

Accounting Methodology Statement 2019-20





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1: Overview

Each company must produce and publish an accounting methodology statement alongside its Annual Performance Report (APR). The purpose of this statement is to enable Ofwat and other stakeholders to understand the systems, processes and allocation methodologies used to populate the totex and operating cost analysis tables in Parts 2 and 4 of the Dŵr Cymru Cyfyngedig (DCC) 2019/20 APR.

This report has been prepared in accordance with the following Regulatory Accounting Guidelines (RAGs) and Information Notices:

- RAG 1.08: Principles and guidelines for regulatory reporting under the 'new UK GAAP' regime;
- RAG 2.07: Guideline for classification of costs across the price controls;
- RAG 3.11: Guidelines for the format and disclosures for the APR;
- RAG 4.08: Guideline for the table definitions in the APR;
- RAG 5.07: Guideline for transfer pricing
- Information Notice 19/07: Expectation for companies in issuing long term viability statements;
- Information Notice 20/01: Requirements and expectations for ring fenced certificates; and
- Information Notice 20/03: Expectations for monopoly company annual performance reporting 2019/20.

1.1: Company structure

DCC is a 'not-for-profit' company which has been wholly owned by Glas Cymru since 2001. Glas Cymru does not have shareholders, and any financial surpluses are reinvested in the business for the benefit of customers. DCC is the group's principal trading company. Its principal activity is the supply of water and treatment and disposal of wastewater under the instrument of Appointment made by the Secretary of State for Wales under the Water Act 1989.

The group purchased two companies in 2018/19, Welsh Water Organic Energy Ltd and Welsh Water Organic Energy (Cardiff) Ltd. Welsh Water Organic Energy (Cardiff) Ltd operates a waste recycling plant generating energy which is sold to DCC for use at its co-located waste water treatment works in Cardiff. Power is charged at commercially negotiated arm's length prices and therefore adheres to the principles set out in RAG 5.07.

In March 2019 a new group company, Welsh Water Organic Waste Ltd, started trading, offering trade effluent disposal facilities to new business customers through existing DCC assets. Trade effluent charges to this company are levied by DCC at published rates. Other cost recharges follow the principles set out in RAG 5.07.

There are no other associated companies that trade with DCC.

Structure

DCC is split into three reporting areas: Chief Executive Officer, Finance, and Operations which are the responsibility of Executive Directors of the Company. Operations comprises the Water, Wastewater and Retail services, headed by a Managing Director of Water, Wastewater and Retail respectively (none of whom is an Executive Director of the company).

The finance team provides dedicated support to the operational teams and support functions. Monthly management accounts are prepared which highlight variances against budget; the finance department and the budget holder work together to identify reasons for the movement. Following this, at the department's team meeting, cost performance against budget is reviewed.

At year end, the finance team, working with the operational and support teams, extracts income and cost data from SAP and formats this into the regulatory reporting table structures for each area of the business, primarily using Excel spreadsheets. These spreadsheets are consolidated and their outputs are used to populate the APR. The processes used to generate the regulatory reporting allocations are reviewed each year to reflect any organisational and regulatory changes.

There are governance review processes to ensure that all the information within the regulatory financial statements is consistent with the latest regulatory guidance before the financial statements are published. Further details can be found in our Data Assurance Plan which is published at the same time as the APR and can be found at www.dwrcymru.com. There is no change to this process from last year.

1.2: Systems

DCC uses SAP as an integrated financial and business management system. SAP information is either downloaded into spreadsheets or extracted using Business Warehouse. All operating costs are recorded in SAP against an account code and a cost centre and are aligned to regulatory business units and their relevant regulatory cost group, as shown below. Each time a new account or cost centre is created within the corporate finance system, it is linked to the appropriate business unit or cost type with reference to the latest RAGs.

- Power
- Power income/income treated as negative expenditure
- EA service charge
- Bulk supply



- Employment cost
- Hired and bought-in services
- Materials and consumables
- Other direct costs
- Doubtful debts
- General and support costs
- Rates

Further adjustments are made for third party and non-appointed costs following a full analysis of costs and with reference to guidance in the income categorisation table in RAG 4.08.

For the population of the APR a cost centre hierarchy has been created in SAP which is different from the internal management accounting structure (which is based on budget holder accountability). This means that directly coded Water, Wastewater and Retail operational costs can largely be assigned to the appropriate regulatory unit and cost headings. Where costs cannot be directly allocated, allocations are used which are summarised in the following appendices:

- Appendix 2 - Retail: Wholesale cost allocation
- Appendix 3 - Wholesale cost allocation
- Appendix 4 - General and support allocation
- Appendix 5 - Retail: household/non-household split
- Appendix 6 - Retail (household): measured/unmeasured split

In 2014/15 we replaced our legacy billing engine, Customer Accounting System (CAS), with a new billing system (RapidXtra) provided by Echo Managed Services. The RapidXtra system is designed specifically for the water sector and is currently used by a number of UK water companies. We are continuing to improve our debt collection system, Tallyman, which interfaces with RapidXtra. In 2018/19 we upgraded our SAP operational customer platform by introducing C4C, the cloud version of SAP. In 2019/20 we leveraged previous Sitecore upgrades to our website to deliver an improved online interface to customers. In the latter part of this year we delivered system functionality to enable our front-line agents to work from home by upgrading our telephony software.

Power costs include all energy costs (including climate change levy costs). Electricity costs are allocated to assets using DCC's energy management system in SAP, which receives electronic bills (EDI's) from the energy suppliers and, by reference to the Meter Point Administration Number (MPAN), charges the cost to an asset's cost centre. As this is the first year this system was used (replaced ARIES in 2019), extensive checks were carried out by comparing the billed charges for each MPAN with the backing data supplied by the energy supplier.

Where an MPAN provides electricity for more than one price control unit, a percentage split is applied that is specific to the associated MPAN. The percentage split is determined by estimating the electricity cost per price control unit by undertaking site audits. These involve cataloguing all the electrical equipment on site. The running hours and loading of each piece of equipment are estimated/determined to calculate annual electricity consumption and this is allocated to regulatory cost accounting areas. The equipment's electricity use as a proportion of the total site's electricity consumption is used to establish the cost centre splits. The Power costs category also include fuel costs, which are allocated to the cost centres where the asset which consumes the fuel is located. For assets that support more than one price control segment, the costs are allocated based on the most appropriate cost centres based in Ofwat's hierarchy of cost drivers.

We also have SAP work management systems, such as Above Ground Asset (AGA) Water, Mechanical, and Electrical and Instrument (ME&I), Planned Maintenance and Switch (below ground asset maintenance). The systems recognise the asset upon which we are working, its geographical location and the type of work being performed. Based on this information the system charges costs to predetermined revenue or capital cost collectors.

1.3: Structure underlying core customer services activity

The structure is as follows:

- Income collection and billing services are provided by the Retail service (RETL). This part of the business is independent of the Wholesale activities and has its own Managing Director, support staff and a unique SAP company code. Support service costs such as HR, IT and finance are allocated across price controls based on the most appropriate cost driver (as shown in Appendix 4);
- DCC also has outsourced arrangements with local authorities and water companies for billing and collection which are all reported within RETL. The risk of collection is transferred to the local authority/water company and a commission is paid to them to reflect this arrangement; and



- The company does not issue bills addressed to ‘the occupier’. Our policy is to write off debt when it has been established that a debt is not collectable. A debt is regarded as not being collectable when one of the following conditions has been satisfied:
 - the debtor has been declared bankrupt;
 - the debtor cannot be traced;
 - the debtor has died without an estate;
 - all reasonable legal remedies have been exhausted and two collection agencies have failed to recover the debt; or
 - the debt is too small to pursue beyond specified recovery action.

All debt that has gone through the full recovery process listed above is held in a ring-fenced account pending write-off. Write-offs are scheduled as part of a routine procedure. However, initiatives continue to be taken in respect of debt with a low likelihood of recovery to review the probability of collection and debts are currently only written off post completion of these initiatives. Generally when debt is deemed irrecoverable, the debt will have been fully provided for in the bad debt provision. As a result the timing of the write-off has little impact on the overall charge for bad debts in any year – and the level of write-offs throughout the year is therefore not monitored in isolation but as a component of the overall movement in collections when considering the level of bad debt provision required.

- DCC operates an operational call centre which is part of RETL. Calls which require a visit to a customer are passed to schedulers who make the appropriate arrangements for an initial visit.
 - For calls relating to the water network the costs within Retail also include inspectors’ time if after investigation it is found that the fault was not a network issue. For those that did relate to a network issue the costs of the customer liaison team (who call the customer advising that the issue has been resolved) are treated as Retail costs; and
 - For calls relating to the Wastewater network, a team is despatched so that any network issue can be resolved as soon as possible. If, when attending the site, they find that this is not a network issue then the call is aborted and these costs are included as Retail. For those that do relate to a network issue the costs of the customer liaison team (who call the customer advising that the issue has been resolved) are treated as Retail costs;
- DCC has inspectors who attend customer premises in relation to metering billing queries. The costs included in Retail relate to visits made in relation to the following activities resulting from a customer’s request:
 - final meter reading;
 - check meter reading;
 - customer billing meter query; and

- meter-reading work - abortive; determine property supplied by meter and site meeting to show location of meter.

The latter two relate to billing and customer-facing activities hence they are treated as Retail costs;

- Support costs: all of RETL direct costs are allocated to Retail, along with a proportion of support costs which are incurred by DCC. DCC support costs are allocated to Retail based on various costs drivers, as shown in Appendix 4; and
- Other business activities include Ofwat fees, Water UK costs and regulation department costs; 1/9th of these costs has been allocated to Retail in line with the RAG guidance. The split between household and non-household is based on customer numbers.

This is the same approach as for the 2018/19 report year, with no changes made for 2019/20.

1.4: Capitalisation policy

Costs charged to capital follow the company’s accounting policy. This states that capital expenditure includes the following categories of cost:

- Property, plant and equipment;
- Infrastructure assets (i.e. mains and sewers, impounding and pumped raw water storage reservoirs, dams, sludge pipelines and sea outfalls); and
- Other assets (including properties, over ground operational structure and equipment, and fixtures and fittings).

The cost of property, plant and equipment additions includes a provision for a contractual “pain/gain” share. Forecast final expenditure associated with completed, or substantially completed, Capital Alliance-delivered projects is compared to either the business plan or unit cost database-derived value, with significant differences being provided for in accrued “pain” or “gain”-share calculations at half-year and year-end.

For accounting purposes, the Water and Wastewater system is segmented into components representing categories of assets with similar characteristics and useful lives. In accordance with RD 06/02, all leakage monitoring and reporting costs are treated as operating expenditure. The cost of maintaining the level of leakage is also classified as such, unless it falls clearly into other areas e.g. replacement of capital items. The costs of leak detection and repairs which contribute to achieving the economic level of leakage are treated as infrastructure renewals expenditure and are expensed in the income statement.



Additions are recorded at cost, and reflect the purchase price together with any expenditure directly attributable to bringing the asset into use, including directly-attributable internal costs. Costs incurred on development projects are recognised as intangible assets when the relevant recognition criteria are met.

Capitalisation of salaries

The cost of employees working directly on capital projects is calculated using an hourly recharge rate which is reviewed by management annually. Each set of rates is broken down by bands based on average salary and overhead costs.

Individuals can charge time to capital projects either by submitting timesheets or by recording time on handheld devices (“toughbooks”). The planned maintenance and Switch systems (currently being replaced by Field IT) are integrated in SAP and they record labour, materials and bought-in services costs at asset level. Job-types determine the classification of work as operating or capital expenditure using predefined settlement tables held within SAP.

Capitalisation of overheads

DCC’s internal costs incurred in supporting the capital programme are capitalised as overheads using an appropriate recovery rate (normally a percentage of annual salary costs). The percentage recovery rate is generated from a review undertaken to identify costs which demonstrate a clear link to the capital programme. The assumptions and the recovery rate used are reviewed annually by the finance team.

1.5: Additional analyses or adjustments that the company has made to data extracted from systems

Fixed assets overview

Additions

The principal data source for the fixed asset tables is the capital expenditure regulatory reporting database which is extracted from SAP. This information source provides sufficient information to allocate most costs directly to the accounting separation business units.

The regulatory reporting and accounting separation databases hold scheme information analysed by asset type. For the purpose of completing the regulatory accounts, they also identify whether the assets are ‘infrastructure’ or ‘non-infrastructure’ and categorise Retail assets separately.

- Infrastructure assets include the following: underground systems of mains and sewers, impounding and pumped raw storage reservoirs, dams, sludge pipelines and sea outfalls. Some information

about infrastructure assets (general mapping and updating of network records) is also regarded as an infrastructure asset;

- Operational assets include the following: intake works, pumping stations, treatment works, boreholes, operational land, offices, depots, workshops, residential properties directly connected with Water and Sewerage services. Land which is not currently in operational use but is expected to come in to use in the foreseeable future is included, as is plant, machinery and telemetry inherent in the nature of the works. Also included are non-operational plant, non-operational machinery, vehicles, surplus land and all assets not previously listed; and
- Retail operational assets include the following: buildings and offices, fixtures and fittings, IT systems and other operational assets directly involved in providing the Retail service.

New expenditure incurred during the year is added to the database and is analysed as follows: costs are recorded at scheme level and are allocated to business type based on an analysis of the scheme design and target costs. This is the same principle for allocation of capital expenditure to business units that has been used in previous years. The aim is to map expenditure incurred to either a one-to-one relationship, or on a proportional allocation basis as directed in the RAGs.

On the assumption that the Quality, Base, Enhancement and Growth (QBEG) analysis continues to be a regulatory requirement, the asset categories are further extended to allow for those four descriptions of asset purpose. For the purpose of our systems’ data capture, the above translates to an asset classification list of eight-digit codes.

Example: 0946Q50S

The first two digits denote asset type and follow the requirements of the previous June Return Table 32 line item:

- 09 = Sewage treatment works

The third and fourth digit represents business activity areas as shown below:

Code		Description - Water
11	12	Abstraction licence
21	22	Raw water abstraction
31	32	Raw water transport
41	42	Raw water storage
-	52	Water treatment
61	62	Trunk treated distribution
71	72	Local treated distribution
81	82	Management and general



Code	Infra	Description - Waste
15	16	Foul
25	26	Surface water drainage
35	36	Highway drainage
-	46	Sewage treatment and disposal
55	56	Sludge transport
-	66	Sludge treatment
-	76	Liquor treatment
85	86	Sludge disposal
95	96	Management and general

The fifth digit denotes the purpose:

- M = Base/maintenance
- E = Enhanced service level
- N = New development
- G = Growth
- Q = Quality

The sixth to eighth digits denote purpose-type drivers:

- 50S = NEP – Reduction in sanitary parameters.

The database queries use the data contained in the classification code to sort and group the year-end figures to allow grouping by asset type, business activity and QBEG classification as necessary. Some 93% of expenditure in the year was suitable for this classification method. The remaining 7% is for items of IT and management and general costs that cannot be directly allocated to a specific business unit. This expenditure has been proportionally allocated across the business activities using FTE numbers as the cost driver.

The IRE programme is included in the above costs and analysed across price controls accordingly. DCC's (IFRS-based) policy is to expense IRE to the income statement unless there is an enhancement element to the cost; these costs are adjusted out of capital and included within other operating expenditure, renewals expensed in year (infrastructure).

Fixed asset register

The company maintains its fixed asset register in the SAP accounting system. The assets are split by service type using evaluation class. For assets under construction, this is allocated to price controls using the capital expenditure regulatory reporting database. Management and general assets are split using FTE numbers as a cost driver.

The majority of the fixed asset and depreciation data in the APR use the IFRS basis of reporting, adjusted for the reversal of borrowing cost capitalisation (IAS 23) as required by the RAGs.

