

BSG response to the DCMS Select Committee's Call for Evidence:

Broadband and the Road to 5G

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Executive Summary

The BSG is the UK Government's leading advisory group on broadband. It provides a neutral forum for organisations across the converging broadband value-chain to discuss and resolve key policy, regulatory and commercial issues, with the ultimate aim of helping to create a strong and competitive UK knowledge economy.

We welcome the opportunity to provide views and address the questions in Select Committee's inquiry. As recognised in the Committee's subsequent call for evidence on the impact of COVID-19 on the sector, this submission should be considered as a current, and interim, snapshot, rather than a forecast of what is achievable by Government and industry during, and subsequent to, an enduring pandemic.

The connectivity landscape in the UK

The provision and take-up of digital connectivity has delivered overwhelming private, economic and societal benefits to the UK. This has been fuelled by the availability of superfast broadband to approximately 97% of the UK population, as well as the improvements in mobile broadband. It has led to the creation of new and innovative services and applications, created efficiencies and helped increase the sustainability of our public services. Used well, it helps to reinforce people's independence and control over their lives, ubiquitous take-up, and usage remains the goal of Government and industry alike.

According to Ofcom's Connected Nations Report¹, 3m homes and businesses (10%) have access to full-fibre broadband connections². The gigabit-capable footprint is currently at 18%³. 5G services have been launched by all four mobile network operators and are operating in over 40 towns and cities across the UK. The Shared Rural Network programme will make 4G mobile broadband available to 95% of the UK and increase the parts that get a mobile service from all mobile operators from 66% to 84%.

Reliable and resilient networks are an even more critical social and economic life-support structure in the current pandemic and underlines the need to develop and deploy future-proof digital infrastructure. This is backed up by existing research:

- Report by Regeneris for Cityfibre⁴ estimates that full-fibre in 100 towns and cities will generate significant economic benefits for businesses, in particular SMEs, with £2.2bn in business productivity. Fixed and wireless networks will increasingly work together to deliver ubiquitous ultrafast connectivity and full-fibre will be necessary to deliver £28bn in 5G benefits.

¹ [Ofcom Connected Nations report – December 2019](#)

² Figure now stands at 13% ([thinkbroadband report](#))

³ [thinkbroadband report](#)

⁴ [The Economic Impact of Full-fibre Infrastructure in 100 UK Towns and Cities](#)

- An Openreach commissioned report⁵ by the CEBR estimates that connecting the whole of the UK to a FTTP broadband ISP network by the end of 2025 could result in a £59bn economic boost (equivalent to £1,700+ per worker), rising to £70bn by 2038.

BSG believes that Government's pledge to ensure all UK premises are gigabit-capable by 2025 is extremely challenging to achieve, particularly in the current climate. That said, it is not out of reach as a target for the majority of the UK population if all current participants and suppliers play their part.

Success is nonetheless contingent upon industry, Government and the regulator working together, developing and implementing the right policies and a regulatory framework that encourages investment and innovation.

Industry is already playing its part but Government and Ofcom must ensure the right policies and regulatory measures are supportive and in place as a priority. This must extend to giving careful consideration to anything that could affect investment decisions such as the new framework for online harms. We also caution that the ambition will likely be unachievable if providers are required in future to strip-out existing equipment entirely from their networks.

Infrastructure providers will need to accelerate their pace of deployment and have an equally accelerated policy-enabled framework in support, and one in which security and resilience are also uppermost.

It is also clear that consumer take-up in the initial stages will be an important factor in determining the business cases for future build plans beyond those already announced.

⁵ [Full-fibre Broadband: A platform for Growth – October 2019](#)

Answers to Committee's questions

1. How realistic is the Government's ambition of nationwide gigabit-capable broadband by 2025, and what measures (regulatory, financial, technical, other) will be needed to achieve it?

BSG welcomes Government's gigabit ambitions for 2025 but cautions that urgent and accelerated policy reform is required to address barriers that impinge upon roll-out. As BSG sponsors continue to work on their individual business plans - ramping up investment, training thousands of engineers, upgrading systems and planning customer migration paths - they need to be fully supported by a cross-Government strategy. A sustained and active focus will be needed in central and local government to drive this forward.

Network competition is the best approach to delivering a portfolio of programme ambitions that the market can sustain. The Government's commitment of £5bn funding is a pre-requisite for areas that are not commercially viable, which are primarily, but not exclusively, rural.

Mandating the provision of fibre connectivity as standard in new build developments has been a longstanding policy priority for BSG⁶ and we welcome the recent announcement by Government⁷ that developers in England will now be required to install gigabit-capable infrastructure and, subject to a cost cap, a gigabit-capable connection.

Other measures that are needed are detailed below.

