



ENTERPRISE AND CULTURE COMMITTEE

8th Meeting, 2004 (Session 2)

Tuesday, 9 March 2004

The Committee will meet at 2 pm in Committee Room 1

- 1. Item in Private:** the Committee will consider whether to take item 4 in private.
- 2. Broadband in Scotland:** the Committee will take evidence from:

Panel 1

Scottish Enterprise

David Gass, Chief Executive, Scottish Enterprise Borders;

Charlie Watts, Senior Director E-Business, Scottish Enterprise;

Highlands and Islands Enterprise

Stuart Robertson, Senior Development Manager (Telecommunications);

Alison Wilson, Senior Development Manager (Broadband Marketing);

Panel 2

Federation of Small Businesses

John Downie, Scottish Parliamentary Officer;

Forum for Private Business

Chic McSherry, Managing Director, PROSYS Business Solutions Ltd;

Scottish Chambers of Commerce

Jim Speirs, Chief Executive, Ayrshire Chambers of Commerce;

Douglas Miller, Chief Executive, Lanarkshire Chambers of Commerce;

on its inquiry on Broadband in Scotland.

- 3. Subordinate legislation:** Lewis Macdonald MSP, Deputy Minister for Enterprise and Lifelong Learning to move motion S2M-968 –

that the Enterprise and Culture Committee recommends that the draft Renewables Obligation (Scotland) Order 2004 be approved.

- 4. Committee Work Programme:** the Committee will consider its future work programme.

Judith Evans
Clerk to the Committee (Acting)
Room 2.7, Committee Chambers
Ext. 0131 348 5214

The following meeting papers are enclosed:

Agenda Item 2

Briefing Paper on Broadband	EC/S2/04/08/1
Submission from Scottish Enterprise	EC/S2/04/08/2
Submission from Highlands and Islands Enterprise	EC/S2/04/08/3
Submission from Federation of Small Businesses	EC/S2/04/08/4 (TO FOLLOW)
Submission from Forum for Private Businesses	EC/S2/04/08/5
Submission from Chambers of Commerce	EC/S2/04/08/6

Agenda Item 3

The Draft Renewables Obligation (Scotland) Order 2004 (S2M-968) – <i>Hard Copy only</i>	EC/S2/04/08/7
SPICe Briefing on the Draft Renewables Obligation (Scotland) Order 2004 (S2M-968)	EC/S2/04/08/8

Agenda Item 4

Paper on future work programme	EC/S2/04/08/9
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Enterprise and Culture Committee

Broadband inquiry

Briefing Paper

1. Introduction

1. At its meeting on 27 January 2004 the Committee agreed the remit and evidence programme for its inquiry into the roll-out of broadband services in Scotland. The Committee agreed to focus its oral questioning and written evidence on the barriers to progress and ways to overcome these.
2. To supplement this, members sought factual information on the elements of its remit relating to targets and accessibility, which this paper provides. The paper also outlines some other recent developments on broadband, and highlights a number of key themes which emerge from the material.
3. A full evidence programme for the inquiry is also attached. A bundle of submissions received in response to the open call for evidence will be circulated prior to the meeting on 9 March. Submissions from those giving oral evidence will be circulated with the papers for the meeting at which those witnesses are due to appear.
4. The former Enterprise and Lifelong Learning Committee's *Report on the Inquiry into the Impact of the New Economy* (6th Report 2001, SP Paper 355) in June 2001 provided wide-ranging and comprehensive background information on broadband, and the wider infrastructure and new economy context. The aim of the current inquiry is to build on that report by assessing progress and future developments, rather than duplicating that previous work.

2. Current status of broadband

a. Availability

Scotland-wide

5. The Scottish Executive set a short-term target of at least 70% of the Scottish population having affordable broadband access by the end of March 2004 (from the position of an estimated 57% coverage in December 2002). In a written reply to question S2W-5244 on 21 January 2004 the Deputy First Minister announced that "*around 70% of Scottish households can now access a broadband internet connection*".
6. Broadband coverage is developing rapidly. Consequently, figures available often have some time-lag and vary somewhat according to source and the definition of broadband used. However, Scottish Enterprise estimates that broadband coverage in Scotland stands at 77% at the end of February, an increase from 57% at the end

of 2002. Broadband coverage in the UK stands at about 85%, an increase of around 14% over a similar time period.

Internationally

7. International comparisons are more difficult to make. However, the following table provided by the Executive shows estimates of broadband coverage in September 2003.

Country	September 2003
Ireland	45%
Australia	65%
Scotland	67%
France	75%
Sweden	75%
USA	77%
Germany	90%
Japan	92%

UK regional comparisons

8. Within the UK, the following table shows (at fourth quarter 2003) the variation in coverage:

Region/Country	% Broadband Coverage
London	100
North West	93
North East	90
South East	89
Yorkshire and Humberside	88
West Midlands	87
UK	85
East Midlands	82
East of England	79
South West	75
Scotland	72
Wales	72
Northern Ireland	67

Variation within Scotland

9. Although there are still some urban areas in Scotland which do not yet have access to broadband, the availability gap is much greater for rural Scotland. For instance, in the Highlands and Islands Enterprise area, coverage currently stands at just under 40%.

10. Also, about 9% of all of Scotland's combined residential and business population currently reside beyond 30 minutes drive time of an urban settlement of 10,000 or more inhabitants. The proportion of this population with access to broadband is estimated at just 12%. This example helps to illustrate the broadband gap for rural areas.

11. BT Scotland estimates that by the end of March 78% of households in Scotland will have access to ADSL. Of the 1069 telephone exchanges in Scotland 195 have ADSL broadband. 116 are in the process of being upgraded having reached their trigger thresholds (a target figure of individual demand registrations used by BT as an indicator of the existence of a viable business case for upgrading that local exchange) or by having the upgrade accelerated via local partnerships. 359 other exchanges have trigger levels in place, but not yet reached. BT Scotland states that, if all exchanges which have trigger thresholds in place reach their target, ADSL coverage will extend to 97.9% of households. There are 399 exchanges in Scotland without trigger levels. 11 Local Partnerships have been signed resulting in the accelerated enablement of 47 exchanges.
12. BT's recent announcement of new trigger levels resulted in just 600 (mainly very small) UK exchanges remaining without triggers. Over 400 of these are in Scotland, with 222 in the Highlands and Islands. These 600 exchanges are estimated to serve 100,000 households in total, with less than 300 customers per exchange. This represents the core segment of the network where it is difficult to anticipate that the market could ensure provision in the near future.

b) Uptake

13. BT Scotland estimates that take up in Scotland remains low with 6% of households which have access to ADSL using the product. This compares with a UK average of 7.9%. Scotland is in 6th place in a league table of UK nations and regions. London is top of the league with 12.5% take-up. The Scottish Household Survey asks whether citizens have a broadband connection at home, but results of this take over a year to be made public and are therefore not current. It is extremely difficult to estimate household take-up based on suppliers' data, since many businesses take up residential packages. However, according to OFCOM's Internet and Broadband Brief for January 2004, 12% (3.2million) of UK households have a broadband connection.
14. The Scottish Enterprise E-Business Survey shows that business take-up was estimated as 4% in May 2002 and increased to 13% by May 2003. Scottish Enterprise estimates that it is currently around 19%.

3. Policy developments

EU

15. The EU's eEurope 2005 Action Plan aims to stimulate secure services, applications and content based on a widely available broadband infrastructure throughout the EU by 2005. The current Irish Presidency of the EU has set encouraging universal availability of affordable broadband as its top priority in this area.

UK

16. Telecommunications policy (including internet services) is a reserved matter. The Department for Trade and Industry therefore has overall responsibility for the UK's broadband strategy, and the UK Parliament has the authority to legislate

and regulate in this area for the whole of the UK. However, telecoms issues also feature within the remit of economic development, which is devolved. There are therefore close links between UK and Scottish policy on this area. In November 2003, Stephen Timms, Minister of State at the DTI, announced the goal of a "Britain in which broadband is available in every single community by the end of 2005". It is not yet known what 'community' will be interpreted to mean in this objective, or how different devolved administrations will set objectives which contribute to achieving this overall goal.

Scotland

17. SPICe Briefing 04/04 outlined the main elements of the Scottish Executive's Broadband Strategy. The three main approaches are:

- action to stimulate demand in order to strengthen the case for commercial supply;
- supporting trials of alternative technologies which may support a viable business case for extending commercial supply;
- examining the case for supply side intervention to extend coverage to areas not likely to receive commercial provision in the near future.

The Executive indicates that its main activity to date has been on demand stimulation.

18. The Executive has used two funding sources for this:

- The Scottish Executive's £4.4m share of the £30m UK broadband fund to support innovative projects to extend coverage. This funding currently supports 11 projects in Scotland.
- The Executive's own £24m broadband initiative provided to support the strategy and achieve the short term 70% coverage target. This funding supports projects including the 'business broadband incentive' grant scheme and a major public marketing campaign.

19. Useful summary details of all the main activities pursued by the Executive are provided on the Executive website and in the UK Broadband Stakeholders Group Third Annual Report and Strategic Recommendations (Jan 2004), Appendix 8 – 'Broadband in the Devolved Administrations'. Further analysis of the main activities of the Executive is available in a summary report of recent research commissioned by the Executive.

20. The Executive's Partnership Agreement states: "*We are committed to extending broadband connectivity for every area of Scotland to ensure Scotland's competitiveness, both internally and internationally, in both public and private sectors.*"

21. The Executive indicates that it is currently considering whether and how a supply intervention could be implemented to reach the most remote homes and businesses in Scotland, which may not be likely to receive commercial broadband provision within the near future. Any such intervention would have to be within the terms permitted by EU State Aid regulations. The Executive also indicates that a

new Scottish broadband coverage target is being developed and will be announced shortly, with new measures to help achieve it under the Executive's broadband strategy.

Northern Ireland

22. In October 2003 Ian Pearson MP, Minister at the Department for Enterprise, Trade and Investment in Northern Ireland, announced its objective of becoming the leading broadband region in the UK, with targets including:
- 100% 512kbps broadband coverage for all households and businesses by the end of 2005;
 - 20% business take-up by the end of 2005;
 - 100% 2Mbps broadband coverage at competitive cost by the end of 2006.

As part of this objective the Department has pursued a major initiative to seek tenders for the provision of broadband services across Northern Ireland.

Wales

23. The Welsh Assembly government launched the 5-year Broadband Wales Programme in July 2002, with £115m funding. It aims to achieve broadband availability of over 95% by the end of the programme. Activity under the programme focuses on demand stimulation and encouraging supply, in order to address market failures and extend the roll-out of broadband availability.

4. Other recent work on broadband

24. The following material may be of additional interest to members, to supplement the basic data in paragraphs 4 to 13 above.
25. The Trade and Industry Committee of the House of Commons has recently produced a report on the Broadband Market. This included examination of the regulatory regime, and the extent to which it is encouraging competition and sustained investment in broadband. The report noted some lack of confidence to date in the regulatory regime by key players in the market, and expressed the hope that this may be improved with the recent transition from Oftel to Ofcom. The report also concluded that, in the short term, there may be a trade-off between ensuring that broadband is pervasively available and ensuring that the market is competitive.
26. Ofcom's Internet and Broadband Brief for January 2004 contains intercountry (UK and others) comparisons on availability, cost and usage of internet services, which supplements the data outlined at paragraphs 4 to 13 above.
27. The Broadband Stakeholder Group made a submission to the House of Commons Environment, Food and Rural Affairs Committee's recent inquiry into broadband in rural areas. (That report was detailed in SPICe briefing 04/04.) The submission provides a useful short overview of some of the main issues which may be of interest to members.