DCC does not maintain a full current cost fixed asset register. The current cost depreciation reported in table 4G has been calculated by indexing the prior year values and adjusting for additions and disposals.

Asset lives

ChandlerKBS provide an asset life assessment service to DCC. Assessments are carried out at project level based on detailed cost records, and DCWW's accounting policy is followed to assign appropriate asset lives. Whilst undertaking this service, ChandlerKBS maintains a record of each individual assessment. The assessments are then compiled into an overall summary database. The database generates asset life models which can then be used where appropriate.

The following are examples of the project types produced using the database:

	Sample size	Sample value
Water treatment works	38 Projects	£348m
Wastewater treatment works	258 Projects	£390m
Combined sewer overflows and untreated intermittent discharges	225 Projects	£423m
Sludge treatment advanced digestion	5 Projects	£166m
Water ultra violet treatment projects	20 Projects	£16m

ChandlerKBS also produce asset life assessments for several other water and sewerage companies. Using this knowledge and experience, the models are checked and reviewed to ensure that they are consistent across the industry in general.

1.6: Changes to the company's systems year-on-year

Electricity costs are since 2019 allocated to assets via the electricity management system that has been built into SAP, which receives electronic power bills & Metered Electricity Reads from energy providers and, by reference to the Meter Point Administration Number (MPAN), charges the cost to an asset's cost centre via an interface with SAP. The SAP replaced the ARIES system that was previously used to manage electricity bills. Just like the ARIES system, the SAP transactions records imported and based on historical data, generates accruals when actual bills are not received. However on top of this, the SAP system also stores generation & export data, which means that all energy data is now in one place.

To ensure that the reported data was correct for 2019/2020, we used the Excel backing sheets received from the energy supplier to generate the total power consumption for each Meter Point Administration



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Number, to undertake integrity checks to ensure accuracy of the SAP data. Each Water and Wastewater service asset has a unique MPAN allowing the actual power costs to be charged directly to the asset and its associated activity. Where a supply point provides power for more than one price control unit, a percentage split is applied that is specific to the associated MPAN. The percentage split is determined by estimating the power cost per price control unit, by undertaking site audits. This generally involves identifying all of the power users on site, associating them with the price control unit and identifying power rating and average run time.

The planned maintenance and Switch systems is currently being replaced by SAP Work Manager as part of our Field IT project. This will make it easier to capture accurate data and allow mobile colleagues to work more flexibly and view historical data. Over 1000 operational colleagues will use Work Manager to view and record details of work undertaken to maintain assets. New features will include more information about our assets, historical information and the ability to upload photographs.

There have been no other changes to the company's systems.

2: Price control segments

2.1: How the company has applied the principles set out in RAG 2.07 and RAG 4.08

RAG 4.08 details the guidelines for the table definitions in the APR.

RAG 2.07 covers the principles and cost drivers to be used to attribute and allocate capital and operating costs in the APR between:

- Appointed and non-appointed activities within the appointee (APR Parts 1 and 2);
- Price control units (APR Part 2);
- Household and non-household Retail services (APR Parts 2 and 4); and
- Services for measured and unmeasured customers (APR Parts 2 and 4).

We have applied the principles and guidance as set out in these RAGs to prepare the APR.

RAG 2.07 states that the cost allocation principles need to comply with the following general principles:

- **Transparency:** the cost attribution and allocation methods applied to allocate costs within the APR need to be transparent. The costs and revenues apportioned to each service and business unit should be clearly identifiable, with clear explanation of cost and revenue drivers:
 - As part of DCC's overall accounting separation cost centre group, alternative cost centre structures have been created in SAP in a format that facilitates the completion of the APR data tables. These contain specific cost centre groups for the business activities. A number of 'work

management systems' result in greater accuracy of cost allocation and reduced reliance on manual allocations across activities. Asset-related cost centres and most operational support staff can be attributed directly to a business activity. Non-operational staff costs are allocated directly to activities where possible. Where this has not been possible cost drivers have been used to apportion departmental costs in line with Ofwat's hierarchy of cost drivers.

- Each business area prepares its costs in the accounting separation format and forwards to the Regulatory Accountant for consolidation. The consolidated spreadsheet details the costs for each business area which can be traced back to SAP. The costs drivers used are shown in the following appendices:
 - Retail: Wholesale cost allocation *Appendix 2*
 - Wholesale cost allocation *Appendix 3*
 - General and support allocation *Appendix 4*
 - Retail: household/non-household split *Appendix 5*
 - Retail (household): measured/unmeasured split *Appendix 6*

Transparency is provided by the production and publication of this methodology statement.

- **Causality:** cost causality requires that costs (and revenues) are allocated to those activities and services that cause the cost (or revenue) to be incurred. This requires that the attribution of costs and revenues to activities and services should be performed at as granular a level as possible.
 - In respect of costs that are directly attributable to a business activity, costs are allocated to these activities; and
 - Where any costs are not directly attributable, the most appropriate cost drivers are used relating to that specific cost.
- **Non-discrimination:** the attribution of costs and revenues should not favour any business unit within the regulated company and it should be possible to demonstrate that internal transfer charges are consistent with the prices charged to external third parties.
 - Transport activities are recorded in a standalone SAP company code where costs are recharged to price control units using predetermined rates for the assets based on asset value deterioration and maintenance costs. We do not have any other internal transfer charges. Any general and support costs that are allocated over price control units are based on cost drivers shown in Appendix 4;
 - Rental charges for the use of our operational appointed assets are calculated on an arms length basis in line with RAG 5.07:
 - Power from other group companies is purchased at market value in line with RAG 5.07; and



- Cost allocation is made on an objective basis without any intention of discrimination.
 - **No cross-subsidy between price controls:** following the introduction of separate binding price controls at the 2014 price review, companies cannot transfer costs between the price controls in setting prices and preparing the APR. The revenue allowance for each price control is determined by the costs specific to that particular price control.
 - There is a separate SAP company code for Retail activities. This means that the majority of Retail costs can be directly attributed;
 - Head office costs such as human resources, IT and finance activities require allocation across all business areas. The allocation methods used are shown in Appendix 4;
 - All costs allocated such as power are based on cost and not on market price; and
 - For water used at sewage works, the appropriate tariff has been used by Water to recharge to Wastewater.
 - **Objectivity:** the cost and revenue allocation criteria need to be objective and should not intend to benefit any price control unit or appointed/non-appointed business. Cost allocation must be fair, reasonable and consistent.
 - The allocation methods that we have used are not intended to benefit any business unit or service and have been applied objectively.
 - **Consistency:** costs should be allocated consistently from year to year to ensure meaningful comparison of information across the sector and over time; regulatory incentives from comparative analysis apply fairly across companies and enable monitoring of companies' performance against price control assumptions. Changes to the attribution methodology from year to year should be clearly justified and documented in the Accounting Methodology Statement.
 - We aim to be as consistent as possible. However, if we identify an opportunity to use another cost driver that is more appropriate then we will use this and explain our rationale for the change in this Methodology Statement; and
 - Any changes in treatment of costs included in the RAGs will affect the consistency of our treatment of costs. These will also be disclosed in this Methodology Statement.
 - **Principal use:** where possible, capital expenditure and associated depreciation should be directly attributed to one of the price control units. Where this is not possible as the asset is used by more than one service, it should be reported in the service of principal use with recharges made to the other services that use the asset reflecting the proportion of the asset used by the other services.
 - Assets that are used by more than one service such as IT costs are attributed to the service of principal use. Recharges made to the other services are based on depreciation.
- ## 2.2: Cost drivers used for allocating costs between price controls
- Where costs relate explicitly to a specific business unit, the expenditure has been coded directly to the business unit that consumed the good or the service. Where direct coding is not possible, an appropriate allocation has been made using specific cost drivers;
 - The Retail/Wholesale cost allocation table (Appendix 2) provides an explanation of how operating costs have been allocated to Retail for each line of the table;
 - Wholesale cost allocation is included in Appendix 3;
 - General and support costs allocation is included in Appendix 4; and
 - The Retail household/non-household table (Appendix 5) provides detail of cost drivers used to allocate costs.
- ## Why these allocations are considered appropriate
- We consider that the allocations are appropriate as, in most cases, we have used the cost drivers mentioned in the RAGs: in certain cases other costs drivers have been used, i.e. where we believe that these are more appropriate;
 - A high proportion of employment costs is allocated directly to business units, however some costs are allocated using assessment cycles. In the majority of cases these are cycled to the same business unit, however there is a small amount that is allocated to other business activities. These cost assessment cycles are monitored on a regular basis, and a thorough review takes place every six months;
 - We have discussed the RAGs with the business to ensure that we are adhering to the guidance with regard to network customer enquiries and complaints. For the split between household and non-household we have used job types;
 - We have confirmed that the customer numbers that we are using in the household/non-household split is in line with the definition set out in the RAGs;
 - Where management judgement has been used we have examined the rationale to satisfy ourselves that it is reasonable; and
 - In allocating the bad debt charge (households 97.1%: non households 2.9%) we have used the customer specific aged debt profile and the bad debt write-offs. This approach is in line with previous years.



How the company's management are satisfied that they are reasonable

- Most cost drivers are applied on a consistent basis, however where there has been a change this is discussed with the relevant department to ensure that it is reasonable. Any changes are disclosed in the Methodology Statement.
- Managers are rewarded on their performance and this includes financial performance. Monthly reports are produced by the finance team which they and the budget manager examine closely to highlight any cost variances and to identify any costs that should not be included in that area. This will include extraneous cost assessment cycles. Any costs that should not be included within a particular area will be transferred out. Therefore, due to this rigorous system, management is satisfied that the costs are being reported in the correct area.

Assurance process

All data reported in the APR is subject to a structured three-tier assurance process:

- In the first line of assurance management has accountability for identifying risks and managing these by developing and maintaining sound processes, systems and controls (in the normal course of operations);
- In the second line of assurance the Regulation and Finance teams have accountability for providing the framework and governance for regulatory reporting; and
- The third line of assurance provides independent audit and assurance activity through our Business Assurance team, who both review the assurance framework and provide risk based assurance on individual elements. The information contained within this document is also reviewed by our independent external auditor or the Technical Auditor.

The auditors' findings are reported to the Dŵr Cymru Executive team, the Audit Committee and the Board of Directors, each of which reviews and approves documents prior to their publication.

2.3: Changes in the methodology compared to previous year

We have changed the cost drivers or cost treatment for the following costs:

Other operational expenditure: we have used revenue to split some of the IT costs that relate to company-wide activities that management feel is a more appropriate cost driver. The impact of the change compared to last year is not material.

Network costs: the household:non-household split has been changed for water costs to include customer numbers in line with other costs incurred by Retail from Water Services. The impact of the change compared to last year is not material.

There have been no other changes.

2.4: Significant changes in costs at price control level compared to previous year

Totex analysis - Wholesale Water and Wastewater (Table 2B)

Totex (including cash items) for Wholesale activities is £7m (1%) higher than last year; operating expenditure is £12m higher with pension deficit recovery payments also higher by £5m. This is offset in part by lower capital expenditure of £3m and increase in contributions of £6m.

Wholesale Water: Totex including cash items is £8m (2%) lower than last year; £7m relates to an increase in Water Resources with a reduction in Water Network+ of £15m. The decrease relates to lower capex spend of £14m and increased contribution of £2m offset by increases in opex (£5m) and pension deficit recovery payments (£3m).

Wholesale Wastewater: Totex including cash items is £16m (4%) higher than last year; £28m relates to an increase in Wastewater+ and £12m reduction in Sludge. Opex costs is £7m, capex £11m and pension deficit contribution £2m higher than last year which is offset in part by lower contribution of £4m.

Movements and explanations are shown in the tables overleaf.



Changes compared to last year: Wholesale water

(For further details see Appendix 1)

	Movements (£m)			Movements (%)		
	Water resources	Wholesale water network+	Total	Water resources	Wholesale water network+	Total
	£m	£m	£m	%	%	%
Operating expenditure						
	1.6	(0.6)	1.0	31%	(3%)	3%
Power	As part of our continuous improvements we reviewed the pumping stations in water resources and water transport which has resulted in some sites previously included as network+ being reported as water resources in this report year; power movement between water resources and Network+ amounts to £1.1m (for further detail see section 2.5). During the year increases in power relating to consumption and price increases are offset by lower adverse weather costs; £1.8m atypical costs included in 2018/19 (£1.3m Water Treatment and £0.5m Treated Water Distribution).					
Income treated as negative expenditure	(0.9)	(0.2)	(1.2)	27%	7%	18%
	The increase in water resource reflects an increase in hydro income following a wetter year than last year.					
Abstraction charges/discharge consents	0.4	-	0.4	5%	(10%)	5%
	No material change compared to last year.					
Bulk supply	-	-	-	-	-	-
	No material change in the year					
	8.2	0.8	9.0	86%	2%	15%
Other operating expenditure – renewals expensed in year (infra)	Water resource movements relate to increased work as a result of the ‘Measures in the interest of safety’ (MITIOS) schemes being carried out in the year which is a programme for making our reservoirs safe as well as some large schemes related to a discontinuance (£4m) and tower rehabilitation schemes (£3m).					
	(0.5)	(6.5)	(7.0)	(7%)	(6%)	(7%)
Other operating expenditure – excluding renewals	Water resource has decreased which mainly relates to lower employment costs and bought in services as 2018/19 included costs relating to the summer drought. The decrease in Network+ relates to the movement in adverse weather costs of £12m; 2018/19 adverse weather costs of £14m offset by adverse weather costs of £2.1m and Covid-19 costs of £0.3m (included in atypical costs Table 4J Line 25). This is offset by provision for reorganisation of £3.9m; £0.2 water resources and £3.7m network+					
Local authority and Cumulo rates	-	0.3	0.3	2%	2%	2%
	Relates to Cumulo inflationary cost increase of 5% offset by rates refunds.					
Total operating expenditure exc third party services	8.7	(6.2)	2.5	31%	(3%)	1%
	1.5	0.5	2.0	39%	26%	34%
Third party services	Water resource increase relate to non potable increase of £1m; £0.8m relate to bulk supplies relating to pricing dispute, £0.1m power and £0.1m general and support. In addition, renewals expensed in the year increased by £0.5m relating to our s20 EA agreements. Network+ increase relates to old rechargeable invoices that have been impaired as they are deemed not recoverable					
Total operating expenditure	10.2	(5.7)	4.5	32%	(3%)	2%



Changes compared to last year: Wholesale water

(For further details see Appendix 1)

