

REVIEW OF COMMUNITY BROADBAND SCOTLAND

A final report for Highlands and Islands Enterprise
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1 Introduction

- 1.1 ekosgen was commissioned by Highlands and Islands Enterprise (HIE) to undertake an independent review of the Community Broadband Scotland (CBS) initiative, taking account of the current and emerging context of the roll out of superfast broadband to remote and rural communities across Scotland.

Study aims

- 1.2 The broad objectives of the review are to:
- Understand and review the development of CBS focussing on the viability of CBS projects in the context of R100 plans and on the alternative delivery models that CBS has been exploring over the past year and whether these could be deliverable in the context of R100;
 - Assess the current policy context and how it is influencing progress towards CBS achieving both its objectives and the objectives of R100;
 - Identify the challenges surrounding the delivery of community broadband projects, and their current and anticipated impacts;
 - Develop and appraise potential options for the future that meet the needs of the Scottish Government, HIE, CBS and communities; and
 - Provide an objective, evidence based report to inform decision making and the way ahead.
- 1.3 The scope of the review does not include an evaluation of the progress and achievements of CBS. It also does not include developing technical solutions to provide superfast broadband.

Methodology

- 1.4 The approach to conducting the review consisted of an in-depth review of a wide variety of documents relating to CBS from its inception in 2012 including monitoring information relating to the projects developed and delivered to date as part of the initiative.
- 1.5 ekosgen also carried out face-to-face consultations with a number of HIE Directors, the CBS management team and their technical advisers, Scottish Government staff and other relevant stakeholders. A list of consultees is provided at Appendix 1.

Report structure

- 1.6 The report is structured as follows:
- Chapter 2 provides an overview of the CBS programme and describes the policy context within which it operates;
 - Chapter 3 presents CBS's achievements to date and the challenges which have been faced by the programme;

- Chapter 4 discusses the current operating environment and the implications for the future delivery of the CBS programme and projects; and
- Chapter 5 presents the conclusions and considers a number of priority actions and activities for the future.

2 The CBS Initiative

Introduction

- 2.1 This chapter presents an overview of the evolving policy context for the introduction of next generation broadband and the rationale for the CBS initiative. Drawing upon both programme documentation and consultation feedback it also describes the CBS delivery model, resourcing and the current operational issues which have led to the commissioning of this review.

Wider Policy Context

- 2.2 Broadband Delivery UK (BDUK) was first set up by the UK Government in 2010 as part of the Department for Culture, Media & Sport. Phase one of BDUK's *UK Next Generation Network Infrastructure Deployment Plan* aimed to provide superfast or next generation broadband coverage (with speeds greater than 24 Mbps) to 90% of UK homes and businesses by 2015. Phase two aimed to extend this to 95% of UK homes and businesses by 2017. This was to be done through a £1.7 billion investment with local and devolved authorities.¹
- 2.3 The Scottish part of the Superfast Broadband Programme is run by the Scottish Government with funds from central government, BT, local authorities and the Scottish Government itself. Alongside commercial roll out by providers such as BT and Virgin Media, Digital Scotland Superfast Broadband (DSSB) was set up by the Scottish Government with two projects aimed at reaching the majority of premises not covered by commercial providers. The Highlands & Islands project was procured through HIE, starting in June 2011, the contract was awarded to BT in 2013. The rest of Scotland project was procured by the Scottish Government, starting in July 2012; BT was awarded the contract in July 2013. Through DSSB and commercial programmes it was projected that the 95% target would be achieved in Scotland by the end of March 2018.²
- 2.4 Whilst it was anticipated that the 95% target would be achieved in Scotland as a whole, it was forecast that DSSB and commercial programmes would only reach 84% of premises in the Highlands & Islands. Recognising this, the Scottish Government established Community Broadband Scotland (CBS) in 2012 to assist those communities in the Highlands & Islands and the rest of Scotland who were not set to benefit from either commercial or DSSB intervention.³ CBS is delivered by HIE and is viewed as a way to both empower communities and help widen access to superfast broadband for the most remote areas.
- 2.5 As well as digital infrastructure projects, digital engagement projects have been an important part of the wider policy context. HIE ran a Digital Engagement 2015-2017 project in the Highlands & Islands that aimed to support businesses by providing a Digital Health Check and running digital business workshops. This project followed the HIE/Business Gateway IT Engagement Programme which ran from 2012-2015 and supported 328 businesses through one to one support and engaged with some 1,200

¹ BDUK (2015) *UK Next Generation Network Infrastructure Deployment Plan*

² <http://www.gov.scot/Publications/2015/02/4674/1>; <https://www.scotlandsuperfast.com/search-faqs?faq=&submit=>

³ <http://www.hie.co.uk/regional-information/digital-highlands-and-islands/faqs.html>

through workshops. HIE's digital engagement programmes are particularly targeted at businesses and SMEs in an effort to help individual businesses to grow sales and boost the wider Highlands & Islands economy.

- 2.6 In the period since policy announcements around superfast broadband there have also been important contextual changes within the broadband market. This has included the increasing presence of smaller "altnet" (alternative network) providers providing broadband services. These providers are particularly important in that they can potentially provide rural communities with connectivity; this is related to their small size and innovative delivery.⁴
- 2.7 As per the Manifesto, the Scottish Government announced its plans in May 2016 to develop the Reaching for 100% (R100) programme. R100 commits the Scottish Government to deliver superfast (defined as 30 Mbps+) broadband to 100% of premises across Scotland by 2021.⁵ The R100 commitment forms part of the Scottish Government's Refreshed Digital Strategy which was released in March 2017. The report again emphasises the importance of connectivity to Scotland's economy.⁶
- 2.8 In March this year the UK government launched its 5G strategy. The strategy set out government plans for developing the next generation of mobile connectivity. The three main targets of the strategy are to accelerate the deployment of 5G networks; maximise the productivity and efficiency benefits to the UK from 5G; and create new opportunities for UK businesses at home and abroad, encouraging inward investment. One of the first steps of the strategy is an investment of up to £16 million from the government into a national 5G Innovation Network to trial and demonstrate 5G applications. The plan is that this network will be developed during 2017/18 with an end to end trial being delivered in early 2018.⁷
- 2.9 In 2015 the UK government announced that across the UK people would have a right to request broadband of at least 10 Mbps speed with the formation of a Universal Service Obligation. There have been suggestions that this should increase to as high as 30 Mbps.⁸ In July 2017 the government also announced a further commitment to ultrafast (1 Gbps+) broadband through fibre connection directly to the premises. The government is funding the development of ultrafast broadband through the provision of £400 million of public money through the Digital Infrastructure Investment Fund and is asking the private sector to invest a further £600 million.⁹ More recently, at the time of writing¹⁰ BT has made an offer to government to fulfil its Universal Service Obligation ambition of providing broadband infrastructure (of 10Mbps) to 99% of the UK.