5. Key themes

28. This section highlights some of the main themes which emerge from the material available, and which may be relevant to the inquiry. This list is not intended to be comprehensive, and the themes are not listed in any particular order.

Links with UK policy and regulation

29. Both telecommunications policy and competition policy are reserved matters. However, the devolved administrations have responsibility for economic development and are pursuing specific objectives within the UK policy framework. Members may wish to explore how the Scottish Executive's targets and initiatives relate to the UK objectives.

30. Similarly, the Ofcom regulatory regime is UK-wide. The Enterprise and Lifelong Learning Committee's 2001 report noted that there was a need to clarify the relationship between the Executive, the Parliament and the regulatory regime. Ofcom has indicated that an advisory committee on Scottish issues is being established. In spite of these reserved issues, Scottish Enterprise suggests that market competition, widespread broadband availability, and take-up must all be addressed together in order to develop broadband. Members may wish to explore how the particular features of Scotland's geography, demography and broadband environment are taken account of in regulatory decision-making, and how Scottish issues are raised with the regulator.

Promoting the use of broadband

31. There is no real consensus on the definition of 'broadband'. Mass roll-out is usually expressed in terms of the availability of ADSL technology. However, this is not the only measure. There is a wide range of technologies available for the delivery of broadband services. Public policy generally aims to be 'technology neutral', with the dominance of different technologies in the longer term likely to be determined by the market for services. In the medium to longer term higher data rates are likely to support services which generate more economic benefit and therefore make broadband more valuable to customers and stimulate supplier decisions that appropriate infrastructure is viable to install.

32. Members may wish to explore how the developments in Scotland across different technologies and data speeds will address the needs of businesses and communities in the medium to longer term as well as in terms of immediate roll-out, and in comparison to competitor regions and nations.

33. The focus so far has largely been on roll-out of availability of broadband. But take-up is closely related to the services that are available and the value they can generate. These services are only now beginning to emerge (with broadband to date largely marketed on the basis simply of always on, faster connection to existing internet services). Members may wish to explore how the public sector can support this development, including the electronic delivery of public services.

34. While the central focus of the Executive strategy is on broadband as a tool to underpin business competitiveness, a number of publications emphasise that some of the major competitive flexibilities (such as ability to offer home-working)

will only be realised when an acceptable broadband service is delivered to residential and rural areas.

Extending roll-out

35. Evidence to date suggests that demand stimulation has had a very significant impact on increasing broadband coverage, by creating viable business models for investment in networks to reach new areas. Continuing to provide more certain information on demand will encourage sustainable commercial investment. The focus of public policy has so far been largely on this demand stimulation. Members may wish to explore the different ways in which this can be pursued further.
36. Anecdotal evidence suggested that some concern exists over the way in which trigger levels have been set, that the potential to reach exchange trigger levels varies, and that the enabling of exchanges after trigger levels have been reached has not always been quick. It is also possible that some exchanges are unlikely ever to be given trigger levels. Members may wish to explore how different trigger levels relate to the commercial viability of providing network infrastructure.
37. The Executive strategy has so far concentrated largely on demand stimulation. There has been limited development of initiatives to aggregate public sector demand and procurement. This process could help to improve the business case for roll-out to be extended to new areas. The Scottish Executive states that its 'Pathfinder' projects are currently in procurement. The likely practical impact of these and other projects on roll-out is not yet clear.
38. Interventions so far (such as demand stimulation and trials of alternative technologies) have provoked considerable development in the market without direct supply intervention. The market also continues to develop rapidly. However, a range of potential market failures exist. High infrastructure costs and relatively low population densities mean that provision in some rural areas will not be commercially viable using current technology. However, technology is developing rapidly. For example, the Executive's commissioned research noted that BT had recently been able to lower trigger levels and extend the reach of broadband in enabled exchange areas to approximately 6km line length (even where an exchange is enabled for broadband, technological limitations mean that the service may not be able to be delivered to customers located beyond a certain line-length from the exchange). Technological development is likely to continue and the threshold for what is commercially sustainable provision of broadband may change further.
39. The former Enterprise and Lifelong Learning Committee's 2001 report concluded that there was a case for appropriate selective public investment, and the Executive has indicated that it is now considering this. Members may wish to explore the options and the appropriate focus for this type of public intervention.
40. The former Enterprise and Lifelong Learning Committee's 2001 report recommended that ambitious targets, benchmarked against competitor nations, should be set. It cited the commitment of the Swedish Government to ensure a 2Mbps service to all businesses and households by 2003. Members may wish to explore what targets may now be appropriate for the Scottish Executive.

Monitoring the impact of broadband services

41. One of the objectives of the Executive's strategy is that broadband provision should help reduce social exclusion and regional inequality, as well as boosting economic competitiveness and growth. While information of this nature will be difficult to identify and may not yet be available, members may wish to explore how achievements against these objectives will be monitored and measured.
42. At its meeting on 10 February 2004 the Committee agreed an approach to mainstreaming equalities issues within its work, following recommendations made by the Equal Opportunities Committee. The Convener has written to the Deputy Minister for Enterprise and Lifelong Learning asking him to provide information on how the checklist of questions suggested by the Equal Opportunities Committee have been addressed in policy on broadband. A reply has been requested prior to the Deputy Minister giving evidence on 30 March.
43. Members may wish to explore with other witnesses throughout the inquiry whether policy to support broadband availability and use has any particular implications for different groups. Members may also wish to explore whether the impact of the Executive's strategy on particular groups has been fully considered and adequately explained.

Clerking & SPICe
March 2004



**Scottish Parliament Enterprise and Culture Committee
Inquiry into the roll-out of Broadband in Scotland**

Submission by the Scottish Enterprise Network

March 2004

For further information please contact:

David Waring
Scottish Enterprise
email: david.waring@scotent.co.uk
www.Scottish-enterprise/broadband.com
www.broadbandforscotland.com

1. Introduction

- 1.1 This document seeks to set in context the need for pervasive and affordable broadband, identify areas of the Scottish market not served by broadband services, describe the interventions by Scottish Enterprise (SE) to address these, report on progress to date and highlight remaining barriers.
- 1.2 SE's e-Business strategy seeks to deliver 'more e-business' and 'greater Digital Connectivity', key elements of *A Smart Successful Scotland*. In the area of Digital Connectivity a comprehensive broadband programme to stimulate supply and demand has been developed and implemented.
- 1.3 This programme is based on a detailed analysis of the market. It consists of a coordinated and comprehensive suite of initiatives designed to address immediate, medium and long term issues aimed at improving the competitiveness, extensiveness and take up of broadband services.
- 1.4 Programme funding now totals approximately £62.3m and is sourced from DTI, ERDF/ESF and SE. These funds also include £19.5m from the Scottish Executive to specifically address the problem of entry level or mass broadband coverage.
- 1.5 Following a period of substantial investment by the telecommunications sector there followed a dramatic collapse in telecoms investment with many providers going out of business. This resulted in regions outside London falling behind in the availability of appropriate infrastructure and low levels of coverage. This became particularly acute in rural and remote areas of Scotland.
- 1.6 However, as a result of the above funding and working with the Telecoms sector, SE has partly addressed many of these issues. For example coverage for 'mass broadband' has increased in the last few months from 53% to 75% of Scottish addresses. This is still some way behind the UK average of 85% but the gap with other regions is closing rapidly. Similarly only 4% of Scottish companies used Broadband in 2002, increasing to 12% in 2003 and is now estimated to be around 19% which is roughly equivalent to the UK average.
- 1.7 Consumer take up throughout the UK is still less than 12% of households – in Scotland the figure is 6.5%. Due to increased coverage, take up is set to increase substantially with registrations from the Broadband for Scotland campaign substantiating this.

An Introduction to Broadband is provided in Appendix 1.

2. Scottish Enterprise - Broadband for Business

2.1 The UK Government has set a target to have the most extensive and competitive broadband market in the G7 by 2005. This has led to the development of projects (see below) such as ATLAS which is aimed at creating higher capacity business broadband in the medium to long term and to a range of projects addressing awareness, education, innovation and rural issues. As part of this overall strategic approach on 2 December 2002 the then Minister for Enterprise, Transport and Lifelong Learning, announced the Scottish Executive's intention to establish a £24 million Programme aimed at increasing broadband accessibility to 70% of the population. This Broadband Access Programme also aimed to address issues such as take up, the digital divide and costs. The programme covers Scottish businesses and homes. A synopsis is provided below and a full description of these projects is available in the appendix section.

	3. ATLAS	4. UK Broadband Fund	5. Broadband Access Programme
Impact	Med – Long Term	Immediate – Med Term	Immediate – Med Term
Focus	Supply	Supply and Demand	Demand (and indirectly Supply)
Aims	Effective Wholesale Market “Advanced Broadband”	Raising awareness, education, demonstrations innovative trials & rural solutions	70% population with access to mass market Broadband
Deliverable	Telecoms Trading Exchange, Business Park Network	8 Projects including: Website, Demo Centres, Workshops, Advisers Scottish Borders Rural Broadband Wireless Excellence Network Powerline Trial Agricultural Application	Marketing, Business Incentives, Facilitation, Advice, SME Assistance and Local Initiative Support
SE Board Approved Budget	£36.8M	£6.0M	£8.5M (of £19.5m allocated by the Scottish Executive)
Status	ATLAS: Awaiting EU decision	All projects commenced and under evaluation	Original target achieved and new target under consideration

	TTE 3 suppliers signed up		
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3. **ATLAS**

3.1 Aimed at creating advanced telecoms networks, ATLAS it will be open to any telco or service provider on 13 business parks across Scotland. Representing a strategic investment in technology, not currently available to SMEs, its aims are concerned with the future needs of the economy, not the short-term exploitation of opportunity in the telecoms market.

3.2 The project was notified to the EU and a decision from that body is awaited before it can commence. A full description of ATLAS is available in Appendix 2.

3.3 *Telecoms Trading Exchange (TTE)*: This was the first project to come of out of the research on Scotland's telecoms needs which also led to Project ATLAS. The TTE became operational in January 2003, and is hosted on the Internet at www.band-x.com

3.4 The aims of the Telecoms Trading Exchange are to:

- improve transparency within the wholesale market for international connectivity from Scotland;
- provide a brokerage service to key high capacity users in Scotland;
- provide an efficient method for switching suppliers; and
- limit the disadvantage Scotland suffers from global networks terminating in London.

3.5 Three suppliers have now signed up to the TTE's. A full description of the Telecoms Trading Exchange is provided in Appendix 3.

4. **UK Broadband Fund**

4.1 SE has implemented a series of projects under the £6m Scottish programme of the UK Broadband Fund. These pilots are aimed at raising awareness and demand for broadband among Scottish businesses. They encourage technology innovation for example in Wireless and Powerline with a view to utilising these technologies in the more remote and rural areas of Scotland. In addition to the above, SE provided resources for advisors, consultants and workshops through the development of its e-Business strategy.

