An Coimisiún um Rialáil Fóntais
Commission for Regulation of Utilities

Irish Water Revenue Control 3 – Financial Incentives *(Non-Domestic Billing and Leakage)*

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Executive Summary

The Commission for Regulation of Utilities (CRU) is the independent economic regulator of Irish Water, the provider of public water and wastewater services.

In December 2019, the CRU published its decision on Irish Water's revenue control (RC3) for the period 2020 to 2024. This was subsequently updated in August 2020 to reflect changes to Irish Water's Capital Investment Plan. The RC3 decisions set the expected levels of outputs and outcomes that Irish Water must achieve over the five years, and the operating and capital costs of Irish Water necessary to achieve those outputs and outcomes. It also set performance-based incentives for Irish Water, including a new financial incentive for Irish Water to accelerate its work to reduce leakage.

Incentives are an important part of the revenue control process. They complement and enhance the requirement for utilities to efficiently manage costs by ensuring that it is incentivised in the delivery of its responsibilities, particularly regarding quality, efficiency, and timeliness of service delivery to the customer. Therefore, incentives are important tools through which CRU seeks to protect the interests of customers.

In December 2020, the CRU published a consultation paper detailing its proposal in relation to setting incentive mechanisms for two of the non-domestic billing incentives decided on at IRC2 and carried on to RC3 ('Efficient Billing' and 'Billing Correction'), and the new leakage reduction incentive introduced for RC3. In reaching this decision, the CRU reviewed and considered all responses to the public consultation, which was held for a period of 10 weeks.

Irish Water's progress across all the RC3 incentives will be assessed at the end of the RC3 period as part of the lookback review and corrected by the application of a k-factor. Irish Water's performance against each of the RC3 incentives will be assessed individually. Any payment or penalty for Irish Water will be pooled together and made as one k-factor adjustment. This payment/penalty will feed through to Irish Water's allowed revenues for the following revenue control period. If Irish Water's allowed revenue for the following period is reduced as a result of poor performance in the RC3 incentives, it will still be expected to deliver on its commitments to customers.

Non-Domestic Customers - Efficient Billing & Billing Correction Incentives

At IRC2, the CRU introduced the following non-domestic billing incentives:

- 'Efficient Billing' incentive - encourages Irish Water to bill non-domestic customers that are connected to the network, using water / wastewater services but not receiving a bill.

- 'Billing Correction' incentive - encourages Irish Water to correctly bill all its non-domestic customer base.

These incentives are important for customers from an efficiency and equity perspective. This is because customers that are connected to the public network, but do not pay a bill, or under pay for their service, impose a cost on Irish Water. This cost is ultimately passed on to other paying customers, which imposes an unfair subsidy on these customers.

Irish Water is encouraged to undertake the work associated with the incentives as it is allowed to keep a portion of the additional revenue billed as a result of identifying and correctly billing non-domestic customers. However, in order to ensure that Irish Water is incentivised to actively pursue these incentives, whilst not being overly rewarded, the CRU, as part of IRC2 (and maintained in RC3), placed the following caps on the incentive payment that Irish Water can earn:

- €50k cap on the revenue that can be earned by Irish Water from correcting bills for an individual customer;
- €4m cap on each individual incentive a year; and
- €10m cap on the total amount of revenue the utility can earn through the three non-domestic billing incentives combined in a single year.

However, the mechanism for exactly how these incentives would be calculated was not decided at IRC2 as Irish Water was not billing its non-domestic customers directly at that time. This paper sets out CRU's decisions regarding the mechanism for the Non-Domestic 'Efficient Billing' and 'Billing Correction' incentives calculations.

The CRU has decided that Irish Water can track the revenue of specific customers identified under an efficient billing and billing correction rule set and use this as the basis for the incentive payment calculation. The rule set is summarised at a high level with a short explanation provided below.

CRU Decision - Rule Set for Efficient Billing and Billing Correction Incentive				
Scenario	**Non-Domestic Incentive**	**Irish Water Incentive Payment**	**Back-billing**	**Duration**
Non-Domestic Meters Not Transferred at Migration	Efficient Billing	42% of additional revenue billed to customer identified	No	12 months from date the issue is identified.
Surveying (New Non-Domestic Meter / Supply Identified)	Efficient Billing	42% of additional revenue billed to customer identified	No	12 months from date the issue is identified
Backdated Move-In via "Feet on the Street	Billing Correction	42% of additional revenue billed to customer billed correctly	No	12 months from date the issue is identified.

Non-Domestic Meters Not Transferred at Migration – In this scenario Irish Water identifies a customer meter (and corresponding metering information) that did not transfer over to Irish Water's billing system from the Local Authorities at the time of the migration (July 2016 to June 2017).

Surveying (New Non-Domestic Meter / Supply Identified) – Irish Water's surveying reveals customer meters that do not currently exist on its billing systems while carrying out work programmes such as its Leakage Reduction Programme.

Backdated Move-In via "Feet on the Street" - Through Irish Water's "Feet on the Street" programme, Irish Water agents carry out site visits to non-domestic properties where there is a build-up of bad debt. These site visits may highlight instances where a new non-domestic customer has already moved in but has not yet engaged with Irish Water. By identifying and making direct contact with the new customer Irish Water can then issue the correct bill to that customer.

Leakage Reduction Incentives

Progress by Irish Water to reduce its leakage levels is important as it reduces Irish Water's costs over time and consequently reduces costs to customers. The purpose of this RC3 leakage

reduction incentive is to encourage Irish Water to accelerate and meet its leakage reduction targets through its work programmes, as funded for in RC3.

For the leakage reduction incentive, the CRU has decided to set Irish Water an overall leakage reduction incentive target of 176 million litres of water a day (176MID) by the end of 2024 (161MLD on the public network and 15MLD on the customer side). This target aligns with the CRU's decision on Irish Water's RC3 leakage reduction commitment.

Irish Water will not to be rewarded through this incentive for any leakage 'reduction' reported as a result of a reclassification of 'unaccounted for water' to 'accounted for water' in the water balance submitted annually to the CRU.

The CRU has decided that the following mechanism for Irish Water to earn or be penalised on this incentive:

- Where Irish Water meets the overall leakage reduction target, it will receive a €20 million incentive payment.
- A 'dead band' whereby if Irish Water reaches between 80-99% of its overall target of 176MLD, it will not receive an incentive payment, and will not be penalised.
- Where Irish Water reaches less than 80% of its target it will be subject to a penalty of €20 million.

In order for the CRU to be able to accurately monitor Irish Water's progress in reaching its overall RC3 net leakage reduction target, Irish Water is required to provide the CRU with its 2019 leakage levels, for a) public side network leakage, and b) customer side leakage. This data be used to set the baseline against which CRU will assess Irish Water's delivery of the targets committed to at RC3. The baseline is an intrinsic part of the leakage reduction incentive mechanism as without this data the CRU will be unable to measure Irish Water's performance. Therefore, Irish Water is required to submit this data no later than 31st December 2021.

If Irish Water does not submit the 2019 data by the stated deadline, the CRU will determine that Irish Water has forfeited its leakage reduction incentive for the years 2020 and 2021 and will apply a €2m penalty for each of these years. For every subsequent six months that Irish Water does not provide the required information, a further €1m penalty will apply. To be clear, this is not an additional penalty for Irish Water. If required, this penalty will be applied subject to the original €20m leakage incentive cap (penalty / reward), i.e., the maximum Irish Water can be rewarded or penalised through the RC3 leakage reduction incentive is €20m. Any adjustment will be made by application of a k-factor at the end of the RC3 period. Irish Water is also required to provide a methodology statement to support its baseline leakage levels (both public and customer side) by the stated deadline of 31st December 2021.

CRU Mission Statement

The CRU's mission is to protect the public interest in Water, Energy and Energy Safety.

The CRU is guided by four strategic priorities that sit alongside the core activities we undertake to deliver on the public interest. These are:

- Deliver sustainable low-carbon solutions with well-regulated markets and networks
- Ensure compliance and accountability through best regulatory practice
- Develop effective communications to support customers and the regulatory process
- Foster and maintain a high-performance culture and organisation to achieve our vision

Public/ Customer Impact Statement

The CRU has a legal duty to protect consumers' interests while ensuring that an efficient Irish Water can carry out and finance its functions. One of the ways we deliver on this duty is to review Irish Water's business plans and set revenue limits (i.e., a revenue control) based on Irish Water investments and services that customers receive from Irish Water.

In December 2019 the CRU set the revenue limits for Irish Water for the next five years 2020 – 2024 (RC3 period) along with the expected levels of outcomes for customers that it is expected to deliver over the period. This was subsequently updated in August 2020 to take account of changes to Irish Water's Capital Investment Plan.

The CRU, in its role as economic regulator for the water sector, is focused on incentivising Irish Water to deliver outputs and associated outcomes for customers in an efficient manner. Therefore, as part of the revenue control process the CRU sets performance-based incentives for Irish Water. Incentives are important tools used by regulators to ensure that monopoly network companies, for example, Irish Water, EirGrid, and GNI, are incentivised to deliver on their responsibilities, especially in areas such as quality, efficiency, and timeliness of service delivery to their customers. In some instances, where a network company performs well it will be rewarded financially, and customers will see an increase in network cost that reflects an increase in the service provided to them. Conversely, if the network company underperforms the customer will see a decrease in network cost that reflects the decrease in the level of services provided. This provides the network company with a financial incentive to provide a high quality of service in the areas that matter the most to customers.

The CRU held a public consultation on mechanisms for two financial incentives relating to non-domestic billing, which were introduced at Irish Water's second revenue control (IRC2) and

continued for the RC3 period This paper details our decision following consideration of the 16 responses received to the consultation.

