Climate-related risk at the IFoA

Report of the task force to Council

In common with other commentators we believe that climate related risk may be the defining risk of our times. Actuaries have an important role to play assisting others to mitigate the worst effects of climate change. The long-term catastrophic risk to the world is the anticipated physical damage that will emerge in the future unless efforts are intensified to reach carbon neutrality very quickly. However, even now, the costs and risks to companies of transitioning to a low carbon environment are impacting company results and are becoming subject to disclosure requirements.

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The world is at a crucial moment in a choice of futures of extremes. If effective global action is not taken the threats are literally existential. However, it should also be considered that there are also massive investment opportunities for emission reduction and the transition to a low carbon economy.

Joint Forum on Actuarial Regulation Risk Perspective 2019/20

Contents

1 Introduction

It is increasingly obvious that climate change and sustainability will be among the biggest themes for governments and businesses over the next few decades. The Covid-19 pandemic has reminded us all that we are intimately connected with and influenced by our environment, and has provided a foretaste of the scale of the risks that can crystallise when things go wrong.

Actuaries must embrace this challenge. Climate change presents risks that actuaries must be able to handle in their work, opportunities that we can take advantage of, and threats to the IFoA's credibility, viability and even its licence to operate.

The IFoA has recognised this by signing the Green Finance Education Charter[1] (GFEC) which was announced in the UK's Green Finance Strategy in 2019. The charter aims to mainstream green finance knowledge and skills throughout the banking, finance and professional services sectors, and commits its signatories to integrate green finance and sustainability into their core curricula, new qualifications, and the continued professional development of their members. The IFoA was among the 12 inaugural signatories at the charter's launch in July 2020. However, the GFEC is limited in scope. Green finance is not the answer to all the risks that climate change poses to the users of actuarial information. Meeting the IFoA's GFEC commitments will not be enough to equip our members to operate effectively in today's and tomorrow's rapidly changing environment.

What's more, not only does climate change have a wide range of impacts for the work of actuaries, it in turn is affected by our work through our collective influence on the financial system. Through that influence we can help to make the world a better place by working towards mitigating rather than exacerbating climate change risks.

The needs for action cut across the whole scope of IFoA activities and are critical to support the IFoA's reputation and that of its members. Immediate priorities include:

- **Education and lifelong learning**
    - Update the Associateship syllabus to include climate risk considerations
    - Establish lifelong learning requirements
    - Prepare a business case for a new credential
- **Regulation**
    - align the IFoA's regulation oversight with the expectations of other regulators and with GFEC requirements
- **Research and thought leadership**
    - support our lifelong learning needs as a profession
    - develop opportunities for members
    - foster thought leadership
- **Operations**
    - ensure that the IFoA's internal operations align with expectations and external efforts

In view of the current review of governance structures, we have not identified specific bodies to take accountability for individual actions but instead propose higher level outlines and principles:

- Actions should be led by the IFoA Executive who should clearly assign responsibilities and accountability for each action and for the overall programme.

[1] The text of the GFEC is in Appendix A, and a discussion of its objectives in Appendix B.

- Where possible, target implementation timescales should be ahead of those required under the GFEC.
- Efforts should be coordinated across the areas of lifelong learning, regulation, research and thought leadership, with consistent themes being addressed simultaneously in all areas.

Given the regulatory focus on climate risk as well as the IFoA's commitments under the GFEC, engagement in the four areas noted above is imperative. This engagement must come from all levels, from volunteers as well as the executive. As part of our work we conducted a survey of corporate and practice board chairs which showed limited efforts to address climate change to date from any of them (other than the Resource & Environment Board[2]). This will need to change. Furthermore, given both the regulatory focus in this area and our GFEC commitments, there is effectively no scope not to engage in each of these areas.

The R&E Board has worked hard to integrate the potential risks, opportunities and impacts presented by climate change into the work of actuaries and the thinking of the IFoA. However, as noted in the November 2019 Council paper, the R&E Board has difficulty in gaining traction in some areas. As a Practice Board, it has little influence on other parts of the IFoA without the backing of Council. This means that there has been no IFoA body able to take effective oversight of how climate risk is handled throughout the organisation. The R&E Board therefore joined with Council in establishing this task force to consider the broad implications of climate risk and opportunity for the IFoA and develop an organisation-wide action plan.

In the remainder of this report we first consider the factors that drive the need for the IFoA to address climate related risk (section 2). In section 3 we present the goals that the IFoA should have, and in section 4 the types of action that will enable the achievement of those goals. Section 5 discusses how the action plan should be implemented and the governance that there should be around it. Finally, section 6 presents a detailed set of actions that should be undertaken, with recommendations for time scales and indications of resource implications.

There are three appendices: Appendix A contains the text of the Green Finance Education Charter, Appendix B discusses the GFEC objective in the context of the action plan, and Appendix C summarises the responses to the survey of practice and corporate board chairs.

1.1 Task force members

The members of the task force, which is a collaboration between Council and the R&E Board, are

> David Rochester, Helena Ingram, James Tufts, John Belgrove, Laura Andrikopoulos, Louise Pryor (co-chair), Mahidhara Davangere, Matt Saker, Neil Mitchell, Nick Spencer (co-chair), Rebecca Craddock, Wendy Walford

We are grateful to the many others who have commented on earlier drafts of this report.

2 Drivers

There are six factors that drive the need for the IFoA to address climate related risk: financial risk, regulatory expectations, signatory commitments, public interest, new member interest and opportunities.

[2] At its meeting on 18 August the Management Board agreed that the Resource and Environment Board should change its name to the Sustainability Board. In this report it is referred to as the R&E Board for simplicity.

2.1 Financial risk

The primary driver is that climate-related risks are material financial risks that will manifest over the next 1 – 30 years (and beyond). The financial risks from climate change will emerge through increased costs driven by the physical risks posed directly by the changing climate, such as increased floods or through costs of adaptation, and by costs of transitioning to a low carbon economy, such as carbon taxes. The degree to which physical or transition costs will predominate varies according to the policies that are implemented and their success in limiting climate change. However, the financial impacts are likely to be significant in the whole range of possible scenarios varying from unfettered climate change to a rapid transition to a low carbon economy.

The physical risks are widely recognised, although there is some uncertainty surrounding the details of their precise timing, extent, and magnitude. If this uncertainty is not communicated effectively, users of actuarial work may find that actual experience is considerably more variable than they have been led to expect.

The transition risks arise whatever the actual policy response and whether or not this response results in an effective transition to a low carbon economy. There are numerous potential options of future policy responses to climate change and their timing is unknown. This creates considerable uncertainty around the impact and timing of transition risks.

Uncertain timings and impacts mean that there is significant potential for economic and financial disruption. Recent work[3] has demonstrated the possibility of significantly different impacts from climate related risks under a range of different policy pathways. All the pathways that were considered resulted in financial disruption, with varying timescales for both incidence and recovery – with material consequences for financial markets.

2.2 Regulatory expectations

The paragraphs quoted at the start of this report are from the 2020 risk perspective report from the Joint Forum on Actuarial Regulation (JFAR). Financial regulators around the world are increasingly emphasising the need to understand and manage climate related risk, and UK regulators are no exception – indeed the PRA is one of global leaders in this area. Many of the IFoA's members work in regulated industries both in the UK and elsewhere, and a failure to take climate risk seriously is an untenable position.

2.3 Signatory commitments

The IFoA has signed the UK's Green Finance Education Charter (GFEC), and has therefore committed to achieving outcomes around its members' knowledge and understanding of climate related risks and green finance within specified timescales over the next few years. A copy of the GFEC is provided in Appendix A.

The IFoA is also a Network Supporter of the UN's Principles for Responsible Investment (PRI) and Principles for Sustainable Insurance (PSI). These commitments are less explicit than those of the GFEC but oblige the IFoA to consider and promote Responsible Investment and Sustainable Insurance issues, which include climate change.

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[3] Climate scenario analysis: An illustration of potential long-term economic & financial market impacts. By Luca Bongiorno, Andrew Claringbold, Lisa Eichler, Claire Jones, Bert Kramer, Louise Pryor and Nick Spencer https://www.actuaries.org.uk/system/files/field/document/IFoA Paper 2.pdf

2.4 Public interest

The actuarial profession can bring a unique perspective to the consideration of the long-term consequences of climate related risk, which is increasingly being seen as the defining risk of our times by both the general public and policymakers. Articulating this perspective will contribute to the public discourse, furthering the public interest and enhancing the reputation of the IFoA and its members.

