



Building a resilient Scotland

Embedding long-term thinking



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About the actuarial profession

Actuaries are big-picture thinkers who use mathematical and risk analysis, behavioural insight and business acumen to draw insight from complexity. Our rigorous approach and expertise help the organisations, communities and governments we work with to make better-informed decisions. In an increasingly uncertain world, it allows them to act in a way that makes sense of the present and plans for the future.

To find out more about actuaries visit www.actuaries.org.uk



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Foreword



Scotland has long been a global leader in innovation, with the Scottish Enlightenment of the 18th century placing the nation at the forefront of world thinking. From the invention of transformative technologies to pioneering advancements in financial services, Scotland's legacy is undeniable. This spirit of ingenuity continues today, with a vibrant life sciences ecosystem offering cutting-edge solutions to societal challenges.

The application of actuarial principles in Scotland can also be traced back well over 250 years. Today the actuarial community, represented by the Institute and Faculty of Actuaries (IFoA) retains this strong presence in Scotland. Actuaries play a vital role within the Scottish financial services sector – a sector that employs around 150,000 people¹ and which contributes £14.3bn in Gross Value Added to the economy.

The IFoA supports a vibrant community of risk and investment professionals through their education, professional development, and upholding of standards. Through our Scottish Board, the IFoA has also helped to develop future generations of actuaries and mathematicians through a focus on financial education and a high-profile maths competition across Scottish schools².

At its core, the actuarial profession exists to help decision makers understand and plan for future events, often many decades into the future. As Scotland continues to emerge from a period of exceptional geopolitical, social and economic challenge over recent years, we believe it is right to re-focus policy thinking back to the long term. From investment in infrastructure to addressing the challenges of the adult social care system, a strategic focus on the long-term can ensure that Scotland harnesses opportunities for growth and face the emerging challenges in good time.

For example, while undoubtedly beautiful, the Scottish landscape is exceptionally well-suited to the energy transition, with short transit routes and one of the highest renewable potentials in Europe. By fostering collaboration between policymakers, actuaries, and financial institutions, we can develop integrated solutions that harness this potential, driving job creation, economic growth, and positioning Scotland as a renewable energy exporter and centre of expertise across the sector.

We therefore call on Scottish policymakers to embrace the long term, and to take risk-informed approaches to investing for growth and building a resilient economy for the future that supports a healthy population.

This policy prospectus suggests ways in which government and civil society can take an alternative approach to ensure a longer time horizon is considered in the policymaking process. Whilst we focus on four critical themes, we equally recognise there are many more public policy challenges that would benefit from a similar approach.

Combining the expertise of actuaries with the innovative Scottish mindset and our deep financial services heritage could put Scotland on a fast-track in a world that faces the need to change. We look forward to engaging across the political spectrum to demonstrate how our skills, knowledge, and experience can help build solutions to these challenges both for our own country and beyond.

Ian Sharpe

Leader, IFoA Scottish Board

Actuaries for the long term

Our members work across a range of roles in a diverse and ever-expanding number of organisations. We help businesses understand, evaluate, plan for and price uncertain future events. We help organisations allocate and manage their capital, and we work to develop suitable solutions to, or new ways of looking at, what many assume are intractable problems.

Governments, businesses, and a diverse range of sectors depend on the skills of actuaries to help them model and plan. In an uncertain world, risk management is in demand more than ever before, bringing an expertise that can help organisations navigate this rapidly evolving landscape. From pensions, insurance and investment to climate, healthcare and beyond, you will find actuaries.

Actuaries are also increasingly deploying their skills in broader sectors, such as data science and banking. Our members conduct public-interest work that affects the financial futures of millions of Scots, whether it is performing complex and highly specialist analysis to enable retirees to receive their pensions or ensuring insurance products are priced accurately for customers and businesses.

