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Submitted by email to:
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Response to the Scottish Government's Consultation: Climate Change - Draft Scottish National Adaptation Plan 3

About us

Consumer Scotland is the statutory body for consumers in Scotland. Established by the Consumer Scotland Act 2020, we are accountable to the Scottish Parliament. The Act defines consumers as individuals and small businesses that purchase, use or receive in Scotland goods or services supplied by a business, profession, not for profit enterprise, or public body.

Our purpose is to improve outcomes for current and future consumers, and our strategic objectives are:

- to enhance understanding and awareness of consumer issues by strengthening the evidence base

- to serve the needs and aspirations of current and future consumers by inspiring and influencing the public, private and third sectors
- to enable the active participation of consumers in a fairer economy by improving access to information and support

Consumer Scotland uses data, research and analysis to inform our work on the key issues facing consumers in Scotland. In conjunction with that evidence base we seek a consumer perspective through the application of the consumer principles of access, choice, safety, information, fairness, representation, sustainability and redress.

Consumer principles

The Consumer Principles are a set of principles developed by consumer organisations in the UK and overseas.

Consumer Scotland uses the Consumer Principles as a framework through which to analyse the evidence on markets and related issues from a consumer perspective.

The Consumer Principles are:

- Access: Can people get the goods or services they need or want?
- Choice: Is there any?
- Safety: Are the goods or services dangerous to health or welfare?
- Information: Is it available, accurate and useful?
- Fairness: Are some or all consumers unfairly discriminated against?
- Representation: Do consumers have a say in how goods or services are provided?
- Redress: If things go wrong, is there a system for making things right?

We have identified information and representation as being particularly relevant to our response to the Draft Scottish National Adaptation Plan 3. Our response will highlight the importance of consumers being involved in developing solutions and keeping consumers at the heart of the design of these solutions.

Our response

Consumer Scotland welcomes the opportunity to contribute to the Scottish Government's consultation on the draft Scottish National Adaptation Plan 3. As the statutory body for consumers in Scotland, we recognise the essential role of adaptation in response to the impacts of climate change in Scotland.

Consumer Scotland's position as a cross-market consumer body allows us to draw from learning, insight and analysis from the different sectors that we operate in. A key overarching principle that emerges across our work is the need for a consumer-centric and joined-up approach to net zero and adaptation. As part of the transition towards net zero, consumers across a range of different markets will be required to make changes to their behaviours, from decarbonising homes and means of transport, to more day-to-day lifestyle changes to cut down on waste and household emissions. Many of these changes are complex, costly and require the right enabling environment to underpin them.

The changes that consumers are encouraged or required to make across and within specific sectors should not be seen as distinct, or separate from, the wider net zero and adaptation agenda. We have sought to highlight areas where policy alignment would bring improved outcomes for consumers, and we encourage further strategic thinking on how this coordinated approach can be achieved across different policy agendas. This is particularly important in light of the scale and pace of change required to adapt to climate change and the essential role that changing consumer behaviours will play in this process.

Given that adverse weather is predicted to be more frequent in future, we have concerns about the resilience of water, energy and telecommunications infrastructure and the impact that this may have on consumers in Scotland. Consumers living in remote and rural areas face potentially greater impact as a result of compounded or cascading risk. This may be, for example, where power, telecommunications services and water supply or wastewater supplies are affected, or where transport links and mobile phone infrastructure are also disrupted.

Our response will focus on the 'lived and local experience' section of the consultation, along with Outcome 2: communities and Outcome three: public services and infrastructure. It draws on the findings from a number of research projects commissioned by Consumer Scotland in the past two years. These include cross sector research on consumer attitudes to decarbonisation and research delivered on our behalf by the independent research agency Ipsos in 2023 which explored consumers' views on a range of policy options related to adaptation in the water sector. The research sought to understand the support required by consumers to change their water behaviours to become more sustainable overall.

Lived and local experience

Question 1. What do you think the current effects of climate change are on people in Scotland?

The UK's Met Office (2021) has predicted that we will see winters that are warmer and wetter and summers that are hotter and drier, with more frequent and intense weather extremes occurring in unpredictable ways.¹ With warmer air holding more water, average rainfall is increasing in the UK and around the world. In some places increased rainfall is becoming more intense and in other areas less rain is falling due to changes in wind patterns.

