Our risk management

Our risk and resilience framework

We have a robust risk and resilience framework for the identification, assessment and mitigation of risk.

Our approach to risk and resilience

Successful management of risks and uncertainties enables us to deliver on our purpose to provide great water and more for the North West, and be more resilient across our corporate, financial and operational structures. A key objective of our approach is to support the sustainable achievement of the strategic themes that underpin our vision to be the best UK water and wastewater company delivering:

- the best service to customers;
- at the lowest sustainable cost; and
- in a responsible manner.

Our risk and resilience framework provides the foundation for the business to anticipate threats to delivering an effective service in these challenging times, and to respond and recover effectively when risks materialise. Key components of the framework include:

- an embedded group-wide risk management process, which is aligned to ISO 31000:2018 risk management guidelines;
- a board-led approach to risk appetite, based on strategic goals;
- a strong and well-established governance structure giving the board oversight of the nature and extent of risks the group faces, as well as the effectiveness of risk management processes and controls; and
- a portfolio of policies, procedures, guidance and training to enable consistent, group-wide participation by our people.

Continuous improvement is a key feature of the framework, which incorporates a maturity assessment model to identify areas to enhance. Based on risk management capabilities relative to five levels of maturity, a recent assessment has supported the development of a road map of improvements. This includes further enhancement to risk appetite and tolerance, greater focus and analysis of cross-cutting themes and improved escalation of data from operational risk management systems.

Risk appetite and tolerance

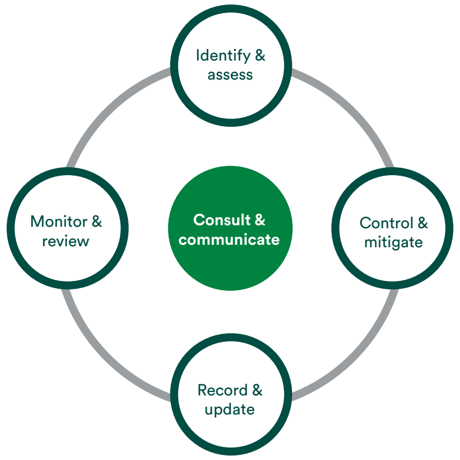
Focused on supporting decision-making, the risk appetite and tolerance framework consists of a package of measures. The General Risk Appetite represents financial limits against which event-based risks are compared at each full and half-year assessment and reporting cycle. In parallel are a series of strategic statements which align directly to the principal risks (see pages 104 to 105). Each statement reflects the strategic intent, strategic theme, relevant stakeholders and governance, but fundamentally emphasises the attitude to risk taking and control relative to four descriptors:

- **Averse:** A strong opposition to accept risk within business strategy or operational activity.
- **Prudent:** A reluctance to accept risk within business strategy or operational activity, but careful acceptance within tight boundaries.
- **Moderate:** Willingness to accept risk with regard to business strategy or operational activity provided this is within reasonable limits.
- **Accepting:** Willingness to accept risk with regard to business strategy or operational activity.

As a regulated company providing essential public services none of the principal risks have risk accepting as a strategic direction or approach.

Underpinning each strategic statement, and currently under development, are a series of more tangible, tactical statements with specific levels and limits.

How we identify and assess risk



We have a number of mechanisms in place to identify risk. These include a risk universe, cross-business horizon scanning forums, consultation with third parties and comparison with National Risk Registers.

Each risk is event based and is sponsored by a senior manager who is responsible for the analysis of the corresponding causal factors, consequences and the control effectiveness, taking account of both the internal and external business environment. This process quantifies the likelihood of the event occurring and the full range of potential impacts from a minimum (best case) to a maximum (worst case). Comparing this position against the desired target state, in combination with the strengths, weaknesses and gaps of the control environment, supports the decisions for further mitigation as appropriate. This ongoing analysis culminates in the biannual business unit risk assessment (BURA) which forms part of the governance and reporting process (as outlined opposite) to ensure consistency of approach and a true reflection of the risk facing the company. It also serves to calibrate the most significant risks from a financial and reputational context and to assess how these relate to our risk appetite.

Governance and reporting process

The board ensures that its oversight of risk remains effective, and in compliance with the UK Corporate Governance Code, through a number of established reporting routes.

Twice yearly the board receives an extensive update on the risk profile as part of the full and half-year reporting cycle. This provides an overview of the nature and extent of risk exposure in the context of the group's principal risks (as detailed on pages 104 to 105), and emphasises the most significant event-based risks (summarised on pages 106 to 108) in both their current state relative to the risk appetite, and target state of acceptable exposure. The board is also advised of new and emerging risks (see page 109). In addition to the biannual risk reporting, specific risk topics are reported to the board to support decision-making. The board is, therefore, able to:

- make decisions on the level of risk it is prepared to manage relative to risk appetite and tolerance in order to deliver on the group's strategy;
- engage with the business to ensure appropriate controls and mitigation are in place, and test the appropriateness of plans;
- report externally on the long-term viability of the company in an informed manner; and
- monitor and review the effectiveness of risk management procedures and internal control systems.