The efficient billing and billing correction non-domestic incentives are important for customers from an efficiency and equity perspective. This is because customers that are connected to the public network, but do not pay a bill, or under pay for their service, impose a cost on Irish Water. This cost is ultimately passed on to other paying customers. This is unfair as paying customers should not be subsidising others.

This paper also details our decision on a new leakage reduction incentive, introduced for the RC3 period. Progress made by Irish Water to reduce its leakage levels will in the long term reduce costs to customers.

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1. Introduction

1.1 Commission for Regulation of Utilities

The Commission for Regulation of Utilities (CRU) is Ireland's independent energy and water services regulator. Established in 1999, the CRU has a wide range of economic, customer protection and safety responsibilities in energy.

The CRU is the regulator of Irish Water as the national utility for the provision of public water and wastewater services. The CRU's role is to protect the interests of water and wastewater customers, ensure the delivery of water services in a safe, secure, and sustainable manner and ensure that Irish Water operates in an economic and efficient manner.

Further information on the CRU's role and relevant legislation is available on the CRU's website at **www.cru.ie**.

1.2 Background

Performance-based incentives are an important component of revenue control regulation. They complement and enhance the requirement for a regulated monopoly network company to efficiently manage costs by ensuring that the network company has an increased incentive in the delivery of its responsibilities, particularly regarding quality, efficiency, and timeliness of service delivery to the customer.

Incentives should be meaningful, measurable, and implementable and can either be financial incentives which can include a corresponding penalty, or reputational incentives, where performance against key metrics is published. For financial incentives, the success of an incentive regime is contingent on the correct balance being struck between risk and reward for the utility. If a regulator sets an incentive which is either overly rewarding to the utility (exposing the customer to unnecessary costs) or overly punitive, this would be of little benefit to the utility and ultimately the customer.

Incentives are used by the CRU to encourage Irish Water to run its business in an efficient manner to reach targets set by the CRU. Generally, if targets are met, the utility would receive an incentive payment. However, if the utility fails to reach the target, in some cases an equivalent penalty would apply.

In previous revenue controls the CRU included performance-based incentives on Irish Water similar to the approach the CRU applies to the energy sector, using a combination of financial

and reputational incentives (through monitoring and publication) to incentivise Irish Water to improve its performance in key areas.

In its RC3 (revenue control 3) decision, the CRU decided to continue this approach in order to build upon work currently being undertaken by Irish Water on the incentives introduced at IRC2. Additionally, the CRU decided to introduce a further financial incentive for RC3 for Irish Water to reduce its leakage levels.

The areas where the CRU decided financial incentives are to apply to Irish Water for RC3 are:

- Rolling retention of additional opex efficiencies[1];
- Non-Domestic billing incentives
    - Bad debt,
    - Efficient billing; and
    - Billing correction
- Leakage reduction incentive

The 'rolling retention of additional opex efficiencies' incentive, and the 'bad debt' non-domestic billing incentive have already been implemented, for further details on these please see section 5 of the CRU's Decision on Irish Water Revenue Control 3 (CRU19148). For the IRC2 period, the CRU decided to assess Irish Water's performance against these incentives at the end of the period. Through the application of a k-factor, the CRU adjusted Irish Water's revenue for the RC3 period to reflect any payment/penalty. For RC3, the CRU intends to adjust for any penalty/payment to Irish Water, as a result of its performance in achieving the RC3 incentives targets, in the same manner. To be clear, if Irish Water's allowed revenue for the following period is reduced as a result of poor performance in the RC3 incentives, it will still be expected to deliver on its service commitments.

On 4 December 2021, the CRU published a consultation paper to provide information to the public and seek feedback on the CRU's proposal on incentive mechanisms for the other two non-domestic billing incentives (efficient billing and billing correction), and for the new leakage reduction incentive. The CRU received 16 responses from interested parties which were considered when reaching its decisions. This decision paper provides a summary of the issues raised in those responses and CRU's response.

[1] See section 6 of CRU's Decision on Irish Water's Revenue Control for 2017-2018 (CER16342)

1.3 Related Documents

- CRU Consultation Irish Water's Revenue Control 3 - Financial Incentives (Non-Domestic Billing and Leakage) – CRU20143 – 4th December 2020
- CRU Decision Irish Water's Performance Assessment Framework 2020 – 2024 – CRU21101 – 10th September 2021
- CRU Consultation Irish Water's Performance Assessment Framework – CRU20140 – 27th November 2020
- CRU Decision Update to Irish Water's Revenue Control 3 (RC3.5) – Irish Water's Updated Capital Investment Plan (RC3.5) – CRU20085 – 4th August 2020
- CRU Decision on Irish Water Revenue Control 3 (RC3) – CRU/19/148 – 5th December 2019
- CRU Irish Water 2019 Revenue Control Decision Paper – CRU/18/211 – 24th September 2018.
- CRU Decision on Irish Water Revenue 2017 – 2018 – CER/16/342 – 12th December 2016

Information on the CRU's role and relevant legislation can be found on the CRU's website at **www.cru.ie**

1.4 Consultation Reponses

The CRU received 16 responses a from the following stakeholders:

- An Forum Uisce
- Kennedy Analysis
- Irish Water
- 13 private individuals

In reaching its decision, the CRU has reviewed and considered all responses received to the consultation. The CRU would like to acknowledge the level of detail in the submissions and thank the respondents for their constructive feedback.

1.5 Structure of this paper

This paper should be read in conjunction with the CRU's Decision on Irish Water's Revenue Control 3 (CRU19148).

- Section 1 – provides an introduction and an overview of the financial incentives included in the CRU's Decision on Irish Water's Revenue Control 3 (RC3).
- Section 2 – details the CRU's decisions regarding two of the RC3 Non-Domestic Billing Incentives (efficient billing and billing correction). The decision relates to the mechanism for these incentives such that they can be implemented by Irish Water. It also provides a summary of the consultation responses received in relation to theses incentives, and the CRU's response.
- Section 3 - details the CRU's decision on the leakage reduction incentive mechanism for Irish Water. It also provides a summary of the consultation responses received in relation to the CRU's proposed leakage reduction incentive mechanism for Irish Water, and the CRU's response.
- Section 4 – details the next steps.

2. Non-Domestic Billing Incentives

2.1 Background (CRU RC3 Decision - 2019)

Introduction

For the RC3 period the CRU decided to continue the three financial incentives relating to the billing of non-domestic customers in the same form as outlined in its IRC2 decision. These three incentives are as follows:

- Collection of non-domestic bad debt.
- Efficient billing of non-domestic customers; and
- Billing correction for bills of non-domestic customers

At the time of the IRC2 decision (when the decision to introduce these incentives was made), billing of non-domestic customers was carried out by local authorities on behalf of Irish Water. Therefore, while the non-domestic bad debt incentive came into effect during the IRC2 period, the implementation of the other two incentives was dependent upon the transfer of the billing function to Irish Water, and the formation of a robust baseline of data on non-domestic customers. Therefore, these incentives could not come into effect immediately at the start of IRC2. The implementation of these two incentives required the completion of the project to transfer customer/billing information from the local authorities to Irish Water.

Irish Water's 'Data Migration Project' has now been completed, and Irish Water now bills all non-domestic customers directly. Therefore, the CRU plans to commence these incentives.

For the RC3 period the CRU decided to continue with the efficient billing and billing correction incentives in the same form as decided in its IRC2 decision. For ease, this decision is summarised below.

Summary of Non-Domestic Efficient Billing & Billing Correction Incentives

The non-domestic billing incentives are intended to apply to all regulated charges[2] set by (or on behalf of[3]) Irish Water in relation to non-domestic customers (including mixed use customers). In order to ensure that Irish Water is incentivised to actively pursue these incentives, and that Irish

[2] Excluding connection charges
[3] By the Local Authorities

Water is not overly rewarded, in its IRC2 decision, the CRU, placed the following caps on the incentive payment that Irish Water can earn:

- €50k cap on the revenue that can be earned by Irish Water from correcting bills for an individual customer.
- €4m cap on each individual incentive a year; and
- €10m cap on the total amount of revenue the utility can earn through the three non-domestic billing incentives combined in a single year.

These caps are being maintained for the RC3 period. The CRU decided that both the efficient billing and billing correction incentives would be asymmetrical for the RC3 period. This means that Irish Water can earn additional revenue through these incentives (with no downside or penalty if they fail to increase revenues collected). The CRU considers that this will further act as an incentive for Irish Water to bill all eligible non-domestic customers correctly, in a timely and efficient manner. However, the CRU may change these incentives to a symmetrical form (including penalties) in the future, if appropriate.

Non-Domestic Customers - Efficient Billing Incentive

The efficient billing scheme incentivises Irish Water to identify and correctly bill any non-domestic customers connected to the Irish Water network that do not currently receive a bill from Irish Water for the use of water / wastewater services. This incentive is important from an efficiency perspective, as properties that are connected to the network impose costs on Irish Water, and by extension, other Irish Water non-domestic customers who do pay. This means there is also an equity issue, as customers should not be expected to subsidise other customers in this context.

Under the IRC2 decision, the incentive would work as follows: If Irish Water bills more connected properties (i.e., above a baseline amount), they keep a percentage (42%) of the additional revenue billed. The additional revenue billed is calculated as the difference between expected billing (which is zero for customers that Irish Water was not previously billing) and actual billed amounts (which is then multiplied by an efficient billing factor of 42%). For the incentive payment to be calculated in this manner, it is important that the number of non-domestic connections currently billed by Irish Water, is predictable and reported on, for this incentive to be effective.