The UK's ten warmest years on record have all occurred since 2002. Modelling in 2018 by the Met Office (2018) estimated that heatwaves are now 30 times more likely to happen in the UK than would have been the case without climate change.² By 2050, it is predicted that heatwaves, like that seen in 2018, will likely happen every other year. In addition, although cold or dry winters will still occur, UK winters will likely become warmer and wetter on average, with a range of associated impacts on the natural and built environment.

The impacts of Storms Gerrit, Henk, Isha, Babet and Jocelyn earlier this year were severe, with tens of thousands of properties losing power or experiencing flooding in some storms, for extended periods of time. The Met Office has projected an increase in winter storms across the UK, including disproportionately more severe storms, and smaller scale convective summer storm activity in the future.³ The increase in these extreme weather events and the impact that they can have on infrastructure means that power cuts and disruption to water and wastewater infrastructure and services as well as communications could become more commonplace. Furthermore, research by Crew has identified that infrastructure in Scotland is exposed to a range of climatic hazards, including extreme weather events.⁴

The projected increase in extreme weather events and the impact that they can have on infrastructure means that power cuts could become more commonplace. Distribution Network Operators (DNOs) are responsible for maintaining the physical infrastructure necessary to deliver electricity and gas to consumers in Scotland. There is a wide range of impact on consumers of loss of electricity including the inability to use central heating systems, broadband, medical equipment and cooking facilities.

Resilience and infrastructure – surface water flooding

Scotland's drainage systems, much of which date back to the Victorian era, are often overwhelmed by the increased intensity of rainfall and run-off.⁵ This occurs as the existing sewer network cannot cope with the influx of high volumes of surface water within a short time frame. During short and intense periods of rainfall, water either backs up in streets, causing flooding, or is discharged from the combined sewer overflows network, releasing the mix of rainwater and sewage into Scotland's rivers and waterways. Traditional grey infrastructure is not capable of fully meeting this challenge on its own.

In Scotland, the management of surface water,⁶ including flooding, is a significant challenge in the face of increasing urbanisation and more extreme weather patterns. Flooding leaves lasting negative social and wellbeing impacts on the people and communities impacted by floods. Previous instances of flooding in the UK have also led to power cuts impacting services' delivery and recovery;⁷ preventing water treatment and delivery services from operating successfully;⁸ destroying crops;⁹ and disrupting natural habitats.¹⁰

The risk of surface water flooding in Scotland in future is heightened due to increasing urbanisation. The creation of more impermeable surfaces such as roads, pavements, and roofs, and the loss of green spaces to housing and other development has increased the amount of rainwater that cannot be absorbed by the ground. This rainwater instead runs off roofs, roads and pavements, and enters the drainage system.

Although the amount of permeable land in Scotland lost to urbanisation is not easily quantifiable, one study found that the city of Edinburgh lost an average over 15 football pitches of vegetated land per year to urban creep, between 1990 and 2015.¹¹ Concern around new developments that fail to consider surface water flood risk also emerged as a key theme of our water sector deliberative research, and participants expressed alarm at the large amounts of green space being lost in urban areas of Scotland each year.

Resilience and infrastructure – vulnerability of drinking water supplies

Over the next few decades, climate change will put increasing pressure on Scotland's water resources. Recent summers have seen water scarcity alerts being regularly issued by the Scottish Environment Protection Agency (SEPA). According to Scottish Water's latest projections, without adaptation, by 2050 Scotland could be running short of 240 million litres of water a day for homes and businesses. This deficit will be compounded by population growth, particularly in the east, which has fewer renewable water resources to rely on.¹² Recent deliberative research for Consumer Scotland shared these facts and figures with participants which resulted in the participants indicating concern that more was not being done to reduce water consumption and stating everyone has a role to play: government, Scottish Water, local authorities, businesses, and consumers.¹³ This suggests that when the public is informed about the scale and severity of the impacts of climate change they may be more likely to consider behavioural changes to their everyday lives in response.

