Response to the Scottish Affairs Committee Call for Evidence Inquiry: Connectivity in Scotland – Fixed Links

1. Introduction

The Institution of Civil Engineers (ICE) is the independent voice on infrastructure and the leading source of expertise in infrastructure and engineering policy. Founded in 1818, the ICE was the world's first professional engineering body and over the years, has offered trusted impartial expert advice to politicians and decision makers on how to build more sustainable infrastructure.

The Institution of Civil Engineers Scotland welcomes the opportunity to submit evidence to the Scottish Affairs Committee's inquiry into fixed links and connectivity across Scotland. As a professional body representing over 95,000 civil engineers worldwide, including over 8,500 in Scotland drawn from across the public, private and academic sectors, ICE provides impartial, evidence-based advice on infrastructure planning, policy and delivery. We are not a trade body. Our Royal Charter requires that we act in the public interest, and the following comments have been developed in this way in conjunction with our members who have extensive experience in the design, construction and maintenance of bridges, tunnels and complex transport systems in remote, rural and island environments.

Improving connectivity for Scotland's Island communities is a longstanding Government priority. Transport infrastructure plays a critical role in sustaining local economies, enabling access to services, supporting resilience and tackling depopulation. Fixed links, whether tunnels, bridges or hybrid solutions, can form part of a long-term strategy, but must be assessed alongside alternative interventions and considered within the constraints of Scotland's geography, climate and public finances.

ICE Scotland emphasises that all approaches to fixed links must be developed primarily by Scottish Government, recognising their devolved responsibilities for transport, planning, infrastructure investment and economic development acting in collaboration with the UK Government. Within this framework, the UK Government can play a constructive enabling role where appropriate.

2. Strategic Case for Fixed Links

2.1 Strengthening Regional Cohesion and Economic Vitality

Fixed links have the potential to deliver transformative benefits for certain island communities, including:

- Enhanced labour market mobility
- Improved access to healthcare, education and public services
- Greater resilience against weather-related disruption
- Enabling freight and supply-chain efficiency
- Supporting population retention and regional investment

However, ICE Scotland stresses that fixed links are not universally appropriate. The strategic case must be underpinned by robust socio-economic appraisal, environmental assessment and long-term operating cost analysis and meaningful public engagement on the benefits of infrastructure. Evidence from comparable nations (e.g. Norway, Faroe Islands, Iceland) suggests that fixed links can be viable where:

- Population thresholds are met
- Traffic volumes justify capital expenditure
- Network benefits extend beyond a single community
- Geological and marine conditions permit cost-effective construction

Where these criteria are not met, improved ferry services, demand-responsive transport, digital connectivity and regenerative economic interventions may represent better value for money.

2.2 Funding and Finance

International experience offers valuable insight into potential cost, funding and delivery models for fixed links. The Faroe Islands, for example, have delivered subsea tunnels at lower unit costs than comparable UK projects, supported by higher toll levels and a publicly owned delivery company with government-backed financing. While such models cannot be directly transferred due to differences in geology, scale and governance frameworks, they illustrate the benefits of examining alternative structures.

Given the scale and long-term risks of fixed-link infrastructure, early appraisal of funding and financing options is essential. This should include consideration of:

- The balance between user charges and general taxation
- Ownership models, from fully public to regulated private structures
- The role of guarantees or shared-risk mechanisms
- The applicability of public-private partnerships or Regulated Asset Base models
- Impacts on affordability, revenue stability and community acceptance

Embedding these considerations from the outset will help ensure financially sustainable and resilient proposals aligned with Scottish and UK fiscal frameworks.

2.3 Climate Resilience and Decarbonisation

Infrastructure investment in Scotland must align with statutory climate targets and the need to adapt to more extreme weather. Decisions must therefore consider:

- Whole-life carbon assessments
- Opportunities for low-carbon construction technologies
- The climate resilience of fixed assets versus marine transport

3. Engineering Feasibility and Delivery Considerations

3.1 Technical and Environmental Feasibility

Scotland's maritime environment presents significant technical challenges, including deep channels, strong tidal currents, complex geology and exposure to Atlantic weather systems. Detailed feasibility studies including geotechnical investigations, environmental impact assessments and cost-risk modelling are prerequisites before any commitment is made.