2.5 New members

Younger people, especially graduates, are increasingly taking ethical and social principles into account when choosing careers. Climate change and other sustainability issues seem to be of great concern to many of them. Highlighting the actuarial role in understanding and addressing climate-related risks enhances the attractiveness of the profession to new graduates and will help the IFoA to attract new members.

2.6 Opportunities

Climate-related risks are complex issues with high levels of uncertainty – the types of issues that actuarial techniques and perspectives are designed to address – and therefore provide new opportunities for IFoA members both within and outside traditional actuarial domains. In addition, the consideration of these risks cannot rely solely on computation but will require judgement, thus helping to provide longer term resilience against the encroachment of traditional competencies by computation abundance.

3 The goal

At its simplest, the core goal for the IFoA should be that **climate related risk is understood and considered by our members in the same way as other major risks** such as interest rate risk and mortality risk. Obviously, not every piece of actuarial work is influenced by changes in interest rates or mortality, and in the same way not every piece of actuarial work should be influenced by climate related risks. However, the areas of actuarial work in which climate related risk do play a role are many, including, for example, both assets and liability issues in pensions and insurance. Work in those areas cannot ignore these risks. It is important that actuarial work on climate related risks is subject to our expected high professional standards of balance, rigour, analysis, judgement, and communication.

Climate-related risks are unlike, say, mortality risk in that they are a systemic, long-term risks that depend on the economy and on the actions of the financial industry, and can therefore be (indirectly) impacted by the work of actuaries. In addition to helping to articulate the long-term financial consequences of these risks, and thus aid public and policymaker understanding, actuaries can thus also influence the impact of the financial industry on them. Moreover, climate-related risks are not the only systemic risks that actuaries should consider, although they are currently the most relevant. Indeed, the IFoA's commitments under the GFEC are framed around sustainable finance rather than focused narrowly on climate change.

The specific context is not the same in all countries. Awareness of climate risk, and societal pressures around it, are developing at varying paces. However, we consider that all the IFoA's members should learn about climate risk and become aware of its significance, while recognising that some specific aspects of knowledge and their more detailed considerations may vary by individual country.

To achieve its goal, the IFoA should set itself objectives in three categories, focused on individual members, its role as a membership body, and its external relationships. It should consider

- How its **individual members** are enabled and encouraged to incorporate considerations of climate-related risk and opportunities into their work
- How as a **membership body** it manages the risks posed by climate change by
    - supporting the competencies of all its members,
    - supporting its members to take advantage of new opportunities,
    - protecting the reputation of itself and its members,
    - ensuring its operational resilience
- How its **external relationships**
    - with regulators and policymakers can help to ensure the appropriateness of regulation
    - with a wide range of stakeholders enable it and its members to act in the public interest by speaking out on the implications of climate risk, articulating the potential for unintended consequences and highlighting ways in which actuaries' influence on the financial system can help mitigate climate risks.

In this report we have expressed these objectives in terms of climate related risks. However, there are similar sustainability risks that apply across environmental and social issues such as biodiversity, water usage, food security, migration, poverty and inequality. Although climate-related risks are generally the most relevant to actuarial work, and should therefore take precedence in the development of knowledge and competences, attention should be given to the interaction of climate risk with these other risks, recognising that social issues are not only exacerbated by the consequences of climate change but could also be worsened by a transition that fails to take account of them. Giving a balanced view is a key underpinning of high quality actuarial work. In addition, the GFEC requires efforts to build appropriate levels of competencies and understanding across a range of sustainability issues by December 2023. The broader sustainability requirements are not specifically addressed in this report, but we note that the overall approach should be coherent and complete.

In the remainder of this section we consider each category of objective in turn.

3.1 Individual members

The IFoA should enable individual members to incorporate considerations of climate related risk into all their work by ensuring that they

1. have access to sufficient knowledge and competencies to comment with credibility on the impact of climate risks (physical and transitional) in the advice and analysis that they deliver

2. are aware of the practical actions they and the users of their work can take to respond to climate risk

3. are aware of developing regulation, best practices, and reporting standards, and comply with or exceed them

3.2 Membership body

In order to support its members, the IFoA should

4. Ensure that its members have access to, and are competent in, the knowledge and skills that enable them to incorporate climate considerations into their work

5. Identify, develop and promote the role of actuaries in understanding and supporting sustainable finance, and identify new opportunities for actuaries

6. Support those of its members who move into new domains

The IFoA has signed the Green Finance Education Charter which means that has committed to achieving aspects of these objectives within specified timescales.

As part of its aggregate responsibility on climate change, as well as illustrating the public interest and awareness of a professional body, the IFoA should consider its own operational impact as a membership body. In particular the IFoA should:

7. Ensure its operations are consistent with mitigating climate change and adapting to its inevitable consequences

8. Be open and transparent around its climate impacts and its efforts to mitigate them

3.3 External relationships

The IFoA's external focus should include how it works with regulators and policymakers and how It acts in the public interest. The IFoA should:

9. Engage thoughtfully and demonstrate credibility with regulators and policymakers to ensure the appropriateness and sufficiency of regulation, including the potential for unintended consequences that may exacerbate climate-related risks

10. Work with members to speak up about the implications of climate change to support policymakers and address public understanding

11. Work with members to contribute to achieving better alignment of the financial system with mitigation of and adaptation to climate change

4 Enablers: the areas for action

We have identified the following possible areas for action ("enablers") that will enable the IFoA to achieve the objectives and goal we have described in section 3. They fall into five categories focused on the knowledge and skills of actuaries, regulation, research and thought leadership, engagement with our members and others, operations, and supporting enablers.

4.1 Knowledge and skills of actuaries

A. Introduce relevant content into the Associateship and Fellowship qualifications
B. Provide a climate risk related credential outside the qualification structure
C. Provide access to relevant content through lifelong learning opportunities

4.2 Regulation

D. Incorporate climate related risk (and systemic risk more generally) into the regulatory framework for IFoA members

4.3 Research and thought leadership

E. Sponsor and encourage research to support actuarial needs and develop new skills and techniques
F. Sponsor and encourage thought leadership in the introduction of new perspectives and new fields of knowledge that can support actuarial skillsets

4.4 Engagement

G. Provide community and promotional support to members

H. Undertake communications and promotional campaigns to members and others, including liaison with external regulators and policymakers
I. Undertake market research on, and seek feedback from, members, ex-members and their employers

4.5 Operations

J. Assess the operational risks posed by physical and transitional climate risks over the next five years and implement a plan to manage them
K. Set targets for operational emissions and implement a plan to achieve them
L. Report publicly on progress towards achieving climate-related goals

Many of these enablers support more than one objective: the following table summarises.

Enablers / **Objectives**	A. Qualifications	B. Credential	C. Lifelong learning	D. Regulation	E. Research	F. Thought leadership	G. Community	H. Communications	I. Market research	J. Risk management	K. Emissions targets	L. Disclosure
1. Competent to comment	✓	✓	✓	✓	✓	✓	✓	✓				
2. Aware of practical actions	✓	✓	✓	✓	✓		✓	✓	✓			
3. Aware of best practice	✓	✓	✓	✓	✓		✓	✓	✓			
4. Access to skills	✓	✓	✓	✓	✓	✓		✓	✓			
5. Sustainable finance	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓
6. Support in new domains	✓	✓	✓		✓	✓	✓	✓	✓			✓
7. Operations										✓	✓	
8. Transparency												✓
9. Regulators and policymakers				✓	✓	✓		✓				✓
10. Speak up			✓	✓	✓	✓		✓				✓
11. Align financial system				✓	✓	✓		✓				

The enablers and the actions through which they can be implemented are considered in more detail in section 6.

5 Implementation and governance

Since the task force was set up much has changed. There is now a Council working group looking at restructuring the Practice and Corporate Boards. Covid-19 has changed the way the executive work, and is likely to lead to further changes. ICAT has tried out new ways of working.