During extended periods of drought, river and reservoir levels drop, which can have adverse effects on biodiversity and water quality. Warmer, drier summers also cause areas of peatland and bog to dry out and this releases carbon into the atmosphere. This represents a risk for consumers not just in terms of higher carbon emissions, but also because dissolved organic carbon will likely be released into water systems, degrading the quality of drinking water, increasing treatment costs, and posing a risk for water security.¹⁴

It is estimated there are 22,800 private water supplies (PWS) in Scotland serving over 190,000 people, 3.5% of the population.¹⁵ These drinking water supplies are not connected

to the mains water network and can serve single households, tenanted properties, holiday lets, businesses and sometimes small communities. However, PWS are more common in rural areas and some regions will have 20-30% of their populations on a PWS. The number of people accessing a PWS is also estimated to increase during holiday periods, when visitor numbers can rise significantly, particularly in popular rural tourist locations.

Climate change is increasingly having a negative impact on PWS and a growing number of properties are more regularly running out of water during prolonged dry periods, often leaving users with no alternative water supply.¹⁶ This is particularly difficult for consumers in vulnerable circumstances who may not be in a position to source bottled water.

Question 2. The next Scottish National Adaptation Plan will cover the period of September 2024 to 2029. What effects, if any, do you expect climate change will have on people in Scotland over the next five years?

Water supplies

Private water supplies are at increasing risk of running dry; research by CREW shows this is an expected impact of climate change.¹⁷ For many households and businesses this will mean extended periods of time without access to drinking water, other than bottled water. The Climate Change Committee (CCC) Adaptation report for Scotland highlighted that almost half of private water supplies in Scotland are in areas of high or very high risk.¹⁸

Water supply infrastructure is already affected by climate hazards, with flooding of water treatment works occurring recently at Ballater Water Treatment Works in Aberdeenshire due to high river flows. Earlier this year when Brechin was flooded during storm Babet the wastewater treatment works was completed overwhelmed.¹⁹ Water infrastructure is typically based near rivers and coastal areas and as such there is an inherent risk from climate change, such as high river/sea levels causing flooding and coastal erosion.

Telecommunications

Infrastructure in Scotland is exposed to a range of climatic hazards, including extreme weather events.²⁰ The Climate Change Committee has determined that the UK telecommunications infrastructure is at risk from flooding, high winds and lightning strikes and has recommended the development of a set of indicators to enable monitoring of the impacts of weather and climate on telecoms and ICT services and the actions being taken to manage them.²¹

Energy

Looking ahead, both Scottish and UK Government policy for decarbonisation involves greater reliance on electricity as the fuel for both heating and transport. While essential to reduce emissions, increased reliance on electricity may result in greater cascade disruption across other services for consumers in the event of power cuts.

Improved monitoring of energy assets for weather-related outages (including the frequency and duration of the outage and the number of properties and businesses affected) will be crucial in allowing future risks to be identified, and investments in infrastructure development and maintenance to be appropriately prioritised.

Transport

Transport Scotland note in their Approach to Climate Change Adaptation & Resilience strategy that roads, rail networks, and ferry routes will be at increased risk from extreme temperatures, winds, lightning, flooding, cascading failures, slope and embankment failures, and potential erosion of bridges and coastal routes.²² As with telecommunications, it is recognised that indicators will need to be developed to help measure the impact of these climate effects. Work will also be required to plan and implement adaptation and resilience measures for Scotland's transport networks.

Other sectors

The Climate Change Committee highlighted other areas that will directly impact on consumers, including food and supply chain issues. They have recommended measures to ensure resilience of food supply from extreme weather in Scotland and internationally, while safeguarding against impacts from climate-related disruption of supply chains.²³

Q3 What actions, if any, would you be willing and able to take to adapt to climate change? You may wish to consider the action you could take a) in your community and b) around your home and/or business.

Consumer Scotland's evidence suggests that a significant personal barrier to consumer behavioural change is motivational. For example, and in relation to water use, the inconvenience or hassle of taking action to conserve water is often seen to outweigh the perceived environmental impact.²⁴ Our research has identified a number of barriers to consumers undertaking water interventions at home. When asked why they were not 'turning a tap off while brushing teeth, shaving or washing face', the largest percentage of responses (37%) self-reported that this was 'too much hassle', closely followed by the perception that it would be 'ineffective in reducing environmental impact' (32%).²⁵ Only 12% of responses cited 'not knowing enough about this' as a reason for inaction. Our research also found similar results for the behaviour 'ensuring dishwashers and washing machines are full before running'.

The messages that appear to resonate most with consumers, helping to win over 'hearts and minds', are often those that make the issue feel real and imminent, while appealing to people's values, concerns and lived experience. In order to support consumers to take actions that enable them to adapt to climate change, there is a need to go beyond the provision of information and advice in order to shift habitual behaviours.