Risk-specific governance and steering groups manage ongoing individual risks. The operational risk and resilience board provides oversight of asset and operational process, risk and resilience capability, escalates risks and issues to the group audit and risk board (GARB) and contributes to the BURA process.

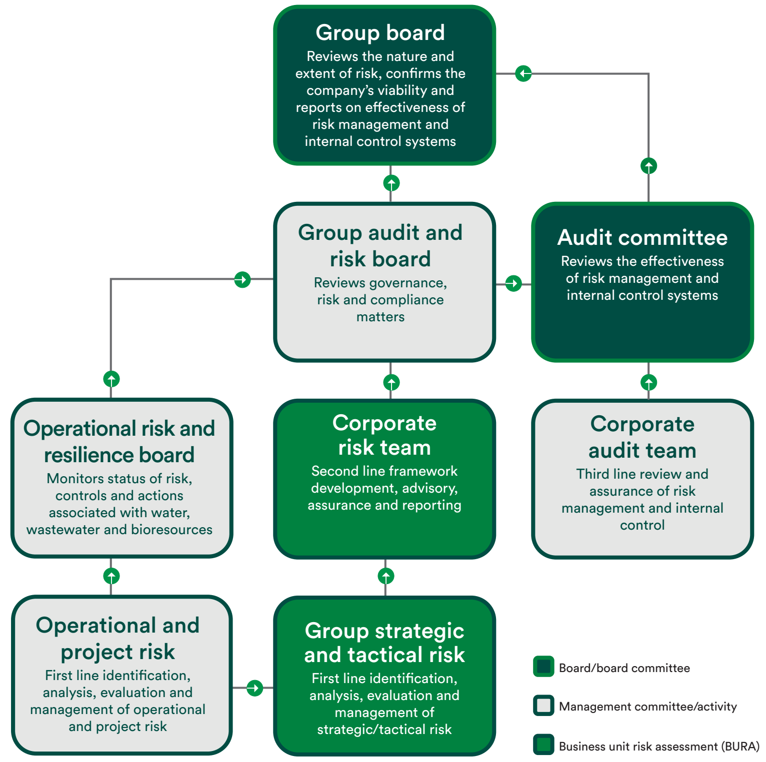
The executive-led GARB focuses on: the adequacy, effectiveness and performance of governance processes; risk management and internal control; monitoring compliance and assurance activities; identification of emerging themes and trends; and resilience across the group.

The audit committee is also a fundamental component of the governance structure. Supported by company secretariat and the corporate audit teams, the audit committee reviews the effectiveness of risk management and internal controls before these are agreed by the board.

Risk profile

The business risk profile is based on the value chain of the company, with the ten principal risks representing inherent risk areas (primary and supportive) where value can be gained, preserved or lost relative to the performance, future prospects or reputation of the company. Underpinning the principal risks, the profile consists of approximately 100 event-based risks, each of which is allocated to one of the ten inherent risk areas based on the context of the event, enabling the company to consider interdependency and correlation of common themes (see page 102) and control effectiveness.

The governance and reporting process



Principal risk heat map

The heat map provides an indicative only view of the current risk exposure (likelihood of occurrence and most likely impact) of each of the principal risks relative to each other.

Six of the principal risks have remained relatively stable in the last twelve months with the following four demonstrating an increase in exposure:

- **Wastewater service** associated with change in legislation;
- **Supply chain and programme delivery** due to economic conditions;
- **Health, safety and environmental** due to the uncertainty of achieving the net zero carbon commitments; and
- **Political and regulatory** due to the challenge of delivering customer and environmental improvements whilst maintaining fair value to customers

See pages to 104 to 105 for further details of the principal risks.

Risk exposure

An indication of the current exposure of each principal risk relative to the prior year.