- 4.2 A full description of the UK Broadband Fund projects is provided in Appendix 4.
- 4.3 A range of initiatives have been supported or initiated at a LEC¹ level, often with the support of other organisations and with local communities. They are aimed at increasing coverage and take up of Broadband. A number of examples are given below:
- 4.4 **Scottish Borders Rural Broadband (SBRB):** The SBRB is an innovative pilot project using fixed wireless technology to provide broadband (512/512Kbps) Internet access to around 1000 businesses and home users living and working in 9 Borders communities that are too rural to have access to ADSL or cable broadband services.
- 4.5 SBRB Ltd, a subsidiary company of SE Borders, is a wholesale provider of network services to ISPs and does not provide broadband service directly to the public. It has outsourced the design, build and operational management of the network to THUS who won two separate contracts following OJEU² procurement.
- 4.6 The SBRB enables ISPs (4 companies have contracts with SBRB Ltd, namely THUS (Demon), edNET, Scotland Online and Abel Internet) to use its network for the delivery of broadband services to businesses and residences in underserved communities in the Scottish Borders. Retail tariffing has been set by the ISPs³ in a competitive environment.
- 4.7 Rollout of the network commenced in February 2004 and will be complete by late Spring.
- 4.8 A detailed business plan has been developed following extensive market analysis to help achieve a sustainable model allowing the migration of the project into the private sector at the appropriate time.
- 4.9 **Aberfoyle Project:** This project was launched in June 2003 and currently has 20 business users. Two satellite dishes are used to deliver connectivity to the local businesses and a hot spot, providing broadband access for visitors to Aberfoyle, is proposed. See appendix 5.
- 4.10 **Lochwinnoch Project:** The project was launched in June 2003 and currently has 35 business and household users. It is now entering a second phase in which an additional two satellite installations are proposed, adding a further 100 users to the project. Additional information on the Lochwinnoch project can be found on their website: <http://www.lochwinnoch.info/clan/index.htm>

¹ Local Enterprise Company

² Official Journal of the European Union

³ Internet Service Providers

5. **Broadband Access programme (BAP)**

- 5.1 The BAP is funded by the Scottish Executive's £24M allocation for broadband and was developed to accelerate and widen access to affordable broadband coverage to 70% of the Scottish population by the end of March 2004. An analysis of the options for achieving this objective identified that the fastest and best value for money route would be to concentrate on demand stimulation initiatives which would pull through broadband supply.
- 5.2 Scotland has performed well in the past 12 months in terms of increasing broadband coverage with the dominant contribution being the increase in ADSL⁴ availability. At the beginning of the Broadband Access Programme 137 of 1069 exchanges in Scotland were enabled covering 53% of Scotland's population. 204 areas now have access to broadband, covering 75% of Scottish addresses and 80.4% in the SE area. (N.B. these figures relate to ADSL plus cable and wireless supply). With current and planned activities, coverage is targeted to reach circa 91.5% in SE's area in 2004/2005. A number of initiatives have been developed for this programme including:
- 5.3 'Business Broadband Incentive' offers grant assistance to SME's taking up Broadband. The initiative will increase the number of businesses who are using broadband from around 17,000 (Aug 2003) to 22,000, an increase of 29%.
- 5.4 'Broadband for Scotland' marketing campaign has played a significant role in exceeding the 70% target which at the beginning of the BAP initiative was not forecast to be reached until March 2005. The campaign has increased the number of visits to the Neutral Website www.broadbandforscotland.com with over 38,000 visitors and over 4,000 registrations for broadband at this site since November 2003. 2,000 of the registrations were achieved in the last 2 weeks of February 2004 as a result of a TV campaign.
- 5.5 Broadband Network Project will run in the financial year 04/05 and allow communities to use their aggregated buying power to attract broadband providers to their location and to provide a service equivalent to ADSL.
- 5.6 A full description of the Broadband Access Programme is provided in Appendix 6.

6. **New Targets**

- 6.1 With continued funding of the Broadband Access Programme, it is planned to maximise coverage through continuing with demand side

⁴ Asymmetric Digital Subscriber Line

activities including an extension of the marketing and new incentive based activity in the next financial year. It is believed that there is the potential to achieve circa 95% coverage across Scotland by April 2006 through this activity.

- 6.2 With a view to reaching maximum coverage in Scotland a range of community initiatives and supply side interventions, in addition to the demand stimulation projects described above, are being evaluated.

7. **Additional Targets**

- 7.1 **Take-up Targets:** It is planned that in addition to continuing the existing campaign a programme will be implemented to enable people to directly experience broadband. This should have a significant impact on take-up as research has shown that people do not fully understand the relative merits of broadband compared with a dial-up connection.
- 7.2 **Business Targets:** There are a number of activities across the network focused on increasing coverage through initiatives such as wireless projects and take-up through local promotion and events. SE Glasgow has introduced three new projects that will directly increase take-up of broadband. It is SE's intention to build on this experience and to set new targets for business take up of broadband - these would be related to any new or revised incentive schemes. It may be appropriate to consider a number of sectoral targets for example in areas considered vital to Scotland's economy such as Tourism.
- 7.3 **Digital Divide Targets:** In developing its Broadband Networks project, SE was conscious of the needs of isolated communities and set appropriate targets. These are being amended to take into account BT's revision of its exchanges with triggers. The revised targets will also take into account the fact that many communities lie out with the range of the broadband service provided by the local exchange.
- 7.4 **Use and Content Targets:** SE's e-Business group places a heavy emphasis not only on coverage and take up but usage and in 04/05 will seek to establish appropriate content and usage targets within the Broadband Access programme.
- 7.5 **Cost Targets:** The Scottish Executive strategy seeks to achieve pervasive, affordable access to broadband and as noted earlier, cost is a major factor in determining whether broadband is adopted. Cost is a particular factor in rural / remote areas and in some parts of urban Scotland. Costs have dropped dramatically overall but, if anything, the gap between the cost of terrestrial and non terrestrial broadband options has increased. Cost targets will continue to be addressed by SE's Incentive and Network activities.

- 7.6 **Innovation Targets:** SE believes that technology innovation, software development and applications, e-learning and support for Scottish companies and academia developing broadband infrastructure and content is critical. Its current activities in these areas will, where possible, be closely linked to the future activity of the Broadband Access Programme.
8. **Barriers to increasing Broadband Availability**
- 8.1 **Technological Barriers:** There is limited access to ADSL enabled Exchanges. The current figure for ADSL (excluding cable) availability is 73% (ADSL/Households + Businesses) with around 6.5% take up. 398 of the 1069 Exchanges in Scotland have no trigger level set as they are not deemed commercially viable by BT (<300 potential subscribers).
- 8.2 There is no proven mass market alternative to ADSL and Cable. Satellite broadband is available across the whole of Scotland and is extremely effective; however, it is currently expensive, has some performance issues and involves additional complexity. Wireless and PowerLine systems are mainly limited to pilot areas although Scottish and Southern Energy (SSE) has been running a commercial system in Stonehaven following the undoubted success of the pilot in Crieff which was supported through SE Tayside and the UK Broadband Fund.
- 8.3 Only 16 Exchanges are enabled for SDSL⁵ – seen by many as “the next challenge”.
- 8.4 Other technical barriers include the reach of ADSL and SDSL – new technology will see the range increased but some communities cannot access Broadband even though their local exchange has been enabled.

⁵ Symmetric Digital Subscriber Line

- 8.5 **Commercial Barriers:** The general downturn in the telecoms sector in recent years has been a major constraint on the development of broadband services and with many Telco's struggling to survive in an adverse market, some placed a hold on their broadband investment and roll-out plans.
- 8.6 The high cost of broadband provision and backhaul (connection from the exchange to the ISP point of presence) limits availability of terrestrial broadband services. Where backhaul does not exist additional cost has to be met by an ISP. A number of products have been developed to overcome these issues but they are not generally regarded as commercially viable unless there is a business or public sector sponsor to support them.
- 8.7 Limited profitability and sustainability restricts broadband deployment. If it's not profitable there is little incentive for a company to invest in deploying new solutions. Therefore it is important that as well as providing support for increased coverage, support for take-up through the public sector should be continued.
- 8.8 ADSL exchange enablement requires high level consumer and business interest to overcome registration hurdles. Presently the split is 10 consumers to 1 business user. Outstanding BT trigger levels are typically between 20% and 30% of the subscriber base.
- 8.9 Rural areas do not have the customer base to support competition as a mechanism to regulate the market and therefore requires direct intervention to ensure equality and inclusion. In urban areas broadband roll-out may be delayed due to infrastructure difficulties, for example, the need for a new cable-dig.
- 8.10 **Regulatory Barriers:** Broadband initiatives must comply with State Aid Rules and future supply intervention / procurement projects aimed at getting broadband to remote and rural areas would be subject to the Commissions view which could potentially introduce delays due to the lack of clarity surrounding the issue of procurement of broadband services.
- 8.11 Powerline technology has not yet been ratified and, although emission levels have not been exceeded in the trials, a reduction in the regulatory uncertainty around this would be welcome.
- 8.12 Local Loop Unbundling (LLU) has not achieved its potential (only 7,800 loops unbundled in UK November 2003). Most potential operators state that this is due to process and price issues and OFCOM are understood to be undertaking a detailed market review of LLU on 04/05.
- 8.13 **Organisational Barriers:** For many businesses the faster connection speeds offered by broadband is the main benefit. In many cases the

additional benefits, either tangible or intangible, are realised after they have become familiar with the technology. Once companies appreciate other benefits such as the ASP⁶ model, remote backups, VOIP⁷, teleworking etc they begin to adopt a more strategic e-Business approach.

- 8.14 There is lack of awareness and understanding on the benefits of broadband; many SMEs don't have the skills to objectively understand the benefits of broadband and therefore they tend to buy for subjective reasons rather than profitability. Awareness of benefits are becoming more apparent – SE's mobile demonstration centre has been very successful and using broadband workshops plus access to advisers helps many users to know what to look for when choosing a supplier.

⁶ Applications Service Provider

⁷ Voice Over Internet Protocol

8.15 There is a strong need for training on the use of broadband in business. Businesses don't rapidly adapt their practices prior to or during early adoption of broadband, therefore the expected benefits are delayed, or, fail to occur. Around 33% of Broadband Business Incentive applicants have requested demonstration and/or training on broadband.

8.16 Some businesses have indicated dissatisfaction with the quality of service offered by broadband providers. There is some evidence of a lack of focus on broadband quality of service and non-price factors in this emerging market.

9. **How to overcome the Barriers**

9.1 The current policies adopted by the Executive and SE are addressing the issues noted above and if continued will have the effect of providing Scotland with pervasive Broadband infrastructure (coverage), high take up levels and effective content and usage.

9.2 As broadband develops and competition increases it is expected that service and quality issues will be resolved. This process can be assisted by encouraging and assisting businesses to make full use of the services offered by the SE network through its advisors and client managers in LEC's and in its demonstration centres, workshops and mobile facility.

10. **Funding**

10.1 The allocation of an additional £24M to the economic development agencies in Scotland is welcomed and has already led to some very significant progress – the initial 70% target has been exceeded and take up in business is estimated at 19% while the combined household/business take up figures have risen to around 6.5%. Continuing this activity is valuable to the Scottish economy and worthy of further support as is happening elsewhere in the UK.

10.2 A model which envisages maximum coverage by April '06 would involve a potential direct intervention in the telecoms supply industry. This would be subject to procurement procedures including an invitation to tender, notification to OJEU and State Aid clearance. It is estimated this would require significant further public sector investment. The cost of such intervention would be dependent on many parameters including the chosen solution and is the subject of discussion between the Scottish Executive, HIE and SE.

Appendix 1

What is broadband?

Broadband is always-on, high speed Internet access. There are different ways of accessing the Internet using a broadband connection. Most people use a connection via their existing telephone or cable line. However, broadband is also available using other technologies including radio, satellite and powerlines. SE's minimum requirement under its Business Incentive Scheme is 500 kps download speed and 250 kps upload.

What does broadband offer?

Broadband is a faster way of connecting your computer to the Internet – often around ten times faster than a narrowband connection. This is because broadband provides greater capacity to receive data than a dial-up connection. It allows you to view web pages more quickly, download large amounts of information more easily and use services that require streaming of content (e.g. Internet radio).

Why is it important in the home?

It will allow you to do everything from shopping to downloading film trailers and music, to playing online games, without delay or disruption, without tying up your phone line. It is usually available at a flat monthly rate no matter how long you stay online. It also enables efficient home working.