- **Funding:** BSG calls for an action plan and a clear set of criteria on how the £5bn will be allocated. The funding model must engender diversity in supply. Private funding will drive the majority of gigabit-capable rollout and companies should be encouraged to maximise their investment in commercial areas. Any new funding mechanism must meet transparency and accountability requirements to ensure that Government funding is appropriately targeted.
- **Regulation:** A framework is required that rewards investment, incentivises build and take-up of new services and allows companies to see a return on that investment over a period of time. Also, regulation must support the efficient and safe migration of consumers and businesses to new networks, enabling everyone to benefit and narrow the digital divide. Cross-industry collaboration, including Government and regulatory support where necessary, is needed to establish, implement and monitor this framework.
- **Spectrum:** Ofcom has gone some way to facilitate rollout but more can be done especially around unlicensed spectrum and WiFi which is so important today in the home and workplace.

⁶ [New build developments: Delivering gigabit-capable connections](#)

⁷ <https://www.gov.uk/government/news/new-build-homes-to-come-gigabit-speed-ready>

- Business rates/fibre tax: The current temporary relief on business rates is misconceived in its application when restricted to such a limited timeframe. The majority of planned build would attract little or no relief for large operators and represents a disincentive for small operators to invest. Business rates also act as a brake on investment in mobile networks whether densely packed small cells in urban areas, or the taller masts needed in rural countryside. Government needs to review the application of business rates to mobile and gigabit-capable networks as a matter of urgency and apply exemptions which both incentivise investment and treat operators fairly. There is clear precedent for a widespread exemption approach for critical infrastructure, including power and heat generation.
- Wayleaves: The legislation is welcome and will be helpful, but it only addresses a narrow set of circumstances, such as unresponsive landlords who can delay rollout in both urban and rural areas. However, in order to allow telecommunications and infrastructure providers access to buildings and land to deliver broadband services quickly, other barriers that exist must be overcome including property access where landlords are responsive but not engaged or seek unfair compensation.
- Skilled labour shortages: National fibre rollout is one of Britain's greatest civil engineering challenges. Investment in digital and engineering skills needs to be prioritised in face of competition for global talent to fill the ever-increasing skills gap. Many civil engineering contractors are from the EU and the proposed, new immigration rules make no concessions for digital infrastructure.
- Sharing infrastructure: In specific areas where economic conditions do not allow for infrastructure build, independent neutral host models can provide a more cost-effective route enabling all players to access a single neutral infrastructure easily and quickly. Neutral host overcomes the competitive challenge of mobile network operators sharing RAN infrastructure so operators can compete at service level by choosing the amount of radio equipment, spectrum and backhaul installed in a location. It often lowers barriers to entry or expansion, by investing in new infrastructure at a loss with just one anchor customer with the anticipation of others joining in the future; encouraging wireless operators; stimulating innovative new applications (e.g. FWA, Internet of Things); and supporting many wireless networks.

Government should also:

- Continue to encourage innovation and development of creative and high bandwidth services. COVID-19 underlines the critical nature of resilience and the urgency of having effective networks for business continuity management.
- Sustain and foster innovation and develop services that will benefit consumers and businesses alike. A report by CISCO⁸ predicts that in the UK there will be 3.3bn mobile applications downloaded by 2023 (2.7bn in 2018).

⁸ [Cisco Annual Internet Report Highlights Tool](#)

- Stimulate demand from businesses, consumers and local authorities (LAs): Advanced take-up and use of digital technology, such as cloud computing, enabled by high speed connectivity is critical for businesses and consumers alike. Demand can be stimulated by more tax-breaks and simple voucher schemes. Government can play its role in encouraging consumers to take up new services by supporting them with communications, where appropriate.
- Work with Ofcom to formulate policies that enable providers to offer dedicated services to different sectors, for example, industry, the NHS, the public.

2. What are the challenges to the roll-out of 5G and gigabit-capable networks? To what extent do existing legislative, regulatory and spending plans address them?

In 2017, BSG published a report by Analysys Mason⁹ assessing the barriers facing deployment of digital infrastructure in the UK. Issues identified in this report were around the patchwork of different permit and notice schemes across the UK, road and street classifications, the lack of early engagement and the process of deployment and reinstatement. 80% of the cost of deploying new full-fibre networks lies in civil engineering alone and whilst there are government initiatives to help fund new networks, such as the Local Full-Fibre Networks programme, most of the full-fibre deployment in the UK will be commercial.

The Barrier Busting Taskforce, subsequently set-up to resolve such issues, identified primary barriers to deployment as being access to land sites for installing equipment, the cost of deployment and access to spectrum for wireless networks. One helpful initiative has been the Digital Connectivity Portal which serves as an online resource and guidance for LAs and communications network providers.

