

**CLIMATE CHANGE COMMITTEE REPORT: ADAPTATION IN WALES**

**ACE MEMBER BRIEFING**

**INTRODUCTION**

We are pleased to provide you with this briefing on the Climate Change Committee [**report**](https://www.gov.wales/written-statement-publication-climate-change-committees-report-climate-change-adaptation-wales) on progress and future priorities for climate change adaptation in Wales.

The report is the Committee’s first assessment of progress in delivering the current adaptation plan. The briefing covers key chapters in the report, including energy, transport, and buildings.

**Key messages:**

* Prosperity for All: A Climate Conscious Wales (PfACCW) provides a good coverage of required research and potential actions across priority climate risk areas.
* There is insufficient progress in delivery and implementation of adaptation and monitoring is limited.
* There are some positive examples of good plans in place, although this is not consistent across sectors.
* The next national adaptation plan for Wales must go further to drive delivery across the public sector and more widely.
* Welsh Government should embed adaptation into its plans for Net Zero, future well-being and increasing biodiversity.

***Should you wish to discuss any of the issues included in this member briefing, please contact*** ***gdavies@acenet.co.uk***

**ENERGY**

**Reduced Vulnerability of Energy Assets to Extreme Weather:**

**Overview:**

* There is an expected increase in surface water flood risk for Welsh electricity substations but a decrease in fluvial and coastal flooding.
* The poor condition of overhead poles has contributed to recent weather-related electricity network damage.
* Energy generators and network operators in Wales have climate resilience plans but with less detail on adaptation action plans.
* Lack of indicators makes it difficult to assess progress in reducing vulnerability and exposure of energy assets to climate change.
* The majority of critical electricity substations across England and Wales are flood-proofed, with plans for the rest by 2026.
* The age and poor condition of overhead poles have contributed to recent weather-related electricity network damage.

**Policy:**

* Most policies in this area are reserved to the UK Government.
* Planning policy in Wales has limited consideration of climate risks related to the energy system.
* At the UK level, the CCC's assessment is partial policies and plans, highlighting the need for minimum resilience standards and clearer climate resilience remit for regulators.

**System-Level Security of Supply:**

**Overview:**

* More research is needed to understand possible climate impacts on the energy system and integrate them into system design and investment processes.
* Wales aims to generate renewable electricity equal to 70% of its consumption by 2030.
* There is uncertainty in future energy sector water needs, with an increasing reliance on wind power and commitments to renewable hydrogen production.

**Policy:**

* Most policies in this area are reserved to the UK Government.
* The UK Net Zero strategy outlines pathways to achieve a decarbonised energy supply by 2035.

**Interdependencies Identified and Managed:**

**Overview:**

* Operators are beginning to consider their interdependencies with other infrastructure systems, but there are limited actions in place to quantify or manage risks.

**Policy:**

* Key policy milestones largely outside the Welsh Government's direct control.

**Key Impacts on ACE Members:**

* Increased Demand for Resilient Infrastructure: ACE members may see increased demand for services related to designing and retrofitting energy infrastructure to withstand extreme weather events, such as floods and heatwaves.
* Incorporating Climate Resilience into Projects: ACE members will need to incorporate climate resilience considerations into their project designs, ensuring that energy infrastructure can operate reliably in the face of climate change impacts.
* Collaboration with Other Sectors: As interdependencies between infrastructure systems become more critical, ACE members will need to collaborate with experts from other sectors (transport, water, digital) to assess and mitigate risks effectively.
* Data and Reporting: ACE members may need to work with clients and stakeholders to collect and report data on weather-related outages and climate risk adaptation activities, ensuring transparency and accountability in climate resilience efforts.
* New opportunities: As Wales aims to generate more renewable energy and pursue hydrogen production, ACE members engineers may find opportunities to work on projects related to these initiatives.

**TRANSPORT:**

**Asset and System Level Reliability of Rail Network:**

**Overview:**

* Mixed progress. Weather events are causing increasing delays in the rail network in Wales. While the majority of Core Valley Lines tracks are in 'good condition,' they remain at risk of flooding.
* Flooding poses a significant risk to the rail network, with projections indicating increased flood risk by 53% by the 2050s under a 2°C global warming scenario.

**Policy:**

* There's a need for additional indicators for a more robust assessment.
* Standards and guidance reflect climate resilience requirements, and operators have developed robust climate adaptation plans.

**Asset and System Level Reliability of Strategic Road Network\***

**Overview:**

* Insufficient progress.
* In 2021-22, a significant portion of the motorway and trunk road network required immediate close monitoring, and only 40% of critical road structures are in good condition.
* About 19% of the strategic road network is at risk of flooding.

**Policy:**

* Regulatory targets for climate resilience and adaptation measures are not set.
* Key transport policy strategies include high-level commitments to climate adaptation.