Broadband's Impact on Business

Broadband can dramatically improve the service businesses offer to their customers, increase productivity levels and may help cut costs. More than 75% of businesses use the web to source suppliers. Broadband is crucial to using the web services effectively and is a vital enabler for business.

The FSB believe that having access to world class telecommunications is a key element in growing the Scottish business base. With regard to the impact on SME's, 76% of FSB members in Scotland using broadband say it has made their business more productive, 74% say it has increased employee satisfaction and 58% say it has improved the business cost base.

End-user positive impacts are likely to include time saving, productivity improvements and cost savings. In some instances, investment could be stimulated through adoption of new telecoms applications. Broadband has been influential in determining how a business goes about its work and has led to the adoption of new *net.related* strategies and marketing activities. According to OFTEL's survey of the small and medium business use of the Internet (OFTEL 2003), the perceived benefits of broadband involve speed in one way or another (27% of respondents), including faster data transfer, access, quicker transactions. Other benefits include the two-way transfer of files (17%), "increased productivity" (9%) and "efficiency" (8%). The saving of time was also a theme of the case study, Deep Blue Dive, featured in "UK online, Annual Report 2002"

A positive impact is expected in terms of Scotland being a more attractive proposition for inward investment. Without increased access to and take up of broadband by businesses Scotland will be at a serious disadvantage compared to other locations that are investing heavily in Broadband infrastructure. Other impacts could include Scotland's ability to attract new talent from elsewhere in the UK and overseas, and a general rise in business confidence with regard to Scotland's international competitiveness.

Case Studies

SE has already carried out substantial reviews of broadband deployment in businesses and compiled 47 company case studies which cite the benefits that have resulted from taking up broadband.

The following two examples are typical of the many Scottish businesses that are now achieving real benefits from the adoption of broadband:

Market Research UK is Scotland's leading independent research company, providing research services for a range of public and private sector clients. Broadband access has transformed their ability to transmit information to their clients and between its offices across the UK. Broadband has dramatically improved the reliability of its internet connection and has produced significant productivity improvements and savings on telecom costs.

ITS is a supplier of inkjet coding and labelling machinery to the whiskey, food and timber industries. Broadband access allows its five employees to manage their time more efficiently by allowing them to access the companies accounting and ordering system remotely and process orders and invoices from virtually any location. It has also removed the need to recruit additional staff to process orders.

Appendix 2

Project ATLAS: Infrastructure for Scottish Business Parks

Background

Broadband is an underpinning requirement for the exploitation of e-Business by businesses. The aim of Project ATLAS is to implement *advanced broadband* (i.e. up to 100Mb) connections to around 500 businesses on 13 business parks around Scotland. It will provide an open-access fibre network on the parks, and offer this at wholesale commercial rates to telecoms Service Providers. These providers can then provide a choice of retail telecoms services direct to businesses, without having to construct their own duplicative networks.

Being based on the latest fibre technology, the project has an anticipated lifetime of up to 25 years. It will contribute towards an improved international image for Scotland in terms of modern economic infrastructure

Project ATLAS aims to ensure that Scotland has world-class infrastructure which will serve the needs of Scottish businesses – not just today or tomorrow, but in the long term.

Role of Scottish Enterprise

SE designed the project following dialogue with the telecoms industry in Scotland. SE has procured a Preferred Bidder to implement the project through OJEC procedures. SE will fund the creation of the telecoms network on the business parks, and will retain ownership and control over its operation and marketing for the duration of the project⁸.

Benefits of ATLAS

- For Business Broadband Users – long term access to cheaper and faster advanced services, supported by modern infrastructure, and greater choice of suppliers.
- For Service Providers (SPs)– open access, at transparent prices, to

⁸ The project has been notified to the European Commission for a ruling on State Aid and SE is awaiting a decision on this aspect prior to proceeding with the project.

customers over a neutral network better than anything currently available in Scotland. This will allow them to provide competitive advanced services to new customers.

- For Scotland – Improved ranking in international comparisons, increased attractiveness to inward investment, establishing Scotland among the leaders in the provision of next generation broadband services

Summary

Advanced Broadband is vital to support e-Business into the future. Scottish businesses are already starting to adopt a greater level of e-Business which will drive future demand for high-capacity broadband. Project ATLAS will accelerate the provision of Advanced Broadband services and ensure these services are available to SMEs at competitive rates. This will position Scotland in a strong competitive position in relation to other countries.

Appendix 3**Telecoms Trading Exchange (TTE)****Background**

The TTE is a virtual marketplace for wholesale broadband connectivity which provides Scottish businesses with high capacity international bandwidth at competitive rates.

The aims of the TTE are

- to improve the transparency within the wholesale market for international connectivity from Scotland
- to provide a transparent brokerage service to key high capacity users in Scotland
- to provide an efficient method for switching suppliers and
- to limit the disadvantage Scotland suffers due to all global networks terminating in London.

The TTE gives Scottish based Internet Service Providers (ISPs) access to a wide range of international telecoms operators previously only available in London. Through the Exchange's website, these ISPs can compare costs and the level of services available. The Exchange will increase substantially the choice of telecoms suppliers available to ISPs operating in Scotland. This increased choice should lead to knock-on price reductions and contract benefits for ISPs.

The TTE is located in Edinburgh and became operational in January 2003, and is hosted on the Internet at www.band-x.com/scotland

Role of Scottish Enterprise

A contract to run the TTE, for a 3 year pilot period, was procured by SE through OJEC and agreed with Band-X. Band-X are world leaders in Telecoms trading. A dedicated backhaul link from Edinburgh to London was also procured under OJEC from SSE Telecom and Band-X manages this and operates the TTE on behalf of SE.

The Impact of the TTE in Scotland

The TTE has significantly improved the transparency of the wholesale (IP Transit) market in Scotland allowing purchasers to make more informed and less restrictive buying decisions. Wholesale IP pricing has fallen faster in Scotland than in London since the TTE was launched in January 2003. This places Scottish purchasers in a better competitive position in relation to their international competitors and helps the sustainability of their businesses in difficult times. The TTE also allows them to develop new services based on improved reliability.

Summary

The TTE is the first of its kind in a European region, and has now successfully completed its first year of operation. This pilot scheme will continue to run for the next two years.

Customers already signed up to the TTE are very satisfied with the pricing transparency and the ease with which they can switch suppliers. The TTE is steadily gaining a solid reputation as a cornerstone of Scotland's telecoms infrastructure, and is having discernible market impact.

Appendix 4**UK Broadband Fund****Neutral Broadband Website**

This is providing online independent advice and information on broadband for businesses. High interest has been shown in the site which is recorded in the suppliers pages and there are 49 business benefits-orientated broadband case studies on the site. The site has become a natural hub for all of Scottish Enterprise's broadband activities and is integral to the promotion and administration of the Business Broadband Incentive scheme.

Powerline technology trials

Two technical trials of powerline comms technology are being undertaken in Crieff and Campbeltown in Scotland in partnership with Scottish Southern Electric (SSE). The trials are proving successful, particularly in Crieff which has exceeded expectations in terms of reliability and performance. Indeed, SSE have since launched services in Stonehaven to test the commercial case for further widespread roll-out of powerline comms Technology. Emission levels have not exceeded the permitted levels. However, to reduce regulatory uncertainty, those involved in this project would like to see EU-wide standards for emissions from PLT defined and ratified.

e-Business Demonstration Centres (eBDCs)

These provide accessible hands-on experience of simple broadband applications together with independent expert advice for SMEs to make educated decisions on using broadband. SE is currently operating 11 eBDCs and deliver a workshop specifically designed to meet the needs of SMEs who are on the broadband learning curve. The interactive workshop, entitled 'Using Broadband', was developed to raise awareness and educate SMEs on the business benefits of broadband. The workshop has been revised to feature the business benefits of applications. A satellite-enabled mobile Broadband Bus complements the physically located eBDCs to provide workshops in much remoter areas. Over 600 delegates have attended Using Broadband workshops either in eBDCs or on SE's Broadband Bus. The eBDC's are supported by 40 fulltime and 45 part-time e-advisors who are available to help businesses. These are supported by SE's general business advisors through the Gateway project.

The Wireless Excellence Network (WEN)

The WEN has been established to promote Scotland as a global leader in wireless. The objectives are to raise awareness and educate, promote research & development, trial future technologies and bring together Scottish expertise from manufacturing, software development, telecoms and academia. As part of this, a Wireless Incubator at Hillington Park Innovation Centre (Renfrewshire) has been established where SME's can develop, test, and demonstrate wireless applications at the Centre, which has been

equipped with the necessary wireless hardware, technical support, and contingency systems. SE has also worked in partnership with NTT and BT to bring the most advanced wireless technology to Scotland at the Edinburgh International Conference Centre (EICC). A wireless hotspot has been created where visitors can access the Internet at broadband speeds and experience the difference between 3 wireless technologies.

Broadband Farming and Community Broadband (wireless) projects

Two broadband projects, being undertaken in Ayrshire, are investigating the benefits of broadband to the rural and voluntary sectors. The **Community Broadband Project** - is a technology trial providing broadband connectivity to 11 third sector organisations such as voluntary groups and not for profit organisations in the Girvan and Ardrossan areas of Ayrshire. It is delivering huge benefits to the organisations which are dealing with disability, rural transport initiatives and youth development as part of their remit. The **Broadband Farming Project** is using wireless technology to deliver specialist rural content and applications to 14 rural and farm businesses based in south Ayrshire. The project is raising awareness and stimulating demand for broadband access from local SME's, residents and community groups in the area, by demonstrating the benefits experienced by the pilots' users

Wireless Trials

Two wireless trials are underway in the SE area in Aberfoyle and Lochwinnoch where communities have been very innovative and proactive in getting these aggregated community broadband demand projects underway. Apart from getting users connected to broadband, SE is garnering key learning from these pilots on how to overcome the logistical, technical, organisational and legal challenges posed by this model.

Scottish Borders Rural Broadband Service

This pilot project is designed to trial innovative approaches to the delivery of broadband services in areas not served by the private sector. The Scottish Borders area was chosen as the location of this pilot, as it had the lowest availability of broadband in Scotland. The trial is aimed at creating a sustainable business model that will continue beyond the DTI Programme which ends on 31 March 2004.

Fixed wireless technology will be used to deliver the broadband service and will provide a high quality symmetrical service of 512 Kbps and a contention ratio of 1:30.

SBRB Ltd is a subsidiary company of SE Borders, set up to act as a wholesale provider of network services to Internet Service Providers (ISPs), it does not provide broadband service directly to the public. SBRB enables ISPs to use its network for the delivery of broadband services to businesses and residences in the Scottish Borders.

Based on the present schedule, the SBRB service will be rolled out to 9 locations.

Appendix 5

Aberfoyle Broadband Community - SE Buying Club Pilot

Project summary

The Aberfoyle Project was launched in June 2003 and currently has 21 business users. Two satellite dishes are used to deliver connectivity to the local businesses and a hot spot, providing broadband access for visitors to Aberfoyle is proposed.

Project Synopsis

Following on from the success of the Broadband Awareness Seminars, the Broadband Demand Survey where 350 SE Forth Valley businesses were surveyed and the Rural Broadband Satellite Pilot which helped over 30

businesses adopt broadband technologies it was felt that a project to deliver a shared satellite broadband connection using wireless technology to a small rural business community would be useful.

The idea was presented at one of the Broadband Awareness Seminars which was held in Aberfoyle as the Aberfoyle Traders Association (ATA) provided a focus for a community approach. The geographical layout which included a small village with the community then stretching out along the lochside for some five miles or so was considered to mirror a large number of communities within Scotland.