One common challenge that actuaries are, perhaps uniquely, equipped to deal with is the need to think over the much longer term. Our work often requires us to explore events that are decades ahead and to develop both the tools and the mindset to evaluate and communicate these long-term challenges. The purpose of this prospectus is to demonstrate how actuaries can utilise this thinking to support policymakers to adopt long-term solutions for a prosperous and resilient Scotland.

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“Scotland needs to once again begin thinking about how it will address the longer-term challenges, from social care to climate, that will far outlast some of the more recent crises we as a nation have had to respond to. For me, a focus on public policy is paramount. This means health and education reform, and how to grow and innovate our economy so that it is match-fit for the future. Actuaries can and will play a major part in this, as they are used to analysing over a timescale measured in very long periods, which is what the bigger, more challenging issues usually demand in terms of time.”

**Chris Deerin, Director,
Reform Scotland**

Recommendations for the long term

Climate

- Implement a cross-economy National Transition Plan to achieve Net Zero objectives and realise economic upside.
- Create a Country Risk Officer role, that leverages actuarial risk analysis techniques to understand and prepare for future impacts of climate change.
- Implement the Natural Environment Bill, recognising the Climate-Nature nexus and how Nature restoration can support adaptation and mitigating climate risks.

Financial resilience

- Support Scots to take control of their financial future by providing them with the right tools and guidance throughout their lives, recognising the important role for savings, insurance and pensions in a world where risk increasingly falls on the individual.
- Increase the amount and prominence of financial education in schools to better equip future generations to make the complex personal financial decisions that are now required of us all.
- Work together with industry to develop complementary solutions for supporting personal financial resilience and education.

Infrastructure

- Ensure Scotland remains an attractive place for long-term investment, harnessing the impact that Solvency UK will have on unlocking investment in infrastructure.
- Use public-private partnerships within innovative risk and profit-sharing structures to help drive infrastructure investment.
- “Think big” about the nation’s resilience, identifying where improvements are needed to ensure that interdependent systems are both effectively utilised and protected.

Social care

- Raise public awareness to combat the perception that all care is free. This would also communicate the risk of care, the costs and where to seek further information, helping individuals to plan for a secure future.
- Formulate policy so that personal and state provision can work coherently together to prevent needs going unmet. Support the use of new and existing financial products to help individuals meet the cost of care.
- Undertake rigorous long-term financial analysis to drive policy solutions that are sustainable and intergenerationally fair.

Seizing the energy transition opportunity to support resilient growth



“As a Scottish actuary working in Sustainability, I see huge potential for actuaries working in pensions and insurance, to collaborate with government, other financial sector players and the real economy to drive resilient growth, taking advantage of Scotland’s natural advantages when it comes to the energy transition. Actuaries stand ready to play an active role in addressing the sustainability challenge – where our long-term thinking, financial system understanding, risk management mindset and probabilistic reasoning combine powerfully to complement climate science, communicate risks clearly to policymakers and help financial services firms position for the opportunity.”

Sandy Trust, Head of Organisational Risk, M&G plc

Climate

Climate change is one of the greatest challenges facing Scotland today but also presents a significant opportunity with Scotland's rich renewable energy potential, skill set and existing infrastructure. A strategic approach could deliver jobs, economic growth and future revenues with the potential for Scotland to become a hub of renewable energy innovation, as well as an energy exporter. However, climate action needs to accelerate globally, meaning Scotland's climate will become more extreme, with disruptive consequences for individuals, businesses and the physical landscape. Climate change drives a complex basket of systemic and interconnected risks that in extreme circumstances could threaten the basis of Scottish society and future economic prospects. To mitigate the risks of our changing climate and seize the economic opportunity presented by the energy transition we encourage the Scottish Government to:



I. Implement a cross-economy National Transition Plan to achieve Net Zero objectives and realise economic upside.



II. Create a Country Risk Officer role, that leverages actuarial risk analysis techniques to understand and prepare for future impacts of climate change.



III. Implement the Natural Environment Bill, recognising the Climate-Nature nexus and how Nature restoration can support adaptation and mitigating climate risks.

