into one billing system which has provided a better view of customers billed and served by Hafren Dyfrdwy. We now have in place clear system flags to indicate if a customer is in the Severn Trent area or that of Hafren Dyfrdwy. Whilst we have completed the majority of work to cleanse our data, we continue to run reports to sense check our data alongside that of Severn Trent for accuracy. As part of our PR14 true-ups in July, we will share with Ofwat any further changes that may be made to this data. We expect changes (if any) to be immaterial in value.

The above change in customer numbers from the business plan submission to this IAP response has resulted in us changing operating expenditure in table R1 from that previously submitted. There are 6 key points to note:

- The change in customer numbers between customer types detailed above has resulted in a change in costs for each customer type. The costs in totality however are broadly the same as our previous submission.
- The bad debt cost is one of the cost lines which has larger differences between the business plan and this IAP response. We have re-calculated bad debt to take in to account changes in customer numbers and the change in bill values.
- The other operating expenditure row also has larger differences between the business plan and this IAP response. This however is purely presentational in this table. For calculation of cost to serve for the purposes of financial modelling, we have always included recharges within this calculation. We have added in recharges in this line so Ofwat's calculations on the "Bill Module" tab in the latest release of its financial model use the correct cost values.
- Depreciation on legacy and AMP6 assets in totality is the same as our business plan submission but as part of this IAP response, we have split out the costs between the 2 categories.
- The AMP7 capital expenditure and depreciation on AMP7 assets have increased by £0.6m and £0.3m respectively in totality. After we submitted our business plan, we spotted that we had understated these values in our submission. We have now corrected these to reflect our true forecasts.
- The change in customer numbers in R1 have only been reflected in this table. We will update table R9 as part of our July true ups, when we have closed out 2018-19.

As a result of all the changes noted above, the net impact on total residential retail costs (opex plus depreciation, excluding third party services) for AMP7 is an increase in costs of £0.02m which we do not consider material as this is 0.2% of the total. The capital expenditure forecast however is higher for AMP7 by £0.6m which is a c. 200% increase on our previously submitted business plan. We recognise that this additional cost takes us £0.3m over Ofwat's view of efficient costs for the domestic retail price control. We will treat this addition to forecasted spend in the same manner as water resources and wastewater network+ where we are also forecasting spend greater than Ofwat's efficient view of costs.

Data table commentary: Other data tables

There are some additional changes to data tables and clarifications which we detail below:

- WS1 and WWS1: We have updated for two items in this table (i) IRE has been updated as this was previously being shown on a net basis. This has now been grossed up. (ii) Grants and contributions have been amended to adjust for an overstatement relating to HS2 income.
- App24, App24a: These tables have been updated to reflect the above and also the amended inflation forecasts used in App23.
- App23: We have updated this table for the January Oxford Economics inflation forecast so our bill calculations align to our scheme of charges work previously carried out for 2019/20.

- App28: We have made several changes to the income lines included in App28. We have changed the data for AMP7 years, as we will be providing updated AMP6 data in July alongside the APR. The AMP7 changes can be summarised as follows:
    - Water and waste income blocks: We have split diversions income between diversions and 'other non-price control' with any NRSWA related diversions moving out of diversions (in line with query response HDD_DD_CE_001). We have also corrected a calculation error which had meant some SVE HS2 income was included in Hafren Dyfrdwy's diversions income (in line with query response HDD_DD_CE_001).
    - Water only: We have corrected the requisitions error on App28 requisitions income line, which we highlighted in our original data table commentary submission in September 2018. This has a knock on impact to the contestable income set out in Block I, which has been adjusted to align.
    - Waste only: We believed that lateral drains and adoptions inspection income was price control, and originally included it on 'other price control' income line. We realise that Ofwat required this to be included as non-price control, and as such we have moved this to other "non-price control" in line with the App28 line definitions. The total income has not changed in respect of this item.
    - Only the corrections for the HS2 and water requisitions income create changes to the grants and contributions total. WS1 and WWS1 have been updated in line with these changes to App28. The opex income on WS1 and WWS1 relates solely to diversions.
- Bio4: In light of the revised guidance received from Ofwat, we have reviewed the fixed and variable elements of the bioresources revenue. With the exception of pension deficit repair contributions and local authority rates all other costs are considered to be variable as they relate to purchases for sludge treatment and disposal services from other companies.
- App10: The dividend cover presented in this table is based on Ofwat's financial model we are including in this submission, and not based on profit after tax in App11 which would result in a different cover.

8.2.2 Financeability and board engagement (RR.A3-A4)

In our business plan as submitted to Ofwat, we presented the scenarios we had modelled as part of our process for viability statement testing for the 2017/18 financial year and a summary of the results. To supplement this, we have provided further detail below which shows:

- Our methodology for assessing financial resilience
- The impact on Hafren Dyfrdwy under Ofwat's scenarios published in Ofwat's consultation paper "Putting the sector back in balance: Consultation on proposals for PR19 business plans" and company developed scenarios
- Potential options available to mitigate against the negative impacts on Hafren Dyfrdwy's financeability
- Our approach to obtaining Board assurance and sign off on the long term financial viability of Hafren Dyfrdwy

Our methodology for assessing financial resilience

Our methodology for assessing financial resilience for Hafren Dyfrdwy consists of four steps detailed below:

Step 1: Assessment of forecasted financial performance

As previously mentioned above, Hafren Dyfrdwy is forecasting losses for AMP7 as a whole. The accounting losses are non-cash in nature as demonstrated by the differences between EBITDA and other subsequent measures detailed in the financial modelling section.

The company is in an extremely strong position when considered before depreciation costs which have significantly increased when compared to Dee Valley water's historical reported performance, as explained

previously in this section. The cash and credit metrics are in a strong position which allows Hafren Dyfrdwy to operate with an accounting loss for the entirety of AMP7.

The strength of the ratios provides confidence that we could maintain an investment grade credit rating throughout PR19 as a stand-alone company.

The thresholds we need to achieve to maintain our credit rating are as follows:

HDD Thresholds		Threshold	Achieved?
Ofwat ratios			
1. FFO interest cover	Times	1.6	✓
Moody's ratios			
2. Interest cover ratio adjusted for charges	Times	1.5	✓
S&P ratios			
3. FFO/Debt	%	9.0	✓

Based on the actual company, the cover levels compare well against the targets for a BBB+ / Baa1 rating:

- Moody's adjusted interest cover averages over 2.8 compared to a target level of 1.5.
- S&P ratio of Funds From Operations to Debt averages over 13% compared to a target of 9%.
- Gearing remains at c.60% throughout AMP7

The above would ensure our rating is at least at our targeted rating of BBB+ / Baa1.

Ratios for the notional company are slightly weaker, however these are still comfortably above the levels required for a BBB+ / Baa1 rating.

Step 2: Consideration and assessment of risks faced by the company included in our Enterprise Risk Management (ERM) process

As part of our consideration and assessment of risks included in our ERM process, we looked to build an understanding on which risks, should they materialise, could have an impact on our long term viability. We have considered both group level risks as well as company specific risks in our assessment. We have highlighted the following principle risks which would be relevant.

- Group level risks:
  - ERM Risk 3: Failure to comply with regulatory requirements
  - ERM Risk 4: Business interruption and/or data loss resulting from cyber threats
  - ERM Risk 5: Health and safety impact
- Company specific risks:
  - HDD ERM Risk 1 : Catastrophic breach of a Hafren Dyfrdwy Reservoir

We subsequently developed two further scenarios to test (over and above those set out by Ofwat in its consultation paper "Putting the sector back in balance: Consultation on proposals for PR19 business plans".

These two scenarios were:

- Over-collection of revenue resulting in one year impact of 3% of appointee turnover – relevant to ERM Risk 3
- A severe climate event, operational failure or other exceptional event with a very significant financial impact – relevant to ERM risks 4, 5 and HDD ERM Risk 1

Further, the Ofwat scenarios modelled were:

- Totex underperformance (10% of totex)
- ODI penalty (3% of RORE) in one year

- Inflation scenario (high inflation scenario RPI 4%, CPIH 3%) for each of the 5 years of the price control
- Inflation scenario (low inflation scenario RPI 2%, CPIH 1%) for each of the 5 years of the price control
- Increase in level of bad debt (5%) beyond current levels
- Debt refinanced as it matures, and new debt financed as required at 2% above the forward projections.
- Financial penalty – equivalent to 3% of one year Appointee turnover.
- Combined scenario – cost underperformance in both totex and retail expenditure of 10% in each year of the price control along with an ODI penalty equivalent to 1.5% of RORE in each year and a financial penalty equivalent to 1% of revenue in one year.

For each scenario modelled, we considered the impact on (and the deviation from our base case) each of the metrics detailed in the previous two tables.

Step 3: Building an understanding of the consequences Hafren Dyfrdwy would face in each scenario
Step 4: Consideration of mitigation actions where the impact on long term viability is significant

As part of this response to Ofwat's IAP, we have considered whether we re-model all the above scenarios to take into account some of the changes in totex forecasts and revision of AMP6 bills. We are conscious that we will be modelling all scenarios for our long term viability statement which will be included in our 2018/19 accounts and therefore consider it to be sensible to not duplicate effort by modelling these twice. Therefore, we have taken the following approach for this response:

- Re-visit PR19 business plan submission and highlight which scenarios placed the most pressure on Hafren Dyfrdwy's long term viability
- Model these scenarios and present the results as part of this IAP response
- Model all other scenarios as part of our work for publishing our long term viability statement in the 2018/19 accounts

The above process highlights two scenarios which we have subsequently modelled and included the results for below

- Totex underperformance (10% of totex)
- Combined scenario – cost underperformance in both totex and retail expenditure of 10% in each year of the price control along with an ODI penalty equivalent to 1.5% of RORE in each year and a financial penalty equivalent to 1% of revenue in one year.

The results of steps 3 and 4 for the above two scenarios are detailed in below.

Modelling outputs

We have presented below the results of the two scenarios and provided further commentary below

Totex underperformance scenario results

Totex underperformance (10%)		18-19	19-20	20-21	21-22	22-23	23-24	24-25
1. Gearing	%	58.5	68.5	70.6	70.7	70.5	70.4	70.2
2. EBITDA	£m	4.7	5.0	7.1	8.4	9.0	10.0	10.0
3. EBIT	£m	(2.9)	(2.8)	(2.0)	(1.1)	(0.5)	0.3	(0.0)
4. EAT	£m	(3.3)	(3.2)	(2.9)	(2.3)	(2.1)	(1.6)	(2.1)

Totex underperformance (10%)		18-19	19-20	20-21	21-22	22-23	23-24	24-25
Ofwat ratios								
1. FFO interest cover	Times	3.1	2.9	3.5	3.5	3.3	3.4	3.1
2. Debt:FFO	%	8.8	8.8	10.4	10.5	10.1	10.2	9.3
3. RCF/Debt	%	8.8	8.8	9.1	9.4	9.0	9.2	7.4

Totex underperformance (10%)		18-19	19-20	20-21	21-22	22-23	23-24	24-25
Moody's ratios								
4.FFO interest cover	Times	8.9	7.4	7.4	7.1	6.8	6.6	6.1
5. Interest cover ratio adjusted for charges	Times	5.0	4.1	1.9	1.9	1.7	1.6	1.5
S&P ratios								
6. FFO/Debt	%	12.9	7.6	9.1	9.3	8.8	8.9	8.1
5. EBITDA interest cover	Times	13.8	2.5	3.1	3.3	3.2	3.2	3.1

Combined scenario results

Combined Scenario		18-19	19-20	20-21	21-22	22-23	23-24	24-25
1. Gearing	%	58.7	68.9	72.0	71.7	71.5	71.3	71.2
2. EBITDA	£m	4.6	4.8	6.2	7.7	8.3	9.3	9.3
3. EBIT	£m	(3.0)	(3.0)	(2.9)	(1.7)	(1.2)	(0.4)	(0.8)
4. EAT	£m	(3.4)	(3.3)	(3.7)	(2.9)	(2.7)	(2.2)	(2.7)

Combined Scenario		18-19	19-20	20-21	21-22	22-23	23-24	24-25
Ofwat ratios								
1. FFO interest cover	Times	3.0	2.8	3.0	3.2	3.1	3.1	2.8
2. Debt:FFO	%	8.5	8.5	8.9	9.6	9.2	9.3	8.4
3. RCF/Debt	%	8.5	8.5	7.6	8.5	8.1	8.3	6.6
Moody's ratios								
4.FFO interest cover	Times	8.7	7.2	7.0	6.8	6.5	6.3	5.9
5. Interest cover ratio adjusted for charges	Times	4.9	4.0	1.4	1.6	1.4	1.3	1.2
S&P ratios								
6. FFO/Debt	%	12.6	7.3	7.7	8.5	7.9	8.1	7.3
5. EBITDA interest cover	Times	13.4	2.5	2.7	3.1	2.9	3.0	2.8

The above results show the significant downside faced by Hafren Dyfrdwy in these scenarios; this result is in line with our PR19 submission where these scenarios had the largest impact on Hafren Dyfrdwy. The company would face significant downgrade in credit rating from both Moody's and S&P to below investment grade should either of these scenarios materialise.

For the combined scenario, we believe an ODI penalty each year of 1.5% of RORE is unlikely to ever materialise due to the nature of customer behaviour and their views on financial incentives in the Hafren Dyfrdwy area. Our customers do not want financial penalties at all and even when pushed, the rates are low. Further, our current and forecasted operational performance is such that performance would have to drop by large proportions for the company to face such a penalty in each year of AMP7. We still believe this can be mitigated and have set out potential actions we could take in the sub-section below.

Mitigating Actions

For the above scenarios modelled, we have considered mitigating actions we could take and other protections that exist which could provide short, medium and long term protection against these impacts.

- Deferral / cancellation of discretionary payments: Whilst Hafren Dyfrdwy has sufficient distributable reserves with which it can pay a dividend throughout AMP7 (despite its loss making position for the AMP), these payments would be a significant drain on the company's cash flow in this scenario. In our actual scenario (discussed in the financial modelling section) we are proposing a dividend payment allowing us to maintain gearing at 60%. We would forego this payment in this scenario.
- Deferral / re-profiling of our capital programme: We are forecasting appointed significant capex spend in AMP7. Our planned capex programme for AMP7 is important for us such to the extent that it will enable

us to fulfil our obligations as a water and wastewater company. However we recognise that a short term deferral of a proportion of this spend to enable long term viability outweighs the risk of underperformance against our performance commitments in these extreme scenarios.

- Improved working capital management: Whilst this solution would only improve the short term position, this option of reducing working capital requirements could work well in combination with other measures listed above. This would allow us to manage the company through the prolonged period of stress the company would be under in these modelled scenarios.
- Access to equity finance from the group: This option of making use of Hafren Dyfrdwy's group position and raising additional equity finance from its parent company would be a last resort option for the company. This option therefore is somewhat theoretical and would only be considered should all other avenues fail, as opposed to an option we would consider in the first instance.
- Protection through regulatory mechanisms: The Company would receive a degree of protection towards its long term viability via the totex sharing mechanism. In each of the two modelled scenarios, the company would share the underperformance with customers. The above mitigation actions listed would see the company through AMP7 and the recovery from customers via increased revenues in AMP8 would improve the long term position for Hafren Dyfrdwy. We recognise this isn't a long term solution as common performance targets will be tougher and incentives will be well designed in line with what we see for AMP7. This mechanism in the medium term would however support the company in turning around the cost and operational performance to deliver value for its customers in the long term.
- Internal controls: We have in place internal controls and escalation processes to monitor both operational and financial performance. This mechanism would allow us to respond early to minimise the likelihood of such a scenario coming to fruition.

Board Assurance and Sign-Off

There are two elements of Board assurance sign –off:

- That relating to the financeability of our business plan: As part of this IAP response, we shared with the Board details of our forecasted financials alongside credit metrics and financeability for review and challenge. We also instructed Jacobs to carry out assurance on our financial projections for Hafren Dyfrdwy. The Board is satisfied that The Company's plan is financeable and has made a Board statement accordingly included with this submission. (HDD.RR.A3)
- That relating to the long term viability statement: As part of the 2017/18 year-end, we shared with our Board:
    - Details of the risks we face as a company - those in our ERM process
    - The scenarios we have modelled as part of our work on long term viability of the company – these are the Ofwat scenarios as well as company specific scenarios mentioned previously
    - The outputs of the modelling – including the annual profitability and financeability forecasts
    - Possible mitigating options available to the company

The Board reviewed, questioned and critiqued the above material as part of its assessment of the long term viability of the company to gain confidence that the company will be viable until 2025. The Board subsequently approved the company plan up to 2025 upon which the Board based its long term viability statement. Our external auditor Deloitte also reviewed the long term viability statement made by the Board and have since signed-off on the company accounts.

For the upcoming 2018/19 year-end, we will be following a similar process with our Board where we will update the analysis on the two scenarios to reflect actual financial results for the year. The Board will make its long term viability statement beyond 2025 (HDD.LR.A4) for the year based on this information provided.

8.2.3 Non-household retail (RR.A1)

Ofwat noted that our plan proposed a net margin of 1.20% for non-households using less than 5 Ml/a per year. We did explain our approach in section 8.6.2 (p220) of our original plan, but it is worth clarifying that our **overall margin** for customers outside the market is **below the 1.0% cap**. Our approach is exactly the same as we adopted at PR16, albeit with a lower overall margin:

- Calculate the working capital requirements for the banding and allocate margin to cover that first
- Treat the residual margin (if any) as a mark-up on retail costs for the band.

Since retail costs are a larger proportion of small bills, this will mean that net retail margins are higher for small users if expressed as a percentage of sales; gross margins will inevitably be a larger proportion of sales because these included retail operating costs.

Working capital

We treat the financing of 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 assume an interest rate in line with the appointed business – we do not differentiate for retail.

We look at all costs at a granular level, so we base working capital on the number of days that we need to finance for sub-bands (i.e. unmeasured, 0-1 Ml/a, 1-5 Ml/a etc.). The characteristics of some groups within the broad bands are quite different – for example, unmeasured customers sit within the 0-5 Ml/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.

Residual margin

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.

The net margin of 1% is applied to allowed costs and forecast wholesale income to give an overall allowance for customers outside the market. Once working capital cost is removed, we have a residual margin. Our uniform mark-up provides equal headroom in all bands, which would reduce the chance that differences in cost or financing requirements will impose a margin squeeze on any competitor if this segment was opened to competition. The calculation to derive the mark-up is laid out below:

Calculation of residual margin for ineligible customers (water service)

Residual margin - ineligible customers £000	20-21	21-22	22-23	23-24	24-25
1. Wholesale revenue <50 Ml/a	4,471	4,592	4,769	4,990	5,124
2. Retail cost <50 Ml/a	344	349	348	357	362
3. Total before margin	4,814	4,941	5,117	5,347	5,486
4. Net Margin @1%	49	50	52	54	55
5. Less: Working capital <50 Ml/a	(53)	(41)	(23)	(21)	(23)
6. Residual margin	(4)	9	29	33	32
7. Cost including working capital (L2 - L5)	397	390	371	378	385
8. Mark-up on cost including working capital	-1.13%	2.29%	7.76%	8.62%	8.42%

In our original plan, we allocated the margin across all bands (water and waste) that were outside the market. However, in order to be clear that we are not attempting to derive any additional margin from non-households in either water or waste, we have now done this at a service level.

Note that the overall net margin of 1% has been applied to ineligible customers only. For customers using more than 50 Ml/a, we have applied a gross margin as a mark-up on wholesale revenue, in line with Ofwat's approach at PR16.

Our residual mark-up is applied to the costs for each customer group. So, for example, the net margin allocated to unmetered costs in the smallest category in 2021-22 is as set out in the table below.

Application of mark-up to customer categories

£000	Working Capital	Residual margin	Total net margin	Total revenue	Net margin %
Water 0-5 Ml/a	30	8	38	3,607	1.05%
Water 5-50 Ml/a	11	1	12	1,383	0.86%
Water: non-eligible	**41**	**9**	**50**	**4,991**	**1.00%**

Retail cost is a higher proportion of overall revenue for small customers than for large ones; retail costs do not scale with the level of water used. This means that retail margins will look larger for small customers – but the mark up on retail costs (i.e. the retail component of the value chain) is the same.

In general, gross margins are higher for water than for waste. This reflects the weighting of operating costs to the water service. Our approach to cost allocation is explained in Appendix 8.1.

8.2.4 Return on Regulatory Equity (RR.A2)

We've re-examined our RoRE analysis and included some more detail about how our risk management and mitigation are taken into account. In general, the assumptions and methodology are very similar to those laid out in section 9.5 (p229) of our original plan. A summary is set out below.

- **Totex:** Unchanged. A range of -6.5% to +2%. The rationale for the asymmetric range is that substantial efficiency improvement is already required in order to hit our business plan forecast. In addition, there are two external factors (new statutory obligations and the withdrawal of lottery funding) which could drive a material increase in cost.
- **Cost of new debt:** Unchanged. A range of -45bps to +15bps. The range assumes that the range of performance around the iBoxx is symmetrical, but the skew is created by Ofwat capturing 30bps of this through its "halo effect" adjustment to the index.
- **Outcome delivery incentives:** Amended. In our original business plan, we assumed a P10/P90 range of -0.46% to +0.24%. Following Ofwat's Initial Assessment, we have done more work on testing our ODI package with customers; the result is a range of –2.04% to +0.48%.
- **Revenue:** Amended. We estimated a RORE impact of -0.23% to +0.26%; following the IAP feedback and the details of the Revenue Forecasting Incentive that Ofwat has now circulated, we have revised this view to –0.19% to +0.20% for wholesale, and -0.23% to +0.01% for retail (primarily non-household retail).