The actions we are recommending include some that are clearly operationally focused, in the domain of the executive, some that need to be member-led, and many that demand coordinated action from executive and member-led groups. It is important that there are clear lines of accountability, especially in terms of liaison and consistency. Many of the actions that are required will only be effective in conjunction with other actions, and with the involvement of several different parts of the IFoA, so it is important that there is a clear view of the overall picture.

We recognise that the IFoA's executive and financial resources are currently stretched, and that not all the recommended actions are included in the current corporate plan. We have tried to identify possible resource implications throughout section 6. In this context we note that much of the work can be member-led and our recommendations entail few extra explicit costs. However, there are limitations to a member-led approach: there is little accountability, and the pool of active volunteers in the climate risk area is limited. In addition, most of the work is at the core of the IFoA's strategy strands of VSMD and member engagement and may help provide a focus for strategy implementation. We consider it should be integrated into the executive's existing approach to implementing the strategy, building on ongoing activities.

Member-led activity may fail to meet the required deadlines if there is no executive involvement – and there is little scope to dilute the proposed timelines, given the regulatory interest, reputational risks and GFEC commitments. The risks can be mitigated through appropriate executive support and involvement, and through extending the pool of volunteers. The engagement plans from the practice boards (see section 6.4.1) are especially important in this context. We also note that although the executive support for climate change issues in the policy team is excellent, there is currently a lack of climate-related risk expertise in the lifelong learning team.

The current governance of the IFoA provides no structure for the types of actions that we have identified as being critical to successfully responding to the defining risk of our times. The impression from the survey was that everyone thinks it's someone else's responsibility. Without clear accountability there will be no action. The IFoA needs a structure that supports effective actions that cross the traditional practice area boundaries and integrate the efforts of the executive and volunteers, and that provides clear objectives for all its constituent bodies (including member-led bodies).

We see many advantages to assigning primary responsibility for responding to climate-related risks to the executive, whose role is to implement the strategy determined by Council. We also appreciate the desirability of having a single member of the executive being accountable to Management Board for the success of the whole programme. However, we are concerned that this type of structure would not on its own facilitate coherent and consistent action from member-led groups. We therefore propose that the Presidential Team is asked to:

- Ensure effective liaison across the programme
- Provide troubleshooting advice and assistance in order to maintain momentum

Our recommendations to support progress in this area are:

R1	The executive leadership team should take overall responsibility for climate risk, ensuring accountability for the whole programme, with regular reports to Management Board and Council.
R2	The executive should integrate its approach to climate related risk into its implementation of the VSMD and member experience strands of strategy.
R3	The Presidential Team should provide liaison and maintain momentum.

R4	The IFoA should develop a clear governance structure that facilitates and supports the development of a clear and detailed action plan, its implementation and its governance. We consider that similar action plans are likely to be needed for other initiatives in the future, and the IFoA's structures must be able to support them.
R5	All new initiatives should be assessed in terms of their consistency with the IFoA's goal that climate related risk is understood and considered by our members in the same way as other major risks.

Across all these actions, the timelines of the GFEC commitments should be borne in mind, as well as the expectations of regulators. In particular, the GFEC refers to the Article 2.1c of the Paris Agreement and the UN Sustainable Development Goals, so its concerns are broader than climate change alone. Addressing the GFEC commitments will therefore require a broader sustainability focus than the climate change focus of this report (see Appendix B). We believe that the actions recommended in this report will provide a good framework within which to address the broader sustainability issues. We therefore have the following additional recommendation:

R6	Consider whether and how the action plan for climate-related risks should be extended to broader systemic risks (review performed by mid-2022).

6 Actions

We look at each enabler in turn, commenting on how it can help achieve one or more of the objectives, and proposing a related action plan.

6.1 Knowledge and skills of actuaries

6.1.1 Qualifications

Introducing relevant content into the Associateship or Fellowship qualifications could help to achieve the following objectives:

IFoA members: competent to comment, aware of practical actions, aware of best practice (1, 2, 3)

Membership Body: access to skills, sustainable finance, support in new domains (4, 5, 6)

It would also help to implement the IFoA's commitments arising from the GFEC. However, introducing content into the qualifications helps to achieve these objectives only for newly qualifying actuaries – it does not address them for those members who have already qualified. This is addressed in section 6.1.3.

The content that should be considered includes:

- basic understanding of climate science including IPCC Shared Socioeconomic pathways
- Sustainable Development Goals (SDGs)
- actuarial techniques including widely used asset modelling approaches and the role of scenario analysis
- the potential influence on assumptions and the development of bespoke scenarios for stress tests that reflect the most relevant vulnerabilities
- asset, liability and covenant considerations
- regulatory and public interest including regulatory-style stress tests and TCFD
- understand planetary and social boundaries and techniques to address complex, adaptive systems.

- Economic pluralism
- systems thinking
- the role and application of governance

Some of this content is relevant for all actuaries, and some only for actuaries working in particular areas. The latter content may be more suited to the Fellowship qualification than the Associateship.

Incorporating relevant content into the qualifications will require a syllabus review of the Associateship syllabus and of the Fellowship modules.

The syllabus review should:

- Assess the content that should be included at the relevant level (Associate or Fellow)
- Perform a gap analysis based on the desired content and the actual content
- Introduce suitable content based on the gap analysis

A syllabus review for the Associateship qualification will be needed in order to meet the IFoA's commitments under the GFEC. Under GFEC commitments, the initial assessment must be performed by **December 2021**, and the content introduced by December 2023. However, we recommend that, if possible, the review is completed by July 2021 and content should start to be introduced for the Spring 2022 exams. There is currently a T&FG sponsored by the R&E Board working with the lifelong learning team on several of these matters and there is some appetite to accelerate the process.

It will also be necessary to consider assessment methods. We recommend considering the use of PPD (Personal and Professional Development) as an alternative to traditional assessment for some aspects of the content. In addition, the use of climate-related examples for existing syllabus content could be used to introduce some background concepts without explicit changes to the syllabus.

A revised syllabus could support objectives 1, 2 and 5. It is less suitable for addressing objective 3, which concerns developing best practice, standards, and regulation, as these can change quite rapidly and may also vary quite widely around the world. However, it might be possible to address some aspects of objective 3 through the use of PPD.

Introducing climate-related risk content to the syllabus would send a message that the IFoA takes it seriously, and would thus enhance the IFoA's reputation with potential members as well as with external stakeholders.

Revising the syllabus will require input from both the executive and members. The R&E Board and its volunteers can supply extensive expertise (in conjunction with other practice boards for the Fellowship modules), but the executive's lifelong learning team will have to lead the effort (and currently has no focus in the sustainability area). We note that much of this work is needed in any case in order to support the IFoA's GFEC commitments, and that the current Education review is also looking at the content of the Associateship and Fellowship syllabuses. It may be worth considering whether one or two of the education actuaries should specialise in climate-related risk and sustainability matters.

Recommendations:

R7 A syllabus review of the Associateship is necessary in order to meet the IFoA's commitments under the GFEC. The review should be completed by December 2021 in line with GFEC commitments.

R8 A syllabus review of the existing Fellowship modules will ensure that their content is up to date and equips Fellows for the developing emphasis on this area. It should be completed no later than the GFEC December 2021 deadline.
R9 Consider how the cross-cutting nature of sustainability issues can best be supported by the lifelong learning team, and the possible use of subject matter experts within that team.

6.1.2 Climate risk credential

Other bodies have climate risk credentials (Global Association of Risk Professionals – GARP, CFA) but they are either fairly basic (GARP) or extremely specialised (CFA). There is a potential niche for a high-status, risk-focused credential, with a focus on economic and financial implications (including sustainable finance) and scenario analysis. Both a standalone credential and the introduction of a new specialism at the Fellowship level should be considered. The credential should have an emphasis on climate-related risks, but may have a broader sustainability focus (which could also help to differentiate it from other offerings).

A standalone credential could be a good revenue earner, especially if open to non-members. It would also enhance the IFoA's credibility in the climate risk and sustainability areas. There is probably a limited time window for the introduction of such a credential, as other professional associations introduce their own credentials.

Introducing a credential would support the following objectives:

IFoA members: competent to comment, aware of practical actions, aware of best practice (1, 2, 3)

Membership body: access to skills, sustainable finance, support in new domains (4, 5, 6)

Whilst a standalone credential is not a direct GFEC requirement, it would help the IFoA meet the full spirit and intent of the charter. Although a credential would provide one method for post-qualification members to increase their knowledge of climate-related risk, it would not be the only method – see the discussion of lifelong learning in section 6.1.3.