I: Develop National Transition Plans that require realistic risk assessment

The Government should develop strategic national transition planning to achieve decarbonisation, as called for by Mission 2025³ and could be part of a 'Mission oriented industrial strategy' for Scotland⁴. These should set direction, and provide incentives, finance and support for transition in the wider economy. Legislation should require annual updates on progress against the plan, including adaptation and resilience measures. Plans should include the requirement for annual realistic risk assessments.

II: Appoint a Scottish Country Risk Officer (SCRO)

Scotland should appoint a Country Risk Officer (analogous to Chief Risk Officers in financial services). These could sit in the Military or National Security realm and should be independent of government. The SCRO should be required to undertake realistic risk assessments of climate change and other risks, to inform national transition plans and adaptation and resilience measures. The SCRO should leverage well-established financial services risk management techniques to assess and communicate risks to policymakers.

III: Implement the Natural Environment Bill, recognising Climate-Nature nexus and how Nature restoration can support adaptation and mitigating climate risks

Nature is an asset that provides ecosystem services to us. These services are the flows from nature that provide the essentials that support society: food, water, raw materials, a stable climate and so on. Looking after this asset is now critical and furthermore, rebuilding Nature can help both with achieving climate goals and mitigating climate risks. Legislation that supports the restoration of Nature is therefore an important component in managing climate change and associated risks.

The IFoA is working closely with policymakers to ensure the risks of climate change and nature are fully understood, and are committed to exploring which policy levers could help manage (and reverse) the risks unique to Scotland.

Investing for the future



“Long-term investment in infrastructure can make a significant contribution to addressing the great challenges of our time including the net zero transition, increasing productivity, and reducing inequality. Public investment in infrastructure will crowd in private investment, boosting growth and employment. Better infrastructure can also help low-income households access digital and transport services thereby improving access to labour market opportunities.”

Stephen Boyd, Director, IPPR Scotland

Infrastructure

Climate change also requires that policymakers consider how our critical infrastructure can be developed to support an orderly transition whilst simultaneously ensuring the country remains resilient to future extreme weather events.

Infrastructure investment drives growth and is integral to supporting the Scottish economy. However, financial⁵ and environmental⁶ factors are making it more challenging to maintain our existing infrastructure, contributing to an increased risk of not being able to support our growing (and ageing) population. Over the longer term, the need to transition to a low-carbon economy in response to climate change will put pressure on various parts of our infrastructure, including our energy system as we seek to exploit our renewable resources.

We urge the Scottish Government to:



Ensure Scotland remains an attractive place for long-term investment, harnessing the impact that Solvency UK will have on unlocking investment in infrastructure.



Use public-private partnerships within innovative risk and profit-sharing structures to help drive infrastructure investment.



“Think big” about the nation’s resilience, identifying where improvements are needed to ensure that interdependent systems are both effectively utilised, and protected.

Insurers and pension funds, many of which retain a connection to or presence in Scotland, can play a pivotal role in stimulating economic growth and development by investing in essential infrastructure assets. Following the UK’s departure from the European Union, the transition from the EU’s Solvency II directive to ‘Solvency UK’ provides a once-in-a-generation opportunity to turbocharge much-needed investment in key infrastructure projects.

The Association of British Insurers estimates that this change could create the potential for over £100 billion more in investment to social infrastructure and green energy supply over the next ten years at the UK level⁷. Scotland must ensure it creates the right conditions to capture at least its fair share of this potential capital boost. Helping to develop a supportive investment and risk management environment must fall at the centre of this.

The IFoA regularly engages with key infrastructure stakeholders. For example, we have shared ideas with HM Treasury, the UK Infrastructure Bank, and the Infrastructure Projects Authority about ways to make public-private partnerships (PPPs) more attractive for both investors and public authorities, drawing on work by our Infrastructure Working Party. Working parties allow us to gather diverse individuals with complementary skills and experiences to develop and share our thinking.