There are minor differences in most measures but in most instances these are the flow-through consequences of changes in the revenue base or other variables that impact on the calculation rather than differences in the underlying assumptions.

Revenue variance

Our assessment of the potential revenue impact within our RoRE analysis was based the largest actual variance that has taken place within either legacy company since the Wholesale Revenue Forecasting Incentive Mechanism (WRFIM) was introduced.

Dee Valley Water: actual wholesale revenue variances (before creation of HDD)

£m nominal	2015-16	2016-17	2017-18
Allowed revenue	21.974	22.455	23.132
Revenue recovered	20.753	21.915	22.521
Variance	(1.221)	(0.540)	(0.611)
Percentage	-5.56%	-2.40%	-2.64%

We should expect revenue to be more volatile within a small company than a large one. In a small company, a change in production by its large customers can have a significant impact. In a large company, it is likely that this will be offset by other factors but in a small population this natural pooling of risk does not occur. When connection charges are included in the control this increases the variability of revenue – a material variation can be caused by a single large development being delayed, or being brought forward when it was not anticipated within a business plan.

Issues around large industrial customers are particularly important for Dee Valley / Hafren Dyfrdwy where income from large industrial customers represents a significant proportion of the total wholesale base. Compared to Severn Trent, non-household is 33% of wholesale water compared to 23% and the population is also skewed towards the top end. There are 15 customers large enough to qualify for the market in Hafren Dyfrdwy's area, which is high considering the small number of non-household customers (c7,100). Again, comparing this against Severn Trent there are only around 200 customers of similar size in a non-household population of c162,000; large users in Hafren Dyfrdwy are around double the proportion of the overall mix.

However, since Ofwat has now further published details of its proposed Revenue Forecasting Incentive (RFI), we note that connection charges are now outside of the RFI, which does make a significant difference to overall volatility. Looking at the historic record, capital income has been a large contributor to the volatility of revenue against the control.

Dee Valley Water: capital income compared to forecast (before creation of HDD)

£m nominal	2015-16	2016-17	2017-18
Implicit allowance for capital income	1.170	1.143	1.143
Actual recovery	0.970	0.694	0.810
Variance	(0.200)	(0.449)	(0.333)
Percentage of developer income	-17.12%	-39.26%	-29.11%
Percentage of wholesale	-0.91%	-2.00%	-1.44%
Variance on core charges[3]	-4.65%	-0.41%	-1.20%

We are forecasting a significant variance (shortfall) in Hafrend Dyfrdwy income this year, which is largely a result of data cleansing following the border variation. We have gained more clarity about which customers lie on each side of the border, which cuts across both the old Wrexham and Chester areas of appointment; in some instances it also cuts across postcodes meaning that these cannot necessarily be used as a guide in all circumstances. We also have better data on which customers billed by Dwr Cymru fall within Wales and which fall into England.

The resulting WRFIM correction and penalty has not been included within our modelling at this point. In line with other changes for 2018-19, we are not updating our plan until items are finalised. As the correction would result in an increase in customer bills, our intention would be to smooth the impact over AMP7 and adjust the PAYG lever if required in order to ensure that the final bill profile remains in line with the one that we have consulted on.

[3] This is the variance that would have occurred under the Retail Forecasting Incentive – i.e. if capital income had not been included within the correction mechanism

We do not think that this effect will be repeated. We take comfort from the fact that – before the border change – the variances to FD had been falling in both Dee Valley and Severn Trent because we have a team that is familiar with the process required to produce revenue forecasts. Our executive team monitor variances against budget on a monthly basis so that the causes are understood and actions taken to correct any issues identified. Taking all of these factors together we think that a variance over 3% going forwards is unlikely and should therefore represent the P10/P90 bound under the new RFI. This means that the RORE impact of wholesale revenue variance, through the interest penalty on revenue correction, is likely to be trivial (as in our original submission).

The majority of the revenue impact occurs in the non-household retail control and bio-resources, where a loss of customers or volumes can lead to variances that are not corrected. We did not provide sufficient detail around our assumptions on this within our original plan.

Non-household retail

In business retail, the assumptions in our revised plan are as follows:

- **P10 Scenario**
  - There is a variance of 3% in non-household customer numbers due to the general business cycle. Within the monopoly customer base, there are no other effects and cost is assumed to be constant in the short run. This means that for each customer, there is a loss of the associated net margin.
  - We lose all eligible customers to other retailers or they choose to self-supply. Experience to date within the non-household retail market is that this segment is very active and therefore we do not think this is unreasonable as a worst case scenario. Large customers could also simply close these sites due to wider economic factors.
- **P90 Scenario**
  - Assumption on gains for the ineligible sector are symmetrical.
  - For the eligible sector, as Hafren Dyfrdwy has no plans to compete for eligible customers in England it could only gain if a large business were to choose to move into the region during AMP7. Given the small size of the area this seems unlikely and therefore we have assumed 1 addition.

Illustration of non-household retail revenue variances

Non-household revenue impact in 2020-21	Change in customers %	Change in customers Nr	Margin per customer £	Change in Net Margin £m
P10 Scenario				
Ineligible customers	-3.0%	(241)	(7.60)	(0.002)
Eligible customers	-100%	(15)	(4,663.66)	(0.070)
Total P10 result (for 2020-21)		(256)		(0.072)
P90 Scenario				
Ineligible customers	+3.0%	241	7.60	0.002
Eligible customers	+6.7%	1	4,663.66	0.005
Total P10 result (for 2020-21)		242		0.006

The loss of non-household customers in the eligible sector is relatively material to Hafren Dyfrdwy for all the reasons explained above – relative to Severn Trent, income from the eligible customers forms a large proportion of overall revenue and hence a significant proportion of the non-household retail margin.

Bio resources

The new bio-resources specifically allows for an element of revenue variance which was not present in AMP6 and hence this can be expected to increase the RoRE range compared to PR14. Over an extended period sludge volumes within the original Severn Trent boundaries have grown, but in Wales there was a reduction of

0.7% in the last year (2017-18). Our base case assumed that the reduction was something of a one-off, but was indicative of a slowing of growth relative to recent history.

- Our base case assumes that growth in production resumes at a rate of c1% per annum over AMP7, starting from the lower 2017-18 base.
- Our P90 case assumes that 2017-18 was a genuine exception, and the historic trend of c1.7% growth resumes from the higher 2016-17 base.
- Our P10 scenario estimates the effect if sludge loggers are recording volumes 10% too high.

As noted in section 8.2.1, we have reviewed the fixed and variable elements of the Bioresources revenue. With the exception of pension deficit repair contributions and local authority rates we consider all other costs to be variable as they relate to purchases of sludge treatment and disposal services from other companies. The result is that our proportion of fixed revenue moves from an average of 21.2% to an average of 37% over AMP7 and this slightly reduces the RoRE impact. In other respects, our assumptions for bio-resources are unchanged.

An example of the impact calculations for one year of AMP7 is set out in the table below. This also shows the effect of the increase in fixed revenue.

Bio resources revenue impact in 2021-22	Base Case	Original RoRE		Revised Plan	
		P90	P10	P90	P10
Proportion of revenue fixed		22%	22%	39%	39%
Volume variance		15.6%	-10.0%	15.6%	-10.0%
Volume TDS	672	777	605	777	605
Revenue based on revised volumes £m		0.894	0.696	0.894	0.696
Adjustment for fixed revenue £m		(0.026)	0.017	(0.046)	0.030
Forecasting penalty £m		0.012	0.008	0.012	0.008
Total revised revenue £m	0.773	0.855	0.705	0.835	0.718
Difference from original plan £m				(0.020)	0.013

Note that the impact of revenue variances in the bio-resources control cannot be measured as a return on its regulatory equity because Hafren Dyfrdwy has no sludge assets and therefore no RCV (as explained in section 8.1). Much like retail revenue variances, its impact is only captured at the appointee level.

Outcome Delivery Incentives

Following Ofwat's Initial Assessment of our plan, we have carried out further extensive engagement to understand our customers' views on the performance commitments that matter to them and the level of rewards and penalties that they would support. This is described in detail within Chapter 4 and appendices 4.1-4.2.

Overall Return on Regulatory Equity

Although ODIs drive the largest single change in our RoRE range, there are a number of small movements in other incentives:

- There are small changes in the regulatory equity base which are a result of the decisions we have taken on the RCV run-off and rate of PAYG (see sections 8.1.2 and 8.1.3).
- We have reflected the impact of the non-household customer experience measure, assuming a range of +6% to -12% of non-household revenue in line with the residential CMeX. This was omitted from the RoRE analysis in our original plan.

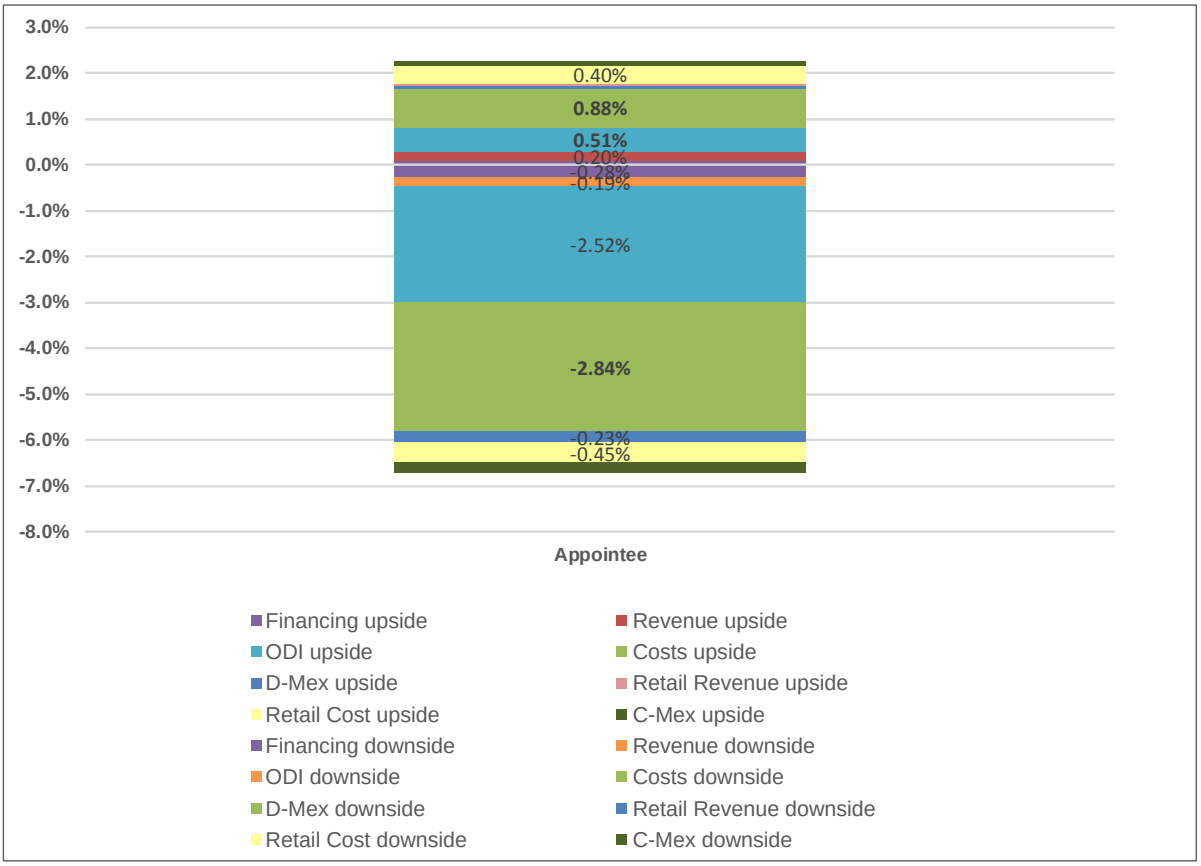
- There is some movement in the Developer Experience Measure because of changes we have made to the level of grants and contributions (see section 8.2.1). There is a knock-on impact for DMeX because the revenue base changes.
- There are also some changes in the Ofwat RoRE calculations within the most recent release of the financial model.

The overall result is an increase in the RoRE range compared to our original submission; there is a small (+0.16%) increase in the upside, with a larger (1.70%) increase in the maximum penalty.

Overall RoRE	Original Plan		Revised Plan		Movement	
	Upside	Downside	Upside	Downside	Upside	Downside
Financing	0.08%	-0.25%	0.09%	-0.28%	0.01%	-0.03%
Revenue	0.26%	-0.23%	0.20%	-0.19%	-0.06%	0.04%
ODIs	0.24%	-0.46%	0.48%	-2.04%	0.24%	-1.58%
Costs	0.89%	-2.87%	0.88%	-2.84%	-0.01%	0.04%
D-Mex	0.06%	-0.12%	0.04%	-0.09%	-0.02%	0.04%
Retail Revenue	0.03%	-0.03%	0.04%	-0.23%	0.01%	-0.20%
Retail Cost	0.42%	-0.47%	0.40%	-0.45%	-0.02%	0.03%
C-Mex	0.10%	-0.19%	0.11%	-0.22%	0.01%	-0.02%
Overall	**2.08%**	**-4.63%**	**2.24%**	**-6.33%**	**0.16%**	**-1.70%**

The revised RoRE range is set out in the graph below.

Overall RoRE Range (Appointee)



Mitigating actions for Return on Regulatory Equity

We have discussed the mitigating actions that might be taken in terms of the viability of the company (section 8.2.2). In general, these would help to offset negative impacts from variations in costs and revenue, but would not necessarily offset the impact on the company's returns - for example, avoiding the payment of a dividend or an injection of new equity would not improve RoRE except to the extent that it reduced the company's debts and thereby reduced borrowing costs.

There are some mitigating actions which would result in an improvement in RoRE:

- For revenue variances within the controls subject to an overall revenue cap, there is substantial mitigation through the Revenue Forecasting Incentive – this applies to water resources, networks and wastewater networks; overall we have assigned low risk to this element of revenue as a result.
- For household retail, there is some protection against cost increases provided these are driven by changes in customer numbers.
- For non-household retail we would expect to realise some cost reductions in response to the loss of large business customer; some would flow naturally from the revenue lost (for example, provisions for bad debt and working capital).
- In both branches of retail, costs would be less responsive to a reduction in customers in the short-run, but in the medium term we would examine the scale our retail operations and the level of service bought in from other providers (particularly through the operational service agreement with Severn Trent) to reduce semi-variable costs.
- Similarly, as all sludge will be exported to other companies (currently to Severn Trent), in the event of reduced volumes we would seek to use our service agreements to reduce our bio-resources costs accordingly; we would also seek alternative providers if these would be more cost effective.
- For wholesale costs, we could seek to defer or re-profile elements of our capital programme where this could be done without compromising our performance commitments and incurring ODI penalties. Some cost over-runs might be caused by new obligations in Wales and in this case we could seek to use regulatory protections to improve revenue.
- Improved working capital management (as described in section 8.2.2) would have a short-term impact on RoRE.

Chapter 9
Accounting for past delivery

9.0 Accounting for past delivery

Learning from past performance so we can deliver better customer outcomes

The IAP assessment concluded that HDD had failed to provide convincing evidence in five out of eight PR14 reconciliation areas. Given the complexities that have arisen as a result of the new licence, it is understandable that the IAP resulted in several areas where more information is required to explain or evidence both delivery and reconciliation of past performance and how we will continue to improve to ensure deliverability of the AMP7 programme.

In July 19 we are due to report on 2018/19 performance and several of the actions in this test area are due in July to align with the annual reporting timeline. Therefore the responses and any corresponding updates to the data tables associated with past delivery have not been updated in this April resubmission. The full suite of reconciliation models including counterfactuals will be provided in July 19.

This chapter sets out how we have addressed all of the actions under the past delivery test and is structured in the following way:

Test Area	Test questions	Action ref	Relevant narrative
Accounting for past delivery	PD1 – how well has the company evidenced its proposed reconciliations for 2015-20 (including application of the PR14 reconciliation rulebook)	HDD.PD. A1, A2, A4	Section 9.1 Historical, current and forecast performance Appendix 9.1 third line assurance on performance data
		HDD.PD.A5 (part of HDD.PD.A2)	Section 9.2 – reconciliation models (PR14 totex) Appendix 8.2: Financial Model
	PD2 – How well has the company performed over 2015-20 and how well has it put in place measures to successfully deliver its PR19 plan	HDD.PD.A7, A8	Section 9.3 – understanding and improving service performance reporting
		HDD.PD.A9, A10	Section 9.4 understanding and improving financial reporting
		HDD.PD.B1, B2	Section 9.5 – understanding and improving customer service

The following actions are not included in this document as they are not due until July 19:

- HDD.PD.A3 (although we have corrected an error in the 18/19 data, linked to action HDD.PD.A2)
- HDD.PD.A6

9.1 Historical, current and forecast performance

9.1.1 Basis of historical data

In response to action **HDD.PD.A2** we are required to clearly set out how we have established historical performance on the basis of the new company area for each performance commitment. This should include:

- Setting out the auditable underlying sources or judgements (and confidence that can be placed on any judgments and therefore the future level); and
- Setting out how historical performance has been used to forecast performance, or otherwise set out how it derived its forecasts for each performance commitment.

Overview

For each performance commitment we established performance for both North Wales (covers performance in Wales previously served by Dee Valley Water) and Mid Wales (performance in Wales previously delivered by Severn Trent). This was set out for each PC in appendix 2: rationale and evidence for PC targets and ODIs. However we did not describe the source or method we had used to produce this data and this is set out below.

For different measures we have been able to back calculate, estimate or extract data for different time periods. This was explained in the data table line commentary document p3 to 5 (supporting information to the plan) but again the precise source and data confidence was not articulated.

We also included statements in our confidence and assurance section that performance data had been assured, but didn't provide detail of the specific checks or findings from this exercise. The details have been included in the response below.

Table 1 – Historical data sources and confidence levels for each PC

Performance commitment	Time series start point	Data source	Data confidence
CRI	2014-15	Performance data that has been previously reported to the DWI and then used to back calculate CRI. Based on individual WQ events with very clear site names to make Eng/Wales split completely auditable. Data auditable back to DWI submissions	Historic data confidence = High The historic and forecast performance was reviewed by both subject matter expert and senior manager Forecast = medium/ high as recent investment has improved performance considerably so forecast trend is a significant improvement on past, which means there is some uncertainty.
Number of complaints about drinking water (APR)	2015-16	Data source is captured on a reporting system called QUERIES which runs on Sample manager data. The sample manager data is returned to DWI on a monthly basis. The 2017 data was cross checked with the data submitted for the Water UK DWQ datashare. The data is reported as complaints per 1000 population so we have assumed the same rate applies across England and Wales for each company and then worked out the absolute number of	Historical data confidence is high for former companies. Medium/ high confidence for split between England and Wales. The assumption that the rate of complaints is equal across both areas was based on expert judgment and is supported by the actual performance since 2017, which shows the complaint rate in Wrexham and Chester is broadly equal.