	Water resources	Wholesale water network+	Total		Water resources	Wholesale water network+	Total
	£m	£m	£m		%	%	%
Capital expenditure							
Maintaining long-term capability of assets - infra	(1.2)	(0.7)	(1.9)		(51%)	(5%)	(10%)
	The decrease in water resources expenditure relates to less infrastructure renewal expenditure being classed as capital expenditure and Network+ decrease reflects reduction in treated water distribution costs due to lower zonal studies.						
Maintaining long-term capability of assets – non-infra	0.9	2.7	3.6		19%	4%	5%
	Water resources increase relate mainly to the impact of changes to water pumps categorisation. Network+ increase of £2.7m is mainly due to a scheme at Bewdley Bank SRV of £5.5m offset by scheme cost reductions compared to previous year at Portis WTW (£0.5m), Red Cow SRV (£0.6m), CML Loggers (£0.9m). and a reduction in our transport costs of £0.7m.						
Other capital expenditure - infra	3.4	(5.7)	(2.3)		26%	(28%)	(7%)
	The increase in water resources relates mainly to two dam safety schemes which were re-categorised as enhancement; Ynysfyo Reservoir £1.3m and Lower Carno Reservoir £2.1m as a result of additional work. Network+ decrease relates mainly to treated water distribution ; Hereford City Growth scheme cost reduction from 2019 of £4.4m and further reductions in our Acceptability of Supply work on trunk mains in Porth (£2.6m) and Maerdy (£2.4m). These decreases are offset with the early start schemes amounting to £2.5m .						
Other capital expenditure – non-infra	(6.1)	(5.8)	(11.8)		(37%)	(47%)	(41%)
	The decrease in water resources relates mainly to Prioress Mill Habitat intake screen costs to comply with new environmental legislation, which is £5m lower last year. The remaining differences relates to several smaller fish screen schemes that have less expenditure than in previous years. The decrease in Network+ relate to lower costs in water treatment as majority of spend to upgrade these works were incurred in previous years; Tynywaun WTW (£1.1m) and Bryn Cowlyd WTW (£3.4m). In addition the SEMD programme costs is lower than last year by £1.1m..						
Infrastructure renewals reinforcement	-	(0.7)	(0.7)		-	(74%)	(74%)
	The decrease is an indicator of the potentially volatile nature of this work, as this type of work is intermittent.						
Total gross capital expenditure excluding third party services	(3.0)	(10.2)	(13.2)		(8%)	(9%)	(9%)
Third party services	(0.8)	0.2	(0.7)		(22%)	34%	(15%)
	The cost movements relate mainly to the s20 operating agreements.						
Total gross expenditure	(3.8)	(10.1)	(13.9)		(9%)	(9%)	(9%)
Grants and contributions	(0.4)	2.2	1.8		(12%)	19%	12%
	The decrease in Water Resources relates to income received from the NRW relating to work carried out on impounding reservoirs under the s20 operating agreement. The increase in Network+ relates mainly to our Requisition and Rechargeable programme where there has been an increase of income received from schemes compared with last year.						
Totex	6.9	(18.0)	(11.1)		10%	(6%)	(3%)
Pension deficit recovery payments	0.2	2.6	2.7		79%	79%	79%
	Additional pension deficit recovery payments were made during 2019/20.						
Totex including cash items	7.0	(15.4)	(8.4)		10%	(5%)	(2%)



Changes compared to last year: Wholesale wastewater

(For further details see Appendix 1)

	Movements (£m)			Movements (%)		
	Wastewater network+	Sludge	Total	Wastewater network+	Sludge	Total
	£m	£m	£m	%	%	%
Operating expenditure						
Power	3.6	0.3	3.9	14%	19%	14%
	The increase relates to price and consumption increase due to severe weather in the early part of the year which is offset in part by lower atypical costs in Network + compared to last year of £400k.					
Income treated as negative expenditure	(1.3)	(1.4)	(2.7)	197%	58%	88%
	Network+ increase relates to increase in Gas to Grid as production resumed in the year. The increase in sludge relates to AAD operation and new site commissioned in North Wales.					
Abstraction charges/discharge consents	(0.2)	-	(0.2)	(4%)	-	(4%)
	No material change from last year.					
Other operating expenditure – renewals expensed in year (infra)	4.7	-	4.7	16%	-	16%
	The increase in the year in network+ reflects increase in reactive maintenance schemes of £2.6m together with some large schemes such as Cwmgwrach Sewer rehabilitation scheme (£1.1m) and Afan Catchment scheme (£1.5m)					
Other operating expenditure – excluding renewals	1.9	(0.9)	1.0	3%	(5%)	1%
	Network+ increase relates mainly to the restructuring provision of £3.4m offset in part by reduction in hired and bought in services of £1.4m reflecting our costs efficiency drive. Sludge reduction relates to North Wales AAD site solids destruction reducing sludge volumes to land, together with general sludge optimisation.					
Local authority and Cumulo rates	(0.4)	-	(0.4)	(6%)	13%	(5%)
	No material change from last year.					
Total operating expenditure excluding third party services	8.3	(2.0)	6.3	7%	(10%)	4%
Third party services	1.0	-	1.0	150%	-	150%
	This cost relates to impairment of rechargeable invoices of £1.6m, that is believed no longer to be recoverable offset by lower rechargeable costs.					
Total operating expenditure	9.2	(2.0)	7.2	8%	(10%)	5%



Changes compared to last year: Wholesale wastewater

(For further details see Appendix 1)

	Movements (£m)			Movements (%)		
	Wastewater network+	Sludge	Total	Wastewater network+	Sludge	Total
Capital expenditure	£m	£m	£m	%	%	%
Maintaining long term capability of assets - infra	(1.1)	-	(1.1)	(9%)	-	(9%)
	The decrease in wastewater network+ can be attributed to two schemes that have lower costs in the year, Llangennech Rising main (£0.4m) and Cardiff Bay Catchment LG Tanks (£1.7m) offset by an increase in expenditure in Nant Talwg Rising main of £1.1m.					
Maintaining long term capability of assets – non-infra	(7.3)	(11.0)	(18.3)	(9%)	(21%)	(13%)
	The decrease in Wastewater Network + mainly relates to Sewage Treatment with reduction in some large schemes; Kinmel Bay WWTW for new inlet works (£0.9m), Reynoldston WWTW (£1.2m), Llanfoist WWTW (£2.9m), Hirwaun WWTW costs for new process (£1.3m), and Swansea Bay Inlet Screens (£1.4m). The decrease in expenditure for sludge mainly relates to the reduction in the North Wales sludge strategy scheme principally at Five Fords where there was a decrease in expenditure of £12m as the scheme come to an end.					
Other capital expenditure - infra	1.5	-	1.5	4%	-	4%
	Network+ increase relates to sewage collection and reflects work incurred to reduce the number of spills to river courses					
Other capital expenditure – non-infra	27.1	0.8	27.9	92%	20%	83%
	Increase in Network+ compared to the previous year relates to sewage collection of two schemes Pwll SPS (£3.6m) and Weycock Cross SPS (£1m) . The remainder of the increase relates to Sewage treatment schemes including Llanelli WWTW PFET £6.1m, Gowerton WWTW PFET £0.8m, Llety Brongu £5.5m, NEP Flow 3 scheme £0.6m, Raglan WWTW £1.3m, Brynmawr WWTW £1.7m, Ruthin WWW £3.3m, Dyserth WWTW £2.9m and Eglwysbach £0.3m.					
Infrastructure renewals reinforcement	0.5	-	0.5	34%	-	34%
	The reduction reflects the volatile nature of this work, as this type of work is intermittent with higher schemes in the year					
Total gross capital expenditure excluding third party services	20.8	(10.2)	10.6	13%	(18%)	5%
Third party services	-	-	-	7%	-	7%
	No material change from last year					
Total gross expenditure	20.8	(10.2)	10.6	13%	(18%)	5%
Grants and contributions	4.1	-	4.1	48%	-	48%
	The increase in income from the previous year is mainly due to some new large requisition schemes such as East Bonvilston (£1m), Sainsbury Surface Water (£1.7m), Coed Ely (£1.5m) and Churchlands £0.6m.					
Totex	25.9	(12.2)	13.7	9%	(16%)	4%
Pension deficit recovery payments	1.7	0.3	2.0	79%	79%	79%
	The pension deficit was paid in full during the year					
Totex including cash items	27.6	(11.8)	15.8	10%	(15%)	4%



Changes compared to last year: Operating cost analysis - Retail (Table 2C)

Total operating costs for Retail activities are £3.6m (6%) higher than last year, all of which relate to household

Operating expenditure	Movements (£m)			Movements (%)		
	Household £m	Non-household £m	Total £m	Household %	Non-household %	Total %
Customer services	(0.9)	(0.6)	(1.5)	(6%)	(25%)	(9%)
	Total customer services costs decreased by £1.5m predominantly driven by a rephasing of hiring requirements, reduced demand for front line agents. The driver of this reduced demand, circa 10% of telephone and white mail contacts, was the deployment of automation including a chat bot and increased online self-serve functionality.					
Debt management	(1.2)	0.1	(1.2)	(18%)	11%	(16%)
	Debt Management costs continue to fall with 19/20 costs being 16% lower than in 18/19 (18/19 recorded a 10% reduction on 17/18). The reduction can be attributed to the restructuring of our vulnerable customer support function. The activity within this area is now classed wholly as customer service costs based upon the activity undertaken to support these customers. This removes £0.3m of debt management costs, the remaining £0.9m reduction is due to a reduction in third party agreement costs as customers migrate to meters and billing is conducted in house.					
Doubtful debts	1.9	(0.2)	1.7	10%	(25%)	8%
	Total doubtful debt costs have increased by 8% as a result of an additional £3.7m doubtful debt provision made as a consequence of the Covid 19 outbreak. Excluding this adjustment, underlying collections performance improvements resulted in a total charge of £19m (9% reduction).					
Meter reading	0.1	0.1	0.2	7%	11%	8%
	The proportion of metered customers increased in 19/20 to 50% (from 49% in 18/19), with costs increasing by 8% in the same period to support this. The cost increases arise from a 55% increase in customer meter query jobs, for example checking high meter readings for burst/leaks. Future planned innovations in this area and the roll out of new meter reading technology in 20/21 will help manage further cost increases of this nature.					
Services to developers	-	0.1	0.1	-	52%	52%
	No material increase from last year.					
Other operating expenditure	3.1	0.3	3.3	35%	36%	35%
	Excluding the £2.4m one off cost relating to AMP7 restructuring provision, other operating expenditure has increased by £0.9m which is wholly attributed to an increase in Business Information Service (BIS) costs, specially related to software (SAAS) and other projects which will help deliver future cost savings.					
Total operating expenditure	3.0	(0.3)	2.7	6%	(6%)	5%
Depreciation - tangible	(0.3)	-	(0.3)	(51%)	(10%)	(49%)
	We have had several pre-AMP5 investments that have run off.					
Depreciation – intangible	1.1	0.1	1.2	22%	15%	22%
	We have had a number of AMP 6 assets start to incur depreciation in the year; £1.7m increase in AMP6 depreciation, offset by £0.5m reduction in pre-AMP 5 depreciation.					
Total operating costs	3.9	(0.2)	3.6	7%	(4%)	6%
Debt written off	(4.2)	0.4	(3.9)	(18%)	40%	(15%)
	The HH/NH write-off split has moved by 2%, from 96%/4% to 94%/6%. The allocation of write off between HH and NHH is based upon actual write-offs per internal data records.					



2.5: Significant movement in a particular cost type between price control segments

As part of our continuous improvement we have reviewed in detail the assets included in water resources intakes and source pumping station and raw water transport stations which has resulted in improved allocations this year. Following this review the costs movements from network+ to water resources were: power £1.129m, power income (£0.013), employment costs £0.001 and capex £0.885 m.

There have been no other movements of cost types between price control segments

2.6: Percentage split of power costs and other operating expenditure

- The percentage allocation split of power costs between directly coded and indirectly coded (allocated based on consumption) is as follows:

Power	Water Resources	Water network	Wastewater network	Sludge
Directly coded	78%	57%	60%	45%
Indirectly coded	22%	43%	40%	55%
	100%	100%	100%	100%
Savings from power generation	-	-	-	100%

The percentage allocation split of other operating expenditure between directly and indirectly coded excluding renewals expensed in the year is as follows:

Other operating expenditure - excluding renewals	Water Resources	Water network	Wastewater network	Sludge	Retail
Directly coded	63%	62%	63%	70%	69%
Indirectly coded	37%	38%	37%	30%	31%
	100%	100%	100%	100%	100%

The allocation split of other operating expenditure after including renewals expenditure in year (infrastructure) is as follows:

Other operating expenditure - including renewals	Water Resources	Water network	Wastewater network	Sludge	Retail
Directly coded	90%	76%	77%	70%	61%
Indirectly coded	10%	24%	23%	30%	31%
	100%	100%	100%	100%	100%

2.7: Disaggregation of power costs when consumed at sites with more than one price control segment.

This is covered in section 1.2 above

2.8: Management and general costs split across price control segments

Capital expenditure: Management and general costs for those that cannot be directly allocated are allocated across price control segments using FTE as the cost driver. The cost splits are as follows:

Capital expenditure - management and general	Water Resources	Water network+	Wastewater network+	Sludge	Retail	Total	% split
Allocated by:	£m	£m	£m	£m	£m	£m	%
FTE	1.9	16.7	10.5	3.3	0.8	33.2	81%
Direct	-	-	-	-	7.8	7.8	19%
Total	1.1	16.7	10.5	3.3	8.6	41.0	100%

Capital expenditure - management and general	Water Resources	Water network+	Wastewater network+	Sludge	Retail	Total
Split:						
FTE	6%	50%	32%	10%	2%	100%
Direct	-	-	-	-	100%	100%
Total	3%	41%	26%	8%	21%	100%

Operating expenditure: Management and general costs (including other business activities) for those that cannot be directly allocated are allocated across price control segments using cost drivers as reported in Appendix 4.



Operating expenditure- General and support and other business activity costs	Water Resources	Water network+	Wastewater network+	Sludge	Retail	Non-appointed	Total	% split
Allocated by:	£m	£m	£m	£m	£m	£m	£m	%
Allocated using cost drivers ¹	1.3	20.4	15.3	3.6	10.0	2.2	52.8	83%
Directly allocated	1.3	0.8	3.8	1.0	-	0.9	7.8	12%
Other Business Activities	0.4	1.1	0.7	0.7	0.4	0.1	3.4	5%
total	3.0	22.3	19.9	5.3	10.4	3.2	64.0	100%

¹ Cost drivers used are shown in Appendix 4

	Water Resources	Water network+	Wastewater network+	Sludge	Retail	Non-appointed	Total
Split:							
Allocated using cost drivers	2%	39%	29%	7%	19%	4%	100%
Directly allocated	17%	10%	49%	13%	-	11%	100%
Other Business Activities	11%	33%	22%	22%	11%	2%	100%
	5%	35%	31%	8%	16%	5%	100%

2.9: Planned improvements for future years

Planned improvements for future years (Retail)

In 2019/20 the following capabilities were delivered within the operation, which resulted in, improved customer service offering and a reduction in underlying costs:

- Project Connect – Phase 1, upgraded our telephony system, enabling us to progress our 'single view of the customer' for front line agents, improving the handling of inbound contacts.
- Automation of online transactions, which removed manual handling of tasks, including as direct debit set up. Delivering significant efficiencies to the processing of these transactions.
- Utilising RPA (Robotic Process Automation) technology we have automated a large volume of back office manual processes, reducing the cost of processing within customer services.

- Implemented an ideas portal to drive innovative ideas from across the business to help improve customer service processes, the wellbeing and engagement of colleagues and identify opportunities to reduce costs.
- Further rolled out a formal QA Framework that has helped drive down complaints, to the lowest rate on record and improve customer satisfaction rates.
- Launched our new My Account, providing greater levels of functionality around online billing to a selected group of customers (in BETA testing phase).
- Rolled out an online knowledge base tool of business definitions, processes and policies, which provides a single source of the truth for our front line teams. Reducing repeat contacts and complaints.
- Implemented a digital debt solution that has increased our debt collection efficiency within our early arrears teams
- In response to the Covid 19 crisis, in Q4 of 19/20 we mobilised home working for over 300 colleagues, enabling our front line agents to serve customers with minor impact to service.

In 2020/21 we will focus on re-establishing a BAU operation following the outbreak of Covid 19, whilst continuing to deliver our new "My Account" to our entire customer base (currently rolled out to selected customers in BETA form as part of testing), to support customers who wish to a self-serve their account online at their convenience.