Capturing such insights, the recent Working Party paper⁸ describes potentially innovative features that could be embedded in future arrangements, such as enabling the public partner to receive a percentage of revenues from user charges and covering several projects under one PPP on a semi-permanent basis. We would be delighted to discuss with relevant stakeholders, including the Scottish National Investment Bank, how this thinking could be applied in Scotland.

Transitioning to a low carbon economy presents opportunities to ensure that infrastructure developments, such as energy and transport systems, are planned and deployed to maximise cross-benefits. However, it is also necessary to ensure that such interdependent systems⁹ are sufficiently resilient to the potential future risks from the adverse impacts of climate change. By considering the interconnectedness of systems and risks – or “thinking big” – the Government can help identify where improvements are needed to ensure resilience.

From the consideration of complex systems to the development of climate scenarios and financial analysis, actuarial techniques and skills will be needed when considering the complex possibilities faced by infrastructure in the light of climate change and rapid technological developments. The long-term actuarial mindset compares favourably with the expected lifetime of many infrastructure assets and makes actuaries well placed to both support investors and asset managers, and to inform the Scottish Government’s approach to tackling this subject.

Supporting a financially resilient Scotland



“The core ability of the actuarial profession, to look into the future, to rigorously analyse and then to model, means it has capability to identify major societal shifts, just as it did it in the Great Risk Transfer, and to propose long-lasting solutions that ensure greater resilience and sustainability.”


Susan Murray, Director, David Hume Institute


Financial Resilience


Our longer lifespans should be celebrated, but they also bring financial challenges for each of us and for government. This is compounded by a broad societal shift in who carries the burden of financial risks, with more responsibility now resting on individuals rather than on institutions, employers, or the state—a trend we call ‘The Great Risk Transfer’¹⁰.

These changes underscore the need for government action to ensure that people are prepared to navigate this new financial reality.

We believe government should:

 **Support Scots to take control of their financial future by providing them with the right tools and guidance throughout their lives, recognising the important role for savings, insurance and pensions in a world where risk increasingly falls on the individual.**

 **Increase the amount and prominence of financial education in schools to better equip future generations to make the complex personal financial decisions that are now required of us all.**

 **Work together with industry to develop complementary solutions for supporting personal financial resilience and education.**

The Great Risk Transfer has significant implications for how Scots plan for their future. For example, the move from defined benefit (DB) to defined contribution (DC) pension schemes means that individuals now bear greater risks related to longevity and investment. Each of us is now required to make increasingly complex decisions about our finances, both now and far into the future.

Such trends cannot necessarily be reversed, but it is crucial for policymakers to ensure that individuals are aware of their responsibilities, are better equipped to manage their finances and better informed about the changing retirement landscape.

In particular, there is a need to raise awareness of the importance of pension saving, and the potential impact of under-saving on individuals’ lifestyles and wellbeing when they retire. At present, there is no consistent public narrative in Scotland or across the UK to help individuals understand how much they need to be saving into their pension each month to secure a ‘good’ retirement. The IFoA’s *Savings goals for retirement*¹¹ report aims to address this by outlining how much is required for varying levels of comfort in retirement. Similarly, actuarial analysis in *How much could you lose?*¹² details how life events like changing jobs, starting a family or divorce could affect an individual’s overall retirement prospects.

We recently supported research in this area in Scotland, part funding the David Hume Institute (DHI). The report *Risky Business*¹³ examines the impact of the Great Risk Transfer on individuals and society through the changing relationship between employer and employees, and considers the implications on productivity and government aspirations for economic growth. This new research builds on another collaborative research paper with the DHI from 2022, *The Great Risk Transfer - have we got the balance right?*¹⁴

These challenges may affect people in Scotland in different ways, and we believe it is important for policymakers here to address them through devolved powers, such as education policy, and by advocating for Scotland’s needs in UK policy, such as pensions and financial services.

Actuaries are at the coalface of the ageing population challenge, working to understand the causes and implications of this continuing trend. Working across the pensions, life insurance, health, and social care sectors, IFoA members are actively contributing to the development of public policy solutions that are central to how individuals manage these risks. Our members stand ready to lend their expertise to the Scottish Government to address this challenge.