Performance commitment	Time series start point	Data source	Data confidence
		complaints based on the population served in each area.	The forecasts are based on comparisons with the other companies in the West (data from the water UK data share (and on discover water) and our analysis to set the target is based on the independent and expert review of discolouration in England and Wales, which provides additional confidence that the targets are grounded in auditable external data (see appendix 10 in our September submission)
Number of lead pipes replaced	2011-12	Asset data records (have been transferred onto GIS since integration and Powys assets were always on GIS, which is a Geographic Information System which holds asset attribute data such as location, size and age). It is also a data item requested by Ofwat in the cost assessment submission and has been assured as part of that submission.	Historical data confidence – medium Data was previously submitted by both companies in the June return to 2011 and the method for capturing this information hasn't changed. The numbers are also very low which is in keeping with expert judgement from both companies. The historical data is not the basis of the forecast in any case. It is just context. The forecast activity is linked to the cost assessment claim on lead reduction which is explained in the business case and set out in more detail in IAP action response HDD.OC.A42.
Water supply interruptions (APR)	2014-15	This is based on a review of all interruptions events since 14-15 to identify where the burst occurred and where the properties affected are located. The DVW and STW data (before the split) can be audited back to APR reported data. There is a detailed process description which has been documented and assured as part of the annual performance reporting	Historical data confidence – high The Eng/ Wales Split is specific to the location where the interruption occurred and has been peer reviewed by network experts. More information is provided in response to HDD.OC.A12. Forecast data confidence – n/a The September forecast was based on analysis of the historical data and a judgement about how much improvement would be possible. This was audited and shared with and challenged by the CCG. However, following Ofwat challenge the target has been reset at UQ and therefore is not based on the historical data

Performance commitment	Time series start point	Data source	Data confidence
			from either of the two former companies.
Leakage (APR)	2017-18	In the September plan leakage for Wrexham was equal to the DVW leakage for the Wrexham WRZ. For Powys it was based on 80% of Llandinam WRZ and 4% of Shelton WRZ which was based on mains length split England/ Wales in those zones (mains length data was extracted from the corporate system for holding network data - GIS). Since then, the Final Water Resource Management Plan has been completed which includes a bottom up analysis based on DMA location in order to create two new Water resource Zones. The details are set out in the response to action HDD.OC.A15 There is a detailed process description which has been documented and assured as part of the annual performance reporting	September plan confidence was low as it was based on high level splits. Revised submission data has been through three lines of assurance and aligns with the final WRMP which is being submitted to NRW and Welsh Government. Data confidence is medium. The reason why it is not high is because of the issues we are facing as a result of the lack of small area monitors in Wales. The forecast is based on a 15% reduction from the 19/20 performance.
PCC (part APR)	2015-16	This data has been updated since the September submission, in line with the update to the WRMP to align with the national boundary. See response to action HDD.OC.A18	September submission – low data confidence April resubmission – High confidence in App2 (old definition) Medium/low data confidence in App1 (new definition) because the conversion factor that has been applied is based on one year's data. This has been taken through three lines of assurance to review the process, source data and judgements made to convert the value to align with the new definition.
Resilience - drought risk	2017-18	The resubmission has been calculated bottom up in line with the Ofwat methodology. See response to action HDD.OC.A21 for details	High data confidence for both historical and forecast, given the robust methodology followed, the level of assurance applied and the large margin before the risk is not zero (i.e input data would need to be more than 30% out before the answer changes).
Asset health - burst mains (APR)	2014-15	No issues were raised with this PC so we have assumed there are no Ofwat concerns about data confidence	n/a

Performance commitment	Time series start point	Data source	Data confidence
Asset health - unplanned outage	2017-18	No data has been submitted. No historical data can be extracted. This is explained in more detail in response to action ref HDD.OC.A25.	n/a but data forecast data will have a low confidence grade given it will be based on 1 year's data.
Properties at risk of receiving low pressure (part APR)	2010-11	No issues were raised with this PC so we have assumed there are no Ofwat concerns about data confidence.	n/a
Length of river water quality improved	2015-16	This measure relates directly to the requirements in the NEP, which makes AMP to AMP comparison not relevant. No issues were raised with this PC so we have assumed there are no Ofwat concerns about data confidence.	n/a
Hectares managed for biodiversity	2015-16	No issues were raised with this PC so we have assumed there are no Ofwat concerns about data confidence.	n/a
Satisfactory sludge disposal (APR)	2010-11	No issues were raised with this PC so we have assumed there are no Ofwat concerns about data confidence.	n/a
Treatment works compliance (APR)	2010-11	No issues were raised with this PC so we have assumed there are no Ofwat concerns about data confidence.	n/a
Inspiring our customers to use water wisely	n/a	This is a new measure for AMP7. We have no comparable data for past years. Therefore no further information can be provided.	n/a
Internal sewer flooding incidents (APR)	2013-14	No issues were raised with this PC so we have assumed there are no Ofwat concerns about data confidence.	n/a
Pollution incidents (APR)	2011-12	Historical data is captured on a Severn Trent system called PIR (Pollution Incident Register) and historic performance is auditable onto the EA database NIR (National Incident recording system). From 2018 onwards this data is now reported to NRW into WIR – Welsh Incident Recording system	Historical data confidence is high.
Sewer blockages (APR)	2011-12	Blockage data is held on a Severn Trent corporate SAP system and is logged on an Incident Report Form (IRF) with a grid reference (or postcode) where the blockage occurred. We have a standard blockage reporting tool which is automated to ensure consistency over time. More information is provided in response to action HDD.OC.A50.	A significant data cleanse occurred in 2016 so there is high data confidence after that period. Before 2016 data confidence is lower. We have a long data history with a well-established regulatory definition and annual audit process so there is a high degree of confidence in the forecast data

Performance commitment	Time series start point	Data source	Data confidence
Sewer flooding - extreme storms	2017-18	More detail about the method and robustness of this data is provided in response to action HDD.OC.A38	Low confidence – the definition and method for reporting this measure is still evolving. We are active members of the industry working group and will continue to improve the robustness of this data.
Sewer collapses	2011-12	No issues were raised with this PC so we have assumed there are no Ofwat concerns about data confidence.	n/a
Number of void supply points	2017-18	Data is not extractable from the previous systems so we are unable to back cast. The method for producing the data for 17/18 and the rest of AMP6 is set out in the process description template.	Low data confidence in forecasts. Part of the work in AMP7 is to review the data and establish which of the void properties are genuine and which are occupied but not being billed. By definition, this activity will improve data confidence.
ustomer Experience Measure	n/a	This measure starts in 2020 so no historical data can be provided No issues were raised with this PC so we have assumed there are no Ofwat concerns about data confidence.	n/a
Developer Experience Measure	n/a	This measure starts in 2020 so no historical data can be provided No issues were raised with this PC so we have assumed there are no Ofwat concerns about data confidence.	n/a
Non household customer experience	n/a	This measure starts in 2020 so no historical data can be provided No issues were raised with this PC so we have assumed there are no Ofwat concerns about data confidence.	n/a
Welsh language services	n/a	This measure starts in 2020 so no historical data can be provided No issues were raised with this PC so we have assumed there are no Ofwat concerns about data confidence.	n/a
Supporting our Priority Service customers during an incident	n/a	This measure starts in 2020 we have no historical data but as far as we are aware we have always supported all customers who need it. In the revised submission the data has been overwritten with the Ofwat mandated PC and target so this is not dependant on any company data. The company records holding the PSR is a SharePoint database, which has restricted access and full change control.	n/a

Performance commitment	Time series start point	Data source	Data confidence
Help to pay when you need it	17/18	No issues were raised with this PC so assumed there are no Ofwat concerns about data confidence.	n/a

Assurance

For all of the performance commitments that are currently reported as part of the annual performance report (marked as (APR) above), from 17/18 onwards we have a robust performance reporting process. This is set out in detail in the Company Monitoring Framework Annual assurance plan which is published annually on the Hafren Dyfrdwy website – the 18/19 version can be found here. The findings from the assurance process are also published annually. The findings from the 17/18 assurance can be found here.

For data only required in the PR19 submission, we followed the same approach as for annual reporting - Process description templates (PDTs) were produced and subject to assurance. The level of assurance was decided on a risk based approach as described in Chapter 10 of our September Business plan. The information in table App1 is a mixture of historical and forecast performance, both of which were subject to the full three lines of assurance. A summary of the findings was included in Appendix 8 Governance and Assurance reports. In response to this action the following additional detail has been provided to confirm the exact checks done on the performance data in table App1.

Appendix 9.1 includes the full report from Black and Veatch which sets out the checks and findings associated with the performance data included in table App1.

The second part of action HDD.PD.A2 relates to the ODI true-up; our response is set out in 9.2.3 below.

9.1.2 Land sales

Action HDD.PD.A1 requires us to provide additional evidence to support the forecast trajectory in table App9.

For the first three years of AMP6 Dee Valley had made no disposals of protected land. In line with that strategy, we are not forecasting to make any land sales in 2018/19 and 2019/20 from the new Hafren Dyfrdwy operating area.

9.1.3 SIM forecast trajectory

Action HDD.PD.A4 requires us to provide more evidence to support the forecast trajectory in table R10.

We will provide a fully updated forecast as part of the July submission, once our full year assurance process is complete. As an interim position we have reviewed the basis of the forecast we included in our September plan in light of actual performance over the last six months. Our performance is still being impacted by the issues we have been experiencing as a result of the transistion from Dee Valley and Severn Trent to Hafren Dyfrdwy and our initial forecast is set out in the following table:

Table 2: SIM forecast

Total annual SIM score (out of 100)	units	2018-19	2019-20
Forecast in our Business plan	nr	87	90
Revised submission	nr	80	82

In July we will provide the following additional evidence of the impact of the merger on current performance in the following areas:

- new Unwanted Call Forecast
- Complaints performance forecast
- Qualitative score forecast

- Forecast now modelled on Hafren Dyfrdwy current performance trends and appropriate business targets applied

We provide more detail on customer service performance and our improvement plans in response to action HDD.PD.B1 and B2 below.

9.2 Reconciliation models

9.2.1 PR14 Totex

In its Initial Assessment of Plans, Ofwat asked us to explain the amendments made to cells L97-98, M97-98, N97-98, P97-08 of the totex model, where we used a hard-coded value, rather than the formula (**HDD.PD.A5**)

As we explained in section 4.3 (p54) of our plan, the border variation (NAV) made reconciling PR14 performance more complex than for most other companies in the industry. The key requirement in the NAV process was that customers should suffer no detriment as a result of the variation. The guiding principles we agreed with Ofwat were that:

- Everything within PR14 had been decided and would not be re-opened – all allowances from before the variation would be apportioned between the companies using appropriate drivers.
- There should be no gain or loss compared to the incentives or penalties that would have been reflected in customer bills if the variation had not taken place (the counterfactual).

We agreed the basis of our apportionments with Ofwat during the NAV process and engaged on the mechanics of the PR14 reconciliation mechanisms at a working level before the first submission in July 2018. We explained that we would need to make some adjustments to the original Ofwat reconciliation models because they were never designed to deal with a mid-period border variation (let alone a mid-year variation). We provided a suite of models, showing the calculation for the revised companies and the counterfactual position (i.e. the incentives, penalties and adjustments that would have resulted under the original SVT and DVW borders). The results of our cross checks were summarised in section 4.3.4 of our September business plan.

The totex model was designed to calculate all of the rewards and penalties that apply under the menu approach based on inputs for the company's original business plan, determination and actual expenditure. It is the first two of these that create an issue for the varied companies. When the PR14 expenditure for DVW and SVT are apportioned and combined, this drives a new menu ratio. This, in turn, causes the model to re-calculate the PR14 "additional income" lines in rows 97 and 98 of the "Calcs" sheet.

As noted, we agreed that PR14 would not be re-opened as a result of the border variation. Re-calculating the "additional income (applied at the FD)" would be like re-writing history. The amounts involved were already included within the revenue controls of SVT and DVW (and are thus "baked in" to the revenue controls of SVE and HDD).

Moving further down the calculations, the calculations in rows 101 and 102 ("Reward / (penalty) excluding additional income") depend on these values. The menu calculation works out the overall reward or penalty, deducts the amount that was already included within the AMP6, and derives the amount that ought to be taken forward to AMP7. This means that including a different value from the Final Determination in these lines has a knock-on effect on PR19.

We looked carefully at the models to see whether some combination of inputs would enable us to achieve our second principle (the same outcome as the counterfactual). Replacing these calculations with the original FD inputs is the simplest solution. While Ofwat could redevelop its totex model to accommodate this unique circumstance, we think this would be disproportionate given the likelihood that any company in the industry will undergo a border variation in the near future. We will send updated versions of the PR14 reconciliation models in July, with documentation and repeat our reconciliation to the counterfactual position.

9.2.2 Variance to the Final Determination

Within action HDD.PD.A5 Ofwat requested a detailed explanation to support its forecast 18/19 and 19/20 tables is WS15/WWS15, which particular focus on the unusually high forecast overspend in 2018/19.

Performance gap to plan

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 lower. 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 higher.

The result of the changes in scope and increased investment throughout AMP6 have resulted in a small underperformance (i.e. overspend) 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 WTW 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.

Instead of taking a higher return and small bill reduction from this, 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. The following narrative provides further detail on the key aspects of the AMP6 where there is most variance compared to the PR14 final determination.

Investment in contact channels

Customers have informed us of their requirement 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. 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 we have re-invested part of the savings from Legacy to enable these changes.

Distribution Service Reservoirs

Our commitment to deliver the outcomes of the service reservoir water quality risk management scheme requires the delivery of the service reservoir (SR) water quality risk management schemes by the end of 2019-20. The required work is the replacement of Llwyn Onn treated water tank, Sugn-y-Pwll service reservoir and Berwyn service reservoir. In addition we need to replace the roof membranes at eight service reservoirs. Our programme of roof inspections is on track to complete this AMP which will ensure that all reservoirs have been tested within the last 10 years. Whilst eight sites were specified in our business plan, these can be substituted as our inspection programme identifies the most at risk reservoirs and we will install the new membranes at the eight sites required to meet the obligation.

Asset investment

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 Security and Emergency Measures Direction, Protective Security Guidance 2020 and the Network and Information Systems Direction. 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.

In 2019/20, £0.5m is planned for targeted areas of the network for ice-pigging to remove the build-up of silt and chemical residues. Alongside this we have undertaken an intensive programme of high velocity flushing in over 160km of our network by the end of 2018. In early 2018, the year the Legacy treatment works has also been taken out of supply, following which we expect the number of contacts to reduce in future as we have

removed a key source of manganese from the supply network. To complement this we undertook 250km of high velocity flushing in the Legacy zone during 2018.

Network monitoring

As part of the improvements we are making to ensure we can report against the standard definition for leakage and PCC, we have invested more in instrumentation and are continuing to increase the number of permanent and temporary loggers to give us a better understanding of where and when water is being lost from our network. This investment should enable us to both improve reporting and target improvements in the most efficient way.

Risk management

The process to adopt the well-established Severn Trent Plc Enterprise Risk Management (ERM) approach has commenced in order to strengthen the Company's processes to manage and mitigate risks. The Board has overall accountability for ensuring that risk is effectively managed across the Company. The Board's mandate includes defining risk appetite and monitoring risk exposure to ensure significant risks are aligned with the overall strategy of the Group

IS investment

We have also invested £4.5 million in implementing new integrated IT systems, which was not included in the PR14 assumptions. Given the Cyber Security landscape continues to evolve with an increasing level of activity and a number of high profile incidents for other companies and government departments, the Board has received an update on the company's Cyber Security Roadmap during the year. It noted the scrutiny by the National Cyber Security Centre, its risk based approach and investment priorities, and increased in-house support and positive reviews by Defra and PwC.

Site security

Policies and procedures consistent with Severn Trent have been applied across the property portfolio with the emphasis on providing a safe and compliant environment for employees alongside ensuring appropriate customer perception of sites in local communities.

As an example, a security review of the main Packsaddle site identified a number of required improvements to ensure the safety of employees, assets and data. This included investment in security gates, fencing and access controls.

9.2.3 ODI reconciliation

In the second part of action **HDD.PD.A2**, we have been asked to look at the ODI rates included in data table APP5. In doing this we have identified two errors, which are explained and corrected below.

Table 3: SB1/WC1 – Value for money

	2018/19	2019/20
Target	53%	55%
Outperformance deadband	63%	65%
Forecast performance	63%	65%

We note here that in table App5, cell reference AB297, forecast performance in 2019/20 is stated as 63% for SB1 and 65% for WC1 (cell AB285). The mechanism by which the measure is calculated does not allow for a different level of performance between water and wastewater as a single questionnaire is used to derive the overall value for money level. As such we recognise that the 63% referred to in cell AB297 was incorrect and this should have stated 65%.

By exceeding the outperformance deadband both the water and wastewater service earn a £125,000 outperformance payment. These are allocated on the following percentage splits in line with the Severn Trent revenue splits applied as part of the NAV agreement:

Table 4: ODI split in line with NAV

	Severn Trent	Hafren Dyfrdwy
Water	99.42%	0.58%
Wastewater	99.56%	0.44%

Applying these allocations gives an outperformance payment of £0.0007m per year for the water service, and £0.0005m per year for the wastewater service.

Table 5: A1 – Discoloured Water Contacts

	2018/19	2019/20
Target	1.01	1.01
Outperformance deadband	1.01	1.01
Forecast performance	0.85	0.80

We recognise here that we made an error in table App5 where the incentive calculations have multiplied the incentive rate by a factor of 100. Below we outline the corrected values based on an outperformance incentive rate of £24,934/contact per 1,000 customers.

As this measure is normalised the incentive rate needs to be adjusted in line with the Dee Valley Water revenue allocations agreed as part of the NAV split. This is essential to ensure that customer do not pay more than they would have done if the border variation had not occurred. These splits allocate 60.21% to Wrexham and 39.79% to Chester and results in an incentive rate for HD of £15,013.

Table 6: Discoloured water incentive values

	2018/19	2019/20
Units of outperformance	0.16	0.21
ODI value	£2,402	£3,153

We will ensure that these values are updated in the PR14 true-up submission of July 2019.

In our discussions with Ofwat, we have identified the need for a translation from App5 and App6 to App27. We are producing an ODI Workbook as part of the APR19 submission which will demonstrate how the incentives have been calculated through the licence variation and uncapping processes.

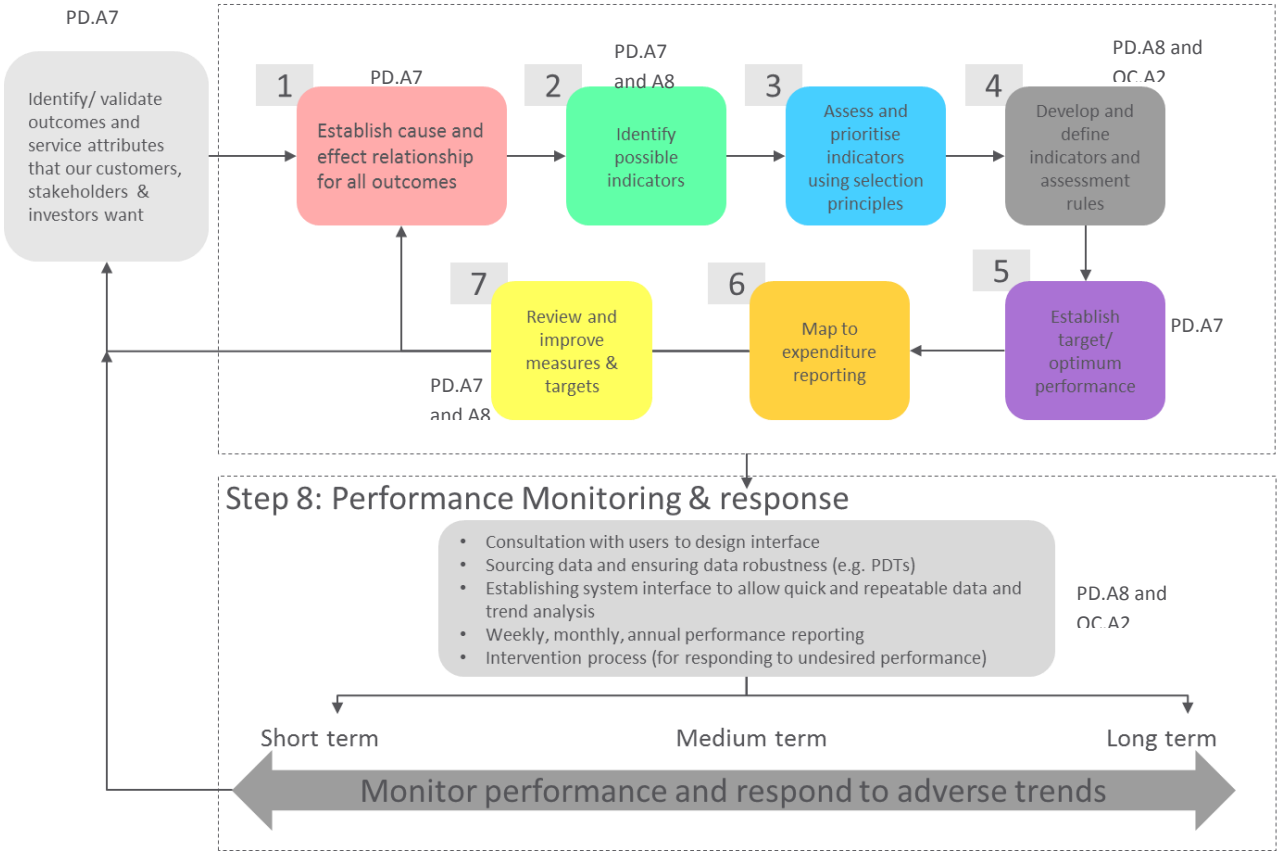
9.3 Understanding and improving service performance reporting

In the Initial Assessment Ofwat found there was insufficient evidence to demonstrate that we understand the drivers of performance or lessons learned from that performance. In this section we address two actions:

Action Ref	Action
HDD.PD.A7	Produce and provide additional evidence that it has identified: • How has it identified the drivers of past and current performance (including financial and reputational PCs) • How it has learnt from good and poor past and current performance • The performance gap between current and proposed 2020-25 performance • The measures in place to ensure deliverability

Action Ref	Action
HDD.PD.A8	Produce and provide an action plan that sets out: • how Hafren Dyfrdwy will continuously monitor performance against PR14 and PR19 performance commitments, including how this relates to section 3 of the Annual Performance Report and what evidence it will look for beyond itself and the sector; • how Hafren Dyfrdwy will identify drivers of performance and lessons learnt from both good and poor performance; • how Hafren Dyfrdwy will identify measures to improve performance and integrate these into its business; and • how Hafren Dyfrdwy will ensure that this is a continuous rather than one-off process.

There is significant overlap between IAP actions HDD.OC.A2, HDD.PD.A7 and HDD.PD.A8. All three actions relate to how well we understand past, current and future performance, the robustness of the process for reporting and assuring data and then how we make that transparent to customers and then use that information to improve performance in the future. The following flow chart summarises our approach to understanding performance and reporting and continuous improvement and overlays which steps in our process relate to the various elements of the three IAP actions.