Planned improvements for future years (Wholesale)

Planned improvements for Wholesale are:

- Improved site optimisation by embedding 'lean' ways of working and best practice to focus on assets, chemicals, energy and reactive efficiencies;
- Replacement of legacy IT software and hardware with more appropriate intuitive solutions, improving the user experience and supporting smarter ways of working to enhance productivity;
- Continued collaboration and alliance with Morrison's Utility Services to operate, maintain and upgrade our water networks in the most efficient manner;
- Implementation of Network Optimisation control systems to harness real time energy management and optimisation of pump operations for water distribution networks;
- Continued focus on minimising the amount of energy used to deliver compliance and customer service objectives, whilst increasing levels of self-generated energy wherever feasible and economic to do so;
- Continued enhancement of an asset-specific, risk-based maintenance strategy to improve performance, reducing costs by moving from a reactive way of working by increasing levels of preventative maintenance plus a more considered approach to strategic spares availability;



- Retendering of third party contracts where applicable to ensure access to the latest technologies and working practices at competitive rates;
- Continued advancements in the latest “SMART” operational technology and predictive data analytics to improve controls and preventative modelling to minimise incidents; and
- Further roll out and training on use of smart office tools, such as MS teams to enable the organisation to support significant increase in home working, not just for the period of the Covid-19 pandemic but to reduce operating costs of offices and travel expenses, fuel etc.

2.10: Principal use rules applied

Principal use applies where an asset is used by more than one service: it should be reported in the service of principal use with recharges made to other services that use the asset, reflecting the proportion of usage by those other services. In 2019/20 have applied the principal use rule as follows:

- £15.6m of capex spend in the year has been reported in the service of principal use and relates to IT and other ‘management and general’ items.
- Recharges made to the other services are reported in Table 2A Segmental income statement. This recharge is based on the depreciation on these assets with no financing adjustment. The amount recharged in the year amounts to £6.9m (2019: £4.9m).
- The recharges made to other services use FTE numbers as the cost driver as the assets are “management and general” in nature. The split between household and non-household has been based on customer numbers; and
- For Tables 2B (Totex analysis Wholesale), 2C (Operating cost Retail), 4D (Wholesale totex Water) and 4E (Wholesale totex Wastewater) assets are included in the business area where they are being used, i.e. not on a principal use basis. The reason for this treatment is to reflect the PR14 submission. It would be difficult to compare actual to Final Determination costs on a principal use basis. In addition, RAG 2.07 states that the principal use method is not required in Part 4 of the APR.

2.11: Recharges to non-appointed activities

Costs relating to tankered Wastewater, property searches and restaurant and visitor centres are allocated directly to non-appointed activities with no recharges made for these costs. Tankered Wastewater costs are allocated to non-appointed activities using the Mogden formula.

3: Wholesale upstream services

3.1: Disaggregation of operating costs across upstream services

This is detailed in Appendix 1.

3.2: Disaggregation of power costs across upstream services

This is covered in section 1.2 above.

3.3: Bulk supply imports

Bulk supply import costs of £1m have been allocated across the regulatory units using the average cost of the exporting company (as reported in their APR).

3.4: Derivation of quantities used in unit cost data

Water Resources - abstraction licenses

Licensed volume available

Data is taken as a summation of the annual licenced volume (MI) per abstraction licence provided by Natural Resources Wales (NRW) and the Environment Agency in their annual abstraction licence charging sheet. For APR 2019/20 we are reporting a total annual licensed volume available of 1,253,923.46MI (2018/19 of 1,682,460.83 MI). The difference related to a discrepancy in the annual volumes stated for two of our abstraction licences which are:

Licence No.	Licence name	Licensed Volume (MI)	NRW Invoiced volume (MI)	Discrepancy (MI)
20/56/72/0019	Lower Lodge	13,124.98	132,745.97	119,620.99
20/56/72/0024	Blackbird stream	34,098.41	340,984.09	306,885.68

The invoices were also incorrect in 2018/19 and the value should have been 1,255,954.16 MI not 1,682,460.83 MI as reported.

The ‘like for like’ comparison now shows that the reported annual licence volume for 2019/20 is therefore 2,030.70 MI less than the restated volume for 2018/19, equivalent to a 0.1% change. This difference is a result of our revoking five abstraction licences during the reporting year 2019/20, these are listed below.

Licence No.	Licence Name	Licensed volume (MI)	Note
20/56/31/0055	Tynywern Farm	282.85	revoked
20/56/33/0004	Ffynon Gisfaen	1,400.00	revoked
20/56/35/0007	Cwmonneu	16.00	revoked
20/56/36/0020	Crickhowell	182.52	revoked
23/64/10/0001	Afon Haffoty	149.34	revoked



Water Resources – Raw Water Abstraction

Volume abstracted

For 2019/20 we are reporting a total abstracted volume of 490,285.94 MI, this is around 5% lower than the value of 513,798.41 MI reported in 2018/19. In 2018/19 we experienced a very hot, dry spell in the early part of the summer which saw increased demand for water from our customers and hence in turn meant we needed to abstract additional water to increase our supplies. By contrast, 2019/20 was much more of a 'normal' year and so we did not see the heightened demand for water from our customers.

Raw Water Distribution - Raw Water Transport

Volume transported

For APR 2019/20 we are reporting a total transported volume of 386,388.77 MI, this is around 6% lower than the value of 411,257.74 MI reported for APR 2018/19. In 2018 we experienced a very hot, dry spell in the early part of the summer which saw increased demand for water from our customers and hence in turn meant we needed to abstract additional water to increase our supplies. By contrast, 2019 was much more of a 'normal' year and so we did not see the heightened demand for water from our customers. . The data used is the same as that for Raw Water Abstraction, being metered flow data from all of our abstraction sites. To derive the Raw Water Transport value those sites that are classed as 'co-located' are excluded from our calculations. The figures reported include the Elan Valley bulk supply to Severn Trent Water.

Raw Water Distribution - Raw Water Storage

Average volume stored

The data reported is a summation of the total storage volume available in raw water reservoirs which do not have an abstraction licence or other legal agreement, or have greater than 15 days' storage. For such reservoirs the storage volume is calculated using the average of daily readings of volume in the year or, where no daily data is available, we use the maximum capacity of the reservoir.

For APR 2019/20 we are reporting an average volume stored of 286.61 MI/d. This is approximately 8.25 MI/d (3%) more than the volume reported in 2018/19 of 278.36 MI/d. The slightly lower figure reported last year was due principally to the average volume stored at Court Farm being lower than normal in summer 2018 as more water was used to meet demand caused by the hot, dry weather.

Water Treatment

Distribution input from Water Treatment

Distribution input is the average amount of potable water entering the distribution system and supplied to customers within the company's area of supply, on an annual rather than daily basis.

Treated Water Distribution

Distribution input – treated water

Distribution input is the average amount of potable water entering the distribution system and supplied to customers within the company's area of supply, but on an annual rather than daily basis.

Wastewater Services - Network+ (Sewage Collection)

Foul; surface water drainage; highway drainage - volume collected

Table 4E line 25 to has been produced using the same methodology as used previously for the June Return tables 14 and 17, although the volume collected in the APR Table 4E is reported in MI rather than MI/d. This line includes all sewage collected from households and non-households, as well as trade effluent and tankered wastewater.

In 2015, we commissioned Mouchel to calculate the proportion of total sewerage received at our wastewater treatment works from foul sewerage, surface water and highway drainage. The report estimated that foul sewerage accounts for 73% of the total volume collected; surface water drainage 17% and highway drainage 10%.

Wastewater services - Network+ (sewage treatment and disposal)

Biochemical oxygen demand (BOD) in tonnes

The value for Table 4E line 25 has been calculated per guidance for the June Return Table 15, Line 5.

This value is the daily population equivalent data that has been converted to kg/BOD/day (for June Return Table 17d) and subsequently to tonnes/BOD/year. Tankered volumes are also added to give the total load entering the sewage system in tonnes/BOD/year. The value for this year is 91,073.420 tonnes (2018/19: 89,928.680 tonnes).

Wastewater services - Network+ (Sludge Liquor Treatment)

There has been a decrease in total BOD load in sludge liquors of 472.908 tonnes compared to last years which is a decrease of 9.2%. This has mainly been due to the use of actual sample data to determine the BOD concentration in sludge liquors, namely:-

- The centrate BOD strength at Aberystwyth was lower as determined by samples.



- The filtrate quality at Afan was better with lower BOD concentration.
- Llanelli centrate samples had much higher BOD than last year giving an approximately double BOD load for this year.
- Merlins Bridge and Parc Y Splotts centrate quality was poorer this year with high BOD concentration.
- Five Fords AAD plant being commissioned, Liquor Treatment plant operational, actual data used, centrate tankered off site for a period. All caused lower loads being returned.
- Kinmel Bay showed an increase due to higher strength of liquor samples.
- An increased liquor return load was measured in Queensferry due to increased number of sludge imports.
- Treborth had an increase in liquor return loads due to increased sludge imports to site and actual sample data showed liquor strengths were greater.
- Llangefni had an increase in liquor return loads due to increased sludge imports to site and actual sample data showed liquor strengths were greater.
- Cardiff showed a significant reduction due to the use of actual liquor return sample data which showed the actual BOD was much lower than the theoretical value used in previous assessments.
- Reduction in BOD loads at Eign due to use of actual sample data from lab samples

Sludge Transport

Volume transported - Sludge transport m³

The unit information was derived by totalling the following information:

- Intersilting by tanker - Ofwat has clarified that only sludge tankered to sludge treatment centres should be included; all transactions are extracted from our logger system and transactions into inlets have been removed. The recorded volume has then been totalled;
- Intersilting by truck – all logger weighbridge intersilting cake movements' data has been extracted. The records contain kg of product, with sludge corrected on the basis that 1m³ = 1,100 kg. The haulage weight has then been totalled;
- Intersilting by pipeline -this was previously reported as zero in error. Rotherwas WwTW is DCWW's only pumped sludge transfer pipeline and it was believed that the pipeline was less than 1km and as 4R.L31 was reported as a function of km's to zero decimal place it was reported as zero. On review the pipeline is actually 1.428km which meant it should have been reported. It was missed from 4R.L31 and hence not included in this measure, it accounts for 11% of the reported value.
- Disposal by tanker – no sites are disposed of via tanker; and
- Disposal by truck – this has been derived as follows:

- Actual data from digester output is used for three sites where actual feed weights are recorded;
- For all other sites supplier invoices which include recorded weight disposed are used to calculate the volume of sludge removed; and
- All this data is captured monthly in the bio-solids monthly report "M R Wales MASTER xx". All above data records bio-solids cake in wet weight and this is converted to a volume on the basis 1m³ = 1,100 kg and summed.

In 2019/20 the volume transported was 676,127.732 m³ which is 3,065.441 (<1%) lower than last year. The addition of volume transported by pipeline as mentioned previously, together with increase in interworks haulage as a result of the North Wales sludge strategy is offset by the additional tankering carried out in 2018/19 as a result of tankering thinner loads due to the hot weather and compliance risk as well as the current process of not disposing liquid sludge to land but in the form of cake instead.

The same methodology was applied last year.

Sludge Treatment

Dried solid mass treated (ttds)

The RAG guidance states that this is the total amount of sewage sludge produced during the report year expressed in thousands of tonnes of dry solids of sludge produced by the whole service.

This has been derived as follows:

- Actual data is used for three sites where actual weights are recorded both as a feed and output to/from the digester;
- For all other sites supplier invoices which include recorded weight disposed are used to calculate the volume of sludge removed;
- All of this data is captured monthly in the bio-solids monthly report "M R Wales MASTER xx";
- We convert the wet sludge totals into dry solid figures taking an average from the Quality Database system of the last years' solids figures to remove any spikes in data. The conversion from wet sludge to dry solids is not treatment process specific. The five-year % tds data is reviewed and outliers, liquid over 10% and cake over 50% removed as erroneous results. The % year data is plotted and a trend line added to ensure a representative result is achieved for the reporting period; and
- To calculate the digestion losses for each treatment process:
 - At advanced digestion sites the actual total feed is taken;



- At conventional digestion where actual destruction figures are available, these are used else an industry average of 39% destruction of dry solid mass is used;
- For sites where lime addition takes place, this quantity of lime addition is removed from the total sludge disposed figure; and
- At two sites where both lime and conventional treatment occurs 39% destruction of dry solids is assumed for the process and volume of lime addition is removed.

There has been increased accuracy of reporting this measure in this current year as a result of the sludge strategy focussing sludge treatment through four key Advanced Digestion sites.

Dried solid mass treated in the year of 77.029 ttds is 2% higher than last year.

Sludge Disposal

Dried solid mass treated (ttds)

The guidance states that this is the total for all sewage Sludge Disposal. This should include disposal to farmland, landfill, incineration, composting and other routes.

This has been derived as follows:

- Actual data from digester output is used for three sites where actual feed weights are recorded;
- For all other sites supplier invoices which include recorded weight disposed are used to calculate the volume of sludge removed;
- All this data is captured monthly in the bio-solids monthly report “M R Wales MASTER xx”; and
- We convert the wet sludge totals into dry solid figures taking an average from the Quality Database system of the last years’ solids figures to remove any spikes in data. The conversion from wet sludge to dry solids is not treatment process specific. The five-year % ttds data is reviewed and outliers, liquid over 10% and cake over 50% removed as erroneous results. The % year data is plotted and a trend line added to ensure a representative result is achieved for the reporting period

Dried solid mass disposed in the year of 40.398 ttds is 10.206 (20%) lower than last year. This reflects the higher amount of sludge disposed in North Wales whilst Five Fords digester was off line.

3.5: Significant changes in costs at upstream level service compared to previous year

Restructuring costs

In this report year we have recognised exceptional items totalling £10.5m. These relate to restructuring costs during the next price control period 2020 to 2025 (AMP7) and comprise restructuring costs associated with headcount reduction and the cost of one-off payments to colleagues affected by

changes to working patterns. The restructuring is on a smaller scale to those we have announced at the beginning of previous regulatory periods, and is focused on delivering identified savings in specific areas of the business, as already communicated to those business areas. We have provided for severance costs totalling £8m, which will be a key enabler of our plans to reduce headcount by around 200 FTEs during the period. There are firm plans in place, with most reductions expected to take place in 2020-21.

During 2019-20 we renegotiated a five-year Working Together Agreement with our recognised trade unions, effective from 1 April 2020, which included modifying certain colleagues’ standard working hours and expected levels of overtime. As part of this, we committed to making one-off payments in 2020-21 to some 1,500 colleagues affected by this which will total some £2m.

The reorganisation provision has been split over the regulatory areas based on restructuring plans:

	Water Resources	Water network+	Wastewater network+	Sludge	Retail	Total
	£m	£m	£m	£m	£m	£m
Employment costs	0.097	2.523	2.487	0.428	1.949	7.484
General and support	0.136	1.198	0.936	0.286	0.439	2.995
Total	0.233	3.721	3.423	0.714	2.388	10.479

The above costs are included as atypical costs in table 4J and 4K.

Atypical weather costs

In 2018/19 we experienced record breaking warm and dry weather during the summer which resulted in increased demand from our customers. June was the hottest on record with only 24% of the long term average rainfall with conditions in July being similar. The cost incurred to ensure that water was put into the network and to ensure that we kept on top of demand and moved water around as necessary cost £20m for our water services. The impact of this weather on waste services was an extra £1m due to the additional monitoring needed to avoid pollution.

In February 2019 the weather had a significant impact on our water and wastewater networks and major incidents were declared across Wales and England. In the Waste business, 26 treatment works, 18 pumping stations and seven sewer pipe bridges were put out of action by the storm. Challenges included flooding, landslides and power outages and our colleagues worked around the clock to maintain service to customers with the number of calls a day reaching 750 (four times more than



normal). The overall cost of Storm Dennis included as atypical costs in 2019/20 amounted to £2m for waste and £3m for water and these are reported in table 4K and 4J respectively. However the costs associated with this weather incident is expected to continue into 2020/21.

