AVIATION 2050: HIGHLANDS & ISLANDS CONSULTATION RESPONSE

June 2019

hia Highlands and Islands Airports Limited
Puirt-adhair na Gàidhealtachd is nan Eilean Earranta

HIE
Highlands and Islands Enterprise
Iomairt na Gàidhealtachd 's nan Eilean

HITRANS
THE HIGHLANDS AND ISLANDS TRANSPORT PARTNERSHIP

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EXECUTIVE SUMMARY

This submission to the Aviation 2050 Consultation is a collaboration by three leading Highlands and Islands organisations concerned with transport, aviation and economic development. They are HITRANS (The Highlands and Islands Transport Partnership), Highlands and Islands Enterprise (HIE) and Highlands and Islands Airport Limited (HIAL).

Our submission has drawn on over a decade of region-specific reports. These are listed in Appendix 3. They represent an evidence base of the distinctive characteristics and requirements of the Highlands and Islands and its air services.

The Highlands and Islands has a small and sparsely distributed population. Thus, many of the catchment area's important sectors-e.g. energy, tourism and food & drink-are heavily reliant on interaction with businesses at a national and international level. However, the region is peripheral to other parts of Scotland and even more so to the rest of the UK. Distances and surface travel times to main centres are long.

Therefore, airports and air services are essential elements of the Highlands and Islands' transport infrastructure. It also means that the public sector plays a very significant role in owning and operating airports and providing financial support to air services.

Inverness, Heathrow and Amsterdam hub services are vital in providing access to global markets. The region's limited number and frequency of air routes leads to a significant amount of leakage of passenger traffic to Aberdeen, Edinburgh and Glasgow. However, these airports are distant from most parts of the Highlands and Islands. Thus, travel to these airports incurs time costs (loss of productive business time) and financial cost (for travel and overnight accommodation).

The most important issues concerning our organisations and our regional responsibilities are summarised as follows (These are discussed more fully in Chapters 5, 6 and 7):

A) Providing International Hub Slot Security (see 5.3)

Slot security at key congested airports such as Heathrow is a key requirement for direct flights from the Highlands and Islands. Government policy needs to provide a stronger recognition of its importance, particularly in relation to slot reform.

Ring-fenced hub access with sufficient frequency is a primary concern. That reflects the very limited number of direct international flights that operate from the region. A decision on how this is to be achieved in the short to medium term is required. If this is currently not possible then clarity on how that decision will be made, and how DfT will involve the Highlands and Islands in those deliberations, is also required.

Our region wants to avoid returning to a position where Government policy on hub access leaves us susceptible to the vulnerabilities of air operators, adverse pricing or policy preferences from airport operators, or other market forces overriding the connectivity needs of the region. Highlands and Islands Businesses will not invest unless they have certainty of connectivity.

B) Amend proposed PSO Guidelines to ensure they can support Policy objectives (see 5.11 and 5.12)

We recommend changes to be made to the proposed UK PSO guidelines in Chapter 5 (and also in answer to the specific consultation question, at Chapter 1). Any future UK PSO Guidelines will ideally retain full versatility to deliver varied goals. We are concerned that being too restrictive may inhibit optimal or innovative use of this tried and tested intervention tool. We also welcome the increasing recognition that PSO services should offer day trip opportunities at both end of the routes-while noting that some non-PSO services (e.g. Stornoway-Edinburgh, both routes from Wick John O'Groats) fail to meet that criterion.

C) Improving Connectivity to Other UK Hub and UK 'National' Airports (see 5.3)

Inverness's air services to Gatwick, Luton, Manchester, Bristol, Belfast and Birmingham are highly valuable in supporting business activity and inbound tourism.

Despite the references in the Green Paper to Edinburgh and Manchester as "national airports" there are currently PSO routes from the Highlands and Islands to Glasgow-with the potential for further ones from Skye and Oban. Therefore the definition of permissible non-London PSO airports should not be artificially limited and nor fail to reflect the realities of administrative, business and social links in Scotland.

D) Establishing a Regional Air Services Futures Short Life Working Group And Strategy/Action Plan (see 5.9)

We make some observations throughout the document narrative regarding better ensuring the long-term sustainability of regional air services. Here we refer not only services from the regions to London but also intra-regional services, which often are more marginal to and from regions such as ours. It is a significant omission that the draft strategy does not consider these issues in any detail.

Given this is a key issue for the Highlands and Islands we would wish to be involved in consideration of these issues. This would best be undertaken through a short life Regional Air Services Futures Working Group. It would produce a strategy and action plan for sustainable future regional air services. This will require consideration of a range of issues. These are listed at 5.9-e.g. ageing smaller aircraft types.

E) Regional Connectivity Index (see 5.10).

To be researched, established, monitored and used to inform policy and interventions in a consistent and objective manner (more detail in Appendix 2).

F) Reducing Long Distance Catchment Leakage (see 5.1)

This should be a consideration in the UK Aviation Strategy. That reflects its significant impact on journey times, business productivity and the ability to achieve sustainable aviation and transport targets.

G) "Lifeline" Air Services (see 5.6).

A more rounded definition of lifeline services would be helpful and help move further towards truly maximising the benefits of aviation. Aviation does not only keep fragile communities viable from a social service delivery perspective (e.g. access to health services). It also facilitates business links and makes locations more attractive places to live helping to counteract depopulation.

H) Promoting Air Connectivity through City and Region Growth Deals (see 5.8).

The UK and Scottish Governments have made commitments in the Inverness City Region Deal to support connectivity to Heathrow and other hub airports. The DfT could usefully work with their colleagues across UK Government to raise awareness of other island and Rural Growth Deals which include aviation projects. This would lead to proper consideration of an aviation dimension in Growth Deals that are currently being worked up, and in those that will be developed in future.

I) Highlands and Islands Leading or Support Innovation and Emerging Technologies in UK Aviation.

Our region is very well placed to contribute through:

- Acting as a test bed for aviation pilot projects connected with emerging technology (see Chapter 6).
- Providing a location for National Centres of Excellence for UK Aviation and Aerospace (see Chapter 6 and 7.3).
- Participating in skills and inclusion activities (see Chapter 7).

J) Development of an UK Air Freight Strategy (5.7).

The UK Government White Paper should deal with freight policy more extensively. That could usefully include commissioning a standalone sector-specific policy document.

1. CONSULTATION QUESTIONS AND RESPONSES

1.1 GENERIC CONSULTATION QUESTIONS

How could the policy proposals be improved to maximise their impact and effectiveness in addressing the issues that have been identified?

Providing mechanisms to ensure slot security at key congested airports-and especially Heathrow-is a primary concern for the Highlands and Islands. We welcome recent stronger recognition of its importance, particularly in relation to slot reform.

We have made some recommendations regarding better ensuring the long-term sustainability of regional aviation and regional connectivity in Chapter 5.

We have made some proposals for revisions to the proposed UK PSO guidelines in Chapter 5 (5.11 and 5.12).

How should the proposals described be prioritised, based on their importance and urgency?

The region's top priority is ensuring ring-fenced hub access with sufficient frequency, timings and codeshare agreements. A decision on how this is to be achieved in the short to medium term is vital to the region's economy. If this is currently not possible then clarity on how that decision will be made and what involvement the Highlands and Islands would have in those deliberations is needed. The region does not want again to find itself a victim to the future vulnerabilities of air operators; adverse pricing or policy preferences from airport operators or other market or industry forces overriding our connectivity needs.

We have made some recommendations on ensuring the long-term sustainability of regional air services. We perceive several serious threats of future degradation of these. The draft strategy has offered no clear awareness of any preventive action that can and should be taken. We would wish to be involved in this important piece of resilience planning.

Are you aware of any relevant additional evidence that should be taken into account?

We have provided some fresh perspectives in the narrative of our submission including through use of a range of relevant research reports (listed at Appendix 3). However, if there is any specific additional information or evidence which our submission does not provide but you would find useful in developing future policy, we would welcome the opportunity to discuss how we might provide this.

What implementation issues need to be considered and how should these be approached?

We have made recommendations on various strategic delivery mechanisms. This touches upon issues such as regional connectivity (explored in Chapter 5) and economic development and training issues (Chapters 6 and 7). We would very much like to be involved in key deliberations.

We highlight the resources of the Highlands and Islands that should be considered for key aviation pilot projects connected with emerging technology and any desired National Centres of Excellence in relation to UK aviation. We have also made some suggestions relating to skills and inclusion, where once again our region offers to play a national role.

What burdens, both financial and regulatory, are likely to need to be managed and how might those be addressed?

As a member of the UK Regional and Business Airports Group, HIAL contributed to their Disproportionate Costs report produced in 2018. A further current example is that the upgrade to Standard 3 Baggage Screening requires larger equipment, which has necessitated an expensive terminal reconfiguration to accommodate. Such costs are almost impossible to budget for as new requirements and regulations emanate from different government departments. Government needs to take cognisance

of overall policy to ensure that smaller regional airports remain sustainable.

HIAL has made some progress in mitigating some costs connected with regulation in conjunction with the CAA. For instance, full NASP compliance has been waived on some services from the west of Scotland into Glasgow, where interlining passengers then have to go through Glasgow security before they travel onward. This has saved both time and cost at these airports.

New technology such as Remote ATC offers the promise of operational savings and improvements in safety, performance and resilience. HIAL would like to play a role in trialing / pioneering suitable emergent technologies. As an example, Project Fresson is developing an electric Islander aircraft. This involves Loganair, Cranfield and Orkney Islands Council, and for which Brittan Norman have donated an aircraft. The current intention is to trial in Orkney in 2021 (possibly on Kirkwall-Eday) following testing at Cranfield in the second half of 2020. The project team face the challenges of 'electrifying' an existing nine-seater aircraft and building on this innovative approach to design and manufacture a hybrid-electric 19-seat aircraft, whilst working within the current limits of battery technology. HIAL will be supporting this with the necessary ground infrastructure and services to ensure that the aircraft can operate safely and effectively.

Are there any options or policy approaches that have not been included in this chapter that should be considered for inclusion in the Aviation Strategy?

Engagement with the EU is another matter that should be addressed in the UK strategy. It should be clear in what areas we are going to voluntarily align ourselves with EU rules and regulations, and in what areas we may choose to diverge. Detail may be difficult to formulate at this stage. Yet it should be possible to articulate general principles.

The strategy should also identify areas that require more research to better guide policy. That would include what role DfT may play in commissioning this-or facilitating it by providing an overall research context that other bodies can support.

The DfT could explain in more detail in what ways it is going to align its strategy with other government departments and with other tiers of local, regional and devolved government. Some detail on delivery mechanisms would also be helpful. The Highlands and Islands would be willing to be involved in delivery mechanisms for the Aviation Strategy and we have made some suggestions (key ones underlined):

- Heathrow Expansion Working Group. We would happily participate in a review to establish the parameters that might best guide government policy on, for example, access and frequency and how best they can be achieved in an equitable way across the UK.
- UK PSO Guidelines Review.
- Regional Air Services Futures Working Group.
- Regional voice on slot committee.
- Highlands and Islands presence on Scottish/national aerospace bodies.
- Highlands and Islands voice in aviation and aerospace skills and training.
- Highlands and Islands as a location for National Centres of Excellence.
- Funding and supporting regionally relevant industry-related and policy-related research.

DfT could usefully work with their colleagues across UK Government to raise awareness of Growth Deals which include aviation projects. This would lead to proper consideration of an aviation dimension in Growth Deals that are currently being worked up, and in those that will be developed in future.

The strategy has not sufficiently considered air freight. A review and associated strategy to consider issues relating to air freight and how it can be enhanced to maximise the economic benefits of aviation would be welcomed (more under 5.7).

Finally, the strategy should be more transparent about the potential resourcing of its key strands to give clarity as to priorities. Intended budgets and staffing for key DfT functions would signal the relative importance and energy to be directed at strategic aims.

Looking ahead to 2050, are there any other long-term challenges which need to be addressed?

UK aviation strategy should remain mindful of the ACARE Flightpath 2050[1] target to create a common access standard that by 2050. That is, 90% of European citizens should be able to reach all parts of the single market within four hours. This implies much more extensive use of time-efficient modes like air travel, combined with smaller airport catchments and much more extensive use of regional airports. The draft aviation strategy has not aligned its ambitions with such aspirational improvements in connectivity.

1 http://www.acare4europe.com/sites/acare4europe.org/files/document/Flightpath2050_Final.pdf

1.2 TOPIC SPECIFIC QUESTIONS (NOT ALL RESPONDED TO)

Chapter 3: Aviation can grow sustainably

Q8 (page 83): To what extent does the proposed partnership for sustainable growth balance realising the benefits of aviation with addressing environmental and community impacts?

Q8 (page 83): How regularly should reviews of progress in implementing the partnership for sustainable growth take place and are there any specific triggers (for example, new information or technological development) that should be taken into account?

We have been impressed with the work of the Committee on Climate Change (CCC) and support the DfT's reliance on their work and recommendations. We appreciate that the Committee has recognised the special characteristics that make aviation, along with shipping, a 'harder to reach sector' due to the nature of its assets, operations and likely long term reliance on liquid fossil fuel. We also accept the CCC's recommendation that emissions from UK-departing flights should be at or below 2005 levels by 2050.

We note that domestic aviation is less problematic than either short haul, which is growing strongly, or long haul which has a significantly bigger environmental footprint. We endeavour in this submission to underline how the balance between sustainable aviation and growth may well be a different calculation in the Highlands and Islands than in more populous and congested parts of the UK.

We accept the CCC's classification of possible ways forward through technology; airspace management and airline operations; and greater use of alternative fuels. The region stands ready to participate in trials and roll-outs. We recommend establishing a fund which identifies areas of best practice as we progress, and rolls this out to other industry actors.

HIAL and HITRANS are participating in a scheme to create a new railway station at Inverness Airport. They have also have worked with the bus operator to improve the service to the airport along the Elgin – Inverness road corridor (significantly increasing the number of passengers accessing Inverness Airport by public transport). HIAL and HITRANS have also supported the introduction of electric taxis at Inverness airport.

Chapter 4: Regional Employment, Training and Skills

Q8 (page 106): To what extent do these proposals provide the right approach to support the complex and varied role that airports play in their regions?

Q9 (page 106): To what extent are the proposals on skills the right approach to ensuring the aviation sector is able to train and retain the next generation of aviation professionals?

The University of the Highlands and Islands (UHI) are working with HIAL on the Remote ATC Centre of Excellence. Also UHI, along with Moray Council and HIE, have been engaging closely with Boeing on the proposed Boeing Pilot Training Institute at RAF Lossiemouth.

Perth College, which is part of UHI, has existing courses in aeroengineering, working closely with HIAL's Dundee Airport. An International Aviation Academy is also being established at Dundee Airport in collaboration with Tayside Aviation.

To help deliver the UK Government's policy of rebalancing the economy, we suggest national centres of excellence are located in UK regions that can offer significant advantages. This will also build new nodes of expertise.

UK Government funding (whether new or re-assigned) could be channelled into training centres, run in conjunction with airports and local training providers (e.g. college and universities). The property estates and surrounding facilities of many HIAL airports could be offered for such roles.

Our submission refers to the potential to establish national centres of excellence. The Highlands and Islands would offer a good location to host, or at least participate in, some of these activities. For example:

- Remote and online recurrent training and validation (UHI have significant experience of remote learning).
- Airport Management Development (we have an experienced and multifarious resource in the shape of HIAL).
- Third generation flight testing.

Chapter 5: Enhance the Passenger Experience

Q8 (page 130): To what extent does the proposed Passenger Charter adequately address the issues that are most important to passengers?

Q9 (page 130): How should the operating model for border service be designed to improve the passenger experience?

No response

Chapter 6: Ensure a Safe and Secure Way to Travel

Q8 (page 148): To what extent do these proposals sufficiently address existing and emerging safety and security risks in order to maintain business and passenger confidence in the UK aviation industry and in the UK as a destination?

No response

Chapter 7: General Aviation

Q8 (page 163): To what extent do these proposals strike the right balance between the needs of General Aviation and the rest of the aviation sector?

The White Paper should make a clearer distinction between General Aviation and Business Aviation which have significantly different drivers and benefits.

Business Aviation often seems to plough an important but unacknowledged role in transporting high net worth individuals for business and leisure purposes. Inverness Airport is one of the busiest UK destinations for such traffic. It hosts two businesses (Signature and Dalcross Logistics) who provide Business Aviation ground and passenger handling.

The Aviation Strategy should recognise more strongly the value of Business Aviation in the UK and identify initiatives to facilitate its growth. The CAA could, for instance, include Business Aviation in the General Aviation Unit's remit and periodically update on challenges and issues

General Aviation encompasses other non-scheduled activities including pilot training and private pilots, which have differing needs and requirements, alluded to in the Green Paper.

As an example Far North Aviation at Wick John O'Groats Airport hosts transatlantic ferry flights of smaller aircraft between North America and Europe. The airport is the furthest north aerodrome on the UK mainland. This location offers several significant benefits over other mainland aerodromes:

- Strategic and convenient fuel stop for many transatlantic flights.
- Tactical airport of entry and exit for aircraft entering UK/EU Airspace from North America and Iceland.
- Strategic logistical base for oil and gas related helicopter flights to/from oil platforms and offshore windfarms located in the surrounding seas.

Around 90% of flights into Wick John O'Groats are "Tech Stops" where the crew are just making a fuel stop on route to their ultimate destination.

Highlands and Islands airfields are also an exciting location for private and recreational flying, and airports such as Oban have significant numbers of visiting GA aircraft. It is also used by executives in charter aircraft for a large scale business investment in relatively nearby, but difficult to access, Fort William.

Chapter 8: Encourage Aviation and new Technology

Q8 (page 178): To what extent are the government's proposals for supporting innovation in the aviation sector the right approach for capturing the potential benefits for the industry and consumers?

Q9 (page 178): Do the proposals in this chapter sufficiently address the barriers to innovation?