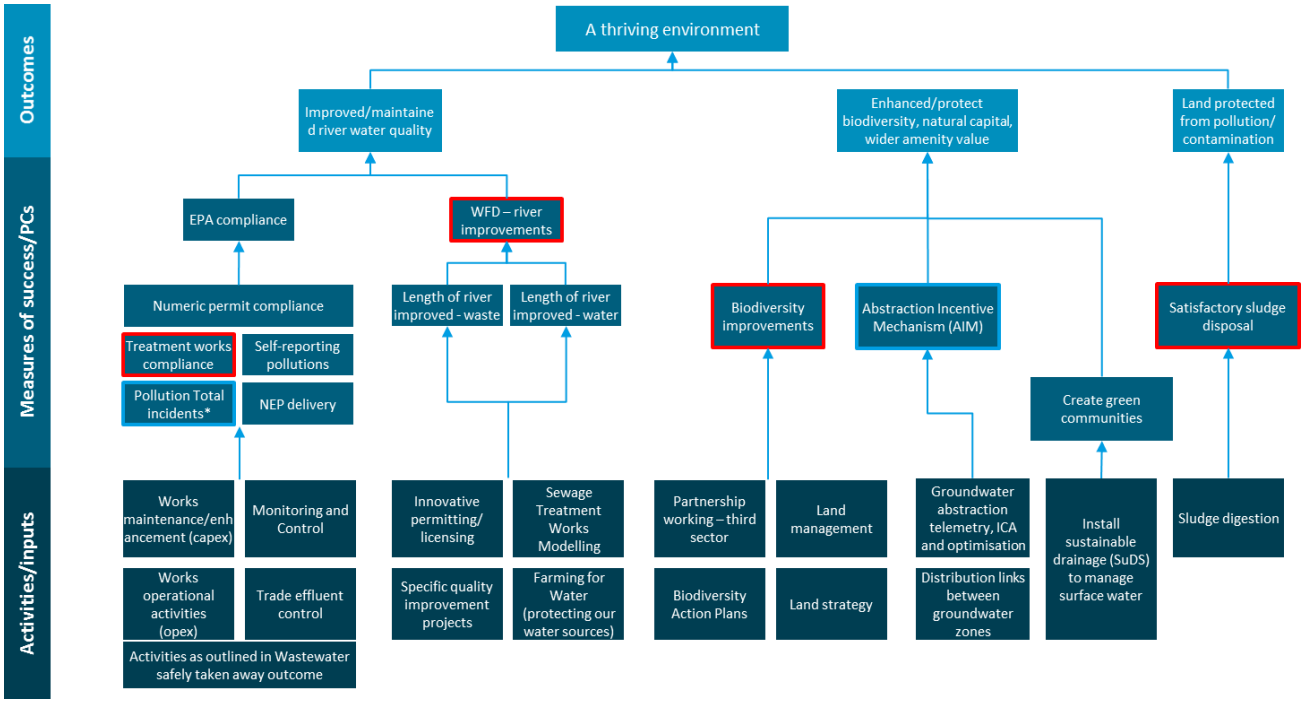
HDD.PD.A7 Response

9.3.1 Identifying drivers of past performance

For each of our customer outcomes we have mapped out the key activities that will contribute towards successful delivery of this outcome and developed driver trees that show the connection between the factors.

This ensures there is a clear line of sight between outcome, activity and measures. Some of those drivers are formal performance commitments, and some of them are internal measures that we use to track performance. We also used the driver trees to identify gaps and develop bespoke performance commitments where needed. The driver trees were set out in chapter 6 of the September business plan in the relevant Outcome chapters. The driver tree for achieving a thriving environment is included below as an example.

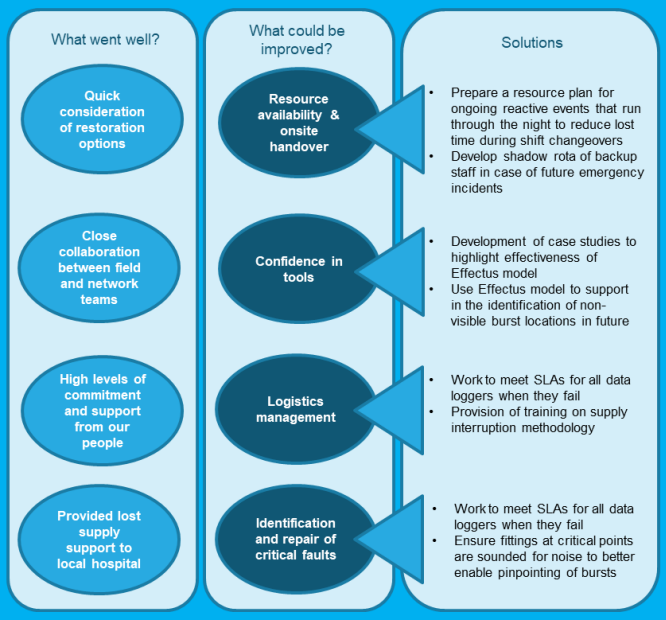
For assets or service attributes where we have robust failure mode information (e.g. as a result of well-established root cause analysis) data was used to define the relationship. Where actual cause and effect data is not available then we used expert judgement to expand the driver trees. This was done in the form of a workshop where we methodically drew upon a range of experience (e.g. operators, maintainers, designers, performance reporters, investment planners) to establish factors. Standard cause and effect methodology can be used to structure the development of the driver tree.



9.3.2 Learning from good and poor past and current performance

We have a well-established process of carrying out root cause analysis whenever we have a significant failure (such as a pollution incident, supply interruption, sewer flooding event). The case study set out below is an example of a lessons learnt exercise that was done following a significant burst and supply interruption in our Powys region of HDD.

Case study: continual learning and review: lessons from December 2018 burst



As a result of this learning we have reviewed the driver tree to ensure sufficient coverage of internal measures such as data completeness and confidence in our burst locator 'effectus' model, distance from depot, network recharge duration.

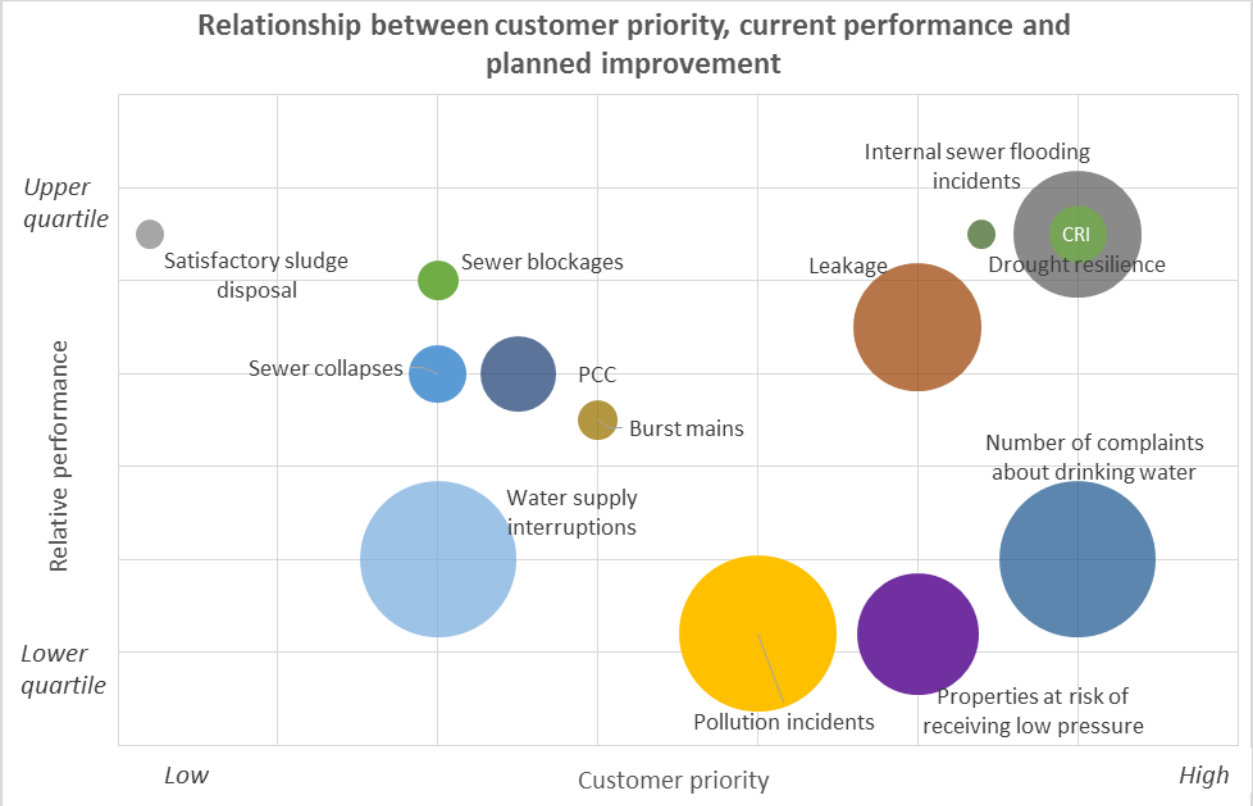
We also regularly review sector wide reports to understand what examples of good practice can be translated into our business. We have particularly been focusing on developing our understanding of how to measure the effectiveness of the support we offer to vulnerable customers (both financially and non-financially vulnerable customers) as this is an area where we are struggling to get a robust set of measures that help us understand if our efforts are actually making a difference. Recent reviews include:

- Freeze thaw lessons learnt
- Making better use of data to identify customers in vulnerable situations
- CCW report on sharing best practice to help customers in vulnerable circumstances

This is covered in more detail in IAP action HDD.PD.B1 and B2.

9.3.3 The performance gap between current and proposed 2020-25 performance

As explained in our Business plan, we ensured that the biggest improvement was focusing in the areas that mattered most to our customers. The following chart that was included in Chapter 6, shows (by the size of the circle) that the biggest stretch occurs on PCs where (a) customers place a high importance on and (b) where we are comparatively poor performers. This has been updated to reflect the additional stretch in the supply interruptions target and pollutions target and revised data on PCC and drought resilience.



For many of our PCs we are committing to deliver significant improvement to make sure that our performance meets our customers' expectations and aligns to long term policies set by regulators and Government. The relevant Outcome chapters within Chapter 6 of our Business plan set out the steps we will be taking to deliver this performance. Careful tracking of the additional measures set out in the driver tree will also be a key part of our delivery plan to help us refine our understanding of which drivers have the most impact on driving overall performance.

9.3.4 The measures in place to ensure deliverability

In the above sections we have set out the broad range of factors that affect overall delivery of the outcomes. These measures are embedded within our performance framework. In the response to action HDD.PD.A8 we set out the governance framework for monitoring performance at different levels of granularity and the escalation process if performance is off track.

Ensuring we have the right measures in place is an area where we seek to make continuous improvement. As set out in section 5 of the resubmission on securing long term resilience this is another area that is evolving at pace and we are engaging with a number of industry studies to make sure we have an appropriate and broad range of measures that covers short, medium and long term service levels.

HDD.PD.A8 Response

9.3.5 Continuously monitoring performance

All of the tools we use to monitor and understand past performance that are set out in response to HDD.PD.A7 will continue to be used throughout AMP7 and kept under review and will evolve throughout the delivery phase.

An important part of driving continuous improvement is the monitoring and governance process as this is where we challenge ourselves to make sure we really do understand performance and strive to improve.

The key step is ensuring clear ownership of measures at both an Executive and Senior Leadership level for each performance commitment. This top down ownership then cascades through the use of weekly and monthly performance reporting at a team, county and company level. These groups review both performance and delivery plans to understand opportunities to collaborate between Directorates and drive internal sharing of good practice and known successes. The key groups where performance and delivery plans are reviewed are summarised below:

- **Tactical Loopcell**, which is a bi-weekly meeting that brings together Senior Leadership measure owners and key Executive members to track actual performance and review future delivery plans – this covers the full suite of PCs;
- The Loopcell is underpinned by Directorate, Team and County specific communication meetings (called **Comm Cells**) which meet regularly (mainly weekly) to review performance against lead metrics and budget forecasts in their specific areas and they look at both PCs and the underlying measures (as set out in the driver trees that influence successful delivery of the PCs);
- **Wales Co-ordinating Committee,** is a senior level group which reviews all aspects of HD delivery (wider than performance monitoring) and challenges the delivery of all HD obligations and commitments. This group is the gateway to the **Hafren Dyfrdwy Board**; and
- HD performance is also escalated to the **Severn Trent Board** to ensure that the Hafren Dyfrdwy budget and activities are fully integrated in to the Severn Trent Group rolling business planning processes. This group considers a multi-year forward view of capital and operating expenditure as well as key performance drivers.

This series of meetings works well because they ensure everyone uses a consistent set of data to understand how we are performing against our targets. They also rely on an agreed 'driver tree' which depicts the relationships between activities and lead measures through to specific outputs and ultimately the outcomes customers care about.

The process ensures that each team/department can understand their performance against the metrics that are within their control, whilst at the same time being aware of how their performance impacts on the other company level targets.

Whilst this is successful in understanding the vertical relationships within a department there are also opportunities that exists for collaboration between departments. At the most senior level this is co-ordinated through the Loopcell which helps ensure the impacts and opportunities of our activities are understood across different Directorates.

The Loopcell was initiated prior to the licence variation and proved successful for Severn Trent Water. Since the 1st July 2018 we have integrated our activities in Wales in to the Loopcell initially by ensuring performance in Powys was reported separately to that of England and most recently by bringing the 2019/20 delivery plans for Wrexham and Powys as part of our preparations for the final year of the AMP.

However, we recognise that the cost of additional weekly Executive level meetings is significant and are therefore taking a proportionate approach to including Hafren Dyfrdwy within the sessions. Ensuring that we utilise this well stablished framework in a proportionate way is a key part of the action plan going forwards.

9.3.6 Action plan for PR19/ AMP7

The first key step is to apply the Severn Trent Group internal rolling business planning process into Hafren Dyfrdwy. This brings together all capital and operating expenditure, along with non-financial performance drivers, to provide a holistic multi-year forward view of the business requirements.

This process looks to more closely integrate the non-financial performance work, such as driver trees and lead measures, with our financial reporting and performance information. It also ensures that we follow a consistent approach across all parts of the business, consider cost-benefit analysis and whole life cost solutions more rigorously and the inter-dependencies between Directorates is more clearly visible and understood.

This is a key next step of we are to deliver on the ambitions efficiencies set out in our plan.

The process is designed to ensure we always have a plan taking us through to the end of the following AMP period, giving us up to a nine year forward look whilst at the same time streamlining and simplifying the budget setting process each year.

Fundamentally the Business Planning Process is looking to drive the concept of an internal marketplace where activities, and performance targets, are agreed through contracts and service level agreements between directorates. This is critical for the operating model of Hafren Dyfrdwy, allowing it to ensure it buys in shared services from centralised functions, such as Information Systems and Financial Reporting, at a quality and cost that ensure the company aligns with its totex allowance.

9.4 Understanding and improving financial reporting

In the Initial Assessment Ofwat found there was insufficient evidence to demonstrate that we understand the drivers of costs or lessons learned from that performance. In this section we address the following two actions:

Action Ref	Action
HDD.PD.A9	Produce and provide additional evidence that it has identified: • the drivers of its cost performance, including performance against allowances for all price controls • lessons learnt from good and poor past and current performance • the performance gap between current and proposed 2020-25 performance • the measures in place to ensure deliverability of the 2020-25 business plan
HDD.PD.A10	Produce and provide an action plan that sets out: • How HDD will continuously monitor performance against cost allowances, including how this relates to section 2 and 4 of the Annual Performance Report and what evidence it will look for beyond itself and the sector; • How HDD will identify drivers of performance and lessons from good and poor performance; • Set out how HDD will identify measures to improve performance and integrate these into its business; and • Set out how HDD will ensure this is a continuous process rather than a one-off process.

Following acquisition in 2017, Hafren Dyfrdwy has been substantially integrated into the Severn Trent Group; since the licence variation at 1st July 2018, operational activities including cost capture, monitoring and reporting have been integrated into Severn Trent processes and systems. The main difference is the systematising of the cost data as part of BAU into an auditable system (SAP). The main advantage is that it standardises the way costs are captured and improves ease of reporting and consistent information to all teams who need it.

HDD.PD.A9 Response

9.4.1 Identifying drivers of past and current cost performance

It has been extremely challenging to extract cost data at the level of granularity that allows us to understand the precise cost of delivering different services against the new licence boundary. This is in part due to the fact that contracts (both former Dee Valley and Severn Trent) were set at a company level. For both former companies the operating conditions in Wales are quite different to England and this is likely to mean that contract unit rates are based on an average of the true costs in both areas.

There is more to do on this going forwards and the key focus areas are set out in action response HDD.PD.A10.

As part of our engagement with Ofwat on the econometric models, we have been looking in detail at the drivers of our costs across the value chain.

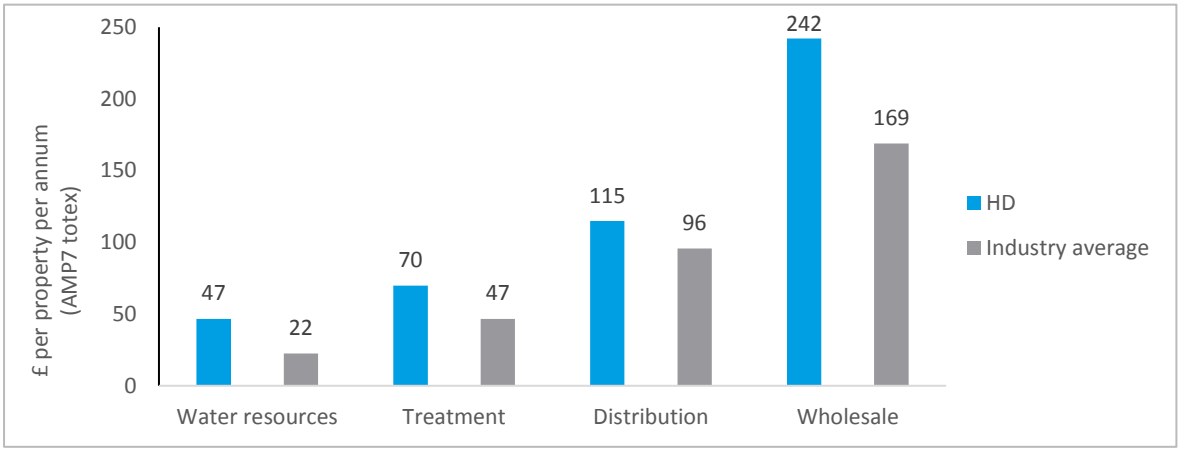
In preparation for Ofwat's 2018 Cost Assessment consultation, we published "Identifying drivers of water costs: A high-level framework for cost modelling". This helped us to understand the fundamental attributes that are outside of company control and drive expenditure. Where models have appropriate coverage of these fundamental cost drivers, variance between outturn or forecast costs and model predictions can then be used to inform cost performance or efficiency. The study identified 11 fundamental cost drivers for Water network plus costs:

Table 7: Fundamental drivers of network plus water expenditure (Source: Identifying drivers of water costs: A high-level framework for cost modelling, 2018)

Cost driver Type	Fundamental Cost Driver
A. Scale drivers	A1. The distance water has to be transported.
	A2. The number of customers to whom it is distributed.
	A3. The quantity of water that has to/may have to be transported
B. Network-specific drivers	B1. The geography and topography over which water has to be transported
	B2. Opportunities for Economies of Scale in the transportation of water
	B3. The extent to which transportation activities are affected by 'congestion'
C. Treatment-specific drivers	C1. Opportunities for the economies of scale in water treatment
	C2. The extent and forms of treatment that are required.
Other potential underlying drivers (not treated as 'primary')	Regional differences in relevant input costs
	Service quality variations
	The significance of other customer characteristics

Hafren Dyfrdwy has performed well against Ofwat's IAP cost baseline - being the only company to outperform it on each service. This implies that our costs are efficiently incurred given the cost drivers selected. Consequently, we have used this information to compare against a high level unit cost for each of the major business units (Water Resources, Treatment and Treated Water Distribution per property served). It allows us to identify and demonstrate the cost drivers that drive our expenditure the most.

Figure 1: Unit costs for water price control business units



As can be seen in figure 1, above, Hafren Dyfrdwy has higher planned unit costs for AMP7 across all of the value chain relative to the industry average. This is in line with our operational understanding and is consistent with the cost drivers that Ofwat has used in its IAP econometric botex models.

Fundamentally we consider that our biggest drivers of cost relative to the rest of the industry are as follows.