The introduction of a new specialism at the Fellowship level would assist the achievement of objective 5, which concerns supporting actuaries who move into new domains. It would send a very clear message that the IFoA considers climate risk significant, and that actuaries have skills and expertise to offer in this area (in the same way that the introduction of the risk management route to Fellowship did).

The introduction of a new specialism at the Fellowship level might also provide an opportunity to consider a different route to Fellowship, using assessment methods other than written exams. The consideration of a Fellowship specialism could take place alongside that of a standalone credential, or could follow the introduction of a credential.

The steps that would be needed for a standalone credential are:

- Desk-based survey of what other credentials are out there
- Assess whether white labelling would be possible or desirable
- Assess whether collaboration with another professional body would be possible or desirable
- Develop outline specification of and delivery model for a credential, including considerations of a fellowship specialism module
- Assess the possible level of demand
- Develop a business case with recommendations

If the credential was being used to meet some of the GFEC commitments, it would need to be operational by December 2023. However, the climate risk scene is evolving rapidly, and an earlier date would lessen the chance of missing the window.

The preparation of a business case for a standalone credential could be member-led, although it would require input and support from the executive. It should form part of the Learning Committee's work on Project Moonshot.

Recommendation:

R10 A business case and implementation plan for the introduction of a standalone credential should be presented to Management Board by December 2020.

6.1.3 Lifelong learning

Providing access to relevant content through lifelong learning opportunities would help address the following objectives:

IFoA members: competent to comment, aware of practical actions, aware of best practice (1, 2, 3)

Membership body: access to skills, sustainable finance, support in new domains (4, 5, 6)

External relationships: speak up (10)

We note that the current Practice Board structure does not support a coordinated approach to lifelong learning, and hope that the recommendations of the new Learning Committee will help to address the problem. We consider it important that a coordinated approach to lifelong learning is initiated as soon as possible, so that the deadlines associated with the GFEC are not missed.

Lifelong learning opportunities complement the introduction of climate risk content into the IFoA's qualifications. There are many members who are already qualified, and who therefore will not benefit from changes to the qualifications. In addition, lifelong learning opportunities can respond more nimbly to new developments. Lifelong learning is particularly important in the achievement of objective 3, that members are aware of developing regulation and best practices, and in meeting the IFoA's commitments under the GFEC in respect of members who have already qualified.

The learning requirements are likely to differ for different groups of members, such as Associates, Fellows and practice certificate holders. We recommend that self-study resources are created for the various groups, listing suitable topics and recommending appropriate sources.

Full consideration should be given to a range of types of learning opportunities, including traditional volunteer-led events, webinars, guides and research reports (see also the Research enabler in section 6.3.1), as well as lists of external resources such as events, websites, articles, and online courses. The R&E board has initiated an initial programme in this area, which could be expanded.

Consideration should also be given to the possibility of lifelong learning themes operating for a specific period, coordinating with elements of the regulatory structure, and research and thought leadership enablers (see section 6.3) and supported by a communications campaign (see section 6.4.2). These could be driven by risk analysis, current events, or other factors. Having a consistent theme across many areas of the IFoA's activity would be likely to be more effective in raising awareness among members and in encouraging them to take action, and would also enhance the IFoA's reputation as an effective and proactive professional body.

Events, webinars, and publications that are available to both members and non-members are an important method of exposing ideas and analysis for discussion and refinement, and thus support objective 10, which concerns IFoA members and the IFoA speaking up about the implications of climate change to support policymakers and address public understanding.

Most of the work on lifelong learning could be driven by volunteers with the support of the executive lifelong learning team. The effort could be led by the R&E Board with the support of the other practice boards. A governance structure that supports liaison and coordination is vital. Some further administration and liaison support is also likely to be needed from the executive.

Recommendations:

R11 a coordinated approach to lifelong learning should be introduced in order to enable the IFoA to meet the GFEC deadlines by December 2023.

R12 Member-led groups, supported by the lifelong learning team, should develop self-study resources for various groups of members starting in 2020, with the first resources being published in 2021.

R13 The introduction of a thematic approach coordinating lifelong learning with regulation, research and external thought leadership would provide significant advantages and should be in place by the end of 2022.

6.2 Regulation

6.2.1 Regulatory framework

The incorporation of climate related risk (and systemic risk more generally) into the regulatory framework for IFoA members will help to achieve the following objectives:

IFoA members: competent to comment, aware of practical actions, aware of best practice (1, 2, 3)

Membership body: access to skills, sustainable finance (4, 5)

External relationships: regulators and policymakers, speak up, align financial system (9, 10, 11)

As well as being aware of the gaps in their skills and expertise, and of how they can fill those gaps, members must actually act to fill the gaps. The regulatory framework can form part of an effective incentive to action.

We have considered the following elements of the regulatory framework:

- Actuaries Code
- Professional and technical standards
- Risk alerts
- Monitoring
- Disciplinary scheme
- Practising certificates
- CPD requirements

We believe that the Actuaries Code and professional and technical standards between them already require that members take climate related risk into account when it is material, although we are concerned that many members have not integrated climate related risk considerations into their work. The risk alert that was issued in 2017 was intended to help with this. However, there is no evidence on how members have responded to the risk alert. Moreover, the status of the alert is not clear: it was issued some time ago and members may believe that it is no longer applicable. There is an explicit requirement within the GFEC to "*Undertake a review of professional Codes of Conduct, and related guidance, and update or augment these to reflect green and sustainable finance principles*". The Regulation Board has already engaged with the R&E Board to consider this commitment, which has a deadline of December 2021.

The introduction of thematic monitoring of actuarial work provides an opportunity to review practice in the area of climate related risk. A thematic review in this area would identify gaps in current practice that could be used to inform the development of lifelong learning resources (see section 6.1.3). It would also help to identify best practice approaches that could be shared. Without any review, there is little evidence of what the current situation actually is and where there is a need for improvement. A thematic review would also send a message to members and external stakeholders that the IFoA is taking climate related risk seriously. In the light of the importance given to climate risk in the JFAR risk review, climate change would be an appropriate risk-driven topic for a thematic review.

Another possibility is the introduction of specific lifelong learning requirements for practice certificate holders, who are the members who have most exposure to the UK financial regulators and whose work is most likely to come under public scrutiny.

The newly introduced CPD scheme provides much more flexibility than the previous scheme. The use of reflective discussions offers an opportunity for the promotion of specific themes for CPD across the membership, thus encouraging the uptake of lifelong learning opportunities. As part of its curation of lifelong learning materials for post-qualification actuaries, the R&E and Regulation Boards are discussing the use of self-guided competency frameworks. Climate change would be a very suitable topic with which to pilot such frameworks, particularly in regards to the GFEC commitments.

Consideration should also be given to the possibility of coordinating a thematic monitoring review with the promotion of a CPD theme and with elements of the lifelong learning, research and thought leadership enablers (see sections 6.1.3 and 6.3), all supported by a communications campaign (see section 6.4.2). These themes could be driven by risk analysis, current events, or other factors. Having a consistent theme across many areas of the IFoA's activity would be likely to be more effective in raising awareness among members and in encouraging them to take action, and would also enhance the IFoA's reputation as an effective and proactive professional body.

Finally, the role of the disciplinary process in ensuring sufficient standards and competencies are met and maintained across the profession should be considered. This is particularly pertinent for a topic that has evolved rapidly, is a regulatory focus and will not have been covered in the exams that almost all currently qualified actuaries took.

Several of the recommended actions in this area are already under way, either as part of the IFoA's GFEC commitments or as discussions between the Regulation and R&E Boards. Others could easily be incorporated into the BAU work programme without requiring extra resources – for example, the thematic monitoring reviews in 2021 have not yet been determined.

Recommendations for the Regulation Board's consideration:

R13 The introduction of a thematic approach coordinating regulation with lifelong learning, research and external thought leadership would provide significant advantages and should be in place by the end of 2022.

R14	The Actuaries Code, related guidance, and professional standards should be reviewed in the light of the GFEC commitment (update to be completed by December 2021).
R15	Use climate change as a pilot for self-guided competency frameworks in the CPD scheme as early as possible in 2021.
R16	Undertake a thematic review under the monitoring scheme to provide evidence of the current state and highlight best practices (review to be completed by mid-2021).
R17	Evaluate the viability of introducing learning requirements for practice certificates.
R18	Review the role of the disciplinary process.

