Yorkshire Water In-period ODI Report 2021/2022

July 2022

Table of Contents

Introduction

Our performance commitments for 2020 to 2025 were set as part of the Periodic Review 2019 (PR19) process. As part of our customer research, we conduct willingness-to-pay surveys, alongside other cost-benefit assessments, to work out how much customers are willing to pay per unit of improvement in each measure. This helps us understand our customer priorities and the appropriate incentive or penalty that should be attached to each unit of outperformance or underperformance against each target. The reward or penalty incurred is determined by how many units the company is over or under the measured target.

In Asset Management Period 7 (AMP7), Yorkshire Water has 44 performance commitments. The majority of these performance commitments have associated outcome delivery incentives (ODIs), which attract a reward or penalty based on our performance to target.

There are 25 ODIs that are taken in-period, (annually), through adjustments to our allowed revenues for the next charging year. Such adjustments can be spread over more than one year to reduce bill volatility if this is in customer's best interests and agreed with our regulator, Ofwat.

There are four ODIs (working with others, land conserved and enhanced, length of river improved and living with water) that are measured over the course of the whole AMP (2020 to 2025) and the net reward or penalty position is reflected at that point through the next Price review in 2024 (PR24). Our remaining 15 performance commitments are reputational measures and do not have a financial incentive attached to them. These end of AMP ODIs and the reputational performance commitments are not included in this report.

For more information on our performance on all measures, please see the Annual Performance Report (APR) for 2021/2022.

This report provides a summary of the reward and penalty that has been obtained throughout 2021/2022 for those 25 ODIs that are in-period. This report also provides information on areas where we have requested an intervention to the automatic operation of the in-period ODIs as set out in the PR19 Final Determination, any corrigenda or as detailed within the redetermination provided by the Competition and Markets Authority (CMA).

We can confirm that all of our reported data for each of the common performance commitments complies with the common, converged methods for reporting for 2021/2022.

Table 1 summarises the in-period ODIs, performance obtained in 2021/2022, the resulting penalty or reward and whether any intervention is being requested.

This submission report should be read alongside:

- Annual Performance Report (APR) 2021/2022.
- APR Tables for Table 3A to 3I with the ODI performance model
- In-period adjustments model

ODI summary

Table 1. Summary of in-period ODI 2021/2022 performance any requested intervention.

ODI	2021/2022 Performance	Reward/Penalty £m	Intervention requested
Common ODIs			
PR19YKY_20 Water quality compliance (CRI)	4.83	-3.470	No
PR19YKY_21 Water supply interruptions	00:10:38	-5.536	Yes
PR19YKY_22 Leakage	7.9	0.209	No
PR19YKY_25 Per capita consumption	0.1	0.000	No
PR19YKY_24 Mains repairs	169.8	0.000	No
PR19YKY_23 Unplanned outage	3.82	0.000	No
PR19YKY_31 Internal sewer flooding	2.83	-10.122	No
PR19YKY_30 Pollution incidents	27.36	-2.483	No
PR19YKY_33 Sewer Collapses	11.71	0.000	No
PR19YKY_32 Treatment works compliance	99.03	0.000	No
PR19YKY_19 C-MeX[1]	80.41	-0.015	No
PR19YKY_10 D-MeX	55.08	-3.395	No
Bespoke ODIs			
PR19YKY_6a Operational Carbon	6.8	0.472	No
PR19YKY_7 Education	22,576	0.000	No
PR19YKY_9 Water Recycling	0.00	-0.041	No
PR19YKY_17 Gap sites	83	0.000	No
PR19YKY_18 Managing void properties	3.78	1.989	No
PR19YKY_26 Drinking water contacts	10.9	-0.369	No
PR19YKY_27 Significant water supply events	41	-7.420	Yes
PR19YKY_28 Low pressure	4	0.000	No
PR19YKY_29 Repairing or replacing customer owned pipes	7,335	0.101	No
PR19YKY_35 External sewer flooding	4,578	17.625	No
PR19YKY_36 Bathing water quality	16	-2.470	No
PR19YKY_37 Surface water management	2	-0.010	No
PR19YKY_40 Quality agricultural products	100	0.000	No
Total (without intervention)		-14.935	
PR19YKY_21 Water supply interruptions		1.064	
PR19YKY_27 Significant water supply events		5.565	
Total (with requested intervention)		-8.306	

[1] Yorkshire Water net penalty position includes, for completeness, all revenue-based incentives including a forecast of the C-MeX and D-MeX penalty positions. Two versions of the PR19 in-period adjustments model have been provided: one version contains C-MeX and D-MeX and the other excludes these.

Intervention request -Impact of Storm Arwen

Overview

Yorkshire Water is requesting an intervention related to Storm Arwen which resulted in the loss of power and consequently loss of water supply to our customers. We were adversely impacted by the loss of power supply from Northern PowerGrid (NPg) and NPg's response throughout the storm, which was declared as a major incident.

The intervention is requested for two of our outcome delivery incentives (ODIs):

- PR19YKY_21 Water supply interruptions (common performance commitment),
- PR19YKY_27 Significant water supply events (bespoke performance commitment.

The loss of water supply was not attributable to Yorkshire Water but was a consequence of large-scale loss of power supply from NPg across a large geographical area. Ofgem's report evidences the difficulties NPg faced, and the significant effects and damaging nature of the storm within our region and across the Northern England.

Yorkshire Water did everything in our power to minimise the impact on our customers and restore water supply as soon as possible:

- We implemented incident command structures appropriately and increased resources in areas of risk.
- Contingency plans were implemented.
- We attended multi-agency local resilience forums.
- We were in regular contact with our customers to update them on their water supply and the on-going plans in place to resolve, including our 'text blast' SMS service.
- We managed our customer response to a high standard.

Our external auditor, Atkins, reviewed our processes, our methodology and the individual events that are attributed to Storm Arwen and agree that our processes and approach is robust and support us making a representation to Ofwat in relation to the consequences of Storm Arwen.