⁴ <http://www.nesta.org.uk/blog/innovating-alt-nets-future-digital-infrastructure-uk>

⁵ <https://consult.scotland.gov.uk/digital-scotland/superfast-broadband-in-scotland-reaching-100/>

⁶ <http://www.gov.scot/Publications/2017/03/7843/2>

⁷ Department for Culture, Media & Sport (2017) *Next Generation Mobile Technologies: A 5G Strategy for the UK*

⁸ https://www.theregister.co.uk/2017/02/23/lords_slip_in_30mbps_uso/

⁹ BBC News (2017) 'Ultra-fast broadband fund launched by UK government', 3rd July 2017, available at: <http://www.bbc.co.uk/news/technology-40481561>

¹⁰ BBC News (2017) 'BT offers universal broadband in place of regulation', 30th July 2017, available at: <http://www.bbc.co.uk/news/technology-40751449>

Rationale for CBS and the Model

- 2.10 When CBS was initially set up in 2012 it was established with an aim to empower remote communities through helping them access faster broadband. The focus was on small projects involving local volunteers with a high level knowledge of technology. These were step change projects focused on more than doubling broadband speeds with use of equipment capable of delivering superfast speeds. Lack of access to backhaul in the early years of CBS meant that some projects were not able to reach superfast speeds until DSSB fibre rollout reached rural areas. The development of broadband was seen to be important for rural communities, not just in and of itself, but also in connection with digital engagement projects that have highlighted the economic importance of digital connectivity.
- 2.11 CBS was set up as a 'one-stop-shop for rural community groups to develop broadband coverage in their areas'. The purpose of CBS is to provide financial support and advice through its website, telephone services and on the ground staff to local communities who were least likely to be included within commercial and DSSB provision.¹¹ Although managed by HIE, CBS provides a Scotland-wide service to all those not included within commercial or DSSB provision, it is not limited to the Highlands & Islands alone.
- 2.12 The Scottish Government provided an initial investment of £5 million over the first three years to 2015. Initially eight FTE members of CBS were costed for. This consisted of one FTE Director, one FTE Operations Manager, five FTE Development Officers and one FTE Administrator. Community groups were provided with grants to procure initial technical support. From September 2014 to March 2017 a CBS framework was put in place with Atkins technologies to provide technical support. FarrPoint, originally sub-contractors to Atkins, have been directly contracted as technical and project advisers since 2015.¹²
- 2.13 The initial phase of CBS' operation was the pioneer phase during which six projects were selected with the aim of representing different situations and challenges, not all however, came to fruition. It was intended that these projects would receive intensive support for one year and that an open programme would become available in 2013.¹³ Over 2012-2014 twelve step change programmes were delivered with a model focused on community ownership and development.¹⁴
- 2.14 In the 2014/15 financial year the focus switched to aggregated models. This means bringing several communities together to procure the building and operation of much bigger, more sophisticated networks from commercial suppliers. It was felt that these aggregated areas would be more likely to attract commercial suppliers that could offer larger, more sustainable and faster networks. Within the aggregated model it was envisaged that communities would manage and own the network whilst commercial suppliers would build and operate them. In the aggregated model funding is passed from HIE through the community to the supplier.¹⁵

¹¹ <http://www.gov.scot/Topics/Economy/digital/action/WC2020/CBS>

¹² Community Broadband Scotland – Part 1

¹³ Ibid.

¹⁴ CBS internal reports

¹⁵ Community Broadband Scotland (2017) *Future Directions "think piece"*

- 2.15 Stemming from the plans for a focus on an aggregated model, agreement was reached in early 2015 with the Scottish Government for an additional £2.5 million of funding to support increased staff costs and specialist advice. This included increasing the CBS team from nine to 18 members of staff, with funding extended to March 2018. £9 million of Scottish Rural Development Programme (SRDP) funding for the aggregated project model was also secured in June 2015.¹⁶

Current Developments

- 2.16 A number of developments have led to this review and the need to take stock of the CBS programme within the new and evolving policy context discussed above. These challenges are discussed in more detail in the next Chapter but include the following.
- 2.17 Issues with the CBS aggregated model approach have hampered the progress of 13 pipeline projects in a number of ways. Procurement for these projects proved to be problematic after the expiry of the BDUK State Aid in June 2015. Use of the General Block Exemption Regulations was discussed as an interim solution until the establishment of a new BDUK scheme. However, CBS believed that negotiations with the EU would be protracted and chose to wait on the new scheme instead. This delayed all projects wishing to go out to procurement.
- 2.18 Although a new BDUK State Aid decision came into force in June 2016, no terms and conditions were available until October 2016. There was also a further delay as these terms and conditions were redrafted into Scots Law and submitted to the Scottish Government in January 2017 with the process not complete until May 2017.
- 2.19 There have also been problems with attracting commercial suppliers in the procurement process due, in part, to particularly high backhaul and operating costs. Feedback from suppliers has identified that these costs had not been sufficiently taken into account within CBS project estimates. The impact has been that the available SRRP funding is now insufficient to support all of the current pipeline projects at their preferred coverage levels.
- 2.20 The long term commercial viability of “altnet” suppliers has also come under scrutiny. One project, GigaPlus Argyll, which was procured shortly before the BDUK State Aid decision expired, did receive competent bids. However, AB Internet, which won the contract, subsequently went into administration in May 2017 with only part of the network built.¹⁷ There is an increasing concern, therefore, that newer “altnet” providers may not have sufficiently robust and sustainable business plans to operate community networks over the longer term.
- 2.21 The development by the Scottish Government of the R100 programme has also impacted on communities’ perceptions of the CBS team and expectations for their CBS projects. All CBS projects are considered within the R100 scope unless communities choose to opt out.
- 2.22 The development and procurement strategy of R100 has proceeded as follows. From November 2016 to May 2017 an Open Market Review exercise was carried out to map

¹⁶ CBS internal reports

¹⁷ Ibid.

areas of existing and planned NGA broadband. From this, “white” areas where there is no existing or planned NGA broadband have been mapped. These areas will be covered by a new Scottish Government procurement to be launched in autumn 2017, following a period of market engagement from September 2016 to June 2017. It is planned that the contract will be awarded in late 2018 and deployment plans will begin by 2019.¹⁸ This has meant that there has been an air of uncertainty about the eventual outcome for current CBS projects.