- Decreased
- Stable
- Increased

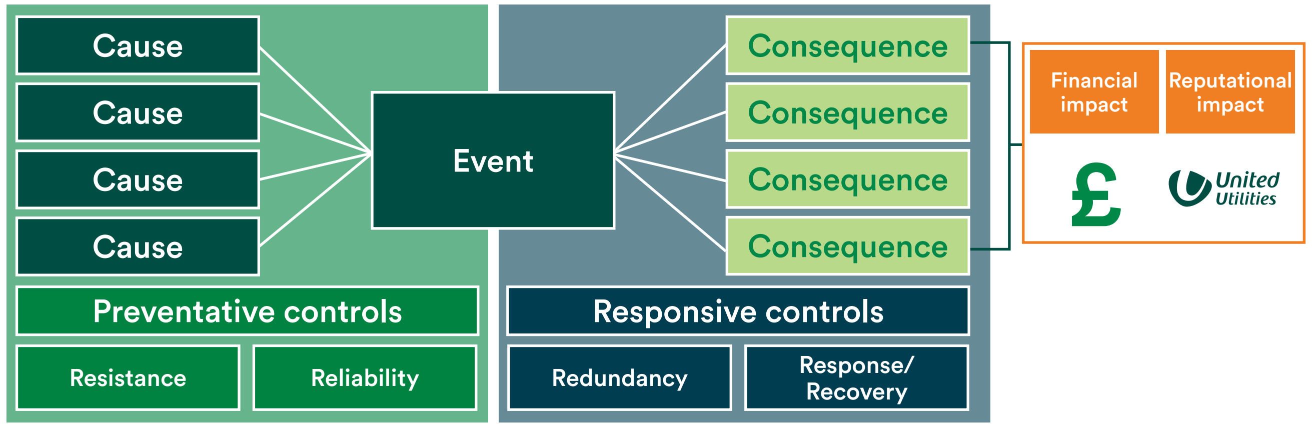
Principal risks

1. Water service
2. Wastewater service
3. Retail and commercial
4. Supply chain and programme delivery
5. Resource
6. Finance
7. Health, safety and environmental
8. Security
9. Conduct and compliance
10. Political and regulatory

Our risk management

Common themes

As illustrated in the bow-tie diagram below, each of the event-based risks has multiple causes and consequences, which in turn lead to financial and/or reputational impact. Preventative and responsive controls, which incorporate the four components of resilience (resistance; reliability; redundancy; and response/recovery), are applied to reduce the likelihood of the event occurring and limit the impact if the event were to materialise. New and emerging circumstances in respect of causes, consequences and controls make the profile multifaceted and dynamic. Analysis of the profile highlights common themes, notably associated with the causes and consequences. These common themes can then be considered more holistically, which combined with the analysis of the strengths, weaknesses, gaps and interdependency of control across the business, enables a more integrated approach to risk mitigation.



Common causal themes

The event-based risks include multiple causal factors, which individually or in combination, could trigger the risk event to occur. Categorisation illustrates six common causal themes:

- **Extreme weather/climate change:** In the majority of cases our water resources, asset base and operations can cope with extreme weather conditions, although these can become overwhelmed in intense situations. Climate change projections highlight increased temperatures, rainfall, wind and more frequent extreme variations in weather patterns. This means that climate change remains a key focus for us, because of its impact on our capacity and capability for service delivery, and because of the effect on the environment that we strive to protect and enhance. We are committed to the principles set by the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD) – see pages 86 to 97.
- **Demographic changes:** Demographic changes, including population growth and evolving age profiles, can impact the capacity and capability of water and wastewater treatment and network assets; can affect demand on water resources; and increase uncertainty in relation to pension obligations.
- **Legislative and regulatory change:** Changes in legislation and/or regulation can have implications for the business model, asset base and ways of working. For example: post-Brexit changes in law bring an element of uncertainty; and the introduction of competition, while positive to customers and markets, can affect ongoing revenue and the asset base.
- **Economic conditions:** Macro events can have multiple financial implications, including: lower revenue; increased bad debt; increased operational cost; increased cost of borrowing; and a reduction in the Regulatory Capital Value. The events can also impact the wider supply chain with knock-on effects to our service delivery and cost to serve.
- **Asset health:** General use, exposure to natural hazards, pressure and load all contribute to the deterioration of assets. In addition, other factors such as technological obsolescence and operating assets beyond their optimal capacity to cope with increased demand (population growth and/ or climate change) also affect asset health. Ageing assets, therefore, provide an underlying and cross-business risk and uncertainty both to efficiency and for the long-term resilience of asset integrity and the associated service capability.
- **Culture:** Embedded through processes, reward mechanisms, values and behaviours, corporate culture is important to maintain high performance and cuts across the majority of risks in the profile. In an increasingly challenging business environment, our focus is to continue to embed a culture of innovation, customer service and behaving in a responsible manner at the same time as being open and transparent.

Common consequence themes

Each consequence is analysed for the financial and reputational implications relative to multiple stakeholders. Categorisation of the consequences illustrates four common impact themes:

- **Customers:** Customers are impacted through our service offering, the quality of their experience when dealing with us, and how our operational and capital schemes affect them in the community.
- **Environment:** Our assets, operations and capital programmes can have a significant impact on the environment in both rural and urban settings. As a major land owner and operator of a large fleet of vehicles, the way we manage these also has environmental implications.
- **Investors:** The vast majority of risks in the profile have financial implications that could affect shareholder investment in the short and long term. Reputational impact associated with ethics, environmental protection and efficiency is also relevant for investors' interest in the company.
- **Employees:** Our employees are fundamental to delivering our service requirements as well as our strategic objectives. Equally, our employees can be affected by multiple risks across the business, but primarily in relation to employment and health, safety and wellbeing risks.