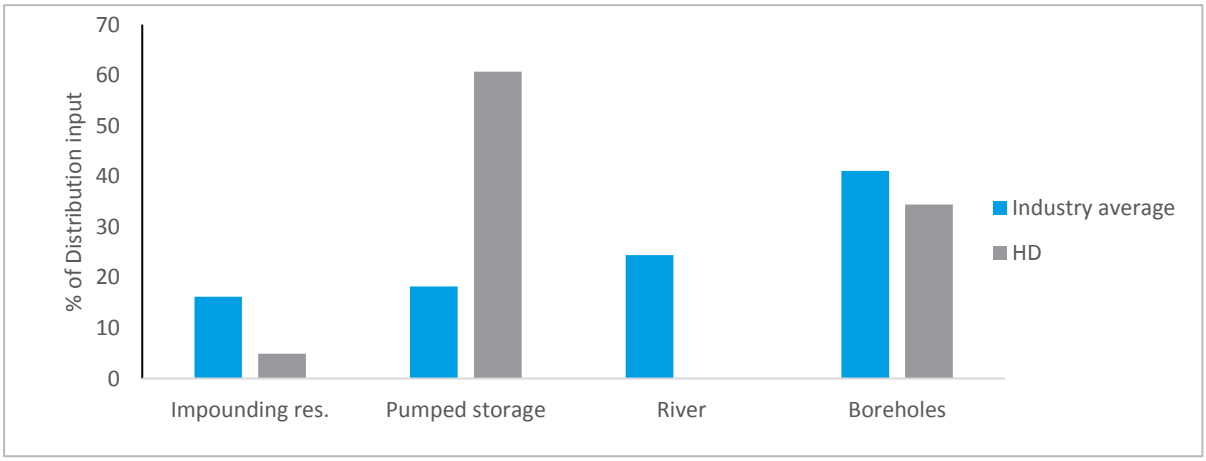
- The rurality of our operating area driving both increased water network costs, and the absence of economies of scale in wastewater treatment.
- The geographical and geological attributes driving increased water treatment costs.
- Statutory categorisation of reservoirs by Welsh Government leading to elevated reservoir safety enhancement expenditure.

All of these drivers of cost are essentially outside of our control in anything other than very long multi AMP timescales. They are discussed by price control business unit below.

Water resources

Our Water Resources assets are diverse with a mixture of upland surface, river abstraction and borehole sources. Figure 2, shows the % of distribution input by source type. The lack of any river abstraction is explained by the fact that, in standard operation, our major source (the Sesswick abstraction on the River Dee) is pumped into Marchwiel pumped storage reservoir prior to treatment at Llwyn Onn WTW.

Figure 2: Percentage of distribution input by water resources type



From an operating and capital maintenance (botex) perspective, the competing effect on costs of pumped storage and borehole sources help to moderate our water resources expenditure. This is shown by the fact that our water resources botex unit cost is consistent with the industry average. However, the re-

categorisation of reservoirs in Wales due to amendments of The Reservoirs Act (1975) is driving a step change in reservoir safety enhancement expenditure. This is the reason for the material variance in the totex unit cost relative to the industry average in figure 1.

Water Treatment

Our water treatment costs are driven by the elevated complexity of the treatment processes that we need to use. This is due to the vulnerability of the River Dee to pollution and the propensity for discolouration from our upland surface water sources due to regional geology. In summary:

- The River Dee is vulnerable to pollution incidents as evidenced by the presence of a source water protection zone upstream of our Sesswick abstraction. This risk manifested in 1984 when the River Dee became heavily contaminated with phenol - a number of people became ill and the water supply was contaminated for several weeks. In response to this vulnerability, we have an enhanced GAC process and have configured raw water through Marchwiel reservoir to create a buffer to pollution incidents.
- Discolouration originating from our upland sources that feed Pendinas and Llwyn Onn WTWs is largely driven by the geology of our catchments. This requires increased treatment processes. We presented analysis of this effect in appendix 10 of our September business plan.
- Whilst boreholes typically require simpler treatment processes, our Oerog and Llandinam sources both have UV treatment processes. This is because both are vulnerable to aquifer ingress near to the point of abstraction (Oerog is a spring source and Llandinam abstracts from river gravels close to the surface).

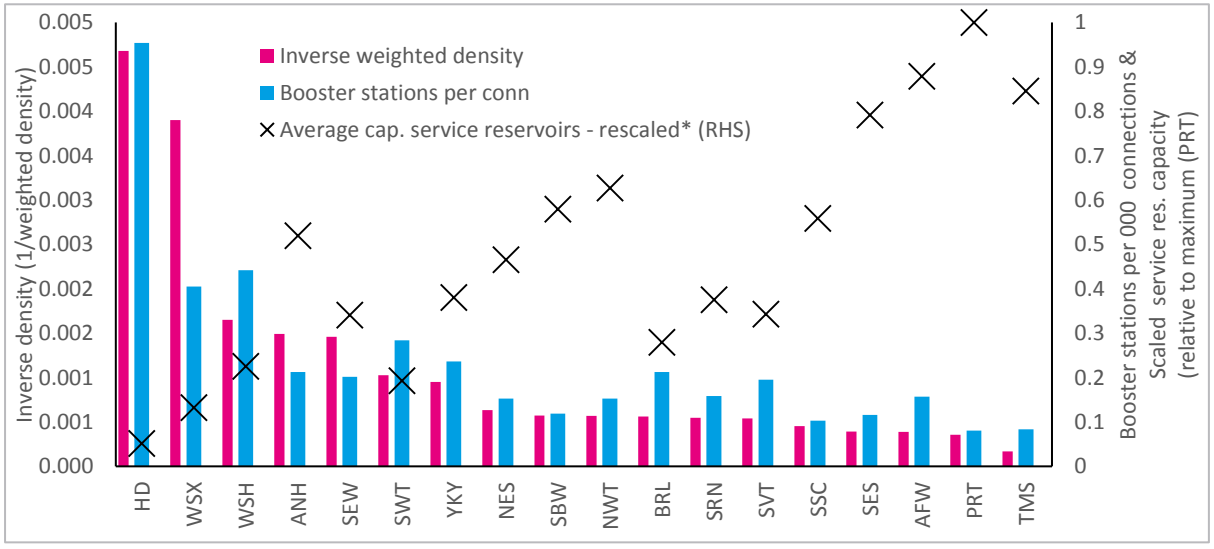
Due to the circumstances we have described above, our water undergoes some of the most complex treatment processes of any company - we rank 4th on Ofwat's measure of water treatment complexity (proportion of distribution input treated at works in complexity categories 3-6). These more complex processes help to explain the higher treatment unit costs relative to other companies - as indicated in figure 1.

Treated Water Network

The very low population density of our supply area drives up the asset and operating complexity of our water distribution network (as seen through increased network assets and pumping requirement). This in turn drives up the network unit cost in figure 1.

The relationship between the number and size of network assets (booster stations and distribution service reservoirs) and population density is clearly seen in figure 3. Ofwat include these asset metrics in their econometric models, which helps to account for some of the higher costs that we face due to rurality.

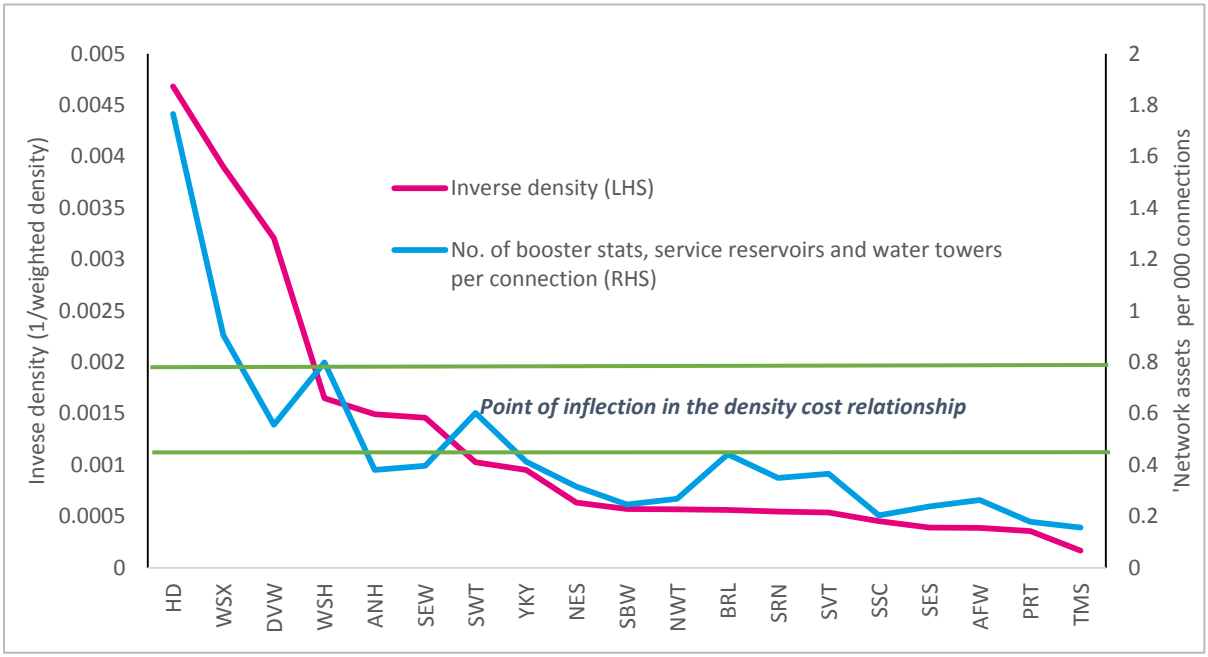
Figure 3: Interaction between density and number and size of network assets



In addition to the impact of rurality on our asset base, it also drives our wider operating costs. In its IAP Botex models, Ofwat have accounted for variances in population density across companies by including a non-linear

density variable. This allows the elasticity of costs with respect to density to vary across companies - it captures the impact of rurality on costs well (costs increase at the extremes of rurality and density). This is evidenced by figure 4, below, which shows the point of inflection in the density/cost relationship implied by Ofwat's models where distribution expenditure is included.

Figure 4: Elasticity of costs with respect to density as demonstrated by inclusion on non-linear density in econometric models



The value indicated by the horizontal lines is the point at which costs are minimized with respect to density. The range of the lines represents the range of inflection points in the various specifications of Ofwat's models – the upper line represents the turning point in the water distribution model while the lower one is the average of the inflection points in both of the wholesale models. Moving away from this inflection point (both below and above), costs are expected to increase. Hafren Dyfrdwy is at the extreme of this distribution. This further demonstrates that rurality (with its interaction with asset and operating requirements) is a major cost driver for us.

Using similar analysis for water resources and treatment costs, in Ofwat's models of water resources plus (water resources and treatment combined), the point of inflection is at such a high density value that costs fall as density increases across the vast majority of companies. We think that this is a realistic picture of the relationship between density and costs in water resources and treatment where higher density opens up the opportunity for economies of scale – provided the appropriate water resources are available.

Wastewater

As per Table 8, below, the very low population density and dispersion of settlements in Powys means that we have a disproportionately large number of small sewage treatment assets. This lack of economies of scale drives our operational and maintenance costs and significantly outweighs any cost driver savings derived from lower levels of treatment complexity.

Table 8: Wastewater totex unit costs, treatment complexity and average capacity metrics

Company	Treatment Unit cost (£/kgBOD)	Collection Unit cost (£/kgBOD)	Bio Res. (£/kgBOD)	Complexity (%*tertiary)	Complexity (%* N3 <3mg/l)	Complexity (%* BOD <10mg/l)	Average STW capacity (kgBOD/STW)
Industry	270.9	438.5	143	58.3	21.9	8.2	737.1
HD	549.8	374.5	245	65.8	0.0	0.0	59.6

With regards to our sewage collection costs, our network is longer per person than for other companies with higher population densities. This is due to the population being more dispersed. However, this does not translate into a higher unit cost. This is likely to be due to the limited pumping requirement and stress placed on assets and the lower maintenance unit costs for replacing and repairing smaller diameter pipes away from highly urban locations. Bio-resources unit costs are again affected by rurality, with no economies scale leading to elevated journey lengths to treatment centres.

9.4.2 Learning from good and poor past and current performance

We have taken the opportunity of the new licence to review how we work and lessons of both good and bad practice fall into three key themes:

- Business planning process;
- Communication with customers and stakeholders; and
- Granularity of cost capture.

Business Planning Process

Based on good practice seen in other sectors and learning from Severn Trent Group, we are putting in place an internal rolling business planning process which brings together all capital and operating expenditure, along with key non-financial performance drivers, to provide a holistic multi-year forward view of the business requirements.

This process looks to more closely integrate the non-financial performance work, such as driver trees and lead measures, with our financial reporting and performance information. It also ensures that we follow a consistent approach across all parts of the business, consider cost-benefit analysis and whole life cost solutions more rigorously and the inter-dependencies between Directorates is more clearly visible and understood.

A fundamental part of this in ensuring each measure is underpinned by a driver tree which links activities and lead measures through to the delivery of each performance commitment and interdependencies between commitments. Alongside this, our OOAR models (outcomes, outputs, activities and resources) help clearly link the activity and resource requirements vertically through a specific output (whether a performance commitment or other key performance driver such as Asset Health Metrics) to the delivery of the overall outcome for customers. (See action response HDD.PD.A7 and A8)

The process is designed to ensure we always have a plan taking us through to the end of the following AMP period, giving us up to a nine year forward look whilst at the same time streamlining and simplifying the budget setting process each year.

Crucially this approach also links in closely with our monthly internal reporting which seeks to bring together the financial and non-financial performance consistently so ensure we truly understand our variance to budget.

Communication with customers and stakeholders

A key lesson we have learned through the integration process is about the importance of communication with customers and stakeholders. Also that the communication needs to transparently and clearly link back to the commitments that were made at the relevant price review. The regulatory model incentivises companies to outperform against the final determination, but it also incentivises companies to make necessary investments even if that means expenditure is higher than the FD – this is the why totex sharing exists. During AMP6 HDD will have seen both of these eventualities – savings as a result of innovative and system wide design on the Legacy re-build, but also increased investment due to other factors like security standards. More detail on AMP6 totex compared to the final determination is set out in IAP action HDD.PD.A5 but in summary a key lesson is about communicating variances and reasons for those variances and the choices that follow with stakeholders and customers. This will improve trust – customers have consistently told us that they do trust us to invest in our assets and services, but that they want to be kept informed.

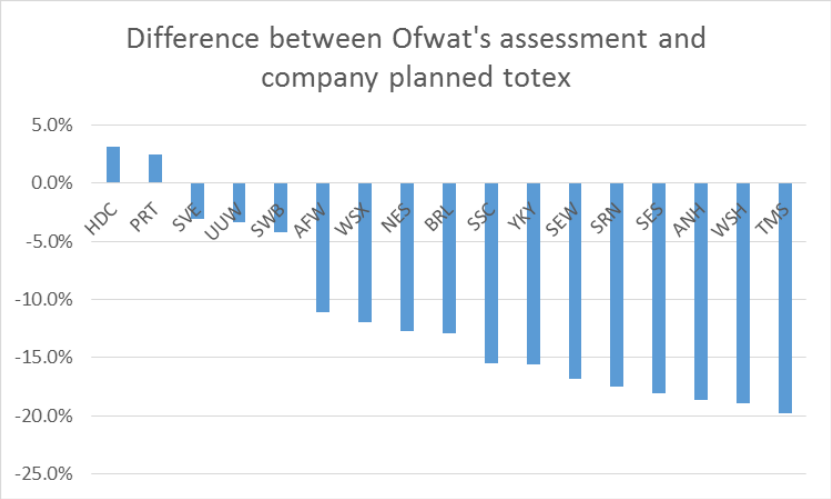
Granularity of cost capture

This is an area for opportunity for both good and bad practice. We are looking at best practice to help us identify the right balance between the cost and effort to capture granular cost data, including how to best use the systems and tools we have in place to minimise the cost of capturing cost data. The move from a largely paper based system to SAP is a big step forward.

9.4.3 The performance gap between current and proposed 2020-25 performance

Our plan includes a 9% efficiency challenge between equivalent historical costs and 2020-25 costs.

As shown in Ofwat's econometric models we are already assessed as the most efficient company, and improvement from an already efficient baseline is harder to deliver than if the scope to improve was greater. However the opportunity to re-look at how we work as a result of the licence variation is a good platform to start from.



There are three key areas that will contribute to achieving these efficiencies:

The first area where we are drive the concept of an **internal market place**. This means that costs, activities and performance targets, are agreed through contracts and service level agreements between directorates. This is critical for the operating model of Hafren Dyfrdwy, allowing it to ensure it buys in shared services from centralised functions, such as Information Systems and Financial Reporting, at a quality and cost that ensure the company aligns with its totex allowance. This approach will enable transparent market testing of these contracts throughout the AMP to ensure that the operating model we have chosen is the most efficient for HDD.

The other key area is around **delivery of our capital programme**. The way in which this will help us deliver efficiencies in AMP7 is explained in Appendix 5 of our September submission. But the cornerstone is about using partners in the most effective way – using large (tier 1) contractors on large complex projects, using smaller contractors (tier 2 and 3) for smaller jobs. This reduces the overheads and gives us more control over the work being done. For HDD it also means we have the flexibility to open our tender process to include local suppliers, that wouldn't have been able to commit to the volumes required under Sever Trent contracts.

The third is about **clear roles and responsibilities** and since submitting the September plan we have created a new position, the HD Financial Controller. This position ensures we retain a single point of focus on costs and is responsible for ensuring we are continuously monitoring costs against all internal budgets and then the overall price controls and categories within the APR reporting requirements. More detail is provided in action

response HDD.PD.A10, but the central and clear focus will drive efficiency through joined up decision making and clear ownership and cascading of the budgets across the business.

9.4.4 The measures in place to ensure deliverability

The measures for cost reporting are being integrated into the performance reporting process. We are currently applying the Severn Trent Group internal rolling business planning process into Hafren Dyfrdwy. This brings together all capital and operating expenditure, along with non-financial performance drivers, to provide a holistic multi-year forward view of the business requirements.

This process looks to more closely integrate the non-financial performance work, such as driver trees and lead measures (see HDD.PD.A7/A8), with our financial reporting and performance information. It also ensures that we follow a consistent approach across all parts of the business, consider cost-benefit analysis and whole life cost solutions more rigorously and the inter-dependencies between Directorates is more clearly visible and understood.

Part of the cost reporting process is to periodically review financial metrics and this is part of the business as usual governance. We are particularly mindful that without controls in place it would be easy to load the HDD business with overhead that it can't sustain. One of the initiatives we are introducing is to apply the metrics that Severn Trent use to monitor £ in the ground. This is where we track total costs and present them as a proportion of the costs spent on physically creating solutions. This approach is used by many utilities as a way of driving contract efficiency, but for HDD it is also a good way of ensuring overheads and support costs are proportionate to the asset base we are managing.

See more in response to HDD.PD.A10 which sets out our plans to continuously improve cost effectiveness and efficiency.

The response to HDD.OC.A2 is also relevant as it sets out our approach to strengthening reputational incentives, which is another way of further ensuring we deliver our commitments efficiently.

HDD.PD.A10 Response

The main focus of our actions now and into AMP7 is about embedding the new cost controlling and reporting systems that we have put in place as part of the integration process and then improving the visibility and value we get out of that cost performance data.

We have set ourselves a challenging efficiency target (9%) which is centred on the aim of maximising efficiency from being a small, agile company with the rigour, controls, expertise and negotiating power of a large company.

9.4.5 Continuously monitoring performance and link to APR and evidence beyond itself and the sector

Since the 1st July we have reviewed how we are operating Hafren Dyfrdwy. As part of this review we have set up a new governance structure to ensure the right controls are in place and there is appropriate visibility of performance against the commitments we made in the NAV. This governance structure will continue to be a key part of how we deliver efficient costs over the next AMP and beyond. This structured is explained in more detail in HDD.PD.A8 but summarised here:

Like service performance, budgets are held at both an Executive and Senior Leadership level for each price control (and often more granular than that). This top down ownership then cascades through the use of weekly and monthly reporting at a team, county and company level. These groups review both performance and costs to understand opportunities to collaborate between Directorates and drive internal sharing of good

practice and known successes. The key groups where performance and costs are reviewed are summarised below:

- **Tactical Loopcell**, which is a bi-weekly meeting that brings together Senior Leadership measure owners and key Executive members to track actual performance against FD and budget and review future delivery plans
- The Loopcell is underpinned by Directorate, Team and County specific communication meetings (called **Comm Cells**) which meet regularly (mainly weekly) to review performance against lead metrics and budget forecasts in their specific areas and they look at both PCs and the underlying measures (as set out in the driver trees that influence successful delivery of the PCs);
- **Wales Co-ordinating Committee,** is a senior level group who review all aspects of HD to review and challenge the delivery of all of the HD obligations and commitments including costs against the final determination (FD). This group is the gateway to the **Hafren Dyfrdwy Board**, which gets regular updates on performance (both service and cost) against the FD; and
- HD performance is also escalated to the **Severn Trent Board** to ensure that the Hafren Dyfrdwy budget and activities are fully integrated in to the Severn Trent Group rolling business planning processes. This group considers a multi-year forward view of capital and operating expenditure as well as key performance drivers.

As part of lessons learned (set out in HDD.PD.A9), we identified an opportunity to create a new position, the Financial Controller. This position ensures we retain a single point of focus on costs and is responsible for ensuring we are continuously monitoring costs against all internal budgets and then the overall price controls and categories within the APR reporting requirements.

In terms of looking externally, as part of the service level agreements that are being set up between HDD and STE, they will include services relating to commercial and procurement activities ensuring third party and contactor costs receive appropriate scrutiny, with robust contract tender, external market testing and benchmarking processes in place. We also periodically participate in external benchmarking exercises such as European Benchmarking Co-operation (EBC) and will be considering the extent to which we benchmark HDD specific costs compared to Severn Trent Group costs.