Tunnels may offer advantages over bridges in some contexts, such as reduced visual impact, improved climate resilience and lower long-term maintenance, but costs vary widely depending on depth, geology and required safety systems. Bridges may be appropriate in shallower or more sheltered waters but come with distinct maintenance and climate exposure considerations. The choice of solution must be evidence-led and grounded in robust modelling.

ICE Scotland recommends a national framework for assessing fixed link feasibility, incorporating:

- Standardised appraisal methodology
- Benchmarking with international case studies
- Clear governance and risk-allocation structures
- Community co-design and ongoing engagement

3.2 Institutional Capacity, Governance and Mega-Project Readiness

It is important to recognise that any fixed-link project would constitute a mega-project relative to the scale and remit of the likely lead authority. International experience shows that mega-project success is strongly linked to the organisational capability and governance maturity of the sponsoring body.

ICE Scotland emphasises the need for early and explicit assessment of institutional readiness, including:

- The capability and capacity of the sponsoring authority to manage a project of significant scale, complexity and duration
- Access to specialist expertise in project and programme management, procurement, digital design, risk governance and community engagement
- Clear definition of roles, responsibilities and decision rights across all stakeholders, including the Scottish Government, local authorities, regulators, affected communities and where appropriate the UK Government
- Clarity and consistency on outcomes from the outset with stability and long-term commitment by government
- Early establishment of robust governance, assurance and oversight arrangements consistent with best practice in major projects

Strengthening organisational capability from the outset is vital to managing risk, promoting transparency and ensuring that delivery structures are proportionate to the scale and ambition of the project

4. Role of the UK Government

Infrastructure planning and transport investment are devolved matters. Therefore, any involvement by the UK Government must be undertaken in partnership with the Scottish Government and respect devolved competencies. Within this context, the UK Government could add value by:

4.1 Funding Collaboration

- Co-funding early-stage feasibility, research and innovation
- Supporting long-term investment through mechanisms such as the UK Infrastructure Bank, shared risk-financing, or place-based regeneration funds

4.2 Supporting Technical Innovation and Skills

- Facilitating shared UK–international research on fixed-link engineering
- Supporting skills development in tunnelling, digital engineering and advanced materials
- Enabling cross-jurisdiction knowledge transfer from major UK infrastructure programmes

4.3 Enhancing National Connectivity and Resilience

Where fixed links support wider UK objectives such as net-zero transition, supply-chain resilience or strategic transport corridors, the UK Government may have a legitimate role in partnership with devolved authorities. However, decisions on prioritisation, procurement, consenting and delivery must remain aligned with Scottish Government policy and statutory duties.

5. Governance and Long-Term Planning

To ensure consistency, transparency and public confidence, ICE Scotland recommends:

- A collaborative UK-Scottish Government steering framework, ensuring alignment with the National Transport Strategy, Islands Connectivity Plan and National Planning Framework
- A clear pipeline of studies and potential projects, set within Scotland's infrastructure investment hierarchy
- Long-term funding certainty to allow industry investment, skills development and efficient procurement

Any fixed-link proposals should sit within a holistic island's connectivity strategy, ensuring that investment across ferries, ports, digital and local services is coordinated rather than pursued in isolation.

6. Conclusions and Recommendations

ICE Scotland believes that fixed links may offer significant benefits for some island communities, but their appropriateness must be assessed on a case-by-case basis through rigorous engineering, economic, financial and environmental appraisal. The decision to pursue such projects should only be taken where fixed links demonstrably provide better long-term value, resilience and community outcomes than alternative modes and are consistent with the pathway to net zero.

We recommend that:

1. All approaches to fixed links must be developed collaboratively with the Scottish Government, ensuring alignment with devolved responsibilities and strategic policies.

2. A consistent national appraisal framework should be established to evaluate the feasibility and comparative value of fixed links.

3. The UK Government can play a constructive role by supporting research, skills and early-stage feasibility, and by collaborating on funding where projects also serve wider UK objectives.

4. Investments must be guided by whole-life cost and carbon assessment, enhanced climate resilience and clear community benefit.

5. Fixed links should form part of a broader, integrated islands connectivity strategy, not a standalone intervention.

6. Embed international **benchmarking of technical, financial and organisational models** in early project assessments.

ICE Scotland would welcome the opportunity to provide further evidence, participate in committee sessions or contribute technical expertise as the inquiry progresses.

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