The Highlands and Islands can offer itself as a living laboratory for aviation and aerospace testing and emergent technology pilots. It offers:

- Low intensity airspace to facilitate experimental flying.
- An ATC system that aspires to provide a centre of excellence with staff bandwidth to incorporate additional tasks such as experimental pilot programmes.
- HIAL's good and productive relations with the CAA.
- An archipelago where freight deliveries to islands for instance would provide practical opportunities for mail and newspaper delivery trials.
- A range of terrestrial and maritime aerial surveillance opportunities (power lines, forestry fisheries, offshore oil rigs, pollution control).
- Search and Rescue challenges.
- Multiple sea and fresh water loch environments to facilitate float aircraft experiments.
- Variable weather conditions to test operational limits.
- Supportive public sector organisations.

We believe there is potential to establish national centres of excellence and the Highlands and Islands would like to offer to host or participate in these. Some suggestions (with the key ones underlined) include:

- Remote ATC (centre already being established by HIAL).
- Drone Testing and Pilot Projects – particularly for remote, rural and maritime applications.
- Aviation and Aerospace R&D Nurseries – Forres is home to a standalone launch vehicle manufacturer (Orbex) and Inverness and Wick are both interested in possible roles as support locations for spaceport and launch activity. Inverness Airport Business Park has prepared an Aerospace, Space and Defence proposition.
- Biofuel production and distribution. Scottish Association for Marine Science in Oban has some leading-edge researchers looking at marine sourced biofuel, while the European Marine Energy Centre in Orkney is looking at renewable hydrogen production.
- Electrification of ground activities.

Annex D: Proposed PSO Assessment criteria

Q1 (page 194): Are these the right criteria to judge PSO proposals against?

We have made a number of proposed adaptions to the proposed UK PSO guidelines. We would want to see future UK PSO Guidelines retain full versatility to deliver varied policy objectives (which may well include differing mixes of lifeline, economic and 'national integration' aims). There is a concern that being too restrictive may inhibit optimal or innovative use of this tried and tested intervention tool. We would be happy to participate in a PSO study group to contribute to ensuring that current deliberations on UK PSO guidelines are optimal.

Key points are that:

- The 'National Airports' designation does not work for the Highlands and Islands. Glasgow and Oban, which are not proposed 'National Airports' already receive PSOs on the UK mainland. Aberdeen (again not a proposed 'National Airport') potentially could host a PSO from Caithness; and Isle of Skye / Oban (again on GB mainland) potentially could have future links to Glasgow/Central Belt.
- The Partners recognise that regions should have 'skin in the game' and contribute to PSO subsidy. However, there should be recognition that PSOs are a two-way street, and not a favour from the 'hub'. Regional access to London for instance not only benefits the regions, but it also allows London to interact more efficiently with the rest of the nation. This is a fundamental element in realising overarching government policy objectives such as inclusive growth.
- Timetabling, frequency and affordability must be considered in any specification. The market does not always deliver these adequately in the Highlands and Islands.
- PSOs are a convenient and legally accepted way to ring fence and protect slots. The Green Paper has not offered another mechanism. However, we would stress that certainty and security are required to maximise investment and utility by the sponsoring body and deliver the catalytic benefits of connectivity. The White Paper should not leave this issue 'hanging'.
- With PSOs the region, rather than the airline, retains some control over its destiny. The Green Paper's apparent aversion to/ reluctance with PSOs needs to be balanced against the positives that PSOs can deliver, such as certainty.
- No-subsidy Open and No-subsidy Closed PSOs should be considered in UK Aviation Policy. There is no mention of them in the Green Paper. This is a way that regional slots can be secured without subsidising PSO air services.
- Freight, seasonal, tour operator and international PSOs should be entertained. The Charter Fund Scheme for Northern Norway[2] is one such initiative that could be adapted for the UK environment. Avinor and partners' efforts in these areas have shown some innovation. International PSOs have occurred elsewhere across Europe, and may be useful particularly in advance of an expanded Heathrow, where access to other hubs such as Dublin, Amsterdam, Paris and Frankfurt has an important role to play.
- Suitable ownership of infrastructure can be both a stimulant (in case of public ownership of niche aircraft types) or inhibition to competition-e.g. if the incumbent operator owns key fulfilment elements such as hangarage.

We have noted more local challenges surrounding PSOs, and it is not clear what DfT in isolation could do to address them. However, there are issues that a regional aviation futures working group could consider. These include:

- Airlines struggle to justify investment in new aircraft for fear of being undercut at the next tender round by a competitor offering an older compliant aircraft. Currently four years is the maximum length for an award of a PSO. That is often impractical to fully depreciate a 'new' aircraft asset.

2 The Norwegian's Managing Authority is formally EFTA (not the EU) and the Northern Norwegian Counties are low density population areas with an average population density of 4.2 inhabitants per km² thereby falling within the definition of least populated regions as set out by the Chapter of the Authority's State Aid Guidelines on national regional aid ("the Regional Aid Guidelines"). Moreover, they face depopulation, and this was used as a further justification for the intervention.

- Some routes which could be suitable for PSOs would involve two or more different Councils, for example Oban to Barra. However, differing concepts of the role of, and subsidy levels available for, PSOs make it difficult for Councils to work together on such routes.
- Funding challenges cause downward pressure on service renewal specifications, particularly when spending could be directed to other Council programmes and Councils have no statutory obligation to provide air services.

2. REGIONAL CONTEXT AND BACKGROUND

SUMMARY

- **Unlike elsewhere in the UK the public sector has a significant role in owning and operating airports and providing financial support to air services.**
- **The Highlands and Islands' low and sparsely distributed population results in small scale local business markets and service provision. Thus, sustainable economic growth depends on accessing commercial opportunities and services in other areas.**
- **The region hosts a number of sectors of strategic importance to the UK economy. They include energy, food & drink and tourism each of which is dependent on good international connectivity.**
- **However, it is peripheral to other parts of Scotland and even more so to other parts of the UK. Distances and surface travel times are long-especially to/from the islands where infrequent ferry services are common.**
- **Hence airports and air services are essential elements of the transport infrastructure required to overcome these challenges, including enabling day trips to main centres.**

2.1 INTRODUCTION

2.1.1 HIAL is a public corporation wholly owned by the Scottish Ministers. The company operates and manages 11 Airports at Barra, Benbecula, Campbeltown, Dundee, Islay, Inverness, Kirkwall, Stornoway, Sumburgh, Tiree and Wick John O'Groats. HIAL's airports are vital to the social and economic welfare of the areas they serve, However, they are loss making, and are supported by subsidy from Scottish Government in accordance with Section 34 of the Civil Aviation Act 1982.

2.1.2 HIE is a Scottish Government economic and community development agency. It covers a diverse region which extends from Shetland to Argyll and parts of North Ayrshire, and from the Outer Hebrides to Moray, covering more than half of Scotland's land mass. HIE aim is for the Highlands and Islands to be a highly successful and competitive region in which increasing numbers of people choose to live, work, study and invest.

2.1.3 HITRANS is one of seven Regional Transport Partnerships in Scotland which were established through the 2005 Transport (Scotland) Act. It is the statutory regional transport partnership covering Eilean Siar, Orkney, Highland, Moray and the vast majority of Argyll & Bute.

2.1.4 HITRANS brings together local authorities and other key stakeholders to take a strategic approach to transport. It has a range of powers, including:

- Requiring funding from its member councils.
- Giving grants and loans in order to implement the regional transport strategy.
- Borrowing money for specific capital expenditure.
- Participating in Community Planning.

2.1.5 Information on the three bodies' strategic objectives is given in Appendix 1.

2.1.6 In addition, our response has been informed by consultations with a range of regional stakeholders. The consultees are listed at Appendix 4.

2.1.7 The profile information in this Chapter is drawn from a number of the studies which are listed in Appendix 3. In particular:

- Socio-Economic Case for Retention of Highlands and Islands APD Exemption, HITRANS (Reference Economic Consultants) 2019.

- Economic and Social Impact of Inverness Airport, HIE (ekosgen and Reference Economic Consultants) 2018.
- Appraisal of Inclusion of All Business Travel Within the Air Discount Scheme, HITRANS 2016 (Reference Economic Consultants).

2.2 DISTINCTIVE FEATURES OF HIGHLANDS AND ISLANDS AVIATION

2.2.1 There are several exceptional aspects to aviation in the Highlands and Islands. First, in terms of infrastructure and other assets:

- A large number of airports per capita. That is mainly because of the archipelago nature of the terrain, a relatively low population and a large landmass.
- Many of the airfields have short runways (less than 1,200 metres) and basic infrastructure that require specialist aircraft to operate.
- Public acquisition of niche aircraft types-e.g. Twin Otter (Scottish Government via HIAL) and BN2 Islander (Shetland Islands Council).

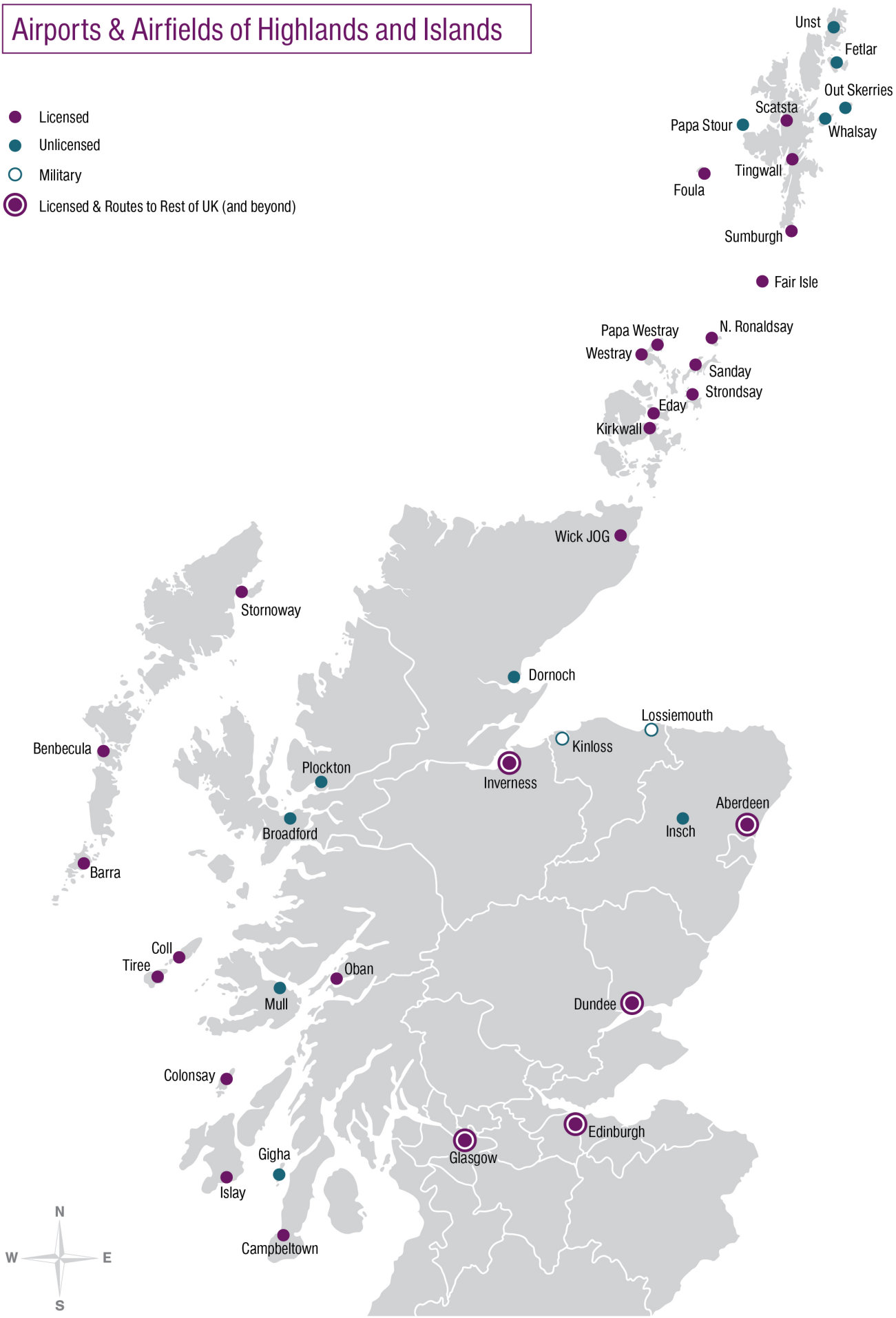
2.2.2 Second, the essential role of the public sector in aviation. The Green Paper notes that "The UK aviation market operates predominately in the private sector". However, in the Highlands and Islands:

- There is public ownership of HIAL (by Scottish Government) and Council run airports and airfields. Only some unlicensed airfields and Scatsta Airport (in Shetland) are in private hands.
- Many intra-Scottish air services operate under PSO specification and the Highlands and Islands has by far the highest number of PSOs of any parts of the UK.
- Scottish Government fund the Air Discount Scheme (a social inclusion measure) which reduces fares for local residents and other defined categories of traveller in designated areas.
- There is particularly high usage of intra Scottish air services by public services such as health, education and public administration.
- Air passenger Duty (APD) is not charged on outbound non-PSO passenger flights from the region, helping to sustain the network of commercial services.

2.2.3 The following table and map provide some key information on the airports and airfields in our region.

Name	Length (Metres)	Service Status	Ownership
Barra	1,500	PSO	HIAL
Benbecula	1,685	PSO/Open Market	HIAL
Campbeltown	3,049	PSO	HIAL
Colonsay	500	PSO	Argyll & Bute Council
Coll	500	PSO	Argyll & Bute Council
Dornoch	775		The Highland Council
Dundee	1,400	PSO	HIAL
Eday	518	PSO	Orkney Islands Council
Fair Isle	486	PSO	RSPB / Shetland
Fetlar	481		Shetland Islands Council
Foula	548	PSO	Shetland Islands Council
Gigha Island	720		Private
Glenforsa (Mull)	792		Argyll & Bute Council
Insch	547		Private
Islay	1,545	Open Market	HIAL
Inverness	1,887	Open Market	HIAL
Broadford	771	Upgrade	The Highland Council
Kirkwall	1,183	Open Market/ PSO	HIAL
Lerwick/Tingwall	764	PSO	Shetland Islands Council
N. Ronaldsay	560	PSO	Orkney Islands Council
Oban (North Connel)	1,264	PSO	Argyll & Bute Council
Out Skerries	365	PSO	Shetland Islands Council
Papa Stour	440	PSO	Shetland Islands Council
Papa Westray	500	PSO	Orkney Islands Council
Plockton	597		The Highland Council
Sanday	543	PSO	Orkney Islands Council
Scatsta	960	Oil Operated	Oil Consortium
Stornoway	2,315	Open Market/ PSO	HIAL
Stronsay	540	PSO	Orkney Islands Council
Sumburgh	1,180	PSO/Open Market	HIAL
Tiree	1,472	PSO	HIAL
Unst	640		Shetland Islands Council
Westray	535	PSO	Orkney Islands Council
Whalsay	457		Shetland Islands Council
Wick John O'Groats	1,825	Open Market	HIAL
RAF Lossiemouth	2,847	Fast Jets	MOD
Ex RAF Kinloss	2,375	Reserve airfield	MOD

Airports & Airfields of Highlands and Islands

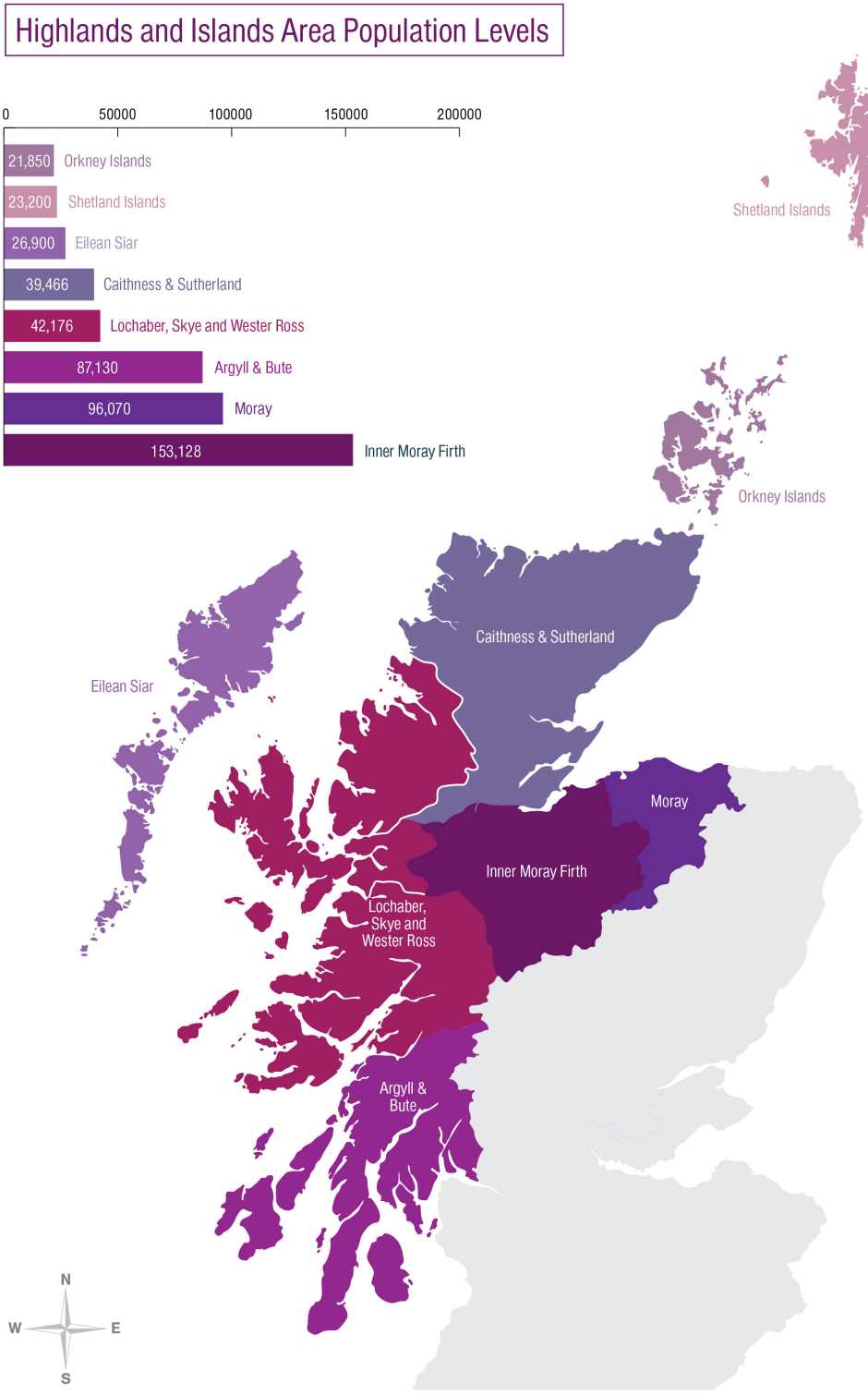


2.3 INVERNESS AIRPORT

2.3.1 A Low Catchment Population Across a Large Area

2.3.1.1 Inverness Airport's catchment area covers the two local authority areas of Highland and Moray. Its total population is around 330,000 people-i.e. just 6% of all Scottish residents.