Q5. What action(s) do you think the Scottish Government should prioritise in order to build greater resilience to the impacts of climate change?

Given that adverse weather is predicted to be more frequent in future, we have concerns about the resilience of water, energy and telecommunications infrastructure and the impact that this may have on consumers in Scotland. Consumers living in remote and rural areas face potentially greater impact as a result of compounded or cascading risk. This may be for example, where power, telecommunications services and water supply or wastewater supplies are affected, or where transport links and mobile phone infrastructure are also disrupted.

Water

During our water sector deliberative research, participants saw a clear and urgent need for climate adaptation in the water sector, with a desire for the sector to put long-term solutions in place and invest in innovative approaches.²⁶ Participants felt that everyone has a role in tackling the impacts of climate change on Scotland's water sector, specifically Scottish Government, Scottish Water, businesses, local authorities, people and communities. Both education and raising awareness were consistently highlighted as important factors in empowering all consumers to do things differently, such as reduce wastage of drinking water or create more rain capturing solutions on their properties.²⁷

There is currently no legal requirement for the Scottish Government to plan for its water resources. This makes it challenging to assess whether, in future, Scotland's water supply will be sufficient to meet all needs. To encourage a more proactive and coordinated approach to water scarcity management, we support the Scottish Government's intention to undertake national water resource planning and, as part of this, developing an overarching water efficiency strategy which should set out a plan for how the Scottish Government intends to reduce water demand across sectors over time.²⁸

Research participants in our deliberative research were alarmed by the potential scale of climate change impacts, including those posed to Scottish Water assets and communities from increased rainfall and intensity of rainfall.²⁹ They expressed a desire for the Scottish Government, Scottish Water and local authorities to take the lead on efforts to coordinate and legislate where necessary, along with ensuring support and incentives are in place to enable people to engage differently with rainwater.³⁰

Furthermore, our participants articulated a view that they would encourage greater transparency and more information about the scale of the challenges faced by the water sector and support investment in education and campaigns to this effect.³¹ To shift behaviours, trusted actors such as existing community bodies should be brought in as partners in communicating the importance of sustainable behaviours. There is also a need to learn from and harmonise messaging with other sectors that are seeking to decarbonise and adapt, including the transport and energy sectors.

Consumer Scotland's assessment is that consumers are unlikely to be able to achieve the necessary and significant reductions in water usage required without strong and consistent messaging, education and forms of support that make behaviour change easy, accessible and affordable. There is a strong case for increased ambition in government policy in embedding water efficient design into new buildings, and there is an opportunity to work with the housing sector on achieving this. This policy intervention has the potential to deliver multiple benefits, from reductions in household carbon emissions, to potential affordability benefits to consumers through reduced energy bills from lower hot water use.

Water – adapting to increased rainfall

With blue-green infrastructure (BGI) and nature-based solutions, there is an opportunity to target investment in neighbourhoods more at risk of flooding and where there are existing problems with residents accessing high-quality green and blue spaces. BGI planning should include the wider social context, to allow consideration of how those communities with least resilience to flood events can be better protected and receive a greater share of some of the positive benefits from greater access to BGI. Information, guidance and support should be made more readily to enable better understanding of the need to manage rain water differently, this could include:³²

- Improving the guidance offered to consumers around the impact that changes to their outside space – through paving over driveways and use of artificial grass – can have on flood risk and the wider environment.
- Increasing the visibility of environmentally friendly rainwater management solutions, such as raingardens and water butts in public spaces.
- Reviewing structural issues, including aspects of planning legislation, that may disincentivise proactive rainwater management at a household level and considering positive financial incentives which could be offered to homeowners or businesses for adopting positive behaviours. That might also involve reducing the extent of permitted development rights for hard surfaces, requiring the use of permeable materials for surfaces in back gardens and driveways and improving controls and oversight over drainage within new developments.
- Improving management and oversight over drainage within planned and new developments and ensuring that larger players in the housing sector, including developers and commercial landlords, are sufficiently proactive about sustainable solutions.