Creating a fair and resilient care system




“We believe that the actuarial profession’s expertise in long-term risk modelling and data analysis can provide an objective and impartial assessment of the options facing the Scottish Government, in order to build on the truly long-term, sustainable social care reform that is required to ensure our increasingly ageing population is adequately cared for in the future.”


Henry Simmons, Chief Executive, Alzheimer Scotland


Social care

Scotland's ageing population creates a further challenge for policymakers, with increasing strain being placed on the adult social care system. The Office for National Statistics projects that in 2050, people over 85 will make up twice the proportion of the population in Scotland that they do today¹⁵. With demand growing and little being done to address the inadequate preparations many are making for potential care costs, action is needed across several fronts to ensure those who do require care are supported by a system that is sustainable, fair and treats everyone with dignity.

To address this, we believe policymakers should:

 **Raise public awareness to combat the perception that all care is free. This would also communicate the risk of care, the costs and where to seek further information, helping individuals to plan for a secure future.**

 **Formulate policy so that personal and state provision can work coherently together to prevent needs going unmet. Support the use of new and existing financial products to help individuals meet the cost of care.**

 **Undertake rigorous long-term financial analysis to drive policy solutions that are sustainable and intergenerationally fair.**

Through the implementation of free personal care to the planned creation of a National Care Service, Scotland has made noticeable steps to address the social care question. However, it has yet to arrive at a system which is complete and sustainable.

For example, a report from Alzheimer Scotland¹⁶ with contributions from the IFoA identified a lack of strategic planning for long-term care arrangements in Scotland. Among its findings, was that “personal and statutory resources are often siloed and seen as separate yet a more creative approach to funding could bring these resources together to enable greater flexibility and choice for people when combining these”, noting a role for insurance. A range of products exist to address these needs, including immediate needs annuities, life insurance-style ‘care riders’, income from retirement savings and equity-release mortgages. However, integration with state funding remains an issue and significant work is needed to create a coherent system.

Actuaries have been involved in quantifying and managing long-term care risk in the insurance context since the 1990s, but were assessing mortality, morbidity, and investment risk long before then. Over recent years, IFoA members have produced several research reports on the sustainability of adult social care funding and potential funding options. IFoA members – as mortality, morbidity, and longevity experts – are therefore aptly placed to inform the Scottish Government’s approach to the question of social care.

Conclusion

We cannot assume that the future will be any less eventful or disruptive than the last several years of so-called *'Permacrisis.'* The Scottish government faces hard, consequential choices, with some truly 'big ticket' items for Holyrood to consider, each with deep implications for Scotland.

Like much of the world, Scotland faces challenges that require careful and strategic planning by policymakers that go beyond any one parliamentary term. If a sustainable and prosperous future is to be secured, decision-makers need to retain a proactive rather than a simply reactive footing, developing policy processes that can withstand unexpected shocks that require immediate 'firefighting,' and often give way to the temptation to place pressing but more longer-term issues into the 'too difficult box.'

As this prospectus has detailed, these challenges include the consequences of demographic shifts, the need for greater infrastructure investment, the growing impacts of climate change, and the question of how to make social care funding sustainable.

Actuaries, with their analytical skills and expertise in managing uncertainty, are well-positioned and ready to provide valuable insights and solutions. By partnering with policymakers, businesses, and communities, actuaries can help navigate these challenges and contribute to a sustainable and equitable future for Scotland.

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“As SFE highlighted in our election manifesto, sustainable growth must be Scotland’s guiding ambition. To achieve this, our political leaders should demonstrate good government, foster a thriving business environment, champion green and sustainable finance, and invest in our people and their skills.

A long-term vision and policy alignment within and between governments is key, and we would like to see the UK and Scottish governments working together to remove barriers, empowering industry and helping to deliver economic growth.”

**Sandy Begbie, Chief Executive,
Scottish Financial Enterprise**

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