9.4.6 Continue to learning from good and poor past and current performance

In HDD.PD.A9 we set out examples of lessons learnt, but this is clearly an ongoing process. We have a culture for learning and continuous improvement and the main ways in which we will continue to seek out lessons and good practice is through the following:

- Sharing between HDD and STE
- Development and embedding the rigours assurance process, which includes independent third parties such as Deloittes who as well as assuring our data, also identify opportunities to improve
- Budget and performance review meetings which cut across directorates to improve knowledge transfer
- Active participants in relevant industry projects eg through UKWIR
- Bringing together cost and performance reporting and sharing best practice between the two types of performance reporting
- Use of industry data to help us understand areas where we might not be as efficient

9.4.7 Measures to improve performance and integrate into BAU

In response to HDD.PD.A9 we set out the types of measures we are looking to develop. In summary they cover:

- Price / volume variances for the key drivers of performance
- £ in the ground analysis to understand the proportion of total spend that actually goes to improving or creating new assets
- Benchmarking internal service level agreements

The way it will be embedded is through inclusion of data (and trends over time) in regular reporting (eg weekly team level meetings, fortnightly cross divisional meetings and monthly Wales Coordinating committee meetings).

9.4.8 Continuous improvement

The initiation of the HDD financial controller is key to driving continuous improvement, both in terms of actual efficiency but also in the robustness and value we get from cost reporting data. The initial key focus of this role is about control and visibility of costs to enable joined up decision making – especially between performance and costs.

Another aspect of embedding a culture for continuous improvement is about transparency with customers and stakeholders. Customers have told us they want to better understand what our investments are delivering and more importantly that what we are delivering is efficient (this was clear feedback coming from the new research we did on fair balance of charges over time). However it is also clear that customers don't want to spend a long time trying to understand our information so this will be an area we look to build on through a continuous improvement approach.

9.5 Understanding and improving customer service

In the Initial Assessment Ofwat raised concerns about our complaint handling and stated that there was insufficient evidence to demonstrate that we understand the drivers of performance or lessons learned as we did not provide evidence that we have assessed complaints performance holistically. In this section we address the following two actions:

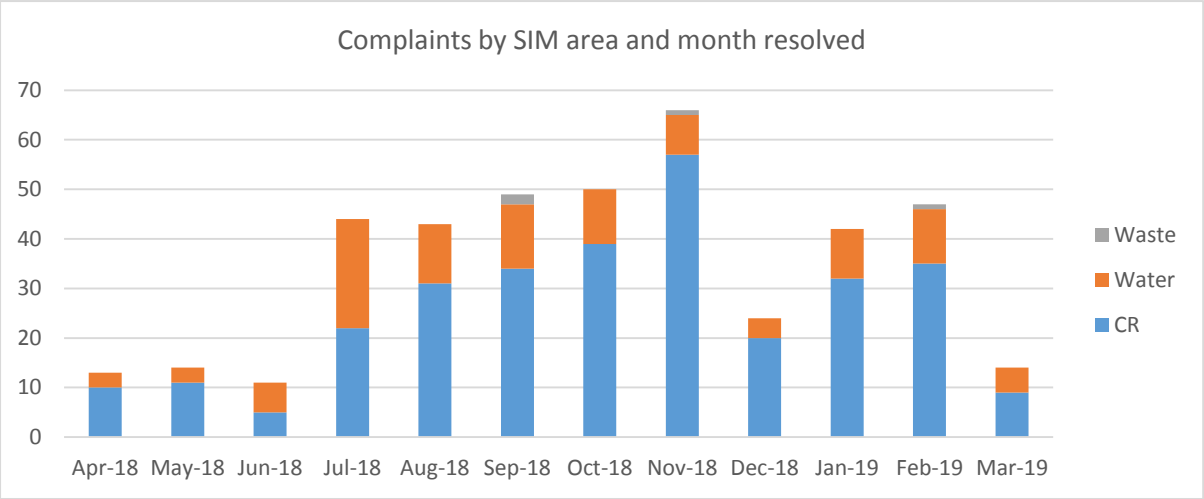
Action Ref	Action
HDD.PD.B1	Produce and provide additional evidence that it has identified: • The drivers of its complaints handling performance both in terms of the number of complaints and how well complaints are dealt with; • Lessons learnt from good and poor past and current performance; • The performance gap between current performance and proposed performance in the 2020-2025 business plan; and • The measures planned or already in place to ensure deliverability of the 2020-2025 business plan.
HDD.PD.B2	Produce and provide an action plan that sets out: • How Hafren Dyfrdwy will continuously monitor performance, including with reference to CCWater analysis and targets, and those related to the delivery of C-Mex, including what evidence and best practice it will look for beyond itself and the sector; • How Hafren Dyfrdwy will identify drivers of performance and lessons learnt from both good and poor performance; • How Hafren Dyfrdwy will identify measures to improve performance and integrate these into its business; and • How Hafren Dyfrdwy will ensure that this is a continuous rather than one-off process.

HDD.PD.B1 Response

9.5.1 Drivers of complaints

The first part of **HDD.PD.B1** relates to the drivers of complaint handling performance – both the drivers of complaints themselves and how well they are handled.

We have reviewed all complaints since 1 April 2018 to understand what prompted the complaint. The chart below sets out the number of complaints that fall into each of the main categories covered by SIM.



Complaints by Team

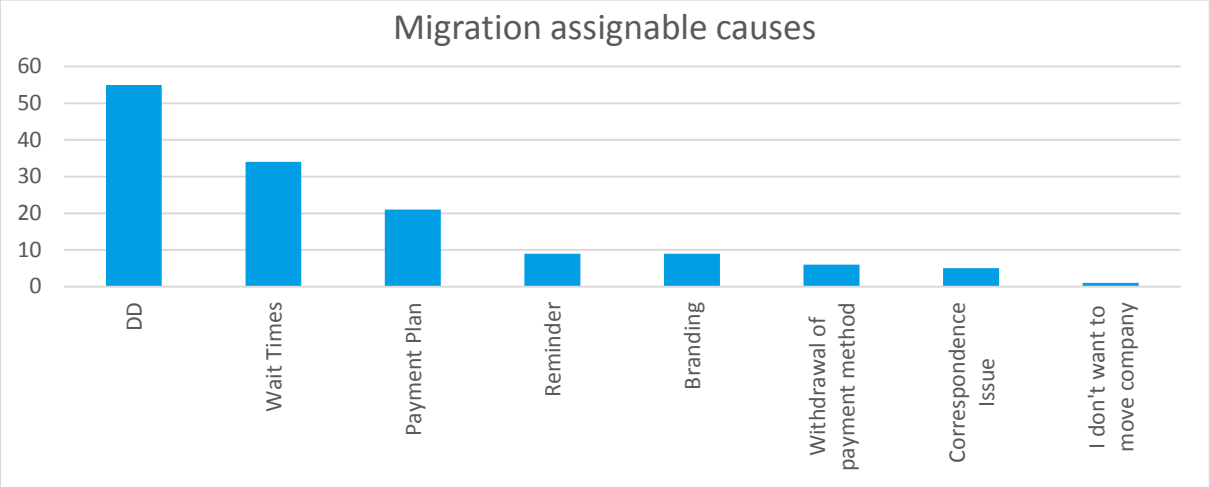
- Billing complaints (CR) account for 73% (313)
- Operational Water complaints 25% (108)
- Operational Waste complaints 2% (4)

We have had 429 complaints since 1 April and have reviewed every one during this period so we can fully understand what our customers' main issues have been since the launch of our company. Of our overall complaints year to date, c.35% are in relation to the migration from Dee Valley to Hafren Dyfrdwy. This is most pronounced for billing complaints, 50% of which are attributable to the migration (see root cause chart below). This is a significant number, which was mainly caused by direct debit issues, call wait times and payment plans (which were heavily linked to the perceived increases in customers' bills).

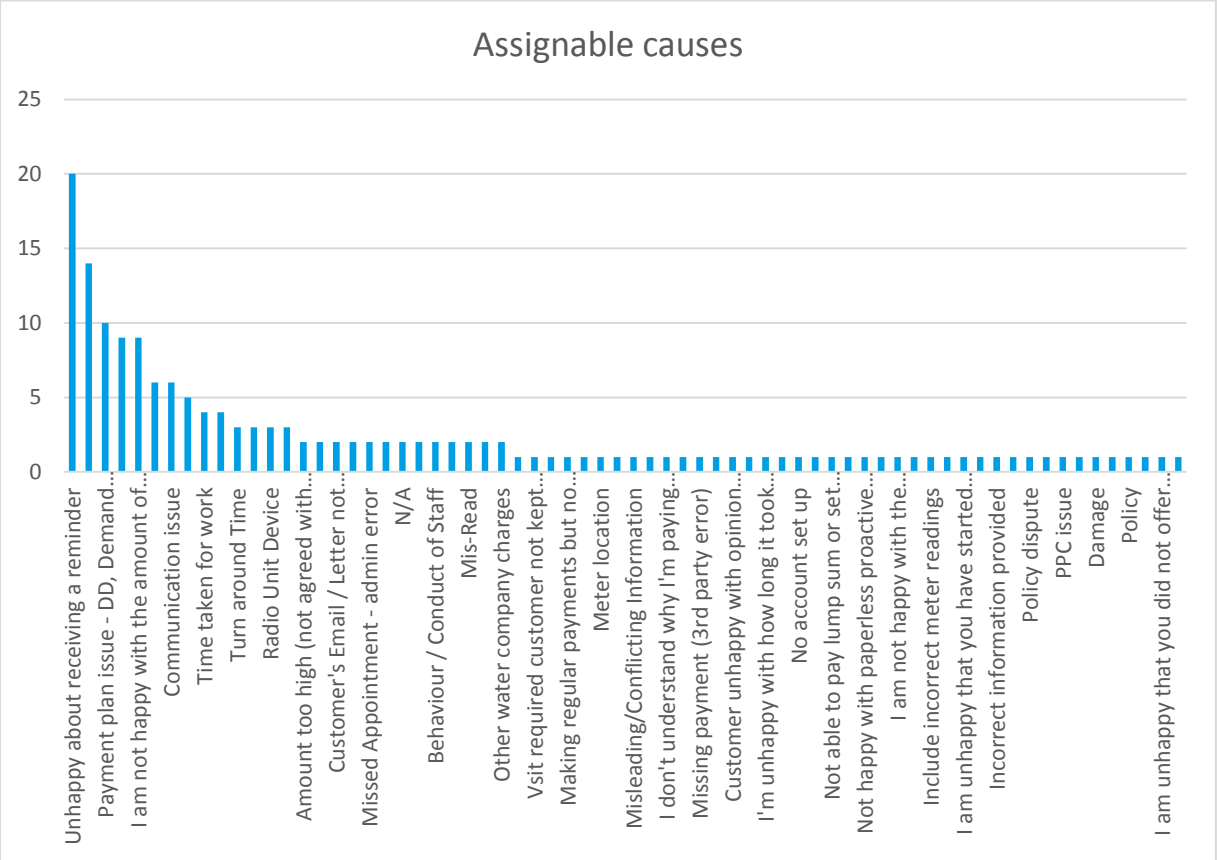
Excluding migration related complaints, the top reason for complaint is in relation to customers being unhappy about receiving a reminder notice (see billing root cause chart) which contributed to the spike in complaints that we saw in November 2018, with this being our first recovery cycle since forming Hafren Dyfrdwy.

Complaints about payment plan amounts were the second highest reason for complaint. However, as all former Dee Valley customers have now been through their six monthly payment plan review, we anticipate that all customers will now be clear on their payment amounts and complaints should reduce in this area.

Migration Root Cause



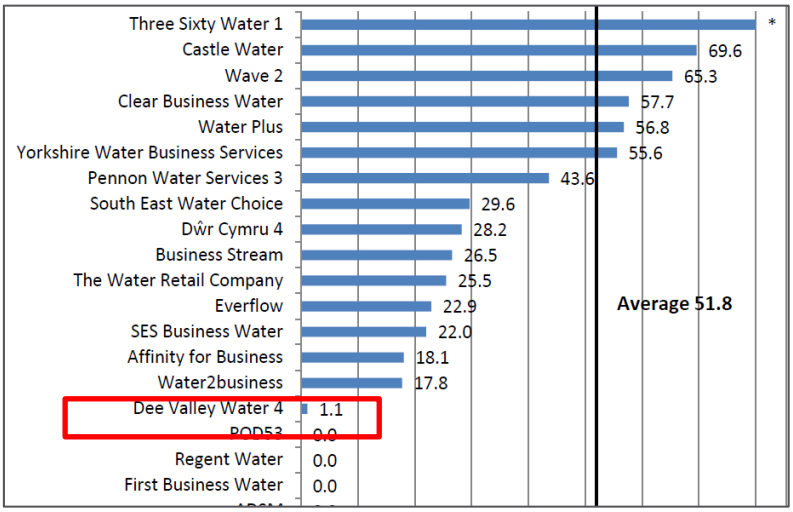
Billing root cause (Excluding migration related complaints)



Non-household performance

We have also seen an increase in non-household (NHH) complaints compared to 17/18 where Dee Valley were UQ. However it is difficult to make comparisons due to the extremely low absolute numbers. In 2017/2018 we received 1 NHH written complaint and YTD 18/19 we have received 11 (one of which was a Stage 2). While this is less than 2% of our overall complaints and relates to 0.1% of our NHH customer base, this equates to 10.6 per 10k NHH connections YTD.

NHH written complaints received by retailers and companies in Wales per 10,000 SPIDs 2017/18



Since 1 July 2018 we have introduced a dedicated Business Care team who work closely with our complaints team to identify root cause and put clear next steps in place to improve the service we offer to our business customers. All non-household complaints relate to billing and issues raised related to payment issues, not happy with reminder notice and having to chase for a response to a query. Again, the majority have been generated by migration related activities.

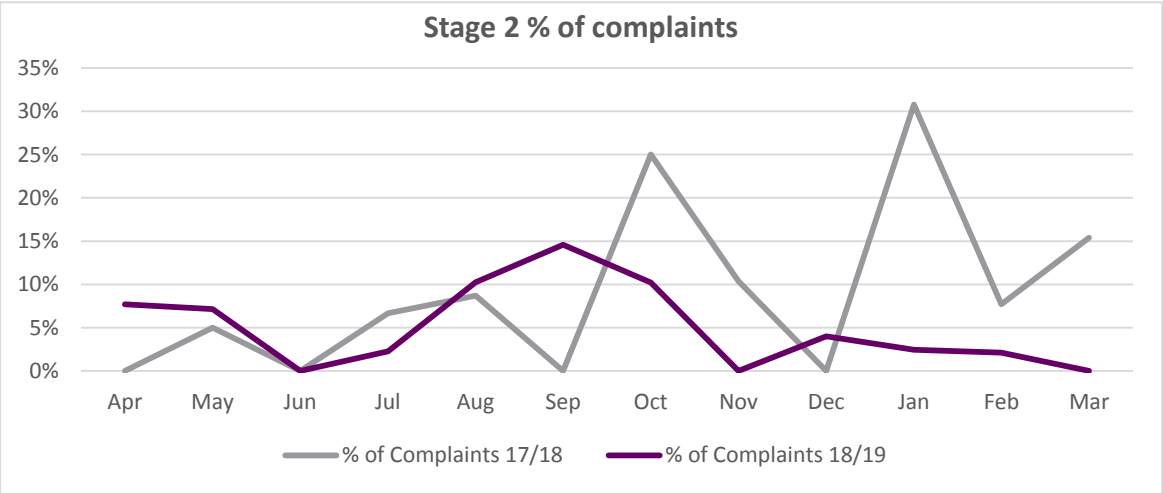
Drivers of how well we handle complaints

One of our key areas of focus has been stage 2 performance which indicates that the way we were dealing with our Stage 1 complaints wasn't as effective as it should be. We identified three key drivers for this:

- Training – including tone of voice and customer empathy.
- Internal communication – particularly between the Network Control and Customer Service teams.
- Communication back to the customer and ensuring complaints are resolved - this has improved with c.80% being resolved over the telephone to ensure that we are fully resolving the customer's complaint.

Taking action against all three of the above (more detail is included in section 9.5.2 below) has had a positive impact on our Stage 2 performance year to date with us delivering a 50% improvement in performance – currently 5.1% (data as at March 2019) of complaints move to State 2 which with the 10% Dee Valley saw in 2017/18. Prior to that, Dee Valley's 16/17 stage 2 performance was 13.5%, demonstrating a marked improvement over this period.

Stage 2 performance 18/19



The time taken to resolve a written complaint is on average 3 days for Billing and 7 days for Operational complaints; this is well within our guaranteed standard of 10 working days.

9.5.2 Lessons learned

Tone of voice and empathy

Our Stage 2 complaint analysis revealed we needed to provide more training to support our people. We have introduced a new Tone of Voice whereby every word matters which means that whenever we respond to our customers it is in a warm and empathetic tone. This has helped us resolve more complaints first time round as we are using language that our customers understand. We have also looked outside of the industry to see how well other businesses deal with their complaints and found that by giving our complaints team these additional soft skills, its empowered them to make better connections with our customers and create those "customer moments".

Resolution

Handling complaints is a key part of delivering and outstanding customer experience and we now have a clear strategy in place to do this. We have a dedicated team in Wrexham that deal with our complaints and will case manage them through to resolution – they also have autonomy to make decisions in the best interest of the customer. Full root cause is now carried out on all written complaints and real time root cause on Stage 2's by the Complaints Manager and is responded to.

We have also introduced additional service recovery activity to prevent written complaints where we will proactively contact a customer by telephone if:

- They have scored low on Voice of Customer (customer feedback tool Pipe Up)
- They have given negative verbatim comments on Voice of Customer
- They are contacting us multiple times over the telephone
- Their call is unwanted (complaint)

Communicating change

A key area where we are learning lessons is associated with communication around changes. Whilst we engaged with our customers about the change in brand, we weren't clear enough in how they would be impacted by the creation of Hafren Dyfrdwy as an individual - in terms of payments and what to expect from the change. We now review all changes to ensure that we have fully documented the customer journey, anticipated what this means to our customers and how they will be impacted by any change. This may mean that we contact these customers by telephone to discuss the change or send a more bespoke letter which makes it clearer to our customers.

The spike that we saw in billing complaints in November was triggered by the second half year recovery; this was for some customers the first notice that they had received from Hafren Dyfrdwy and customers were unhappy as they thought that they would have received a newly branded bill before they received a reminder. Although we had written to them in July to tell them that they didn't need to do anything differently, we should have been clearer that they should continue to pay on their old Dee Valley bill with their next payment being due on 1 October.

We have also developed a month-by-month Customer Experience improvement plan which identified areas where we need to focus. It includes proactive communication with our customers to make sure that they are clear about any changes and anything that will impact them specifically e.g. payment plan increases/decreases such as:

- Contacting the customer by the phone when their payment plan is going to increase
- Putting additional information on the website explaining how payment plans are calculated

- Using social media to explain to our customers how their bill and payment plans are calculated
- Improving Web Self Service to enable them to create/amend payment plans where needed

Our Service Recovery team in Wrexham also provide us with insight and their insightful (or in-depth) conversations with our customers echo the findings of our written complaints review.

9.5.3 Gap between current and AMP7 performance

As we continue to move into our business as usual operation and resolve all of the migration issues, we anticipate that these types of complaints will again reduce back towards the historically low levels of complaints. For 2019/20 we have forecast a 20% reduction in written complaints which will put us in a good position in readiness for AMP7. We are already starting to see the reduction in migration-related complaints and we are confident that our 19/20 performance will be much improved as we head out of this transition period.

More widely, our customer research tracker has told us that there is a definite lack of awareness and familiarity with Hafren Dyfrdwy – a foundation for trust - a sentiment that has also been echoed in the comments that we see via our written complaints, Pipe Up feedback and SIM. While we would expect this familiarity to naturally grow over time, we have also included specific actions to increase awareness of our company over the final year of AMP6 and moving into AMP7.

9.5.4 Measures planned or already in place to ensure deliverability

We have developed both short and medium term actions to improve performance through the close of AMP6 and into AMP7.

Short term

- We are developing a new complaints system which will be introduced on 1st April 2019 which will enable our teams who log, case manage and respond to complaints to do so all in one platform meaning we can manage our complaints in a much more effective way.
- Our teams for the first time will have much better visibility of what is happening with their complaints. The system will also allow access to dashboards to enable us to monitor complaints and see real time updates and give better visibility of root cause and complaint history.
- We have been rolling out Tone of Voice training to all of teams to better equip them with the soft skills for dealing with customers at point of contact and in the event of dealing with a customer complaint.
- We have introduced proactive Service Recovery activity to identify customers that may have been unhappy with the service that we offer whether this be through negative verbatim comments via our Pipe Up scores (Voice of the Customer) or by reviewing unwanted contacts specifically those repeat calls and complaints.
- We are proactively going out into the region to meet with our customers face to face so that we can support them with any issues that they have and put some faces to the name and we have a local customer team in Wrexham who are always on hand to deal with customers and actively promote “the hatch” (a walk in office at our main office in Packsaddle) if customers prefer to come in and chat to us face to face.



Medium term

We have identified through our complaints review and recent customer research tracker that there is a lack of awareness of services we offer. Promotion of these services is part of our preparations to ensure we can deliver in AMP7.