Telecommunications

Consumer Scotland has specific concerns about the impact of the migration from landlines to digital calling (VoIP) on consumers in Scotland in relation to power cuts and resilience. Although for most households the migration will be straightforward, we have published a report which found that consumers in Scotland, particularly those in remote rural areas,

were at potentially greater risk of harm given the combined effects of a poorer than average mobile signal, higher use of and reliance on landlines and a greater number of power cuts that last longer than the UK average.³³

One area of particular concern is that the new digital landlines will only work in a power cut if there is a battery back-up. We note that currently telecommunications infrastructure is not prioritised for repair following adverse weather events and suggest consideration is given to changing this. This could lessen the impact on consumers and reduce the risk of consumers being unable to contact emergency services or other sources of support.

Although work has begun to improve infrastructure resilience, such as that being undertaken through the Electronic Communications Resilience & Response Group, there remain significant challenges in developing and maintaining our infrastructure given the predicted increase in the volume and impact of severe weather events.

We recommend that the Scottish Government should continue to engage with stakeholders such as Ofcom, communications providers, energy networks, regional resilience partnerships and infrastructure providers to consider risks arising from interdependent infrastructure, such as telecoms and energy. Our communication networks must be as robust as possible to help withstand future weather and climate events and the potential power and communications infrastructure outages that may occur as a result.

Outcome two: Communities

Q9. In what way(s) could the plan help different groups across Scotland and/or its regions to collaborate on climate adaptation? Please offer suggestions that could support collaboration on climate adaptation. For example, the plan could describe how different groups should work together and support each other. Or the plan could define geographic areas, roles and responsibilities for responding to climate change risks. Please offer suggestions that could support collaboration on climate adaptation.

Water resource planning

A key barrier to effectively managing drinking water resources is that there is currently no legal requirement to plan for Scotland's water resources. This makes it challenging to assess whether, in future, Scotland's water supply will be sufficient for meeting all needs. It also makes it difficult to strategically manage potential conflicts in water use driven by current and evolving policy agendas, such as land use policy, economics, food and energy security policies (including hydrogen production) and ecological/environmental policies such as enhancing biodiversity and afforestation.

A national water resource management plan is an essential governance framework which will enable Scotland to build its resilience to droughts and water scarcity and to safeguard both the quantity and quality of water resources. The requirement for the Scottish Government to plan for water resources should be set out in legislation, and the plan itself should seek to provide a framework for assessing and holistically managing the water

demands of different sectors alongside protecting the water needs of the environment. The water resource management plan should also take into account any future water efficiency strategy and the consumer outcomes within it.

We would expect a water resource management plan to be evidence-based, and for all major water users (food and agriculture, energy, public supply) - and consumers within these markets - to work collaboratively in helping help shape the plan's development.

Water – adapting to increased rainfall

Strategic frameworks are needed to allow organisations involved in blue-green infrastructure (BGI) or nature based solutions planning – including local authorities (across different functions) and Scottish Water - to work in a joined-up manner. Within Scotland, various – formal and less formal – examples of partnership approaches have been adopted across different urban areas, including the Metropolitan Glasgow Strategic Drainage Partnership and the Edinburgh and Lothians Strategic Drainage Partnership, amongst others. We recommend a review of the current approaches to partnership working which may help to ensure that good practices are captured and shared more widely, particularly those related to community engagement.

Outcome three: Public services and infrastructure

Q10. Scotland's net zero targets are part of global efforts to limit global temperature rise to 1.5°C. At the same time, the Climate Change Committee's advice is to adapt now to a minimum global temperature rise of between 1.5 and 2°C for the period 2050 – 2100, and to consider the risks of up to a 4°C warming scenario. Should the Scottish Government adopt the Climate Change Committee's advice to 'adapt to 2°C and assess the risks for 4°C'?

Strongly Agree Agree Don't know Disagree Strongly Disagree Please share detail on your answer:

Agree

Q11. Some decisions, for example those in relation to long-term planning or infrastructure investment, may require greater consideration of future climate conditions. Would further guidance on the appropriate future climate scenario(s) to consider when you (or your organisation) are making plans and investment decisions be useful? Y / N 11 Draft Scottish National Adaptation Plan (2024-2029)

Y

If yes, what sort of information or advice would be useful for you or your organisation when considering future climate scenarios in long-term planning or investments?