The cost movement relating to atypical weather conditions is a reduction of £17m in water and an increase in £0.8m in waste. The movement at costs over price control levels and cost types is shown below:

	Water resources	Network+			Total
	Raw water abstraction	Raw water transport	Water treatment	Treated water distribution	
	£m	£m	£m	£m	£m
Power	-	-	(1.18)	(0.48)	(1.66)
Other operating expenditure - renewals expensed in year (Infrastructure)	-	-	-	(4.12)	(4.12)
Other operating expenditure - excluding renewals	0.02	0.01	0.43	(11.52)	(11.06)
Total operating expenditure	0.02	0.01	(0.75)	(16.12)	(16.84)
Maintaining the long term capability of the assets - non-infra	-	-	0.20	-	0.20
Totex	0.02	0.01	(0.55)	(16.12)	(16.64)

	Network+ Sewage Collection			Network+ Sewage Treatment		Sludge			Total
	Foul	Surface water drainage	Highway drainage	Sewage treatment and disposal	Sludge liquor treatment	Sludge transport	Sludge treatment	Sludge disposal	
	£m	£m	£m	£m	£m	£m	£m	£m	£m
Power	-	-	-	(0.36)	-	-	-	-	(0.36)
- Renewals expensed in year (Infrastructure)	0.76	-	-	-	-	-	-	-	0.76
- Other operating expenditure excluding renewals	0.14	0.05	0.03	(0.05)	0.02	0.05	(0.24)	0.17	0.17
Total operating expenditure	0.89	0.05	0.03	(0.41)	0.02	0.05	(0.24)	0.17	0.57
Maintaining the long term capability of the assets - non-infra	-	-	-	0.00	-	-	0.25	-	0.25
Totex	0.89	0.05	0.03	(0.41)	0.02	0.05	0.01	0.17	0.82

Rates refund

In 2018/19 rates refund of £2m was included as atypical costs relating to our Swansea WWTW. In 2019/20 another £2.5m was included in atypical costs as the expected refund has risen to £4.5m. This £2.5m credit is reported in local authority rates in table 4D split £2.350m sewage treatment and £0.150m sludge treatment and is also reported in table 4K as atypical costs

As a result the atypical rates movement is a reduction of £0.459m in sewage treatment and £0.041 in sludge treatment.

See Appendix 1 for further detail on significant changes in cost at upstream level.

3.6: Significant changes in a particular cost type at upstream level compared to previous year

There have been no movements of particular cost types at upstream level compared to previous year

3.7: Significant movements in unit cost

Further details on the cost movements are included in appendix 1.

Water Resources

Abstraction License: Unit cost £8.422/ml (2019: £5.941/ml)

This has increased by 42% since last year and reflects that the abstraction volumes were incorrect last year as a result of invoicing errors (see 3.4). If we used the correct volume in 2018/19 the unit costs would have been £7.958/ml, which is 5% lower than 2019/20. The reason for this increase is the cost increase of 6% during the year.

Raw Water Abstraction: Unit cost £64.705/ml (2019:£ 42.890/ml)

This has increased by £21.815/ml and mainly relates to increased operating expenditure of £9.7m (44%) as volume abstracted has decreased by 5%. The cost increase is primarily as a result of higher infrastructure renewals expenditure (IRE) (£8.2m) as a result of the dam safety programme

Raw Water Distribution

Raw Water Transport: Unit cost £12.511/ml (2019: £12.761/ml)

The unit cost has reduced by 2%, primarily as a result of lower operating expenditure (£0.4m) and lower volume transported of 6% .

Raw Water Storage: Unit cost £3,733.244/ml (2019 £3,445.129/ml)

The unit cost has increased by 8%, which reflects £0.1m(12%) increased operating expenditure costs (mostly in power) and 3% increase in volume (see 3.4 for explanation of volume movement).

Water Treatment

Water Treatment: Unit cost £130.917/ml (2019: £134.141/ml)

The unit cost is lower than last year by 2%: Distribution input volume has increased by 1% with operating expenditure lower by 1% (£0.6m). The cost reduction is mainly in power (£0.8m) as 2018/19 incurred costs relating to the atypical weather event of £1.3m and increased hydro income (£0.3m) following a wetter year than last year. This is offset by increase in other operating expenditure (£0.6m)



of which £1.8m relates to the restructuring provision offset in part by a reduction in hired and bought in services of £1m.

Treated Water Distribution

Treated Water Distribution: Unit cost £435.324/ml (2019:£454.898/ml)

The unit cost has decreased by 4% which reflects a cost decrease of £5m (3%) and volume increase of 1%. Atypical cost decreases account for £16.1 of this (2019/20: Storm Dennis and Ciara £2.6m; 2018/19: hot weather £18.7m). This is offset in a part by reorganisation provision costs of £1.8m, together with increases in infrastructure renewal costs of £4.9m , power of £1.5m as a result of higher DI and price increases as well as increases in materials £0.6m and employment costs £1.5m.

Sewage Collection

Foul: £200.121/ml (2019: £192.200/ml); surface water drainage £294.951/ml (2019: £278.403/ml); Highway drainage £261.581 (2019 £244.363/ml)

Unit costs have increased as follows: foul 4%; surface water drainage 6%; highway drainage 7%. These are driven by cost movements as well as volume increases of 5% following the wetter year than last year. Operating expenditure has increased in foul by £3.9m , surface water drainage by £1.6m, and £0.9 in highway drainage. The increase mainly relating to infrastructure renewals expenditure in the year which has increased by £4.7m over sewage collection as well as increase in power costs of £1m as a result of the increased rainfall and restructuring provision costs of £1.5m.

Sewage Treatment

Sewage Treatment and Disposal: £640.714/t (2019 £625.863/t)

The unit cost has increased by 2%. Volumes have increased by 1% and operating costs by 4% (£2.1m) compared to last year. The increase in costs reflects power increase of £1.5m and reorganisation provision of £2m offset in part by higher power income £1.2m.

Sludge Liquor: £1,197.191/t (2019: £945.935/t)

Unit cost has increased by 27%. Volumes have reduced by 9% but costs have increased by 15% (£0.7m). The change in volume reflects a change in the process to get more accurate information (Further detail can be found in section 3.4) .The cost increase reflects that the strength of the liquor being treated with cost increase in power.

Sludge

Sludge Transport: £8.855/m³ (2019: £8.828/m³)

The unit cost is in line with last year; volume and costs are both in line with last year.

Sludge Treatment: £88,369.315/ttds) (2019: £107,990.527/ttds)

The unit cost has reduced by 18%; volume treated has increased by 2% whereas costs have decreased by 16% (£1.3m). In 2018/19 additional power costs of £1m reflected operational issues at one of our AD plants.

Sludge Disposal: £112,975.890/ttds (2019: £104,003.636/ttds)

The unit cost has increased by 9%. Volumes have decreased by 20% and costs fallen by 13% (£0.7m) as a result of the lower volume which is mainly due to Five Fords AAD increased solids destruction.

3.8: Completion of Tables 4D and 4E

Principal use basis in line with the guidance in RAG 2.07 we have opted not to use the principal use method in Part 4 of the APR as this will make it easier to compare actual costs with the PR14 Final Determination.

The cost allocations used to complete Tables 4D and 4E are included in the attached Appendices.



Appendix 1

Disaggregation of Wholesale activities – upstream services

Introduction

RAG 4.08 requires companies to disaggregate their totex costs further in Tables 4D and 4E into the following upstream services:

Wholesale Water

Upstream services

Water Resources

Abstraction Licence

Network +

Raw Water Abstraction

Raw Water Transport

Network +

Raw Water Storage

Network +

Water Treatment

Treated Water Distribution

Wholesale Wastewater

Network+

Sewage Collection - foul

Sewage Collection - surface water drainage

Sewage Collection - highway drainage

Network +

Sewage Treatment and Disposal

Sludge Liquor Treatment

Sludge

Sludge Transport

Sludge Treatment

Sludge Disposal

The following details each individual upstream service and assumptions applied.



Appendix 1

Disaggregation of Wholesale activities – upstream services

Water Services: operating expenditure

Abstraction Licence

Guidance

This service has been identified separately from the Raw Water Abstraction service because of the potential for a market to emerge in the future, which would enable abstraction licences to generate a separate income stream.

This service includes activities related to negotiating with third parties to obtain abstraction rights and to agree charges, as well as the annual cost of the licence itself. This service should not include activities that are incurred in choosing abstraction sites, optimising abstraction or ensuring compliance with licence conditions. All such abstraction planning activities and licence administration activities should be included in the Raw Water Abstraction service. This also includes transfer licences where they are to support another transaction.

Methodology

There are no changes to the methodology from last year.

Raw Water Abstraction

Guidance

The water abstraction service includes activities related to the operation of existing water resource sites, identification of new sources, catchment management, licence management, management of schemes in accordance with Acts of Parliament and other legal obligations, and the abstraction infrastructure which may include pre-treatment where it is upstream of Raw Water transport.

Pre-treatment processes can vary, from a relatively simple physical separation of the largest impurities, to more complex chemical treatments.

In some circumstances, transport from the water abstraction site is included within the abstraction service rather than in Raw Water Transport. Where raw water is transported between Water Resources assets, the assets supporting this transport should also be included in Water Resources – Raw Water Abstraction.

The activities relating to the inspections, operation and maintenance of assets in this price control unit are included in this service.

Methodology

There are no changes to the methodology from last year.

Raw Water Transport

Guidance

This service includes the activities related to transporting the raw water or pre-treated water from the boundaries of the abstraction site/assets or pre-treatment assets through a transport network to a treatment works, a Raw Water Storage facility (balancing reservoirs/tanks), or to customers that require untreated or non-potable water (including third party water companies). It can also include blending of water from different sources.

Where a water abstraction site and water treatment works are co-located on the same site, then the raw water effectively 'by-passes' the Raw Water Transport stage.

The activities allocated to this service primarily include the development and maintenance of the physical Raw Water Transport network. This includes pipelines and aqueducts.

Methodology

There are no changes to the methodology from last year.

Raw Water Storage

Guidance

This service includes activities related to the construction, operation and maintenance of Raw Water Storage facilities. In general, no Raw Water Transport costs should be allocated to this service, since the cost of Raw Water Transport should be included within the Raw Water Transport service.

Associated activities, such as inlet flow control to prevent overflowing and outflow control (which ensures continuity of availability of supply) and planned and emergency drawdown and discharge facilities (with associated permitting) are included in this service.

Activities related to determining losses due to leakage and to ensuring security of the site from contamination are also included.



Appendix 1

Disaggregation of Wholesale activities – upstream services

Reservoirs/other storage assets that are not covered by the definitions in Raw Water Abstraction and have less than 15 days' usable storage should be included as Raw Water Storage.

Where pre-treatment is downstream of Raw Water Storage it should be included in Raw Water Storage. (Note the location of pre-treatment determines whether it should be accounted for as Raw Water Abstraction or Raw Water Storage).

Methodology

There are no changes to the methodology from last year.

Water Treatment

Guidance

Receive raw or partially treated (non-potable) water from the raw water transport network and undertake treatment processes. This may include water softening.

Inputs: Raw water and pre-treated (non-potable) water from raw water distribution network.

Outputs: Treated water (potable and non-potable) fed into the distribution network or directly to an end user customer. Waste by-products from treatment processes into the sewerage network.

Methodology

There are no changes to the methodology from last year.

Treated Water Distribution

Guidance

Treated Water Transport includes activities related to distributing treated water from the treatment works to the customer and includes secondary disinfection and other chemical dosing. This includes all trunk and distribution network repair and maintenance activities, as well as activities associated with any new network development.

Inputs: Treated (potable) water from treatment sites and third parties.

Outputs: Supply of treated (potable) water to customers and new appointees.

Methodology

There are no changes to the methodology from last year.

Sewerage services: operating expenditure

Foul, surface water and highway drainage

Foul

Guidance

This service is for the collection of foul sewage from customers' properties. This includes development, repair and maintenance of the Sewage Collection infrastructure. Other specific activities are the provision and maintenance of ancillaries such as overflows, screens, on-line and off-line retention tanks, rising main wells and pumps and flow measurement.

Surface water drainage

Guidance

This service is for the collection of surface water from exterior areas of customers' properties. This includes development, repair and maintenance of the Sewage Collection infrastructure. Other specific activities are the provision and maintenance of ancillaries such as overflows, screens, on-line and off-line retention tanks, rising main wells and pumps and flow measurement.

Highway drainage

Guidance

This service includes the activities related to collection of surface water that runs off roads and pavements. The activities included in this service relate to the development, repair and maintenance of the Sewage Collection infrastructure. Other activities that should be considered within this service may include the provision and maintenance of ancillaries such as overflows, screens, on-line and off-line retention tanks, rising main wells and pumps and flow measurement.

Methodology

Prior to 2015, the split between surface water and highway drainage was based on a study prepared in 1999 by external consultants. This study was used as the basis for setting our tariff charges.

During 2014/15 we commissioned a further study by external consultants to update the findings of this original report, and to produce a model that could be used to split the costs between the upstream activities. This report incorporated the following improvements compared to the original study:



Appendix 1

Disaggregation of Wholesale activities – upstream services

- Increasing the number of modelled catchments from two to sixteen. The hydraulic modelling capability has improved significantly since the original report. The hydraulic modelling of all 16 chosen catchments had been reviewed under the Sustainable Drainage Planning programme. A mix of small, medium and large catchments was chosen, to provide understanding about how each could impact on the flows. The sixteen catchments were also chosen to include two catchments from each of the eight DCC operational areas, to ensure that the overall average would be representative of the range of DCC's catchments;
- The method for applying a flow split between surface water flows that derive from customers' properties, and those that derive from highways and footpaths, was previously based on small sample areas. With the improvements in technology, we reviewed the entire catchment using data included within OS mapping layers on ArcGIS. This gave a far greater confidence in the split between surface water drainage and highway drainage;
- The updated hydraulic modelling review used the latest verified data for DWF, plus it also used the diurnal flow profile which had previously been ignored;
- The hydraulic model simulations have been run with the typical year dataset rather than estimates for the 1997/98 flows that had been used in the 1999 report (based on proportioning from the 1985 rainfall data);
- CSO spills were previously ignored, with the 1999 report only considering storm flows spilling at the treatment works. With advances in hydraulic modelling we have additional data to understand the storm flow discharged from the system in a typical year; and
- The cost split in 1999 included the cost of treatment, whereas the requirement for Ofwat in 2015 was to provide the split for sewerage costs only.

Quality assurance of model

- The criteria for inclusion within the study were that the hydraulic models had to show reasonable accuracy, be geographically spread across the operating area and also show a mix of catchment sizes. To assess what could count as 'reasonable', all selected hydraulic models had been utilised on modelling schemes within the last five years which would indicate a reasonable level of confidence in modelling methodology and best practice. The majority of the catchments have had Sustainable Drainage Plans (SDP) completed in AMP5. The total population equivalent represented by the chosen catchments equated to over half a million people;
- The model data was sense checked by our external consultants (Mouchel). In addition, further checks were undertaken by our Asset Capability team, including re-running three of the 16

models to verify the results. The outputs from the analysis were also compared to other catchments to determine whether the results were sensible; and

- One of the areas that was identified to improve on was the confidence in the assigned split of 'Other operational expenditure' as these splits were based on engineering estimates and did not reflect the nature of the work. An exercise was carried out to determine the most accurate method of splitting out these costs between foul, surface water and highway drainage. Working alongside network managers and taking samples of incidents to record the nature of the work, a new split was derived as follows and applied in this report year.

Other operating expenditure splits used for report year	2018/19	2019/20
Foul	75%	75%
Surface water	19%	19%
Highway drainage	6%	6%

The % allocation is updated annually and as a result the % changes within areas are as follows:

Operating expenditure (excluding IRE) splits used for report year	2018/19	2019/20
Foul	67%	73%
Surface water	22%	19%
Highway drainage	11%	8%

In addition the capital spend in Sewerage has been analysed between the three business units for 2019/20 resulting in the following allocation:

Capital expenditure	Maintenance	Other capital expenditure
Foul	58%	46%
Surface water	27%	35%
Highway drainage	15%	19%

There are no changes to the methodology from last year.



