Water & Sewerage Services Price Control 2021-2027

Draft Determination – Annex B
Sources of Revenue
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Sources of Revenue

Customer base assumptions

1.1 The price limits that the Utility Regulator sets for NI Water must balance the revenue that NI Water requires, with the revenue it collects from charges and subsidy. This means that, as well as calculating the level of revenue to allow for; we need to forecast the number, mix and type of customers that NI Water will be providing services to throughout the PC21 period.

1.2 Within its PC21 business plan submission NI Water provided customer projections which took account of relevant economic factors. This review had three elements:

- Review of historic trend data;
- Economic analysis of projected growth in customer demand carried out by Ulster University Business School; and
- A review of other assumptions.

1.3 Based on the above they concluded that underlying domestic demand would increase at 0.1% p.a. from the 2020-21 baseline. This equated to a 0.7% increase in measured water consumption over the PC21 period. They also assumed 7,000 new household connections each year, in line with recent levels, although assumed that the proportion of these who also connect to the sewer will reduce over PC21.

1.4 NI Water state that it is very difficult to predict customer demand with any degree of certainty especially given the current economic climate. They also said it was vital that robust regulatory mechanisms are put in place which ensure that if and when variances in demand occur, they can be properly dealt with in a way that both customer and company are treated equitably.

Reporter

1.5 The UR used the Reporter in line with previous price controls to review the customer projections.

1.6 The Reporter found that property numbers were consistent with base historic data and noted that estimates of new water connections, meter optants and void properties are based on a simplistic approach. They went on to say the use of price limits affords some flexibility to deal with any variances, and NI Water expects that the forecasts will be reconsidered at the PC21 mid-term review.

1.7 The reporter also noted the approach used by the Company to estimate road drainage volumes for the PC21 submission is the PC15 method and this is not material to the revenue and tariff forecasts.

COVID-19

1.8 The initial customer forecasts for PC21 were submitted with the business plan which was before the height of the current global pandemic.

1.9 Setting price limits based on the customer numbers within the business plan numbers would therefore have not only resulted in misleading results but could also have caused NI Water to raise the wrong amount of revenue as determined in PC21.

1.10 It was agreed that NI Water would re-submit a plausible scenario with updated figures and these would be reviewed again in more detail for the final determination.

1.11 The scenario presented was based on the following assumptions:

- 2020/21 non household (nHH) demand would be 27% lower than previously forecast. The demand reduction would bottom out in Q1 2020/21, with a steady recovery thereafter.
- nHH demand only reaches pre COVID-19 levels in 2023, with no growth in the remaining years of PC21;
- Household (HH) demand remains slightly above levels assumed in the PC21 business plan throughout PC21;
- There is no second wave or reintroduction of restrictions on a wide scale level.

1.12 A revised revenue allocation based on the above assumptions was also submitted to enable price limits to be calculated on a consistent basis.

1.13 HH demand remaining above PC21 business plan levels along with nHH demand only recovering to pre COVID-19 levels during the course on PC21 does mean that an increased proportion of revenue is allocated to HH. This will also have the impact of increasing subsidy required.

1.14 It is already clear that this plausible scenario needs revisited before the final determination as the impact of COVID-19 continues to evolve in the run up to the draft determination.

PC15 Over recovery

1.15 Actual demand in the first five years of the PC15 period surpassed the customer projections made at the time of the previous determination. As a result revenues generated exceeded forecasts by £63.5m.

1.16 NI Water have proposed to return this to customers in PC21 less a small allowance for additional costs resulting from higher demand. This means that £57.9m (2018/19 prices) will pass back to customers during PC21.

1.17 We agree with this approach and also that the final year of PC15 once confirmed can be dealt with in the future price controls in a similar manner unless it is considered earlier at the PC21 mid-term review.

1.18 If an under recovery situation develops the above mechanism can also operate in reverse to increase customer charges.

Level of Subsidy in PC21

1.19 The Utility Regulator has accepted NI Water's updated forecasts of customer numbers and volumes and revenue allocations for the PC21 period for the purposes of this draft determination.

1.20 We considered that the most accurate customer data should be employed in calculating K-factors for 2021-2027, to ensure that the impact was as fair as possible to all customer groups.

1.21 We have assumed that the current structure of charges will continue for the PC21 period. Our financial model allows us to then forecast the required revenue from each customer group and derive price limits and forecast charges.

The current structure of charges in Northern Ireland

Charges (where applicable) to individual customers will vary according to the type of customer and the service they are receiving.