Our 2023 survey research found that the barriers consumers report in relation to decarbonisation and net zero vary depending on the sector and/or the particular set of behaviours being asked about. But across markets it is clear a lack of reliable information is

making it difficult for consumers to fully understand the issues and as a result make informed choices.³⁴

Our research has found that cost is the biggest single reported barrier for ‘big ticket’ technological items in the energy sector that are more expensive to purchase or install (such as zero emissions heating systems or electric vehicles).³⁵ It is therefore essential that consumers are well supported to be able to make the changes that will be required to reflect likely future climate scenarios.

It is also important to recognise that for many consumers sustainable behaviours are viewed as either unaffordable or niche, so they can lack widespread appeal. More work is required therefore on making sure the more sustainable alternatives are affordable, accessible and will provide the necessary protection/resilience based on the most likely climate scenarios. Only then will they compete with the less sustainable but more familiar options that dominate current behaviours and practices.

Q12. Climate change makes extreme weather more likely in Scotland. When weather events disrupt one part of our infrastructure (e.g. energy, telecoms, transport networks), the impacts can quickly “cascade” out to disrupt other infrastructure networks or vital services. For example, an interruption in electricity will quickly affect businesses, hospitals and transport. Would an assessment of “cascading” risks from weather-related disruptions to infrastructure help you or your organisation to adapt?

Resilience and infrastructure

An assessment of cascading risks arising from interdependent infrastructure or multiple impacts would support stakeholders to fully consider the resilience risks faced by consumers, particularly those in vulnerable circumstances. In that regard, it would also be helpful if, as recommended by the Climate Change Committee, regulators in appropriate sectors were also granted appropriate responsibility for scrutinising resilience and adaptation planning.³⁶

Water

Access to water is critical to life and during extreme weather events both public and private water supplies (PWS) can be disrupted.

Access to one utility can be impacted by the loss of another in many cases. It is therefore important that sectors are able to recognise cross-cutting, cascading risks in order to enable better prioritisation and emergency support for consumers.

Telecommunications

Reliable access to communications is increasingly fundamental to the undertaking of everyday activities. People require access to a wide range of different online services including home working and learning, government services and banking. Communications are also needed to seek help and support in the event of weather-related issues arising,

whether by contacting friends or family or public authorities. Public authorities also rely on people being able to access communication systems to provide information to communities, whether by social media updates or emergency text messaging systems.

Ensuring that all relevant stakeholders have a clear understanding of the cascading risks associated with weather-related disruptions is of even greater significance as a consequence of the migration to VoIP and the inability to make a call from a digital landline during a power cut without a battery back up.

Transport

The ability to access transport is also crucial for consumers, allowing people to travel to work and to access services. The loss of transport infrastructure can also affect people's ability to access necessities such as food and medicine. As take up of electric vehicles increases this also presents risks that both the public and those in charge of making critical repairs may be unable to travel longer distances in the event of a lengthier power cut.³⁷ Road safety is also significantly diminished during extreme weather events and could form part of a 'cascading' problems when weather related events occur.³⁸

¹ Met Office – Climate change in the UK [Climate change in the UK - Met Office](#)

² [Chance of summer heatwaves now thirty times more likely - Met Office](#)

³ Appendix B: Environmental Baseline - Scottish climate change adaptation programme 2019-2024: strategic environmental assessment - gov.scot (www.gov.scot)

⁴ Crew 2020 - [Impacts of Flooding in North-east Scotland | CREW | Scotland's Centre of Expertise for Waters](#)

⁵ Consumer Scotland (2023) - Overcoming Barriers to the Adoption of Blue-Green Infrastructure <https://consumer.scot/publications/overcoming-barriers-to-the-adoption-of-blue-green-infrastructure-html/>

⁶ Water which collects on the ground, from rainfall or snow melt, and doesn't immediately drain away. Surface water flooding describes flooding from high intensity rainfall, when sewers and other drainage systems exceed their capacity to absorb surface water.