**Asset and System Level Reliability of Local Roads**

**Overview:**

* There's limited information available on the condition of local roads in Wales.
* Local road network condition data is outdated, and there's a lack of progress assessment.
* 37% of the local road network in Wales is at risk of flooding.

**Policy:**

* There is a lack of credible plans for local roads.

**Interdependencies Identified and Managed:**

Overview:

* Insufficient progress.
* Evidence shows improved identification of interdependencies for rail and airports in Wales, but these are not consistently addressed in sufficient detail.
* Regulators in the transport sector and other infrastructure sectors have inconsistent climate remits.
* Emphasis on the role of Groups like the National Infrastructure Commission for Wales (NICW) to facilitate coordination on managing interdependencies.

**Policy:**

* There is a lack of information for other transport modes.

**Key Impacts on ACE Members:**

* Increased Demand for Climate-Resilient Design: As climate change continues to impact transport networks, there will be a growing demand for ACE members to design and retrofit infrastructure to withstand more frequent extreme weather events, such as flooding and heatwaves.
* Interdisciplinary Collaboration: ACE members will need to collaborate closely with other professionals, including climatologists, environmental scientists, and urban planners, to develop comprehensive climate adaptation strategies.
* Compliance and Reporting: There may be an increased need for ACE members to ensure that climate resilience standards and guidelines are met, and that reporting on adaptation efforts is accurate and timely.
* Retrofitting Existing Infrastructure: ACE members may be involved in retrofitting existing rail tracks, roads, and other infrastructure to make them more resilient to climate change impacts.
* Incorporating Climate Resilience in Design: Future projects will require a strong focus on climate resilience in their design and construction phases.
* Training and Skill Development: Engineers may need to acquire additional skills and knowledge related to climate resilience and adaptation in transportation engineering.

**BUILDINGS:**

**Buildings do not overheat during heatwaves:**

**Overview:**

* Overall progress toward adapting the building stock in Wales for current and future climates cannot be evaluated due to insufficient data on overheating in residential and non-residential buildings.
* Research indicates that around 24% of residential buildings across Wales, Midlands, Northern England, and Northern Ireland are currently overheating, with this proportion projected to rise to 100% in 2°C and 4°C warming scenarios.
* Post-1990 dwellings, flats, and properties with internal wall insulation are among the poorest-performing in terms of overheating.
* Key indicators to monitor progress, such as the number of cooling measures installed in homes and awareness among the public about managing internal temperatures, lack sufficient datasets.

**Policy:**

* There are no regulations or policies to support adaptation of the building stock in Wales to prevent overheating.
* Limited plans and policies exist to prevent overheating during heatwaves.
* No policies or financial instruments support adaptation of existing building stock.
* Updated building regulations address overheating in new buildings.
* Social housing standards do not consistently address overheating.

**Buildings are prepared for flooding:**

**Overview:**

* Progress toward this outcome cannot be evaluated due to a lack of data on property-level flood resilience installations and successful insurance claims.
* Approximately 11% of Wales's residential housing stock is at flood risk, with projections indicating an increase in flood risk for residential and non-residential buildings under different warming scenarios.
* Flooding incidents, such as during Storm Dennis in 2020, have caused significant damage in parts of Wales.
* Data on properties with flood resilience measures are not available, although some local authorities have invested in flood doors and surveys.

**Policy:**

* There are no clear policy mechanisms designed to accelerate the uptake of property flood resilience measures in Wales or regulate building design.
* Property-level flood resilience (PFR) has limited investment and implementation, with barriers such as the lack of standards and accreditation.
* Little mention of PFR in the Welsh Government's policies and plans.
* No policy supports financing PFR installation.

**Buildings resilient to other climate risks:**

**Overview:**

* This outcome's progress cannot be evaluated due to a lack of indicators.
* Climate hazards like subsidence caused by drought, excessive moisture, and structural damage due to high winds are identified as risks to building fabric.
* Climate vulnerability modeling indicates a modest reduction in the service life of building materials due to changing precipitation patterns.

**Policy:**

* A recent study commissioned by the Welsh Government aims to improve the knowledge base of these hazards in Wales.
* No policy score is included for this outcome due to uncertainty related to climate risks to building fabric.

**Key Impacts on ACE Members:**

Opportunities for Research: ACE members could engage in research initiatives related to building adaptation to climate change. This could involve studying heat thresholds, overheating mitigation strategies, flood resilience measures, and other climate-related risks to buildings.

Skills and Training: The industry's role in implementing property flood resilience measures is crucial. ACE members may need to acquire specialised skills related to flood resilience and adaptation to effectively address these challenges.

Policy Advocacy: Members, through ACE, can engage in advocacy efforts to promote the development of building regulations and policies that address climate change adaptation.

Market Demand: As climate adaptation becomes increasingly important, ACE members specialising in building resilience may find growing demand for services.



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