Our risk management

Our principal risks

Our strategic themes

- The best service to customers
- At the lowest sustainable cost
- In a responsible manner

Inherent risk area (principal risk)[1]	Strategic theme	Sponsor(s)	Principal risk description	Causal factors themes (Drivers/influences of risk)	Consequence themes and stakeholder groups	Appetite and tolerance[2]	Control/mitigation	Top five event-based business risks (*most significant group risks – see pages 106 to 108)
1 Water service	The best service to customers	• Water, wastewater and digital services director	A failure to provide a secure supply of clean, safe drinking water and the potential for a negative impact on public confidence in water supply.	• Climate change • Demographic change • Legal and regulatory change • Asset health	• Customers • Environment • Investors	**Water** Averse	• Strict quality controls and sampling regime • Physical and chemical treatment with automation • Cleaning, maintenance and replacement of assets • Water resources and production planning • Pressure/flow management and leak detection • Integrated network and response capability	• Failure of Haweswater Aqueduct* • Water sufficiency* • Failure to treat water • Failure of the distribution system (leakage) • Dam failure*
2 Wastewater service	The best service to customers	• Water, wastewater and digital services director	The failure to remove, treat and return water to the environment and recycle sludge to land.	• Climate change • Demographic change • Legal and regulatory change • Asset health	• Customers • Environment • Investors	**Wastewater** Prudent **Bioresources** Moderate	• Physical and chemical treatment • Odour management systems • Drainage and wastewater management plans • Wastewater network operating model • Cleaning, maintenance and replacement of assets • Customer campaigns	• Wastewater network failure (sewer flooding)* • Failure to treat sludge* • Recycling biosolids to agriculture* • Wastewater treatment (permits) • Mersey Valley Sludge Pipeline
3 Retail and commercial	At the lowest sustainable cost	• Customer and people director • General counsel and company secretary	Failing to provide good and fair service to domestic customers and third-party retailers or a failure of or issue in relation to non-regulated interests.	• Legal and regulatory change • Economic conditions • Asset health • Culture	• Customers • Investors	**Retail** Prudent **Commercial** Moderate	• Customer-focused initiatives • Best practice collection techniques • Customer segmentation • Priority Services scheme • Data management and data sharing • Non-regulated operation governance	• Customer experience • Cash collection • Billing accuracy • Wholesale revenue collection • Developer services
4 Supply chain and programme delivery	At the lowest sustainable cost	• Commercial, capital delivery and engineering director	The potential ineffective delivery of capital, operational or functional processes/programmes including change.	• Legal and regulatory change • Economic conditions • Culture	• Communities • Customers • Environment • Investors • Suppliers	**Supply chain** Prudent **Programme delivery** Moderate	• Category management • Supplier relationship management • Capital, change and operational programme management • Portfolio, programme and project risk management	• Price volatility* • Unfunded developer programmes • Security of the supply chain • Dispute with supplier • Capital delivery programme
5 Resource	At the lowest sustainable cost	• Customer and people director • Health, safety and wellbeing and estate services director • Water, wastewater and digital services director	The potential failure to provide appropriate resources (human, technological or physical) required to support business activity.	• Climate change • Legal and regulatory change • Economic conditions • Asset health • Culture	• Customers • Employees • Investors	**Resource** Moderate	• Adoption of effective technology • Multiple communication channels • Training and personal development • Talent, apprentice and graduate schemes • Change programmes and innovative strategies • Maintenance, replacement or renovation of assets	• Land management • IT asset support • Loss or failure of NIS systems • Business critical data • Employee relations
6 Finance	At the lowest sustainable cost	• Chief financial officer	The potential inability to finance the business appropriately.	• Demographic change • Legal and regulatory change • Economic conditions • Asset health	• Customers • Employees • Investors	**Finance** Prudent	• Long-term refinancing • Liquidity reserves • Counterparty credit exposure and settlement limits • Hedging strategies • Sensitivity analysis • Monitoring of the markets	• Credit ratings* • Pension scheme funding deficit* • Financial outperformance* • Tax efficiency/fair share* • Totex efficiency challenge*
7 Health, safety and environmental	In a responsible manner	• Environment, planning and innovation director • Health, safety and wellbeing and estate services director	The potential harm to employees, contractors, the public or the environment.	• Climate change • Asset health • Culture	• Communities • Employees • Environment • Investors	**Health, safety and wellbeing** Averse **Environment** Averse	• Strong governance and management systems • Certification to ISO 45001 and ISO 14001 • Benchmarking, auditing and inspections • Targeted engagement and improvement programmes • Carbon reduction initiatives • Self-generation of energy	• Carbon commitments* • Disease pandemic* • Occupational health exposure • Minor injuries • Process safety (bioresources and wastewater)
8 Security	In a responsible manner	• General counsel and company secretary	The potential for malicious activity (physical or technological) against people, assets or operations.	• Economic conditions • Asset health • Culture	• Communities • Customers • Employees • Investors	**CNI and SEMD** Averse **Other** Prudent	• Physical and technological security measures • Strong governance, inspections and audits • Security authority liaison and NIS compliance • System and network integration • Business continuity and disaster recovery • Insurance	• Cyber* • Terrorism* • Criminality • Fraud • Data protection
9 Conduct and compliance	In a responsible manner	• Corporate affairs director • General counsel and company secretary	The failure to adopt or apply ethical standards, or to comply with legal and regulatory obligations and responsibilities.	• Climate change • Demographic change • Legal and regulatory change • Economic conditions • Asset health • Culture	• Communities • Customers • Employees • Environment • Investors • Suppliers	**Legislation** Averse **Other** Prudent	• Ethical supply chain, diversity and inclusivity policies • Data classification and levels of authorisation • Stakeholder engagement activities • Audits and peer reviews • Governance, risk assessment and horizon scanning • Brand comparisons and dashboard of culture metrics	• Water Plus • Bribery • Non-regulated assets • Procurement compliance • Corporate governance and listing rules compliance
10 Political and regulatory	At the lowest sustainable cost	• Corporate affairs director • General counsel and company secretary • Strategy, policy and regulation director	Developments connected with the political, regulatory and legislative environment.	• Legal and regulatory change • Economic conditions	• Customers • Employees • Environment • Investors	Appetite or tolerance cannot be determined due to no genuine choice or control	• Consultation with government and regulators • Communication with customers	• Price Review 2024 outcome* • Upstream competition (bioresources) • DPC exit – HARP • ASHE index • Upstream competition (water resource)