The key area is making customers aware of the additional channels that we can now offer such as:

- The new Hafren Dyfrdwy website, which has many options for customers to find out about our services and report issues that they may be experiencing.
- Our "Track my Job" app which will keep customers informed about progress towards any operational issues they are experiencing – this means that they can get regular updates without having to contact us.
- "In My Street" which allows customers to look at what work is going on in their area so they can make alternative arrangements if necessary.
- Various social media sites such as Facebook and Twitter where our customers can find out information about the schemes and services we can offer and all the things that are going on in their area.
- As we are a relatively new company, we are working with third parties in the region to promote these such as Wrexham Borough Council, Powys County Council and local media.
- We are looking into the possibility of running "community hubs" on a more regular basis following the success of our "Hafren Dyfrdwy On Tour" throughout main billing (2019/2020). We had a great response from our customers and if it's something they say they'd like then we would look to introduce this as an additional channel for those who prefer not to contact us by phone

By building these strong networks we will be able to reach more of our customers to promote these additional channels where they can access the support that they need 24/7.

HDD.PD.B2 Response

9.5.5 Continuous improvement

We focus our continuous improvement efforts on the areas our customers tell us we need to improve and from our quality and assurance checks. Our team of quality advisors are responsible for ensuring we maintain a consistent level of quality for our customers when explaining queries, bills, payments plans or any interaction a customer may have with a Hafren Dyfrdwy advisor.

We also use benchmarking as a member of the Institute of Customer Service to address the challenges we face in our contact centres and beyond and match us with companies who have previously been on a similar journey.

Examples of this benchmarking include Covea Insurance who we visited in January 2019 to learn from their experiences. Covea were identified as a potential match to talk about how they have built their credibility of the team, trust in the outputs and developed a set of Customer Experience principles which aim to give one united focus for all members of the organisation. From this visit we identified a number of opportunities including an internal Customer Experience group that would act as continuous improvement change agents, taking the feedback from contact with customers and driving process improvements to enhance our Customer Experience.

Other benchmarking includes O2 Telefonica on services for customers in vulnerable circumstances and HMRC to help develop of Voice of Customer approach which currently sends an SMS to customers at the closure of their job to request feedback. We also use the Call Centre Management Association which again unlocks opportunities for benchmarking, including recent visits to Homeserve to discuss their Customer promises and ShopDirect to help understand how they manage quality assurance across their organisation.

Alongside this, part of our organisational structure includes a Customer Assurance team. This team are responsible for ensuring all of our regulatory data submissions meet the requirements. These include SIM (including complaints) and CMEX. As part of the CCW quarterly data submission that all companies are required to submit, the Customer Assurance team liaise directly with CCW to submit performance, with associated commentary and receive all publications from CCW regarding the performance across the industry. This team also work alongside our Customer Insights and Analytics team who monitor our Voice of the Customer performance, alongside setting complaints targets and provide data analysis back to the business including root cause, and monthly performance trackers to identify any changes to performance.

9.5.6 Drivers of performance

We currently operate a Voice of Customer survey to all customers with a mobile phone number. At the closure of a job an SMS is sent to customers asking how satisfied they were with the service they received. This is measured on a 1-5 scale, and any customer responses of 3 or below have a ticket raised to our Service Recovery team. This team investigate the account and contact the customer to resolve their issue. As part of this exercise root cause analysis is carried out and logged to help drive continuous improvement. If any feedback is applicable to an advisor this is provided through a Sharepoint hosted tool which is then picked up by the Team Leader for coaching to be delivered to the advisor where necessary.

As we transition away from SIM towards CMEX we are continuing to evolve our Customer Experience Strategy. Our Customer Experience principles, including keeping the customer informed and dealing with queries in a timely manner remain the same and will consistently be our customer expectations, and we are now using these in a decision tree format. The development of this decision tree will help capture what levers should be used to achieve the maximum impact for our customers. In this way we will have a more sophisticated approach to quantifying the benefit of transformation activity, with associated improvements to customer satisfaction and complaints performance. This enhanced approach will also help keep consistency through the AMP and bring together perception as well as experience to further improve our brand for both customers who have interacted with our teams and those who have not.

As part of our normal process for all SIM waves, we conduct root cause analysis on any customers that were surveyed during a wave. This involves selecting a group of employees from around the business to listen to the customer feedback. The findings of this activity are then feedback to the relevant teams, including transformation for business improvement, or team leaders for people improvements. This approach will continue with CMEX and will be delivered alongside the normal Voice of Customer root cause analysis.

In addition to this, regular analysis is conducted on complaints performance. As part of our Customer Experience rhythm we host Loop Cells. These are a gathering of all teams which affect Customer Experience to discuss the trends of the month and associated improvement activities. All categories are assigned an owner who is instructed to fully understand their issue and make a recommendation to resolve it. These action plans are then reported in a monthly Community of Practice, which is a group of key decision makers who offer a holistic view to ensure customers are at the heart of everything we do.

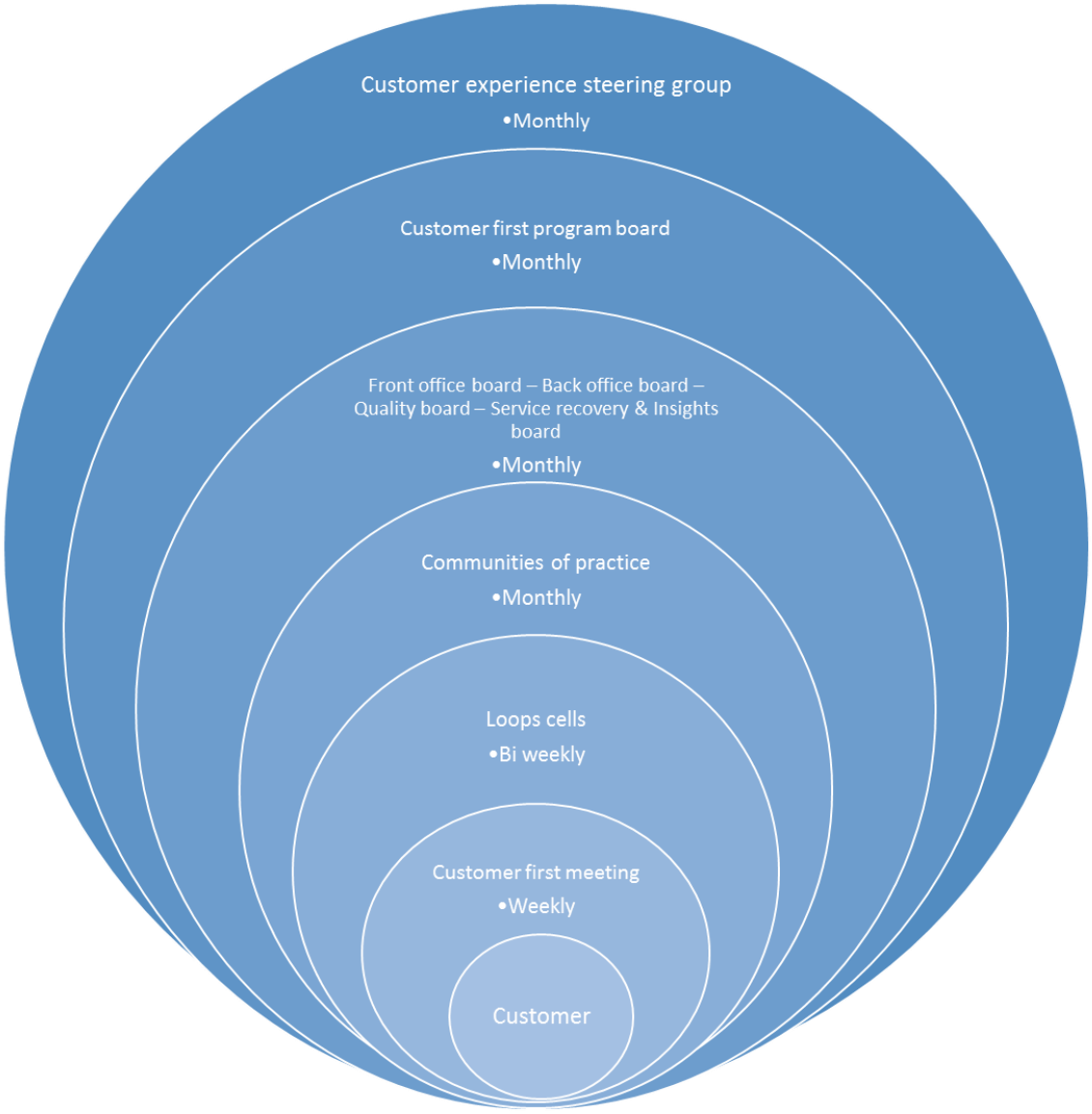
9.5.7 Integration into business as usual

The outputs from our driver tree analysis will continue to evolve our measures, however we currently use Loop Cells and Communities of Practice on a monthly basis to measure and integrate performance into the business. The key attendees at this meeting rhythm include operation team leaders, team managers and Business Leads, from our Strategy teams. This ensures we have a consistent understanding of our current performance and customer needs.

In addition, our operational teams measure point of contact resolution, customer satisfaction, repeat contacts from customer and average handling time on a weekly basis. This allows us to take more immediate remedial action, for example by offering our advisors greater training and support.

9.5.8 Continuous process

We recently implemented an enhanced reporting structure to ensure performance is reviewed regularly at all levels. The diagram below documents the line of sight for Customer Experience and Hafren Dyfrdwy's communication structure.



By ensuring that there are regular documented meetings to discuss performance trends and improvement trends Customer Experience is visible. This visibility means that everyone is engaged in the conversation and has a stake in the measure. The Customer Experience Steering Group will be critical to analyse and agree the most appropriate action needed to improve our performance. The monthly rhythm of this will help maintain a consistency and review any targets to ensure this is a continuous process. This accompanied by the enhanced data reporting of the above metrics means that insight is readily available and our Customer Experience ambitions are trackable and achievable.

Chapter 10
Confidence and assurance

10.0 Confidence and assurance

10.1 IAP actions

In the IAP feedback and accompanying documents a number of actions were specified under the heading "Confidence and Assurance". In this section and accompanying appendices we address a number of the actions. However, because some relate to financial modelling our work in relation to risk and reward they are addressed elsewhere.

In the table below we list all the Confidence and Assurance actions and specify where they are addressed in our revised submission.

Action	Response and reference
HDD.CA.A1 The statement (relating to performance reporting) is not compliant as it is contained within the main plan and therefore not a statement made by the Board themselves. Provide a compliant assurance statement made by the full Board.	**Addressed.** Covered in this chapter (Section 10.2) and in our Board Assurance statement (Appendix 10.2)
HDD.CA.A2 On gearing benefits sharing the company's explanation of its sharing mechanism is too high-level to assure that it provides benefits to customers' equivalent to our default mechanism. It should incorporate our default sharing mechanism from 'Putting the sector in balance: position statement on PR19 business plans' into its published business plan, so that customers will receive bill reductions if gearing in any year is above the 70% threshold.	**Addressed.** Covered in this chapter (Section 10.3.1)
HDD.CA.A3 On dividend policy the company is required to confirm that it is committed to adopt the expectations on dividends for 2020-25 as set out in 'Putting the sector in balance'. Please provide an update on the steps you are taking to fully meet the expectations as set out in our putting the sector in balance position statement.	**Addressed.** Covered in this chapter (Section 10.3.2)
HDD.CA.A4 On executive pay the company is required to confirm that it is committed to adopt the expectations on performance related pay for 2020-25 as set out in 'Putting the sector in balance'	**Addressed.** Covered in this chapter (Section 10.3.3)
HDD.CA.A5 Provide further information on which PR14 performance commitments have been discontinued	**Addressed.** Covered in this Chapter (Section 10.4)
HDD.CA.A6; HDD CA.B1 Provide updated financial model. Address points relating to (i) pension charges; (ii) differences in fixed asset costs; (iii) Ap14 trade and other payables	**Addressed**. See Financial model

HDD.CA.A7 In App1, provide forecast data for supply interruptions in analogue format to align with commentary i.e. HH:MM:SS rather than decimal minutes.	**Addressed**. See Data Tables, App 1
HDD.CA.A8 The company should explain the assurance process it has taken to develop its tax forecasts to demonstrate that amounts proposed for tax take account of customer interests, in particular to clarify the scope of the assurance work that was undertaken and the outcome of that work. The company proposes a net margin of 1.20% for <5ML/yr users despite operating in a non-contested market segment. It should limit its margin to the PR16 1.0% cap, or provide compelling evidence why this is not appropriate	**Addressed.** Tax - Covered in this Chapter (Section 10.2) and Appendix 10.1 Retail margin is covered in Chapter 8 – Risk and Return

The remainder of this chapter considers in turn:

- the assurance of our resubmission;
- the specific action on the Board assurance;
- addressing the actions related to Back in Balance;
- addressing the actions relating to discontinued performance commitments.

10.2 Assurance on the resubmission

10.2.1 Approach

The assurance of our revised submission is an important activity that helps underpin trust and confidence in what we do and who we are. This is because assurance helps ensure:

- that our commitments, incentives, totex and other elements of the revenue requirement deliver the best outcome for our customers; and
- stakeholders are provided with reliable, accurate and complete information.

For this reason we have chosen to go beyond the IAP requirements which asked us to provide an updated Board assurance statement and our assurance on tax. We have chosen to obtain additional assurance across a number of areas to first ensure and second demonstrate that the information we are providing is of a high quality, reflects customer views and is consistent with the PR19 methodology. In undertaking this assurance we have utilised specialists in their field so that we get the best possible feedback. The areas subject to additional assurance include:

- Quality of customer research – by Mike Stevens, Managing Director of What Next Strategy & Planning (recommended by the research sub-group Chair of Severn Trent's CCG)
- Use of customer research and triangulation – Frontier Economics
- Designing ODIs – Frontier Economics
- Interpretation of social tariff and acceptability research – Frontier Economics
- Resilience – Arup
- Financial modelling and financeability – Jacobs
- Tax – PWC
- Past performance – Black and Veatch

- Data tables – Black and Veatch and our Internal Audit team (tick and tie for data that hasn't changed)

In this sub-section we summarise the key findings from the different assurers. The assurance reports can be found in the relevant appendices for each chapter and/or Appendices for Chapter 10.

10.2.2 Findings

Our revised PR19 submission is supported by additional assurance undertaken following our review of Ofwat's IAP feedback. We identified specific assurance requirements against each of the challenges following our established risk-based assurance methodology and specifically as requested in HD.CA.A8 (tax forecast). Following identification of the assurance requirements, we have engaged experts to undertake the various elements of assurance required.

Taking account of the additional assurance undertaken, the revised Board assurance statement now includes this additional statement: *We confirm that we have completed all of the IAP actions in accordance with Ofwat requirements and appropriate assurance has been undertaken to ensure that the data provided in the resubmission is consistent and accurate.*

Market Research:

Mike Stevens of What Next Strategy & Planning, a high profile independent market researcher who was recommended by Nick Baker, the Chair of the Severn Trent Water Forum's market research sub-group and Board member of the Market Research Society, has undertaken an independent peer review of our market research approaches. Mike has assessed the degree to which we have applied best practice market research techniques. This includes review of existing research and any new research undertaken in direct response to the IAP:

- *Existing research - Social Tariffs Cross Subsidy, Willingness To Pay and Acceptability research,*
- *Newly commissioned research – ODI Choices and Fair Balance of Charges.*

Findings:

The company has satisfactorily addressed all of Ofwat's challenges regarding the above shortcomings in its original PR19 plan. In summary this is because:

- *Hafren Dyfrdwy did not include any research reports with its original submission; instead it included a brief summary of each one. This meant that Ofwat did not have comprehensive sight of the projects' objectives, methodology and findings. This is remedied in the company's resubmission, as full reports are included as appendices.*
- *Clarifications and supplementary analysis have now been added to the research reports by the research agencies which conducted the work. It is these reports which have been included in the re-submission.*
- *Acceptability research had not been conducted in both its regions prior to submission of its original plan. This has now been completed.*
- *The two new projects deliver the missing customer insight which Ofwat requires. A wide variety of research techniques has been deployed, including deliberative workshops, large scale surveys and sophisticated price modelling.*
- *All five projects have been well designed and carried out to a high standard and in line with market research best practice.*
- *Sample sizes on surveys have been very robust, particularly considering the relatively small population served by Hafren Dyfrdwy, and the fact that online research is not feasible in this part of Wales. All projects have included a suitable sample of customers from both Wrexham and Powys.*
- *The company has conducted research with customers in vulnerable circumstances, including the health and wellbeing vulnerable; this is now documented in the research reports.*

- *Ofwat's Tapped In principles have been adopted where appropriate"*

Project 1 (Willingness to Pay) is of high quality and follows best practices in number of interviews conducted, sampling, survey design and analysis. The survey design process in particular shows a level of diligence rarely seen in commercial market research and other similar engagement exercises.

Project 2 (Social Tariff Cross Subsidy) has been well designed, with a questionnaire and sample frame appropriate for setting the social tariff level. Shortfalls in some sample quotas required weighting of data (as per market research best practice), but this does not appear to have had any material impact on the conclusions drawn.

Project 3 (Acceptability) reflects best practices for engaging customers in complex topics, with a representative sample frame across both Wrexham and Powys and robust sub-groups of vulnerable customers included in the analysis.

Project 4 (Fair Balance of Charges) reflects best practices for deliberative engagement with customers on complex topics. The sample frame is a representative spread of customer groups across both Wrexham and Powys, and the conclusions drawn in the report are clear.

Project 5 (ODI Choices) achieved a robust sample of customers under challenging timescales and circumstances. It provides a clear indication of customers' attitudes to performance payments and reputational incentives for service area improvements.

Frontier Economics review - Outcome Delivery Incentives and interpretation of key research

We have employed Frontier Economics to undertake an independent peer review of our ODI framework and application to assess the degree to which we have applied Ofwat's methodology, and explained and followed a robust approach for using the research results in our plan.

Agreed scope:

- Review the application of the original Willingness To Pay and new information within the triangulation approach
- Review our approach to setting type and timing of incentives
- Review application of Ofwat's technical rules (benefits, caps, collars and deadbands)
- Review our application of the research results into our ODI design / package – to what degree have we evidenced that the package does reflect a fair balance

Findings

We note that HDD has made a genuine attempt to take on board Ofwat's feedback.

- *HDD has carried out new customer research, and this has enabled it to carry out triangulation using its different sources of customer valuations. We consider this to be an improvement upon to its previous business plan.*
- *It has followed a clear and transparent process for revising its package of ODIs. This includes:*
    - *Supporting its proposed ODI type for each measure;*
    - *Making all ODIs in-period (with the exception of one measure related to the WINEP which we consider to be reasonable given the uncertainty around the WINEP);*
    - *Ensuring that its ODI rates for common measures are at least in line with the lower bound set out in Ofwat's ODI rate benchmarking. HDD has renormalised some of Ofwat's ODIs rates to better control for company size: it now compares rates on a 'per incident per household' approach for all measures. We consider this approach to be appropriate:*
        - *It is consistent with Ofwat's approach for some common measures;*
        - *It is more in line with how customers actually experience the issues; and*

        - *HDD has provided a worked example for internal sewer flooding which illustrates how Ofwat's normalisation results in rates which are significantly larger on a per household basis than the results under the 'per incident per household' approach.*
- *Increasing its RoRE range from [+0.4%,-0.4%] to [+0.5%,-2.0%];*
- *Adding an outperformance sharing mechanism and caps to individual measures to protect customers from significant outperformance.*
- *Demonstrating the level of stretch of its new plan: if it does not improve upon 2017/18 performance levels it will incur significant outperformance payments equal to around 2.2% of RoRE.*

As a result, we consider HDD's revised approach to be an improvement upon its original business plan submission and incorporates various changes that Ofwat wished to see included.

Financeability:

Our term contract assurance provider, Jacobs, has been asked to provide an independent review of the degree to which we have applied Ofwat's methodology and followed a robust approach for using the research results in our plan.

Scope includes:

- Peer review the accuracy of the data used in the market research
- Peer review our calculation of the natural run-off rate and natural rate of PAYG, and our narrative around the calculations
- Peer review application of findings of the research in our use of financial levers and the conclusions on long-term bill impact.
- Peer review accuracy of the population of the Ofwat model
- Peer review the robustness of the narrative that explains how we have completed the data requirements

Findings:

Overall, we consider that:

- *you have appropriate processes in place to populate the Ofwat financial model with data consistent with the Ofwat requirements;*
- *when running Ofwat's financial model you have followed the general guidance in Ofwat's PR19 methodology statements (including clarifications provided in its Initial Assessment documents) and the specific guidance provided in the latest version of Ofwat's financial model;*
- *your modelling reflects the decisions of your Board in relation to bill profiles and credit quality; and*
- *your final commentaries will be consistent with the outcome of your financial modelling, and address the feedback provided by Ofwat in its initial assessment of your September 2018 business plan.*

Past performance and PC Definitions – Black and Veatch

In addition, there are a number of areas of assurance that have been undertaken by Black & Veatch to ensure that we have provided sufficient response to the IAP challenges:

- Review of specific PC definitions, targets and supporting evidence, where the IAP had challenged those elements,
- Review of AMP6 SIM forecast data for 2018/19 and 2019/20,
- Red Team style review and challenge of the clarity of specific responses and the sufficiency of information provided, and
- Review of specific tables showing changes, to ensure that these were consistent with responses made to Ofwat

Findings:

Black and Veatch confirmed that for the areas identified above, they had reviewed and discussed HD's proposed responses and table changes and confirmed that in their view these addressed Ofwat's IAP challenges.