Project and Policy Timeline

Table 2.1: Project and Policy Timeline

Date	Project/Policy Event
2010	BDUK set up
2011-2012	Highlands & Islands and Rest of Scotland DSSB projects procured (contracts awarded in 2013)
2012-2014	Initial £5 million CBS funding and working on step change projects
2014/15	Decision is taken to focus on aggregated project model
Early 2015	Agreement reached with Scottish Government over additional CBS staff for aggregated projects
June 2015	SRDP grant awarded to CBS for aggregated model
June 2015	GigaPlus Argyll contract awarded to AB Internet
June 2015	BDUK State Aid decision expires
May 2016	R100 announcement
Nov 2016-May 2017	R100 Open Market Review
May 2017	AB Internet, suppliers of GigaPlus Argyll enter into administration
September 2016-June 2017	R100 market engagement
July-August 2017	R100 public consultation
Autumn 2017	R100 procurement launched
Late 2018	R100 contract awarded
2019-2021	R100 roll out

¹⁸ <http://www.gov.scot/Publications/2017/07/4529/343139>

3 Achievements and Challenges to Date

Introduction

3.1 Whilst a full evaluation of the CBS programme is out with the scope of this review, this chapter presents a brief summary of the CBS programme's achievements to date in project terms. Then, based on feedback from consultations, it discusses some of the challenges which the CBS team has and currently faces in the course of delivering the programme.

Project Achievements

3.2 CBS project activity since 2012 has been delivered in two phases to date. Table 3.1 gives a summary of the 18 individually funded projects in Phase 1. These have approved capital funding, making up 13 community projects, three of which are in the second or third phase to extend existing networks to more premises – Locheilnet CIC, Mearns Internet Initiative and Stobo-Dawyck Community Broadband Network.

TABLE 3.1: PHASE 1 APPROVED CBS PROJECTS (June 2017)¹⁹

CBS Project	Coverage	Council Area	CBS Grant	Premises	Connected
Applecross Community	Applecross peninsula	Highland	£ 68,520	250	100
CMNet CIC	Achmore/Stromferry	Highland	£ 33,339	75	34
Locheilnet CIC 1	Locheil/Glenfinnan/ Achnacarry	Highland	£ 91,500	350	393 ²⁰
Sleat Community Trust	Sleat peninsula, Skye	Highland	£ 122,169	136	93
Glenelg & Arnisdale	Glenelg/Kylerhea	Highland	£ 61,598	154	37
GigaPlus Argyll ²¹	Mull, Colonsay, Jura, Islay, Lismore, Luing & Craignish	Argyll & Bute	£ 1,060,550	1,574	0
Badenoch Broadband CIC	Laggan	Highland	£ 41,800	225	0
Community Information	Tiree	Argyll & Bute	£ 80,000	160	0
Locheilnet CIC 2	Tulloch/Kilmalieu	Highland	£ 42,145	45	0
Total for HIE area			£ 1,601,621	2969	657
Stobo-Dawyck Community	Stobo-Dawyck	Scottish	£ 13,300	75	70
Blair Logie Community	Blair Logie	Stirling	£ 21,000	85	36
Mearns Internet Initiative 1	Marykirk surrounds	Aberdeenshire	£ 21,000	151	125
Humbie & Lammermuir CE	Humbie area	East Lothian	£ 152,000	325	118
Highland Perthshire Community Partnership	Struan and surrounds	Perth & Kinross	£ 58,500	115	66
Ardeonaig & Ardtalnaig CA	Loch Tay	Perth & Kinross	£ 139,894	152	80
Stobo-Dawyck Community Broadband Network 2	A701/A702 Corridor and rural Midlothian	Scottish Borders/	£ 54,552	315	165
Mearns Internet Initiative 2	Marykirk surrounds	Aberdeenshire	£ 30,600	340	94
Mearns Internet Initiative 3	Marykirk surrounds - Aberlemno & Memus	Aberdeenshire	£ 24,888	172	79

¹⁹All data is accurate at date received by CBS

²⁰ Locheil has more connections than CBS funded as they expanded using their own funds

²¹ Currently has a partially built network after voluntary administration of network provider in May 2017

Total for rest of Scotland			£ 506,734	1,730	833
Total Capital Funding			£ 2,108,355	4,699	1,490

- 3.3 The projects in Table 3.1 have a total approved capital funding in excess of £2.1 million covering 4,699 premises with almost 1,500 premises connected and an average cost per premise of £447. Some of the projects have been operating for as long as five years. Two projects, RemIX and Tiree Broadband, have been shortlisted for two awards at 2017 NextGen Digital Challenge Awards. The networks in Ardeonaig & Ardtalnaig and Marykirk have previously received NextGen Digital Challenge Awards.
- 3.4 In terms of network speeds, two communities are currently achieving >5Mbps at one end of the spectrum with others achieving speeds of >30Mbps. The focus of the Phase 1 projects however was a step change with the installation of equipment capable of delivering superfast broadband at some point in the future as achieving superfast speeds was constrained by a lack of access to backhaul. Only ADSL services were available until the DSSB fibre rollout reached rural areas allowing projects to offer plus 30Mbps. Following the signing of the DSSB contracts in May 2013 (after the launch of CBS) the issue of some projects having to de-scope and be removed from the DSSB footprint was raised for any project delivering +24Mbps with public funding support. Some of these projects, such as Humbie, Loch Tay and several connected on the West Coast Backbone currently offer 30Mbps+.
- 3.5 GigaPlus Argyll, serving the islands of Colonsay, Mull, Iona, Jura, Lismore, Islay and Luing, and the peninsula of Craignish, was the first aggregated model project. It aimed to reach around 1,574 premises. As referred to earlier, due to the network service provider AB Internet entering into voluntary administration in May of this year, the project is only partly built and therefore has no connections, with c. 60% of approved funds paid out. CBS, however, has been working intensively with the community and the administrator to plan a way forward.
- 3.6 CBS is actively supporting 13 advanced pipeline community organisations through the CBS project development process. These projects aim to cover over 8,000 premises across Scotland and indicatively have a cost of just under £10 million. Table 3.2 presents the Phase 2 pipeline projects which are currently at various stages of development.