Risk exposure
An indication of the current exposure of each principal risk relative to the prior year.

- Decreased
- Stable
- Increased

Notes
(1) **Principal risks:** Based on the value chain of the company, principal risks represent inherent areas where value can be gained, preserved or lost. Water, wastewater (including bioresources) and retail and commercial areas are the primary activities, with all other areas as supportive/contributing activities.
(2) **Appetite and tolerance:** Averse: A strong opposition to accept risk within business strategy or operational activity. Prudent: A reluctance to accept risk within business strategy or operational activity, but careful acceptance within tight boundaries. Moderate: Willingness to accept risk with regard to business strategy or operational activity provided this is within reasonable limits. Accepting: Willingness to accept risk with regard to business strategy or operational activity. (NB As a regulated company providing essential public services none of the principal risks have risk accepting as a strategic direction or approach).

Our risk management

The company's most significant event-based risks

The most significant event-based risks represent the ten highest-ranked risks by exposure (likelihood of occurrence of the event multiplied by the most likely financial impact) and those risks which have been assessed as having a significantly high impact, but low likelihood. Depending on the circumstances, financial impacts will include loss of revenue, additional or extra cost, fines, regulatory penalties and compensation. Reputational impact relative to our multiple stakeholders is also assessed, reported and considered as part of the mitigation.

Summarised below are the top ten ranking risks (1–10), and those assessed as having high impact, but low likelihood (A–F):

Key:

- Top ten ranking risks relative to likelihood and impact
- High impact, low likelihood risks

1. Price Review 2024 outcome

Risk exposure: This risk focuses on the capacity and capability to develop a business plan that creates value for customers, communities, and the environment that is sustainable and resilient for the long term relative to the unique characteristics of the region we serve, in light of multiple influencing factors – notably changing demographics, climate change and asset health.

Control/mitigation: We have established cross-cutting work streams and theme owners to identify the products and evidence required for the submission and we will maintain a close dialogue with Ofwat throughout the process.

Assurance: Extensive customer research and several external providers have been commissioned for technical optioneering. Second line assurance is provided through a dedicated price review team and a PR24 programme board. An internal audit is scheduled and external assurance is currently under procurement.

2. Failure of the Haweswater Aqueduct

Risk exposure: The Haweswater Aqueduct is a key asset with current low resilience due to deterioration, with failure potentially resulting in water quality issues and/or supply interruptions to a large proportion of the United Utilities customer base.

Control/mitigation: A capital project to replace the tunnel sections of the aqueduct has already commenced with the completion in November 2020 of one section. The remaining sections are due to be replaced as part of Haweswater Aqueduct Resilience Programme (HARP) by 2029.

Assurance: Technical and geological advice and modelling have been sought throughout the programme development, with second line assurance including engineering technical governance. Independent assurance is provided by cyclical internal audits and external assurance over the competitively appointed provider.

3. Wastewater network failure (sewer flooding)

Risk exposure: Equipment failure, collapses/bursts or inadequate hydraulic/operational capacity to cope with extreme weather and population growth, resulting in sewer flooding.

Control/mitigation: Preventative maintenance and inspection regimes, customer campaigns and sewer rehabilitation programmes.

Assurance: Second line assurance provided by wholesale assurance, engineering technical governance and flood review panel. Subject to regular internal audits and external assurance of regulatory reporting.

4. Cyber

Risk exposure: Data and technology assets compromised due to malicious or accidental activity, leading to a major impact to key business processes and operations.

Control/mitigation: Multiple layers of control, including a secure perimeter, segmented internal network zones, access controls, constant monitoring and forensic response capability.

Assurance: Security stance reflects multiple sources of threat intelligence. The security steering group provides second line assurance, with independent assurance provided by cyclical internal audits and various technical audits by external specialists.

5. Water sufficiency

Risk exposure: Water sufficiency is one of the most sensitive risks to climate, with the frequency of recent periods of extended hot, dry weather being evidence of changing circumstance and the potential for implementation of water use restrictions on customers.