In England and Wales, Ofwat[4] have a similar incentive scheme in place to encourage companies to bill all eligible properties. Companies share any rewards (or penalties) from billing more (or fewer) properties than expected. The incentive payment is calculated by multiplying the difference between what a company expected to bill and what they actually billed by an 'efficient billing factor' of 42% of the average bill. This approach taken by Ofwat is slightly different to the one taken by the CRU in that it is symmetrical (i.e., there is a penalty and reward associated). There is a cost associated with identifying and billing customers. Therefore, for Irish Water to be appropriately incentivised, the reward needs to be set at level that recognises this cost. For this reason, and from experience in England and Wales, the CRU decided at IRC2 to set the 'efficient billing factor' at 42%.

Non-Domestic Customers - Billing Correction Incentive

The billing correction scheme creates an incentive for Irish Water to identify and correct instances where properties are being charged less than they should be charged. As mentioned above, as customers connected to the network impose costs on Irish Water, by extension, they also impose costs on other Irish Water customers who pay the correct charges. This means there is also an equity issue, as customers should not be expected to subsidise other customers in this context.

Under the IRC2 decision, the incentive would work as follows: If Irish Water identifies eligible non-domestic customers that have been under-billed, and starts to bill those customers correctly, Irish Water can keep a portion of the additional revenue collected. The additional revenue they can keep is calculated as the additional revenue billed to customers as a result of errors being identified, and subsequently, correct bills being issued, multiplied by 42%.

For this incentive to be effective, it was acknowledged at IRC2 that Irish Water will be required to provide appropriate information to demonstrate the amount of additional revenue it has billed out as a result of identifying these errors. As with the efficient billing incentive above, this data only became available following the completion of the transfer of responsibility for billing of non-domestic customers to Irish Water.

Similar to the efficient billing incentive above, the CRU drew on experience from other jurisdictions and decided to emulate Ofwat's approach in England and Wales.

[4] Ofwat is the body responsible for economic regulation of the privatised water and sewerage industry in England and Wales.

Ofwat looks at two options when calculating the billing incentive and uses the lower of the following estimates for calculating the reward:

- Future extra revenue billed up to the end of the regulatory period as a result of correcting historical under billing. This approach would reward companies for identifying problems as early as possible; and
- Associated back-billing. This approach would protect customers as it would stop companies receiving rewards greater than the extra revenue obtained from identifying problems.

The CRU decided not to include back-billing within this billing incentive for RC3, as per its IRC2 decision, as it considers that Irish Water should focus on improving its future billing operations rather than on historic issues. Like the efficient billing incentive above, there is a cost associated with identifying and billing customers. Therefore, for Irish Water to be appropriately incentivised, the reward needs to be set at level that recognises this cost. For this reason, and from experience in England and Wales, the CRU decided at IRC2 to set the reward for Irish Water at 42% of the corrected bill.

As mentioned above, both the billing correction and efficient billing incentive payments to Irish Water are subject to caps in terms of how much Irish Water can earn based on additional revenue it receives from individual customers, and overall caps on the total incentive Irish Water can earn.

Further to the IRC2 decision, the CRU published a consultation paper regarding the detailed operation of these incentives in December 2020[5].In that consultation, the CRU requested feedback from the public in two areas under consideration for setting the mechanism for the billing correction and efficient billing non-domestic billing incentives, namely:

- the overall approach to setting the incentives (to take a baseline or granular approach); and
- the criteria under which Irish Water could earn on the incentives.

Sections 2.2 and 2.3 below detail the consultation proposals on both areas, the responses received to the consultation, and the CRU's decision following its consideration of those responses.

[5] CRU20143

2.2 Overall Approach to Setting the Efficient Billing & Billing Correction Non-Domestic Incentives

2.2.1 Background (Irish Water's Submission)

Since 2018, Irish Water has engaged with the CRU on its progress to setting the baseline data required to progress the implementation of the billing correction and efficient billing incentives. In doing so, Irish Water has identified issues with using the baseline approach to calculate the incentive payments, and has requested the CRU to consider an alternative, more granular approach to setting the incentives. Under this approach Irish Water would track additional revenues earned from specific customers which fall under the billing correction and efficient billing incentives criteria (rather than total revenue from all relevant customers), offering a more granular approach to what the CRU had included in its IRC2 decision (discussed in section 2.3 below).

Non- Domestic Customer Baseline Movement Issue

At the time of the IRC2 decision, because of the approach taken to the incentives, it was necessary for Irish Water to bill all its non-domestic customers directly[6] before it could start work towards implementing the efficient billing and billing correction non-domestic billing incentives as outlined in the IRC2 decision. This is because for these incentives to be effective, it was necessary to have the correct baseline of data of non-domestic customers, (i.e., number of customers, customer data matched with meter numbers etc.) against which Irish Water's performance can be measured.

In a submission to the CRU, Irish Water highlighted issues with using a baseline approach to calculate any incentive payment. Irish Water argued that the baseline number of non-domestic customers / connections is not yet stable and requested that the CRU consider an alternative, more granular approach to calculating any incentive payment under the efficient billing and billing correction incentives.

In May 2018, Irish Water presented its proposals to the CRU for establishing and monitoring a non-domestic customer baseline measurement, that it considered appropriate to use in the calculation of any incentive payment under the efficient billing and billing correction incentives.

[6] Irish Water completed the No-Domestic billing Migration Project in 2017, up until this point non-domestic customers were billed by the Local Authorities.

- For the efficient billing incentive Irish Water proposed to track the movement in the number of connections on its system[7] over the period of one year.
- For the billing correction incentive Irish Water proposed to track the movement in the number of service agreements for one year.

Irish Water set the baseline for both of connections / service agreements on 1st January to 2018 and tracked any movement up until 31st December 2018. Overall, there was minimal movement of -0.2%. Irish Water explained that this minimal movement means that the baseline is not yet stable for the purposes of calculating the incentive payment. The reason for the minimal movement may have been caused by one of the following:

- Removal of monitoring of meters[8] and non-billable meters from Irish Water's billing system; and
- Reclassification of non-domestic customers to domestic customers.

Irish Water explained that if a new connection is identified (that was not being billed), and another connection is removed from the billing system (as the associated meter was identified as a monitoring meter), the baseline will show no movement. Therefore, the work that Irish Water is doing to identify these connections will not be recognised (for incentive purposes). As a result, the effectiveness of the efficient billing and billing correction incentives is compromised.

2.2.2 CRU's Request for Feedback & Consultation Responses

In the consultation paper the CRU noted that there are two fundamental approaches to calculating the incremental revenue associated with the efficient billing and billing correction incentives. These are:

A. The baseline approach, where an incentive payment to Irish Water would be based on the difference between expected billing levels in one year (measured by connections / services points), and actual billed amounts to all eligible customers in the subsequent year.
B. A granular approach where an incentive payment to Irish Water would be based on the tracking of additional revenues earned from specific customers identified under an

[7] New connections were excluded from this calculation
[8] During the billing migration project, a number of monitoring meters transferred over to Irish Water's billing system which are not billable

approved rule set (the proposed rule set is discussed in section **Error! Reference s ource not found.**)

The specific rules outlined in Section 2.3 could apply under either approach. The CRU proposed that Irish Water use option B as the basis for calculating any incentive payment under the efficient billing and billing correction non-domestic billing incentives and requested feedback from the public. The CRU did not receive any comments opposing this proposal, or any alternative approaches. An Fourm Uisce supported the proposal, noting that a more granular approach to setting the incentives payment *"will enable Irish Water to recover more accurate incentive rewards that will in turn provide for a more equitable treatment of customers, in that all customers are paying accurately for the services they are being provided with and there is less opportunity for under and/or overpayments occurring."*

2.2.3 CRU's Decision

CRU Decision

The CRU approves Irish Water's proposal to take a granular approach to calculating the efficient billing and billing correction incentive payments (Option B). The CRU's reasoning is provided below. This will be done by tracking the revenues of specific customers that fall within the approved rule set/criteria which is detailed in sections 2.3 below.

Efficient Billing Incentive

When originally setting this incentive at IRC2, the CRU drew on experience from England and Wales where Ofwat has a similar incentive in place to encourage companies to bill all eligible customers. The reason the CRU decided (in IRC2) to use a baseline approach to calculate any incentive payment was based on Ofwat's experience. Also, it is administratively easy for Irish Water to calculate incentive payments using the baseline approach.

However, when the efficient billing incentive was first introduced by the CRU at IRC2, Irish Water did not have full understanding of its non-domestic customer base as they continued to be billed by the local authorities at that time. In reaching its RC3 decision in 2019, the CRU considered that Irish Water would by now have a baseline of data of its non-domestic customers suitable to measure Irish Water's performance against for the purpose of this incentive. However, the CRU acknowledges the issues outlined by Irish Water in finalising a stable baseline of data, for the purposes of calculating the efficient billing incentive payment (discussed in section 2.2.1 above).

The CRU agrees with Irish Water, that using an incorrect baseline of data to track movement for the purposes of an incentive payment, may result in the work Irish Water is doing not being recognised appropriately. This means the effectiveness of the incentive would be diminished as Irish Water would be under rewarded. For the incentive to be effective, it is important that the CRU balances what is best and fair for customers, with incentivising Irish Water to the correct level. This incentive is important to ensure that all customers are treated fairly, and, that some customers do not subsidise other customers.

Irish Water's proposal to take a more granular approach, tracking the revenue of specific customers identified under an efficient billing 'rule set' (discussed below), and to use this as the basis of the incentive payment calculation, is more accurate than the baseline approach the CRU had originally envisaged. Therefore, the CRU has decided to approve this approach (Option B) as it will appropriately recognise the work Irish Water is doing to identify these customers.