Storm Arwen

On Tuesday 23 November 2021 a yellow weather warning was issued for the north-east region of England in anticipation of the upcoming 'Storm Arwen'. A subsequent amber warning of wind was issued at 09:39 on Thursday 25 November 2021 for the duration of 15:00 on Friday 26 November to 09:00 on Saturday 27 November. Yellow and amber warnings are issued by the Met Office and represent a range of impact levels and likelihoods. The categorisation for Storm Arwen was initially within the low yellow range.

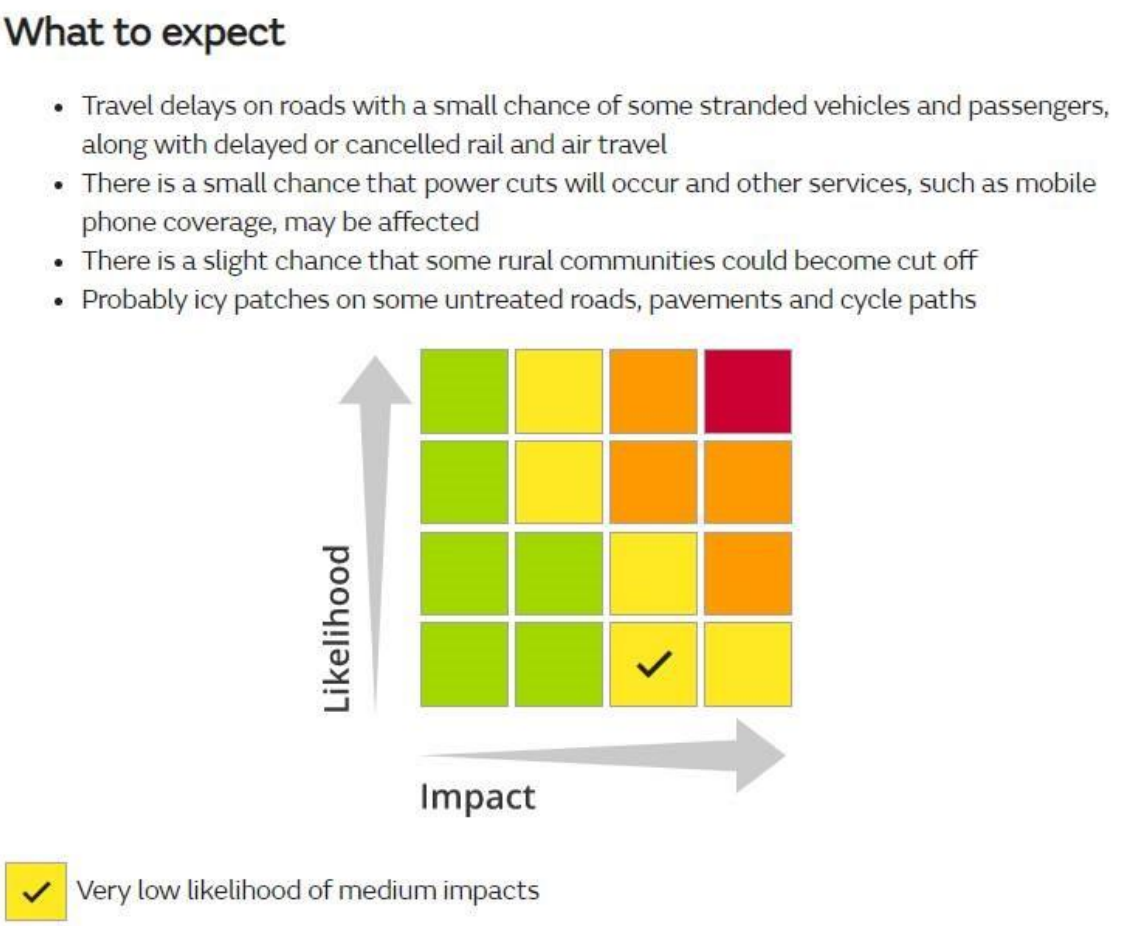

Figure 1 – the Met Office, initial warnings issued Tuesday 23 November.

At the time, The Met Office advised that the weather impacts of the storm should see it pass in the latter hours of Saturday 27 November, leaving the region with a drier day on Sunday 28 November. As the storm entered our region, it is clear the intense nature and length of the storm was greater than forecast with a further yellow snow warning issued. Across the weekend the Storm spread across Northern England and parts of Wales with 98mph winds causing destruction, interruptions to vital services, and tragically the loss of three lives. Though the wind started to abate on Sunday 28 November, the storm then brought snow to the region.

On Thursday 25 November 2021 Yorkshire Water (YW) escalated this as a Bronze Risk and reviewed the hazards posed that weekend.

Initially, as the event was not forecast to affect the Yorkshire region as significantly as other stated areas, a bronze escalation was appropriate at that time. A Bronze Incident can be defined as a lower categorised risk that needs co-ordination and intervention over and above business as usual but doesn't necessarily need escalating to a Silver Incident chaired

by a senior manager. A Bronze Incident can also be used to co-ordinate an incident at a Yorkshire Water site such as a treatment works. Where an incident needs co-ordination on site, the Bronze Incident meeting will be held there and will feed back into either the Duty Manager or escalate to a Silver Incident meeting as appropriate.

This additional use of a Bronze Incident meeting will ensure that there is an official structure for site response and the Company Incident Management Plan will link closely to site Health and Safety Emergency Response Procedures which follow established processes produced by our Health and Safety Team for preservation of life.

The first meeting looked at our preparedness strategy, this included checking business continuity plans, obtaining updates from Northern PowerGrid (NPg) in relation to their preparation plans and checking the resilience of our assets. As a result of the initial meetings five main actions were established and completed;

- Resource for our customer contact centre was reviewed to deal with the potential increase of contacts.
- Emergency planning team contacted NPg to review their escalation process and response times for generators.
- Review of the status of resilience of individual assets at risk.
- Understanding operational resource options and availability across all departments.
- All resource plans to be collated and reviewed by Duty Manager (lead on emergency response).

We increased resources in areas of risk, reviewed our asset management plans and carried out asset checks in preparation for response to the on Friday 26 November.

Overnight, on Friday 26 November, it was apparent that the effects of the storm were more significant than forecasted.