Appendix 1

Disaggregation of Wholesale activities – upstream services

Sewage Treatment and Disposal

Guidance

This activity comprises the receipt of untreated sewage from the Sewage Collection system into treatment works, undertaking treatment processes and the discharge of treated wastewater into rivers, etc., and the transport of sewage sludge to sludge treatment processes. This includes all direct costs associated with Sewage Treatment including terminal pumping costs. The activities of emptying septic tanks or very small sewage works, by transporting the contents periodically to the inlet of a larger sewage treatment works, are also Sewage Treatment activities.

Inputs: Untreated sewage from the Sewage Collection network.

Outputs: Treated wastewater into receiving watercourses, discharge of sewage sludge for transporting to sludge treatment processes.

Excludes imported liquor treatment.

Methodology

There are no changes to the methodology from last year.

Sludge Liquor Treatment

Guidance

This includes all activities in transporting and treating liquors at a sewage treatment plant that have been generated during the Sludge Treatment process. This includes transporting and treating liquors that have been partially treated and are returned for final treatment at a sewage treatment plant.

It excludes liquor treatment which is carried out at a stand-alone liquor treatment plant (which will be included in the Sludge Treatment upstream service).

Methodology

There are no changes to the methodology from last year.

Sludge Transport

Guidance

This service includes the transport of sludge from the sewage treatment plant to the sludge treatment plant. All types of transport, and associated fuel costs, are included within this service. However, transport within the sludge treatment plant or between sludge treatment plants is not included in this service, which is instead an activity of the Sludge Treatment service.

Methodology

Costs of our internal and contracted Sludge Transport service are used to manage routine haulage work and these costs are separately identifiable.

There are no changes to the methodology from last year.

Sludge Treatment

Guidance

All Sludge Treatment activities including;

- Thickening of treated sludge;
- De-watering of thickened sludge;
- Incineration of non-treated sludge; and
- Treatment of sludge liquors in a stand-alone liquor treatment plant.

While different technologies exist for sludge treatment, Sludge Treatment is defined as a technology-neutral service for the purpose of the APR. Where income is received for energy generation then this should be shown as 'negative expenditure' in table 4E.

Methodology

There are no changes to the methodology from last year.

Sludge Disposal

Guidance

The collection of treated sludge from collection point, onward transport and disposal to landfill, agricultural land, land reclamation sites and to other end users in various forms including:

- Treated sludge;
- Incinerated sewage sludge ash (ISSA);
- Composted sludge; and
- Sludge cake.

If incineration of completely treated sludge takes place, then this should be included in Sludge Disposal.

Where income is received for treated sludge, then this should be shown as 'negative expenditure' in table 4E.

Methodology

There are no changes to the methodology from last year.



Appendix 1

Disaggregation of Wholesale activities – upstream services

Upstream Services: capital expenditure

As mentioned earlier, the majority of capital expenditure can be allocated directly to the business areas as a result of its coding structure and model.

Management and general assets are allocated using FTE numbers split based on direct labour (see section 2.8 for further information)

Explanation of cost movements from prior years

In RAG 3.11 there is a requirement to report costs that have significantly moved from last year.

The commentary below provides explanations for all significant movements (above 10% or £0.5m) compared to 2018/19.

Water Resources		Operating expenditure		
Service		Abstraction Licence	Raw Water Abstraction	Total
Total cost 2018/19	£m	10.0	22.0	32.0
Movements	£m	0.6	9.7	10.3
Total cost 2019/20	£m	10.6	31.7	42.3
Movement since last year		6%	44%	32%

Significant movements (>10% or £0.5m) compared to last year are summarised below.

Abstraction licence opex costs have increased overall by 6% which relates to increase in abstraction licence costs.

Raw Water Abstraction operating costs have increased by 44% (£9.7m). The reasons include:

- Power increase of £1.6m (31%) which reflects power costs of £1.2m for sites previously included in network +. Other increases relate to price and consumption increases following a wetter year than in 2018/19;

- Income treated as negative expenditure has increased by £0.9m (28%); higher hydro-generation income due to higher reservoir levels than last year;
- Other operating expenditure: renewals expensed in the year – infra has increased by £8.2m; discontinuance schemes £4m and tower rehabilitation scheme £3m. The costs mainly relate to a key strategic initiative, which commenced in 2018, by the Water Operations directorate to increase funding in the dam safety programme, ensuring that we continue to meet changes in reservoir legislation, new best safety guidance and to maintain water resource resilience; and
- Third party services have increased by £1.5m and relates to non potable increase of £1m; £0.8m relate to bulk supplies relating to pricing dispute, £0.1m power and £0.1m general and support. In addition renewals expensed in the year increased by £0.5m relating to our s20 EA agreements.

Capex has reduced by £3.8m, from £40.3m to £36.5m. Capital maintenance has remained in line with last year whilst enhancement has seen a decrease of £2.6m and a £0.8m decrease in third party services.

- Enhancement expenditure for non infra schemes reduced by £6.1m: Prioress Mill Habitat intake screen costs to comply with new environmental legislation, was £5m lower than last year together with several smaller fish screen schemes that have less expenditure than in previous years. This is offset by infra enhancement schemes which were £3.4m higher than last year; Ynysfro Reservoir £1.3m and Lower Carno Reservoir £2.1m. These costs relate to the dam safety programme.
- The third party reduction of £0.8m relates to work carried out at reservoirs which will be recharged to NRW under the s20 operating agreement and is less than previous years.
- Grants and contributions totalled £3.0m (2019: £3.4m), being income received from the NRW for third party work carried out at specific impounding reservoirs.

In summary, Raw Water Abstraction totex (including cash items) has increased by £6.4m (11%); a £9.7m increase in opex and £0.4m lower grants and contributions partially offset by lower capital investment (£3.8m)

Table 4V

Water Resources costs are further disaggregated into the following asset type in table 4V:

- impounding reservoir;
- pumped storage;
- river abstraction;
- ground water excluding MAR water supply schemes;
- artificial recharges water supply schemes;



Appendix 1

Disaggregation of Wholesale activities – upstream services

- aquifer storage and recovery water supply schemes; and
- other.

Direct costs that are coded to sites are allocated directly to asset type. The cost driver used for costs that cannot be directly allocated are:

- Cumulo rates - MEAV;
- Scientific services - asset allocation;
- Water recharged to waste – EA licences; and
- Other costs - direct cost proportions.

Raw water distribution		Operating expenditure		
Service		Raw Water Transport	Raw Water Storage	Total
Total cost 2018/19	£m	5.2	1.0	6.2
Movements	£m	(0.4)	0.1	(0.3)
Total cost 2019/20	£m	4.8	1.1	5.9
Movement since last year		(8%)	10%	(5%)

Significant movements (>10% or £0.5m) compared to last year are summarised below.

Raw Water Transport operating costs have decreased by 8% (£0.4m). The reasons include:

- Power decrease of £0.9m relate mainly to reclassifying some sites as water resources with £1.1m being included as water resources.
- Other increases:
 - Income treated as negative expenditure reduction of £0.02m (28%).
 - Other operating expenditure - renewals expensed in the year – infra has increased by £0.1m ;and
 - Other operating expenditure has increased by £0.2m reflecting work carried out during the year (increase in bought in services, employment costs and materials)

In summary, Raw Water Transport totex (including cash items) has decreased by £0.3m (6%) mainly reflecting lower opex.

Raw Water Storage capex has reduced by £0.4m which mainly reflects the reduced spend in maintaining the long term capability of the assets – non-infra relating to management and general assets.

Totex (including cash items) for raw water storage has decreased by £0.3m (19%); £0.1m increase in opex and £0.4m reduction in capex.

Water Treatment		Operating expenditure
Total cost 2018/19	£m	40.9
Movements	£m	(0.6)
Total cost 2019/20	£m	40.3
Movement since last year		(1%)

Significant movements (>10% or £0.5m) compared to last year are summarised below.

Water Treatment operating costs have decreased by 1% (£0.6m). Reasons include:

- Power costs have decreased by £0.8m (12%). In 2018/19, £1.3m atypical costs relating to the prolonged hot weather was included in power, this year the atypical costs relating to Storm Dennis and Ciara amounts to £0.1m; this has been offset with increased power price and consumption increase reflecting the wet year compared to last year; and
- Income treated as negative expenditure has increased by £0.3m (19%) from £1.6m to £1.9m reflecting higher ROCS income;
- Other operating expenditure (excluding renewals) has increased by £0.6m (2%) which reflects operational increases: restructuring costs of £1.9m is offset in part by lower hired and bought in services cost of £1m;

Capex has decreased by £7.6m (18%): base maintenance has decreased by £2.7m (8%) to £31m; enhancement has reduced by £4.7m (57%) to £3.6m whereas third party services have decreased by £0.2m (54%) to £0.1m. Capital costs will vary depending on the programme of work carried out in the year; the enhancement reduction reflects that the majority of spend to upgrade these works were incurred in previous years; Tynywaun WTW (£1.1m) and Bryn Cowlyd WTW (£3.4m). In addition the SEMD programme costs is lower than last year by £1.1m. Base maintenance increases relate to a scheme at Bewdley Bank SRV of £5.5m offset by scheme cost reductions compared to previous year at Portis WTW (£0.5m), Red Cow SRV (£0.6m), CML Loggers (£0.9m). and a reduction in our transport costs of £0.7m.



Appendix 1

Disaggregation of Wholesale activities – upstream services

In summary, Water Treatment totex (including cash items) has decreased by £7m (9%); £0.6m of opex and capex decreases of £7.6m more than offset the increase in pension deficit payment of £1m.

Treated Water Distribution		Operating expenditure
Total cost 2018/19	£m	139.6
Movements	£m	(4.7)
Total cost 2019/20	£m	134.9
Movement since last year		(3%)

Significant movements (>10% or £0.5m) compared to last year are summarised below.

Treated Water Distribution operating costs have decreased by 3% (£4.7m). The reasons include:

- Power increases of £1m (8%) reflects additional pumping costs and price increases following the wet year. This has been offset in part by the atypical costs included in 2018/19 of £0.5m; and
- Other operating expenditure – renewals expensed in the year - infra has increased by £0.7m (2%); 2018/19 includes atypical weather event costs of £4.7m which is offset in part by increased spend as a result of coming to the end of the AMP; and
- Other operating costs excluding renewals have decreased by £7.3m (11%): in 2019/20 atypical costs relating to Storm Dennis and Ciara amount to £1.7m which is £12m lower than the 2018/19 atypical hot weather costs of £14m. This is offset in part by cost increases in atypical restructuring cost of £1.8m as well as increases in materials £0.6m and employment costs £1.5m.

Capex has decreased by £2.1m (3%). Base maintenance has increased by £5.1m to £48.7m whereas enhancement has decreased by £7.6m to £18.1m. The enhancement scheme reduction is a result of coming to the end of the AMP and schemes being completed; Hereford City Growth scheme cost reduction from 2019 of £4.4m and further reductions in our Acceptability of Supply work on trunk mains in Porth (£2.6m) and Maerdy (£2.4m).

In summary, totex (including cash items) for treated water distribution has decreased by £7.5m (4%); £4.7m opex £2.1m capex and £2.1m higher capital contributions. The majority of this decrease relates to atypical weather event reduction of 16m, and capex reduction (£2m) offset by increases restructuring provision of £2m, power (£1m), IRE (£5m) and other operational increases (£2m).

Sewage Collection		Operating expenditure			
Service		Foul	Surface water	Highway drainage	Total
Total cost 2018/19	£m	40.7	14.2	6.8	61.7
Movements	£m	4.0	1.7	0.9	6.6
Total cost 2019/20	£m	44.7	15.9	7.7	68.3
Movement since last year		10%	12%	13%	11%

Significant movements (>10% or £0.5m) compared to last year are summarised below.

Overall total Sewage Collection operating costs have increased by £6.6m (11%). The reasons include:

- Power costs have increased by £1m (19%); foul (£0.7m), Surface water drainage (£0.2m) and highway drainage (£0.1m). This reflects This reflects increased consumption during the early part of 19/20 due to severe weather resulting in an increase in pumping.
- Renewals expensed in the year (infrastructure) at £34.3m is £4.7m higher than last year; foul (£2.7m), surface water drainage (£1.3m) and highway drainage (£0.7m). Costs incurred will vary on a year by year basis as this is dependent on the weather and the condition of the assets. Large schemes in the year were Reactive maintenance schemes of £2.6m together with some Cwmgrach Sewer rehabilitation scheme (£1.1m) and Afan Catchment scheme (£1.5m).
- Other operating expenditure has decreased by £0.2m. The savings incurred have been offset with the restructuring provision of £1.5m.
- Third party services have increased by £1m and this reflects an impairment review of our old rechargeable debt.

Capex overall has increased by £5.9m (8%) for Sewage Collection; foul (£4.1m), surface water drainage (£1.0m) and highway drainage (£0.8m). Enhancement spend has increased by £5.7m with maintenance decreasing by £0.5m and infrastructure network reinforcements increasing by £0.5m. The enhancement increase reflect work carried out to reduce the number of spills to river courses as well as two large schemes Pwll SPS (£3.6m) and Weycock Cross SPS (£1m).

Sewage Collection totex (including cash items) has increased by £9.3m (7%); £6.4m opex, £5.8m capex £0.7m pension deficit payments offset by higher grants and contributions (£3.6m).



Accounting Methodology Statement 2019/20

Appendix 1

Disaggregation of Wholesale activities – upstream services

Sewage Treatment		Operating expenditure		
		Sewage Treatment	Imported Sludge Liquor	Total
Service				
Total cost 2018/19	£m	56.3	4.9	61.2
Movements	£m	2.1	0.7	2.8
Total cost 2019/20	£m	58.4	5.6	64.0
Movement since last year		4%	14%	5%

Significant movements (>10% or £0.5m) compared to last year are summarised below:

Sewage Treatment operating costs have increased by £2.1m (4%); the main reasons for this are:

- Power costs have increased by £1.5m (8%). The reasons for the increase reflect the severe weather in the early part of 2019/20 as well as £0.7m of atypical costs linked to Storm Dennis.
- Income treated as negative expenditure has increased by £1.3 from £0.6m credit to a £1.9m credit relating to Gas to Grid operation now generating income during current year;
- Other operating expenditure (excluding renewals) have increased by £2.4m (8%); £2m of this relates to restructuring provision; and
- Local authority rates for Sewage Treatment sites have reduced by £0.4m (6%) reflecting rebates received.

Capex has increased by £15m (17%), this is broken down between base maintenance decrease of £7.8m and an enhancement increase of £23m. Capex will change on an annual basis, based on the programme of work scheduled in the year. The enhancement increase reflects some larger schemes such as including Llanelli WWTW PFET £6.1m, Gowerton WWTW PFET £0.8m, Llety Brongu £5.5m, NEP Flow 3 scheme £0.6m, Raglan WWTW £1.3m, Brynmawr WWTW £1.7m, Ruthin WWTW £3.3m, Dyserth WWTW £2.9m and Eglwysbach £0.3m at Chester.

Grants and contribution increase of £0.5m to £1.1m relates to developer contribution.

In summary, Sewage Treatment totex (including cash items) has increased by £17.7m (12%); £2.1m higher opex, £15.2m higher capex, £1m pension deficit increase offset with and increased grants and contributions (£0.5m).

Imported Sludge Liquor totex has increased by £0.5m (11%) mainly relating to higher power (£1.1m) offset with lower income (£0.1m), other opex costs (0.3m) and lower base maintenance costs (£0.2m).

The increase in power reflects a higher strength of concentrate becoming available.