2.3.1.2 This results in a low population density given that the catchment area covers more than one third (36%) of the total area of Scotland. The catchment area's population density is only 19 persons per square kilometre. That is significantly lower than the figure of 65 for Scotland. Only four Scottish local authority areas have a lower population density than the catchment area.



2.3.1.3 Moray accounts for around 96,000 of the catchment area's population. The remaining 234,000 are in Highland, although they are not distributed evenly, as follows:

- Inner Moray Firth: 153,000.
- Lochaber, Skye and Wester Ross: 42,000.
- Caithness and Sutherland: 39,000.

2.3.1.4 Within both Caithness and Sutherland and Lochaber, Skye and Wester Ross population density is less than 6 persons per square kilometre-lower than in any Scottish local authority area.

2.3.1.5 This low population density produces a settlement pattern of small communities, often distant from each other, key markets and services. This results in additional costs in the provision of goods and services due to a lack of economies of scale and a corresponding enterprise base.

2.3.1.6 Companies in low density areas have few chances to do business with and communicate with local firms due to the small number spread across large geographical areas. This constrains business development and economic growth. Around half of HIE's designated Fragile Areas[3] (which cover the whole of the Highlands and Islands) are within Inverness Airport's catchment area.

2.3.1.7 The catchment area also has a relatively low proportion of residents aged 15-44. This group is particularly likely to include economically active individuals with families.

2.3.2 Long Distances from Main Centres and Slow Surface Transport Alternatives

2.3.2.1 The catchment area is remote from the main areas of Scottish population, the rest of the UK and mainland Europe in particular. A car journey from Inverness Airport to Heathrow Airport takes more than nine hours. By train it is between 8 and 11 hours, with only two direct services to London per day. The drive time from Moray to parts of north west England is around 9 hours when the requirement for a couple of stops is factored in. Clearly these surface journey times are not viable for many trips-and particularly so for business travellers.

2.3.2.2 Given the large size of the catchment area, some of its residents and visitors have a more than two-hour drive to Inverness Airport. Analysis has shown that of 15 settlements (i.e. towns or villages) across the catchment area one third (five) have a drive time of more than two hours from the Airport-the longest being over 2 hours and 50 minutes.

2.3.2.3 The alternative Scottish airports for the 15 settlements are even further away, with for:

- Aberdeen - most (9) settlements have a drive time of 3 hours or more, with 5 requiring a journey of 4 hours plus.
- Edinburgh - eleven settlements are 3 or more hours drive, with 3 of the settlements requiring a journey of more than 5 hours.
- Glasgow - around half the settlements have a drive of 4 hours plus, and in 3 cases it is more than 5 hours long.

2.3.2.4 The longest drive times are to/from Caithness, parts of Sutherland, Wester Ross and Skye-more than four hours to each of the three airports.

2.3.2.5 Many of the drive times from the catchment area to Glasgow Airport are longer than the equivalent road journey between Glasgow and Manchester.

2.3.2.6 The shortest public transport journey times are all longer than those by car. From the more remote settlements in the catchment area public transport tends to take at least one hour longer than the car. In addition:

- The shortest journey time may not fit well with flight arrival and departure times.
- In all cases at least one change of transport is required-and many journeys require two or more.
- Public transport from most settlements is low frequency-and particularly so in winter.

2.3.2.7 Thus, use of Aberdeen, Glasgow or Edinburgh Airports can incur significant additional travel time compared to using Inverness. Values of time per hour (rounded) for air passengers using Inverness[4] are:

- Business-UK resident £40.
- Business-foreign resident £29.
- Leisure £13.

2.3.2.8 Thus, passengers having to use an airport other than Inverness can incur significant time related disbenefits. In addition, using another Scottish airport can mean an additional overnight stay away from home. Research with

3 This designation is based on a number of criteria including geographical location, population trends, drive time to the nearest service centre, household income and unemployment rate

4 Source: DfT Aviation Appraisal Values of Time for Inverness Airport Passengers: 2014. The figures shown are in 2018 values and prices

Highlands and Islands business air passengers indicates that this incurs an additional cost per night of £100-£120.

2.4 OTHER HIGHLANDS AND ISLANDS SCHEDULED AIR SERVICES

2.4.1 Very Low and Sparse Populations

2.4.1.1 As shown on the earlier map the catchment area populations for other Highlands and Islands airports are very low. Those for intra-Scottish flights from Wick John O'Groats, Sumburgh, Kirkwall and Stornoway are between 22,000 and 40,000 residents.

2.4.1.2 At the other end of the scale the catchment area populations for flights from Benbecula, Barra, Tiree and Islay range from less than 1,000 to 5,000 residents. All the isles served by the internal Orkney and Shetland flights have populations of less than 600 people.

2.4.1.3 This is reflected in low population densities in the catchment areas. Shetland has the highest (19 person per sq km) but this is far below the Scottish figure (65).

2.4.2 Very Long Distances from Main Centres and Slow Sea and Road Transport Alternatives

2.4.2.1 Surface transport alternatives to air are long. In most cases they include slow and infrequent ferry crossings to/from the islands. This is compounded where passengers use public transport to reach their mainland destination. That is because it has a longer journey time than car travel, while services are generally infrequent.

2.4.2.2 In most cases the air services perform better in terms of service frequency (e.g. those from Stornoway and Shetland) compared to ferry travel. The flight times are all short-between 45 minutes and 1 hour 25 minutes.

2.4.2.3 The surface journeys are much longer-all bar one is more than 4 hours duration. This reflects the long surface distances involved and the need to travel by ferry in almost all cases. Indeed, most journeys take over 6 hours.

2.4.2.4 No values of time are available for users of all the air services included in the Table below. However, as noted earlier values of time per hour (rounded) for passengers using **Inverness** are:

- Business – UK resident £40.
- Business – foreign resident £29.
- Leisure £13.

2.4.2.5 This points to the significant value of time savings per trip offered by air travel in the Highlands and Islands-and for business passengers in particular.

SURFACE TRANSPORT ALTERNATIVES TO SELECTED AIR ROUTES							
	Air	Ferry and Car/Ferry and Public Transport					
Journey	Flights per day (Most days)	Journey time: Hours:minutes	Sailings per day (Most days)	Journey time: Hours:minutes (Ferry and Car)	Time saving by air	Journey time: Hours:minutes (Ferry and Public Transport)	Time saving by air
Uist (Benbecula) to Glasgow Airport	2	0:55	3	6:43	5:48	9:36 to 9:51	8:41 to 8:56
Islay to Glasgow Airport	2	0:40	5	4:09 to 4:34	3:29 to 3:54	5:27 to 6:38	4:47 to 5:58
Orkney to Aberdeen Airport	4	0:50	3 per week	7:32	6:40	8:17	7:27
Orkney to Inverness Airport	2	0:45	6	3:47 to 3:59	3:02 to 3:14	6:48 to 8:16	6:03-7:31
Stornoway to Inverness Airport	3	0:40	2	3:56	3:16	4:51	4:11
Stornoway to Glasgow Airport	4	0:55	2	6:55	6:00	8:38	7:43
Shetland to Edinburgh Airport	3	1:25	1	14:18 to 15:48	12:53 to 14:23	15:42 to 17:42	14:17-16:17
Shetland to Aberdeen Airport	5	1:00	1	12:17 to 13:47	11:17-12:47	13:04 to 15:04	12:04-14:04
Wick to Edinburgh Airport	1	1:05	Road journey	4:53	3:48	7:54 to 9:53	6:49 to 8:48

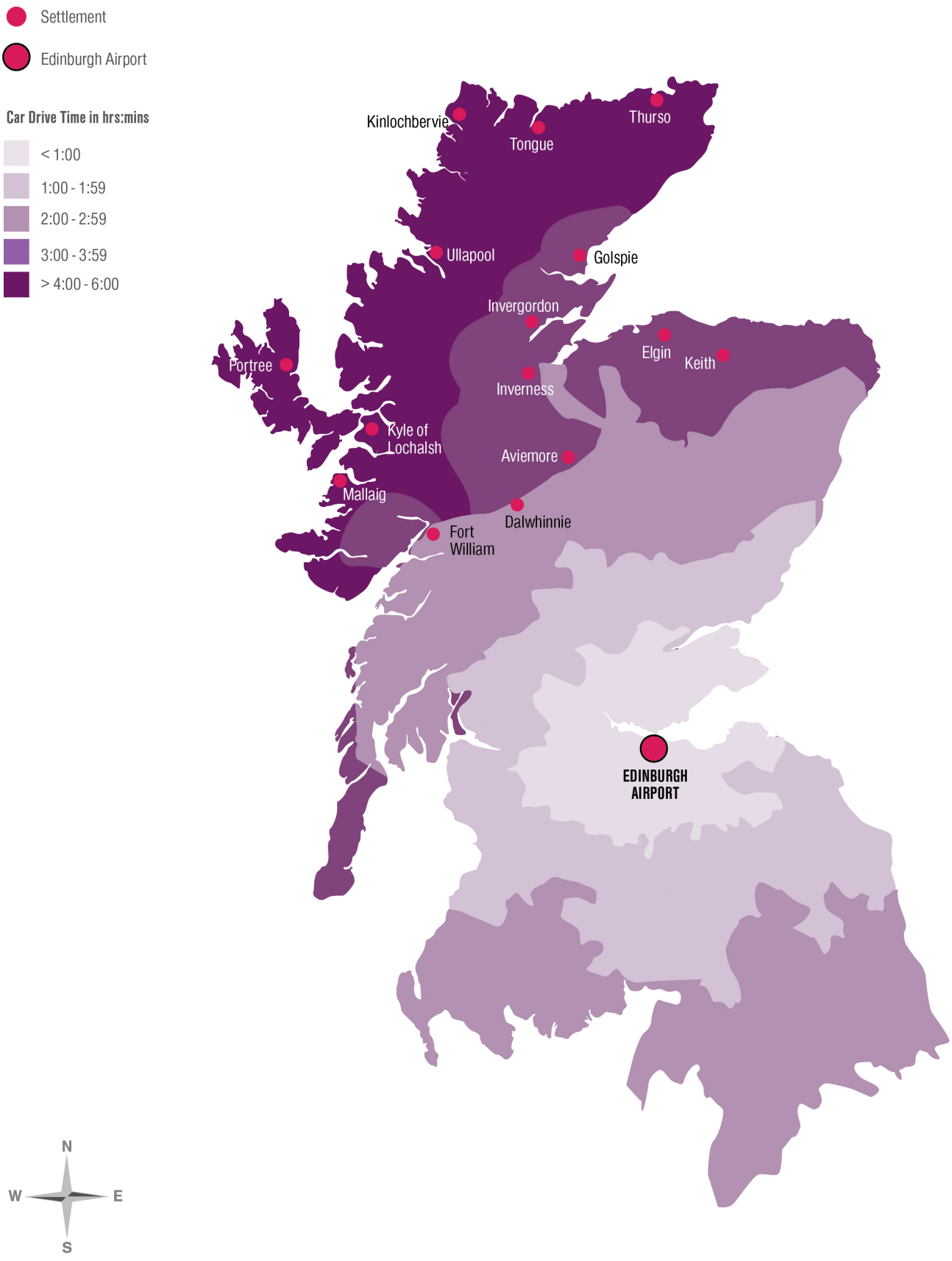
Source: Summer 2019 ferry and air timetables, RAC Route Planner and Traveline Scotland

2.4.2.6 Importantly, almost all the air services shown in the Table offer a day trip opportunity. This can only be achieved on a few of the surface alternatives (e.g. to/from Islay). However, that would mean a total journey time of more than 8 hours in a single day. The value attached to the ability to make a day trip is over and above the travel time savings per se.

2.4.2.7 While Wick John O'Groats and Campbeltown airports are on the Scottish mainland they also have long surface journey times. For example, driving from Wick John O'Groats to Edinburgh takes over 5 hours. To better illustrate these challenges we have charted the drive times from Edinburgh Airport over a map of northern Great Britain.

2.4.2.8 The map illustrates 1, 2, 3 and 4 hour free-flow drive-time isochrones. On longer legs comfort and refuel breaks also have to be factored in by travellers.
With some locations beyond the four hour mark, they are in effect further away from Edinburgh Airport than either Manchester or Leeds.

Free flow drive-time isochrones from Edinburgh Airport - One, two, three and four hour drive times.



3. CURRENT ROLE AND CONTRIBUTION OF AIR SERVICES IN THE HIGHLANDS AND ISLANDS

3.1 INVERNESS AIRPORT

SUMMARY

Many of the catchment area's important sectors are heavily reliant on interaction with businesses at a national and international level.

There has been good growth in passenger numbers and services at Inverness. Yet gaps in provision remain. Consequently, leakage to other Scottish airports is still significant. This incurs additional financial and time costs for business and leisure passengers. It also reduces the amount of time visitors can spend in the region.

The Heathrow and Amsterdam services are vital given the very limited direct international flights from Inverness. This includes the significant amount of visitor spend they generate. Their traffic profiles and the connections they provide are largely complementary rather than competing.

The two routes account for more than half of all connecting flights from Inverness and more than 80% of connections with destinations outside Europe. Experience on the Amsterdam route shows that a full-service airline and a frequency of more than one rotation per day significantly increases all traffic types-including the volume of connecting passengers.

The flights to the Outer Hebrides and Orkney/Shetland support Inverness's role as the regional centre by facilitating public sector staff travel and inbound health patient trips.

Inverness Airport is now a major employment site, a generator of significant tourism activity, and the means of business access to markets outside Scotland. The Heathrow and Amsterdam services are a crucial part of this given they allow ready access to global markets.

The main business benefits from the Airport and its route network are increased staff productivity, talent attraction/retention and supporting export activity. They are viewed as essential to attracting inward investment and international students. That requires business confidence that the two hub services have a secure future at an adequate frequency and with suitable timings.

The significant amount of inbound passengers mean that Inverness's air services are "two way streets" offering benefits to businesses and passengers at both ends of the routes.

3.1.1 A Small But Outward Facing Economy

3.1.1.1 There are a number of economic specialisms/strengths in the catchment area. Many of these sectors are heavily reliant on customers, suppliers, advisers and funders from outside the Highlands and Islands and Scotland- and internationally. This reflects the relatively small local population and business base (just 6% of Scotland's jobs are in the catchment area).

3.1.1.2 Thus, the key sectors tend to be intensive users of air services-e.g. tourism, life sciences, manufacturing (notably food & drink), primary production/processing, nuclear industry. These include major international companies such as Lifescan, Diageo, Mowi (aquaculture) and Baxters.

3.1.1.3 Some of these sectors are major employers in the catchment area. For example, food & drink has 18,000 direct jobs-one in six of the sector's Scottish total. Sustainable tourism has 19,000 direct jobs - 9% of the Scottish total.

3.1.1.4 Many catchment area companies operate in global markets. A recent survey of businesses that use the Airport showed that more than one third are exporters. Their main markets are mainland Europe and the United States. A number of these companies are inward investors to the Highlands and Islands.

3.1.1.5 The most important trading markets for HIE's Account Managed businesses include both the EU, and the rest of the world including United States and China.

3.1.1.6 The main economic challenges the Airport catchment area faces are, first, an over-representation of lower value-added sectors. This results in relatively low GVA/ productivity and wages.

3.1.1.7 Second, and in the rural parts in particular, a higher cost of living than in urban areas.

3.1.2 A Growing Range of Cross Border Air Routes Including International and Hub Services

3.1.2.1 There was significant growth (30%) in the number of terminal passengers at Inverness between 2008 and 2017. This amounted to an increase of over 200,000 passengers: from around 670,000 to 875,000. The level of growth was above that seen at both Glasgow and Aberdeen airports in the same period.

3.1.2.2 Inverness' passenger growth since 2009 has been aided by the introduction of an Amsterdam service plus the reinstatement of flights to Heathrow and Dublin. There has been also good growth in carryings on the Gatwick, Luton and Manchester routes.

3.1.2.3 However, Inverness's route network continues to face challenges/limitations:

- The inability of business travellers to do day trips on some routes-notably inbound from London.
- Many routes operate at no more than single flight per day all year round. That includes significant business destinations such as Bristol and Birmingham, to which day trips are not possible and flight times are not business-oriented.
- There are all year round services to only two non-UK airports.
- Overall passenger volumes are highly dependent on a small number of routes and airlines.

3.1.2.4 The services to the two hubs at Heathrow and Amsterdam are vital given the very limited direct international flights from Inverness.

3.1.2.5 Inverness Airport very clearly serves the north west mainland of Scotland as a whole. More than one third (300,000) of its passengers have a surface origin in either Moray, Caithness and Sutherland or Lochaber, Skye and Wester Ross.

3.1.2.6 Inverness Airport is distinct in that most (around 55%) passengers are inbound to the area rather than being local residents. Some 14% of all passengers through the airport are from overseas.

3.1.2.7 Another feature is the significance of London routes in passenger carryings, as the 2018 profile shows:

- London: 507,000 (57% of scheduled passengers).
- UK regional: 232,000 (26%).
- International: 97,000 (11%).
- Islands: 50,000 (6%).

3.1.3 A Growing Demand for Air Travel to/from the Catchment Area but with Increasing Leakage

3.1.3.1 Table 1 shows that demand for air travel has increased since 2009. That is both for Inverness Airport's flights and those via the other three main Scottish airports.