On Friday 26 November at 23:18 two potential interruptions were recorded which affected several properties in the DL postcode area of the network, one of the most northern parts of the Yorkshire Water region. A Company Incident Management Team meeting took place at 00:45 to review these events, which were identified as related to power failures. As events unfolded throughout the night, we mobilised technicians to each of these, enacting individual response and recovery plans at each site. An additional two incidents took place that night. Upon reviewing all four incidents occurring on Friday night, the first power-loss related event started at 21:12 on Friday 26 November in the same region. These incidents were resolved by restoration of power or an alternative supply being available, however at this point the risk of power failure required escalation.

We escalated this to a Silver Incident in the early hours of Saturday 27 November, anticipating that a greater response was required. Yorkshire Water defines a Silver Incident as one which

disrupts acceptable service levels for customers. It may also have significant financial implications or may breach regulatory requirements. A significant incident which cannot be swiftly resolved will require the re-organisation of priorities at a functional level within all available business units and is likely to require the mobilisation of wider support services.

A silver level incident is managed by a Silver Incident Team and will be generally referred to as a Silver Meeting, however due to the severity of the events this was quickly escalated to a Gold Incident at 06:30 on Saturday 27 November. An incident requiring gold level intervention is a rare event causing severe and sustained disruption to acceptable service levels and potentially, a significant risk to public health. It will invariably involve risks and impacts associated with reputation and value for the company. A crisis will require the re-organisation of company priorities and may involve interaction with external Category 1 and 2 Responders as defined by the Civil Contingencies Act 2004.

A crisis will be directed by a Gold Incident Team in support of the Silver Incident Team. The Gold Incident Team will direct strategic issues and the Silver Incident Team will focus on tactical resolution of the incident, implemented by the Bronze Team.

Bronze and Silver meetings continued to be held parallel to gold interventions to ensure incidents were addressed at all levels. All non-essential work was cancelled to allow resources to be concentrated in the highest impacted areas.

There were over 20 Silver and individual Bronze Meetings, which covered water distribution, water production and waste. Minutes of meetings are available on request.

Across the north-east of England and Scotland a Major Incident was declared with the Army being deployed to assist both NPg and Local Resilience Forums. Although Yorkshire and Humber did not declare a Major Incident, the impact across the region, and particularly that experienced by NPg, was of similar nature. Though to note, the effect of wind and snow were greater than anticipated.

Impacts of the Storm

On Saturday 27 November Yorkshire Water was managing a total of 21 events relating to interruption to supply simultaneously and 19 events on Sunday 28 November. The large-scale interruption to power mainly affected our water pumping stations and service reservoirs with 27 of our assets suffering power loss within this period and a further 9 assets still without power on Monday 29 November. There were intermittent returns of power supply to some of these assets, however power was unstable and often not sustained for long enough to restart the asset systems. As outlined in figure 2 the widespread power loss worsened as the storm progressed over the weekend with little return to supply for the Yorkshire region. Whilst the most severe effects were felt in the north-east, it is of note that the shared distribution network operator for these areas is NPg.

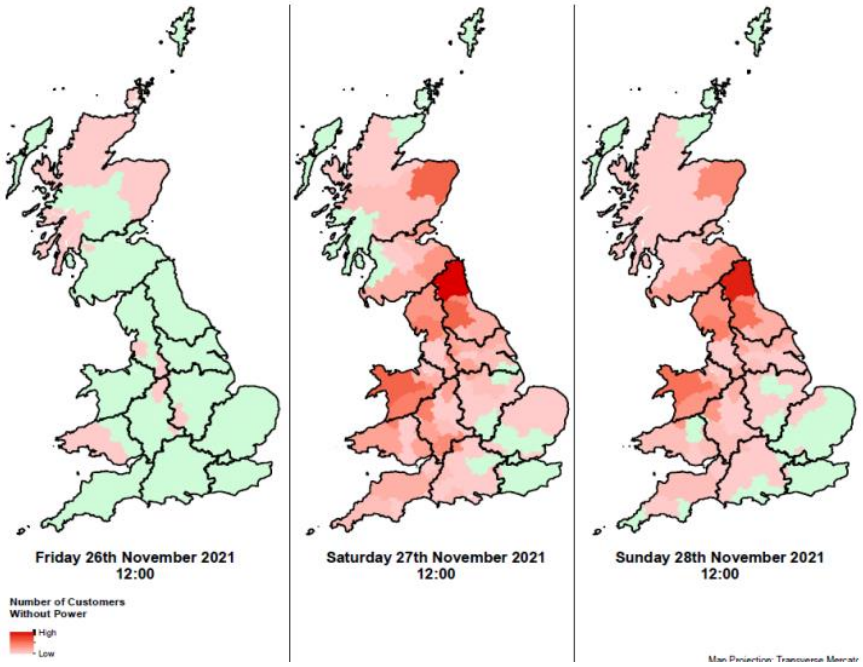

Figure 2 – Final report on the review into network' response to Storm Arwen (Ofgem)[2]

Contingency plans are in place to support power failure for our assets. Yorkshire Water has a contract with an external provider and relies on the supply chain for emergency response where assets fail. This supply chain could not respond as there not were enough generators to supply all companies requiring them, therefore not fulfilling this contract with us. This contract was put in place as a cost-effective resolution to power failure issues, reducing maintenance costs and allowing Yorkshire Water to focus on high-risk outages.

Whilst loss of power can happen and is a recognised risk to the business, this is usually in isolated or discrete areas, meaning Yorkshire Water can respond appropriately and move generators around as necessary. In this case, the scale of issue and the on-going weather event meant this was not possible.

Yorkshire Water also holds alternative methods of restoration that are possible when we experience localised power failure, however some of these were unable to be deployed due to unstable and dangerous weather conditions. These methods include tankering, over-land supplies and re-zoning supplies (alternative distribution input). Our primary method of restoration in these situations is by tanker. Tankers were deployed across the region, however due to the weather conditions this became hazardous with one of our tankers aborting the restoration plan after experiencing severe unsafe driving conditions. We were unable to deploy over-land supply restoration as there was no water in the systems due to the condensed regional power-loss. Due to the remote location of many of these incidents, re-

[2] https://www.ofgem.gov.uk/publications/storm-arwen-report

zoning was not an appropriate solution to resolve all of these events. Underpinning these plans were considerations to the health and safety of customers, employees and contractors as conditions grew increasingly treacherous due to snow falling in remote areas where routine highway maintenance i.e., road clearance and gritting does not operate as well as continued high winds.