Control/mitigation: We produce a Water Resources Management Plan (WRMP) every five years, which forecasts future demand and water availability under repeats of historic droughts, adjusted for climate change. A statutory Drought Plan is also developed every five years, setting out the actions we will take in a drought situation.

Assurance: The WRMP and Drought Plan are subject to various second and third line assurance activities prior to publication.

6. Carbon commitments

Risk exposure: This risk focuses on the capacity and capability to decarbonise water and wastewater activity relevant to the Public Interest Commitments (PIC) to achieve net zero by 2030 in light of the growth pressures, lack of technological advances or innovation and the fundamental change of approach required.

Control/mitigation: We will continue to develop near-term initiatives to address process and energy emissions, and create woodland and restore peatland, while responding to an evolving policy and technological landscape. We are also developing a long-term strategy to reduce emissions and to fully understand and optimise potential decarbonisation initiatives and pathways.

Assurance: Water industry research and technical support combined with a climate change mitigation steering group provides second line assurance. An internal audit is scheduled and external assurance of emissions, regulatory reporting lines and science-based targets has been established.

7. Failure to treat sludge

Risk exposure: This risk relates to the interdependency between wastewater and bioresource treatment activity in light of changing demographics, asset health and legislative/regulatory change. Industrial Emissions Directive (IED) now applying to biological treatment of sewage sludge within AMP 7, with no investment assigned to this requirement is a key factor.

Control/mitigation: The Throughput, Reliability, Availability, and Maintainability (T-RAM) of our facilities is a key area of mitigation, with formal service level agreements between the two core activities. In relation to IEDs, discussions at national level are being held to move the high capital cost improvements into PR24.

Assurance: Wholesale assurance and engineering technical governance provide second line assurance. Subject to cyclical internal audit and ad-hoc external strategic reviews.

8. Recycling of biosolids to agriculture

Risk exposure: This risk represents various impact scenarios including operational failures, increased restrictions or total ban of recycling biosolids to agriculture. Referencing the EA's interpretation of the Farming Rules for Water (FRfW) regulations and the increasing threat to recycling a large proportion of biosolids.

Control/mitigation: United Utilities is accredited to the UK Biosolids Assurance Scheme (BAS), which certifies that our treatment and recycling activities meet regulatory requirements and best practice. We also work closely with farmers and landowners and have robust standard operating procedures established with contractors.

Assurance: Wholesale assurance and engineering technical governance provide second line assurance. Subject to both cyclical internal and external audit.

9. Price volatility

Risk exposure: This risk reflects the inflationary pressures across all commodities, notably energy, associated with the post COVID-19 economic bounce back which have been exacerbated further by the conflict in Ukraine.

Control/mitigation: Contract provision with suppliers, hedging policy and supply agreements manage volatility and minimise vulnerability in the contract and price risk with the suppliers including periods of agreed fixed pricing and negotiation of CPI/H uplift on an annual basis.

Assurance: Market analysis and supplier engagement, combined with quarterly business reviews provide second line assurance. Due to the scale of procurement an energy governance panel has oversight over procurement and use.

10. Credit rating

Risk exposure: Credit ratings below internal targets, due to deterioration in financial and/or operational performance and/or external factors (such as inflation) resulting in more expensive funding.

Control/mitigation: Continuous monitoring of markets, and the management of key financial risks within defined policy parameters

Assurance: Second line assurance provided by financial control and quarterly business reviews, with oversight provided by the treasury committee. The treasury function is subject to regular internal audits.

A. Pension deficit

Risk exposure: The potential for the pension scheme funding deficit to increase because of life expectancy rates leading to additional contributions.

Control/mitigation: Constant monitoring combined with hedging against interest rates, inflation and growth asset risk.

Assurance: Policy and oversight is led by the pensions review management group, taking into account advice from accountancy and law firms. Pension governance is subject to periodic internal audits.

B. Financial outperformance

Risk exposure: Failure to achieve financial outperformance due to macro economic conditions and efficiency challenges, impacting the cost of debt and delivery of the company business plan.

Control/mitigation: Interest rate and inflation management, ongoing monitoring of markets and regulatory developments, and company business planning.

Assurance: Second line assurance and oversight is provided by the board and treasury committee in addition to executive quarterly business reviews. Subject to cyclical internal audit reviews.

C. Dam failure

Risk exposure: Uncontrolled release of a significant volume of water from reservoirs due to flood damage, overtopping, earthquake or erosion leading to catastrophic impacts downstream.

Control/mitigation: Each reservoir is regularly inspected by engineers. Where appropriate, risk reduction interventions are implemented through a prioritised investment programme.

Assurance: Various sources of second line assurance, including supervising engineers, dam safety group, wholesale assurance and regular board reviews. Independent assurance is provided by panel engineers and internal audit.

D. Fair payment of tax

Risk exposure: Failure to maximise the available tax efficiencies and reliefs due to changing mechanisms.