Table 1: Total market for flights with a surface origin or destination in Inverness Airport catchment area

Airport Used	2009		2013		2018	
Inverness	578,302	64%	602,046	55%	886,482	63%
Aberdeen/Edinburgh/Glasgow	319,770	36%	492,644	45%	526,942	37%
Total Market	898,072	100%	1,094,690	100%	1,413,424	100%

3.1.3.2 The total market grew by more than half (57%) between 2009 and 2018. Most of this increase has been since 2013. There was a higher growth rate in leaked traffic (65%) than for the flights using Inverness (53%) in the years to 2018. In a recent survey the vast majority of the businesses (84%) use other Scottish airports as well as Inverness for their own travel, while those other airports are also used by their business visitors. However, Inverness continues to serve more than half of the total market.

3.1.3.3 The great majority (79%) of leaked trips in 2018 were leisure rather than business (21%). The split of these trips by place of residence was:

- Outbound: 67%.
- Inbound-from overseas: 21%.
- Inbound from Rest of UK: 12%.

3.1.3.4 Thus, compared to the Inverness passengers leaked traffic is more likely to be for leisure and/or made by residents of the catchment area.

3.1.3.5 Table 2 shows that a wide range of routes and destination airports are used for these flights.

Table 2: Main routes and destination airports for leaked trips

By Passenger Numbers	Passengers		By Destination Airport	Passengers
Aberdeen-Heathrow	45,745		Heathrow	68,397
Aberdeen-Amsterdam	23,959		Amsterdam	34,849
Aberdeen-Manchester	18,583		Gatwick	22,551
Aberdeen-Sumburgh	14,756		Manchester	21,714
Edinburgh-Lisbon	13,346			
Edinburgh-Heathrow	12,361			
Glasgow-Dubai	12,089			
Aberdeen-Paris (CDG)	10,586			
Glasgow-Heathrow	10,291			

3.1.3.6 The nine top routes shown account for around only 30% of the total (527,000) leaked passengers.

3.1.3.7 The highest passenger numbers are on the Aberdeen routes. Most of the nine routes are to major hubs-and include all three Heathrow services.

3.1.3.8 In terms of individual destination airport Heathrow clearly has the highest level of passengers (over 68,000) followed by Amsterdam (c 35,000). That is despite the development of Inverness' routes to these two airports in recent years, including increased frequency.

3.1.3.8 Table 3 provides further details of the leaked traffic using these flights.

Table 3: Profile of catchment area traffic using other scottish airports

	Heathrow	Amsterdam
Business	20%	29%
Leisure	80%	71%
% of Passengers Connecting Onwards	66%	58%
By Place of Residence		
	Heathrow	**Amsterdam**
Catchment Area	74%	71%
Rest of UK	8%	0%
Overseas	17%	29%

It shows that:

- The traffic is largely leisure rather than business.
- More than half of the passengers are connecting onwards at Heathrow or Amsterdam.
- More than 70% are residents of the catchment area.

3.1.4 The Vital Role of Inverness's Heathrow and Amsterdam Services

3.1.4.1 Complementary Roles of the Heathrow and Amsterdam Services

3.1.4.1.1 Table 4 compares the traffic profile of the two Inverness hub services.

Table 4: Inverness hub services (000 passengers)

	Heathrow	Amsterdam	Inverness
Total Passengers	**97**	**81**	**886**
Business	**13**	**22**	**263**
Leisure	**85**	**60**	**623**
Outbound Business	7	13	185
Inbound Business	5	9	78
Outbound Leisure	22	20	177
Inbound Leisure	62	40	446
Connecting-All	**47**	**30**	**137**
Connecting-Europe	15	18	88
Connecting-Rest of the World	32	12	49

3.1.4.1.2 Apart from the higher carryings on the Heathrow service the main distinctions are:

- Greater importance of business passengers on Amsterdam, and greater importance of leisure on Heathrow-notably inbound leisure.
- Greater number of connecting passengers on Heathrow, especially with airports outside Europe.

Passengers from Inverness to Heathrow and Amsterdam

3.1.4.1.3 Table 5 provides further information on the final destinations of connecting passengers outside Europe. The most significant differences between the two routes are highlighted in yellow.

Table 5: Final destination of passengers connecting with airports outside Europe

	Business					Leisure			
	UK		Foreign			UK		Foreign	
	Amsterdam	Heathrow	Amsterdam	Heathrow		Amsterdam	Heathrow	Amsterdam	Heathrow
Eurasia*	539	121	1,252	288		0	0	646	234
Asia	529	634	636	265		494	1,596	662	2,897
Africa	432	387	0	0		403	1,089	0	625
Australasia/ Pacific	0	0	0	0		109	606	0	234
North America	512	824	109	597		310	8,598	4,224	10,772
Latin/South America	0	121	0	0		0	265	442	0
Middle East	92	829	0	144		0	355	202	270

**Includes countries such as Russia, Ukraine and Turkey*

3.1.4.1.4 Heathrow is relatively important for:

- Business travel to/from North America and the Middle East.
- Leisure trips to/from North America and Asia.

3.1.4.1.5 In contrast, Amsterdam is relatively important for trips to/from Eurasian countries-both business and leisure.

3.1.4.2 Inbound Tourism Impacts of the Two Services

3.1.4.2.1 The two hub routes account for around 30% (£25 million) of the total spend by inbound visitors to the Inverness Airport catchment area. Heathrow accounts for £14.7 million (second highest of the 12 routes after Gatwick) and Amsterdam for £10.3 million (fifth highest).

3.1.4.2.2 The two routes' significant visitor spend partly reflects the average length of stay of their inbound passengers:

- Amsterdam 8.8 days-the highest of any Inverness route.
- Heathrow 8.1 days-the third highest.

3.1.4.2.3 This compares to an average stay of 5.4 days across all Inverness routes.

3.1.4.3 The Heathrow and Amsterdam Routes Are Key to International Connections

3.1.4.3.1 In 2018, some 16% (around 137,000) of all passengers on Inverness's cross-border services were connecting with an international destination. As shown at Table 6 most (64%, c87,000) were travelling within Europe with the remaining 36 % (c49,000) connecting with flights to the rest of the world.

Table 6: Connecting passengers on Inverness cross-border routes

Route	Total Connecting	Share	Europe Connecting	Share	Rest of World Connecting	Share
Heathrow	46,756	34%	15,004	17%	31,752	64%
Gatwick	33,324	24%	30,203	35%	3,121	6%
Amsterdam	30,403	22%	18,809	22%	11,594	24%
Luton	18,834	14%	17,829	20%	1,005	2%
Manchester	5,601	4%	3,952	5%	1,649	3%
Bristol	811	1%	811	1%	0	0%
Birmingham	760	1%	760	1%	0	0%
Dublin	159	<1%	0	0%	159	<1%
Total	**136,648**	**100%**	**87,368**	**100%**	**49,280**	**100%**

3.1.4.3.2 The key point is Heathrow and Amsterdam's significant share of connecting traffic. Together they account for:

- Over half (56%) of all connecting traffic on Inverness flights.
- Around 40% of all passengers connecting with another airport in Europe.
- The vast majority (88%) of rest of the world connections.

3.1.4.3.3 Heathrow alone accounts for:

- More than one third of all connecting passengers (including 45% of foreign leisure travellers).
- Approaching two thirds of rest of the world connections.

3.1.4.3.4 Almost half (48%) of Heathrow passengers are connecting (37% on the Amsterdam service).

3.1.4.3.5 Approximately one third of overseas business passengers are from outside the EU. Finally, more than half the overseas leisure visitors using Inverness are from non-EU countries.

3.1.4.3.6 Research with businesses and stakeholders has identified the importance of connections at Heathrow and Amsterdam in facilitating, for example:

- Life science businesses' travel to the US west coast.
- Oil and gas companies/workers travel across the globe-e.g. Central Asia, South America.

3.1.4.4 The Significant Difference Made by Frequency and Operator

3.1.4.4.1 In 2013 Inverness-Amsterdam was operated by Flybe at a single rotation per day. By 2018 the service had developed to a KLM operating providing two rotations per day for part of the year. Table 7 summarises the changes in carryings between the two years.

Table 7: Inverness-Amsterdam profile: 2013 and 2018 (000 passengers)

	Flybe 2013	KLM 2018	Change
Total Passengers	**32**	**81**	**+49**
Business	9	22	+13
Leisure	23	60	+36
Outbound Business	6	13	+7
Inbound Business	3	9	+6
Outbound Leisure	8	20	+12
Inbound Leisure	15	40	+25
Connecting-All	**13**	**30**	**+17**
Connecting-Europe	6	18	+12
Connecting-Long Haul	7	12	+5

3.1.4.4.2 Passenger numbers increased by more than 2½ times. Some of this may be due to underlying market growth. However, the scale of increase is such that the higher frequency and change of operator, with connecting codeshare services via Amsterdam, were major drivers of the step change in traffic.

3.1.4.4.3 Of note are the:

- Significant proportionate increase in business traffic.
- Absolute increase in inbound leisure passengers.
- More than doubling of connecting traffic, indicating improved access to other airports in Europe and across the rest of the world.

3.1.4.4.4 Thus, it could be argued that the recently introduced double daily Inverness-Heathrow service will have a much greater impact than the single rotation which offered fewer connecting flights and codeshare agreements.

3.1.4.4.5 Unlike the actual changes seen on Inverness-Amsterdam this cannot be proven at this time (the double daily service only began in April 2019). However, the following comparison of the two Aberdeen-Heathrow services supports the case, as set out at Table 8.

Table 8: Aberdeen-Heathrow services profile: 2018 (000 passengers)

	BA	Flybe	Difference
Total Passengers	**556**	**120**	**+436**
Business	224	58	+167
Leisure	331	62	+270
Connecting-All	**279**	**25**	**+254**
Connecting-Business	102	9	+93
Connecting-Leisure	177	16	+161
Connecting-Europe	103	4	+99
Connecting-Long Haul	176	22	+154

3.1.4.4.6 These services are currently operated by:

- Flybe-3 return flights per weekday.
- BA-6-7 return flights per weekday.

3.1.4.4.7 The Table shows the vastly greater passenger numbers on the BA service across all the measures-and for connecting passengers in particular.

3.1.5 Supporting Inverness's Role as A Regional Centre

3.1.5.1 Another distinctive feature of Inverness' services are the flights to the islands. These services to Orkney, Shetland and the Outer Hebrides operate on a commercial basis (i.e. they are not PSOs).

3.1.5.2 Business travel accounts for a significant proportion (around half) of the passengers on these services. As well as the private sector this includes organisations which require staff to travel between the regional centre of Inverness and the islands. For example, Scottish Fire and Rescue Service, Police Scotland, NHS, local councils and HIE.

3.1.5.3 Travel by island residents to Inverness is to access health and education facilities as well as visiting friends and relatives. They are also used by island residents who work away from home for periods-e.g. offshore, merchant navy.

3.1.5.4 The effectiveness of the Inverness to Orkney and Shetland routes is reduced by there being only a single rotation per day in the winter. Thus, a day trip is not possible in either direction at that time of year.

3.1.6 Inverness Airport as A Major Employment Site and Inbound Tourism Generator

3.1.6.1 On-Site Impacts

3.1.6.1.1 Inverness Airport is a very significant employment site within the Highlands and Islands. Businesses located at the airport site or immediately adjacent to it employ over 550 Full-Time Equivalent (FTE) jobs. Around one quarter of these employees live outside the local (i.e. Inverness & Nairn) area.

3.1.6.1.2 These jobs have an average wage of over £34,000 per FTE. That is higher than the average gross annual pay for full-time employees in both Scotland and the Highlands and Islands.

3.1.6.1.3 Notable aviation-related employers include: Dalcross Logistics, PDG Helicopters, Bristow's regional search and rescue base, and Marine Scotland's reconnaissance aircraft.

3.1.6.1.4 When indirect and induced impacts are included the Airport site generates:

- Catchment area: 748 FTEs and £23 million of employee income.
- Scotland: 916 FTEs and £27 million of employee income.

3.1.6.2 Off-Site Impacts

3.1.6.2.1 Off-site impacts are generated by the spend of inbound visitors to the catchment area who arrive and/or depart via Inverness Airport. Their total annual spend is estimated as £89 million. Around 30% of this is from visitors using the regional UK and islands routes, while over one quarter comes from visitors on the two hub routes (Heathrow and Amsterdam).

3.1.6.2.2 Approaching 40% of the total visitor spend is with businesses outside the Inner Moray Firth area. Some 25% of it is in either Caithness and Sutherland or Lochaber, Skye and Wester Ross. This again highlights the airport's

impact in the more remote and fragile parts of the catchment area.

3.1.6.2.3 The total visitor spend supports around 1,775 FTE jobs (direct, indirect and induced) in the catchment area.

3.1.6.2.4 The overall impacts of Inverness Airport reflect the general evidence for the economic contribution of regional air services as noted by Peak Economics[5]: *"There seems a consensus in the literature that airports in peripheral regions have some stimulating effect on employment and population growth … there are positive economic impacts in the vicinity of airports from good quality regional air connectivity".*

3.1.6.2.5 Further, research by Baker, Merkert and Kanruzzman[6] has developed the case for catalytic effects, by providing the first empirical evidence of strong short and long run bi-directional causality between enhanced regional air transport and economic growth based on an examination of 88 regional airports in Australia over a period of 1985–86 to 2010–11.

3.1.7 Catalytic Impacts

3.1.7.1 Survey evidence shows that the main business benefits from the presence of the Airport and its route network are increased:

- Productivity through reduced travel time and cost savings.
- Ability to attract and retain staff.
- Ability to sell to the rest of the UK and global markets.
- Access to external expertise.

3.1.7.2 Increasing productivity is a key aim for UK Government, as part of rebalancing the economy through, as the Green Paper notes, "economic growth of the regions".

3.1.7.3 It is also an essential part of Scottish Government's Scotland's Economic Strategy which notes that improving productivity "is the principal long-term driver of economic growth".

3.1.7.4 Research with businesses and stakeholders has also shown that Inverness Airport is viewed as being:

- Critical for regional economic development and growth.
- A contributor to growing confidence in the local economy and supporting attraction of inward investment. Inverness Airport is cited in every inward investment proposition by HIE as reference to Inverness' international routes provides the right image and messaging to potential investors.
- Increasingly important in attracting international students and generally supporting the growth of the University of the Highlands and Islands, an anchor institution in the region.
- A positive influence on retaining population and thus addressing the ongoing issue out-migration of young people.

3.1.7.5 More than 25% of Inverness's passengers are travelling to visit friends and relatives. As well being a social impact these and other leisure trips by catchment area residents also support economic development. That is by making the area a more attractive place to live and thus helping employers to attract and retain staff.

3.1.8 Benefits to Passengers and Businesses Elsewhere in the UK and Overseas

3.1.8.1 The available evidence base shows Inverness Airport's benefits to its catchment area's businesses and residents and to the wider Scottish economy. However, the significant number of inbound passengers also generates benefits for businesses and individuals elsewhere:

- Business users-increased sales, effective management of multi-site organisations, meeting investors and other business partners, networking, etc.
- Leisure travellers-welfare benefits including for both holidaymakers and those making VFR trips.

3.1.8.2 Thus, the various Inverness air services are "two way streets" offering benefits to businesses and passengers at both ends of the routes.

3.1.8.3 Table 9 shows that a significant proportion of Inverness Airport passengers live outside the catchment area-and in the rest of the UK in particular.

5 Wider Economic Impacts of Regional Air Connectivity (Peak Economics, for DfT, 2018)

6 Journal of Transport Geography 43, 140-150

Table 9: Inbound passengers to Inverness Airport

	All Inbound	Business Inbound	Leisure Inbound
Total	**524,077**	**78,104**	**445,973**
Share of All Inverness Passengers	59%	30%	72%
From the Rest of UK	395,409	59,234	336,175
From Overseas	128,668	18,870	109,798

3.1.8.4 As shown:

- More than half of all Inverness passengers are inbound.
- UK inbound leisure passengers account for more than two thirds of all Inverness leisure passengers.
- Approaching one third of all Inverness business passengers are inbound

3.1.8.5 Table 10 shows that a range of routes contribute to the benefits that accrue to inbound passengers.

Table 10: Most important routes for inbound traffic by number of passengers

Foreign Business	Foreign Leisure	Rest of UK Business	Rest of UK Leisure
Amsterdam	Amsterdam	Gatwick	Gatwick
Heathrow	Heathrow	Bristol	Luton
Luton	Gatwick	Manchester	Bristol

3.1.8.6 The routes include the two hubs, the other two London services and regional routes from Manchester and Bristol.

3.1.9 Other Developments

3.1.9.1 Inverness Airport Business Park (IABP) is adjacent to the Airport site. It is a joint venture between Moray Estates, HIAL and HIE, with the support of The Highland Council.

3.1.9.2 IABP is a planning approved and master planned mixed-use commercial property development of 275 acres with 36 acres of serviced land available for occupation. It currently houses a Co-op distribution centre, with a 130-bedroom Courtyard by Marriott hotel opening in Q4 of 2019.

3.1.9.3 Moray Estates has also pioneered development of a new town nearby called Tornagrain. It has started life as a village which aims to expand in planned phases over 50-60 years, ultimately becoming home to more than 10,000 people.

3.2 AIR SERVICES FROM OTHER HIGHLANDS AND ISLANDS AIRPORTS

SUMMARY

The catchment areas of the other Highlands and Islands airports face similar challenges to those in the Inverness catchment-but to a much more acute degree. In particular: remoteness from main commercial and service centres; and an overrepresentation of economic sectors with relatively low GVA and wages, in a context of a relatively high cost of living. Many key sectors are intensive users of air services and/or heavily reliant on external markets and investment.

The air services are used to undertake trips for: health, education and VFR; inbound tourism; less than daily commuting to work (e.g. offshore); general business travel; and outbound leisure.

Despite the Air Discount Scheme and some PSO services fares are generally viewed as high, particularly for short notice trips and business travel. Each airport has a limited number of destinations and low frequencies on most routes. This includes some services to main Scottish cities where a day trip is not possible.

Overall fragility of provision is increased by almost all HIAL airports being served by a single airline (Loganair).

3.2.1 Small but Specialised Outward Facing Economies

3.2.1.1 The economic specialisms/advantages of the airports' catchment areas include manufacturing, nuclear industry (based around the Dounreay site), fishing and aquaculture, scientific research and development, and media. Tourism and energy (including renewables) are also particularly important to some of the areas.