Customers are classified as:

- Water or wastewater;
- Domestic (household) or non-domestic (non–household businesses, charities or public sector organisations);
- Measured (metered), un-measured (un-metered); and

- Trade effluent.

Domestic unmeasured water (notional)

1.22 The unmeasured domestic (household) notional charge is based on the Capital Value of each household property. This notional charge does not depend on consumption. Currently the unmeasured domestic (household) charge is paid via subsidy from DRD.

Domestic unmeasured wastewater (notional)

1.23 The unmeasured domestic (household) notional charge for wastewater is also based on the Capital Value of each household property. This notional charge includes the cost of treating surface water run-off from properties, but excludes drainage from public roads and footways etc. Currently, the unmeasured domestic (household) charge is paid via subsidy from DRD.

Domestic measured water (notional)

1.24 Currently no domestic customers pay for water services charges based on usage.

Domestic measured wastewater (notional)

1.25 Currently no domestic customers pay for wastewater services charges based on usage.

Non-domestic unmeasured water

1.26 Unmetered non-domestic customers are currently charged relative to the rateable value of their property. These customers pay separate charges, neither of which reflects their consumption of water: a minimum charge for access to the network and an additional charge that is a proportion of their rateable value. Currently, there is a 50% subsidy in place for non-domestic unmeasured water charges.

Non-domestic unmeasured wastewater

1.27 Charges for unmeasured non-domestic wastewater are also a function of the connected property's rateable value. Customers pay two separate charges: a minimum charge for accessing the network and a charge that is in proportion to their rateable value. Currently, there is a 50% subsidy in place for non-domestic unmeasured wastewater charges.

Non-domestic measured water

1.28 Measured non-domestic customers pay a standing charge, which depends

on the size of their meter connection, and a volumetric charge based on how much water they consume. Currently, there is a domestic allowance subsidy in place for nondomestic measured water charges. The domestic allowance is 200m^3 for those nondomestic measured water customers who pay full business rates. There are discounts on the volumetric rate for customers who use large volumes of water i.e. annual consumption of over 100,000m^3. However, eligibility for the large user tariff depends on the consumption and on the commitment of the customer to water efficiency. This may include, but is not restricted to, the installation of water saving devices, recycling plants and a review of water efficiency by independent water experts.

Non-domestic measured wastewater

1.29 Non-domestic wastewater customers pay a standing charge based on the size of their water meter connection and a volumetric rate based on an assumption that 95% of their water consumption is returned to sewer. If a customer can demonstrate that less than 95% of water returns to sewer (for example, a company that uses water in its production processes) then they can apply to have the assumption of 95% reduced. Currently, there is a domestic allowance subsidy in place for nondomestic measured wastewater charges. The domestic allowance is 190m^3 for those non-domestic measured wastewater customers which pay full business rates.

1.30 There are no discounts for customers who discharge large volumes of wastewater.

1.31 The cost of receiving and treating property surface water drainage for non-domestic measured wastewater is included in the tariff for measured wastewater.

Trade Effluent

1.32 Charges for trade effluent are based on the Mogden formula. This formula assesses a charge for the treatment of a particular strength and volume of effluent, based on the costs of treating this wastewater.

1.33 Trade effluent customers pay a variable rate based on the actual volume and strength of the effluent discharged.

The Mogden formula is: $C = R + V + (Ot/Os)B + (St/Ss)S$

Where:

- C is the unit charge in pence per cubic metre for the trade effluent discharge.

- R is the unit cost in pence per cubic metre of reception and conveyance of sewage.

- V is the unit cost in pence per cubic metre of the volumetric and primary treatment of sewage treated and disposed of in sewage treatment works.

- Ot is the chemical oxygen demand in mg/l of the trade effluent after 1 hour quiescent settlement.

- Os is the chemical oxygen demand in mg/l of the settled sewage standard strength.

- B is the unit cost in pence per cubic metre of the biological oxidation treatment of settled sewage.

- St is the total suspended solids in mg/l of the trade effluent at pH 7.

- Ss is the total suspended solids in mg/l of crude sewage – standard strength.

- S is the unit cost in pence per cubic metre of treatment and disposal of primary sludge.

Roads drainage

1.34 In Great Britain customers pay a proportion of their sewerage charges for the collection and treatment of surface water drainage (rainwater that falls onto properties, driveways and is channelled to the sewerage network) and highway drainage (run-off from roads and pavements). The cost of dealing with rainwater is complicated by the fact that some surface water in rural areas would be collected by separate drainage network and would be discharged directly to water-courses, whilst a proportion of urban drainage (within cities and towns) would normally be collected by the sewerage network and discharged to a sewage treatment works.