Control/mitigation: Tax policies and objectives cover: efficient structuring of commercial activities; maintaining a robust governance and risk management framework; and an open and transparent relationship with tax authorities.

Assurance: Tax policies are based on advice from multiple sources, including accountancy firms. Third-party assurance is provided by internal audit and accountancy firms.

E. Disease pandemic

Risk exposure: Serious illness in a large proportion of the UK population and consequences to our workforce, the wider supply chain and macro economy.

Control/mitigation: The incident management process would be invoked, supported by the Pandemic Response Plan. This includes the implementation of multi-channel communication with non-pharmaceutical interventions as per government guidance.

Assurance: Wholesale assurance provides second line assurance, with internal audit undertaking various reviews.

F. Terrorism

Risk exposure: A significant asset to be compromised by terrorist activity leading to loss of supply, contamination and/or pollution.

Control/mitigation: A risk-based protection of assets in line with the Security and Emergency Measures Direction (SEMD) and close liaison with the Centre for the Protection of National Infrastructure (CPNI), regional counter terrorist units, local agencies and emergency services.

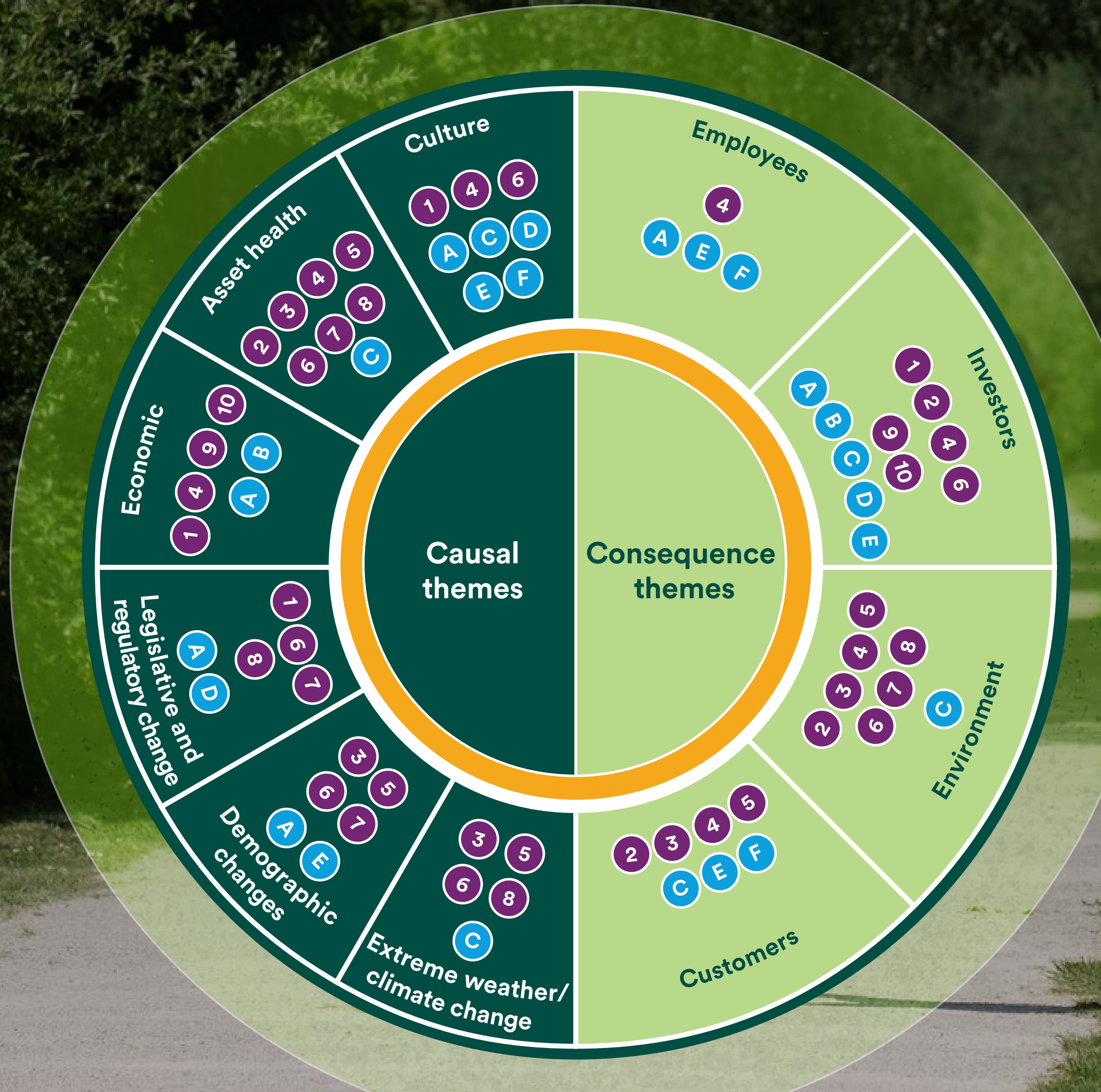
Assurance: Security posture is based on various threat advisors. Second line assurance is provided by the security steering group. In addition, internal audit undertakes cyclical audits with external technical assurance being delivered by specialists.