TABLE 3.2: PHASE 2 PIPELINE PROJECTS AT AN ADVANCED STAGE				
Projects (SRDP funded)	Premises	Population	Indicative Grant	Local Authority
*Kyles Community Broadband	346	750	£384,000	Argyll and Bute
*Fair Isle	43	50	£312,000	Shetland
*Strath (Helmsdale)	139	275	£312,000	Highland
*Lunan Valley/Amulree	387	850	£540,000	Perth and Kinross
Cairngorms National Park	1,088	2,285	£1,800,000	Highland/Moray
*East Neuk and Howe of Fife	935	1,964	£858,000	Fife
North Skye Broadband ²²	916	1,924	£1,200,000	Highland
Fortingall (Glen Lyon)	482	964	£360,000	Perth & Kinross

²² North Skye Broadband project is not proceeding as originally planned but as a demonstration project of under £200k with a focus on future-proofed ultrafast broadband

Durisdeer	176	370	£235,200	Dumfries & Galloway
Trossachs/Kinlochard	272	571	£384,000	Stirlingshire
Berwickshire	1,017	2,136	£415,000	Scottish Borders
Borders CB (Ettrick)	1,804	3,788	£2,280,000	Scottish Borders
B4GAL	676	1,420	£900,000	South Lanarkshire
Total Funding	8,281	17,345	£9,980,200	

- 3.7 Of the (aggregated) projects listed in Table 3.2, five have started the procurement process; target build dates range from early to late 2018. However, there are a number of challenges being faced by some of these projects which may hinder their ability or desire to progress beyond the procurement stage and this is discussed below. In addition to the above, CBS had been working with three smaller projects whose circumstances have now changed, as shown at Table 3.3.

TABLE 3.3: PHASE 2 SMALLER PROJECTS

Projects	Premises	Population	Indicative Grant	Local Authority
Elgol, Skye (Hebnet)	46	100	£45,000	Highland
Balquhidder	100	200	£70,000	Stirlingshire
Ardross	150	300	£80,000	Highland

- 3.8 Elgol has pulled out of the CBS process preferring to be considered as in scope by R100; Ardross was not funded by SRDP and has been put out to tender directly; and Balquidder is now progressing with financial support from Stirling Council but may come back to CBS for support at a later stage.
- 3.9 Recognising that this review has not carried out extensive stakeholder consultation or indeed any detailed community consultation the review provided some general feedback regarding the CBS programme and delivery team.
- 3.10 The majority of those consulted agreed that the strengths of the CBS team lies in their knowledge and experience of community engagement. They have successfully adopted a collaborative approach to developing projects and providing guidance and support to communities as and when needed. Stakeholders in the review felt that the team members have been very flexible in their approach (given changes in the policy environment changes and market challenges) to helping communities reach their objectives whilst being mindful of both HIE and SG policy objectives and other operating constraints.
- 3.11 There is a view that the CBS programme overall was (and perhaps still is) the ideal mechanism to support those communities who could and wanted to take action in the absence of any confirmed superfast broadband provision for their communities. It has helped some communities to get broadband and it has engaged with a significant number of people in a wide range of communities. It has also demonstrated that the Scottish Government is interested in and committed to addressing the issue of broadband provision in rural and remote communities.

Challenges

- 3.12 Delivering the CBS programme has not been without its challenges as briefly alluded to earlier in Chapter 2. These are discussed in more detail here and include issues specifically relating to the changing policy environment, the community owned and operated network model, the internet service provider market and implications for network services procurement, the sustainability of community networks and the management of the CBS programme itself.

Policy Environment

- 3.13 It is recognised (to a certain extent in hindsight) that the community development approach implicit in the CBS delivery model is always going to be at odds with being able to adhere to and understand the complexities of the broadband market and the State Aid and procurement regulations that govern it. When the BDUK State Aid decision expired in June 2015, a number of CBS projects were forced to either pause development activity or proceed with a new, complex and technical procurement route which required more technical advice and support. This has held up the delivery of a number of projects. Subsequently through negotiation with SRDP, CBS can now offer specialist support for financial and legal advice and project management activity.
- 3.14 The CBS programme was originally tasked to help communities not covered by the roll out of the DSSB infrastructure. However, it was not clear at the beginning of the CBS initiative which areas BT (the contract holder) could and couldn't cover and when areas being included could expect provision. The perception is that CBS was unable to easily clarify intervention areas due to the constraints of the DSSB contracts.
- 3.15 As a result CBS started working with those projects which came forward with ideas, and since they were step change projects, there was no need for permission from the DSSB contracts to deliver these. The evolving delivery of DSSB through 2014-2016 resulted in ongoing uncertainty for where CBS was able to intervene. However, the fact that the publically funded DSSB contract was being rolled out even further was welcomed.
- 3.16 There is now a similar, if not greater, challenge for the CBS programme with respect to the latest plans for the roll out of the R100 programme. The R100 procurement process will not commence until later this year and until this process is complete it will not be clear to what extent R100 will be able to subsume the current Phase 2 CBS projects in particular, and, indeed, whether there will still be a need for the CBS programme with its current delivery model, i.e. will there still be some 'white' areas that the initial R100 procurement will not provide for. Even if there are they are likely to be smaller projects in the most challenging areas with high overhead costs. The team needs to await the outcome of initial procurement, however, as there is still uncertainty on the plans to achieve full coverage for those communities not provided for by the DSSB roll out and some communities are in the advanced stages of procuring their own networks.
- 3.17 R100 is currently proceeding on the basis that all remaining premises (after DSSB), some 200,000, will be covered by the new contracts which will be procured in three Lots – North, South and Middle. However it is recognised that these are in areas which are 'fractured' i.e. all over Scotland and not just in rural or remote areas. This makes it very expensive to build in network terms. Whilst it is recognised that the initial R100

procurement will not extend to 100% of premises in scope, the gap in provision is yet to be confirmed.

- 3.18 This has implications for the currently operating CBS (and pipeline) projects. Communities must consider whether to opt out of R100 (by mid November 2017) and run the risk of potentially missing out on the latest technology and future network upgrades or wait for R100 to reach them, albeit it may be 3-4 years away, assuming funds will be made available to support all communities.
- 3.19 From a management perspective, R100 is now imminent and in the absence of any real clarity to date on what R100 aims to achieve, there is an urgent need to conclude discussions on how CBS fits with the R100 programme, process and team. It could be argued that there are essentially two solutions available for the same geographies at the moment.

