

Recognising the financial, safety and reputational consequences of extreme weather and climate change, ScotRail – together with FirstGroup – participated in a pilot project run by Adaptation Scotland and backed by Scotland’s 2020 Climate Group. ScotRail tested Adaptation Scotland’s new adaptation plan template, providing the basis to start monitoring and managing climate-related risks and opportunities. This case study looks at how Adaptation Scotland helped ScotRail to understand and plan for long-term climate change.



### Getting started

In recent years ScotRail has had to respond to a number of extreme weather events, including severe winters in 2009, 2010 and 2011. This has highlighted many challenges for the business. A number of measures have since been put in place to help cope with similar events - particularly relating to improved passenger communication. However, weather variability in the last few years has emphasised the need to look at current and future climate risks in more detail.

ScotRail’s Director of Facilities Management and Building Services began the process of identifying climate risks, which was then coordinated by the Environmental

Sustainability and Climate Change Manager. Transport Scotland and Network Rail also participated in the project which was led by Adaptation Scotland. Managers and directors of the following units contributed:

- Seasonal delivery
- Service delivery
- Facilities
- Performance
- Communications and contingency
- Health and safety

Involving a range of departments and stakeholders is crucial to developing a realistic and robust adaptation plan. In particular, having senior management participate will help ScotRail gain buy-in to its forthcoming adaptation efforts.



### Rail travel and the weather

As a first step, Adaptation Scotland helped ScotRail to prepare a record of weather events which had serious financial, safety and reputational consequences for the business over the past five years. Evidence was gathered from internal records, media reports and staff experiences.

Heavy rain, snow, high winds and high temperatures disrupt services, damage infrastructure and vehicles, and cause safety concerns. Future climate change will exacerbate these impacts and threaten energy, fuel and water supplies. These are vital to ScotRail’s services.

These impacts have financial consequences. Revenue is lost due to fines and ticket refunds, vehicle and station maintenance, and paying overtime due to staff being in the wrong location. Reputational and safety consequences can be even more damaging, lasting longer than the impact itself. Adaptation Scotland facilitated a workshop to help ScotRail visualise how current vulnerabilities might alter in light of projected climate change, and what threats and opportunities these pose to the business.

### ScotRail’s aim

“Providing a safe and reliable service and continuous improvement to performance levels remain at the top of our agenda. We will continue to provide value for money services and to invest in train refurbishments leading to improved reliability and station enhancements to ensure a safer and more comfortable environment.”

Climate change will make it harder for ScotRail to achieve this aim. This is an incentive to start planning for adaptation early, so that climate impacts and adaptation actions can be integrated into ScotRail’s planned maintenance and investments. This will help create a robust network of trains, stations and supporting infrastructure that is fit for future climate.





## Involving the whole organisation

“Adaptation Scotland helped ScotRail to identify how outside influences can affect our ability to run rail services. It was useful to involve other departments and stakeholders who would not normally consider how climate change might affect them or other rail users.”

DAVID PARK, ENVIRONMENTAL SUSTAINABILITY & CLIMATE CHANGE MANAGER, SCOTRAIL

## Prioritising future climate change risks

At a second workshop facilitated by Adaptation Scotland, participants collectively assessed the likelihood and magnitude of future climate change risks, identifying a list of priority risks.

- *Heavy rain leading to flash flooding and landslips* can block rail and roads, overwhelm drains and damage infrastructure and trains. Interruptions to fuel deliveries cause service disruption.
- *Persistent rain causing ground saturation and flooding* can result in track circuit failure and service disruption.
- *High winds can damage buildings, infrastructure and power supplies*; uprooted trees block tracks and roads causing service disruption and safety concerns.
- *Coastal flooding and storm surges can cause service delays* leading to loss of revenue from service fines and ticket refunds.
- *Severe ice can cause staff and passenger injury* and lead to an increase in claims and insurance premiums.

On top of direct financial consequences, these risks may damage ScotRail’s reputation as a transport provider and employer of choice.

## Managing climate risks

During the second workshop, participants identified challenges to adaptation planning. In particular, given the interconnected nature of the transport network, ScotRail will have to work closely with other transport providers to ensure a joined-up approach to adaptation. This includes developing a shared vision, agreeing ownership of risks and identifying shared solutions. ScotRail will also need to engage and influence utilities and

power suppliers, local land managers and local councils whose decisions may affect their services.

Adaptation Scotland recommended developing a flexible adaptation plan to enable ScotRail to take timely action in light of uncertainties and changing business needs.

Adaptation Scotland has supported ScotRail to produce a draft adaptation plan by trialling its new business adaptation plan template. The train operator is working towards an operational adaptation plan by 2014.

## Next steps

Adaptation Scotland recommends the following actions to help ScotRail continue to build resilience to climate change:

- *Increase institutional capacity* for adaptation by creating an adaptation working group and establishing a budget for adaptation. Continue to assess passenger communications.
- *Conduct further vulnerability and risk assessments at sites with known exposure to weather and climate impacts* using UKCP09 climate change and marine projections.
- *Design and manage data needs* to help monitor the impact of weather and climate on services in the next 5-10 years.

## Information and support

The global climate is changing with far-reaching implications for Scotland. Greenhouse gases already emitted into the atmosphere mean that some climate change is unavoidable regardless of future emissions reductions. Climate change presents threats and opportunities, and businesses have an essential role to play in helping Scotland respond to these. Adaptation Scotland provides information, tools and training aimed at helping organisations understand and respond to the challenges and opportunities presented by climate change.



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