Aims of the project are to:

- provide a shared satellite broadband service to a rural community, which would deliver a robust and acceptable performance for the service users;
- provide this service within a sustainable financial model based on the need for the monthly costs to be comparable with those currently available within large towns and cities;
- produce a partnership with the local business community which would own the project and continue to develop the services after the involvement of SE Forth Valley ceased;
- produce a report detailing the experiences of all concerned within the project which would become available to similar communities to help them duplicate or improve on the completed project without the need for further SE involvement; and
- work with the suppliers on the project to help them gain from their involvement and which would develop their skills and experience.

Partnership was recognised as the best way forward with the Aberfoyle Traders Association providing the administration and delivery of the service to the Aberfoyle businesses. SEFV has provided technical e-Business expertise, assistance with the European LEADER+ funding application and also assistance in the legal and planning issues.

The ATA are the owners of this project and they represent the local business community. They are innovative and experienced business people. Our main point of contact has been with a 4 member sub group of the ATA. Their intention is to extend this project into the wider Aberfoyle community.

The project installation costs are funded through LEADER+ (50%), SE Forth Valley (35%), ATA (15%). The running costs will be fully met by the ATA.

Appendix 6

Broadband Access Programme**Business Broadband Incentive**

This scheme is encouraging up to 5,000 businesses to take up a broadband connection. Grants are available throughout Scotland until March 2004, with £300 available to businesses that install broadband services such as telephone line, cable or fixed wireless. For businesses in areas where these services are not or are unlikely to be made available in the near future, £1,200 is available to help with the cost of installing and running a more expensive satellite broadband connection, or a bespoke solution. The scheme, which has the support of industry organisations, has been very successful and since its launch in the summer 2003, over 6,000 businesses have requested applications for the grant.

Marketing Campaign

Marketing campaigns have been developed to increase awareness, access and take-up of broadband in Scotland under the 'Broadband for Scotland' banner. There are two key initiatives underway that are already delivering results:

- Advertising campaign – The objective of the campaign is to raise awareness and demand for broadband. The key call to action is to visit a new web site www.broadbandforscotland.co.uk to register for broadband and to access information that includes the benefits of broadband and details of service provider coverage. In the first phase of the campaign there have been over 30,000 visits to the site with over 3,000 registering for broadband.
- Field marketing – Local promotional activity targeted at areas that do not yet have access to ADSL equivalent broadband. The objective is to encourage businesses and consumers to vote for broadband for their community. Local promotional teams have been responsible for enabling 19 exchanges and involved in enabling over 60 others. The plan is have promotional activity in 150 exchanges before the end of March 2004 with a further 94 planned in 04/05.

Market Intelligence

SE has undertaken a significant piece of broadband analysis work to help make informed decisions about possible demand and / or supply interventions. The rationale for this work is to improve decision taking in any broadband demand or supply side interventions. The resulting market intelligence tool will provide a very effective and unique Scotland wide capability. It will provide the means to make intelligent and informed decisions on any investment based on dynamic and granular data sourced from telecoms suppliers and other commercial data sources. Access to this data

will be made available to the Telecomm supply industry to enable them to take informed decisions on future broadband investment decisions.

Business Broadband Networks (BBN)

This project aims to provide SME's and communities with the option and means of aggregating their collective broadband demand in local areas where no commercial service is available, in order to pull through supply-side solutions for affordable broadband services.

Analysis shows that in excess of 200,000 small businesses, organisations and households cannot, for one reason or other, gain access to affordable or suitable broadband service. The reason for this is, partly, that where population densities fall below certain limits, the commercial viability of delivering service is unattainable and suppliers are absent. In socially deprived areas, the cost of individual broadband access is itself the barrier. There are, as a result, links to the economic inclusion agenda which are highlighted in appendix 2. The option of satellite service, which is generally available across the country, is often prohibitively expensive or technically unsuitable.

The project will achieve its objectives through facilitating the creation and operation of local BBN's in the SE region out with areas of mainstream ADSL/cable modem supply. It is anticipated that between 80 and 120 BBN's will be developed over the next 2 years.

The core members will be SME's, however there is potential for BBN's to include members of the community and large businesses with sites in the area. A common template is being developed from 2 pilots, which will assist new BBN's to be developed quickly and efficiently.

**ENTERPRISE AND CULTURE COMMITTEE INQUIRY INTO
BROADBAND IN SCOTLAND**

WRITTEN EVIDENCE

Submitted by Highlands and Islands Enterprise

This paper contains Highlands and Islands Enterprise's initial response to the Scottish Parliament's Enterprise and Culture Committee's Inquiry into the roll-out of broadband services in Scotland and to the particular questions set out in the inquiry remit.

Executive Summary

- Our aspiration, as technology advances and geographical, commercial and technical constraints are reduced, is for 100% broadband coverage.
- Although existing private sector initiatives and public sector projects suggest that over 80% of the population will receive broadband access, there is need for further action.
- HIE's challenge is to ensure that the area is not always at the back of the queue when new telecoms technologies and services are rolled out.
- HIE would support any initiative to look at the telecommunications needs of rural Scotland in the longer term.
- It is unlikely that a single technology will be suitable for all parts of the area.
- The most serious technical barrier to coverage is likely to be the inability of ADSL to be provided to every customer within an exchange area, therefore, HIE would value the opportunity through local trials or pilots to be at the forefront of any initiatives to increase ADSL's range.
- Commercial barriers are a difficult hurdle to overcome in achieving broadband coverage across the Highlands and Islands as the market is small and dispersed and the ability to pay premium prices is limited.
- HIE would therefore welcome an early move by the Scottish Executive to develop and fund a comprehensive roll-out of affordable broadband services in the areas where the private sector has no plans to invest.
- Currently targets focus, rightly, on coverage, however, in future as access increases formal targets should include impact.

What future action is required?

Modern, high quality telecoms links are of immense value to rural and island communities in particular by expanding the potential for economic development, preventing de-population, delivering key public sector services such as health and promoting inclusion. It can be argued that broadband and other modern telecoms services are even more important to rural communities than to urban areas, and can lay claim to the same strategic and “lifeline” status as more traditional communications infrastructure such as roads, bridges, ferries and air routes. All told some £20m public funding has been invested in telecoms infrastructure in the Highlands and Islands over the last 15 years - a significant sum, but far less than has been spent on transport infrastructure which, in terms of improving opportunities for trade and other forms of development, meets similar needs.

In the past year the availability of broadband in the Highlands and Islands has more than doubled. Nevertheless the percentage of households covered (40%) falls well short of that of Scotland as a whole (75%) and is the lowest of any region of the UK. The reasons for this are well known: the area’s size, topography and relatively small and dispersed population (425,000 people in an area which covers half of Scotland) do not offer a commercially attractive proposition to telecommunications service providers. Consequently the dominant supplier, particularly to the SME and residential sectors, is BT with its extensive trunk and exchange network. For basic telecoms services the Highlands and Islands is relatively well served thanks to a number of previous infrastructure projects supported with public funding. However, the ever present challenge is to ensure that the area is not always at the back of the queue to receive new telecoms technologies and services which increasingly underpin economic and social sustainability.

Ultimately as technology advances and geographical, commercial and technical constraints are reduced, HIE’s aspiration is for 100% coverage. Although existing private sector initiatives and public sector projects suggest that over 80% of the population will receive broadband access, there is need for further action. This could be through ad hoc responses to local demand or more decisively by investing in near 100% coverage in the way that regions of England and Northern Ireland have done.

Unfortunately such moves, as important as they are, only enable the Highlands and Islands to catch up with urban centres - and on a short-term basis - and do not create an underlying infrastructure that can be easily and cost-effectively upgraded for the next generation of broadband services. For this reason HIE would support any initiative to look at the telecommunications needs of rural Scotland in the longer term. This may offer a way to avoid the need for public funding on a recurring basis as each new access service is rolled out.

What technological, commercial, regulatory and other barriers to further increasing availability still exist?***Technological***

ADSL and satellite are currently the main delivery technologies for broadband in the Highlands and Islands. There is no cable infrastructure and, to the best of our

knowledge, no plans to provide any. Microwave radio is used extensively for trunk infrastructure but there are no private sector wireless local access networks. Powerline technology with satellite backhaul is being trialled by SSE Telecom in Campbeltown.

It is very unlikely that a single technology will be suitable for all parts of the area. All delivery technologies have inherent advantages and disadvantages. The overriding problem is that of reach – the need for the exchange, mast or sub-station to be sufficiently close to the customer to provide higher bandwidth services. For wireless, a line of sight (or near line of sight) is also needed between the network and the customer. Currently, satellite systems are the most geographically widely available broadband service but experience to date has shown some technical and non-technical shortcomings which suggest that they will not provide a universal solution for rural customers.

Given the ubiquity of ADSL and the dominance of BT within the Highlands and Islands, the most serious technical barrier to coverage is likely to be the inability of ADSL to be provided to every customer within an exchange area. If a customer is too far from an exchange, or if the quality of the copper line is poor then the customer will be unable to receive broadband even though the exchange is enabled. In general, the limit for basic 512k bps ADSL is 6 km and for higher bandwidths some 3.5 to 4 km. BT estimates that across the UK some 2% of customers will fall completely outside ADSL range. Owing to the dispersed nature of the population in the Highlands and Islands and the resulting large exchanges areas, the position is likely to be well above average. Detailed analysis by Scottish Enterprise shows that fewer than 2% of customers served by the currently enabled exchanges in the HIE area are potentially out of range, but this percentage more than trebles to 7% if all triggered exchanges were enabled. Some extreme examples are Scarinish (Tiree) where the number is 73% and Lochgilphead where it is 16% of customers. Although the actual number of customers affected is small, they are invariably the ones who express the greatest demand for broadband.

BT is, of course, aware of the reach issues and is attempting to extend the range through technical advances and the use of other delivery methods such as wireless. HIE would value the opportunity through local trials or pilots to be at the forefront of any initiatives to increase ADSL's range.

Commercial

Commercial barriers are the single most difficult hurdle to overcome in achieving broadband coverage across the Highlands and Islands. The market is small and dispersed and the ability to pay premium prices is limited. Most of the business models developed for broadband roll-out rely on clusters of 100 or more customers. Even BT's Exchange Activate, a service designed especially for small communities, needs 30 customers and an upfront capital contribution of £25,000 in order for users to receive the service at the same monthly cost as in urban centres.

Through its Hi-Wide project HIE has looked at the costs of rolling out a broadband service in the smallest communities using wireless technology for local access. The main elements of cost are the backhaul – i.e. the link back to the internet - and the ongoing support to customers. In our experience the need for support is greater for

satellite systems, although these do offer the most cost-effective backhaul. Another major cost element for more ambitious wireless access networks is the annual rental of mast space, or where it is not available, the cost of constructing new hilltop sites.

Regulatory

Positive steps have been made to reduce barriers created by regulation, particularly those relating to the use of the radio spectrum. The opening up of the 5.8 GHz band has cleared the way for a high quality wireless delivery. The clarification of whether regulation allowed BT to look at the business case for installing ADSL over a number of exchanges rather than on an exchange by exchange basis was also a positive move which in November 2003 resulted in 128 additional exchanges in the Highlands and Islands to be set a trigger level.

Other

Once it is accepted that public intervention is required to provide broadband coverage in areas such as the Highlands and Islands, then the biggest problem that arises is that of State Aid regulation, and how best to construct a project which meets all the requirements set out by the EC. The recent decision on the Cumbrian ACCESS project by the EC, although positive in that the project was allowed to proceed, drew certain conclusions that appear to make public intervention more rather than less difficult. We know that State Aid experts at both Scottish and UK level are studying the decision and we hope that they will be able to clarify the way to proceed.