3.2.1.2 These sectors are largely intensive users of air services and/or heavily reliant on external markets and investment. A 2016 survey found that over half of businesses that use the commercial air services generate more than 25% of their sales from external markets. Hence the importance of air transport to their future growth and development.

3.2.1.3 The airports' catchment areas face similar challenges to those in the Inverness catchment-but to a much more acute degree. They are:

- Remoteness from the main commercial and service centres of Scotland, and even more so from the rest of the UK.
- Very low population densities, constraining economic development.
- Small business bases, leading to a need to travel elsewhere to access personal services (e.g. health) and for companies to access markets/business partners.
- A relatively low proportion of residents aged 15-44. This reduces the pool of workers, businesses and families required for sustainable economic growth.
- An overrepresentation of economic sectors with relatively low GVA and wages, in a context of a relatively high cost of living.

3.2.2 Air Services Vital to Sustainable Economic Development Despite Thin Routes and Some High Fares

3.2.2.1 These challenges, and the vital importance of air transport, is evidenced by Scottish Government's Air Discount Scheme (ADS). This provides a reduction of 50% on core air fares for local residents making non-business flights on internal Scottish services. There are people with a permanent/main residence in Colonsay, Orkney, Shetland, Eilean Siar, Islay, Jura, Caithness or most areas of Sutherland.

3.2.2.2 ADS is also provided for:

- Non-resident students in the eligible areas.
- Business flights made by local residents who work for third sector organisations.

3.2.2.3 This makes air travel more affordable. Thus, ADS allows greater use of air services to access key centres and, in turn, helps to contribute to sustaining the internal Scottish air network.

3.2.2.4 In addition, PSOs are funded by:

- Scottish Government: for services between Glasgow and Barra, Campbeltown and Tiree.
- Local authorities: for internal air services in Argyll & Bute, Orkney, Outer Hebrides and Shetland.

3.2.2.5 However, fare levels are still generally seen as high, by both business and leisure passengers. Previous (2016) research showed business travellers facing return air fares of between £106 and £515 on the commercially operated services. It also found that while most companies use the cheapest available, non-flexible tickets more than one third of them have to book some flights no more than two weeks in advance.

3.2.2.6 Most of the airports' routes are thin or ultra-thin. Even at the main island capital airports (Sumburgh, Kirkwall and Stornoway) only three of their 10 routes have more than 50,000 passengers. Four have fewer than 30,000.

3.2.2.7 Between them the other six HIAL airports have seven services to Scottish cities. Only two of the routes have more than 25,000 passengers per year, while three carry less than 10,000.

3.2.2.8 Each airport has a limited number of destinations and low frequencies on most routes. This includes some routes to main Scottish cities with only a single rotation and thus a day trip is not possible-e.g. Stornoway-Edinburgh, Kirkwall-Glasgow. Timings on a number of routes are limited to middle of the day operations. Wick John O'Groats has no scheduled services arrivals or departures until after midday.

3.2.2.9 The overall fragility of provision is increased by the fact that eight of the nine HIAL airports are served by a single airline (Loganair). The exception is Wick John O'Groats (Loganair and Eastern Airways).

3.2.2.10 The air services are used to undertake trips for: health, education and VFR; inbound tourism; less than daily commuting to work (e.g. offshore); general business travel; and outbound leisure.

4. REGIONAL GROWTH AND CONNECTIVITY: MAXIMISING THE ECONOMIC BENEFITS OF SCHEDULED AIR SERVICES

Air service provision in the Highlands and Islands needs to reflect the region's unique characteristics and aviation's vital role and very significant benefits. Overall this should encompass:

Schedules that meet the needs of the local economies and communities-including timings and frequencies to allow affordable day trips in both directions to/from identified key centres outside the region-and ones within it.

Inverness Airport

- Critically, services to key hubs (Heathrow, Amsterdam) at a frequency/timing/codeshares to permit both point to point trips and onward connections, with security that these services will continue to be in place.
- Air links to non-hub London airports reflecting its role as the UK capital and a major world city.
- Range of regional UK services-supporting business, personal, and tourism travel.

Other Highlands and Islands Airports

- Links to main Scottish economic, administrative and medical centres at an affordable fare cost with day trip opportunities in both directions.
- Security around the ongoing provision of the current air routes. 2018 saw the loss at very short notice of the Stornoway-Aberdeen service There are also ongoing concerns about the possible loss of both of Wick John O'Groats' services (Aberdeen and Edinburgh).

4.1 STRATEGIC FIT

4.1.1 Fully meeting these air service needs would support the strategic aims of a range of organisations.

4.1.2 Scottish Government. One of the National Transport Strategy's three Key Strategic Outcomes is *improved journey times and connections.*

4.1.3 HITRANS' draft regional transport strategy states that "Communities across the region should be able to access/be accessed affordably from the Central Belt within 2-3 hours...(and)...allow a day's business to be undertaken".

4.1.4 HIE has a vision of the Highlands and Islands in 2030. It is based on seven desired characteristics that would be found in all parts of the region. Fully meeting the stated air service needs would contribute to two of these characteristics:

- Well connected, with fit for purpose digital and transport links.
- An innovative, productive and internationally competitive business base.

4.1.5 HIE's Operating Plan also notes that "effective and efficient transport is a fundamental enabler of socio-economic development".

4.1.6 HIAL's mission is to "create social benefit and economic prosperity by building Scotland's regional network of the future".

5. REGIONAL AVIATION AND STATE AID ISSUES

5.1 JUSTIFIED AND LEGITIMATE STATE INTERVENTIONS

5.1.1 The assumption in this section is that the UK continues to follow EU State Aid in aviation guidelines voluntarily post Brexit, although there is the potential to begin tailoring such guidelines more specifically to the UK's needs. We believe that future engagement with the EU is another matter that should be addressed in the strategy. It should be clear in what areas we are going to voluntarily align with EU rules and regulations, and in what areas we may choose to diverge. Detail may be difficult to formulate at this stage, but it should be possible to articulate general principles.

5.1.2 The Green Paper articulates the case for minimising intervention in the market. Indeed, it expresses the ambition to ensure that markets are functioning effectively for consumers and local communities. In the Highlands and Islands we are keen to ensure that role of state intervention is optimised to address existing market failures. In such areas of low population density markets struggle to function effectively for consumers and local communities.

5.1.3 In the late noughties Inverness and the Highlands found itself abandoned by bmi, and previously by BA and Dan Air on its Heathrow route. At that time Inverness had no links with other major hubs such as Amsterdam and Dublin[7]. These routes were not necessarily unviable. Rather, they were just less commercially attractive than other destinations with larger markets, and were therefore lost due to insufficient capacity at hubs. Where there is constrained capacity it should be recognised that markets do not work seamlessly. Studies were undertaken[8] to provide evidence of the need for hub connections. High levels of catchment leakage (indicative of inconvenience, cost and environmental impacts to both residents and visitors) were endured.

5.1.4 We are not sure why the word 'communities' has been substituted for the more obvious descriptor of 'regions', and reference to the economy and business should also be included. We suggest re-phrasing this strategic ambition to be more simply that air services are functioning effectively for consumers, business and UK regions, without the need to pre-conceive how this is achieved.

5.2 RESERVED MATTERS

5.2.1 We suggest that a National Aviation Strategy provides guidelines that are applicable to all the regions and devolved nations of the UK. The Devolved Administrations can then work within those general guidelines to develop polices within their own remit. Issues which are held currently at the EU 'Member State' level include regulation surrounding:

- State Aid in Aviation (2014) which includes permissible state aid to airports.
- Services of General Economic Interest (SGEI) permitting public capital and operational support for SGEI designated airports.
- Route Development Funds (RDFs) (route start up aid).
- Public Service Obligations.
- General Block Exemption Regulations (GBER) making state interventions simpler by avoiding formal notification and formal approval would fall into this ambit.
- Slot rules, though specified at an IATA and EU level, are interpreted locally in the UK.

5.2.2 It is understood that an EU review of the 2014 State Aid Regulations is to be undertaken this year, and (assuming the UK participates in this) the Highlands and Islands' needs should be reflected in the deliberations. Some

7 A Dublin service operated for a period in 2009 and 2010
8 North of Scotland Air Issues Evidence Note 2012 and Updated in 2014

of these perspectives will be apparent in this report, but may need bespoke re-stating when the formal consultation commences.

5.2.3 For RDFs it would be helpful if a more practical set of time-limited incentives were negotiated and agreed, as there is a gap in bridging the upfront risk for air operators-particularly on thinner routes. We understand that The Regional Air Connectivity Fund (the UK version of RDFs) is currently in abeyance and may need changes in EU Regulations to ensure it is fit for purpose.

5.2.4 PSOs are another important tool. Our views on the Green Paper's proposed approach are set out later in this chapter. One detail that the Green Paper did omit was mention of the UK definition of a Development Region (currently understood to be the UK Special Assisted Regions 2014-2020 map). This aspect is referred to in the PSO regulation, so future clarity would be helpful. SGEI and GBER should also be dealt with in the forthcoming White Paper so absolute clarity on these categories and their application in the UK is understood by regional interests.

5.2.5 Slot Regulations and UK Government approaches to this are discussed below.

5.3 INTERNATIONAL HUB SLOT SECURITY

5.3.1 Earlier parts of this submission described the vital role of air services for the Highlands and Islands and the hub connections in particular. HITRANS, HIAL and HIE welcome the proposed expansion of Heathrow.

5.3.2 While there are currently services from Inverness to both Heathrow and Amsterdam it is less than 10 years since neither existed. It is essential for the region's future that this situation is not allowed to happen again. We are concerned that this could happen if UK Government policy and actions do not recognise:

- Any role for the state[9] other than as light touch policy maker and enforcement agent.
- The need for differentiated policy outside the South East.
- The existence of numerous significant market failures in the aviation sector (e.g. air service under provision; disproportionate regulatory costs on those least able to bear them; VFM assessment bias for large projects on issues such as terrestrial access and tourism promotion).

5.3.3 This last point highlights a consequent need for more proactive intervention in certain markets – particularly in the most peripheral parts of the UK such as the Highlands and Islands where surface transport alternatives are long and time consuming. This is in a context where the fortunes of a handful of businesses can significantly affect passenger numbers on an individual air route. Put simply, the failure of a single large business in Inverness creates a much larger impact than in, say, Aberdeen or Birmingham, indicating the fragility of Inverness's routes.

5.3.4 There is also a need to give due weight to:

- The need for equity of access to aviation services for all and the role of smaller regional airports in delivering this.
- Appropriate use of permissible State Aid, rather than adopting a minimalist approach.

5.3.5 Government should consider domestic aviation as part of its national infrastructure in the same way that it considers rail, road and harbours. It should intervene, robustly where necessary, to protect vital strategic interests, especially where limited travel alternatives exist.

5.3.6 We very much welcome the Green Paper's commitment to maximising the benefits of airports and air services to support regional growth and connectivity. For the Highlands and Islands, doing so requires addressing a range of issues as follows.

5.3.7 Affordable, ring-fenced and business-friendly timed slots for an increased number of regional airports at an expanded Heathrow (the UK's international hub) is a vital requirement. We sense in the Green Paper a desire to leave as much as possible to the market with its talk of markets working well for consumers and communities and the concern about distortionary effects of PSOs. Where we might disagree is the ability of the market to really deliver what the UK regions need to help them further increase their contribution to the UK economy.

9 Regulation is outsourced to the CAA

5.3.8 Regionally protected slots should not be negotiable. We consider that PSO designation is one simple and recognised way that slots can be earmarked for regions. A Heathrow Expansion Working Group is a possible vehicle to help resolve the issues around slots. We would cooperate with efforts to establish the parameters that might best guide government policy on matters such as access and frequency and how best they can be achieved in an equitable way across the UK. Another possibility is to give the regions a voice on Slot Committees so that their perspective is taken into account.

5.3.9 It is worth reiterating that PSO designation does not necessarily mean that the route requires subsidy. Rather, it is a guarantee that minimum standards of adequacy for regions cannot be bartered away by airlines and airports. It would be better that government sets minimum regional connectivity standards and the principles underlying them, when new slots become available under expansion so that all parts of the UK are treated equitably. Business's longer-term investment and planning need this sort of guarantee. This may be required as Heathrow expands.

5.3.10 Adequate Frequency

5.3.10.1 We welcome the strong recognition that the Green Paper gives to the importance of onward connectivity and hubs. Adequate frequency and suitable timings are vital to protecting connectivity. Otherwise return journeys will mean long stopovers at hub airports- and potentially overnight stays. These result in loss of productive time and additional business costs. We consider that if Inverness is to be truly plugged into the global economy it would benefit from at least three or four rotations a day[10] to Heathrow post expansion. The issue relating to requisite hub frequency should be part of a broader consideration as to which regions need access to emerging global markets, appropriate frequencies to maximise connectivity, optimal aircraft size may be and how practically, and in a State Aid compliant way, bespoke regional solutions can be delivered.

10 York Aviation: Department For Transport Regional Connectivity Review May 2018. According to analysis the number of connections that can be made steadily increasing at the lower end of the frequency range until around four to five frequencies per day, when diminishing returns on additional frequencies emerge. This is particularly true for connections to major destinations and emerging markets.

5.3.11 Affordability

5.3.11.1 Heathrow currently offers discounted airport charging for domestic flights. This is very welcome because it recognises that smaller aircraft operate on many UK domestic routes. However, when Flybe withdrew from the Gatwick route our region has had experience of an airport charging an aircraft type off a key route, because of their profit maximising imperatives. This was certainly the Highland perspective when Gatwick made things, according to Flybe at the time, essentially unviable for Flybe-based aircraft at that airport.

5.3.11.2 After protracted and tough negotiation, easyJet delivered an acceptable solution after a period of concern and uncertainly. The alternative at that time was that the region faced the prospect of losing the timetabling advantages of having the plane for the main London service based overnight at Inverness. The expansion of Heathrow presents an opportunity for government to lay down some basic parameters to guide future pricing policies.

5.3.11.3 The Highlands and Islands exemption on APD for departing flights is a necessary policy measure. It helps ensure affordability for a region where air travellers frequently have to undertake a connecting flight before their ultimate flight connection. The APD is also welcome given that many parts of the region experience a relatively high cost of living. The exemption enables airlines to somewhat address the operational costs of the comparatively longer sector flights from Inverness to the south and west of the UK.

5.3.12 Coordinated Hub Connectivity to Scottish Island and Peninsula Destinations

5.3.12.1 Destinations such as Islay, Campbeltown, Tiree, Benbecula, Stornoway, Wick John O'Groats, Kirkwall and Sumburgh will not be able to either justify large enough aircraft to join the Heathrow stack, or provide sufficient demand to maintain a year-round service. We do however believe that policies should be brought forward that ensure Heathrow's expansion benefits, in John Holland Kaye's (CEO of Heathrow) words, 'every corner of the UK'.

5.3.12.2 A national feeder system should seamlessly link the extremities of Scotland with Heathrow flights from the Scottish hubs. This would truly globalise these peripheral

communities. It is likely that such a scheme would require the following:

- Timetable co-ordination.
- Important role for transit airport air services to Heathrow (at the main Scottish airports).
- Fast Scottish hub airport transfers vital.
- Code sharing preferable.
- GDS visibility of 'remote destinations'.

5.3.12.3 We note that Canada and US have taken this interlining-focused approach with their Essential Air Services programmes.

5.3.12.4 Another possible approach would be a 'shared' Peripheral Destination direct service in summer months permitting seamless global access to UK recreational areas such as Campbeltown, Islay, Tiree, Benbecula, Stornoway, Wick, Kirkwall and Sumburgh; 2 midday flights / week to selected 'hard-to-reach' 'tourism-jewel' destinations. Coordination between air operators and the needs of the tourism industry would be required to develop holiday packages/optimum timing of flights. Destinations would need to prepare for such an influx with an enhanced provision of visitor. Tourism promotion would have to work closely with the other elements of the initiative. However, with prior planning the various arrangements and investments could be put in place.

5.3.12.5 Schemes such as these could be explored and worked up once a clear framework for Heathrow expansion is set out in the Aviation Strategy White Paper.

5.3.13 Overseas Hubs

5.3.13.1 Airports such as Amsterdam are already expanding to address their current slot limitations. We would expect the UK government to lobby for reliant regions robustly in appropriate fora.

5.4 ACCESS TO OTHER UK HUB AND UK 'NATIONAL' AIRPORTS

5.4.1 Despite the references in the Green Paper to Edinburgh and Manchester as "national airports" there are currently PSO routes from the Highlands and Islands to Glasgow-with the potential for further ones from Skye and Oban. Therefore, the definition of permissible non-London PSO airports should not be artificially limited. Rather, it should reflect the actual administrative, commercial and service links between more remote communities and main centres.

5.4.2 Having said that, we note the important Stornoway-Glasgow-Manchester service (launched in 2016) that delivers welcome additional island connectivity via this means. We also note that a new Stornoway service, which involves a stop off at Glasgow Airport, will be also be the first ever between a Scottish island and London Southend. However this remains dependent on the Southend-Glasgow passenger numbers. If they are not high enough then the route will cease.

5.4.3 In a similar vein the seasonal air services between the Northern Isles, the central belt and Manchester is also welcomed. Yet but these are routes may well take a number of years to build commercial viability and are therefore vulnerable to the commercial decisions of the airline.

5.4.4 However, we appreciate these initiatives by Loganair and hope that both the aviation strategy and commercial logic will allow more such innovations to occur; especially with business-friendly timetabling. There needs to a fully collaborative approach between all agencies to ensure joined up marketing.

5.5 SUSTAINABILITY

5.5.1 There is a need to balance environmental concerns and sustainability ambitions in relation to peripheral regions. In some parts of the Highlands and Islands population decline and outmigration of the young, in particular, are a pressing concern. Aviation, and the connectivity it delivers, are important in underpinning regional and island viability. Not only does aviation have to become more sustainable in its own right – it also plays an important role in the sustainability of peripheral and remote communities. To reiterate, Highlands and Islands air services are vital

because of the need to access commercial opportunities and services elsewhere in a context where because the surface alternatives are generally long and time consuming.

5.5.2 In HIAL's sustainable development plans[11] the intention is to meet the needs of the present without compromising the needs of future generations whilst protecting the uniqueness of our natural environment, culture and heritage. Their success will be measured by a 70% increase in recycling (against 2019 baseline): a 20% reduction in water consumption: a 14% reduction in energy demand by 2025: and accreditation within the Airports Council International's Airport Carbon Accreditation Scheme.