Sludge		Operating expenditure			
		Sludge Transport	Sludge Treatment	Sludge Disposal	Total
Service					
Total cost 2018/19	£m	5.9	8.1	5.3	19.3
Movements	£m	0.1	(1.3)	(0.7)	(1.9)
Total cost 2019/20	£m	6.0	6.8	4.6	17.4
Movement since last year		2%	(16%)	(13%)	(10%)

Significant movements (>10% or £0.5m) compared to last year are summarised below:

Overall Sludge operating costs have decreased by 10% (£1.9m).

Sludge Transport costs have increased by £0.1m. A £0.1m power saving which reflect a reduction in fuel usage is offset by the restructuring provision.

Capex has increased by £0.1m and reflects the purchase of vehicles as well as the allocation of 'management and general' additions such as IT.

In summary totex (including cash items) for Sludge Transport has increased by £0.2m (4%); £0.1 opex and £0.1m capex.

Sludge treatment opex costs have decreased by £1.3m (16%) and reflect:

- Power (fuel) increase £0.4m (45%); increase power consumption plus additional Gas to supplement the AAD process.



Appendix 1

Disaggregation of Wholesale activities – upstream services

- Income increased by £1.4m (58%) from £2.5m to £3.9m mainly in North Wales due to operating the new AAD plant during the year.
- Other operating expenditure decreased by £0.3m (3%) reflecting a reduction in manpower (£0.4m), maintenance (£0.3m) and chemicals (£0.2m) which offset the atypical restructuring provision of £0.5m.

Sludge treatment capex costs have decreased by £10m (18%); £11m maintenance offset with increase of £1m in enhancement schemes.

In 2018/19 costs maintenance costs included investment in the South Wales and Hereford Sludge Strategy which aimed to mitigate the issues associated with the treatment and disposal of bio-solids waste and to bolster the resilience and reliability of the sludge base across these regions. The large schemes last year were Cog Moors £8m and Llanfoist £1m.

In summary, Sludge Treatment totex (including cash items) has decreased by £11.4m (13%); a £1.3m reduction in opex and a reduction in capex of £10.3m, is partially offset by increase in pension deficit contribution of £0.2m.

The Sludge Disposal costs decrease of £0.7m (17%) reflects a reduction in sludge volumes to land as a result of increased solids destructions; 10,000 tonnes of dried solids less to agriculture in 2019/20.

Capex has reduced by £0.1m relating to a lower 'management and general' asset cost allocation to Sludge Disposal.

In summary, Sludge Disposal totex (including cash items) has decreased by £0.7m (4%) which relates to opex reduction.



Appendix 2

Retail: Wholesale cost allocation

Cost Allocation	Cost Driver
Customer Services	
Billing	Wholly in Retail.
Payment handling and remittance	Wholly in Retail.
Non – Network customer enquiries and complaints	Wholly in Retail.
Network customer enquiries and complaints	
<i>Dŵr Cymru Waste Wholesale</i>	
Scheduling jobs	A team within the Wastewater services schedules the first job following its trigger by a customer contact. Management estimates the time spent on the initial call made to the customer to schedule a visit.
Aborted jobs	A SAP report identifies the cost of all jobs aborted as a result of customer contact.
Call to customer for customer call to be resolved	Management estimates the time spent on customer contact to close off the call as the contact is made directly by the wholesale team to the customer and not via the retail call centre.
<i>Dŵr Cymru Water Wholesale</i>	
Scheduling jobs	Management estimates the time spent on the initial call made to the customer to schedule a visit.
Inspector's first visit	The number of jobs requiring a customer visit is despatched from the Operational call centre within retail and filtered by cause to establish the cost of non-network visits.
Call to customer for customer call to be resolved	Management estimates the time spent on customer contact to close off the call as the contact is made directly by the wholesale team to the customer and not via the retail call centre
Debt Management	
Debt management	Wholly in Retail.
Customer Doubtful Debt	

Cost Allocation	Cost Driver
Customer doubtful debt	Wholly in Retail, as there is no provision for Wholesale revenue e.g. bulk supplies or third parties.
Meter Reading	
Meter reading	Wholly in Retail.
Services to Developers	
Services to developers	Costs are apportionment by management estimate. Costs in retail are only for providing developer information and administration for new connections.
Other operating expenditure	
Demand-side water efficiency	
Costs incurred by Wholesale	These are treated as Wholesale activities as they relate to Wholesale outcomes (a sole exception is a small amount of Retail expenditure which reflects customer service advisors' time linked to affordability initiatives promoting the potential benefits of metering).
Customer side leaks	
Costs incurred by Wholesale	These are treated as Wholesale activities as they relate to Wholesale outcomes
Other direct costs	
Retail segment	Wholly in Retail.
Dŵr Cymru insurance costs	Insurance costs are allocated to Retail by FTE.
Dŵr Cymru actuarial charges	Defined benefit and defined contribution pension scheme costs are allocated based on membership numbers.
Disconnections and reconnections	
Disconnections and reconnections	Decision and administration costs only are allocated to Retail.
General and support expenditure	
IT Costs:	



Appendix 2

Retail: Wholesale cost allocation

Cost Allocation	Cost Driver
Retail segment	Wholly in retail.
Dŵr Cymru IT department	Allocation is based on a combination of company revenues, FTEs, number of computers and system types.
Finance:	
Retail segment	Wholly in retail.
Dŵr Cymru Finance	Allocated directly where appropriate and management assesses the cost apportionment of roles which cover for company-wide activities which includes using company revenues.
Dŵr Cymru Charges team	Allocation is based on company revenues.
HR:	
Retail segment	Wholly In Retail.
Dŵr Cymru HR department	Allocated directly where appropriate only and by FTEs where this is not possible.
Executive team:	
Dŵr Cymru Chief Executive and Finance Director	Allocation is based on company revenues.
Dŵr Cymru Company Secretariat, Executive, Non-Executive Directors and Members' costs.	Allocation is based on company revenues.
General management:	
Retail segment	Wholly In Retail.
Facilities:	
Retail segment	Wholly in Retail.
Dŵr Cymru	Allocation is based on FTEs.
Other general and support costs:	
Retail segment general and support costs:	
Meter reading	Wholly in Retail.
Training and quality	Wholly in Retail.
Web	Wholly in Retail.
Business change	Wholly in Retail.
Compliance	Wholly in Retail.
Key and business customers	Wholly in Retail.
Dŵr Cymru general and support costs:	

Cost Allocation	Cost Driver
Communications team	Allocated directly where appropriate and, where this is not possible, by management judgement.
Quality and assurance	Management time spent on Retail/Wholesale audit work.
Health and safety	Allocated directly where appropriate and management assesses the cost apportionment of roles which cover company-wide activities.
Tax and capital markets	Allocation is based on company revenues.
Finance planning	Allocated directly where appropriate and management assesses the cost apportionment of roles which cover company-wide activities.
New business	Management assessment
Trade effluent sampling	Management assessment of sampling activity
Other business activities	
Regulation costs	1/9 th to Retail.
Local authority rates	
Local authority rates	Allocation is based on FTEs.



Appendix 3

Wholesale cost allocation

Allocation bases

Cost Driver A – Direct costs can be mapped directly from a cost centre to the relevant accounting separation business unit.

Cost Driver B – Mapping is not direct, but a specific cost driver is used to allocate the cost to the appropriate accounting separation business unit.

Cost Driver C – Mapping is not direct, allocations are worked out using appropriate judgements based on available data and understanding of the business.

	Water Resources	Raw Water Distribution	Water Treatment	Water Distribution	Sewerage	Sewage Treatment	Sludge Transport & Treatment	Sludge Disposal
	£m	£m	£m	£m	£m	£m	£m	£m
	A/B	A/B	A/B	A/B	A/B	A/B	A/B	A/B
Power	<p>Power costs include all energy costs (including climate change levy costs). Electricity costs are allocated to assets using DCC's energy management system in SAP, which receives electronic bills (EDI's) from the energy suppliers and, by reference to the Meter Point Administration Number (MPAN), charges the cost to an asset's cost centre. As this is the first year this system was used (replaced ARIES in 2019), extensive checks were carried out by comparing the billed charges for each MPAN with the backing data supplied by the energy supplier.</p> <p>Where an MPAN provides electricity for more than one price control unit, a percentage split is applied that is specific to the associated MPAN. The percentage split is determined by estimating the electricity cost per price control unit by undertaking site audits. These involve cataloguing all the electrical equipment on site. The running hours and loading of each piece of equipment are estimated/determined to calculate annual electricity consumption and this is allocated to regulatory cost accounting areas. The equipment's electricity use as a proportion of the total site's electricity consumption is used to establish the cost centre splits. The Power costs category also include fuel costs, which are allocated to the cost centres where the asset which consumes the fuel is located. For assets that support more than one price control segment, the costs are allocated based on the most appropriate cost centres based in Ofwat's hierarchy of cost drivers.</p>							
EA Service Charges	A	-	A	-	A	A	-	-
	<p>Abstraction charges received from the Natural Resources Wales are allocated to water resources.</p> <p>Discharge consent payments to the Environment Agency are supported by a site-by-site breakdown and this is used to allocate the cost to the appropriate activities and processes.</p>							
Bulk Supply Imports	A/B	A/B	A/B	A/B	-	-	-	-
	<p>Bulk supply imports relate to the purchase of potable water and non-potable water. The non-potable element is allocated to Water Resources. The cost of imported potable bulk water supplies are split between Water Resources and Water Network+ using the cost split of the exporting company as reported in their latest published Annual Performance Report.</p>							



Appendix 3

Wholesale cost allocation

Allocation bases

Cost Driver A – Direct costs can be mapped directly from a cost centre to the relevant accounting separation business unit.

Cost Driver B – Mapping is not direct, but a specific cost driver is used to allocate the cost to the appropriate accounting separation business unit.

Cost Driver C – Mapping is not direct, allocations are worked out using appropriate judgements based on available data and understanding of the business.

	Water Resources	Raw Water Distribution	Water Treatment	Water Distribution	Sewerage	Sewage Treatment	Sludge Transport & Treatment	Sludge Disposal
	£m	£m	£m	£m	£m	£m	£m	£m
	<i>Other operating expenditure</i>							
	A/B	A/B	A/B	A/B	A/B	A/B/C	A/B/C	A/B
Employment Costs	Following the introduction of the above SAP work management systems, the majority of operational staff's workload and the related allocation of cost is automated. As a consequence, the need for manual allocations of people's time is minimised. Furthermore, many operational staff and their associated cost centres can be attributed to one particular activity and instances of staff working across more than one activity are relatively low. For example, Water Distribution employees rarely work on Water Resources, Raw Water Distribution or Water Treatment assets, while Water Treatment operatives rarely carry out any work within Water Distribution. The situation is similar within the Sewerage business, where sewerage operatives rarely perform Sewage Treatment and Sludge Treatment activities. However at co-located sludge centres, management estimates are used to allocate costs between sewage treatment and sludge activities. Managers' estimates are used to allocate any under or over-recoveries in operatives' home cost centres.							
Hired and Contracted Services	A	A	A	A	A	A	A	A
	Hired and contracted services are charged directly to business units by procurers who are generally dedicated to that activity. Where the costs relate to Switch, AGA or ME&I generated work, they are charged directly to a works order which is a unique cost collector for a specific job. These works orders settle costs to the cost centres or capital internal orders associated with the asset, job type and location.							
Chemicals	A	A	A	A	A	A	A	A
	Chemicals are charged directly to assets and activities by procurers who are generally dedicated to those activities. Where the costs relate to Switch, AGA or ME&I generated work, they are charged directly to a works order which is a unique cost collector for a specific job. These works orders settle to the cost centres or capital internal orders associated with the asset, job type and location.							
Materials and Consumables	A	A	A	A	A	A	A	A
	Materials and consumables are charged directly to assets and activities by procurers who are generally dedicated to those activities. Where the costs relate to Switch, AGA or ME&I generated work, they are charged directly to a works order which is a unique cost collector for a specific job. These works orders settle to the cost centres or capital internal orders associated with the asset, job type and location.							
Other	B/C	B/C	B/C	B/C	B/C	B/C	B/C	B/C
	Other costs include insurance costs relating to wholesale activities. Insurance costs have been allocated based on FTE for employer's liability and for uninsured provision based on claims history.							



Appendix 3

Wholesale cost allocation

Allocation bases

Cost Driver A – Direct costs can be mapped directly from a cost centre to the relevant accounting separation business unit.

Cost Driver B – Mapping is not direct, but a specific cost driver is used to allocate the cost to the appropriate accounting separation business unit.

Cost Driver C – Mapping is not direct, allocations are worked out using appropriate judgements based on available data and understanding of the business.

	Water Resources	Raw Water Distribution	Water Treatment	Water Distribution	Sewerage	Sewage Treatment	Sludge Transport & Treatment	Sludge Disposal
	£m	£m	£m	£m	£m	£m	£m	£m
General and Support Expenditure	C	C	C	C	C	C	C	C
	The cost allocation for general and support expenditure is shown in Appendix 4.							
Scientific Services	C	C	C	C	C	C	C	C
	Laboratory services costs are allocated across the various activities based on management estimates which used the amount of samples plus other relevant cost factors.							
Other Business Activities	B	B	B	B	B	B	B	B
	This includes the cost of regulation, including all incremental managerial costs of regulation associated with a periodic review, licence fees payable to Ofwat in respect of regulation, certification fees associated with the Licence requirements and staff and associated costs incurred in the preparation of submissions to, and liaison with, regulators. Costs are allocated equally across nine activities (four for water services, four for sewerage services and one for retail services).							
Local Authority Rates	B	B	B	B	B	A/B	B	B
	This relates to the cost of local authority rates and includes both local authority rates and Cumulo rates. Cumulo (water-only) rates are allocated across activities in proportion to the gross MEA value of assets assigned to the business. Cumulo rates associated with the Environment Agency operating agreement are charged to third party services. Non-domestic rates relating to sewerage sites are allocated primarily to the sewerage treatment activity. Where there is a sludge treatment activity at a sewerage treatment site, a percentage (based on rateable values) is charged to the sludge treatment activity.							
Third Party Services	A/C	A/C	A/C	A/C	-	-	-	-
	Third party services includes costs associated with the supply of non-potable water, the supply of standpipes, ships water, bulk supply, reservoir agreements and rechargeable works. Rechargeable works, standpipes, ships water and reservoir agreement costs are extracted from our accounting system and an element of general and support costs are added to this. Bulk supply third party costs consists of the abstraction licence relating to this together with allocation for general and support costs							



Appendix 4

General and support allocation

Cost Category	Base for split of costs that are not directly allocated – Cost Driver	Rationale	Water Resources	Water Network+	Sewage Network+	Sludge	Retail	Non-Appointed
<i>Chief Executive Officer</i>	Company revenues	Considered most appropriate driver for Chief Executive of whole organisation	4%	37%	39%	12%	7%	-
<i>UK Water</i>	Equal split across nine business units	Per Ofwat guidance for 'regulatory' costs	11%	33%	22%	22%	11%	-
<i>Finance Director</i>	Company revenues	Considered most appropriate driver for FD of whole organisation	4%	37%	39%	12%	7%	-
<i>Chief Operating Officer</i>	Wholesale revenues	Considered most appropriate driver Head of wholesale operations	5%	40%	44%	12%	-	-
<i>General Counsel</i>	Company revenues	Considered most appropriate driver for company-wide function	4%	37%	39%	12%	7%	-
<i>Legal Costs</i>	Management assessment	Head of Legal detailed analysis of costs	4%	37%	37%	10%	12%	-
<i>Regulatory Compliance</i>	Equal split across nine business units	Per Ofwat guidance for 'regulatory' costs	11%	33%	22%	22%	11%	-
<i>Company Secretary</i>	Company revenues	Considered most appropriate driver for company-wide function	4%	37%	39%	12%	7%	-
HR								
<i>HR other</i>	Company FTEs and management assessments	Considered most appropriate driver for HR function that supports whole organisation	5%	41%	30%	9%	13%	2%
Business Assurance								
<i>Business Assurance</i>	Management assessment	Time sheet together with management estimate	4%	39%	26%	8%	13%	6%
Communications								
<i>Communications</i>	Management assessment	Communications Director assessment of costs over the business areas	4%	34%	26%	8%	22%	5%
Planning & Regulation								
<i>Planning & Regulation Director</i>	Equal split across nine business units	Per Ofwat guidance for 'regulatory' costs	11%	33%	22%	22%	11%	-