The Model and Funding

- 3.20 The CBS model is predicated on a community owned network. It was designed and works on the assumption that the network will be a revenue generating asset. In reality revenue generation will be very challenging, especially for larger networks, thereby becoming more of a burden for the community in the longer term. Communities are also dealing with a highly regulated environment which can be difficult and, for some, daunting. To be successful and sustainable will require the ongoing involvement of community volunteers and this can make the model vulnerable if, for example, people move away, retire from volunteering and so forth. Along with this, project management expertise is a pre-requisite and presents the same issues around sustainability and succession. There is an ongoing cost for network maintenance and equipment upgrades and replacement (required every 7-10 years) and there are questions around how this can be funded. The rate of change and a requirement for upgrade may in fact get faster over time given the pace of change in digital technologies. In essence the onus is on the community to deliver the most challenging aspects of the project, putting a burden on them rather than empowering them.
- 3.21 The move to a supplier owned model puts the onus back onto the supplier to ensure that equipment remains fit for purpose and the tender process can assess the level of upgrade possible. There does remain the question, however, how contract management throughout the operational phase of the network can be funded.
- 3.22 CBS approached SRDP to amend the model. Some amendments were possible, including the shift to a supplier owned model and the capitalisation of specialist support for project management, financial and legal advice during the build phase. However a more significant shift away from the aggregated project model was deemed too substantial to be agreed without an amendment approval from Europe, which could take up to a year. This combined with the Brexit deadline for commitment to spend (March 2019) meant that it would not be possible to make amendments and use this funding in a different model for delivery.
- 3.23 The extent to which the challenges of the CBS aggregated model has been recognised and/or explained to communities at the outset is questionable in some cases and has led to issues and problems later in the project development process.

- 3.24 Issues with the aggregated model (larger networks) have included volunteer fatigue due to difficulties and lack of experience or skills to act as contract managers. This has meant that projects have been delayed and there have been examples of poor financial and procurement management. Given that the CBS programme's own programme governance and management has evolved over time some earlier projects have perhaps not been advised or supported to the extent needed and have therefore suffered from some of these issues.
- 3.25 Supported by specialist advisers CBS is, in theory, also able to support project feasibility and technical design and costing as part of the project development process. Whilst specialist advisers have been deployed on many projects, the extent to which their detailed technical expertise has been deployed when needed for some of the more complex networks has been brought into question. However, CBS felt that more technical support would have diverted funds from project delivery to feasibility which raises questions with respect to value for money.
- 3.26 It was also suggested by stakeholders that many people within communities do not actually want to own or operate their own broadband network per se; they simply want to have broadband access and have responded to the opportunities available to do that. This highlights the importance of and need for wider community consultation at all stages of the project development process.

Procurement and the Market

- 3.27 As previously mentioned, the 12 month lapse in the State Aid umbrella for broadband projects affected the pace of delivery of CBS pipeline projects and resulted in protracted State Aid rules and process around procurement for some community projects whilst others were put on hold.
- 3.28 Procurement regulations are complex and resource intensive and in the current model communities have to lead and CBS staff and technical advisers advise them. State aid is a hugely complex area and it is difficult for communities to work to. In addition, the CBS advisers have no in-depth background or expertise in procurement, or in the technical aspects of preparing a business case, although over time some have acquired some of these skills on the job.
- 3.29 With respect to the network provider market there would appear to be little appetite for building and operating mid-sized networks. Some CBS pipeline projects have had a disappointing response from the market via recent procurement rounds in that they have received inadequate or no bids, a market indication that small community projects are easier to build and operate, and larger networks are more commercially viable.
- 3.30 For example, the Fair Isle project received no bids and Kyles Community Broadband project had six supplier responses to the European Single Procurement Document (ESPD) stage of procurement ranging from £350k to £1m and three responses to the full tender with only two thirds coverage proposed.
- 3.31 It is recognised that the mid-sized market is the hardest to supply. The 'altnet' market has been the response to the gap in the market but it is not a mature market and lacks a selection of high quality, reliable suppliers which have sustainable and robust business plans.

- 3.32 Another significant challenge currently for CBS is progressing the current Phase 2 pipeline projects because of the budgeted cost of these projects. The commercial viability of these projects is now in doubt – evidenced in part by procurement responses – and due to a shortfall in capex budgets. Approximately costed by CBS at £1000 per premise the reality is that the cost is likely to be closer to £2-3,000 per premise. These costs were not subject to detailed technical options appraisals as to do so would have been costly and CBS considered that this would not have been good value for money. When compared with R100 estimated costs on rurality indexes seven and eight, CBS estimates are shown to be on average 74% too low to attract bids.²³ Whilst initially it was thought that the £9 million funding from SRDP would be sufficient to support 16 projects, it is now projected that the current pipeline of projects would cost £17.3 million.
- 3.33 It should be noted that in costing the projects there has also been little or no allowance made for contingency (as feedback from some suppliers), the ongoing maintenance of active equipment and the replacement of kit when needed.
- 3.34 To address this issue CBS has now revised individual project budgets to reflect the modelling used to estimate the costs of R100. Farrpoint technical advisers are also in the process of assessing the technical, commercial, operational and financial considerations for using SWAN²⁴ as a source of backhaul for community projects which would reduce the total capex and opex required to deliver them. CBS is liaising with Highland Council and a map of their SWAN sites has been produced. The next steps are to identify pilot areas and produce a proposal to access funds via Scottish Government.

Sustainability

- 3.35 Considering the sustainability of community networks is a critical part of the project development process. As network infrastructure ages, there is a need for both more financial resource and volunteer input. In assessing the viability of a project, addressing the fragility of relying on volunteers and the need for succession planning as volunteers give up or move away, becomes a necessity.
- 3.36 A focus on a broadband solution only, without thinking about project sustainability and whether it is the right solution for that community, has now come even more to the fore given that the larger aggregated project model is the focus of most of the CBS pipeline.

Other

- 3.37 Other challenges facing the CBS programme relate to its governance and oversight. Managed by HIE on a day to day basis, and loosely reporting to the Scottish Government on a monthly basis, this structure has had a detrimental effect on communication and information sharing between key parties and in turn CBS' ability to deliver projects and ultimately it has impacted on communities. This has been more pronounced in the current operating context of a major policy shift which has directly affected CBS programme delivery.

²³ Ibid.