5.6 LIFELINE SERVICES

5.6.1 The Green Paper states that *"UK Aviation Strategy will continue to provide policy support for lifeline services that connect regions"*. However, it would be very helpful for the strategy to be explicit in defining what lifeline services are and why they are important. A cursory view is that lifeline services merely cover health, education, business and public administration. However, in remote communities they also provide other benefits that support their ongoing sustainability.

5.6.2 A report on regional connectivity[12] notes the importance of air connectivity to business shown in case studies of two airports in remoter parts of Norway. Proximity of an airport was ranked second in location-specific factors for businesses in remote regions, with businesses in the service sectors and with offices, departments or sister companies in other regions or abroad valuing it highest (Halpern and Bråthen, 2011, 2012). The business dynamic is broadly accepted, but Halpern in a previous submission[13] also noted that remote communities near airports grew in population terms, whilst those without airports generally had shrunk.

5.6.3 The consultations that have informed our submission identified other issues. Notably, attraction and retention of key staff is in part dependent on how easy it is for them to undertake VFR and recreational trips away from the remote community.

5.6.4 Further, other countries such as Sweden, Norway and France have developed PSO justifications around the notion of 'national integration' with the implication that easily accessing the national capital should be a citizen's right. The Anglesey-Cardiff PSO was partly justified as linking north west Wales with the national capital (i.e. national integration). Orkney Rugby Club often use air to compete in Scottish national league games and many in the Outer Hebrides make the flight to Glasgow for Old Firm football matches. More generally, this aspect incorporates leisure trips to main Scottish centres including to visit museums and other cultural attractions which receive funding paid for by all taxpayers (including those in the more remote parts of the Highlands and Islands).

5.6.5 The Oban and Colonsay/Coll PSO was designed to allow island-based secondary school children to return home at weekends, whilst boarding in Oban during the week. Indeed, the insight was that if families could not satisfactorily bring up their children on islands then the communities would die. An air service may not just bring the teachers to the children (as it does in the Orkney PSOs), but in certain circumstances it also accomplishes bringing the children to the school and to their homes again.

5.6.6 We would also emphasise the often crucial role of aviation in ensuring access to health services. The delivery of specialist services and clinics that can only be accessed by air is a very important component of maintaining modern life in many more remote communities. Specialist hospitals in Glasgow, Inverness and Aberdeen in particular serve very large areas, including the islands. Lower stress, speedy aviation travel is much more acceptable than the formidable terrestrial alternatives.

5.6.7 HIE compiled a paper[14] that considered that the provision of transport for remote mainland and island communities t is often justified on the basis that these are 'lifeline' services. The understanding is that such services do not make economic sense (i.e. they cost more to deliver than the economic benefits they generate) but that they are nevertheless socially desirable in order to sustain these

11 Making-Connections-Engagement-on-HIAL's-Strategy-2019-2025
12 Peak Economics (2018): Wider Economic Impacts of Regional Air Connectivity
13 International Forum on Air Transport in Remoter Regions (date not stated)
14 Beyond Lifeline Services: How Investing In Transport Can Unlock The Economic Potential Of Peripheral Areas
Tony Jarvis Highlands and Islands Enterprise STAR Conference 2006

communities. In addition, there may be a reluctance to consider significant improvements to the level of services provided due to political priorities coupled with lack of demonstrable benefits versus the relatively high cost of implementing the improvements.

5.6.8 Recent experience in the Highlands and Islands, the study declared, is now starting to challenge the traditional view of lifeline transport provision. The paper highlights evidence that where transport links are improved, significant economic benefits can be generated, even in relatively small communities. The paper also emphasised that there is an unmet demand for transport in many parts of the Highlands and Islands. In these places, high costs and poor accessibility have constrained business growth and deterred visitors for many years, but where costs have been reduced and accessibility improved, the local economies responded positively.

5.6.9 Any definition of lifeline services should encompass not only the delivery of social services like health, education and public administration, but also economic and social aspects. These include quality of life, attraction and retention of professionals, countering depopulation, and more intangible aspects such as fuller integration into national life.

5.6.10 The main point is that Highlands and Islands understanding of lifeline services is somewhat broader than that implied by DfT. We see it as encompassing all aspects of the 'socio-economic' term used in State Aid and PSO regulations.

5.7 AIR FREIGHT

5.7.1 We believe a review of UK air freight with a view to possible improvements and regionalisation is timely. This could reduce the long-range trucking of perishable produce to Heathrow using more local dispatch into the air freight system. The prize would be to deliver time sensitive and perishable produce more quickly to global destinations, and for backloads to provide a more responsive service for the region.

5.7.2 Two studies of air freight in the Highlands and Islands have been undertaken[15]. The possibilities considered included a direct evening service to East Midlands with seafood southbound and express parcels northbound, thereby avoiding long distance trucking to London. The other was increased use of regional long-haul passenger services out of the central belt, and use of bellyhold capacity on the flights from Inverness to Heathrow and Amsterdam.

5.7.3 We are also aware that after Operation Stack in 2016, Scottish Government have been reviewing resilience of perishable goods like seafood in the freight system whereby the channel ports and a very small number of UK airports play a key role. Thus, the system could be susceptible to disruption or progressive future inefficiencies as a result of congestion.

5.7.4 The UK Government White Paper should deal with air freight policy more extensively, or commission a standalone sector-specific policy document. Possible government action might include the following:

1. Commit to long-term growth in air freight capacity to 2050, including safeguarding of night operations capability, to cater for projected demand, which needs to be robustly forecast.
2. Develop policies to attract back as much of the UK air freight which is currently being diverted via near European airports (an estimated 2 million tonnes per annum, with a UK origin or destination being trucked to Europe for flight).
3. Support for new and enhanced freight routings, and specialist handling capabilities.
4. Better balance between the location of airport freight capacity and the source and destination of demand; perhaps incentivising established freight-forwarders to increase their regional focused activity or new start-ups to base themselves at airports outside the South East.
5. Encouragement, or a requirement, for the UK industry to modernise so that its stays ahead of competition (e.g. by adopting the latest digital and automation technologies) achieves IATA standards for e-airways bill adoption and improved delivery times for general cargo.
6. Initiate Free Trade or Enterprise Zones to stimulate major logistics clusters at key regional airports.

15 Highlands and Islands Air Freight Study HIAL/HITRANS (Northpoint) 2012 (updated 2018)

5.8 GROWTH DEALS TO SUPPORT MAXIMISING THE ECONOMIC BENEFITS OF AVIATION

5.8.1 The vital importance of Inverness Airport is underlined by the inclusion of aviation within the Inverness and Highland City-Region Deal. That is an agreement between the UK Government and Scottish Government and The Highland Council.

5.8.2 Both Governments recognise the importance of effective air access to the Highland economy. They have agreed to work with The Highland Council and local partners to provide support in line with the capabilities of the airport operator (HIAL).

5.8.3 The Moray Growth Deal proposes significant investment in skills development for aviation, recognising the UK shortage in aircraft maintenance technicians and associated professions. Moray benefits from RAF Lossiemouth, a major air force base, which is expanding and adopting a "whole workforce approach" to the management and deployment of a large fleet of aircraft located there. The commitment of The Boeing Company to RAF Lossiemouth and to Moray is part of the UK government's policy of securing economic prosperity from Defence.

5.8.4 Local partners have identified the importance of ensuring continued air access for the economic development of the region. In particular business-friendly daily links to international hubs and adequate interlining opportunities. Maintaining and improving the level of air access to London is the top priority for local partners over the longer term, along with maintaining and improving the service to Amsterdam.

5.8.5 Argyll and Bute's Rural Growth Deal is currently being developed. One of the proposed projects is to make Oban Airport (owned and operated by Argyll & Bute Council) a west coast regional hub for Scotland with an aim to:

- Develop infrastructure at Oban Airport.
- Support new air services from Oban-and especially to Glasgow-to allow the airport to achieve its full potential as a regional transport hub.

5.8.6 The main benefits of new scheduled services from Oban Airport are seen by the emerging Growth Deal as including increased business efficiency. Reduced travel times for major local employers in key sectors such as life sciences and aquaculture and improved access for inward investors is seen as an attractive goal. A recent example was senior management using charter aircraft into Oban to better access the Liberty aluminum plant at Fort William. They also believe such services would stimulate inbound tourism and underpin further development of Oban Airport Business Park and facilitate more overseas students to study at Oban University Town. Finally, it would improve rural patient access to metropolitan and specialist healthcare provision.

5.8.7 DfT could usefully work with their colleagues across UK Government to raise awareness of the aviation dimension to many Growth Deals. This could lead to improved consideration of the aviation dimension in Growth Deals that are currently being worked up, and in those that will be developed in future.

5.9 THREATS FACING REGIONAL SERVICES AND REGIONAL AIRPORTS

5.9.1 A recent review of air services at Wick John O'Groats[16] notes some specific and general challenges facing UK regional airlines:

"In the context of wider issues facing the regional airline market, including the two operators serving Wick John O'Groats. The future of the ageing aircraft on the routes (Jetstream 41 and Saab 340) which are fast becoming legacy types as the airlines move to upgrade/modernise their fleets.

1. *Recent uncertainty around the future of Flybe for whom Eastern Airways is a franchisee.*
2. *It is likely that Flybe's strategy under new ownership will now evolve, and regional route contraction is a possibility.*
3. *Potential backfilling on marginal Flybe routes by smaller aircraft operated by the likes of Loganair and Eastern Airways, which could attract such aircraft away from weaker to stronger routes. This would leave the Wick John O' Groats services vulnerable.*
4. *The recent difficulties of Bristow Inc. and subsequent change in Eastern Airways' ownership.*
5. *Growing reluctance/cost to airlines of operating "middle of the day" services to provide a contribution to overheads."*

16 Caithness and Sutherland PSO Air Services Review (2019 Northpoint)

5.9.2 To this might be added the generally poor financial performance of the few UK regional operators, which does not augur well for future domestic route risk-taking and management forbearance of marginal routes.

5.9.3 Other issues include the prospect that the size of regional aircraft is likely to increase (as is currently underway at Loganair and Eastern Airways) with a likely adverse effect on frequency on thinner routes. This is a concern for internal Scottish air services and potentially threatens the ability to complete an effective day's work at either end of the route.

5.9.4 However, it is recognised that new smaller aircraft types may emerge to backfill any gaps and Single Engine Aircraft and other aircraft types (e.g. electric) will find niches in the UK. The BN2 Islander, Twin Otter and RUAG's updated Dornier 228 all play niche roles in services around the UK. However, such aircraft types are relatively expensive to operate with implications for affordability.

5.9.5 These concerns feed into our suggestion that a short life *Regional Air Services Futures Working Group* be established.

5.10 MEASURING CONNECTIVITY

5.10.1 Swedish agencies Trafikverket and Transportstyrelsen have undertaken some useful indexing of regional domestic and international air connectivity for the Swedish Regions. (More detail on their work is contained in Appendix 2).

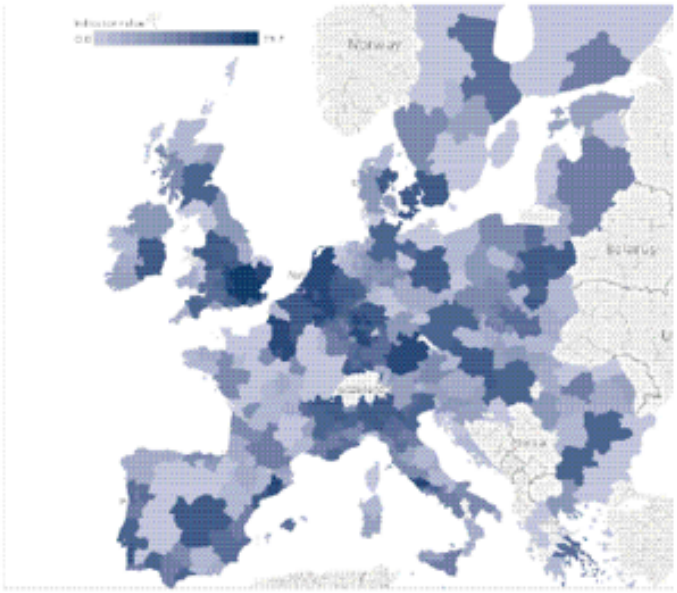
5.10.2 These indices help guide public decision making about the supplementary role that aviation can play in ensuring adequate provision of transport connectivity appropriate to the social and economic needs of each region. For remote areas this can involve subsidy for both airports and key air routes.

5.10.3 Arlanda Airport in Stockholm acts as an important domestic and international hub for Sweden's regions. It allows them to both conveniently link with the country's capital and also transfer to a wide range of international flights. Indeed, connectivity is seen as a two-way street because it also permits the rest of the world to access Sweden's interior and far north.

5.10.4 Many countries, particularly in the north of Europe face similar challenges to Sweden and developing some national measures of accessibility and 'reachability', as the Swedes have termed it.

5.10.5 Eurocontrol are also working on this issue. They see these efforts as an important indicator to guide policy. The following map is part of an effort to measure average travel time to all EU destinations.

Figure 25: Intra-EU air connectivity in 2017Q1, percentage of EU population reachable from each NUTS 3 area via a direct flight



Note: Percentage of the EU population that is reachable using a direct flight where the drive to the airport takes at most 90 minutes. NUTS 3 areas are smallest administrative regions in the EU used for statistical comparison of different areas of the EU by Eurostat. There are 1,342 regions at NUTS 3 level in the EU, with populations ranging between 150,000 and 800,000. Indicator provided by the European Commission created using data from Eurostat, the European Environment Agency, EUROCONTROL, Google maps, FlightGlobal-Innovata.

Source: *https://public.tableau.com/profile/connectivity#!/vizhome/EUConnect-TEST/IntraEUAverage*

This highlights weak spots across the UK, including the Highlands and Islands.

5.10.6 The UK Government has developed various policies to address these regions, and some have an aviation component. The issue at stake is really whether these have developed in an ad hoc and sporadic manner or are based upon some consistent and fundamental principles. This points to a need for a more objective basis for decision-making on air access, such as a connectivity index.

5.10.7 HITRANS have worked on joint transport projects with Swedish Government Transport Agency Travikverket, who assure that their index is not too onerous to maintain, and they would be happy to share their insights with the UK. Norway incidentally also run a similar

connectivity measuring exercise, and once again our local transport agencies have good relations with some of their agencies.

5.10.8 We propose that DfT considers the feasibility of developing a measure of regional connectivity, taking into account all transport modes including air. That would allow decision making on interventions to have an objective and consistent basis. We would look to be involved in this process to contribute our experience and insights.

5.11 PUBLIC SERVICE OBLIGATION (PSO) ROUTES

5.11.1 There are currently five separate Public Service Obligation (PSO) schemes in operation serving a large number of airports and airfields throughout the Highlands and Islands. They represent the highest concentration of PSOs in the UK:

- Shetland Islands Council for Tingwall to Fair Isle, Foula, (Papa Stour and Out Skerries-now cancelled), plus a summer weekend service between Sumburgh and Fair Isle.
- Orkney Islands Council for Kirkwall to the six North Isles of Orkney (Sanday, Stronsay, Eday, Westray, Papa Westray, North Ronaldsay).
- Comhairle nan Eilean Siar for Stornoway to Benbecula.
- Argyll and Bute Council for Oban to Colonsay, Coll and Tiree.
- Scottish Government for Glasgow to Campbeltown and Tiree (both Argyll & Bute) and Barra (Outer Hebrides).

5.11.2 The level of subsidies e provided by each of the awarding authorities varies slightly from year to year, and there is uncertainty as to its future level at contract renewal.

5.11.3 The airline costs should also be combined with the airport / airfield subsidies received when considering value for money. HIAL for instance was subsidised by the Scottish Government by a budgeted £35m in 2016/17 and £39m in 2017/18 which covers both operational and capital investment provisions. The local councils are responsible for determining the level of grant aid they may make to their own airstrips. The one PSO airport that is not subsidised is Glasgow, whilst Fair Isle is also independently operated although it receives a grant from Shetland Islands Council.

5.11.4 It should be noted that a report in 2004[17] recommended the wholesale adoption of a PSO scheme for all domestic intra-Scottish routes operated to/from airports in the Highlands and Islands. That would have included a one-third decrease in the cost of air fares, with a then estimate of a maximum cost to the Scottish Government of £12 million per annum. This scheme was rejected at that time in favour of the Air Discount Scheme, which is described earlier in this submission. Some of the stakeholders consulted to inform our submission were still in favour of this concept of wholesale intervention, albeit perhaps affecting a reduced number of the originally specified routes.

5.11.5 Analysis by Northpoint estimates that Scottish Government departments are providing more than 50% of the cost of air services revenue in the region both as users (health boards / doctors / patients, for education, or other Government / community purposes), and via subsidy to HIAL and local authority airports and via ADS and PSO programmes.

5.11.6 Consequently, it appears important to periodically review the utility of the scale, frequency, network, schedules and prices charged and operated across the Highlands and Islands air service network in relation to the efficiency of delivery of all publicly funded programmes. As previously mentioned, Scottish Government and Shetland Islands Council have also ventured into aircraft acquisitions to ensure more modern fleets are available. Scottish Government and the communities served need to assure themselves that they are receiving optimal outputs from this expenditure in terms of services, network, schedules and fares.

5.11.7 When compared with the free market routes, very few adverse comments were received during earlier stakeholder consultations (2016) regarding the level or structure of fares on PSO routes. However, issues arising from the operation of PSOs include:

- Airlines struggle to justify investment in new aircraft for fear of being undercut at the next tender round by a competitor offering an older compliant aircraft. At present four years is the maximum length for an

17 Expanded Air Services Network Volume 1 and Volume 2 HITRANS 2004

award of a PSO, which is often impractical to fully depreciate a 'new' aircraft asset.
- Some routes which could be suitable for PSOs would involve two or more different Councils, for example Oban to Barra. However, differing concepts of the role of, and subsidy levels available for, PSOs make it difficult for Councils to work together on cross-border routes.
- Funding challenges cause downward pressure on service renewal specifications.