Billing Correction Incentive

In its IRC2 decision the CRU acknowledged that for the billing correction incentive to be effective, Irish Water would be required to provide appropriate information to demonstrate the amount of additional revenue it has billed to customers, as a result of identifying billing errors. Therefore, the CRU has decided to approve Irish Water's proposal (Option B) to track the revenue of specific customers identified under a CRU approved billing correction 'rule set' and use this revenue as the basis of the incentive payment as it is more accurate than the baseline approach.

2.3 Rule Set / Criteria

2.3.1 Background (Irish Water's Submission)

In a submission to the CRU, Irish Water proposed four scenarios where it considers it should earn on the efficient billing and billing correction incentives because of the work it is doing to identify and correctly bill non-domestic customers (those using water services and not receiving a bill, or those being under charged for the services they are using). Irish Water proposed that these scenarios would set the criteria for the efficient billing and billing correction incentives. If approved by the CRU, Irish Water would track revenues earned from specific customers which fall under these criteria. In line with the CRU's RC3 decision, Irish Water could then retain 42% of this additional revenue. Irish Water's proposed scenarios 1- 4 are explained below.

Irish Water Proposal – Scenarios for Efficient Billing and Billing Correction Incentive	
1. Non-Domestic Meters Not Transferred at Migration (Efficient Billing)	The migration of non-domestic customers from all 34 Local Authorities to Irish Water took place from July 2016 to June 2017. Only accounts that were actively billed by the Local Authorities at this time were transferred to the Irish Water billing system. This meant that some meters (and corresponding metering information) were not transferred across to Irish Water in the migration process. Irish Water is working with the Local Authorities reviewing historic metering information to identify the meters that were not transferred in the migration process. Where consumption is identified at any of these meters, and where a customer can be identified, they will be billed by Irish Water.
2. Surveying (New Non-Domestic Meter / Supply Identified)	Irish Water will consolidate its non-domestic customer base though a number of current and planned work programmes during RC3. As a result of this work, Irish Water may uncover meters that do not currently exist on its billing systems. Where consumption is identified at these meters, and where a customer can be identified, (who does not currently receive an unmetered bill), Irish Water intends to commence billing those non-domestic customers.
3. Failed / Failing Meters that are Subsequently Exchanged or Repaired	A failed meter may no longer record any consumption, or it may incorrectly record consumption at a customer's property. A failing meter may show a gradual reduction in recorded consumption over time, as it no longer performs to its original specification. Irish Water proposed that where a failed / failing meter is identified and subsequently fixed or replaced by Irish Water, it should be included in the billing corrections incentive.
4. Backdated Move-In via "Feet on the Street	Irish Water actively pursues outstanding bad debt amongst its non-domestic customer base through its "Feet on the Street" programme. Through this programme, Irish Water agents carry out site visits to

	non-domestic properties where there is a build-up of bad debt. These site visits will highlight instances where a new non-domestic customer has already moved in but has not yet engaged with Irish Water (resulting in the right customer being billed). By identifying and making direct contact with the new customer Irish Water can then issue the correct bill to that customer. This will also cleanse the bad debt for the old customer who was no longer using services at that property.

2.3.2 CRU's Request for Feedback

The CRU reviewed each of the scenarios proposed by Irish Water and subsequently, in the consultation, proposed the rule set detailed in table 1 below. The CRU sought feedback from the public on this rule set.

The CRU's proposal represented two main changes compared to Irish Water's submission.

- Not to include Scenario 3 – 'Failed / Failing Meters that are Subsequently Exchanged or Repaired' in the rule set (as Irish Water has already been provided with funding for RC3 to exchange / replace those meters (discussed in section 2.3.3)).
- Back-billing should not be included in the incentive payment calculation (as per IRC2 Decision); and
- To allow the duration of the incentive to run for 12 months from the date the issue is identified rather than the date it is fixed (to ensure Irish Water is incentivised to rectify the issue faster)

CRU Proposal - Rule Set for Efficient Billing and Billing Correction Incentive				
Scenario	**Non-Domestic Incentive**	**IW Incentive Payment**	**Back-billing**	**Duration**
Non-Domestic Meters Not Transferred at Migration	Efficient Billing	42% of additional revenue billed to customer identified	No	12 months from date the issue is identified.
Surveying (New Non-Domestic Meter / Supply Identified)	Efficient Billing	42% of additional revenue billed to customer identified	No	12 months from date the issue is identified
Backdated Move-In via "Feet on the Street	Billing Correction	42% of additional revenue billed to customer billed correctly	No	12 months from date the issue is identified.

Table 1 CRU's Proposed Scenarios for Efficient Billing &Billing Correction Incentives

2.3.3 Consultation Responses & CRU Response

The CRU received responses from An Forum Uisce and Irish Water in relation to the proposed 'rule set' for efficient billing and billing correction non-domestic incentives. An Forum Uisce is supportive of the CRU's proposals as detailed in table 1. Irish Water sought some changes, to the CRU's proposal which are detailed below.

Scenario 3 – Failed / Failing Meters that are Subsequently Exchanged or Repaired

Consultation Response

In its response to the consultation, Irish Water requested the CRU to reconsider including scenario 3 in the billing correction non-domestic incentive 'rule set'. Irish Water explained that when it took over the water network in 2014, it inherited an aging asset base which included c.178,000 non-domestic meters. Irish Water stated that *"many of these non-domestic meters will not have been regularly maintained prior to Irish Water establishment, resulting in failed or failing meters providing incorrect information to Irish Water systems."* In order to improve meter performance for its customers, Irish Water has been repairing and replacing failed or faulty meters as soon as they are discovered.

CRU Response

The purpose of the billing correction incentive is to encourage Irish Water to bill its non-domestic customer base correctly. The CRU considers this incentive important because where a non-domestic customer is underpaying for their water / wastewater service, the wider customer base is effectively subsiding those customers. An equitable charging regime is one where customers are charged correctly for the water / wastewater services they use.

The CRU has not changed its view since the consultation regarding the inclusion of scenario 3 in the billing correction 'rule set'. The CRU recognises that Irish Water inherited an ageing asset base, however, the upkeep of non-domestic meters is the responsibility of Irish Water. Therefore, the CRU considers that any incorrect bills issued as result of a failed / failing meter is Irish Water's responsibility. Irish Water should not be rewarded for billing errors it makes, is at fault for, or that it should have rectified as part of its business operations. For this reason, the CRU does not find it appropriate to include scenario 3 in the rule set. As noted in the consultation, Irish Water's Capital Investment Plan proposes to spend €50 million on metering over the RC3 period (prior to CRU efficiency challenge).

Issue Identification date

Consultation Response

Irish Water proposes that the 'issue identification date' for both the efficient billing and billing correction incentives is defined as the date that the issue is uploaded into Irish Water's billing systems. Irish Water states that it could then earn on the incentive for 12 months following this date.

In its response to the consultation, Irish Water recognises that there should be time limitations applied to the efficient billing and billing correction incentives. However, Irish Water states that "*there may be occurrences where there is a time delay between when an issue is identified by Irish Water, e.g., through a site visit by Irish Water or LA staff, and when the information is uploaded onto Irish Water systems."*

CRU Response

The CRU proposed that Irish Water can calculate its incentive payment of 42% of the additional revenue billed to customers identified under CRU approved scenarios, for up to 12 months from the date the issue is identified (for both efficient billing and billing correction incentives). This ensures that Irish Water is incentivised to rectify the issue in a timely manner. To be clear, the

CRU considers the issue to be rectified from the date the information has been uploaded on Irish Water's billing systems.

Irish Water should keep a record of the identification date and be able to provide it to the CRU if requested.

2.3.4 CRU's Decision

CRU Decision

The CRU has decided the rule set for Irish Water to earn on the efficient billing and billing correction non-domestic incentives is as detailed in Table 1 above.

Irish Water is eligible to claim on both theses incentives for non-domestic customers identified under the approved rule set from the date on this decision.

Irish Water will be required to submit its efficient billing and billing correction incentive payment request to the CRU as part of its proposed RC4 business plan. The CRU will assess Irish Water's request as part of the lookback and any adjustment will be made by the application of a k-factor at the end of the RC3 period.

If requested by the CRU, Irish Water may be required to provide a submission detailing how it reached its proposed incentive payment. Information to be provided in that submission may include, but not be limited to the information outlined in the table below.

Efficient Billing	Billing Correction
• the date the connection was identified by Irish Water; • the date the first bill issued to the customer; • billing data from the 12 months following the first bill; and • where appropriate, billing data from the previous 12 months	• the date the issue was identified by Irish Water; • the date the corrected was bill issued to the customer; • billing data from the 12 months following the first corrected bill; and • billing data from the 12 months before correcting the issue

2.4 Other General Comments & CRU Response

Timing of Incentives

Consultation Response

In its response to the CRU's consultation, Irish Water stated its preference to postpone the roll out of revenue incentives until the next regulatory cycle (RC4), Irish Water stated that the following factors of uncertainty has impacted its operations – a delay in the transition to the Single Public Utility; COVID19, and the upcoming move the Non-Domestic Tariff Framework.

Irish Water explain that transitioning to the Single Public Utility is an important factor in enabling Irish Water *"to report on all required data nationally in a systemised fashion".* Irish Water states that a delay in this transition impacts on "*its ability to fully control performance and deliver key operational efficiencies".* Regarding the COVID19 pandemic, Irish Water notes that it has had a substantial impact on its revenues, operational activities, and capital programmes.