We attended Local Resilience Forums which are multi-agency meetings to discuss and support responses to incidents as they unfold. Yorkshire Water are an established member of all Local Resilience Forums across the regions, of note to the North Yorkshire local Resilience Forum (NYRF) as detailed in the Forum references[3]. This was the area of region in which the majority of our supplies were affected and where the majority of our focus was required. During these meetings it was noted that there was a lack of communication from NPg, and the estimated response times given were not very specific. Yorkshire Water, and other Forum members, struggled to understand their response plan and the escalation route for NPg. Organisations within this Forum shared their knowledge and information relating to customers on their respective Priority Services Registers however it was noted that other organisations were affected by the loss of power and deterioration in communication from NPg. Health and safety issues were communicated, and it became apparent that each organisation was facing difficulties during this time and were unable to assist each other effectively without a clear understanding of the plan set by NPg.

We were unable to access information from NPg for large periods of time to enable us to anticipate their response, gain support and act accordingly. This was evidenced to BEIS and subsequently highlighted in their interim report[4].

> *''Estimated times for restoration were optimistic given the scale and complexity of faults as well as the difficulty in adequately assessing fault data. The way in which these moving estimates were communicated to customers made it difficult for households and Local Resilience Forums to make informed decisions about their welfare.''*

Interruption incidents

Throughout the duration of Storm Arwen there was a total of 90 interruption-based service events. Of those, 24 triggered an internal hydraulic review to understand and quantify the effect to the water supply interruptions and significant water supply interruptions regulatory reporting and guaranteed standards of service. The hydraulic review is triggered when an incident lasts more than one second or has an estimated duration of more than 10 hours in

[3] https://www.emergencynorthyorks.gov.uk/
[4] https://www.gov.uk/government/news/government-publishes-interim-report-on-storm-arwen-review

line with our methodology stated in PR19. This is our continued standard process used for our annual performance reporting.

Of the 24 that were subject to an internal hydraulic review, 22 were directly associated with power failure. Based upon these reviews, 20 of these events lasted greater than 12 hours. As detailed below (figure 3) 439 properties suffered a supply interruption of greater than 12 hours but were restored within 24 hours. 146 properties were restored within 48 hours and 129 properties suffered an interruption of greater than 48 hours but less than 72 hours. One property was restored within four days with a remaining two properties restored in under five days.

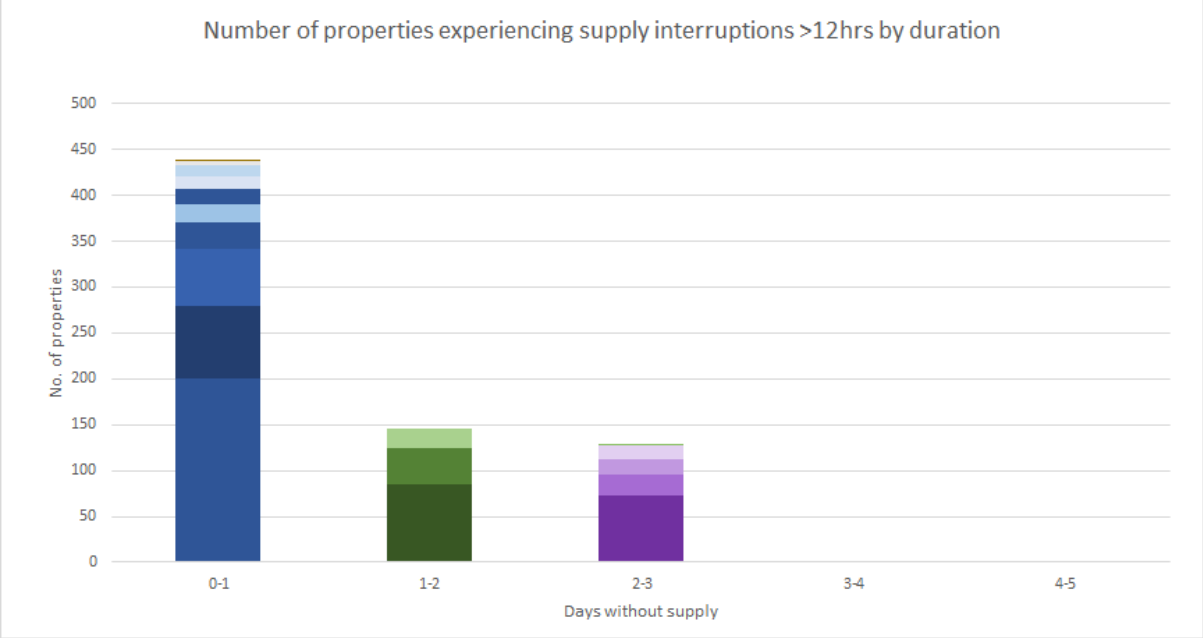

Figure 3 – number of properties and duration of interruption.

Figure 4 details the 24 incidents subject to the hydraulic review, their effect.

Incident Name	Date of Event	Properties Interrupted >3 hours	Properties Interrupted > 12hrs	Water Supply Interruption Impact (seconds)	Significant Event Categorisation
Stannington WPS, S6	27/11/2021	168	79	4.264	Yes
Dodd Naze WPS, HX7	27/11/2021	403	0	4.179	No
Arkengarth Dale WPS, DL11	26/11/2021	12	1	0.102	Yes
Marske School WPS, DL11	26/11/2021	0	20	0.538	Yes
Bainbridge Stall Busk WPS, DL8	27/11/2021	135	216	5.944	Yes