What policy developments and funding are likely to be required to overcome those barriers?

HIE supports a continued commitment to bring broadband services to communities across Scotland. We believe that recent developments in the telecoms industry will assist this task but that public intervention will be needed to make affordable broadband widely available in rural areas.

To that end we have run a TV and press campaign "Speak up for Broadband" since January 2003, designed to raise awareness, increase demand and encourage registration of interest. More than 18,000 people have responded so far. We also hope to provide coverage in more peripheral areas through our Hi-Wide project and potentially through Connected Communities, a UK Broadband Fund and ERDF-supported project, to roll out broadband across the Western Isles.

The Scottish Executive's Pathfinder public sector aggregation project is also important for although it directly addresses education and health broadband requirements, it has the potential to indirectly extend coverage for SMEs and households. There is a danger, however, that the timescales suited to achieving best value for the public sector do not match the expectations of rural businesses and communities.

HIE would therefore welcome an early move by the Scottish Executive to develop and fund a comprehensive roll-out of affordable broadband services in the areas

where the private sector has no plans to invest. This would follow the lead set by Cumbria, NE England and N Ireland.

Should new targets be set? If so, what should those targets be?

In “Connecting Scotland our broadband future: Making it Happen” the Scottish Executive set a target of 70% broadband coverage by March 2004. This figure was recently reached at a Scottish level but in the Highlands and Islands coverage by March 2004 will not exceed 45%. Looking forward however the position is more positive; if all the recently-set BT trigger levels are met, and the exchanges upgraded, then broadband would be available to around 80% of households. Was stated above, HIE’s aspiration is to go further and ensure that as many as possible of the remaining 20% of households can receive affordable broadband. This will require providing a service to the areas served by the 230 exchanges without a trigger level and finding a cost-effective solution for those in enabled exchanges but beyond ADSL’s reach. Accepting the geographical, commercial and technical constraints which exist, our aspiration remains for 100% coverage.

What links are there with policy development at a UK level?

HIE works closely with the Telecoms Policy Unit in the Scottish Executive who are responsible for our input into UK level policy development. We believe that these links are well developed and we have found no problems in accessing DTI, Ofcom or Radio Communications Agency staff if required.

Are targets for the impact of broadband (as well as availability) required?

The current concentration on the issue of broadband coverage rather than take-up is inevitable while so many of our communities have no access to affordable broadband services. However, if Scotland is to see the true benefits of broadband, then the services must not only be available but also used – used to enhance business productivity, improve delivery of government services, increase access to training and education and for new forms of entertainment.

As well as individual households and businesses, communities themselves are significant potential customers for and beneficiaries of broadband. HIE commissioned research with community groups which identified a relatively low level of awareness of the benefits of broadband but huge enthusiasm once exposed to examples of the opportunities for enhanced community interactivity presented by broadband. In particular the ability quickly and easily to transfer images was highlighted by community groups as an enhancement to the quality of community life. Communities were enthusiastic about the opportunity to exchange and publish images of individuals prominent in the community, community activities, community landmarks such as weddings or the opening of new facilities, or cultural activities, like music, drama, or new acquisitions of articles for local museum collections.

Currently, HIE has no formal impact target as coverage is our main issue. We are, however, actively encouraging both take-up and use of broadband. We have undertaken a number of awareness and training programmes for the business community, which have been well attended, and we have seen more than 800

businesses and community groups apply for grant assistance to install broadband. As a result, the take-up in the HIE area exceeds the Scottish average although it is still below the best performing regions of the UK. The current priority must remain greater coverage. However, we intend to continue awareness raising and training activity to encourage use and, as the rollout programme develops, we will work to support high levels of uptake and to develop and achieve appropriate impact targets.

Highlands & Islands Enterprise
March 2004



Enterprise and Culture Committee Inquiry into the roll-out of broadband in Scotland

Response from the Federation of Small Businesses

The Federation of Small Businesses is Scotland's largest direct-member business organisation, representing 18,000 members. The FSB campaigns for an economic and social environment which allows small businesses to prosper. We believe that access to broadband is a critical issue for the competitiveness of businesses in Scotland and we have taken a strong interest in the development of the Scottish Executive's strategy. Accordingly, we support the Enterprise and Culture Committee's inquiry and welcome this opportunity to comment.

1. What technological, commercial, regulatory and other barriers to further increasing availability still exist?

The most obvious technological barrier to increasing availability of broadband is the 6km limit for ADSL. Clearly, in many parts of Scotland there are large numbers of people who are unable to access this particular technology. There are, of course, other methods of delivering broadband including satellite and Exchange Activate, though these too have some drawbacks (e.g. satellite can only speed up the download of information and is a costly option). However, as new technologies develop it seems unlikely that there is any insurmountable technological barrier to increased availability.

The barriers are more likely to be of a commercial nature, for example, it will never be economically viable for a company to make the financial investment required to provide broadband infrastructure in many areas of Scotland. Similarly, the bespoke solutions required in areas without ADSL coverage are still expensive and often outwith the affordability of many small businesses and households.

The Pathfinder aggregated public sector demand project offers a solution where ADSL would not be commercially viable. However, we are disappointed that while the scheme has been discussed for some time we have yet to see any real progress in its implementation.

In terms of regulation, the Scottish Executive is required to observe European Union State Aid regulations, which has already caused some difficulty with Project Atlas.

2. What policy developments and funding are likely to be required to overcome those barriers?

As acknowledged by Scottish Enterprise, ongoing public-private partnership is necessary to deliver 100% coverage across Scotland. We believe this can best be done by inviting companies to tender for coverage in Scotland, similar to the initiatives launched in Northern Ireland, Cumbria and Northeast

England. This will involve a significant investment from the Scottish Executive. However, there needs to be clear agreement between the Scottish Executive, Scottish Enterprise and the telecommunications companies about the areas which are not commercially viable and which will, therefore, benefit most from public funds.

In addition, it is our impression that well-organised, highly-motivated communities, often working closely with their LEC and other relevant organisations, have been successful firstly in securing trigger levels, and then reaching these, though we are concerned that having reached trigger levels communities are now having to wait for many months before the exchange is enabled. Where partnership is less successful, or where there is a low level of enthusiasm or demand from the community, could therefore be seen as a barrier to progressing availability. Arguably, it is these excluded communities (whether socially or geographically) which would benefit most from access to broadband.

As coverage increases it is vital that greater emphasis is placed upon stimulating demand. We welcome the current marketing initiative which is intended to overcome the lack of awareness and understanding about the potential benefits of broadband. However, we believe that a more targeted campaign, focused on the benefits for small businesses, is required if we are to increase the level of take-up and effective use of broadband by businesses.

As highlighted above, effective dialogue and partnership between LECs and local businesses is one of the most effective ways of addressing this issue. Business organisations, like the FSB, are well-placed to help drive forward broadband solutions at local level. However, it is unclear to us whether or not this happens on a purely ad-hoc basis across the country, dependent upon the enthusiasm of a few individuals. It might be better to ensure that, where there is no obvious demand from local business, that the public sector (probably the LEC) take the lead in proactively establishing a dialogue with the local business community.

The Business Broadband Incentive scheme appears to have been a success and we hope that this scheme, or a similar financial incentive, will be available for 2004/05.

Lastly, businesses want a transparent strategy and timetable, from the Scottish Executive, Scottish Enterprise (though probably more importantly from LECs at a local level) and BT to enable them to make the most informed decision about their ICT needs – for example, whether to invest in satellite technology, or wait for their community exchange to be enabled. This is highlighted by the evidence provided by one small software business in Ross-shire who told us that:

“It is almost 3 years since I was going to go for broadband by satellite but was advised against by the HIE adviser who said hang back and enable your community. He knows that I have been extremely frustrated as a result. I have got up at the crack of dawn to attend seminars - and always to learn 'but

not for you'. We now have a special community broadband enabler for the Highlands. He told me that it would be the end of 2005 before we might come under the Hi-Wide scheme which would be setting up local community 'receivers and wireless networks.'

3. Should new targets be set? If so, what should those targets be?

We believe that the target must be 100% population coverage of Scotland, in the shortest time-frame possible. However, given the cost of many of the bespoke solutions this target must take into account some element of affordability, so the target should be 100% coverage of affordable solutions. It is also important to look beyond that target and focus on improving not only take-up levels, but planning for future improvements in technology e.g. wireless access points to allow mobile access to broadband.

4. What links are there with policy development at a UK level?

We believe that there has been greatest focus on developments in the devolved areas – Wales and Northern Ireland. Both countries appear to have made well-publicised, firm policy and funding commitments to achieving better broadband coverage. However, we are not aware of any major differences between the Scottish approach and that taken elsewhere in the UK.

5. Are targets for the impact of broadband (as well as availability) required?

Given the ongoing and significant investment which is being made by the Scottish Executive, some method of evaluating the impact of broadband is required, for example, a formal analysis of which businesses have benefited most from the technology. This should obviously be taken into account in the targeting of public funds, with marketing and education focused and tailored to these businesses, rather than a one-size-fits-all approach.

It is our understanding that the E-business survey carried out by Scottish Enterprise may already have some milestones which could be used to derive suitable targets.

For further information on any of the points raised in this submission please contact Susan Love, Policy Development Officer, on scotpu.policy@fsb.org.uk or 01259 723713

Written Submission to Enterprise and Culture Committee on Broadband

Submitted by : C Mc Sherry, Managing Director, PROSYS Business Solutions Ltd

On behalf of The Forum For Private Business.

1st March 2004.

1. What technological, commercial, regulatory and other barriers to further increasing the availability of broadband services still exist?

The availability of broadband is still patchy. In my own business for example we cannot get a broadband connection (although we are investigating satellite broadband). This puts us at a distinct competitive disadvantage as we are paying literally thousands of £s unnecessarily for a leased line. Our Operations Director can get broadband at his home and he has taken to only downloading large files at home because the performance is so much better.

Technologically, the problem is simply that our office is too far from the nearest exchange. We are located in an industrial park in Cumbernauld, just off the main A80 motorway artery. At the time, ironically, good communication was at the top of our list when looking for a location. It surprises me that a new town such as Cumbernauld should have such bad communications infrastructure. I have the same problem at my home in Stirling – too far from the exchange – and so home-working is not a viable option for me. I know many people and businesses that are now listing broadband capability as a prerequisite when looking for a location. Unavailability in certain areas will have an inevitable demographic impact in time.

The commercial problem is obvious; there is still not enough demand from businesses and consumers in our area. It is a chicken and egg situation: businesses won't understand that there is a benefit unless they can try it and use it and they can't try it if they can't get access because, commercially for BT, there is no short term return on the investment of converting the exchange.

Part of the reason for a lack of demand is that much of the marketing and education about broadband has focussed on getting fast emails. Hardly a "must have" selling point. But there is a wealth of other potential benefits available and up-and-coming. For example, "software as a service" offerings where, using high speed broadband access, it is possible to rent the use of software packages rather than buy them outright. Commonly used applications such as Timesheets, Document Collaboration, Sales Force Management, Customer Service Management, Project Management etc can all be accessed online now for as little as \$10 per user per month. This offers a substantial saving for businesses that can get fast access to the internet as there is no additional software or

hardware to buy – you simply log on and use the service when you need to. The jury's out on whether this will take off, but it is an example of technology that is only viable for broadband users – a dial up modem just won't work.