1.35 The cost of providing these facilities in Great Britain is paid for by sewerage customers. This is due to the fact that legislation in Great Britain does not permit any alternative method of cost recovery. In Northern Ireland, however, such legislation does not exist and, following the accepted recommendation of the Independent Water Review Panel, the costs of collecting and treating drainage from roads is to be recharged to DRD Roads Service and is financed through general taxation. This reduces the amount of revenue to be raised directly from NI Water's customers.

1.36 The cost of dealing with surface water is allocated across the sewerage customer groups (with the exception of trade effluent customers), in the same proportion as the relative volumes of wastewater produced. We have provided below in Table 1 a forecast amount for Roads Drainage that may be recharged to DRD Roads Service in the PC21 period.

	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27
Forecast roads drainage recharge (£m)	23.9	24.7	25.6	26.5	27.5	28.5

Table 1 - Roads drainage recharge (nominal prices)

Domestic Allowance

1.37 We have assumed for the purposes of the PC21 final determination that the domestic allowance for non-domestic (measured water and sewerage) will continue into PC21. The domestic allowance compensates non-domestic customers for domestic consumption, given that subsidy is being paid on behalf of domestic customers by the NI Executive.

Disposal of tankered waste

1.38 NI Water currently provides a discretionary service for the disposal of tankered waste. Each domestic customer is entitled to one free tank empty in a 12 month period. Subsequent requests for collection and treatment of sewage of a domestic nature (e.g. septic tanks, domestic treatment plants and cesspools), are subject to a charge. We understand that the current regime covering disposal of tankered waste will continue in the PC21 period.

Level of revenue and subsidy (per revenue group)

1.39 Table 2 shows the indicative level of revenue from each revenue group together with the subsidy allocation for each group based on the current structure of charges.

Revenue group	Forecast revenue over PC21 (£m)	Subsidy allocation
Domestic unmeasured water	910.8	Subsidy and contribution through rates
Domestic unmeasured sewerage	1111.2	Subsidy and contribution through rates
Non-domestic measured water	287.9	domestic allowance subsidy
Non-domestic measured sewerage	188.2	domestic allowance subsidy
Non-domestic unmeasured water	13.2	50% subsidy
Non-domestic unmeasured sewerage	17.0	50% subsidy
Trade effluent (includes roads drainage costs of approximately £134m)	193.1	0% subsidy
Non-tariff basket revenue (includes large users)	86.3	0% subsidy
Total required revenue	**2807.7**	
Note: Figures may not add up due to rounding.		

Table 2 - Revenue groups including subsidy allocation (nominal) (£m)

1.40 Approximately 76% of the Revenue requirement over PC21, i.e. £2,145m is forecast to be paid through subsidy. The NI Water business plan forecast a subsidy level of £2,130m over the PC21 period.

1.41 Table 3 shows the sources of revenue over the PC21 period including revenue from subsidy, Roads Drainage re-charge to DRD Roads Service and revenue from charges (non-domestic).

	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	Overall total
Subsidy requirement	321.5	335.2	349.6	364.4	379.5	395.1	2,145.3
Roads drainage recharge	23.88	24.74	25.62	26.54	27.49	28.48	156.75
Revenue from charges	76.4	81.4	84.6	86.2	87.8	89.4	505.7
Total revenue	**421.8**	**441.3**	**459.8**	**477.1**	**494.8**	**513.0**	**2,807.7**

Table 3 - Annual subsidy requirement for PC21 (nominal) (£m)

Charge Limits for PC21

1.42 We have a legal duty to set the 'adjustment factor' for each year, generally referred to as the price limit or the K factor, to be applied over the Price Control period. The K factor is the percentage increase or decrease above or below inflation by which tariff basket price limits are allowed to rise or fall on an annual basis during the Price Control period.

1.43 We utilise price limits within the various tariff baskets to ensure that the correct revenue is raised from each customer group and also to assure ourselves that there is no cross-subsidy between the customer groups. In setting the price limits, we have sought to balance affordability with compliance and customer priorities.

1.44 We are committed to improving the transparency of the regulatory regime. As part of this commitment, we believe that it is vital that non-domestic customers can more readily understand the likely impact of the Price Control on their bills (or level of subsidy).