Keighley Road/ Fold Lane, BD22	27/11/2021	77	29	2.136	Yes
Piper Hill WPS/Jeater Houses WPS, YO7	27/11/2021	53	0	0.423	No
Carlecotes SRE, S36	27/11/2021	0	62	1.903	Yes
Grantley WPS, HG4	26/11/2021	0	16	0.551	Yes
Scapegoat Hill WPS, HD3 & HX4	27/11/2021	0	86	4.7	Yes
Crakehall to Kirkbridge, DL8	28/11/2021	113	12	1.009	Yes
Ilkley Wells WPS - LS29	28/11/2021	284	14	2.031	Yes
Broxa WPS - YO13	27/11/2021	0	14	1.234	Yes
Mytholmroyd WPS/Cragg Vale WPS/Turkey Lodge WPS, HX2 & HX7	27/11/2021	18	22	1.209	Yes
Park Hill WPS, WF8	27/11/2021	438	0	6.401	No
Yearsley WPS, YO61	27/11/2021	0	39	2.533	Yes
Kilnsey WPS, BD23	27/11/2021	27	5	0.483	Yes
Clapham Station WPS/Woodgill WPS, LA2	27/11/2021	0	23	2.154	Yes
Buckden Village/Starbottom WPS, BD23	28/11/2021	119	0	1.503	No
Cropton, YO18	27/11/2021	7	2	0.239	Yes
SCAWTON WPS, YO7	27/11/2021	94	71	6.487	Yes
Blades WPS, DL11	28/11/2021	0	17	1.442	Yes
Scar House HG3	27/11/2021	2	2	0.372	Yes
Stockdale Farm WPS, BD24	28/11/2021	0	1	0.137	Yes

Figure 4 – events subject to hydraulic review

All listed incidents were attributed directly to the storm, in particular the significant impact on our ability to respond.

We have conducted reviews to understand the root cause of each of these incidents. The reviews detail the timeline of the interruptions and validate the root cause analysis. We have used a combination of regional telemetry system data, flow and pressure data, customer contacts and other operational reports to build a detailed timeline and ascertain the true length and impact of these interruptions. We have provided Ofwat with details of each individual event separately and, due to the confidential nature of the information within these, it will not be published within the public domain.

Two of the events were not power related issues but were mains bursts. These were Crakehall to Kirkbridge and Cropton. Both had a duration of longer than 12 hours. The delayed response to these events was exacerbated by the health and safety issued caused by Storm Arwen.

Both sites were inaccessible and attempts to restore were delayed or abandoned. At Crakehall to Kirkbridge. The burst was located next to a weir which was flooding as a result of the storm. An on-site risk assessment was carried out and it was found that attempts to restore the supply or continue work next to the watercourse would have proven to be unacceptably hazardous therefore additional caution was taken, delaying the restoration of supply. A burst on a main occurred at Cropton and due to widespread outages, severe weather conditions and several simultaneous events being managed across the region, we were unable to respond as efficiently as usual. The burst was in a wooded area affecting a single property in a remote location. The excavation and subsequent repair was abandoned due to severe weather conditions and the restoration running into the night. An assessment of health and safety led to a decision to abandon the restoration until the following day due to increasing safety and welfare concerns around working in severe weather in the dark.

Our external auditors, Atkins, have reviewed our processes, our methodology and the individual events that are attributed to Storm Arwen and agree that our processes and approach is robust and support us making a representation to Ofwat in relation to the consequences of Storm Arwen as indicated in our Atkins Assurance Report.

Customer communications

We understand that any period of time without water can be of great inconvenience to our customers, especially when they are potentially experiencing simultaneous power issues. We were in regular contact with our customers to update them on their water supply and the on-going plans in place to resolve. We utilised our 'text blast' service to send SMS to our customers advising them of the potential issues and our restoration plans. Our text blast service uses a range of data to target affected areas with meaningful customer contacts advising them of the status of works near them and any support available. Our customers can also check our website to see live updates on issues in their area if they still had access to internet via mobile connection or were not experiencing power issues. We updated our customers on social media and resourced our call centre to enable us to respond to higher volumes of calls from our customers. We also understood that many of our customers did not have the ability to keep their mobile phones charged due to on-going power issues and so deployed voice to landline messaging which sees verbal messages automatically delivered to customers via their landline. Each area was individually assessed for communication triggers, such as changes in status of work, endeavouring to provide regular contact and additional support becoming available. There are some indicators in the timelines provided to Ofwat of where an operational trigger occurred to instigate a text blast communication.

We checked our Priority Services Register to understand if any of the properties in affected areas were those of a vulnerable customer. We then evaluated each case and contacted them to understand what additional support they needed. We identified 35 customers who may have required additional support due to the nature of their vulnerability and arranged

visits to ensure they had adequate provisions, were kept informed and could discuss any further support they required. We dispatched 6.5 pallets of bottled water across North and West Yorkshire. In the Darlington region, we located the NPg customer vehicle and delivered a pallet of bottled water to enable customers to access to support from one single point and pool or delivery resources. Our pallets of water aim to supply 10 litres of water, per person per day and were dispatched within five hours of interruption as defined in our SEMD planning. Pallets were dispatched for further water delivery to BD22, DL11, Huby WTW, Broxa Hill and Foxbridge depot.

Customer compensation (GSS)

As part of our obligation to our customers we can confirm that all GSS payments were made to all customers who were affected by loss of supply throughout Storm Arwen. Our total GSS payments also included payments in relation to failed appointments and delays to service. In total, approximately £70k was paid to our customers for interruptions to service.

Customers received payments in January through to May once all incidents had been reviewed and confirmed. We have additionally paid late penalty payments to our customers where GSS payments were delayed due to our internal review process.

As part of our review process, we check all property seed points and relevant billed accounts to ensure that payments are made to all affected properties. The payments are then cross-referenced throughout our review processes to ensure the payments have been processed.

Our resilience

Resilience is at the core of our values and we understand that poor resilience means poor outcomes for customers. We understand the need to adapt to changing socio-economic needs and environmental challenges. Following the 'Beast from the East' Ofwat conducted a review into the response and resilience of the water industry during severe weather in June 2018. The report was named 'Out in the cold'. It was noted Yorkshire Water was one of the better performing companies overall and specifically in relation to planning and preparation, demonstrating our ability to move water across the grid, having effective processes and governance and having clear escalation routes in place. We were also identified to have strong communications with our customers and our key stakeholders, ensuring alternative suppliers and bottled water stocks on stand-by whilst ensuring adequate resource was available in strategic locations. Whilst noting the provisions in place to contend with such storms, Yorkshire Water has also carried out extensive reviews to strengthen our resilience, including;

- Further improvements to the data analysis around weather, purchasing enhanced information and data from the Met Office.