In the absence of its preferred scenario discussed above (deferring all revenue incentives to RC4) Irish Water proposed an alternative scenario, which would see the efficient billing and billing correction incentives postponed until the Non-Domestic Tariff Framework has been implemented. Irish Water notes that the efficient billing and billing correction incentives *"promote fairness and trust"* in the billing of its non-domestic customer base. Notwithstanding, Irish Water acknowledges that the Non-Domestic Tariff Framework is important and complex change programme that will impact those non-domestic customers. Also, Irish Water recognises that many non-domestic customers are now struggling because of the COVID19 pandemic. This makes the realisation of benefits from the efficient billing and billing correction incentives more difficult over the RC3 period.

CRU Response

In the consultation paper the CRU proposed that Irish Water would be eligible to claim on both the non-domestic efficient billing and billing correction incentives, for customers identified under the approved 'rule set', after the publication date of the CRU's Decision. Theses incentives are important and beneficial for customers from an equity perspective. This is because there is a cost associated with customers connected to the Irish Water network, but who are not paying a bill, or are under paying for their water / wastewater service, which is passed on the other paying customers. This effectively means that the wider water customer is subsiding those customers

who are not paying, or under paying for their water / wastewater service. An equitable charging regime is one where customers are charged correctly for the services they use.

The Non-Domestic Tariff Framework generates a harmonised suite of tariffs for non-domestic water / wastewater customers. This will benefit those customers in terms of transparency, simplicity, and equity. Notwithstanding, the CRU recognises that the transition to the Non-Domestic Tariff Framework will result in customers receiving bills that are higher or lower than under they are currently receiving[9]. In assessing the most appropriate time to implement the efficient billing and billing correction incentives, the CRU considered any impact the transition to Non-Domestic Tariff Framework would have on non-domestic customers identified under the approved efficient billing and billing correction incentives 'rule set'. Once identified, those customers receive their first (or corrected) Irish Water bill. In reaching its decision, the CRU considered that while aligning the incentives with the Non-Domestic Tariff Framework may be simpler for customers (as customers will not experience a transition to another charging regime), it is fairer and more equitable that customers are charged correctly for the services they use.

Therefore, the CRU has decided that it is appropriate to commence these incentives immediately to encourage Irish Water to continue the good work it has been doing to identify, and correctly bill those customers.

[9] Irish Water's Non-Domestic Tariff Framework

3. Leakage Reduction Incentive

3.1 Background

Irish Water inherited an aging network with 63,000 km of mains, thousands of kilometres of service pipes and customer supply pipes, and millions of joints, valves, pumps, and connections. Therefore, leakage on the network is inevitable, and must be actively managed just to prevent it from increasing. The rate of new leaks and bursts is influenced by factors such as the maintenance of the pipes, the water pressure in the system, pressure surges, the quality of the materials used, the quality of the installation, the ground conditions, and, how cold it is. Reducing leakage is a continuous activity, not a one-off exercise. A significant reduction in the amount of water lost on Irish Water's network is not only achievable but is required from conservation, environmental and economic perspectives.

Irish Water has made progress in water conservation since it was established as the sole public water and wastewater utility in 2014. However, severe weather events in recent years have highlighted the need for Irish Water to increase its efforts to fix leaks, reduce and then maintain leakage at lower levels than is currently the case.

Irish Water proposes to spend almost €400m over the RC3 period (2020-2024) to reduce water lost on its network by 176MLD[10], by the end of 2024 (161MLD on the public network and 15MLD on the customer side). For RC3, the CRU provided Irish Water with funding to deliver this target. To reach its target, Irish Water plans to carry out programmes of work during the RC3 period to manage water pressure, find and fix leaks, and replace aging watermains.

3.2 CRU Decision

Progress by Irish Water to reduce its leakage levels is valued by customers as it reduces Irish Water's costs over time, and consequently reduces costs to customers. Reducing leakage levels is also beneficial for security of supply. For RC3 the CRU determined that a new financial incentive targeting leakage reduction would encourage Irish Water to accelerate its leakage reduction programmes and further incentivise Irish Water to meets its RC3 target.

In order to ensure that the leakage reduction incentive is as effective as possible, the CRU has decided to make the leakage reduction incentive symmetrical. This means that Irish Water has

[10] This target is a net leakage reduction target.

an opportunity to earn additional revenue if it meets or exceeds the set target, however, a financial penalty will be imposed if Irish Water does not meet at least 80% of its overall RC3 target of 176 million litres of water a day (MLD) by the end of 2024. The CRU's RC3 decision[11] (CRU19148) previously decided to cap this incentive at €4 million per year for the RC3 period (€20 million over the RC3 period).

In the consultation, the CRU sought the feedback of the public on the following proposal:

- to set Irish Water a leakage reduction incentive target of 176MLD by the end of 2024. This target aligns with Irish Water's combined RC3 leakage reduction commitment (161MLD on the public network and 15MLD on the customer side).
- not to reward Irish Water for any leakage 'reduction' reported as a result of a reclassification of 'unaccounted for water' to 'accounted for water' in the water balance submitted annually to the CRU.

The CRU proposed the following mechanism for Irish Water to earn or be penalised on this incentive:

- Where Irish Water meets the overall leakage reduction target, it will receive a €20 million incentive payment.
- A 'dead band' whereby if Irish Water reaches between 80-99% of its overall target of 176MLD, it will not receive an incentive payment, and will not be penalised.
- Where Irish Water reaches less than 80% of its target it will be subject to a penalty of €20 million.

RC3 Leakage Incentive Mechanism – CRU Proposal			
% of target reached by 2024	0-79%	80-99%	100%
Penalty / Reward (€m)	€-20m	0	€+20m

[11] CRU19148

CRU Decision

The CRU has decided to set the RC3 leakage reduction incentive, as proposed by the CRU in consultation paper, and as noted in the section 3.2 above. In reaching this decision the CRU considered all responses to consultation.

Irish Water's progress in reaching its RC3 net leakage reduction target of 176MLD by the end of the 2024, will be assessed as part of the lookback review at the end of the RC3 period and corrected by the application of a k-factor. Any payment/penalty to Irish Water as part of the leakage reduction incentive will be calculated and then pooled together with any payment/penalty to Irish Water resulting from any of the other RC3 incentives. This payment/penalty will feed through to Irish Water's allowed revenues for the following revenue control period. To be clear, if Irish Water's allowed revenue for the following period is reduced as a result of poor performance in the RC3 incentives, it will still be expected to deliver on its commitments. The CRU will not accept Irish Water reducing service to its customers.

In order for the CRU to be able to accurately monitor Irish Water's progress in reaching its overall RC3 net leakage reduction target, Irish Water is required to provide the CRU with its 2019 leakage levels, for a) public side network leakage, and b) customer side leakage. This data be used to set the baseline against which CRU will assess Irish Water's delivery of the targets committed to at RC3. The baseline is an intrinsic part of the leakage reduction incentive mechanism as without this data the CRU will be unable to measure Irish Water's performance. Therefore, Irish Water is required to submit this data no later than by 31st December 2021.

If Irish Water does not submit the 2019 data by the stated deadline, the CRU will determine that Irish Water has forfeited its leakage reduction incentive for the years 2020 and 2021 and will apply a €2m penalty for each of these years. For every subsequent six months that Irish Water does not provide the required information, a further €1m penalty will apply. To be clear, this is not an additional penalty for Irish Water. If required, this penalty will be applied subject to the original €20m leakage incentive cap (penalty / reward), i.e., the maximum Irish Water can be rewarded or penalised through the RC3 leakage reduction incentive is €20m. Any adjustment will be made by application of a k-factor at the end of the RC3 period. Irish Water is also required to provide a methodology statement to support its baseline leakage levels (both public and customer side) by the stated deadline of 31st December 2021.

3.3 Monitoring & Reporting

Real losses on Irish Water's network, commonly referred to as leakage, include leaks on trunk mains and distribution pipes, leaks on service connections and leaks and overflows at storage reservoirs and is measured in millions of litres per day (MLD). As part of the CRU's Capital Investment Plan Monitoring, Irish Water previously provided a figure for 'unaccounted-for-water' in place of reporting on leakage.

'Unaccounted for water' is calculated as the difference between the volume of water supplied into the water supply network (distribution input) and the volume of water that is accounted for by Irish Water through its reporting on the water balance.

In 2019, in reporting its water balance to the CRU Irish Water provided an 'unaccounted for water' figure alongside the following components of water balance (see figure 1):

- the water delivered to domestic and non-domestic customers (this includes water lost to leaks on the customer's property, measured and unmeasured demand, water lost to under registration of water use due to old or broken meters, and water used on Irish Water sites and treatment plants).
- water it uses on its network to clean and flush its watermains.
- an estimate of water used by fire services, water treatment plants, operational use, and other unbilled use; and
- an estimate of water used at connections that are not recorded on Irish Water's system.

While there are still improvements to be made Irish Water's reporting, the unaccounted-for-water figure for 2019 gives a better indication of the amount of water that is lost to leaks on Irish Water's network compared with previous reports[12]. With the roll out of its leakage management system, Irish Water can report, with greater accuracy and clarity, water losses resulting from leaks on its network.

As part of its RC3 business plan submission to the CRU, Irish Water committed to achieving a net water savings target (net leakage reduction) through a number of programmes by the end of the RC3 period, including First Fix, Find & Fix, Mains Rehabilitation and Pressure Management[13]. Net leakage reduction refers to the water reductions made at the water treatment plant. Irish Water's RC3 net leakage reduction target includes both reductions made on the

[12] CRU Monitoring Report No.2 Irish Water Capital Investment Plan 2017-2021
[13] For further details on these programmes see Irish Water's Capital Investment Plan

public side of 161MLD (i.e., up to the point of the customer's meter / stop cock), and those made on the customer side 15MLD (i.e. past the meter / stop cock).