²⁴ Scottish Wide Area Network, a single public services network for the use of all public service organisations within Scotland

- 3.38 More recently a new governance structure, the Infrastructure Action Plan Programme Board (IAPPB), which oversees all digital infrastructure activity, has been set up. A CBS management team are now required to report into this group on a regular basis.
- 3.39 Finally, there is a growing concern that as more projects stall and potentially fail and communities look for other solutions from CBS, HIE and the Scottish Government there is a real risk of reputational damage for all parties as well as a failure to meet government targets and commitments.

4 Current Operating Environment

Introduction

- 4.1 This chapter discusses the portfolio of CBS projects (currently operating and pipeline) and the next steps to be considered given the current operating environment.

CBS Projects

- 4.2 As already discussed, the R100 programme development and procurement timeline suggests that the number and location of premises covered by the initial R100 procurement for superfast broadband will not be known until June 2018 when responses from contract bidders are received. In the meantime there is a need to manage the expectations of all the communities that are delivering Phase 1 broadband networks or are currently planning Phase 2 pipeline projects.
- 4.3 CBS advisers have been in dialogue with all projects to gain an understanding of how they want to progress their networks or projects going forward and some of this feedback is presented below. At the time of writing individual 1-2-1 meetings with communities are taking place, involving CBS management and R100 representatives, which are seeking to gain a clear understanding of communities' aspirations and expectations going forward. This is a critical stage for understanding the next steps for CBS activity.
- 4.4 For **Phase 1** communities who are currently operating networks there are three options:
- **Option 1:** Continue to operate their networks, in which case they need to opt out of R100. However networks can only opt out of state aid intervention if they can demonstrate either that they have a robust business case and private income to meet the government target of 30MBps or, if they need subsidy to upgrade, that they can build sufficient technical requirements to meet the publicly funded standard (EU Broadband Guidelines including wholesale access and definition of superfast). Their choice needs to be confirmed by mid November 2017 to ensure that they can be scoped into R100 if these requirements cannot be met.
 - **Option 2:** Opt to be included in scope of R100 by mid November 2017 and wait for R100 overbuild and continue to operate networks until that time.
 - **Option 3:** Opt to be included in scope of R100 by mid November 2017 and await R100 overbuild and improve/boost network speeds as an interim measure until that time.
- 4.5 Current feedback from CBS advisers (to the review team) indicate that **four** projects have indicated they want to be part of R100 in some shape or form, i.e. Option 2 or 3.
- 4.6 A further **four** projects wish to proceed with the upgrade of their networks as planned unless R100 is able to deliver superfast broadband to all premises in their footprint, in which case they would be willing to be overbuilt by R100. This highlights that early knowledge of the exact geographic scope for the R100 roll out is critical in these, if not all, cases.

- 4.7 Of the remainder, some do not know (e.g. one's choice will be dependent on R100 supplier); one is already delivering superfast services and one plans to in the near future.
- 4.8 For those four currently operating networks who have indicated that Option 1 is their preference, i.e. they may want to opt out of R100, a business case will need to be prepared and appraised given that the government's likely preference is for a R100 build over existing networks if possible. Understanding why communities want to own their networks and the implications is a key factor for Scottish Government.
- 4.9 A business case will need to prove that the network is capable of upgrade and that communities can provide resources for the ongoing maintenance and future equipment upgrade required to ensure network sustainability. In this instance, further business planning, funding and technical and project management advice will be required by projects supported by CBS. There will also need to be a robust and transparent appraisal of each plan which we envisage will be carried out by Farrpoint. The Scottish Government also needs to confirm that it would be prepared to fund upgrades to networks in approved cases.
- 4.10 For projects that prefer Option 3 - to improve/boost network speeds as an interim measure while they wait for R100 - there is a need to confirm if this approach is eligible for CBS funding.
- 4.11 There are two options for **Phase 2** pipeline projects:

- **Option 1:** Proceed as planned with the delivery of their proposed network. The larger aggregated projects, however, based on market feedback to date, may need more capital expenditure funding which CBS is basing on R100 modelling in order that proposed budgets will be sufficient. They may also want to plan a larger footprint for their project if this is more likely to attract commercial suppliers.

Those projects which are at an advanced stage of development with target build dates during 2018, may choose this option if they believe they can attract a commercial supplier which can demonstrate long term sustainability. This option is more likely to be chosen if priority on the R100 roll out *cannot* be assured by the Scottish Government.

Another key factor for consideration in this option is that supplier owned networks are more attractive to commercial suppliers e.g. BT is not interested in servicing KCB's community owned network; one of only two in the current list of pipeline projects. This model also reduces long term risk for communities as well as ensuring a degree of network sustainability

- **Option 2:** Opt in to the R100 programme on the condition that the community is given priority on the R100 roll out. The latter may or may not be possible but again requires early knowledge of the scope of the R100 contracts. The reality is likely to be that not all of the premises will be covered in the first round of procurement.

Working to improve/boost network speeds as an interim measure until that time could also be part of this option.

- 4.12 In either **Option 1** or **2**, the Scottish Government has already advised these communities that opting into R100 does not guarantee that the community will be covered by this contract. There is also a significant risk that communities which pursue a CBS approach that later fails could be considered in R100 as part of a change control process but that there will not be a pre-allocated budget for this and the supplier may not accept the change. However, for premises and communities not covered by R100, the Scottish Government is currently developing aligned interventions which are likely to include a new voucher scheme for extending infrastructure and satellites.
- 4.13 An early task for the CBS team is to ascertain the aspirations of the communities managing the Phase 2 pipeline projects which should be the focus of the August 1-2-1 meetings. This is especially important given the time and resources already expended by volunteers, in some cases for almost four years, without achieving an acceptable level of broadband provision for their communities.

Future Focus for CBS

- 4.14 In thinking about the future focus of CBS, it is important to consider how to make best use of the SRDP funding; how to meet the needs and aspirations of communities; how to build on the achievements and progress to date including lessons learned; whilst at the same time, taking account of the current and emerging context.
- 4.15 Based on the evidence and feedback received as part of this review there are a number of areas which the CBS team can usefully focus on in the coming months to support community projects and the successful delivery of R100.
- 4.16 As discussed above they can proactively work with those communities who want to opt out of R100, both Phase 1 and 2 projects.
- 4.17 For pipeline projects there is a need to prioritise the most commercially viable ones whilst balancing community need. But given that most, if not all, pipeline projects will need more capital expenditure funding for more coverage, some Phase 2 projects may not be funded and be subsumed into R100 provision, in the absence of additional CBS funding. The risks and benefits of this approach are currently being discussed.
- 4.18 There is also a need to find interim solutions for Phase 1 and 2 projects who are willing to wait for R100 but want to improve their broadband speeds in the intervening period; looking at solutions to provide better broadband e.g. better wireless solutions rather than fibre.
- 4.19 At the same time it would be beneficial for the CBS team to undertake more supplier engagement. There is a need to better understand the reasons behind the lack of bids for those pipeline projects at the procurement stages, i.e. technical or financial reasons or a combination of both. Farrpoint has been involved in assessing bids but a wider dialogue with the market could aid project development and the procurement process.
- 4.20 Feedback to this review suggests that there has been a lack of detailed information about R100 within communities. However, there are discussions now taking place with communities on a one-to-one basis. There is an immediate need for agreeing how best to co-ordinate external messaging to communities and local authorities alike, and CBS are well placed to be the vehicle for this working with R100 team colleagues.