Appendix 4

General and support allocation

Cost Category	Base for split of costs that are not directly allocated – Cost Driver	Rationale	Water Resources	Water Network+	Sewage Network+	Sludge	Retail	Non-Appointed
Planning & Regulation (continued)								
<i>Economic & Charges</i>	Company revenues	Considered most appropriate driver for company-wide function	4%	37%	39%	12%	7%	-
<i>Economic regulation - team</i>	Equal split across nine business units	Per Ofwat guidance for 'regulatory' costs	11%	33%	22%	22%	11%	-
<i>Regulatory Strategy</i>	Equal split across nine business units	Per Ofwat guidance for 'regulatory' costs	11%	33%	22%	22%	11%	-
Finance								
<i>Tax and Treasury</i>	Company revenues	Considered most appropriate driver for company-wide function	4%	37%	39%	12%	7%	-
<i>Commercial Finance</i>	FTEs within Finance team	Direct allocation where appropriate and manager assessment of split roles	4%	34%	28%	9%	20%	5%
<i>Corporate Finance</i>	Company revenues	Considered most appropriate driver for company-wide function	4%	37%	39%	12%	7%	-
<i>Finance Business Partners</i>	Company revenues	Considered most appropriate driver for company-wide function	4%	37%	39%	12%	7%	-
<i>Release of GR/IR</i>	Split in proportion to direct costs	Split of purchases in 2019/20 considered most appropriate	11%	32%	45%	10%	2%	-
<i>External Audit</i>	Company revenues	Considered most appropriate driver for company-wide function	4%	37%	39%	12%	7%	-
<i>Pension Service Charge</i>	FTE in DB scheme	Defined benefit scheme membership split	7%	54%	20%	3%	16%	1%
Environment								
<i>Environment</i>	Management assessment	Head of Department assessment of budget split – wholesale only	7%	23%	59%	10%	-	-



Appendix 4

General and support allocation

Cost Category	Base for split of costs that are not directly allocated – Cost Driver	Rationale	Water Resources	Water Network+	Sewage Network+	Sludge	Retail	Non-Appointed
Business Information Services								
<i>Business Information Services</i>	Company revenues	Considered most appropriate driver for company-wide function	4%	37%	39%	12%	7%	-
<i>Commercial and contracts</i>	Company revenues	Considered most appropriate driver for company-wide function	4%	37%	39%	12%	7%	-
<i>Information Security</i>	Company revenues	Considered most appropriate driver for company-wide function	4%	37%	39%	12%	7%	-
<i>Architecture</i>	Company revenues	Considered most appropriate driver for company-wide function	4%	37%	39%	12%	7%	-
<i>Infrastructure</i>	Company revenues	Considered most appropriate driver for company-wide function	4%	37%	39%	12%	7%	-
<i>Programmes and Services</i>	Company revenues	Considered most appropriate driver for company-wide function	4%	37%	39%	12%	7%	-
<i>Services</i>	Direct allocation, equipment and FTE split	As stated in RAG 2.07	4%	37%	27%	9%	22%	-
<i>Enablement and Transformation</i>	Company revenues	Considered most appropriate driver for company-wide function	4%	37%	39%	12%	7%	-
Health and Safety								
<i>Health and Safety</i>	Management assessment	Considered most appropriate cost driver	5%	40%	34%	10%	10%	1%
Operational Services								
<i>Emergency Planning</i>	Management assessment	Head of Department assessment of cost split	6%	80%	9%	5%	-	-
<i>Smart HUB</i>	Management assessment	Head of Department assessment of cost split	1%	55%	43%	1%	-	-
<i>Lean</i>	Management assessment	Head of Department assessment of cost split	-	50%	50%	-	-	-
<i>IMS & Audit</i>	Management assessment	Head of Department assessment of cost split	2%	48%	20%	20%	10%	-
<i>Developer Services</i>	Management assessment	Head of Department assessment of cost split	10%	80%	5%	5%	-	-
<i>Other</i>	Management assessment	Head of Department assessment of cost split	-	50%	50%	-	-	-



Appendix 4

General and support allocation

Cost Category	Base for split of costs that are not directly allocated – Cost Driver	Rationale	Water Resources	Water Network+	Sewage Network+	Sludge	Retail	Non-Appointed
Procurement and Estates								
<i>Head of Procurement and Estates</i>	Management assessment	Head of Department assessment of cost split	11%	32%	45%	10%	2%	-
<i>Facilities</i>	Site based headcount	Headcount occupation at sites	3%	44%	29%	3%	15%	7%
<i>Procurement</i>	Bought in service costs	Split in proportion to WWR bought-in services costs	11%	32%	45%	10%	2%	-
<i>Estates</i>	Net book value of non-infra assets	Split in proportion to WWR NBV of non-infra assets	3%	42%	50%	5%	-	-
Insurance	Based on MEAV, FTEs and claim history	Considered most appropriate driver	2%	52%	44%	1%	1%	-
Energy Team	Power costs	Considered most appropriate driver	11%	36%	47%	5%	1%	-
Dŵr Cymru Retail segment	Wholly Retail		-	-	-	-	100%	-
Total General and Support			5%	35%	31%	8%	16%	5%



Appendix 5

Household: Non-household split

Cost Category	Cost Driver used for Regulatory 2018/19 Accounts	Cost Driver used for Regulatory 2019/20 Accounts	H : NH split	
			H	NH
Customer services				
Billing			88%	12%
<i>Billing</i>	Bills raised	Unchanged from 2019 basis	91%	9%
<i>Billing resolutions team</i>	Volume of billing queries and work orders	Improved business knowledge of allocation enables a more accurate allocation by customer types as per RAG 2.07	92%	8%
Payment handling and remittance	Volume of payments as per RAG 2.07	Unchanged from 2019 basis	97%	3%
Non-network customer enquiries and complaints			85%	15%
<i>Customer relations</i>	Correspondence contacts	Unchanged from 2019 basis	86%	14%
<i>BPO</i>	BPO contacts	Unchanged from 2019 basis	96%	4%
<i>Postage</i>	Printing and postage charges – Non-billing	Unchanged from 2019 basis	92%	8%
<i>Call centre and training</i>	Call centre contacts	Unchanged from 2019 basis	92%	8%
<i>Customer retail team</i>	All non-household	Unchanged from 2019 basis	0%	100%
Network customer enquiries and complaints			87%	13%
<i>OCC</i>	Volume of operational contacts logged	Unchanged from 2019 basis	89%	11%
<i>Postage</i>	Printing and postage charges – Non-billing	Unchanged from 2019 basis	92%	8%
<i>Webchats and social media</i>	Volume of webchats and social media contacts	Unchanged from 2019 basis	95%	5%
Dŵr Cymru Waste				
<i>Schedulers</i>	Total volume of waste calls received	Unchanged from 2019 basis	86%	14%
<i>Aborted jobs</i>	Total volume of waste calls received	Unchanged from 2019 basis	86%	14%
<i>Call to customer for call to be resolved</i>	Total volume of waste calls received	Unchanged from 2019 basis	86%	14%
<i>Trade effluent sampling</i>	All non-household	Unchanged from 2019 basis	0%	100%
Dŵr Cymru Water				
<i>Scheduling jobs</i>	Customer numbers	Unchanged from 2019 basis	93%	7%
<i>Investigation of problem</i>	Volume of network inspector aborted jobs raised	Changed to customer numbers in line with the other costs	93%	7%
<i>Call to customer for call to be resolved</i>	Customer numbers	Unchanged from 2019 basis	93%	7%



Appendix 5

Household: Non-household split

Cost Category	Cost Driver used for Regulatory 2018/19 Accounts	Cost Driver used for Regulatory 2019/20 Accounts	H : NH split	
			H	NH
Customer services (continued)				
<i>Vulnerable customer schemes</i>	All household	Unchanged from 2019 basis	100%	-
Debt management			88%	12%
<i>DCCS: collections</i>	Collections work	Unchanged from 2019 basis	86%	14%
<i>Affordability</i>	Affordability	Unchanged from 2019 basis	100%	-
<i>DCA charges</i>	Accounts referred to DCAs	Unchanged from 2019 basis	100%	-
<i>Postage</i>	Printing and postages charges – Non-billing	Unchanged from 2019 basis	92%	8%
<i>Water company commissions</i>	Customer numbers	Unchanged from 2019 basis	93%	7%
<i>Council commissions</i>	Affordability	Unchanged from 2019 basis	100%	-
Customer doubtful debt			97%	3%
<i>Local authority bad debt</i>	All household	Unchanged from 2019 basis	100%	-
<i>Doubtful debt</i>	Write offs	Unchanged from 2019 basis	97%	3%
Meter reading			79%	21%
<i>Field operations support</i>	Volume of rejected/abnormal meter reading	Unchanged from 2019 basis	78%	22%
<i>Filed operational work</i>	Number of attempted meter read visits (with NHH weighting)	Unchanged from 2019 basis	81%	19%
<i>Dŵr Cymru water inspectors</i>	Volume of network inspector meter jobs	Unchanged from 2019 basis	71%	29%
Other operating costs				
<i>Disconnections and reconnections</i>	Entirely non-household	Unchanged from 2019 basis	-	100%
<i>Customer side leaks</i>	Customer numbers	Unchanged from 2019 basis	93%	7%
<i>Dŵr Cymru customer services team</i>	Cost identified that could be directly attributed and remaining costs split using customer numbers	Unchanged from 2019 basis	93%	7%
<i>Dŵr Cymru actuarial charges</i>	Defined benefit pension scheme membership split	Unchanged from 2019 basis	92%	8%
General and support expenditure				
Dŵr Cymru Retail			93%	7%
<i>Other general and support costs</i>	Customer numbers	Unchanged from 2019 basis	93%	7%



Appendix 5

Household: Non-household split

Cost Category	Cost Driver used for Regulatory 2018/19 Accounts	Cost Driver used for Regulatory 2019/20 Accounts	H : NH split	
			H	NH
General and support expenditure (continued)			H	NH
Dŵr Cymru				
IT department	Headcount and nature of support and customer numbers	Unchanged from 2019 basis	92%	8%
Facilities	Customer numbers	Unchanged from 2019 basis	93%	7%
Quality and assurance	Customer numbers	Unchanged from 2019 basis	93%	7%
Health and safety	Customer numbers	Unchanged from 2019 basis	93%	7%
Tax and capital markets	Customer numbers	Unchanged from 2019 basis	93%	7%
Commercial finance costs	All non-household	Unchanged from 2019 basis	-	100%
New business customer services	No charge in 2018/19	All non-household	-	100%
Trade effluent sampling	No charge in 2018/19	All non-household	-	100%
Other business activities (Regulation costs)	Customer numbers	Unchanged from 2019 basis	93%	7%
Developer Services				
Developer services	All non-household	Unchanged from 2019 basis	-	100%
Regulatory Accounts 2019-20			91%	9%



Appendix 6

Measured and unmeasured split

Costs between water-only, wastewater-only, and water and wastewater customers have been split based on customer numbers (including dual service weighting); the following therefore refers to the allocations between household measured and unmeasured customers only.

Table 4F heading	Cost	Cost Driver	Justification
Customer services	Billing	Bills raised for each customer type	As per RAG 2.07 guidance
Customer services	Billing Resolutions Team	Volume of billing queries by customer type	This data was only available from 2019/20. Enables a more accurate allocation by customer types as per RAG 2.07
Customer services	Payment handling, remittance and cash handling	Number of payments received from each customer type	As per RAG 2.07 guidance
Customer services	Vulnerable customer schemes	Number of customers on affordability tariffs from each customer type	As per RAG 2.07 guidance
Customer services	Non network customer enquiries and complaints: Customer Relations Team	Number of non-network customer enquiries to this team from each customer type	As per RAG 2.07 guidance
Customer services	Non network customer enquiries and complaints: Compensation Payments - NOT USED	Directly attributed	As per RAG 2.07 guidance
Customer services	Non network customer enquiries and complaints: Postage	Printing and postage charges (excluding billing) for each customer type	Reflects the cost of postage incurred in responding to contacts
Customer services	Non network customer enquiries and complaints: call centre costs	Number of non-network customer enquiries to this team	As per RAG 2.07 guidance
Customer services	Network customer enquiries and complaints: OCC	Volume of network customer enquiries and complaints recorded in SAP for each customer type	As per RAG 2.07 guidance
Customer services	Network customer enquiries and complaints: Postage	Printing and postage charges (excl. Billing) for each customer type	Reflects the cost of postage incurred in responding to contacts
Customer services	Network customer enquiries and complaints: waste: Schedulers	Customer numbers with dual service weighting for each of the six customer types	Reflects the most appropriate basis for allocating costs as we do not record customer type for this work
Customer services	Network customer enquiries and complaints: waste: Aborted jobs	Customer numbers with dual service weighting for each of the six customer types	Reflects the most appropriate basis for allocating costs as we do not record customer type for this work
Customer services	Network customer enquiries and complaints: waste: Call resolution	Customer numbers with dual service weighting for each of the six customer types	Reflects the most appropriate basis for allocating costs as we do not record customer type for this work
Customer services	Network customer enquiries and complaints: water: Schedulers	Customer numbers with dual service weighting for each of the six customer types	Reflects the most appropriate basis for allocating costs as we do not record customer type for this work
Customer services	Network customer enquiries and complaints: water: Investigation	Customer numbers with dual service weighting for each of the six customer types	Reflects the most appropriate basis for allocating costs as we do not record customer type for this work



Appendix 6

Measured and unmeasured split

Costs between water-only, wastewater-only, and water and wastewater customers have been split based on customer numbers (including dual service weighting); the following therefore refers to the allocations between household measured and unmeasured customers only.

Debt management	Debt collection agency (DCA) charges	Number of accounts referred to DCAs by customer type split by debt outstanding for more than 30 days	Enables an accurate allocation of DCA costs
Debt management	Debt Management Postage	Printing and postage charges (excluding billing) for each customer type	Reflects the cost of postage incurred in contacting customers
Debt management	Commissions payable to other water companies	Customer numbers (with dual service weighting)	We do not have access to other water companies' customer data thus we make the assumption that their proportion of customer types is similar to ours.
Debt management	Council commissions	Affordability Team staff time spent on each customer type	Distribution of measured and unmeasured customer types for which council commissions are payable is assumed to be in line with the work of the Affordability team whose work is focussed on similar customer groups.
Doubtful debts	Doubtful debts charge excluding Local Authorities	Write-offs	Direct attribution to customer types
Doubtful debts	Doubtful debts charge for Local Authorities	Write-offs excluding non-household	Assumes local authority household metered and unmetered property proportions are in line with the rest of our household customers.
Meter reading	Meter reading (includes cost of Motor Vehicles)	100% performed for metered customers	Does not apply to unmetered customers
Other operating expenditure	Other direct costs	Customer numbers (with dual service weighting)	As per RAG 2.07 guidance
Other operating expenditure	General and support (excluding Motor Vehicles)	Customer numbers (with dual service weighting)	As per RAG 2.07 guidance
Other operating expenditure	Other business activities	Customer numbers (with dual service weighting)	As per RAG 2.07 guidance