2. What policy developments and funding are likely to be required to overcome those barriers?

I have to say that the policy and funding initiatives that we have seen from Scottish Enterprise and The Executive are doing a good job...or at least as good a job as they can. There is certainly much more awareness of the importance of the technology and the current targeting of the home user with high profile marketing will help (i.e. the additional volume will hopefully push BT along faster to make "outlying" businesses like ours come within the coverage of a broadband enabled exchange). Short of going the whole way and cabling Scotland there is perhaps little that can be done other than continue to pump prime uptake within the general population. But it's a fact that you can't seriously enter the New Economy without a permanent, affordable connection to the Internet. So maybe cabling Scotland shouldn't be discounted as an answer – unpalatable as it may seem.

My own view is that market forces alone will never deliver the kind of service that is needed to make Scotland a Premier League player. I see businesses throughout the world benefiting from fast access to the web and web technologies and it frustrates and embarrasses me that I can get faster access to my office systems from a small office in Mexico or Venezuela than I can get in my home in Stirling. The Executive in its various guises is very involved in creating business opportunities in Scotland. They often do this by encouraging developers to erect serviced buildings which can accommodate businesses or they create industrial parks. They offer incentives to businesses to move in to these buildings in the form of grants and rate-caps etc. But the first thing they do is put in the roads and the basic services. There is already, therefore, plenty of precedent for supporting the business communications environment without being called interventionist.

More work needs to be done on **specific** benefits and **specific** gains of broadband to persuade businesses to demand broadband services. The high profile ad campaigns all focus on very woolly benefits such as "speed" and "always available" angles. There is little tangible benefit to a business in something being fast if it does not deliver an improvement by being so. The benefit is never going to be in broadband of itself anyway – the benefit is in the technology that broadband enables you to access. More focus on internet and ebusiness strategies that deliver *measurable* business improvements is needed; not simply a rehash of the dotcom order-online model using cheaper broadband access. In our case, we have cut direct service costs by 40% whilst improving service response (i.e. productivity) by 28%. We could not have achieved this without the internet. Broadband would help us cut costs even further – but we still

had to have the technology and the vision to implement it. We can point to many examples where the technology is changing the businesses it impacts. Linking case studies like these to broadband will help persuade the business community that this is of real value to them – telling them that they can get their emails faster won't.

3. Should new targets be set? If so, what should those targets be?

First let me ask – new targets for what? New targets for advertising; for commercial uptake; for home uptake; for grant funding?

If targets are to be set, they need to be based on something that is achievable and measurable. For example, I don't know what percentage of the numerous government and executive organisations scattered throughout the country are currently accessing broadband technology, but I would have thought that a good starting point would be in our own backyard. Maybe there is such a program underway. A vast amount of the population is connected in some way with government and ensuring that these all had access to broadband would certainly put the service capability into a huge number of areas. If SEPA were included, I might even get it into my house in Stirling...

This technological opportunity cannot be approached in the same way as we have approached others. If anyone had suggested 20 years ago that there would be a PC in most homes and that these PC's would be more powerful than any mainframe in production at that time, they would have been laughed at (or locked up). Some things are simply not suited to the conventional analytical tools available to marketeers. We couldn't operate without roads; roads are essential government funded projects. Perhaps we need to look at connectivity in the same, basic and fundamental way.

Without connectivity it's difficult to see how Scotland can ever achieve an economic advantage in the 21st century. If our aim is to see Scotland in the "Premier League" of eBusiness nations, we need to buy the best players, coaches and training grounds(i.e. infrastructure) – not make do with a kick-about round the back of the pub on a Saturday afternoon and hope that one or two players will shine and carry the rest.

4. What links are there with policy development at a UK level?

No comment.

5. Are targets for the impact of broadband (as well as availability) required?

See point 3.



President HRH The Princess Royal *Chairman* David C H Ross,
LL.B (Hons), N. P. *Director* Robert H. Leitch

RESPONSE TO ENTERPRISE AND CULTURE COMMITTEE BROADBAND INQUIRY

1. About Scottish Chambers of Commerce

1.1 The Scottish Chambers of Commerce is the umbrella organisation of the local Chambers of Commerce. Its prime functions are to promote and protect the interests of local Chambers and their member businesses throughout the length and breadth of Scotland. It helps promote co-operation between the local Chambers in the provision of services and represents the common interests of Chambers at a national and international level.

1.2 Scottish Chambers policy is determined by a Council on which all Chambers have equal representation, and is executed under their direction. Policy groups, formed from a wide cross section of member Chambers, are used to develop policy initiatives. The national body represents the interests of members to the Scottish, UK and European Parliaments, opposition parties, the Scottish Executive and other Government officials, Enterprise bodies, COSLA and other public bodies, and works with other private-sector business support bodies in Scotland on areas of mutual interest.

1.3 Membership is open to any firm or company irrespective of size. Collectively, Chambers in Scotland have an annual turnover of over £7.3 million and the current membership ranges from the country's largest companies to the smallest retail and professional operations. The present membership ranked by market capitalisation includes 23 of the top 25 companies, and 38 of the top 50 companies in Scotland. Together Scotland's Chambers provide well over half the private-sector jobs in Scotland and provide an unequalled geographical and sectoral representation throughout Scotland compared to other organisations representing Scottish business.

30 George Square, Glasgow G2 1EQ Telephone 0141 204 8316 Fax 0141 221 2336
E-mail: admin@scottishchambers.org.uk Website: www.scottishchambers.org.uk

2 Introduction

2.1 Scottish Chambers of Commerce welcome the Committee's inquiry and we are pleased to have the opportunity to contribute. Clearly there are benefits for many businesses in accessing broadband and so the Chambers have been actively involved in encouraging their members to become broadband enabled. Whilst broadband access and take up is steadily increasing, access to broadband remains an issue for members of some of the local Chambers.

2.2 In many cases Chambers have been working closely with local enterprise companies and with BT to ensure that as many businesses as possible are aware of the benefits that broadband can bring in order to increase broadband registrations and work towards meeting trigger levels in those areas where targets have been set. The number of exchanges being enabled and exchanges where trigger levels are being set has steadily increased, something the Chambers welcome and have contributed towards. This increase will continue but intervention will be required to ensure that more rural exchanges are enabled. A certain percentage of the population will not get access to broadband without intervention.

Below, the Scottish Chambers of Commerce response to the questions posed as part of the Committee's inquiry.

3. Scottish Chambers of Commerce response to inquiry questions

What technological, commercial, regulatory and other barriers to further increasing availability still exist?

3.1 In Scotland the target of 70% coverage by March 2004 set by the Scottish Executive has already been met. However, this has not solved problem of lack of broadband access for many companies and individuals. The main problem is now in the remote rural parts Scotland where broadband registrations are very low and where businesses and the general public are unlikely to get access to broadband via the public telephone network in the foreseeable future. At the heart of the issue is how to make the upgrading of exchanges commercially viable to providers. This requires generating sufficient demand. However, demand stimulation is going to continue to be limited in sparsely populated areas.

3.2 Clearly there are commercial barriers to increasing access further via the telephone networks (and the same is true for cable). There are also technological barriers in that ADSL broadband can only be accessed within 6km of a telephone exchange. These barriers must be overcome. It is important that businesses in rural areas can compete with similar businesses in urban areas on a level playing field. A company, irrespective of location, should be able to access broadband equal to that available elsewhere in terms of cost and functionality. The digital divide that is beginning to appear is a further unwelcome constraint on the development of rural businesses and is something we feel needs to be addressed by the Executive.

What policy developments and funding are likely to be required to overcome those barriers?

3.3 There is clearly a rural/urban divide in terms of access to broadband and policy must be focused on increasing access in these sparsely populated areas. In areas where a commercially viable service is not available through a major provider, government intervention is needed. An example of how this could be brought about is perhaps to allow tendering of organisations to provide an alternative solution. European funding could be directed into these initiatives particularly in rural areas. Supply-side intervention is an approach that has not been favoured in Scotland to the same extent as elsewhere.

3.4 Scotland needs to be viewed differently from the whole of the UK. It has a higher percentage of low customer base exchanges than average. It is clear that 100% coverage will not happen on a commercial basis. We believe over 400 exchanges do not have trigger levels out of approximately 2,000. Areas where exchanges have no trigger level defined, or where this is unacceptably high and likely to be unattainable need to have a defined action plan put in place to show the options they have. This could potentially be tasked to Local Economic Forums throughout Scotland and managed via them. 100% coverage will only be achieved via government intervention and funding mechanisms to support this. In general, a clear statement needs to be made on the exchanges that have no trigger levels set. Will they be set within 1, 3, 6 months? Or have all economically viable exchanges already been defined? There are some Chamber members who are commercial providers and who have attempted to offer a commercial service at a more competitive (but higher rate). To recover their outlay they need to have customers sign up for long-term contracts with returns over a multiyear period (3yrs+). Without understanding the logic of when and how trigger levels will be set on exchanges they cannot do this.

3.5 There have been some innovative projects seeking to overcome the various barriers. Examples include a project at Rosyth laying cables for broadband access in sewerage pipes and a project which enables broadband access through power lines. These types of project on a larger scale will continue to increase broadband access.

Should new targets be set? What should those targets be?

3.6 As mentioned above, the target of 70% coverage in Scotland has now been met. Clearly, if we are to continue to increase access to broadband, new targets must be set. We would argue that broadband should be available to all businesses. Population based coverage targets may not be the most effective way of achieving this going forward. Looking at a map of current ADSL broadband coverage it is immediately apparent that coverage is concentrated on very small areas of land since a consumer/population measure is being used, not land mass or number of exchanges. Targets could focus on, for example, increased rural coverage. Alternatively, targets could be set on the number of enabled exchanges rather than percentage coverage of the population. At a UK level, although 80% of households are now broadband enabled (ADSL), less than 50% of total exchanges are enabled.

3.7 Exchange trigger levels as targets have severe limitations. There are many exchanges where the trigger level looks to be unattainable and where access to broadband is therefore limited to satellite, the more expensive option with time lags that render it unsuitable for functions like video-conferencing. In addition, there are more than 400 small exchanges, each serving an average of 125 customers, which do not have a trigger level. BT is committed to finding ways to bring broadband to these customers. i.e. 50,000 customers. That is 1% of our population that will not be reached through reaching triggers. One solution is ADSL Exchange Activate, which is designed to bring broadband to small and remote exchanges. At £25,000 per exchange, that amounts to £10 million of intervention.

What links are there with policy development at a UK level?

3.8 The UK currently has 80% broadband coverage while Scotland has 70%. Given that we have more remote and sparsely populated areas it is inevitable that we should be a bit behind, though the gap has closed. However, the problem of rural access applies to the

whole of the UK. A UK policy must be set for rural/ low volume exchanges and for those areas not within a 6km radius of an exchange. Access to funding for differing technologies must be available i.e. if wireless or satellite solutions are the options available as a short or medium term solution then financial support must be considered to ensure rural businesses and communities are not disadvantaged.

3.9 It should be noted that England and Wales have pursued a more supply-side approach whereas we have concentrated on consumer demand stimulation. Should Scotland concentrate on more supply-side policies given the limitations of demand stimulation in sparsely populated areas?

Are targets for the impact on broadband (as well as availability) required?

3.10 Targets for the impact of broadband are essential. A great deal of effort has been placed on the roll out of broadband, with generic messages being provided via press, TV and radio coverage. This has created a high level of interest and in exchanges where triggers have been set customers can, for no cost, enable trigger levels via registration. Once this is in place however more examples of tangible benefits to businesses are required to increase take up. There already exists some case study information designed to increase interest. This could be tailored to a range of sectors and company sizes i.e. if a company could look at more specific examples of broadband being taken up and the impacts they may be more inclined to consider it.

3.11 At a higher level, information on the economic impacts of broadband could provided added impetus and added justification for further public interventions (e.g. supply-side).