6.3 Research and thought leadership

6.3.1 Research

Sponsoring and encouraging relevant research could help to achieve the following objectives:

IFoA members: competent to comment, aware of practical actions, aware of best practice (1, 2, 3)

Membership Body: access to skills, sustainable finance, support in new domains (4, 5, 6)

External relationships: regulators and policymakers, speak up, align financial system (9, 10, 11)

We note that the current Research and Thought Leadership Board has focused its research support primarily on long established fields of actuarial practice. We also note that much of the current research supported by the IFoA is initiated by Practice Boards, and that the current Practice Board structure does not support a coordinated approach to member-led research. We recommend that research should be considered with a broader and more cross-practice perspective to address different dimensions of output:

- **Knowledge gaps**: examples include
  - impacts on liabilities from longevity, mortality and morbidity trends due to heat impacts and changes in air quality
  - the underlying frequency of extreme events such as floods and storms; climate scenario impacts on inflation and interest rates
  - the actuarial relevance of underlying climate model dependencies such as the shared socio-economic pathways and transient climate response to cumulative carbon emissions (TCRE)
- **Skillsets and techniques**: examples include
  - skills to develop and select bespoke climate scenarios
  - calibrations of climate impacts in long-term financial models
  - ability to monitor policy developments to adjust the likelihood of different climate scenarios
- **Practical actions and reporting standards**: such as
  - practical guides and emerging best practices
  - guides and illustrations of approaches to disclosures and regulatory requirements
  - coherent approaches to similar issues across different practice areas
- **Sustainable finance**: for example,
  - articulating the role of actuaries in supporting sustainable finance
  - developing solvency frameworks that better support sustainable finance and reduce systemic risks
- **Opportunities and new domains**: for example, identifying application of actuarial insights in broader domains such as applications to business planning and disclosures, physical risk resilience in planning and for real estate

- **Public interest questions**: for example, the use of actuarial techniques to project the long-term financial impacts under different climate scenarios

Mapping key research needs across these dimensions should be followed by prioritising potential research projects, taking into account the needs to support lifelong learning and regulatory needs in the area of climate risk, to support GFEC commitments, and, importantly, to reimagine the boundaries of actuarial science. It is important that the research projects transcend the traditional siloed approaches (see also section 6.3.2), addressing core principles that are broadly applicable.

The outputs of both sponsored and member-led research will provide content for lifelong learning and, potentially, the Associateship and Fellowship qualifications and any standalone credential that is established, as well as to external thought leadership campaigns (see sections 6.1 and 6.4.2).

Consideration should also be given to the possibility of developing research themes that support a (time-limited) focus that co-ordinates with lifelong learning CPD, thematic monitoring reviews and external thought leadership. Having a consistent theme across many areas of the IFoA's activity would be likely to be more effective in raising awareness among members and in encouraging them to take action, and would also enhance the IFoA's reputation as an effective and proactive professional body.

We recognise that the ability for the IFoA to sponsor external research is currently extremely limited and may well remain so in the longer term. However, member-led research is an area of activity that the IFoA does very well, and a more coordinated and focused approach would enable it to be more influential. In addition, we consider that there is significant scope for external sponsorship in this area, as climate change is at the forefront of concern for many insurers and other financial institutions.

Recommendations:

R13 The introduction of a thematic approach coordinating research with lifelong learning, regulation, research and external thought leadership would provide significant advantages and should be in place by the end of 2022.
R19 A member-led group should be convened to map the key climate–related and sustainable finance research needs across the dimensions of knowledge gaps, skillsets, best practices, sustainable finance, opportunities and public interest, during 2020.
R20 Form a set of priority research projects with particular emphasis on supporting life long-learning, regulatory needs and sustainable finance (GFEC) commitments and reimagining the boundaries of actuarial science (Q1 2021).
R21 Seek external sponsorship for high interest research priorities that the IFoA cannot fund itself.

6.3.2 Thought leadership

Sponsoring and encouraging thought leadership in the introduction of new knowledge and new skillsets into actuarial work and the application of actuarial perspectives in new areas will help to achieve the following objectives:

IFoA members: competent to comment (1)

Membership body: access to skills, sustainable finance, support in new domains (4, 5, 6)

External relationships: regulators and policymakers, speak up, align financial system (9, 10, 11)

We consider that the distinction between research and thought leadership is important. Research typically operates within parameters that are largely known or bounded in advance. Thought leadership is in the realm of new ideas, especially those that are not a part of the core actuarial tradition, and often have unknown or unbounded outcomes. We also note the difference between internal and external thought leadership. The IFoA has a good record on external thought leadership, with campaigns such as those focused on intergenerational fairness, the Sustainable Development Goals and the Great Risk Transfer being notably successful. However, this externally facing thought leadership does not contribute to introducing new ideas and skillsets into actuarial work, which is the focus of this enabler.

The economic impacts of both unfettered climate change and a transition to a low carbon economy are potentially severe, and they are likely to disproportionately affect those who are already disadvantaged. There are thus significant risks in any possible course of action (or inaction). Actuaries are ideally placed to consider those long-term financial risks, and indeed should do so if they are advising on matters affected by them. Actuaries should have a voice on a Just Transition, fairness and how to economically support of the disadvantaged communities. But more than that, there are opportunities for actuaries in the area of analysing the potential economic effects of different scenarios.

Although the Research and Thought Leadership Board has not focused on thought leadership in the recent past, we consider that this is a critical area for the IFoA. It is vital that new ideas and techniques are introduced into the actuarial world, and a lack of horizon scanning has been one of the key factors for recent stagnation in this area.

Thought leadership should encompass new knowledge and skills, new perspectives, and new domains. It should consider the implications for actuaries, and on actuarial techniques, of:

- **New knowledge fields**: such as ecological economics, sustainable finance, the economic implications of the role of money, the theory of change, AI ethics
- **New perspectives**: including planetary and societal boundary constraints, universal ownership, limits to growth, systems thinking, aligning with sustainable finance
- **New domains**: environmental risk management, geo-spatial monitoring, corporate systemic risk resilience, physical risk mitigation requirements of individual real assets, corporate resilience

It would be natural for thought leadership to be member-led. There are many members who are introducing new ideas into their daily work, but there is currently no way of supporting them or enabling them to introduce their ideas to other members.

Recommendations:

R22 Establish a member-led group to coordinate thought leadership activities across the membership and support the growth of new ideas-focused communities.

R23 Map thought leadership opportunities across timeframes in the areas of new knowledge fields, new perspectives and new domains, considering how they could affect actuaries and actuarial techniques.

R24 Prioritise short and long term thought leadership projects allowing for life-long learning, competency, and public interest themes.

6.4 Engagement

6.4.1 Community

Providing community and promotional support to members would support the achievement of the following objectives:

IFoA members: competent to comment, aware of practical actions, aware of best practice (1, 2, 3)

Membership body: access to skills, sustainable finance, support in new domains (4, 5, 6)

Providing community support to members not only provides a means of communication to those members, it enables the IFoA and other members to learn from them. This helps both the understanding of the members' needs as well as compilation and dissemination of knowledge around evolving best practice and emerging opportunities.

The key engagement activities for practice boards to focus on are:

- Support competence and awareness campaigns (see section 6.4.2) covering both the drivers of the need for members to engage with climate related risk and the resources and insights that are available, including written promotion and events
- Develop practical guides and illustrations of best practices, leveraging the success of the R&E practical guides[4]
- Obtain feedback from their communities on levels of awareness and priority needs (see section 6.5)
- Promote new opportunities and new domain areas, potentially including workshops and employer and recruiter outreach

It is important that members taking advantage of opportunities are encouraged to remain part of the IFoA and to continue to think of themselves as actuaries. We note that the current governance and structure does not easily support all these objectives. There are comparatively few non-traditional lifelong learning opportunities, and two-way communication between boards and their communities is currently difficult to achieve.

The following steps would help to achieve the objectives:

- Establish a member-led group to develop a template for practice board engagement plans, considering all the engagement channels that are available to them
- Leverage the R&E Board Practice Board Liaisons to support the Practice Boards in developing the template into engagement plans that leverage existing resources and expertise and that address the needs of their communities

Recommendation: R25 Each Practice Board to work their respective R&E Board Liaison to create an engagement plan addressing the needs of their community by the end of 2020, and implement it during 2021.