- Updates to our Company Incident Management Plans which take into consideration all lessons learned over the previous 12 months to ensure effective preparation.
- Enhancing the role of the Seasonal Weather Group, which reviews changes in expected weather as a result of climate change and understanding the risks to our network resilience.
- Evolved our customer contact methods to take into consideration the changing customer and social requirements.
- Promoted our Priority Services Register to ensure that those most at risk and/or vulnerable have the support they need and are integrated into our emergency planning.
- Improved our emergency equipment, reviewing our SEMD requirements regularly, increasing availability of tanks and investing in incident vehicles.
- Strengthening our partnerships with external stakeholders to understand the support they need, creating a cohesive plan and strengthening our role in our Local Resilience Forums.
- Enhanced our network resilience by building a new service reservoir at Boston Park (South Yorkshire), laid a new trunk main from Ness to Terrington (North Yorkshire), and enhanced the pumps at Blackmoorfoot North Water Pumping Station.

These processes continue to be reviewed and enhanced further with regular Bronze and Silver Training Events and test events taking place to allow for continuous improvement. Prior to Storm Arwen, the most recent test was of our alternative water supplies in October 2021 ('Exercise Neptune').

Looking to other more recent storms, Barra and Eunice, there was no significant impact to our customers during these events demonstrating our ability to manage seasonal weather events. The impact of these storms on the region was not as great and so not directly comparable to Storm Arwen. There was also no effect to our power supply as a consequence of these storms, though precautionary measures were taken in case of a power loss incident.

An additional consequence of the widespread power-failure was the volume of incidents being managed simultaneously. From Friday 26 November to Tuesday 30 November 90 events occurred. During the same period in the previous week, only nine events were being managed and only three of these had an impact which caused a supply interruption. Although effective planning was in place and resources were redirected to concentrated areas, the issues seen were ten times that expected in a similar period. The combination of the inability to utilise all restoration techniques, severe and dangerous weather conditions, members of the Local Resilience Forums being unable to offer mutual aid and the volume of incidents being managed meant our response times were also severely affected.

Ofgem and BEIS reviews

After Storm Arwen, Ofgem and the Department for Business, Energy and Industrial Strategy (BEIS) conducted a review of the planning and operational response of the Distribution Network Operators (DNOs) in the energy sector.

In the interim[5] and final report[6] from Ofgem the resilience and response of each individual DNO was assessed and reported.

The interim report provides the outage map as shown in figure 2. Though the direct effect of the storm was not as severe in Yorkshire as seen further north of England, due to a shared DNO (NPg), the Yorkshire Region was subject to widespread power-loss and detriment caused by delayed response times from NPg.

The following observations were made in relation to the distribution zone for NPg;

- NPg had the largest number of affected customers at 280,867.

Table 1 – Extent of the electricity network damage[4]

DNO	Faults reported[5]		Customers off supply
	HV	LV	
ENWL	244	120	74,983
NPg	493	724	280,867
SPEN	950	381	189,133
SSEN	1,759	459	143,749
WPD	859	783	243,930
UKPN	65	164	19,552

- NPg had the highest volume of customers without power supply for the longest period.

[5] https://www.ofgem.gov.uk/publications/review-networks-response-storm-arwen-interim-report
[6] https://www.ofgem.gov.uk/publications/storm-arwen-report

Table 6 – Cumulative number of customers off supply

DNO	Less than 24 hrs	1+day	2+ days	3+ days	4+ days	5+ days	6+ days	7+ days
ENWL	74,983	29,249	8,408	4,812	2,602	1,436	443	196
NPg	280,867	45,900	22,046	13,796	8,792	5,717	4,094	2,537
SPEN	189,133	23,885	8,238	2,592	1,114	474	106	0
SSEN	143,749	32,476	19,272	11,235	6,638	3,741	1,101	299
WPD	243,930	8,214	1,137	26	1[11]	1	1	0
UKPN	19,552	22	0	0	0	0	0	0

- 'During Storm Arwen, we found that some DNOs had far fewer resources deployed initially, which may have affected the time taken to repair and restore supplies. In particular NPg (NPgN and NPgY) and ENWL had far less resources deployed in the early stages of the response.'

The lack of resource deployment by NPg caused delays in restoration and inability to provide us with a defined plan for restoration with realistic timelines.

- 'We found that all DNOs' phone lines were available for the duration of Storm Arwen, excluding NPg's service which experienced a three-hour interruption'… 'The performance of DNO customer call centres varied, with average call wait times between 1-36 minutes. Many customers had to wait longer than this to speak to a call centre agent, with the longest recorded wait time of just under 6 hours (NPg).' NPg also had the highest abandoned call rate at 43% (27,859) caused by their website being unavailable for a long period of time.

The Ofgem report not only evidences the difficulties NPg faced, but also the significant effects and damaging nature of the storm within our region and across the Northern England. Unfortunately, due to the severity of the storm, lack of planning, estimated restoration times and communication from NPg, were unable to plan effectively and we feel that there were significant delays to the restoration of power.

Impact on ODIs

We are requesting an intervention to the automatic operation of two of our in-period ODIs. All details and definitions for our measures can be found in Ofwat's published document 'Final Determination - Outcomes performance commitment appendix[7]'.

[7] https://www.ofwat.gov.uk/publication/pr19-final-determinations-yorkshire-water-outcomes-performance-commitment-appendix/

PR19YKY_21 Water supply interruptions (common performance commitment)

This performance commitment is designed to incentivise companies to minimise the number and duration of supply interruptions.

We have reviewed all incidents and 51.79 seconds reported against this performance commitment were attributed to events caused by power-failure with an associated penalty of £1.06m.

The detailed reporting guidance for this performance commitment within the PR19 Final Determination states that:

'The default position is that the water company manages the risk of supply interruptions and there are no exclusions. This measure covers planned and unplanned interruptions. The cause of the interruption is not relevant to the calculation of the reported figure. That is, asset failure caused by third parties would be treated the same as the failure of the company's assets and planned or unplanned interruptions are the same.'