- 4.21 CBS management is now part of a R100 Working Group which has been established to look at the remaining percentage of premises which will not be serviced by R100 contracts with a view to developing new, perhaps more innovative models for community provision. CBS has a key role to play here.
- 4.22 The rationale for the CBS programme in its current format has been superseded by the government's new proposals to supply superfast broadband to all Scottish premises by 2021. However, there is a role for CBS in assuring a smooth delivery of that commitment.

5 Looking Forward

Introduction

- 5.1 This chapter draws out the conclusions arising from the evidence gathered in the review. It considers a number of priority actions and options for the CBS programme and team at key stages along with the transition to the R100 programme roll out and thereafter.

Conclusions

- 5.2 The following section presents our conclusions by summarising the strengths and weaknesses of the CBS programme and the issues and challenges it currently faces.

Strengths and Achievements

- 5.3 The CBS team's knowledge and experience of community engagement combined with taking a flexible and collaborative approach to developing projects and providing guidance and support is well recognised and is a key strength.
- 5.4 The CBS programme overall was (and potentially still is) the ideal mechanism to support communities who want to take action in the absence of any confirmed superfast broadband provision for their area.
- 5.5 CBS has successfully assisted some communities to get broadband and has demonstrated the Scottish Government's commitment to addressing the issue of broadband provision in rural and remote communities. There is also evidence of significant community capacity building.

Issues and Challenges

- 5.6 The community development approach does not easily fit with the complexity of the procurement processes and regulations, including State Aid rules. This is compounded by the complexity of the broadband market and the technical aspects of provision.
- 5.7 There have been some questions around whether the CBS staff should have had, or had better access, to more specific technical and procurement skills. There is a perception that the balance between community development skills and technical knowledge and understanding available to the communities was not right and did not adequately meet all of their needs.
- 5.8 There has been a lack of clarity at the outset on the areas that DSSB would and would not cover. Also, due to the detail of the DSSB contracts, a lack of clear locations where CBS could deliver has created delays and reputational damage. A lack of information about geographical areas to target resulted in CBS working with the most remote communities first. This approach is deemed to be ineffective and counterproductive.
- 5.9 The changing policy context has proven challenging, including how CBS fits with R100 in order to add value rather than confuse the landscape and risk duplicating provision and resource allocation. The number and location of premises not in scope for R100 will not be known until June 2018 which makes forward planning difficult.

- 5.10 With respect to the CBS community owned model there is limited opportunity for any real revenue generation, although there are some examples. Volunteer fatigue and succession planning is a significant risk and impacts on sustainability. Communities may not, in other circumstances, aspire to own and operate their own network but have followed this route in the absence of alternative solutions.
- 5.11 Network providers are generally not interested in building and operating mid-sized networks and so there has been a lack of response to procurement rounds. Feedback is that projects have been unrealistically costed and lack contingency allowances. Linked to this, there is a lack of a clear plan for the on-going costs such as maintenance, upgrade and replacement of equipment over time and a risk relating to long term upgrade and sustainability of smaller networks (as demonstrated by the failure of AB Internet).

Looking to the Future for CBS Projects

- 5.12 The current programme of 121 meetings between CBS staff, members of the R100 team and Phase 1 and 2 communities to clarify how communities wish to proceed is currently underway and a key step in a successful transition to the future for all parties.

- 5.13 Three potential options for **Phase 1** communities are:

Option 1: Continue to operate their networks and opt out of R100.

Option 2: Wait for R100 overbuild and continue to operate networks as they stand until that time

Option 3: Wait for R100 overbuild and improve/boost network speeds as an interim measure

Current intelligence suggests that the communities in the Phase 1 cohort will select a mix of options. In order for CBS to support necessary upgrades for these projects and mitigate their risks, a demonstration of financial robustness and business plans that demonstrate how upgrades will be funded should be required.

- 5.14 There are two options for **Phase 2** pipeline projects:

Option 1: Proceed as planned to deliver the proposed network. Larger aggregated projects may need more capital expenditure funding at the expense of some smaller projects.

Option 2: Opt in to the R100 programme on the condition that the community is given priority on the R100 roll out noting the risk that there is no guarantee the procurement will cover any or all of the community but that aligned interventions to meet the government commitment are in development.

- 5.15 The most commercially viable pipeline projects should be identified and funding allocated accordingly, recognising that they will need additional capital expenditure. Those that are not prioritised for funding will be subsumed into R100 provision. In order to be able to approve funding for these projects and mitigate their risks, consideration will be given to how to attract suppliers with demonstrable financial robustness, track records in delivery and business plans that demonstrate how upgrades will be funded.

Future Focus for CBS

- 5.16 CBS has a role in identifying and helping to implement interim solutions for Phase 1 and 2 projects that are willing to wait for R100 but want to improve their broadband speeds in the intervening period.
- 5.17 CBS needs to engage with suppliers to better understand barriers to bidding. In addition, CBS should play a key role in the R100 Working Group working to agree how best to co-ordinate external messaging about R100 to communities and local authorities and raise informed awareness.
- 5.18 The rationale for the CBS programme in its current format has been superseded by the Scottish Government's proposals to supply superfast broadband to all Scottish premises by 2021. However, there is a role for CBS in assuring a smooth delivery of that commitment.