For the purpose of any payment/penalty to Irish Water through the leakage reduction incentive, the CRU will monitor Irish Water's performance in achieving its overall net leakage reduction target of 176MLD by the end of the RC3 period. However, Irish Water has not yet provided the CRU with the baseline leakage levels such that it can accurately measure this progress. For the purposes of the leakage reduction incentive, the CRU has decided to allow Irish Water the flexibility to reach its target (176MLD by the end of 2024) by making leakage reductions on either the public or customer side network. This is because while Irish Water is targeting and has been funded to reduce net leakage on the customer side network by 15MLD, the CRU recognises that Irish Water is not in *complete* control of achieving these reductions, as engagement from customers is required. The CRU considers that reductions made on either the customer or public side network achieve the same benefit to customers in terms of water conservation. By taking this approach, if during the RC3 period, Irish Water is not getting the expected level of engagement from customers through the First Fix programme, it can redirect funding towards other leakage programmes targeting public network side leakage. This will be monitored by the CRU through its Capital Expenditure Monitoring Framework.

However, the CRU strongly encourages Irish Water to strive to meets its RC3 customer side net leakage reduction target of 15MLD. The CRU will monitor Irish Water's level of engagement with its customers in relation to the First Fix programme through Irish Water's First Fix Quarterly reports which are subject to approval by the CRU. The CRU will also report on Irish Water's reduction of customer side leakage, and on its reduction of leakage on the public network under the RC3 Performance Assessment Framework, given the targets proposed by Irish Water, and as funded for by the CRU.

It is important that there is an understanding of the scope of leakage reduction on both the public network and on the customer side in order to better target investment and activity for efficient delivery for customers. The CRU therefore requires Irish Water to provide the CRU with its 2019 leakage levels, for a) public side network leakage, and b) customer side network leakage. These will then be used as the baseline against which to assess Irish Water's delivery of the targets committed to at RC3.

If Irish Water does not provide the CRU with the baselines by 31st December 2021, the CRU will consider Irish Water to have forfeited its leakage reduction incentive for 2020 and 2021 and will apply a €2m penalty for each of these years. For every subsequent six months that Irish Water does not provide the required information, a further €1m penalty will apply. To be clear, this is not an additional penalty for Irish Water. If required, this penalty will be applied subject to the original

€20m leakage incentive cap (penalty / reward), i.e., the maximum Irish Water can be rewarded or penalised through the RC3 leakage reduction incentive is €20m. Any adjustment will be made by application of a k-factor at the end of the RC3 period.

Irish Water is also required to provide the methodology used in arriving at each 2019 baseline leakage figure (both public and customer side) by 31 December 2021.

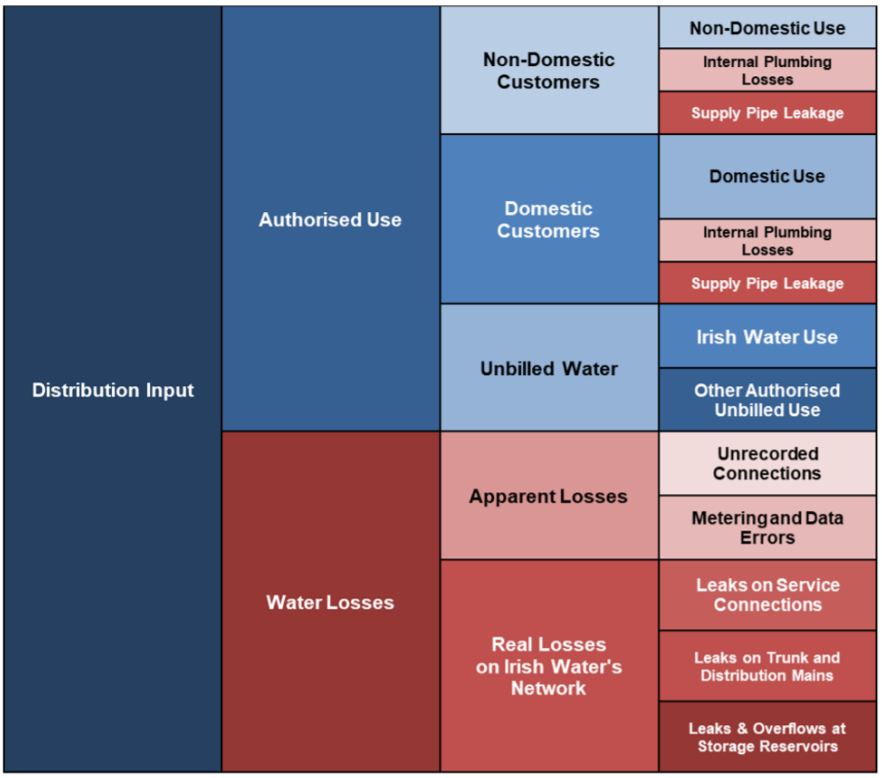
The CRU acknowledges that it is necessary for Irish Water to use estimates when determining its components of water balance. However, estimated inputs need to be explained with associated assumptions and data sources clearly set out. The CRU recognises the valuable work Irish Water has done, and continues to do, to improve its data to better understand leakage levels. It is important that Irish Water continues to leverage its investment to date[14] to better understand the components of its water balance, and to continue to refine, and improve confidence in, its estimates.

However, whilst important, data improvements which result in the reallocation of water across the various components of the water balance, are not reductions in leakage. Therefore, Irish Water will not be rewarded through the leakage reduction incentive for these data improvements. Any improvements to the estimations used in the water balance table should continue to be reported to the CRU and will be treated accordingly[15].

[14] for example, investment allowed for the RC3 period in metering, data collection and IT systems

[15] The CRU requires Irish Water to report the water balance annually under the capital Investment Plan monitoring framework.

Figure 1 Components of a Water Balance



3.4 Consultation Responses & CRU Response

In reaching the decision discussed above, the CRU reviewed and considered the 16 responses to the consultation. This section provides a summary of the responses provided to the consultation, by subject area, and details the CRU's response.

Real & Apparent Water Losses

Consultation Response

Water losses as outlined in the water balance table (see figure 1) includes 'real losses' (losses on the public side network), and 'apparent losses' (water lost to unrecorded connections, illegal use and metering and data errors). Irish Water reduces apparent losses through work completed as part of its meter replacement programmes, by identifying unrecorded connections (i.e., unrecorded consumption) which is then marked as consumption, and continuous refinement of data obtained through the Leakage Management System through District Meter Area (DMA) analysis.

Irish Water is requesting the CRU to reflect Irish Water's performance in identifying 'apparent losses' as a reduction in leakage, when assessing Irish Water's delivery of leakage reduction under the leakage reduction incentive. Irish Water states that *"reducing apparent losses provides clear benefits in terms of reduced 'unaccounted for water' and an ability to accurately record consumption."* Irish Water also argues that *"to limit the leakage calculation to only 'real water losses' would place the CRU as an outlier among international peer regulators in leakage performance reporting."*

In its response to the consultation, Irish Water also note that if Irish Water's apparent losses are not included in the performance outturn of the leakage metric, that it would need to review its leakage reduction targets for RC3.

Additionally, Irish Water states it will continue to improve its data on water consumption and will therefore always have some element of savings from 'apparent losses', in addition to reduced 'real losses' which relate to Irish Water's capital and operational works.

Irish Water notes that it can be *"very difficult to accurately differentiate the individual contributions of reductions in 'apparent losses' and 'real water losses' to overall leakage performance".*

CRU Response

The CRU recognises that finding 'apparent losses' can reduce the unit cost of water for customers. This is because by finding 'apparent losses', and reclassifying those losses as consumption, Irish Water can then charge for that consumption, which had been previously paid for by the wider water customer (through non-domestic charges and government subvention) i.e., socialised. The CRU therefore encourages Irish Water to continue working to improve its data.

Notwithstanding the above, the CRU's leakage reduction incentive is not aimed at reducing apparent losses, it is aimed at encouraging Irish Water to reduce its net leakage. Recent severe weather events in Ireland have highlighted the need for Irish Water to increase its efforts to fix leaks. From an environmental and conservation perspective, a significant reduction in the amount of water lost on Irish Water's network is required. Finding apparent losses does not have the same impact on these issues as fixing leaks on the network (either public or private). The CRU will therefore only measure Irish Water's performance in reducing public side leakage (i.e., 'real losses'), and customer side leakage (water lost on customer supply pipes), as part of the RC3 leakage reduction incentive.

In the consultation paper, the CRU stated that Irish Water would not be rewarded for any reduction reported as a result of a reclassification of 'unaccounted for water' to a national leakage figure". To clarify by way of example, Irish Water previously reported 'unaccounted for water' figures to the CRU which included 'under recorded' use' due to data / meter errors and unrecorded use. The CRU's statement in the consultation was aimed at ensuring that Irish Water is not rewarded financially for reclassifying any components of 'unaccounted for water' to other categories in the water balance. The CRU acknowledges that it is necessary for Irish Water to use estimates when determining the components of its water balance, and that as Irish Water continues to improve its data these estimates will also improve. The estimates used by Irish Water need to be explained to the CRU, with associated assumptions and data sources clearly set out. Any changes to these assumptions as a result of better information, need to be explained to the CRU. Irish Water will not be rewarded financially as part of the leakage reduction incentive for changes in the estimations used in calculating the water balance.

It is worth noting that the CRU already incentivises Irish Water to find 'apparent losses' through the 'efficient billing' non-domestic billing incentive (detailed in section 2 above). If the CRU were to allow Irish Water to include its performance in finding 'apparent losses' as part of the leakage reduction incentive, Irish Water could be rewarded twice through incentives for carrying out the same work. This means that Irish Water would be overly rewarded, at an additional cost to customers. The CRU does not consider this in the best interests of customers.