3.12 It must be remembered that broadband is only an enabler. The more fundamental issue is having simple robust tools available on a fast access network. Potential users must be convinced of the benefits of broadband. A 'killer application' would drive up demand and take up. As stated in the *House of Common's Trade and Industry Committee Second Report*, the selling points of broadband as it stands – quicker connection and always on connection - are not sufficient to persuade the average internet user to make the switch. It is what is not available by not taking broadband that could increase take up. Content that makes use of the high-speed connection must be developed and heavily marketed for demand to

be pushed up to levels that will make broadband fully commercial and 100% available.

3.13 The ability to fully exploit the benefits of broadband though adequate training must also be a consideration when targets are being considered. There must also be the provision of adequate information about fire-walling to assuage fears about the security risks brought about by an 'always on' connection. There is a risk that companies implement an increase in "speed" only to find their data is at risk from outside sources.

4.0 Summary

4.1 There is no doubt that there is a growing interest in broadband amongst businesses in terms of registration and actual take-up of ADSL (and cable) and this will continue. However, there will remain a problem for the most rural of businesses where demand can never be at a level considered commercial enough for exchanges to be enabled or cables to be laid. Satellite can provide some sort of alternative but is prohibitively expensive - even with incentives - and is not the preferred type of technology. Intervention is required to make ADSL or cable broadband available to all businesses. The economic impacts of further intervention must be key to any considerations and alternative technologies, e.g. wireless or power lines, must be fully explored.

4.2 Solutions must be found to give businesses, irrespective of their location, access to affordable broadband technology. The Scottish Chambers of Commerce are committed to assisting the Scottish Executive in this process wherever possible.

Karen Stirling
Policy Officer
Scottish Chambers of Commerce

Jim Speirs
Chief Executive
Ayrshire Chamber of Commerce and Industry

Douglas Millar
Chief Executive
Lanarkshire Chamber of Commerce

3/3/04

30 George Square, Glasgow G2 1EQ Telephone 0141 204 8316 Fax 0141 221 2336
E-mail: admin@scottishchambers.org.uk Website: www.scottishchambers.org.uk

Enterprise and Culture Committee

Meeting 9 March 2004

The Renewables Obligation (Scotland) Order 2004 (Draft)

The Renewables Obligation (Scotland) Order 2004 (Draft) was laid before Parliament on 17 February 2004. It imposes an obligation on all electricity suppliers which are licensed under the Electricity Act 1989 and which supply electricity in Scotland, to supply to customers in Great Britain specified amounts of electricity generated by using renewable sources, and updates the Renewables Obligation (Scotland) Order (SSI 2002/163).

The regulations have been laid under the affirmative procedure for statutory instruments. The Committee must therefore debate the instrument on the basis of the following motion lodged in the name of Rt Hon Jim Wallace, Minister for Enterprise and Lifelong Learning:

‘S2M-968 The Draft Renewables Obligation (Scotland) Order 2004— That the Enterprise and Culture Committee recommends that the draft Renewables Obligation (Scotland) Order 2004 be approved.’

The Deputy Minister for Enterprise and Lifelong Learning, Lewis Macdonald, will attend the meeting and will lead off the debate. Other members may then speak in favour or against the motion. Under standing orders rule 10.6.3 the debate on the motion shall last no more than 90 minutes. The Deputy Minister will wind up the debate, and the Convener will then put the question on the motion, i.e. ask whether it is agreed or not. If it is not there will be a division.

Under standing orders rule 10.6.5 the Enterprise and Culture Committee must take into account any recommendations of any other committee. The Subordinate Legislation Committee’s report on the instrument is attached.

Attached are the following documents:

- a SPICe briefing note on the regulations;
- an extract from the Subordinate Legislation Committee’s 7th report 2004;
- a copy of the regulations, including the Explanatory Note and an Executive Note.

Simon Watkins
Clerk to the Committee

**Extract from the Subordinate Legislation Committee's 7th Report, 2004
(SP Paper 99)**

THE RENEWABLES OBLIGATION (SCOTLAND) ORDER 2004, (DRAFT)

On 10 February, the Committee asked the Executive for an explanation of the following matters-

1. "The Executive is asked to explain what power authorises the apparent retrospective effect in respect of the year to March 2003 of articles 3(1), 6(5) and (6) and 7(1) and (3), as read with the definition of "specified day" in article 2(1) and Schedule 1";
2. "The Committee requests confirmation that the RPIX referred to in article 7 is still the relevant index for the purposes of the Order notwithstanding the recent introduction of the HICP"; and
3. "The Committee asks for an explanation of the meaning of the words "in this paragraph (10)(d)" in article 4(10)(d)(i)"

The Scottish Executive responds as follows-

First Question

1. The Executive is grateful to the Committee for pointing this out. It is agreed that, in respect that the proposed coming into force date of the Order is 1 April 2004, the effect of the provisions in articles 3(1), 6(5) and (6), and 7(1) and (3), as read with the definition of "specified day" in article 2(1) and Schedule 1, in respect of the years to March 2003 and March 2004, should be dealt with by way of provision in article 14, saving the effect of the relevant provisions in the 2002 Order. The Executive, accordingly is making arrangements to have the draft Order amended and re-laid.

Second Question

2. Once again, the Executive is grateful to the Committee for pointing this out. Although there is a separate Scottish Renewables Obligation, the Executive policy is that the buy-out price referred to in article 7 should be the same as applies in the rest of Great Britain, since there is a Great Britain market in Renewable Obligation Certificates. The Department of Trade and Industry, which is the Department responsible for the Renewables Obligation in England and Wales, has confirmed that it is their intention to continue to use the RPIX to measure the yearly increase in the Renewable Obligation buy out price. The Executive confirms therefore, that the RPIX is still the relevant index for the purpose of article 7 of the Order.

Third Question

3. Once again, the Executive is grateful to the Committee for pointing this out. The reference to "in this paragraph (10)(d)" in article 4(10)(d)(i) is intended to make clear that the definition of the "relevant period", as contained in Article 4(10)(d)(i),

applies in relation to the other references to the “relevant period” in paragraph 10(d), but not otherwise in the Order.

Scottish Executive Energy Policy Unit



The Information Centre

The Renewables Obligation (Scotland) Order 2004

This note briefly explains how the Renewables Obligation Scotland (ROS) works, and summarises the main changes which would be made to the existing system by the new order. The promotion of renewable energy, and climate change policy, are devolved matters. The Scottish Executive has set challenging targets of electricity generation from renewable sources.

The ROS was introduced by the Renewables Obligation (Scotland) Order 2002. The ROS replaced the previous Scottish Renewables Order (SRO). These Orders are made under sections 32-32c of the Electricity Act 1989. The Renewables Obligation (Scotland) Order 2004 would replace the 2002 Order. The introduction of the Order is being coordinated with an Order which will make similar changes in England and Wales (where the regime is known as the Renewables Obligation).

Changes to the regime under the 2004 Order are primarily technical, and were consulted on in August 2003. The main changes are outlined later in this note.

Renewable electricity generation contributes towards meeting government targets on carbon dioxide emissions. Government policy is that the development of renewables should be mainly market-led. However, in recognition of the fact that renewables could not survive at the open market price for electricity, the Government, through the Renewables Obligations, intervene in the market to provide a higher market price for electricity generated from eligible renewable sources¹.

The Renewables Obligations achieve this by placing a legal obligation on all GB electricity suppliers to supply a percentage of their electricity from designated renewable sources (rising in increments from 3% in 2003 to 10% by 2010). Whilst arrangements made under the ROS are due to run to 2027, the targets under the scheme are only in place until 2010. This relatively short timescale had led to some concern that investment in renewables may drop off as the deadline approaches. As a response, in December 2003 the UK Government and the Scottish Executive announced proposals to extend renewables support in the marketplace to 2015-16. These proposed changes will see the percentages above rise further, up to 14.4% and will need to be consulted upon as well as requiring further secondary legislation.

¹ The onshore wind industry has developed under this regime, changing from a fledging industry to a mature technology in the UK

Electricity suppliers are required to provide evidence to the electricity regulator Ofgem² that the required percentage of electricity supplied has come from renewable sources. This evidence comes in the form of Renewable Obligation Certificates (ROCs) which are issued by Ofgem to designated generators as they produce renewables based electricity. The system in England and Wales mirrors this, thus allowing cross border trade.

If suppliers are unable to meet their targets, they may instead choose to make “buy-out” payments, at a fixed rate per unit of shortfall, to Ofgem. These payments are recycled to compliant suppliers in a way which incentivises suppliers to provide ROCs (and thus support renewables development) rather than pay the buy-out price.

There are two values placed on electricity produced from renewable sources. The first is the price the electricity can get on the market. The second is the value attached to the ROCs. A ROC is awarded to eligible generators for every unit of renewable electricity produced. These ROCs can be traded separately from the electricity.

Main changes introduced by the 2004 Order

The UK government and Scottish Executive intend to carry out a full scale review of the Renewables Obligation in 2005-06. The changes proposed in the 2004 Order are the result of the technical review carried out during 2003.

The Renewables Obligation (Scotland) Order 2004 revokes the 2002 Order, however, the changes it would make to the current system are technical, rather than fundamental. The Scottish Executive explained in a consultation on the draft 2004 Order that the reason for replacing the Order was that many minor drafting changes would make an amending Order difficult to follow, and that it would be perfectly competent to revoke the 2002 Order.

The main changes that would be introduced by the 2004 Order are to the rules for co-firing of biomass plants. (Co-firing means that plants which generate using fossil fuels can also burn a proportion of biomass fuel, with the electricity generated from the biomass being eligible for ROCs in proportion to the amount of renewable fuel used.)

There has been little planting of energy crops (e.g. short rotation willow coppice) so far, and it has been suggested that part of the reason for this relates to the current rules on co-firing of biomass plants.

The argument is essentially that the original timetable for the use of energy crops in biomass plants is too tight and would be difficult for generators and growers of such crops to meet – therefore it would be difficult for them to generate electricity from biomass which would be eligible under the ROS. By relaxing the rules on the use of

² The Office of Gas and Electricity Markets

energy crops, generators will be able to comply, which will encourage co-firing and biomass and allow more time to stimulate the market for energy crops.

The current rules are that:

- until 31 March 2006 any biomass material can be used for co-firing
- after 1 April 2006, 75% of the energy content of the biomass fraction of the fuel supply must come from energy crops
- co-firing ceases to be eligible under the ROS after 31 March 2011
- a maximum of 25% of a supplier's Obligation could be from co-fired biomass in order to prevent suppliers meeting their Obligation by sourcing large quantities of ROCs generated by co-firing

The proposed changes to these rules are that:

- any biomass can be co-fired until 31 March 2009 with no minimum % of energy crops;
- 25% of co-fired biomass must be energy crops from 1 April 2009 until 31 March 2010;
- 50% of co-fired biomass must be energy crops from 1 April 2010 until 31 March 2011;
- 75% of co-fired biomass must be energy crops from 1 April 2011 until 31 March 2016
- the cap on the proportion of the Obligation which can be met from co-fired biomass would be lowered to 10% from 1 April 2006 until 31 March 2011; and 5% from 1 April 2011 until 31 March 2016 (after which co-firing ceases to be eligible). Again, this provision is in order to prevent suppliers meeting their Obligation by sourcing large quantities of ROCs generated by co-firing

The other main changes the 2004 Order would make are:

- Allowing smaller generators that do not produce enough electricity in a month to gain ROCs based on their annual output
- Providing that where more than one generator uses the same site, that the failure of one to produce electricity in a month does not affect the other generators eligibility for ROCs
- Allowing Ofgem to accept late payments for ROCs and redistribute these payments to suppliers (this was not allowed previously meaning that suppliers could lose out)

Tom Edwards
Graeme Cook
SPICe