[4] The R&E Board has issued practical guides for actuaries working in life insurance, general insurance, DC pensions and DB pensions, along with an introduction to climate change for actuaries and several supporting guides on sponsor covenant assessments, mortality assumptions and financial assumptions https://www.actuaries.org.uk/practice-areas/resource-and-environment/resource-and-environment-practice-area-practical-guides.

6.4.2 Communication campaigns

Undertaking communications campaigns is the core enabler of awareness across all of the objectives. It directly assists engagement with IFoA communities and addresses the public interest.

Communications campaigns are of two types: those focusing on IFoA members, and those focused on external stakeholders. Campaigns can support the following objectives:

IFoA members: competent to comment, aware of practical actions, aware of best practice (1, 2, 3)

Membership body: access to skills, sustainable finance, support in new domains (4, 5, 6)

External relationships: regulators and policymakers, speak up, align financial system (9, 10, 11)

6.4.2.1 Members & Membership Body

Communication campaigns should leverage the practice boards' connections with their communities with a particular focus on raising awareness, best practice and available resources. They should also highlight the opportunities for members, and how the IFoA supports transitions to new domains.

Campaigns can be more powerful if they are built around topical themes. They will be needed in order to support initiatives under other enablers, especially lifelong learning, research, thought leadership and regulation.

In the short term, a communication campaign will be needed to support the engagement plans developed by the practice boards that are described in section 6.4.1.

Recommendation:
R26 Implement a communication campaign to support the launch of the practice boards' engagement plans at the start of 2021

6.4.2.2 External

Past external thought leadership campaigns, such as those on intergenerational fairness and the Great Risk Transfer, have been successful in engaging both members and non-members and in promoting the IFoA. However, they have not always been coordinated with lifelong learning and research activities.

There are three core external groups to consider in external campaigns:

- **Regulators and policymakers**: to enhance the status and reputation of actuarial work, ensure the appropriateness of regulation, and ways to align aggregate actuarial work with sustainable finance
- **Employers and businesses in new domains**: with the need to promote the new actuarial services and the value of actuarial employees
- **Public interest**: speaking up on the long-term implications of climate-related risks

Using a thematic approach to bind together different elements typically helps to amplify the message and impact of a specific campaign. Thought-leadership, research and new lifelong learning materials can all provide support for and opportunities for external campaigns.

As well as external thought leadership campaigns, communication is an ongoing activity. Especially important in this context is liaison with regulators and policymakers. The IFoA should use its regular liaison activities to promote and support regulatory and policy initiatives that support its objectives, especially those concerning aligning the financial system. Doing so will form a valuable part of speaking up, and the influence of external regulation also incentivises actuaries to pay appropriate attention to climate-related risk.

Around the world, regulators are becoming more concerned about climate risk. It has been suggested that in some countries actuaries could play a role in helping to increase regulators' awareness and helping them to develop effective responses to the risks. The IFoA could support its members around the world by providing access to expertise from markets such as the UK where the regulators are more advanced in their thinking, and where the industries in which actuaries work are more accustomed to considering climate risk.

All these activities are executive-led and part of normal operations.

Recommendations:

R13 The introduction of a thematic approach coordinating external thought leadership with lifelong learning, regulation, and research would provide significant advantages and should be in place by the end of 2022.
R27 Identify opportunities for external thought leadership campaigns arising from research and thought leadership activities.
R28 Engage directly with regulators to identify their priorities and any gaps, concerns or support they would like to help meet those priorities.
R29 Support actuaries outside the UK in their engagement with regulators on climate risk.

6.5 Market research

Undertaking market research on members, ex-members and their employers, as well as other stakeholders, could help to achieve the following objectives:

IFoA members: aware of practical actions, aware of best practice (2, 3)

Membership body: access to skills, sustainable finance, support in new domains (4, 5, 6)

Market research could be used to find out about KPIs and other information of interest:

- Current awareness levels within the profession
- What members are actually doing (practical actions, best practice)
- What skills members and ex-members are using or would like to use
- What new opportunities members, employers and other stakeholders perceive
- What gaps different stakeholders perceive in actuarial skill sets
- What actuarial skills and abilities other stakeholders are unaware of
- What areas ex-members are now working in (which might in fact provide opportunities for actuaries)
- What kind of support members and ex-members would find helpful (or would have found helpful)
- What support employers would find helpful for themselves or for their employees

We note that market research need not consist only of full-blown surveys, but that it can come in a variety of forms and structures. It could for example include short post-event surveys, a series of workshops with members, or conversations with employers, as well as desk-based research. It could be led by volunteers or the executive, or in some circumstances external researchers could be used.

In addition, market research with members is a form of engagement, and should therefore form part of the practice boards' engagement plans (see section 6.4.1). It would also support the mapping activities in the areas of research and thought leadership (see section 6.3).

Recommendations:

R30 Market research should be used to gain an understanding of the current awareness of climate-related risk among members, in order to assist in prioritising other actions and benchmarking KPIs. This is very high priority in the short term.

6.6 Operations

6.6.1 Risk management

Assessing the operational risks posed to the IFoA by physical and transitional climate risks over the next five years will ensure that its operations are consistent with mitigating climate change. It will address the following objective:

Membership body: operations (7)

The operational risks fall into two categories:

- **Physical risks** should be relatively minor but impacts on buildings and infrastructure, ability of staff to reach places of work and potential exam disruption should be considered
- **Transition risks** include broad impacts such as potential influences on membership numbers as well as direct impacts on travel, the need to invest in building efficiencies, or the effects of carbon pricing.

Risk management should be integrated with the setting of emissions targets (see section 6.6.2). The recent CoVID19 pandemic has shown that traditional working patterns may be less entrenched than we realised. There are broader sustainability elements within the climate transition, particularly in regards to a circular economy and the management of waste.

A further core risk is the financial risk to the IFoA reserves from impacts on the stability of market values and long term returns from its investments. Given the reputation risk to IFoA members, the IFoA may wish to take a cautious approach.

However, the core priority in this area is the reputational risk to the IFoA, if it is seen to be poor at managing climate related risk to its own operations while being an organisation whose members claim to be expert risk managers.

Recommendations:

R31 A member of the Executive leadership team should be given oversight and accountability for the IFoA's operational climate risks.
R32 Create an operational risk register and highlight key risks including potential investment risks within the management of the IFoA's reserves.

6.6.2 Emissions targets

Setting targets for operational emissions and implementing a plan to achieve them would support the achievement of the following objective:

Membership body: operations (7)

Currently there is an unofficial Environmental Management System (EMS) group within the IFoA. It has built up some momentum: for example, sustainability is now part of the procurement process. However, its activities are somewhat piecemeal, and it has no concrete targets.

The IFoA's response to the Covid-19 pandemic has demonstrated that it can operate effectively, for a period at least, with substantially lower emissions than previously. Reducing emissions is not only consistent with the IFoA's public interest mission, it is also possible that it will result in financial savings. However, as a public interest body, the IFoA may wish to undertake voluntary carbon-offsetting for all travel activity, while still looking to make net savings by focusing on reducing the total amount of travel.

The steps that would be needed to manage the total IFoA emissions are:

- Establishing the current level of emissions
- Setting ambitious but achievable targets for the short and medium terms
- Incorporating the actions to achieve the targets into the annual corporate plans

There are a number of consultancies who can assist with this process, in particular by conducting a review to establish the current level of emissions. It may be cost effective to consider these efforts alongside possible broader sustainability goals such as suppliers' use of recyclable materials, payment of a living wage and vegetarian only catering.

The IFoA executive should consider climate pledges, such as Net Zero or carbon literate, and becoming a hub for sharing best practice and ideas among its members and their employers and other membership organisations. By exemplifying and sharing good practice that its members can follow, the effect of its actions could be magnified.

The member of the executive who is responsible for managing the IFoA's operational climate risks should also be responsible for setting and achieving emissions targets.

Recommendations:

R33 A member of the executive leadership team should be responsible for setting and achieving the IFoA's emissions targets.
R34 Establishing the current level of emissions should be considered during 2021.
R35 Consider joining Net Zero or equivalent initiatives.
R36 The IFoA should develop ways of sharing best practice with its members and of advocating for broader adoption within businesses and other membership organisations.