Following the consultation period, the CRU further engaged with Irish Water to seek clarity on why Irish Water believes that it would need to review its leakage reduction targets for RC3, if apparent losses are not included in the performance outturn of the leakage incentive. From this engagement the following became clear:

- Irish Water's net leakage reduction target does not include an estimate for unrecorded use, therefore, to include Irish Water's performance in finding unrecorded connection in the leakage incentive may mean Irish Water would be overly rewarded.
- Similarly, Irish Water does not include an estimate for 'under-recorded use' in its RC3 leakage reduction target.

RC3 Target

Consultation Response

For RC3, Irish Water proposed a net leakage reduction target of 176MLD for the end of 2024. The 176 MLD target refers to net water reductions in the water supply network (i.e., at a national level). It includes a net leakage reduction on the public network of 161 MLD (i.e., up to the point

of the customer's meter / stop cock), and a separate net leakage reduction of 15 MLD on the customer side (i.e., past the meter / stop cock). In its response to the CRU's consultation[16], Irish Water states that it has revised this target to 118MLD on the public side and 13MLD on the customer side. Irish Water note the role of the CRU in setting stretching outcome objectives for Irish Water and therefore proposes a *"stretch target of 130 MLD be the CRU target on public side leakage for revenue incentive purposes, provided that both reductions in real water losses and apparent losses are included in the calculation."*

Irish Water measures leakage reduction from the works completed through its Leakage Reduction Plan in gross water savings in MLD, which is calculated as the amount of water saved at a local District Meter Area (DMA) level. Irish Water states that when network condition is poor, gross water savings in the network results in lower net savings in MLD at a national level. This is because fixing a leak in one area may result in new leaks developing further downstream.

In justifying its new proposed target, Irish Water states that the original RC3 run rates (i.e., the estimated cost to achieve net leakage reduction), were based on guidance from UK experience and did not reflect the poor condition of the Irish water network. In arriving at its new proposed target, Irish Water derived new run rates based on real data from two years' experience from its Leakage Reduction Programme. Irish Water explains that prior to its Leakage Reduction Programme, it had a very poor understanding of its below ground assets and how they would respond to leakage reduction activity. Irish Water states that the network has not responded well in many cases, resulting in new leaks developing due to nearby repair activity. What this means is that based on new Irish data, Irish Water advises that it does not now expect to get the same reductions on the water supply network, from the works completed through its Leakage Reduction Plan.

Irish Water further explains that at the time of deriving its RC3 net leakage reduction target its new Leakage Management System had not yet been rolled out. This meant that Irish Water had an *"incomplete and inconsistent*" understanding of leakage levels.

Irish Water expects to spend approximately the same funding on its Leakage Reduction Programme as proposed in its RC3 investment plan. Irish Water also claims that the level of works as part of the Leakage Reduction Programme has not been reduced.

[16] CRU20143 published on 4th December 2020

CRU Response

The CRU notes that this consultation process related to RC3 incentives only. The CRU does not consider it an appropriate forum by which to reconsider Irish Water's approved RC3 leakage reduction target. For RC3, the CRU allowed what it considers the appropriate expenditure allowance for Irish Water to efficiently deliver the approved investment plan, associated non-network investments and its operational activities. Irish Water's RC3 net leakage reduction target of 176MLD was submitted by Irish Water, to the CRU, as part of its RC3 business plan in 2018. This net leakage reduction figure of 176MLD was consulted on as part of the CRU's revenue control process and determined as appropriate. In October 2019, Irish Water then submitted a revised investment plan in response to the CRU's RC3 consultation. The revised investment plan included a reduction in planned outputs and outcomes, as well as updated investment priorities and costs. However, Irish Water's net leakage reduction target remained the same - 176MLD.

The CRU also notes that it has approved a project under the CRU Water Services Innovation Fund to support Irish Water in finding innovative approach to support leakage reduction activities[17]. The CRU expects Irish Water to strive to meet the leakage reduction targets it committed to for RC3, and as funded by the CRU. Therefore, at minimum, the CRU can only use the approved RC3 net leakage target for the leakage reduction incentive, as this is what Irish Water has been funded to provide.

Consultation Response

Kennedy Analysis, in its response to the consultation, assumes that Irish Water's RC3 net leakage reduction target relates only to reductions in 'unaccounted for water'. Because of this assumption, the respondent therefore also assumed that Irish Water's RC3 net leakage reduction target did not include reductions in leakage as a result of the First Fix Free scheme which targets customer side leakage. The respondent expresses dissatisfaction with Irish Water's RC3 net leakage reduction target as detailed in the consultation paper, that is, a combined leakage reduction target of 161MLD on the public network, and 15MLD on the customer side. They state that *"if allowed to stand, would entirely change the nature of the leakage reduction target set by the CRU in the RC3 process (making it much easier to meet)"*

The respondent is of the view that Irish Water's customer side net leakage reduction target of 15MLD is not challenging, based on what Irish Water has already achieved through the First Fix Scheme since its commencement in 2015 - 155MLD water savings by the end of 2019.

[17] Research and Innovation | Water Services Innovation Fund | Irish Water

CRU Response

Irish Water submitted its RC3 net leakage reduction target as part of its Capital Investment Plan submission to the CRU in November 2018. Irish Water's net leakage reduction target has always included the customer side leakage reductions Irish Water plans to achieve as a result of work completed through its First Fix programme. The First Fix programme is listed in Irish Water's investment plan as one of Irish Water's 'Leakage Reduction Capital Programmes', for which the expected outcome is 'Net water savings in water supply network' of 176MLD. This investment plan was published on alongside the CRU's consultation paper and can be accessed here.

It is important to clarify that the CRU does not refer to Irish Water's net leakage reduction target as 'unaccounted for water'. The CRU has set out the water balance in published reports, which detail the difference between 'unaccounted for water' and leakage. The CRU continues to require that Irish Water reports on the components in the water balance. These reports can be accessed here.

The CRU's Capital Investment Plan Monitoring report (2019) is clear that *"in place of reporting to the CRU on leakage, Irish Water has been providing a figure for 'unaccounted-for-water".* The CRU's RC3 Decision (CRU20085) explained "*Irish Water is currently in the process of implementing its new Leakage Management System (LMS)"* and that the CRU expected Irish Water to provide a national leakage figure by the end of 2019, which could then be used as the baseline for a leakage reduction incentive. Irish Water did not provide the CRU with a national leakage figure in 2019 as expected, and in its place reported 'unaccounted for water'.

The CRU's RC3 incentives consultation stated that it "*expects Irish water to report on its 'Real Water Losses' and customer side leakage savings for the purposes of the RC3 leakage incentive."*

Irish Water has not yet provided the CRU with the necessary baseline to accurately monitor Irish Water's progress in reducing leakage. The CRU requires Irish Water to report leakage in a transparent manner, defined as the annual average volume of water lost per day on the public and on private networks. As part of the Irish Water RC3 Performance Assessment Framework (CRU21101), Irish Water is required to submit its leakage figures for 2019, for both a) public network leakage and b) customer side leakage, to the CRU. These will then be used as the baseline against which to assess Irish Water's performance in meeting the targets committed to at RC3.

For the purposes of the leakage incentive payment/penalty calculation, the CRU will look at Irish Water's performance in reducing overall leakage (176MLD) as explained further in the CRU's response below "Inclusion of Customer Side Targets in the Incentive/ Link First Fix Scheme to the Incentive".

The CRU has decided that if Irish Water does not provide these baseline figures and the associated methodology statements to the CRU by 31st December 2021, Irish Water will have forfeited its leakage reduction incentive for 2020 and 2021. As result, the CRU will apply a €2m penalty for each of these years. For every subsequent six months that Irish Water does not provide the required information, a further €1m penalty will apply. To be clear, this is not an additional penalty for Irish Water. If required, this penalty will be applied subject to the original €20m leakage incentive cap (penalty / reward), i.e., the maximum Irish Water can be rewarded or penalised through the RC3 leakage reduction incentive is €20m. Any adjustment will be made by application of a k-factor at the end of the RC3 period.

With regard to the respondents' view that Irish Water's RC3 customer side net leakage reduction target of 15MLD is not challenging when compared with what Irish Water has already achieved through the First Fix Scheme, the CRU notes that water savings made through the First Fix Scheme are reported in gross MLD rather than net leakage reduction. Gross water savings in MLD is calculated as the amount of water saved through leakage reduction activities at a local District Meter Area (DMA) level. This differs to net leakage reduction MLD, which considers the amount of water lost at a national level. The CRU has requested Irish Water to make this clear in its First Fix reports going forward. In addition, post receipt of Irish Water's 2019 baseline figure for customer slide leakage, the CRU will monitor this and will be informed by the level of customer side leakage, and the effectiveness of investment under the First Fix Scheme in reducing this, when setting leakage targets for the RC4 period.

Inclusion of Customer Side Targets in the Incentive/ Link First Fix Scheme to the Incentive

Consultation Response

Reduced leakage on the customer side is made by fixing leaks on customer supply pipes. Some repairs are carried out by Irish Water through the First Fix Scheme[18] and others such as internal plumbing works are carried out independently by the customer.

[18] Irish Water's First Fix Scheme - Customer Guide

Irish Water has an issue with the CRU's proposal to include customer side leakage reduction targets as part of the leakage incentive, as it is not in complete control of achieving customer side leakage reductions. However, Irish Water does acknowledge that it has influence over customer side leakage reduction through its First Fix Scheme as funded under the CRU's RC3 decision. Irish Water argues that the abolition of water charges for domestic households has led to a reduction in customer engagement under the First Fix Scheme.