Data tables

For our data tables, to ensure we provide a set of consistent and accurate data tables, we have undertaken the following assurance:

- Where a data table has changed, third line assurance has been provided by the assurance provider who undertook the assurance on the original submission table.
- Where a data table has remained the same, a third line tick and tie exercise has been undertaken by our Internal Audit function to confirm no accidental changes.
- Where appropriate a third line assurance provider checked and confirmed the logic for making no or minimal changes, compared with those submitted in September 2018 and that this was consistent with the Ofwat actions checked by Black & Veatch.
- Due to the specialist nature of new tables App1a and App1b, we have undertaken 2nd line internal assurance using subject matter experts.

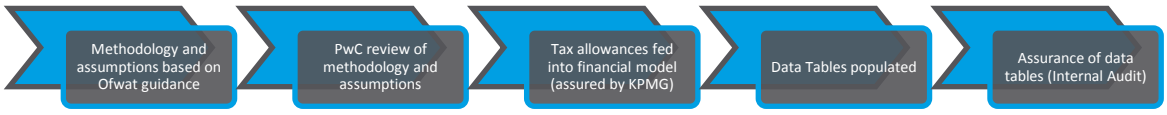
Assurance of data tables has been undertaken by Black & Veatch and Internal Audit dependent upon who undertook the assurance for the original submission and the nature of any changes.

Black & Veatch – *'We checked the following tables [App1, App2, App4, Wr6, Wn2, Wn6, WWS18] which showed material changes, compared with the tables submitted in September 2018. For each table we confirmed that the changes made were consistent with those Ofwat actions which we checked'*

Tax forecast - PWC

Action HD.CA.A8 – *'The company should explain the assurance process it has taken to develop its tax forecasts to demonstrate that amounts proposed for tax take account of customer interests, in particular to clarify the scope of the assurance work that was undertaken and the outcome of that work.'*

Our overall approach to production and assurance of tax allowances for PR19 data tables is set out below.



Our approach to calculating our wholesale tax allowances was based on a balanced view of the best outcome for all stakeholders, including our customers. Our methodology and assumptions for calculating tax allowances took into account the guidance documents published by Ofwat to supplement the PR19 process, namely Ofwat's final PR19 methodology (and its appendix 12) and Deloitte's report to Ofwat (Ofwat PR19 Taxation – 14 March 2017).

We engaged PricewaterhouseCoopers LLP ("PwC") to undertake a review of our judgements, assumptions and methodology to ensure that that our approach was in line with Ofwat's guidance, UK tax law and Hafren Dyfrdwy's tax profile. As part of this work, PwC reviewed Severn Trent Water Limited's most recently submitted corporation tax computation, along with Ofwat's guidance, and held a number of discussions with our tax team to understand the company's tax profile.

In assessing our tax allowances PwC took into consideration:

- Proportionality - the tax expense will represent less than 1% of all customer bills;
- Transparency – Reconciliations between the actual tax charge and Final Determination tax charge will be performed in the Annual Performance Report. Any material outperformance could be subject to third party scrutiny and therefore all judgements must be reasonable.
- Assurance - The tax allowance calculation will not be subjected to third party assurance. Second line assurance will be performed by a non-tax specialist with the overarching principles endorsed by independent third party tax specialists (being PwC).

To provide additional confidence and transparency in response to this action we asked PwC to provide a letter confirming the scope of its review and confirming its conclusions which stated 'to be reasonable for the purposes of the PR19 submission'. This letter is attached.

The tax allowances were fed into our overall PR19 financial model and the outputs were used to populate the data tables, including App29. The data tables and process were independently assured by ST Plc's Internal Audit function.

10.2.3 Board engagement since September

Our Board has led our response to the IAP. Starting with our Board strategy day on 31 January the Board has promoted a positive response to the feedback. They have challenged us to adopt best practice and invite additional challenge through the adoption of specialist assurance.

Through a combination of weekly calls and meetings the Board has been extensively engaged in this revised submission.

More generally the active leadership of the HD Board can be best illustrated by the work they have done in relation to reservoir safety, which is a key challenge we need to address.

- December 2018 – The Board undertook an all-day site visit to Nant-y-Ffrith reservoir which included a site tour and a meeting to better understand the risks and proposed business plan actions.
- January 2019 – At the Board strategy day the reservoir safety risk position was discussed and updated as part of our ERM (corporate risk register) update.
- March 2019 - The Board meeting included a review of the annual Reservoir Inspection Report.

10.2.4 Board statement - response to action

A specific requirement of the IAP feedback was to restate one element of the Board assurance statement as 'The statement is not compliant as it is contained *within the main plan and therefore not a statement made by the Board themselves'*. We have revised the Board assurance statement to specifically include the statement as specified:

- *[our business plan] Can deliver our outcomes, performance commitments and outcome delivery incentives (ODIs) and we will continue to monitor delivery of them through our well established governance approach to ensure that we meet our relevant statutory and licence obligations.*

While the Board Assurance Statement in the September plan included a statement to this effect, the evidence to support this was included in the main plan and not within the Board Assurance Statement. We also recognise the language was a little different.

Importantly, our Board reviewed the assurance that underpinned this statement prior to our original submission as it formed part of the original scope of assurance work. This previous assurance was undertaken by Black & Veatch and Internal Audit and was included in Appendix a8[1] of the original submission.

In our revised plan, the Board Assurance statement reflects a more detailed statement.

10.3 A fair balance between customers and investors

An important feature of Ofwat's test area for Securing Confidence and Assurance includes an assessment of whether there is a fair balance between the interests of customers and investors, including the alignment of incentives. A key part of this assessment relates to how companies have reflected Ofwat's policy statement 'Putting the sector in balance' that was published in 2018.

We strongly believe that a fair balance between customers and investors is essential for enabling trust and confidence amongst our customers (and our wider stakeholders) whilst retaining the attractiveness of the sector to investors.

The feedback on our Plan submission identified that there was insufficient evidence across three areas:

- Gearing benefits – the description was too high level and there was insufficient evidence that we would adopt the default sharing mechanism from the position statement (HDD.CA.A2)
- Dividends – confirmation that we will adopt the expectations from the policy statement about transparency and how we will take account of obligations and commitments to customers for dividend policy and provide update on the steps we are taking (HDD.CA.A3)
- Executive pay – confirm commitment to adopt expectations from policy statement (HDD.CA.A4)

In this chapter we address each of the specific actions.

10.3.1 Gearing

Action HDD.CA.A2

On gearing benefits sharing the company's explanation of its sharing mechanism is too high-level to assure that it provides benefits to customers' equivalent to our default mechanism. It should incorporate our default sharing mechanism from 'Putting the sector in balance: position statement on PR19 business plans' into its published business plan, so that customers will receive bill reductions if gearing in any year is above the 70% threshold.

We are committed to implementing the default gearing outperformance benefit sharing mechanism, articulated in the Back in Balance statement.

At HD we are of the view that high levels of gearing create additional risk that we do not think is appropriate. This is why we have progressively sought to reduce the gearing since acquiring Dee Valley. For example:

- Prior to acquisition Dee Valley was geared at just over 70%;
- Following the creation of HD we have put forward proposals that would bring gearing down to 70% at the start of 2020; and
- Over AMP7 we are projecting that gearing will remain below 60%.

Although we are not projecting gearing to rise above the trigger level defined in the Back in Balance position statement, we recognise the need to be explicit about how we would respond if this situation were occur. We therefore formally commit to adopt the sharing mechanism as described in the Back in Balance statement. This would involve sharing outperformance based on the following equations:

Outperformance adjustment = gearing difference * financing outperformance difference * 50%

Where Gearing difference = Actual gearing – Reference point

Financing outperformance difference = Notional cost of equity – Actual cost of debt

Actual gearing is as reported in the Annual Performance Report

The trigger is set at 70%

The reference point is 65%

The notional gearing is 60%.

10.3.2 Dividends

Action HDD.CA.A3

On dividend policy the company is required to confirm that it is committed to adopt the expectations on dividends for 2020-25 as set out in 'Putting the sector in balance' to include:

- clear Board commitment to publish detail on dividend policies in the APR and to signal changes to stakeholders; and
- commitment to transparency about how the dividend policy in 2020-25 takes account of obligations and commitments to customers for the dividend policy that is applied in 2020-25 and when determining dividends.

Please provide an update on the steps you are taking to fully meet the expectations as set out in our putting the sector in balance position statement.

We confirm that we are committed to adopting the expectations on dividends for 2020-25 as set out in "Putting the Sector in balance". We recognise it is critical to have a dividend policy that demonstrates transparently:

- how the dividends we pay to our shareholders take account of our obligations to our customers and wider stakeholders;
- how dividends relate to our overall performance; and
- how our dividend policy allows us to maintain financial resilience in the long term.

We also confirm our Board's commitment to publish our dividend policy in our Annual Performance Report through 2020-25, how the policy takes account of obligations and commitments to customers, and to explain transparently any change to that policy and the judgements the Board has made in making that change.

The Board also commits to explain in the APR each year how any dividends declared or paid have been determined, with reference to the our dividend policy.

Our dividend policy in 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 explaining the base return and how any outperformance is shared between customers and investors. Investors should also be able to earn a reasonable return on what they contribute so that we can continue to make improvements to our services, consistent with the 4.5% 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 our debt rises to high levels (70%) we will share the financing benefits from this structure with customers. We will use the benefits sharing mechanism described in Ofwat's Back in Balance statement to share any benefits; and
- **dividends will be transparent** - our annual performance report will explain (i) how our dividend policy takes account of obligations and commitments to customers; (ii) any change to that policy and the judgements the Board has made in making that change; and (iii) how any dividends declared or paid have been determined, with reference to the our dividend policy.

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.

It should be noted that unlike Severn Trent, HD dos not have a pension deficit. Instead we have a pension surplus.

10.3.3 Executive pay

On executive pay the company is required to confirm that it is committed to adopt the expectations on performance related pay for 2020-25 as set out in 'Putting the sector in balance' to include:

- providing full details and commitment to publish, including all performance metrics, the executive pay policy for 2020-25;
- visibility and evidence of substantial linkage of executive remuneration to delivery to customers;
- clear explanation of stretching targets and how they will be applied;
- clear explanation of how the policy will be rigorously applied and monitored; and
- commitment to report how changes, including the underlying reasons, are signalled to customers.

Please provide an update on the steps you are taking to fully meet the expectations as set out in our putting the sector in balance position statement.

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.

Hafren Dyfrdwy is committed to being a role model for private companies that deliver public services. We understand that this means leading the way on remuneration as well as delivering sector leading performance on the key operational and financial metrics such as costs and ODIs. We will underpin this by having the best corporate governance practice and transparent remuneration framework which displays the alignment of reward structures throughout the business.

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 performance schemes – the annual bonus – aligns the interests of our executive with those of customers and the long term success of the organisation.

Providing full details and commitment to publish, including all performance metrics, the executive pay policy for 2020-25

We recognise the importance of a credible remuneration framework but it is undisputedly essential given the importance of trust in today's climate. Our bonus scheme must drive the right behaviours and be seen as being in our customers' long term interests.

Our Board and Remuneration Committee have approved two things that we believe will set a new benchmark within the sector:

- We will create a new customer weighted bonus scheme, with less than half of the weighting dependant on profit; and
- Fairness, transparency and alignment must run through our entire bonus scheme from top to bottom of the company.

Each year remuneration of Executive Directors, via the Directors' Remuneration Report, is put to the approval of shareholders at the AGM. In 2018, the DRR was approved by 99.34% of shareholders.

We will continue, as we currently do, to publish full details of our targets, achievements against them and performance narrative in the relevant Directors' Remuneration Report. We are committed to engaging with shareholders regarding any proposed changes to design or performance metrics. These changes would be referenced when we set out the implementation of the Remuneration policy in the year ahead within the 'At a glance' section of the DRR.

Visibility and evidence of substantial linkage of executive remuneration to delivery to customers

We will move the balance of our Annual Bonus Scheme so that the majority of measures are customer focused. 51% will be allocated to customer and environmental based ODI objectives and health and safety performance. 49% will be allocated to profitability measures.

This change is designed to drive an even stronger operational culture within Hafren Dyfrdwy, while also maintaining our commitment to the health and wellbeing of our colleagues which is demonstrated by the health and safety weighting remaining unchanged.

As we close out AMP6 we are committed to putting the customer first and this theme will continue as we move into AMP7.

Grouping the ODIs differently, into three categories of service now, asset health and resilience, enables us to demonstrate focus across the short, medium and long term, and manages the risk that an annual remuneration process can poorly reflect progress in longer term measures.

Retaining the customer complaints element but change the measure from customer written complaints to CMex (Customer Service Measure of experience), in readiness for AMP7. We will review this element in the future with the introduction of DMex (Developer Service Measure of experience).

The feature to which, as a board, we are particularly committed is that our bonus scheme will continue to run through the entire organisation – from the front line to the Executive – on a consistent basis. We are passionate about fairness and as such believe that our values are reinforced by incentivising every employee of Hafren Dyfrdwy in the same manner and rewarding them for achieving the same shared objectives.

Clear explanation of stretching targets and how they will be applied

We have committed to changing the weighting of our Annual Bonus Scheme so that the majority of measures are customer focused. 51% will be allocated to customer and environmental based ODI objectives and health and safety performance. 49% will be allocated to profitability measures. Grouping the ODIs into three categories of service now, asset health and resilience allows us to focus across the short, medium and long term, and to make sure that out-performance in one category is less likely to net out underperformance in the others, ensuring that we take a broad view of performance.

The average bonus payout, for our CEO, as a % of maximum bonus, over the course of AMP6 has been 75%, demonstrating a history of stretching targets and combined with the design changes to our annual bonus scheme raises the bar even higher for executives. Striving hard to achieve our stretching annual bonus targets benefits all employees who participate in Severn Trent's all employee bonus scheme.

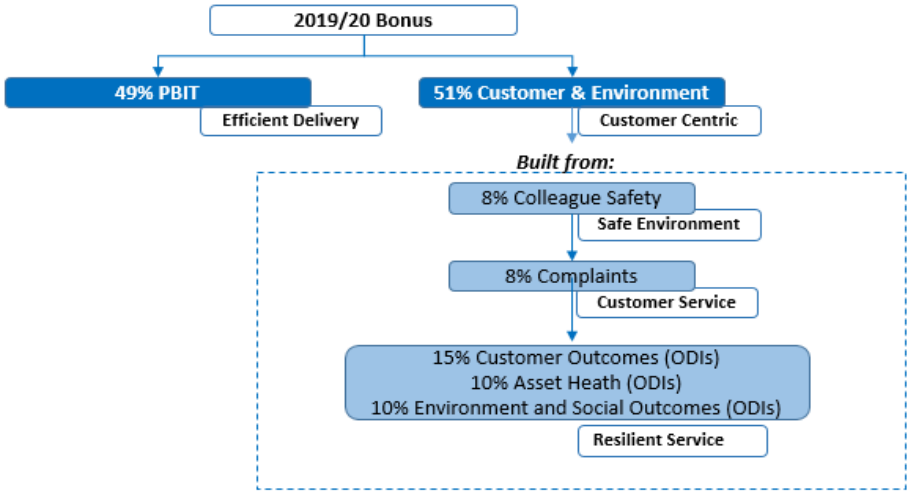
Clear explanation of how the policy will be rigorously applied and monitored

The Remuneration Committee determines, on behalf of the Board, Hafren Dyfrdwy's policy on the remuneration of Executive Directors, other members of the Executive Committee and the Chairman of the Board. The Committee determines the total remuneration packages and contractual terms and conditions for these individuals. The policy framework for remunerating all senior executive managers is consistent with the approach taken for Executive Directors. The Committee also provides oversight of all-employee rewards, for example the bonus scheme, and reviews the cascade and alignment of reward throughout the company. The Committee's terms of reference are reviewed annually, typically in March, and are published on our website. The review currently being undertaken will take into account requirements of the revised Corporate Governance Code.

Commitment to report how changes, including the underlying reasons, are signalled to customers

In line with the spirit of our ongoing commitment to transparency, any design changes to our remuneration policy, long term incentive plan or annual bonus plan will be set out in the relevant Directors' Remuneration Report (DRR). We are conscious that the DRR may be read by employees, customers and/or shareholders, and will continue to do our utmost to display information in an accessible and understandable way as well as ensuring that we are fully compliant with the new Corporate Governance Code for the reporting year 2019/20. The DRR can be easily found on the corporate website, as can our Remuneration policy.

We believe that these features help set a standard for remuneration in the water sector. It promotes greater credibility amongst stakeholders, whilst incentivising the whole organisation to deliver better services for our customers at a lower price.



10.4 Other actions

10.4.1 PR14 PCs action HDD.CA.A5

In line with Ofwat's methodology, we have sought to develop our performance commitments such that they align with the things our customers, stakeholders and shareholders expect from us. We have followed an iterative process that allowed us to build and refine our outcomes and performance commitments (PCs) as we learned more from our customers and from our experiences of delivering outcomes and PCs through AMP6.

We started with the PR14 performance commitments of both Severn Trent and Dee Valley and sought to test and refine them to ensure they were still meaningful and of highest priority for our customers. In doing this we have completed the following.

- Looked for synergies, but also if there are valid reasons for differences (e.g. customer or societal risks).
- Reviewed against ERM significant risks and horizon mapping.
- Sought stakeholder views on regional risks over the long term.
- Reviewed changes to government policy and regulation.
- Aligned the PR14 outcomes to our strategic framework.
- Carried out customer research to further test our customer expectations.

We have sought to retain AMP6 PCs where customers continue to support them or where our AMP6 performance against them suggests that we need to improve.

The tables below set out the AMP6 performance commitments that have been retired. The remaining AMP6 performance commitments transition into either a common or bespoke AMP7 performance commitment. In several cases these retained PCs will be updated to ensure that they are consistent with common definitions.

Table 1: *AMP6 water service performance commitments as per the PR14 final determinations for Severn Trent and Dee Valley that have not been retained for Hafren Dyfrdwy in AMP7*

PC Code	Region	AMP6 PCs	Reason for discontinuance
	Powys (Formerly Severn Trent)	Customer satisfaction with their service (based on a customer survey)	Covered by CMeX and DMeX. Current measure is complex and has limited comparability.
		% of customers who do not pay	Replaced by bespoke measures on voids and affordability.
		Customer value for money – Customers rating our services as good value for money	Covered by CMeX and DMeX.
		Resource efficiency (amount of water we take out of the environment)	Given SDB position is in surplus and that the plan doesn't forecast significant movement in this measure we are retiring it. The future proofing aspect of this measure is in part covered by the new common measure on drought resilience.
		Speed of responses in repairing leaks (% fixed within 24 hours)	This is not a topic raised by customers and would be very challenging in Wales due to the rural nature and infrequency of measurement and valving to enable this to be achieved.

		Restrictions on use	The combination of supply interruptions and drought risk, sufficiently cover this service area.
WE1		Size of our carbon footprint	This did not emerge as a high customer priority and there is overlap with the wellbeing of future generations indicators which we will report progress against.
A3	Wrexham (formerly Dee Valley)	Delivery of the outcomes of the Legacy water treatment works (south west Wrexham) major scheme	Activity will be complete, measure not required.
A4		Delivery of the outcomes of the service reservoir water quality risk management schemes	Activity will be complete, measure not required.
B3		Security of supply index (SOSI)	Not required given that SDB is in surplus and that the plan doesn't forecast significant movement in this measure.
C1		Gross operational greenhouse gas emissions	Measure is too heavily influenced by other companies' performance, therefore, not reflective of our actions.
D1		Customers' perception based on market research	Covered by CMeX.

Table 2: *AMP6 Wastewater service performance commitments as per the PR14 final determinations for Severn Trent that have not been retained for Hafren Dyfrdwy in AMP7*

PC Code	AMP6 PCs	Reason for discontinuance
WD4	Sites with eel protection at intakes	Only 1 site affected in AMP7. This will be monitored through NEP. PC not required for 1 site.
SD1	Size of our carbon footprint	Limited scope due to lack of sludge. Not material enough to warrant PC.
SA2	No. of external sewer flooding incidents	Very few incidents and most are outside of property curtilage.
SA3	Partnership working (measure of joint initiatives on flooding)	Are looking at partnership working but not material enough to warrant PC and also not limited to just flooding initiatives.
SA5	Statutory obligations (section 101a schemes connectable properties)	There are no known applications, if any arise they will be progressed. Not material enough to warrant PC.
SC5	Number of sustainable sewage treatment solutions	This measure is not applicable to HDD – the aim of this PC is to find innovative solutions to reduce treatment works expansion to deal with growth. There is very limited growth forecast in our region and there is only 1 treatment works in our AMP7 plan that has an element of growth factored into the solution and therefore this measure was discontinued for AMP7.
SC7	Overall environmental performance	There were no schemes in Wales. The proposed AMP7 measures provide sufficient coverage of all of our environmental obligations.
SC8	The number of category 4 pollution incidents	Ofwat definition just includes Cat 1-3 incidents. Cat 4 is being withdrawn.