6.6.3 Disclosure

The IFoA should report publicly on progress towards achieving its climate-related goals, including its emissions targets. Doing so would support the following objectives:

Membership body: support in new domains, transparency (6, 8)

External relationships: regulators and policymakers, speak up (10)

Transparency on these matters could also increase membership engagement, by helping the members to understand more of the IFoA's activities and priorities. It would help the IFoA's reputation more generally, enabling it to be seen as a leading organisation that takes its values and mission seriously and increasing its credibility with regulators and policymakers.

A form of transparency that might be especially valuable would be publishing disclosures closely aligned to the recommendations of the TCFD (task force on climate related financial disclosures). These recommendations are being increasingly widely adopted through the financial services sector and beyond. Actuaries are heavily involved in their preparation in the insurance industry, and many actuaries see this area as a major opportunity for applying their skills outside the traditional actuarial domains of pensions and insurance. Involving members in the preparation of the IFoA's disclosures would provide an opportunity for showcasing actuarial skills and supporting members in taking advantage of new opportunities.

We note that although these disclosures would be a clear public statement of the IFoA's positioning, they are probably less influential than many of the other actions we recommend. They should be considered in the context of the IFoA's overall activities and the resources that they would require.

Recommendations:

R37 public reporting on the IFoA's climate related goals, including emissions targets, should be considered by 2022.

R38 The publication of disclosures aligned with the TCFD recommendations should be considered by 2022.

Appendix A Green Finance Education Charter

Institute and Faculty of Actuaries

Green Finance Education Charter

The Institute and Faculty of Actuaries (IFoA) is a royal chartered, not-for-profit, professional body. We represent and regulate over 32,000 actuaries worldwide, and oversee their education at all stages of qualification and development throughout their careers.

Introduction

Finance and professional services bodies play a critically important role in shaping and defining standards, norms, values, and practices in their respective professions.

Climate change is one of the defining issues of our time. It presents significant financial risks to business and society, and offers opportunities to lead the transition to a sustainable, net zero carbon world. The professional bodies, and our members, recognise this global challenge, and the strategic commercial and moral imperative to develop clean, resilient and prosperous economies that work for all. We acknowledge the collective responsibility of the global community, including the banking, finance and professional services sectors, to deliver Article 2.1c of the Paris Agreement and the UN Sustainable Development Goals.

Recognising that leading professional bodies can play a key role in developing the capability and capacity of the banking, finance and professional services sectors to mainstream green finance, we therefore undertake to do the following:

By December 2020

1. Engage our members on issues related to climate change and environmental issues, with the aim of raising their profile within our professions
2. Curate, develop and promote relevant resources to our members on green finance
3. Encourage adoption of relevant global and national standards, frameworks and guidance, including Principles for Responsible Investment, Banking and Insurance, and the Taskforce on Climate-related Financial Disclosures (TCFD).

By December 2021

4. Undertake a review of our professional Codes of Conduct, and related guidance, and update or augment these to reflect green and sustainable finance principles
5. Undertake a review of our programmes of initial and continuing professional development to ascertain existing coverage of, and the opportunities for encompassing, green finance.

By December 2023

6. Mainstream the principles and practice of green finance into our programmes of initial and continuing professional development (as relevant).

www.actuaries.org.uk

Additionally, on an ongoing basis we will:

7. Engage with policymakers, regulators, researchers and practitioners to identify and promote impactful and effective best practices in green finance
8. Collaborate with signatories to this Charter and with other domestic and international counterparts to enhance and promote the integration of green finance into academic and professional programmes of education and training
9. Work with our governments to engage employers to encourage commitment to, and take up of, green finance programmes of initial and continuing professional development
10. Report annually on our progress in mainstreaming the principles and practice of green finance.

Institute and Faculty of Actuaries

Stephen Mann

Chief Executive

30 June 2020

Appendix B GFEC objective

The objective of the GFEC is to help deliver Article 2.1c of the Paris Agreement and the UN Sustainable Development Goals (SDGs). Article 2.1c of the Paris Agreement concerns "Making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development". There are 17 SDGs, as shown in the figure.

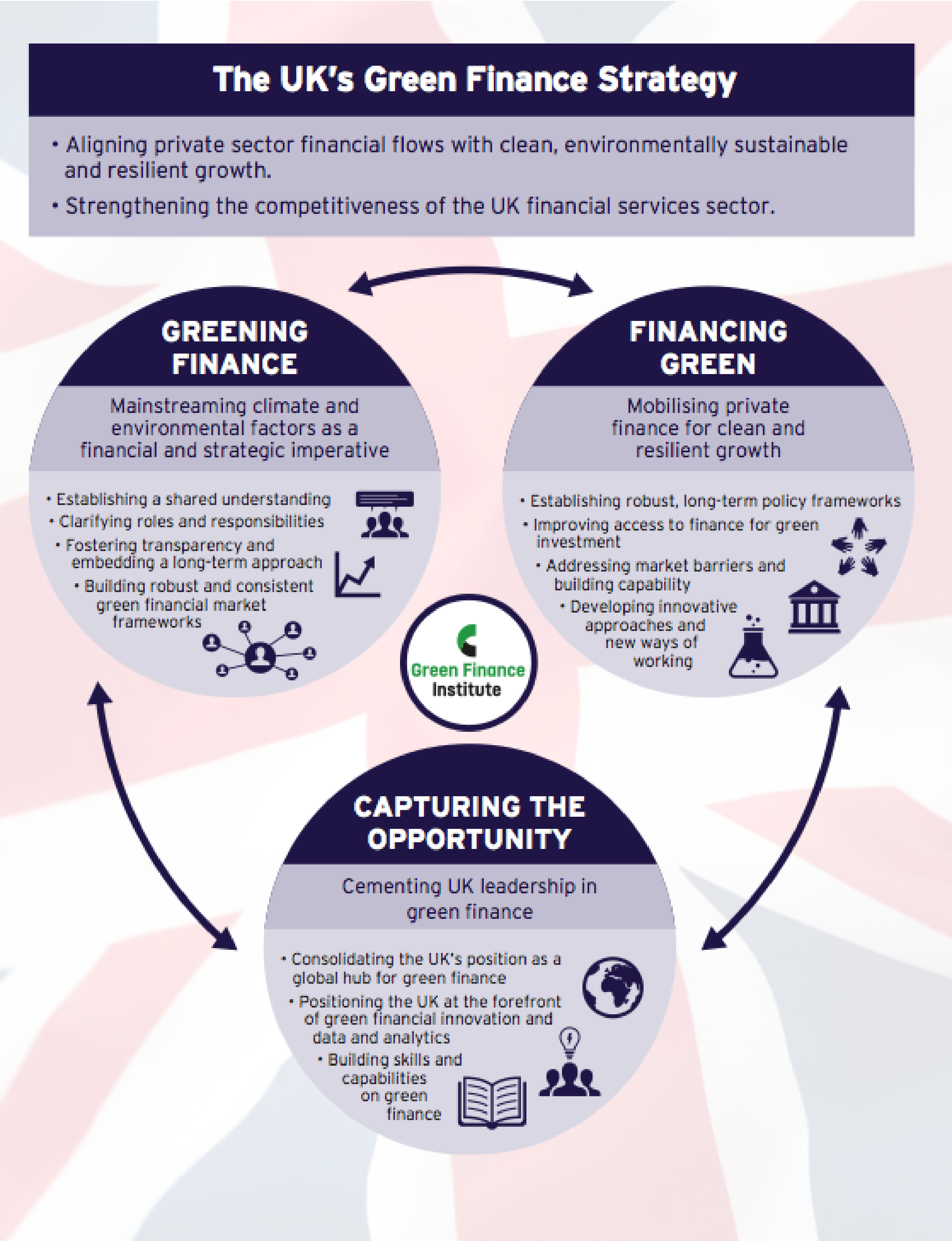
The GFEC objective has been one of the principal drivers of the action plan that we have developed, although our action plan concerns only climate related risks. Our action plan therefore does not fully address all the IFoA's commitments under the GFEC, which concern "Green Finance" more generally.