Actions Plan for CBS

- 5.19 Before looking at the future actions and options for the CBS programme and team there are a number of important points to consider that underpin the options.
- 5.1 There is now a bigger and more robust commitment from the Scottish Government to ensuring remote and rural communities can access superfast broadband through the R100 programme and this must be made clear as part of any transition messaging and activities. It will be important that communities recognise the opportunities and benefits of the R100 programme. Positioning the R100 offer in a positive light will also be critical in mitigating any negative perceptions associated with a refocusing of CBS and its remit which is discussed in more detail below.
- 5.2 In refocussing CBS and the deployment of staff it will be important to take account of the skills and community relationships that have been built by the CBS team and capitalise on these going forward. This could be done either by aligning with or adding value to other HIE teams and functions and/or supporting the activity of the new R100 team.
- 5.3 In developing solutions for those communities which may not be served by R100 including some current CBS projects, the new Working Group (as mentioned in Para. 4.19) will develop and deliver the required solutions. There must be a smooth transition and communications plan to mitigate the risk of a backlash for HIE and CBS from any communities that may feel they have not been prioritised.
- 5.4 There are a number of steps and decisions to be taken and actions to be carried out at key stages in the short and medium term which require the deployment of the CBS team:
- 5.5 One option is to maintain the current model, in effect 'do nothing differently' and continue to work with pipeline projects. However, there is general consensus that this is not a workable option based on the evidence presented and discussed earlier in this report.
- 5.6 The following stages set out the steps that must be taken, assuming the 'do nothing differently' option is discounted.

- **Stage 1:** A priority action for the CBS team is to identify and confirm all Phase 1 and 2 projects which definitely want to be included in R100. Then check their technical inclusion and negotiate their prioritisation with the R100 team on the roll-out of R100 programme whilst recognising that the latter may not be possible. As already mentioned, sitting alongside this, it is critical to confirm the map of R100 provision as early as possible and communicate the anticipated schedule to communities.
- **Stage 2:** Assuming that some projects want to opt out of R100 this stage involves streamlining the CBS into a smaller team that will identify and work with a subset of Phase 2 pipeline projects who will not get R100 or do not want to wait for it (the latter having an approved business case). A smaller pool of projects means more (SRDP) budget available to individual projects which will make projects more attractive to the commercial market for supplier owned and managed networks. Arguably this will deliver better value for money by funding a smaller number of projects that will be more sustainable.
- **Stage 3:** Similarly, task the streamlined CBS team to focus on working with those Phase 1 and Phase 2 projects/communities who want to participate in R100, to examine options for boosting provision in the interim period, e.g. pilot voucher scheme or redeploying DSSB gainshare to CBS projects, before R100 provision is implemented (flexibility of funding permitting)

Stages 1-3 are ideally part of a transition plan running from now until the commencement of the R100 roll out in early 2019.

- **Stage 4:** Retain some CBS resource to promote and raise awareness of R100 either as part of the HIE Digital Team or R100 team. The same CBS team can also contribute to developing workable models (as part of R100 Working Group) for the proportion of premises that are not likely to be within R100's initial procurement scope.

These activities also become part of a transitional plan with immediate effect. Once the R100 scope is clarified by contract bidders anticipated to be July 2018, work to apply and deliver the new models developed in the interim period.

- **Stage 5:** It may be an attractive proposition to retain the CBS brand but for an alternate, though related, purpose, for example shifting it from focusing on the supply side of the broadband market to the demand stimulation side. In this role it would contribute to the uptake of broadband to meet HIE's social and economic objectives.
- **Stage 6:** phased rundown of the CBS operation and brand.

Stages 5 and 6 are for consideration in the medium term (2019 onwards) as the CBS team fulfils activities required in in earlier stages.

5.7 In summary, there are a range of very valuable roles for the CBS team in both the short and medium term as outlined above. In addition they can be key to maintaining positive community relationships and communication channels as part of the R100 messaging.

5.8 CBS is still considered to be an important resource for SG in meeting both its community engagement objectives and contributing to the final R100 solutions for more remote communities. There is a general sense that there is a role for the CBS programme and

team in the short to medium term rather than a need to wind up the programme altogether.

Towards new models and solutions

- 5.9 Although the scope of the review did not include identifying technical solutions to rolling out broadband to all parts of Scotland, some views and suggestions gathered during the research pointed to a range of potential options.
- 5.10 From the albeit limited and non-technical consultations, the emerging view is that demand side solutions will be investigated by the R100 Working Group. Piggybacking on existing fibre networks is an obvious solution for some communities if they are located close to existing infrastructure (including R100 once it is installed).
- 5.11 Voucher schemes are another option that was put forward during the review. For this demand side initiative to be successful, communities must be relatively close to existing infrastructure for superfast broadband. Voucher Schemes are essentially a mechanism for filling in gaps in the infrastructure landscape. It is acknowledged by BDUK that vouchers are a strong contender for the way forward for those projects that do not get procured or covered in main R100 contracts. Demand aggregation as it is known is when a number of premises pool their individual vouchers (each worth a certain amount e.g. £3,000) and jointly purchase a solution in terms of an infrastructure contract.
- 5.12 The CBS team could be deployed to encourage and work with communities to be innovative and build networks where vouchers can be used to link premises to community schemes or R100. CBS could also play a role in brokering arrangements to pool vouchers and ensuring access to fair priced kit that meets network suppliers' standards in case technology upgrades in the future R100 or commercial provision rolls out over it.
- 5.13 Where voucher schemes are not ideal, i.e. *"for a really rural location"*, then for those very hardest to reach communities, satellites may be the only option. However, they are not classified as NGA technology and have certain technical restrictions, e.g. download speeds although this is improving as the technology develops. The monthly cost of satellites is also high and should only really be considered for the real outliers to mainstream provision unless government funding becomes available to subsidise the cost.
- 5.14 There can also be a relationship between the voucher and satellite models and this is likely to be considered as part of exploring all technical solutions.

Appendix 1: Stakeholders consulted

Stakeholder	Organisation
Zoe Laird, Director CBS	Highlands and Islands Enterprise
Pete Guthrie, Manager CBS	Highlands and Islands Enterprise
Charlotte Blackwood, Manager CBS	Highlands and Islands Enterprise
Stuart Robertson, Director of Digital Highlands and	Highlands and Islands Enterprise
Douglas Cowan, Director Strengthening Communities	Highlands and Islands Enterprise
Carroll Buxton, Director Regional Competitiveness	Highlands and Islands Enterprise
Andrew Muir, Technical Adviser	Farrpoint
Neil Watt, Technical Adviser	Farrpoint
Anthony Edge	BDUK
Colin Cook, Director of Digital	Scottish Government
Clive Downing, R100 Programme Manager	Scottish Government
Robbie McGhee, Head of Digital Connectivity Policy	Scottish Government