5.11.8 The Green Paper gives prominence to the potential distortionary effects of PSOs. However, this needs to be balanced by a recognition that PSOs are an important and established means of addressing some of the deficiencies of free market air operations in the more remote parts of the UK.

5.12 UK PSO GUIDELINES IDEALLY RETAIN FULL VERSATILITY TO DELIVER VARIED GOALS

5.12.1 Any future UK PSO guidelines need to retain full versatility to deliver varied goals. Being overly restrictive could inhibit optimal or innovative use of this tried and tested intervention tool. We would be happy to engage more closely in a PSO study group to better ensure the current deliberations on UK PSO guidelines are optimal.

5.12.2 As this time the relevant issues include:
- The 'National Airports' designation does not work for the Highlands and Islands. Glasgow and Oban, which are not proposed 'National Airport' already receive PSOs on the UK mainland. Aberdeen (again not a proposed 'National Airport') potentially could host a PSO from Caithness; and Skye / Oban (again on GB mainland) potentially could have future links to Glasgow/Central Belt.
- We agree that regions should have 'skin in game' and contribute to PSO subsidy but DfT should also recognise that PSOs are a two-way street, and not a favour from the 'hub'. As noted earlier, regional access to London not only benefits the regions, but it also allows London to interact more efficiently with the rest of the nation.
- Timetabling, frequency and affordability must be considered in any specification. The market does not always deliver these adequately in peripheral parts of the UK.
- PSOs are a convenient and legally accepted way to ring fence and protect slots. The Green Paper has not offered another mechanism. However, we would stress that certainty and security are required to maximise the benefits of air services. The White Paper should not leave this issue unresolved.
- With PSOs the region, rather than the airline, retains some control over its destiny. The Green Paper's apparent aversion to PSOs needs to be balanced with the positives that PSOs can deliver in terms of continuity and frequency. Marketing of PSO routes has been raised as a blind spot in contemporary PSO contracts[18], and as a positive on the Glasgow-Barra route.
- No-Subsidy Open and No-subsidy Closed PSOs should be considered in UK aviation policy. These are means by which that regional slots can be secured without subsidising PSO air services. There is no mention of them in the Green Paper.
- Freight, seasonal, tour operator and International PSOs should have the door left open in the UK Guidelines. The *Charter* Fund *Scheme for Northern Norway*[19] is one such initiative that could be adapted for the UK environment. Avinor and partners' efforts in these areas have shown some innovation. International PSOs have been used elsewhere across Europe, and may be useful, particularly in advance of an expanded Heathrow.
- Suitable ownership of infrastructure can be a stimulant-e.g. public ownership of niche aircraft types. However, it can also inhibit competition-e.g. if the incumbent operator owns key fulfilment elements such as hangarage.

18 Merkert, R. and O'Fee, B. (2013): Efficient procurement of public air services - Lessons learned from European transport authorities' perspectives, Transport Policy, 29, 118–125.

19 The Norwegian's Managing Authority is formally EFTA (not the EU) and the Northern Norwegian Counties are low density population areas. Moreover, they face depopulation, and this was used as a further justification for the intervention.

6. THE HIGHLANDS AND ISLANDS: AEROSPACE AND INNOVATION

6.1 SUMMARY

The region benefits from clusters of high-quality precision engineering and technology expertise around existing activity, including the MoD in Moray, the Dounreay nuclear site in Caithness and established energy industry services in Shetland and the Inner Moray Firth.

In Moray the aerospace and defence sector is particularly strong. It accounts for 8% of total employment (2,750 employees) and is growing. There is optimism for the future of this sector, driven by the strategic importance of Moray to the defence of the UK and its allies.

This is complemented by other new opportunities-including space-related businesses linked to the satellite launch site being developed by Highlands and Islands Enterprise in Sutherland with support from the UK Space Agency, and sites being explored in Shetland and the Western Isles.

There is local interest and exploration of specific technologies and these include:
- **Autonomous aircraft (drones)**
- **Sustainable aviation fuels**
- **Electric and hybrid propulsion of aircraft**
- **Single engine turbine aircraft**
- **Spaceport(s) (as noted above)**
- **GNSS navigation roll-out at all HIAL airports**
- **Other cost saving or safety enhancing innovations**

The Highlands and Islands represents an ideal living laboratory for aviation and aerospace testing and emergent technology pilots.

The Highlands and Islands has the potential to host/participate in national centres of excellence.

6.2 BRIEF OVERVIEW

6.2.1 Around 2,000 businesses across the Highlands and Islands are believed to have skills suitable for aerospace-related work. Aerospace and related sectors account for almost 12,000 employees in the region[20]. The region also benefits from clusters of high-quality precision engineering and technology expertise around existing activity. That includes the MoD in Moray, the Dounreay nuclear site in Caithness and established energy industry services in Shetland and the Inner Moray Firth.

6.2.2 Aerospace offers an opportunity to further diversify the Highlands and Islands economy and provide well paid employment and thus address the issue of relatively low wages in parts of the region (including Moray).

6.2.3 Each year over 3,400 engineering students graduate across the Highlands, Moray and Aberdeen with well over 2,000 students studying aerospace-related subjects. Also in 2017, more than 700 people started related Modern Apprenticeships.

6.2.4 In Moray the aerospace and defence sector is particularly strong. It accounts for 8% of total employment (2,750 employees) and is growing. This figure includes individuals currently working within the MOD and various related industries who have potentially transferable skills or could be upskilled to work within the aerospace sector[21].

6.2.5 According to Moray Council employment numbers in aviation and aerospace will rise significantly in the coming years. There is optimism for the future of this sector, driven by the strategic importance of Moray to the defence of the UK and its allies. This is complemented by other new opportunities-including space-related businesses linked to the satellite launch site being developed in Sutherland. Already, one of the launch companies that plans to use Space Hub Sutherland – Orbex – has opened a new factory in Forres.

6.2.6 Moray is well placed to capitalise upon this optimism, as there appears to be a relatively strong skills pipeline for future growth, both in terms of further education students and modern apprentices. The requirement for aerospace engineering skills is significant. Evidence shows that when MOD contracts end, those in the armed forces and in civilian roles are often keen to remain in Moray, and retrain to access new local employment opportunities.

6.2.7 The MOD Hebrides Range (in the Uists) is the largest weapons Test and Evaluation Range in Europe and is a world class facility. The Range is operated by QinetiQ under the terms of the Long Term Partnering Agreement (LTPA). The Range occupies 115,000km² of sanitised airspace with unlimited altitude. This large area and its nearby airfield make it ideal for missile and UAV testing.

6.2.8 The Range is made up of four main sites (Rangehead and Range Control on the Isle of South Uist; West Camp on the Isle of Benbecula beside the airport; and St Kilda which lies 43 nautical miles of the North West of the Isle of Benbecula).

6.2.9 There is local interest and exploration of specific technologies and these include:

- Autonomous aircraft (drones) - expertise in rural, mountainous, island and maritime applications.
- Sustainable aviation fuels and the potential of maritime resources (seaweed and algae) to be a preferable and non-agricultural land (Generation 2) source of biofuels.
- Electric and hybrid propulsion of aircraft. The Highlands and Islands is likely to be an early adopter given the short sectors of its air routes and low capacity aircraft requirements.
- Single engine turbine aircraft and their applicability for airfreight feeders (as in the US) and/or thin passenger routes and air chartering.
- Spaceport(s) with several potential sites and the Sutherland facility receiving phase 2 investigative funding from a range of national and regional sources alongside private sector commitments. In the Outer Hebrides a consortium is proposing to build a new Spaceport at Scolpaig on the north-west coast of North Uist. The Shetland Space Centre (SSC) plans to build and operate a satellite launch site and a ground station in Unst, Shetland, the UK's most northerly island
- GNSS navigation roll-out at all HIAL airports offering potential improvements in safety and operational savings.

20 HIE Farnborough Aerospace Exhibition Brochure July 2018 quoting from the Skills Development Scotland's Review of the Aerospace sector in Scotland - June 2018; with focus on of the aerospace sector within Moray and the Highlands and Islands area

21 Moray Economic Strategy 2019-2029

- Battery-operated runway lights offering safety and cost benefits.
- Remote Air Traffic Centre currently being developed – Offering efficiencies and improvements in safety, performance and resilience
- Remote baggage screening, which will be particularly suited to low throughput airports.

6.2.10 The Highlands and Islands represents an ideal living laboratory for aviation and aerospace testing and emergent technology pilots. This reflects:

- Low intensity airspace to facilitate experimental flying.
- An ATC system that aspires to provide a centre of excellence with staff bandwidth to incorporate additional tasks-e.g. experimental pilot programmes.
- Good relations with the supportive UK CAA regulator.
- Potential test projects-e.g. practical opportunities for mail and newspaper delivery trials to the islands.
- A range of terrestrial and maritime aerial surveillance opportunities (power lines, forestry fisheries, offshore oil rigs, pollution control).
- Search and Rescue challenges.
- Multiple sea and fresh water loch environments to facilitate float aircraft experiments.
- Variable weather conditions to test operational limits.
- Supportive public sector agencies.

6.2.11 The Highlands and Islands also has the potential to host/ participate in national centres of excellence in fields such as:

- Remote ATC (centre already being established by HIAL).
- Biofuel production and distribution. Scottish Association for Marine Science (SAMS) in Oban has leading-edge researchers in marine based biofuels, and the European Marine Energy Centre (EMEC) in Orkney is pursuing interests in renewable hydrogen production.
- Drone testing and pilot projects-particularly for remote, rural and maritime applications.
- Electrification of airside ground activities (HITRANS has pioneered electric taxis provision at Inverness Airport).
- Aviation and aerospace R&D nurseries associated with airport business parks or aerospace clusters. Forres is home to the UK's only standalone launch vehicle manufacturer (Orbex), while Inverness and Wick John O'Groats Airports are both interested in possible roles as support locations for spaceport and launch control activity. Inverness Airport Business Park has recently prepared an Aerospace, Space and Defence proposition.
- Build upon the significant centre of excellence represented by the Hebrides Range.

7. SKILLS TRAINING AND PROMOTION OF DIVERSITY AND INCLUSION

7.1 AEROENGINEERING

7.1.1 Boeing are contracted to supply and support nine P-8A Poseidon surveillance aircraft, plus others from Norway and the United States, operating from RAF Lossiemouth. Lossiemouth is a key strategic location for the protection of the North Atlantic, and home to four Typhoon squadrons as well as the new P-8A aircraft.

7.1.2 A Strategic Centre is currently being constructed as the base for Boeing, and further investment is planned. The MOD have announced a commitment of £3bn into the base over the next ten years, which will be spent largely on aircraft and infrastructural improvements.

7.1.3 The presence of Boeing and partners creates tremendous opportunities for Moray. Implementation of this project will take ten years and during this time partners (coordinated by HIE) will collaborate extensively to secure wider benefits, and manage risks, for Moray and the wider Highlands and Islands. HIE view some of the main benefits of this as:

- University of the Highlands and Islands emerging as a Scottish centre of excellence for teaching and research in aircraft engineering.
- Moray and the region developing a cluster of businesses operating in the global defence, space and security supply chain.
- Increased opportunities for young people able to pursue highly skilled careers in Moray.

7.1.4 The University of the Highlands and Islands is working with HIAL and HIE on various initiatives. These include:

- The Remote ATC Centre of Excellence.
- Proposed Boeing Pilot Training institute at RAF Lossiemouth.
- Perth College, which is part of UHI, has existing courses in aeroengineering, working closely with HIAL's Dundee Airport. An International Aviation Academy is being established at Dundee Airport with Tayside Aviation (who also have links with nearby Perth and Glenrothes Airports).

7.2 STEM SUBJECTS PROMOTION – NEWTON CENTRES

7.2.1 The UK's first Scandinavian-style learning centre, known as a Newton Room, has been opened in Caithness. In Norway and Denmark the centres are used to encourage young people to take an interest in science, technology, engineering and maths (STEM). The UK's first "room" has been created at North Highland College in Thurso. The Inverness and Highland City-Region Deal provided £3m towards the project.

7.2.2 The Caithness facility has been made available to schools, and there are plans for a network of Newton Rooms in The Highland Council area. This centre could be offered as an exemplar model for other parts of the UK wishing to implement similar programmes. As the Green Paper observes the aviation industry in the UK will need to address a number of challenges in the years ahead to ensure that it has the skills it needs to succeed. These include continuing to address the current STEM skills shortage.

7.2.3 The Highlands and Islands Science Skills Academy has been established to transform science, technology, engineering, mathematics and digital creativity (STEMD) education across the region. To maximise the impact, Scottish Government and the Science Skills Academy will ensure that the Highlands and Islands Science Skills Academy is linked with other local and national STEMD initiatives.

7.2.4 This initiative is central to the objectives of the Inverness and Highland City-Region Deal. It aims to ensure that the region has a pipeline of young people with the skills and knowledge to take advantage of the jobs and opportunities that aviation and aerospace will require and will be particularly attractive to potential inward investors.

7.3 NATIONAL CENTRES OF EXCELLENCE

7.3.1 To support UK Government's aim of rebalancing the economy we propose that national centres of excellence are located where they can enjoy significant advantages and also build new nodes of expertise. Government money could be channelled into training centres, run in conjunction with airports and local training providers (e.g. colleges and universities) at smaller airports in the South East and at regional airports ensuring there is good UK geographical coverage. The property estates and surrounding facilities of many HIAL airports could be offered for such roles.

7.3.2 The Highlands and Islands offers a good location to host national centres of excellence and/or participate in some of their activities. For example:

- Remote and online recurrent training and validation (University of the Highlands and Islands have significant experience of remote learning).
- Airport management development (we have an experienced and multifarious resource in the shape of HIAL).
- University of the Highlands and Islands have recently developed an Air Traffic Management programme designed to appeal to licensed Air Traffic Control Officers to provide educational progression and development in a range of careers within the sector. The programme will have links with civilian and military Air Navigation Service Providers.
- Centre of excellence for teaching and research in aircraft engineering (on back of RAF Lossiemouth developments).

APPENDIX 1 - STATUTORY BODIES

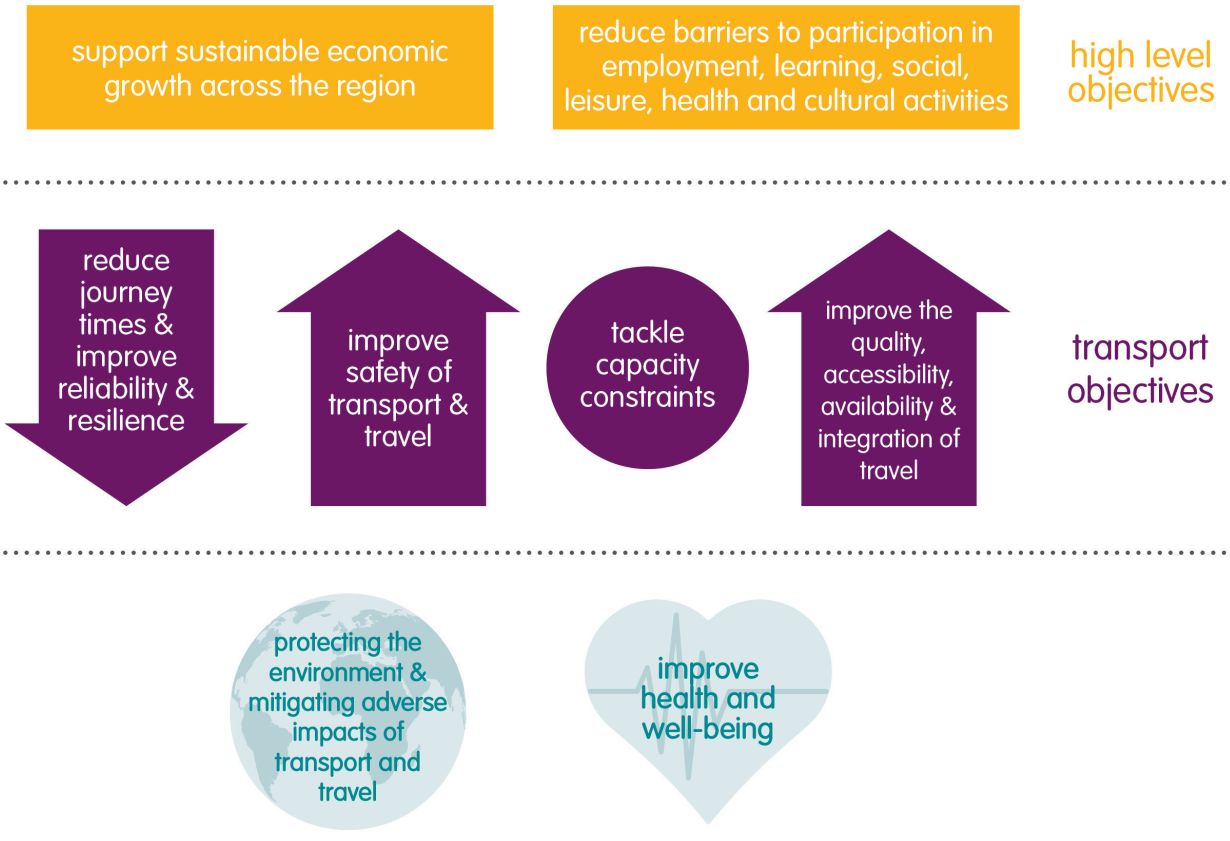
HIAL's airports are vital to the social and economic welfare of the areas they serve. Its declared public aims are:

- To provide airports that enable air transport to fulfil its essential role in Scotland's diverse regions.
- To work with stakeholders to develop sustainable air connectivity that supports socio-economic development in Scotland.
- To advise Scottish Ministers on future developments and resource allocation through robust strategic planning and effective collaboration with airport users and stakeholders.

HIE's 2030 ambition is for the Highlands and Islands to be recognised for the following characteristics in all parts of the region:

- A distinctive, place-based economy.
- An innovative, productive and internationally competitive business base.
- Resilient and resourceful communities that are empowered, capable and inclusive.
- A growing population, particularly through the attraction of more economically active and young people.
- Well connected, with fit for purpose digital and transport links.
- A vibrant and distinctive culture.

HITRANS' draft regional transport strategy aims to deliver connectivity across the region which enables sustainable economic growth and helps communities actively participate in economic and social activities.