The UK Government's July 2019 Green Finance Strategy[5] defines Green Finance as "climate and environmental factors" and highlights the interdependence of the financial markets and climate change. The core aims of the Finance Strategy are illustrated in the graphic on the next page. These aims are particularly relevant to meeting item 7 of GFEC:

> *on an ongoing basis the IFoA will] "Engage with policymakers, regulators, researchers and practitioners to identify and promote impactful and effective best practices in green finance"*.

Clearly this broader focus should be considered when addressing the IFoA's signatory commitments.

[5] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/820284/190716_BEIS_Green_Finance_Strategy_Accessible_Final.pdf


The UK's Green Finance Strategy
• Aligning private sector financial flows with clean, environmentally sustainable and resilient growth.
• Strengthening the competitiveness of the UK financial services sector.
GREENING FINANCE
Mainstreaming climate and environmental factors as a financial and strategic imperative
• Establishing a shared understanding
• Clarifying roles and responsibilities
• Fostering transparency and embedding a long-term approach
• Building robust and consistent green financial market frameworks
FINANCING GREEN
Mobilising private finance for clean and resilient growth
• Establishing robust, long-term policy frameworks
• Improving access to finance for green investment
• Addressing market barriers and building capability
• Developing innovative approaches and new ways of working
Green Finance Institute
CAPTURING THE OPPORTUNITY
Cementing UK leadership in green finance
• Consolidating the UK's position as a global hub for green finance
• Positioning the UK at the forefront of green financial innovation and data and analytics
• Building skills and capabilities on green finance

Appendix C Survey results

We tried to liaise with all the Practice and Corporate Boards (PBs and CBs), and some other (individual) stakeholders. We were able to have useful discussions with some individuals and representatives of the following Boards and committees:

- PPAB
- LLB
- Audit and Risk
- R&E Board
- Life Board
- Pensions Board

The failure to engage was disappointing. It was primarily because of reluctance from the Boards. We had addressed our requests to the Board Chairs, and a number of them considered that it was necessary to discuss the survey with their Boards before responding.

We used the same general template to structure our discussions with all stakeholders, but not all the questions were relevant in all cases. In this section we summarise what we learned.

C.1 General comments

There was clear confusion about the responsibilities of both Practice and Corporate Boards. CBs tended to feel that that their role was to follow strategy set elsewhere, and to respond to demand from members and the PBs. PBs, on the other hand, felt that their hands were in many ways tied and that CBs would be taking the lead. There was a clear sense that there is no overall direction on climate risks within the IFoA, either as a membership body (looking at qualifications, lifelong learning, etc) or at the operational level. The reputational and regulatory risks are recognised as significant.

C.2 Survey questions

1. *What, if any, consideration has your board given to climate change risk? How would you describe the current state of play?*

We assume that most of the Boards that did not respond have not prioritised climate change risk in any way. Of those that did respond, the current level of engagement varies from early stages (starting to think about what should be done) to intense (the primary focus of the Board).

2. *If you have not yet considered it, why is that the case?/ What barriers have prevented you from considering it further?*

One PB thought that more clarity on the IFoA's objectives in this area, and where the responsibility lies, would be useful.

3. *On a scale of 1 to 10, how well versed do you think your practice area members are to address climate related risks and the background of climate science and policymaking? OR On a scale of 1 to 10, how well do you feel your board has addressed IFoA members' needs on climate related risks and the background of climate science and policymaking?*

Scores varied from 3 to 9. The score of 9 was heavily caveated, noting that the need to act has been identified and communicated to actuaries, but that that members at large are not responding.

4. *How familiar are you with the UK Government's Green Finance Strategy? Would you feel confident that you could meet the requirements from your board's perspective and in particular*

that before December 2023 the IFoA could mainstream the principles and practice of green finance into the initial and continuing professional development of every member?

It had been considered by some Boards, although even for these Boards not all members were aware of having done so. Some Boards felt that 2023 was an achievable timeframe. Others felt that there was a significant risk that this was an ambitious goal.

5. *How do you perceive the current regulators (PRA, FCA etc) focus in your practice area? What scope could and should there be for incorporating climate related risks into the generic and specific TASs?*

This question was asked to PBs only. One PB thought that the TASs were not the right place for this but had no other comment.

6. *What do you see as the main risks to the profession from a regulatory and reputation point of view?*

Responses included:

- Reputational risk gap in members not being able to meet the expectations that are being set by the regulators
- The key reputation risk is falling short of public and client expectations leading to a loss in confidence.
- The potential failure of the profession and individual actuaries to grasp the relevance and importance of climate (and other R&E) risks is a critical contributor to reputational risk.
- Risk that regulators take a different position to that of the IFoA. (cf recent experience in Equity Release Mortgages)
- The Regulatory risk is that actuarial work falls short of regulators expectations and we lose the confidence of the regulators.
- The main risks are that the IFoA and individual members fail to do things
- Main risk is failing to adapt our professional development and professional standards to incorporate climate change appropriately.

Some Boards indicated that they had not considered risks. One PB did not consider climate risk as a significant risk to the profession.

7. *How could your board contribute to the embedding of climate change risk into our members' work?*

Suggestions included:

- Development of professional development and professional standards
- Embedding relevant content into the qualification process
- Provide specialist support to other Boards
- Ensuring climate risk is integrated into conferences and CPD events

Some Boards offered no suggestions.

8. *Actuaries are skilled in exercising professional judgment to interpret and advise on long-term financial models with considerable uncertainty. What new climate change opportunities do you see? (eg employer covenant reviews, TCFD reporting, climate risk modelling, business scenario modelling, energy management modelling, physical risk projections) Do you believe actuaries are confident in exploring these opportunities?*

Suggestions included:

- Agri-tech: and the rising use of metrics and analysis could be an interesting "field"
- The actuarial skill-set, which includes an understanding of probabilistic projections and a risk management perspective, is well placed to articulate climate related risks and the implications of different courses of action.
- The focus on climate risks has heightened interest in scenario thinking and planning across the whole of business including accounting practices.
- Recent CoVid19 impacts have highlighted the importance of being able to consider different paradigms and is likely to highlight the benefits of broader modelling approaches and the role of systems-thinking.
- Long-term considerations of climate risks which, particularly given their long-term nature, are very suited to actuarial approaches.
- Involvement in the increased reporting and risk management around climate change in and beyond actuaries' traditional fields of work
- Commenting on climate risks in the context of regulatory and macro-prudential policy
- Influencing the way in which the financial system becomes aligned with addressing climate change
- Developing underlying models and stress-tests to support the above work
- Working with asset owners to reallocate capital to more climate resilient assets and/or to exploit the investment opportunities presented by climate change
- Actuaries leading the development of models that enable businesses to better understand the potential long term impacts of climate change on them and including developing roadmaps to reducing their businesses exposure to climate change.

One PB considered that all the opportunities relevant to their practice area were relevant to at least one other PB, and would be better addressed by those PBs.

No Board had a strong belief that actuaries are confident in exploring these opportunities. Comments included:

- There has not been strategic support from IFoA to build confidence more generally
- Actuaries are waiting to be told how to deal with climate related risks or to be provided with tools that will support them in their work rather than being prepared to think laterally and apply their skill sets.
- Actuaries will probably provide an input into what is more likely to be a multi-professional/disciplinary activity.

9. *What support do you need to achieve the above? Who on your board would be best for future liaisons on Climate-related risks?*

Suggestions included:

- publication of reliable sources of data for climate change scenario modelling to be used by actuaries;
- publication of good practice with respect to applying climate change scenarios to a sufficiently granular level to reflect the variations in physicals risks that may arise eg flood risk at the individual property level in the UK.
- sustainable delivery of content as an input to the delivery of, initially, lifelong learning offerings and, later, content to our qualifications.
- A clear mandate and objectives in regards to climate-related risks

- It would be helpful to affirm the desire for taking a leadership position rather than a member representative one.
- The support and engagement of Council and all the Boards

10. What specific actuarial research can we be proposing as a way of reaching out to climate economists, scientists and other parts of academia? [IAMs being one example]

The few suggestions that were offered included:

- How government policy may evolve to mitigate some of the impacts from climate change?
- Explore how potential changes in climate could affect mortality rates by region and socio-economic status eg more severe winters and summers, water shortages could affect regions differently but those with less financial means will be less able to adapt without the assistance from the State.