⁷ Royal Academy of Engineering (2016) Living without electricity: one city's experience of coping with loss of power <https://www.raeng.org.uk/publications/reports/living-without-electricity>

⁸ Royal Academy of Engineering (2016) Living without electricity: one city's experience of coping with loss of power <https://www.raeng.org.uk/publications/reports/living-without-electricity>

⁹ Royal Academy of Engineering (2016) Living without electricity: one city's experience of coping with loss of power <https://www.raeng.org.uk/publications/reports/living-without-electricity>

¹⁰ Vidal (2014) Wildlife casualties of floods grow amid fears over 'polluted' wetlands (23 February 2014) <https://www.theguardian.com/environment/2014/feb/23/wildlife-uk-floods-species-habitats-lost>

¹¹ Crew 2019 – Quantifying rates of urban creep in Scotland www.crew.ac.uk/publication/urban-creep

¹² Scottish Water, Climate Change Adaptation Plan 2024, <https://indd.adobe.com/view/d63df175-559e-4ec7-a2b5-8227596a710e>

¹³ Consumer Scotland research – currently unpublished

¹⁴ i Ferretto, A., Brooker, R., Matthews, R., & Smith, P. Climate change and drinking water from Scottish peatlands: Where increasing DOC is an issue? (2021) *J Environ Manage*, 300, 113688.

¹⁵ [pws-annual-report-2022-november-2023.pdf \(dwqr.scot\)](#)

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- ¹⁶ Water shortages support - gov.scot (www.gov.scot); Adapting to climate change and water scarcity - gov.scot (www.gov.scot); Private water supplies and the potential implications of climate change
- ¹⁷ [CREW | Scotland's Centre of Expertise for Waters](#) and [Climate change may put Scottish private water supplies at risk of running dry | The James Hutton Institute](#)
- ¹⁸ [Adapting to climate change - Progress in Scotland - Climate Change Committee \(theccc.org.uk\)](#)
- ¹⁹ - [Scottish Water](#) Battling Babet News October 2023
- ²⁰ Appendix B: Environmental Baseline - Scottish climate change adaptation programme 2019-2024: strategic environmental assessment - gov.scot (www.gov.scot)
- ²¹ Climate Change Committee (2023) Progress in adapting to climate change – 2023 Report to Parliament. Available at: <https://www.theccc.org.uk/publication/progress-in-adapting-to-climate-change-2023-report-to-parliament/> accessed 28/02/2024
- ²² [Transport Scotland's Approach to Climate Change Adaptation and Resilience](#)
- ²³ [Resilient supply chains - Climate Change Committee \(theccc.org.uk\)](#)
- ²⁴ Consumer Scotland – Consumers and the transition to net zero
<https://.consumer.scot/media/vzig1umd/consumers-and-the-transition-to-net-zero.pdf>
- ²⁵ Consumer Scotland – Consumers and the transition to net zero
<https://.consumer.scot/media/vzig1umd/consumers-and-the-transition-to-net-zero.pdf>
- ²⁶ Consumer Scotland - forthcoming research – currently unpublished
- ²⁷ Consumer Scotland - forthcoming research – currently unpublished
- ²⁸ Consumer Scotland (2024) - Response to Scottish Government Water, Wastewater and Drainage Policy Consultation <https://consumer.scot/publications/response-to-the-scottish-governments-water-wastewater-and-drainage-policy-consultation-html/>
- ²⁹ Consumer Scotland - forthcoming research – currently unpublished
- ³⁰ Consumer Scotland - forthcoming research – currently unpublished
- ³¹ Consumer Scotland - forthcoming research – currently unpublished
- ³² Consumer Scotland (2024) - Response to Scottish Government Water, Wastewater and Drainage Policy Consultation <https://consumer.scot/publications/response-to-the-scottish-governments-water-wastewater-and-drainage-policy-consultation-html/#section5>
- ³³ Consumer Scotland (2023) Consumers in Scotland and the transition to VoIP. Available at: <https://consumer.scot/media/dztly3f2/consumers-in-scotland-and-the-transition-to-voip.pdf> accessed 28/02/2024
- ³⁴ Consumer Scotland – Consumers and the transition to net zero
<https://.consumer.scot/media/vzig1umd/consumers-and-the-transition-to-net-zero.pdf>
- ³⁵ Consumer Scotland – Consumers and the transition to net zero
<https://.consumer.scot/media/vzig1umd/consumers-and-the-transition-to-net-zero.pdf>
- ³⁶ Climate Change Committee February 2023 - www.theccc.org.uk/2023/02/01/a-lack-of-leadership-is-preventing-essential-investment-to-prepare-the-uk-for-climate-change/
- ³⁷ [Charge point availability in rural areas proves challenging to fleets \(fleetnews.co.uk\)](#)
- ³⁸ [Current and Emerging Challenges | Transport Scotland](#)