Our risk management

The company's most significant event-based risks

Mapping of common themes to the most significant group risks

The diagram below illustrates how the common themes (causal and consequence) relate to the company's most significant event-based risks, demonstrating how new and emerging circumstances can not only influence the risk exposure, but also focus attention for control and mitigation.



Most significant event-based risks

1. Price Review 2024 outcome
2. Failure of Haweswater Aqueduct
3. Wastewater network failure (sewer flooding)
4. Cyber
5. Water sufficiency
6. Carbon commitments
7. Failure to treat sludge
8. Recycling of biosolids to agriculture
9. Price volatility
10. Credit rating

A. Pension deficit
B. Financial outperformance
C. Dam failure
D. Fair payment of tax
E. Disease pandemic
F. Terrorism

Key:

- Top ten ranking risks relative to likelihood and impact
- High impact, low likelihood risks

New and emerging risks

Following horizon scanning activity undertaken by the business, a watching brief is held over risks/issues which are worthy of note due to their new, emerging or reputational status, and typically have too high levels of uncertainty or complexity to quantify.

- **Plastics:** Attention on single-use plastic and microplastic (plastics less than 5 mm) pollution is ongoing, with their presence in the environment being linked to the water cycle. We are responding proactively and have formed a two pillar approach to addressing plastics, focusing on operational plastic waste and plastic in the water cycle.
- **Perfluoroalkyl and polyfluoroalkyl substances (PFAS):** There is a growing focus on PFAS chemicals including from our public liability insurers who are looking to exclude related liability claims. PFAS are manufactured chemicals used in everyday products. Known as 'forever chemicals', they are persistent, bioaccumulate and may be toxic even at low levels. We have completed an assessment of the likely presence of PFAS in raw water sources, the results of which are incorporated into the Drinking Water Safety Plan and aligned to the requirements set out by the Drinking Water Inspectorate.

Material litigation

The group robustly defends litigation where appropriate and seeks to minimise its exposure by establishing provisions and seeking recovery wherever possible. Litigation of a material nature is regularly reported to the group board.

In relation to the Manchester Ship Canal Company matter reported in previous years, a hearing was held in the Court of Appeal at the end of March 2022. A decision is expected during summer 2022, which may provide further clarity in relation to the rights and remedies afforded to the parties and others in relation to discharges by water companies into the canal and other watercourses.

Beyond this, there is nothing to report regarding material litigation, including in respect of the Argentina multiparty 'class action' reported on in previous years, and to which there have been no material developments.

Conflict in Ukraine

The conflict in Ukraine has led to a number of risks emerging (growing, developing or becoming more prominent) from a security and economic perspective.

- **Cyber:** The likelihood of the cyber risk has been increased to reflect the rising tensions between Russia and the west, while taking into account the adoption of increased security measures which include security operations teams on extended high alert and the rapid deployment of technical blocking of critical indicators of compromise.
- **Price volatility:** This risk reflects inflationary uplift across multiple commodities with energy the most volatile.
- **Security of the supply chain:** This risk reflects the knock on impact of inflationary pressure on manufacturing output with some production facilities reducing operations. It also reflects sanctions imposed against Russia and Belarus and the restriction or prevention of access to certain goods.
- **Cash collection:** Inflationary pressure is having a significant impact on the cost of living, affecting customers' ability to pay bills.
- **Supplier viability:** This risk reflects the impact the unprecedented price increases are having on suppliers who cannot honour locked prices in contracts and the threat of suppliers going into administration with a knock-on effect to operations and the capital delivery programme.
- **Credit rating:** Whilst underlying credit quality is not a concern, the impact of high inflation on finance expense results in the potential for Credit Agency thresholds to be breached when combined with other factors such as additional investment spend to meet environmental and service improvements over and above price review allowances.

Legislative/regulatory change

In addition to the emerging economic conditions exacerbated by the conflict in Ukraine, legislative and regulatory change is also a prominent emerging theme which impacts a number of event-based risks.

Relatively recent developments include uncertainty associated with the Environment Agency's interpretation of the Industrial Emissions Directive (IED) and Farming Rules for Water (FRfW) and implications for ongoing compliance, process and investment across wastewater and bioresources risk.

As a responsible company, United Utilities is committed to the protection and enhancement of the environment and can demonstrate many previous and current initiatives, the most recent being the road map to 'better river health' including a pledge to invest £230 million into 184 kilometres of rivers by 2025. We will continue to work closely with all our regulators and partners to deliver better solutions including full cooperation with the ongoing industry wide investigation by Ofwat and the Environment Agency into possible unpermitted sewage discharges into rivers and watercourses.

The Environment Act, which was enacted in November 2021, has potentially far more significant implications for the water sector, due to it being the UK's new framework of environmental protection. Depending on how the new legislation will be interpreted and applied, meeting its requirements may demand a fundamental shift in the water industry's approach to environmental risks, requiring significant investment across multiple AMPs.