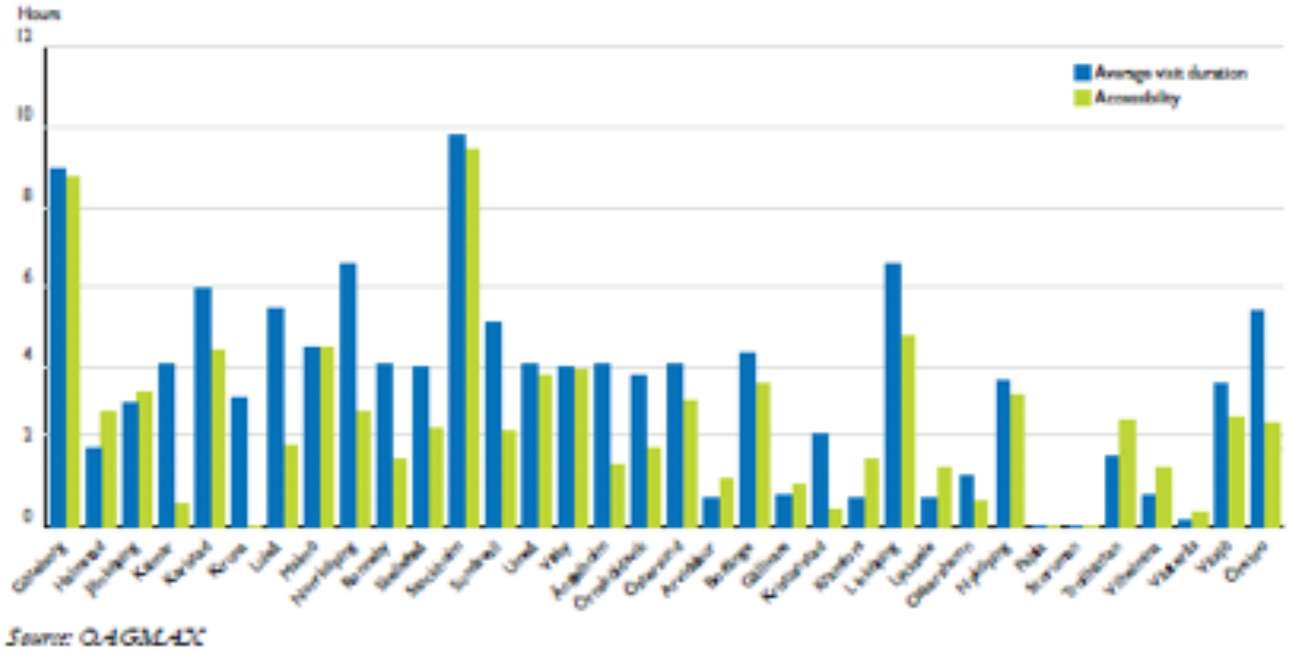
And the transport partnership is playing its role in delivering various building blocks connected with aviation.

Delivery Plan Item	Other Partners	Lead	Stage: Feasibility Planning Delivery Evaluation	Timescale: Short Medium Long	Comments / Issues as at January 2018	Costs £ < £2M ££ £2-5M £££ £5M-£10M £££££ >£10M £££££ >£50M
Inverness Airport Development Plan	TS / HIAL / THC / IABP / HIE	HIAL	P	S-L	HITRANS current lead on developing Inverness Airport (Dalcross) rail station	**£££**
Securing and improving Inverness air slots to London Heathrow	TS / HIAL / HIE / LH	TS / HIAL / HIE / LH	P	S-L	HITRANS currently exploring opportunities for mechanisms to support route development / retention	**£**
Air Passenger Duty / Air Departure Tax – Support alternative that does not negatively impact on Highlands & Islands **Extending Air Discount Scheme to include business use and students**	TS / HIAL HITRANS LAs / HIE	TS	P - D	S	HITRANS will work with local partners to input into review of Air Passenger Duty by Scottish Government HITRANS continue to make case for costed and legally compliant extension of ADS HITRANS recently undertook research to assess the costs and impacts of extending ADS to isle-based businesses. This was presented to the Islands Transport Forum, and Ministers agreed to consider its recommendations. HITRANS will continue to make the case for ADS.	**£**
Introduction of a Skye Air service and development of Oban airport	THC / HIE / TS / ABC	Skye Working Group: (HIE / THC / HITRANS) Oban Devt (ABC / HITRANS)	P	S – further devt. work M – delivery	HITRANS to work with THC and HIE to progress Development Plan for re-introducing services with HIAL providing technical support HITRANS to work with ABC to explore opportunities for additional services and operational enhancements at Oban	**£££** Plus revenue (£)
Development of an Aviation Strategy for the region, including: **Planning for the region's airfields and network**	TS / LAs / HIAL	HIAL TS	F	S	Local input into review and need for important role of aviation to be captured in the new NTS	**£**

APPENDIX 2 - SWEDISH CONNECTIVITY INDICES

Looking at the international scene, the visit durations for the 33 European cities most frequently flown to from the Swedish airports have been calculated (see Figure 1). The average times have been calculated in the same way as in Table 1.

Figure 1: Reachability and accessibility – Europe. Reachability. Average visit duration – 2009



Source: QUOGMLEX

As a rule, reachability is better than accessibility, i.e. you can spend longer at European destinations than you can spend in Sweden when travelling there from those destinations. In 2009 Stockholm and Gothenburg scored highest on both parameters, because they offered a relatively large number of direct connections to European cities. Other airports with good reachability had good connections to Copenhagen Airport, the main Scandinavian hub. The poorest reachability was displayed by airports in northern Sweden (except those near the coast), together with Trollhättan and Västerås. The accessibility calculations revealed that day trips to Kiruna, Hemavan, Pajala, Storuman or Västerås were impossible.

Average reachability for the whole group decreased to 3 hours in 2009 - 5% less than in 2008. Average accessibility was 2 hours in 2009, i.e. 16% less than in 2008.

Table 1 shows average calculated visit durations for 2009 together with the change (in minutes) from 2008 and the number of destinations which can be reached.

Table 1: Change in reachability and accessibility, Europe

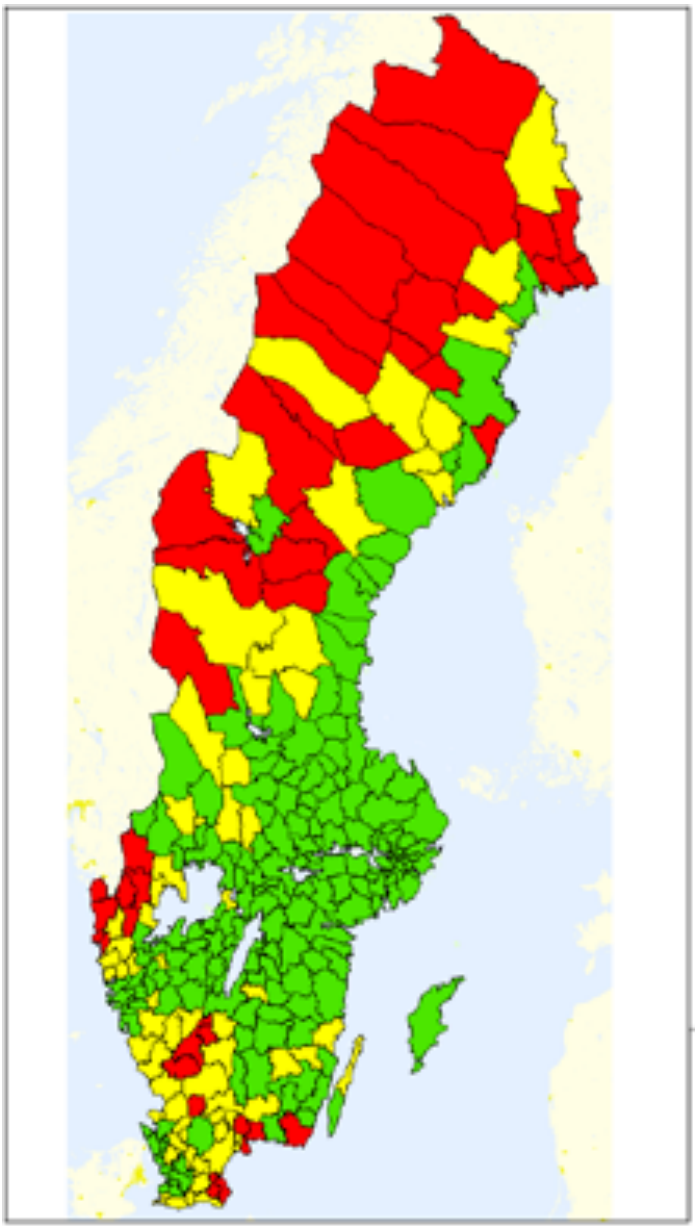
	REACHABILITY				ACCESSIBILITY			
	Average visit duration 2009, hrs	Change, minutes	No. of dest. 2009	Change, No. of destinations	Average visit duration 2009, hrs	Change, minutes	No. of dest. 2009	Change, No. of destinations
Gothenburg	9.33	25	33	0	8.36	-22	32	-1
Halmstad	2.42	27	13	2	1.36	-89	7	-9
Jönköping	2.64	-25	14	-2	1.06	-138	5	-13
Kalmar	4.00	-2	21	1	2.21	100	13	11
Karlstad	5.94	2	26	0	4.18	-15	22	0
Kiruna	3.45	13	18	0	0.00	0	0	0
Luleå	5.03	-25	22	-3	2.88	51	17	8
Malmo	1.76	-162	10	-11	2.94	-91	16	-6
Norrkoping	6.39	-11	27	-2	1.36	-89	9	-9
Ronneby	3.91	-9	20	0	1.67	-2	8	1
Skellefteå	5.27	78	23	3	1.82	-38	9	-4
Stockholm	9.58	-11	33	0	9.39	-4	32	0
Sundsvall	5.27	11	23	-1	2.06	-22	9	-2
Umeå	3.58	-27	19	-1	2.27	-91	11	-9
Visby	3.64	-20	19	-1	3.18	-44	18	-1
Ängelholm	3.73	-18	20	0	2.79	75	18	9
Örnsköldsvik	4.97	73	22	3	1.61	-20	8	0
Östersund	3.58	-27	19	-1	1.67	-87	8	-11
Arvidsjaur	0.58	-9	3	-1	0.91	-18	6	-2
Borlänge	4.12	-15	21	0	3.85	16	21	1
Gällivare	0.61	-9	3	-1	0.91	-9	6	-1
Hagfors	1.09	-4	6	0	0.73	-15	3	-1
Hemavan	0.00	0	0	0	0.00	0	0	0
Kristianstad	1.03	-78	6	-7	0.85	26	4	2
Kramfors	0.61	-7	3	-1	1.70	0	8	0
Linköping	6.82	15	29	0	2.73	-122	15	-13
Lycksele	0.58	-9	3	-1	1.09	-22	6	-2
Mora	1.06	-4	6	0	1.48	-13	7	-1
Oskarshamn	1.06	-13	6	-1	1.52	53	7	4
Nyköping	4.91	75	22	4	2.12	-69	10	-7
Pajala	0.00	0	0	0	0.00	0	0	0
Storuman	0.30	18	2	2	0.00	0	0	0
Sveg	1.06	-4	6	0	1.27	-11	7	-1
Torsby	1.09	-4	6	0	0.64	-20	3	-1
Trollhattan	0.00	-104	0	-10	0.36	-136	2	-14
Vilhelmina	0.61	-9	3	-1	1.27	-11	7	-1
Västerås	0.00	-11	0	-1	0.00	-22	0	-1
Vaxjo	1.85	-102	10	-8	3.27	33	18	1
Örebro	5.48	4	24	-1	2.33	-15	15	-2

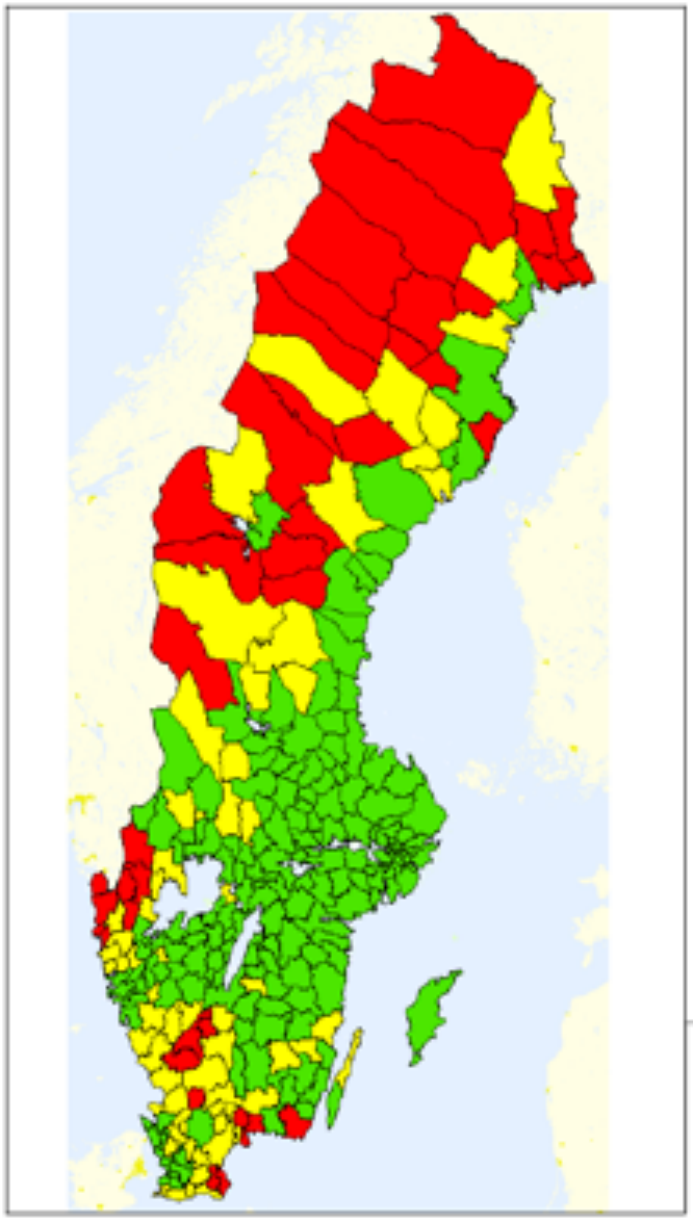
Source: QAGMAX

Accessibility increased at seven airports, in particular Kalmar and Ängelholm. Jönköping, Trollhättan and Linköping displayed the biggest decreases.

In 2009 Stockholm and Gothenburg scored highest for both reachability and accessibility parameters, because they offered a relatively large number of direct connections to European cities. Other airports with good reachability had good connections to Copenhagen Airport, the main Scandinavian hub. The poorest reachability was displayed by airports in northern Sweden (except those near the coast), together with Trollhättan and Västerås. The accessibility calculations revealed that day trips to Kiruna, Hemavan, Pajala, Storuman or Västerås were impossible. Average reachability for the whole group decreased to 3 hours in 2009 -5 per cent less than in 2008. Average accessibility was 2 hours in 2009, i.e. 16 per cent less than in 2008. Trafikverket also track the domestic internal accessibility again based upon an effective working day at either end of the route, by whichever transport mode. (Figure 2)

Figure 2: Trafikverket tracks Ease of Accessibility To (left) and From Stockholm in these illustrations of the National connectivity picture





APPENDIX 3 - REFERENCED STUDIES AND DOCUMENTS

Socio-Economic Case For Retention of Highlands and Islands APD Exemption, HITRANS (Reference Economic Consultants) 2019

Economic and Social Impact of Inverness Airport, HIE (ekosgen and Reference Economic Consultants) 2018

Air Services Scoping Paper 2016, HITRANS (Northpoint)

Appraisal of Inclusion of All Business Travel Within the Air Discount Scheme, HITRANS (Reference Economic Consultants) 2016

Analysis of Best Value options to deliver Air Services to an Upgraded Skye Airport, HITRANS (ARCADIS) 2018

Air Links to London from the North of Scotland: Updated Evidence Note, 2012 (MVA) and Update 2014 (Northpoint)

Inverness City Region Deal, 2016

Aviation Strategy – Initial Call for Evidence responses from local partners, 2017 (HIE; HITRANS; HIAL)

Economic Impact of Wick John O'Groats Airport (UHI) 2018/19 – not yet published

Highlands and Islands Air Freight Study HIAL/HITRANS (Northpoint) 2012 (updated 2018)

Orkney Inter - Island Transport Study Peter Brett Associates 2016 Aviation baseline study – unpublished (SG)

Shetland Inter - Island Transport Study Aviation Baseline Peter Brett Associates 2016 (SG)

Regional aviation and economic growth: cointegration and causality analysis in Australia D Baker, R Merkert, M Kamruzzaman Journal of Transport Geography 43, 140-150

Wider Economic Impacts of Regional Air Connectivity DfT (Peak Economics) 2018)

Regional Connectivity Review DfT (York Aviation) (2018)

Caithness and Sutherland PSO Air Services Review Caithness Chamber of Commerce (Northpoint) 2019

Expanded Air Services Network Vol 1 HITRANS 2004 & Volume 2

Beyond Lifeline Services: How Investing In Transport Can Unlock The Economic Potential Of Peripheral Areas (HIE - 2006)

Skills Development Scotland's Review of the Aerospace sector in Scotland - June 2018 with focus on of the aerospace sector within Moray and the Highlands and Islands area (not online)

APPENDIX 4 – STAKEHOLDER CONSULTEES

Highlands and Islands Airports Limited (HIAL)

Highlands and Islands Enterprise

HITRANS

Argyll and Bute Council

Comhairle nan Eilean Siar

The Highland Council

Moray Council

Orkney Islands Council

Caithness Chamber of Commerce

European Marine Energy Centre, Orkney

Inverness Chamber of Commerce

Moray Chamber of Commerce

Scottish Council for Development and Industry

Shetland Tourism Association

ZetTrans

hia Highlands and Islands Airports Limited
Puirt-adhair na Gàidhealtachd is nan Eilean Earranta

HIE
Highlands and Islands Enterprise
Iomairt na Gàidhealtachd 's nan Eilean

HI TRANS
THE HIGHLANDS AND ISLANDS TRANSPORT PARTNERSHIP