However, the guidance also states:

'Companies may make a representation to Ofwat for an exception to be granted on the basis of a civil emergency under the Civil Contingencies Act 2004, where the supply interruption is not the cause of the emergency.'

The Civil Contingencies Act states that an emergency is an event or situation which threatens serious damage to human welfare in the United Kingdom or in a Part or region. It also states that an event or situation threatens damage to human welfare only if it involves, causes or may cause: loss of human life, human illness or injury, homelessness, damage to property, disruption of a supply of money, food, water, energy or fuel, disruption of a system of communication, disruption of facilities for transport, or disruption of services relating to health. We believe that this is clause in the ODI definition is applicable in this case. A major Incident was declared in the north of England and Scotland and the Met Office described it as "one of the most powerful and damaging winter storms of the latest decade". Whilst Yorkshire and Humber did not declare a Major Incident, the impact across the region, and particularly that experienced by NPg, was of a similar nature. As demonstrated throughout, we implemented all our emergency response protocols and participated in all Major Incident meetings and Local Resilience Forum meetings.

In the interim report written by BEIS[8], the expectations of company response and actions are directly linked, and in reference to, the Civil Contingencies Act 2004.

> *''Under the Civil Contingencies Act (2004), network operators are required to liaise with Local Authorities, Strategic Coordinating Groups (SCGs), and third*

[8] https://www.gov.uk/government/news/government-publishes-interim-report-on-storm-arwen-review

parties (such as the British Red Cross), to share information about vulnerable customers and work together to provide welfare support.''

''Local Response - The operational response to major incidents, such as Storm Arwen, is coordinated at the local level through Strategic Coordinating Groups or Tactical Coordination Groups which are the response mechanisms of Local Resilience Forums in England and Wales, and Regional or Local Resilience Partnerships in Scotland in accordance with the Civil Contingencies Act 2004.''

It was also observed that estimated restoration times were insufficient and unrealistic, acknowledging the severe impact of this storm.

''Estimated times for restoration were optimistic given the scale and complexity of faults as well as the difficulty in adequately assessing fault data. The way in which these moving estimates were communicated to customers made it difficult for households and Local Resilience Forums to make informed decisions about their welfare.''

We would like to make a representation to Ofwat for an exception to be granted for this ODI having demonstrated the characteristics of a civil emergency under the Civil Contingencies Act 2004 and the event retrospectively being reviewed as such.

We believe that if the expected response is that of a civil emergency, then the event should be categorised as such.

Appendix 2: PR19YKY_27 Significant water supply events (bespoke performance commitment)

This performance commitment is designed to incentivise the company to reduce the number of long duration water supply interruption events. It reports the number of supply interruption events lasting for a duration of 12 hours or longer, irrespective of whether they are planned, unplanned or caused by a third party. The performance commitment is intended to assess both the resilience of our assets and the operational response to prolonged supply interruption incidents and acknowledges the impact of prolonged water supply interruption events to customers.

We are requesting an intervention to the automatic operation of this ODI in respect of 22 events and an associated penalty of £5.56m.

Though we appreciate the requirement for severe weather to be included within our representations, we would like to suggest that all events associated with power outage during Storm Arwen, are considered a single event under this performance commitment, in

line with the following clause within the ODI definition: 'All notifications received downstream of the point of interruption, will be considered as one event'. In these circumstances, we consider Northern PowerGrid and the power failure experienced as the 'point of interruption', which caused a single region wide event. As such, we request the penalty associated with these 20 of these events is reduced to £265k.

The remining two events in question were unable to be restored within the 12-hour period due to the severity of the weather events presenting serious health and safety concerns for our employees.

Our customers and our penalty position.

We believe that the requested intervention is important to protect future customers from two potential consequences. One consequence could result in a perverse incentive for a company to undertake uneconomic levels of investment the second consequence would be to potentially push up the cost of capital as the extent of asymmetric risk born by companies becomes apparent through the application of the ODI penalty.

To manage low likelihood high impact events which are outside of management control, companies will be incentivised to undertake uneconomic levels of investment. We believe the evidence we have provided shows that the impact of Storm Arwen was significant and well beyond management control. Even after taking all proactive measures to establish a large-scale response, consistent with our incident management response plan, we were limited in the effectiveness of our response due to a combination of weather impacts but more specifically the performance of the local power distribution network operator. One response to addressing the risk of further low likelihood high impact events would be to consider investing in large scale off-grid generation for every site even where this is rarely required or building physical weather protection around key sites. Any such investment could potentially crowd out investment and funding on other important customer priorities. Additionally, in the case of Storm Arwen we would be incentivised to invest in carbon intensive solutions to mitigate the underlying risk whether that be physical weather protection or off-grid fossil fuel generation.

The asymmetric risk associated with extreme weather events could be significant over time without a sensible and pragmatic approach to regulatory intervention. To the extent that that companies remain exposed to this risk we would expect this will manifest as increased base returns which would not be in customers interests given the extent to which even a small movement in base return could impact customer bills.

PR19YKY_27 Significant water supply events

Excluded events 2021/2022

We have excluded two events within our 2021/2022 reported performance for significant water supply events due to our ability to temporarily offer restoration of supplies to customers during an ongoing incident, but being unable to do so without having a detrimental impact on overall customer service.

These events and our process are as follows:

R045 - Tandem Way, HD5 – 22/05/2021

Three properties experienced an interruption lasting in excess of 12 hours. We deployed the Restoration Team to restore supplies to the properties, however the team was unable to do so. One customer property refused an overland restoration of supply on the grounds of health and safety and two properties were unoccupied at the time of the interruption.

These properties' supplies could have been restored by the restoration team via installation of over land supplies to internal pipework within 12 hours, however in all circumstances access was unavailable.

The only occupied property at the time of the event was a children's nursery, who were offered an overland to feed into their internal pipework but refused this on the grounds of Health and Safety to the children in their care. They then closed for the day and left the premises.