1.45 Tariff baskets are defined in Condition B of the licence to cover the regulated (core) services provided by NI Water. The use of tariff baskets helps to ensure that the process of unwinding any cross subsidies is as transparent as possible. In addition, we consider that tariff baskets allow (directly – paying) customers to see more clearly the likely impact of the Price Control 2021 on their bills. The use of 'tariff baskets' mirrors the price – setting process of other utility regulators in the UK, such as Ofgem, Ofwat and WICS.

1.46 A Price Limit regime establishes a clearer link between the Price Control and any direct bills that customers pay (currently non-domestic customers). We believe that setting price limits will allow non-domestic customers to understand the likely impact of any tariff changes on their bill for the relevant period.

1.47 The K factor is the percentage increase above inflation by which Tariff Basket price limits are allowed to rise on an annual basis during the Price Control period.

1.48 We have smoothed the K factors across the 6 years of PC21. This means that NI Water receive the same net present value (NPV) in revenue terms but revenue can be added or deducted in any individual year to achieve consistent K factors across the PC21 period. This method has been used to some extent in all price controls since PC10 and avoids tariff falls followed by increases and vice versa.

1.49 The K factors determined in this draft determination are set out in Table 4 below.

Table 4 - K factors for each tariff basket

Tariff Basket	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27
Unmeasured water supply	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%
Unmeasured sewerage service	-0.1%	-0.1%	0.0%	-0.1%	-0.1%	-0.1%
Measured water supply	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%
Measured sewerage service	-1.4%	-1.4%	-1.4%	-1.4%	-1.4%	-1.4%
Trade effluent	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
Overall Weighted Average K-Factor	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

1.50 An alternative way to look at K factors is at the more granular level of revenue groups and this is shown in Table 5Table 5 - K factors for each revenue group below.

Tariff Basket	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27
Domestic unmeasured water	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%
Domestic unmeasured sewerage	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%
Non-domestic measured water	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%
Non-domestic measured sewerage	-1.4%	-1.4%	-1.4%	-1.4%	-1.4%	-1.4%
Non-domestic unmeasured water	1.3%	1.2%	0.7%	0.8%	0.9%	1.0%
Non-domestic unmeasured sewerage	4.1%	3.9%	3.3%	3.5%	3.6%	3.7%
Trade Effluent	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
Overall Weighted Average K-Factor	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Table 5 - K factors for each revenue group

1.51 Non-domestic unmeasured customers will notably see prices changes well above the impact of other revenue groups. Prices for these groups have been held down during PC15 by NI Water in the annual tariff approval process to a maximum of inflation. This determination shows how the prices

would need to change to reflect the normal process of revenue allocation. While assessed charges remains an option for these customers we would welcome views on the limiting the increases. This would have a very insignificant impact on other customers.

PC21 Weighted Average Charge Increase (WACI)

1.52 NI Water is allowed to increase the weighted average charge for each of its tariff baskets by up to the K-factor plus inflation. This is the weighted average charge increase, or WACI. The WACI is therefore equal to the K-factor plus the reported Retail Price Index (RPI). The RPI figure is published by the Office for National Statistics on a monthly basis. The figure for the 12 months to November in the year prior to the year in question is used as the RPI figure for the WACI.

1.53 Individual tariffs may increase by more than K, but the WACI for each tariff basket must be equal to or below the figure determined for that tariff basket. If NI Water intends to increase one or more tariffs by greater than the relevant K-factor, we may ask for justification for such an increase.

WACI (Weighted Average Charge Increase) = K factor plus inflation (RPI)

1.54 For the purpose of this final determination we have assumed an inflation figure of 3.00% for each year of PC21.

1.55 Taking account of this inflation figure the weighted average charge increase for each year of PC21 is shown in Table 6.

	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27
Weighted Average Charge Increase (WACI)	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%

Table 6 - PC21 Weighted Average Charge Increase (WACI)

1.56 Under Licence Condition C we set infrastructure charge limits for connecting household premises to water and sewerage services for the first time. The infrastructure charge provides a contribution towards the cost of developing local networks to serve new consumers. NI Water can levy an infrastructure charge, as well as the direct costs of making new connections. We have determined a final infrastructure charge limit of £350 for 2021-22 (2020-21 prices).

Conclusion

1.57 In setting K factors for the PC21 period we have accepted NI Water's updated forecasts of customer numbers and volumes for the PC21 period for the purposes of this draft determination. We intend to review NI Water's assumptions further for the final determination in order to take account of new information that may become available from both NI Water and relevant external data sources.