CRU Response

The CRU acknowledges that Irish Water is not in *complete* control of reducing leakage on the customer side. However, Irish Water does have some control through its First Fix Scheme. Irish Water is responsible for engaging with customers with regard to this scheme, which is aimed at reducing customer side leakage. Irish Water is in control of advertising the scheme to its customers and ensuring good communication and customer service. Irish Water can also offer good advice to its customers on how to fix a leak. The CRU, in its RC3 decision, provided Irish Water with funding for the First Fix Scheme. For this funding Irish Water has committed to reducing customer side leakage by 15 MLD (net water savings in the water supply network) by the end of 2024. Irish Water has historically underspent on the First Fix Scheme. By including the customer side leakage in the incentive, the CRU seeks to encourage Irish Water to increase its efforts to effectively engage with customers on the First Fix Scheme, to support delivery of its target.

The CRU also recognises that uptake of the First Fix Scheme in recent years has been lower that at the earlier stages of the scheme. This is likely due to the abolition of domestic water charges, as customers no longer have that additional incentive to fix leaks. However, Irish Water's implementation of the household water conservation[19] charge will reintroduce this incentive for customers and should lead to customers fixing leaks, helping Irish Water to achieve its target. Additionally, under the CRU's recent decision on the First Fix Scheme[20] the eligibility criteria has been expanded meaning more customers will be able to avail of the scheme.

The CRU has decided to assess Irish Water's performance in reducing overall net leakage (176MLD) for the purposes of calculating any incentive payment/penalty. By taking this approach, if during the RC3 period, if Irish Water is not getting the expected level of engagement

[19] CRU19086 CRU Decision on Irish Water's Household Conservation Proposal
[20] First Fix Scheme Policy - CRU Decision April 2021

from customers through the First Fix Scheme, it can redirect funding towards other leakage programmes, targeting public network side leakage reduction.

The CRU strongly encourages Irish Water to strive to meet its RC3 customer side net leakage reduction target of 15MLD. The CRU will monitor Irish Water's level of engagement with its customers in relation to the First Fix Scheme through the Irish Water First Fix Quarterly reports which are subject to approval by the CRU.

Consultation Response

Kennedy Analysis supports linking the results of the First Fix Scheme to the leakage reduction incentive. Kennedy Analysis proposes that rather than setting targets in absolute figures (i.e., net leakage reduction on the customer side), that it may be more appropriate to set target conversion rates as a measure of performance. For example, the percentage of notification letters issued to customers, which result in a leak investigation, and/or the percentage of leak investigations converted to leak repairs. The respondent states that "*the absolute number of leaks found (through constant flow alarms and the equivalent) is something that Irish Water has no control over".*

CRU Response

The CRU acknowledges that Irish Water is not in *complete* control of reducing leakage on the customer side. The CRU notes that Irish Water proposed its leakage reduction targets in full knowledge of its role and the role of the customer in addressing leaks. The CRU has decided to measure Irish Water's performance in reducing overall net leakage (176MLD), rather than linking the individual target for customer side leakage reduction (15MLD) to a financial incentive. Therefore, if Irish Water is not getting the expected level of engagement from customers through the First Fix Scheme, it can redirect funding towards other leakage programmes, targeting public network side leakage reduction instead, and still receive an incentive payment here. The CRU considers it most appropriate for the leakage incentive mechanism to be set in a manner which allows Irish Water the flexibility to find reductions in overall net leakage in the most efficient way (either on the public or customer side network).

However, the CRU encourages Irish Water to strive to meet its customer side target (15MLD) and will continue to monitor Irish Water's engagement with its customers on the First Fix Scheme. Following its decision on the First Fix Scheme Policy (CRU21040a), the CRU will request Irish Water to adjust its reporting to the CRU to include conversion rates on leak

investigations and leak repairs in its First Fix Scheme quarterly reports. The requirement for Irish Water to report in this way acts as a reputational incentive for Irish Water. The CRU will also report on Irish Water's delivery of both targets under the Performance Assessment Framework and the Capital Investment Plan Monitoring reports.

Move from Symmetric to Asymmetric Targets

Consultation Response

Irish Water does not believe that the CRU's proposed symmetrical leakage incentive mechanism (one which has an equal reward and penalty attached) is suitable for Irish Water at its current stage in its development. As noted in section 2.4, Irish Water requested that implementation of all incentives be deferred until RC4. However, it proposes, that if the leakage reduction incentive is to be implemented during RC3, that no penalty for Irish Water would apply. Irish Water states that as it has not yet transitioned to the Single Public Utility, it does not have complete control over activities which effect overall leakage on the network. Irish Water also notes that unexpected weather events, over which it has no control, may impact its progress in reducing leakage.

Additionally Irish Water notes a continued need for data improvements in its Leakage Management System (LMS) as a reason the CRU should not penalise Irish Water at this stage.

CRU Response

By setting the leakage reduction incentive as symmetrical (equal penalty and reward) the CRU is signalling to Irish Water the importance of leakage reduction. Under the asymmetric approach, there is a risk that Irish Water could take a 'do nothing' approach. However, this risk is mitigated by reputational incentives set by the CRU through the Performance Assessment Framework. The CRU recognises the progress that Irish Water has made in water conservation since its establishment, however, based on the information available to the CRU, leakage levels on the Irish Water network are still significantly high. There is a need for Irish Water to increase its efforts to fix leaks, reduce and then maintain leakage at lower levels than is currently likely to be the case. The CRU notes that Irish Water proposed leakage reduction targets to the CRU and associated expenditure to deliver on those targets in full knowledge of the current organisational model for the delivery of services to customers in partnership with Local Authorities. Under that model Irish Water has a Service Level Agreement (SLA) with the Local Authorities. The SLAs are

supported by annual service plans detailing the work to be delivered, including work to reduce leaks, during the relevant period for which Irish Water pays Local Authorities.

The CRU also acknowledges that unforeseen severe weather events may hamper Irish Water's progress in achieving its net leakage reduction target. It is not appropriate to set targets or reduce targets in anticipation of the risk of such events occurring during the RC3 period. In addition, this type of uncertainty is addressed by the application of a 'dead-band' as part of the leakage reduction incentive.

Graduated Approach

Consultation Response

Irish Water does not agree with the approach the CRU has taken to setting the leakage reduction incentive. Irish Water argues that a 'cliff edge' approach would not promote more efficient practices. In its response to the consultation, Irish Water proposed that the CRU take a graduated approach to setting the incentive, which it states would *"meaningfully incentivise Irish Water to continuously improve".* Irish Water provided two alternative approaches. Option one is shown in table 2 below. Under this option Irish Water would start to earn on the incentive once its reaches 80% of its net leakage reduction target.

% Target Achieved	Total Incentive Payment over RC3
80%	€4m
85%	€8m
90%	€12m
95%	€16m
100%	€20m

Table 2 IW Proposed Graduated Approach

Option two is similar to option one above but would see Irish Water only receive up to €10m at the end of RC3.

CRU Response

Targets for incentives are usually set to encourage the utility to go above and beyond what is expected of them in delivering services for customers, in areas that are particularly valued by those customers. In setting this incentive for Irish Water, the CRU has considered the stage of Irish Water's development, and the fact that incentive mechanisms are relatively new for the utility.

Irish Water is proposing that it would be rewarded for partially meeting a target for which it has already been fully funded to deliver over RC3. If Irish Water did not fully meet its target by the end of RC3, under Irish Water's proposal it would still receive a payment. This would not represent value for money and would not be in the interests of customers. Therefore, the CRU does not agree with the Irish Water's proposed graduated approach.

In setting the incentive, the CRU included a 'dead-band' area, where if Irish Water meets 80-89% of its target it will not be penalised or rewarded. This is to address issues of uncertainty in relation to Irish Water's target.

Linking Incentive Payments to Bonuses

Consultation Response

Thirteen individuals and Kennedy Analysis propose linking Irish Water's performance in reducing leakage, to the level of Irish Water's executive pay / bonuses. Kennedy Analysis states in its response to the consultation, that if Irish Water fails to meet its target, this means that there will be "*less funding available in the future to try to address the failings of the water supply system".* They then refer to private water supply companies in the UK, stating that for these companies, *"the regulator would be able to ensure that the only group of people who would suffer the consequences of that penalty would be the shareholders (not the customers)."*

CRU Response

The incentive mechanism will work is as follows: The CRU will assess Irish Water's performance against the RC3 leakage reduction incentive as part of its ex-post review at the end the RC3 period. Any payment or penalty made at this point will feed into the allowed revenue for next revenue control (RC4). This is the amount that Irish Water can then recover through Government subvention and non-domestic charges.

This approach is similar to that taken by the CRU for electricity and gas networks. Incentive metrics are set by the CRU against which the CRU measures the utility's performance, usually annually. The CRU then adjusts the revenue that the utility can recover based on the utility's performance. The CRU does not ring fence incentive payments / penalties. The utility is expected to absorb any penalty while still delivering on its service commitments. This is the approach generally taken by other regulators in setting incentives for utility companies.

The CRU expects Irish Water to deliver on all its service commitments. The CRU will not accept Irish Water reducing the level of service provided to its customers as a result of any penalty imposed through the RC3 leakage reduction incentive. If Irish Water does not deliver on its leakage target, and is therefore penalised, it will be expected to find further efficiencies over the next revenue control period (RC4) to deliver on its service commitments. This will therefore incentive Irish Water to accelerate its efforts to reduce leakage.

4. Next Steps

Irish Water can start to earn on the 'efficient billing' and 'billing correction' non-domestic incentives from the date of this decision paper.

Irish Water is required to provide the CRU with its 2019 leakage levels, for a) public side network leakage, and b) customer side network leakage no later than 31st December 2021 with a methodology statement to support its baseline leakage levels (both public and customer side). These will then be used as the baseline against which to assess Irish Water's delivery of the targets committed to at RC3.