The other two properties were commercial properties, one property was closed as it was a restaurant and the event took place outside of their serving hours. One property was vacant with the building registered to a commercial landlord. In both circumstances attempts to contact the business owners by the local Field Team Leader to gain access proved unsuccessful and therefore temporary restoration was unable to be deployed.

The company could have restored supplies if it had made further attempts to contact the Business Owners via escalation to local Police, however it was felt this wouldn't be the correct course of action as it wouldn't have been in the interests of the customers affected.

We believe that empty properties should be excluded from reporting if we are able to evidence that restoration could be implemented within 12 hours, without this exclusion we risk driving action that is counter intuitive to customer interests and health and safety.

R108 - High Bradfield, S6 – 10/09/2021

Three customers who experienced a loss of supply were offered an overland to temporarily restore supplies five hours into an event at 22.30, at which point we requested the restoration team stand down for the night as the customers felt they would be disturbed by the on-going work. At this time the customers advised they had had water up until the mains isolation time of 22:21.

We paused our restoration attempts and did not recharge the main until the following morning at the customers request. The main was repaired seven hours into the interruption, but no further attempts were made to deploy a field technician from an alternative area as we waited for the restoration team visit after 07:00 the next day. We believed the start time for this event was 22:21. We had 16 Field Technicians available on standby and had the ability to restore had we felt this would be a significant event.

It was only when completing the full review process that logger data and customer contacts identified the start time of supply loss as 18:45, not 22.21. Therefore, using the precautionary principle, we applied the 18:45 time for reporting purposes thus making this interruption in excess of 12 hours.

If we had continued to restore by overland supply without the customers permission we risked a providing poor customer service, potentially receiving a formal complaint and reputational damage.

Assurance

We have assurance processes in place to make sure that our regulatory publications comply with the relevant guidance and that the company has appropriate systems and processes in place to make sure the information contained within the publications is accurate and complete.

For more information on our assurance processes, please see the framework detailed within our published Assurance Plan which can be found here: www.yorkshirewater.com/about-us/reports. The assurance applied to this submission is part of the APR assurance process. Please see further information in the APR report, including the Board statement on accuracy and completeness of information as well as the external auditor reports from Atkins, our external technical assurance providers on the APR.

To deliver improvements to our APR for next year, we have documented a set of plans for some areas where have received an amber score, from our external auditor, which is related to either the data or methodology behind our reported outcomes. There are some areas where we are investigating the cause of concern in more detail.

Impact on bills and bill smoothing.

The in-period determination request claim from the 2021/2022 arising from the net penalty position is summarised as adjustments to the price controls in Table 2a & 2b. The 'in-period' revenue adjustments will be applied using the 'in-period adjustments model' which deals with taxation, time value of money, inflation and any voluntary deferrals. End of period adjustments will be applied at the end of the 2020-25 period in the relevant PR24 revenue and RCV models.

Table 2a. *Summary of revenue adjustments by price control arising from the 2021/2022 net ODI penalty position (all adjustments stated at 2017/2018 prices). This data is drawn from the ODI performance model and includes the draft assessment for C-Mex and D-Mex included in Table 1.*

Price Control (including C-MeX and D-MeX)	Unit	2021-22
Revenue Adjustments - net ODI payments (to be applied in period)		
Water Resources	£m	0.04
Water network plus	£m	(18.49)
Wastewater network plus	£m	1.28
Bioresources	£m	0.26
Residential retail	£m	1.97
Total in period	**£m**	**(14.94)**

Table 2b. *Summary of revenue adjustments by price control arising from the 2021/2022 net ODI penalty position (all adjustments stated at 2017/2018 prices). This data is drawn from the ODI performance model and does not include the draft assessment for C-Mex and D-Mex included in Table 1.*

Price Control (excluding C-MeX and D-MeX)	Unit	2021-22
Revenue Adjustments - net ODI payments (to be applied in period)		
Water Resources	£m	0.04
Water network plus	£m	(16.44)
Wastewater network plus	£m	2.63
Bioresources	£m	0.26
Residential retail	£m	1.99
Total in period	**£m**	**(11.53)**

Overall, Yorkshire Water is in a penalty position of -£14.935. This equates to a reduction of bills circa £5 per household. As a result, it is not considered that there is a need for bill smoothing and this can be accounted for in the 2023/2024 charges. Table 3 shows the impact of this by price control.

Table 3. *Impact of penalty claim on customers' bills for each relevant price control. The table results include C-MeX and D-MeX ODI outturns (Table 1) which have been adjusted for tax and deflated to the 2017-18 price base.*

Price Control (including C-MeX and D-MeX)	2017-18 Price base £	%
Water Resources	0.0	0%
Water network plus	(6.0)	-4%
Water	**(6.0)**	**-4%**
Wastewater network plus	0.9	3%
Bioresources	0.1	0%
Wastewater	**1.0**	**0%**
Average bill impact	(5.0)	-1%

Customer engagement

Our ongoing engagement with customers allows us to understand and act on the things they consider important to them, from understanding the service experience they expect through to affordability of bills. Our focus on lifestyles provides us with a much better understanding of how they interact with water their day-to-day lives, what they want, need and expect from us. These conversations ensure we know what their priorities are now and in the future.

As part of our PR19 engagement with customers we explored several different ways in which customers' bills could be phased up until the year 2035. Feedback from customers showed a preference for the profiles which remained consistent for the longest period, particularly our more vulnerable customers. Customers in support of this profile felt more reassured by

seeing a bill that would not fluctuate. It would help them to manage their household bills more easily as they were used to so many other bills (such as energy) fluctuating which made it hard to keep on top of things. If the water bill remained consistent it would be one less bill to have to worry about. This was consistent with similar research undertaken to support the PR14 process. During PR19, customers told us they were not motivated by any potential refund on their bills; what they most wanted was YW to deliver on their targets, rather than under-deliver, and have a stable bill.

Given the non-materiality of the impact Yorkshire Water's penalty position will have on the average household bill, the reduction in bills may help to offset the impact of the forecasted increase in Consumer Price Index including owner occupiers' housing costs (CPIH) in 2024. Therefore, based on the knowledge we already have from previous engagement with our customers, we have not specifically undertaken any further engagement with customers on the impact of the 2021/2022 in-period ODIs on bills.