Ofcom's proposals in the Wholesale Fixed Telecoms Market Review are also aimed at helping to create the right regulatory conditions to incentivise Openreach to build fibre in the harder to reach areas (20-30%). However, Government and Ofcom must work together to ensure that the £5bn 'outside in' programme and the regulatory framework are complementary. The current tendency for providers to build in the same areas will inhibit the Government from achieving its 2025 target. In addition, BT has stated publicly that it can't reach everywhere in the UK in the 2025 timescale. This risks rural areas being left behind. The BSG therefore urges Government and Ofcom to quickly come up with a plan to incentivise build in areas with poor or no gigabit-capable coverage.

As stated earlier, independent neutral host models can unlock very significant investment that will be critical to 5G in areas where economic conditions are not conducive to individual 5G players investing with their own infrastructure.

The BSG report¹⁰ recommended several steps, cutting across different levels of Government, to reduce delays in network provision and encourage innovation in the use of new deployment techniques. These include nominating a single point of

⁹ [BSG Lowering barriers to telecoms infrastructure deployment](#)

¹⁰ [BSG Lowering barriers to telecoms infrastructure deployment](#)

contact within each local authority to help ensure streamlined communication and a consistent level of communication between LAs and industry.

For a truly nationwide coverage ambition to be realised by 2025, LAs should take the following into account:

- Engage early in the deployment planning process and work closely to prepare plans for siting of equipment. Street works, traffic management and planning barriers that currently delay, complicate and add cost to the deployment programmes of fibre builders need to be greatly reduced. Key to driving the business case will be exemptions from business rates and implementation of Ofcom regulatory proposals in support of long-term investments, as stated earlier.
- Review techniques of network deployment to understand why there are inconsistencies in how highway authorities assess the suitability of such techniques and make decisions that prevent or delay their use, and to update guidance accordingly. This includes practices to assess fees, restriction conditions, road classifications, traffic-sensitive street designations, embargo periods, reinstatement obligations, and outsourcing arrangements.

Legislative and regulatory plans, including Planning Development Regulations, go some way to addressing some of these issues, however the application of these policies at a local authority level is not in place currently, despite some welcome progress.

Government must accelerate planning reforms as a priority. Delivering the mobile services envisaged for the future will likely require a mix of infrastructure, from massive mimo technology to a dense networks of potentially tens of thousands of new 'small cell' radio antennae in towns and cities. This will allow for increased capacity requirements resulting from the predicted growth in data to be met and contribute to the underpinning infrastructure required for a number of smart city tools and technologies to be introduced, such as the use of sensors and real time data feeds to tackle traffic congestion. The challenge will be in finding suitable sites and infrastructure to support the mimo sites and cells and ensuring that telecoms networks meet local needs.

3. What needs to happen to ensure the Government's 'outside in' approach successfully addresses the digital divide while also delivering value for money?

BSG welcomes the £5bn committed by Government to fund operators prepared to take on this challenge. The architecture of the 'outside in' procurement programme will be the determinant of whether the public funding intervention accelerates or hinders deployment, and the models BDUK has put forward reflect this. In one scenario, completion would be earmarked for 2029; 4 years beyond the 2025 ambition. Delivery vehicles established between central Government and local government agencies would need to achieve a level of co-operation and collaboration that matches the level of ambition that the Government has set over

the next five years. Adequate labour supply to meet the level of build required is also a pre-requisite.

The procurement process should also take learnings from the experience of previous BDUK state aid programmes. In order to ensure efficient use, and correct targeting of funds to only those areas where strictly necessary, clarity over how intervention areas are defined is essential. In the relatively early interventions in the previous BDUK process, state aid rules required that market was consulted on planned commercial build areas prior to defining an intervention area, but these plans changed as demand increased and the market evolved, resulting in previously declared intervention areas in some cases becoming commercial. This was arguably to the detriment of the models of other network operators who subsequently deployed in such areas and undermined the effectiveness of the wider BDUK programme.

Given the reality that markets and business cases change, and revising an agreed intervention build after a successful bid is potentially expensive and problematic a clear mechanism agreed with industry on how to deal with changes to bids in the event of new commercial plans, and other issues, should be addressed in any new programme.

If the 2025 target is to be met, the programme needs to be delivered via simple and effective mechanisms that encourage competitive and credible bids from operators of all sizes. Crucially, it needs to be designed and scaled for rapid deployment with a clear and realistic timetable, maximising industry's ability to deliver in the last 10-20% of the UK. This approach should include:

- Rapid resolution of the procurement process and state aid clearances enabling the bid process to commence well before the end of 2020, with majority of bid areas identified and all contracts awarded in the first quarter of 2021.
- Clear commitments from Government, and obligations on all bidders that the resultant funded gigabit-capable network will be genuinely accessible and open to all service providers, large and small, with all the relevant, necessary and suitably scaled wholesale systems, process and products to support genuine service competition in these important rural areas.
- A bid sizing and delivery process that maximises the speed at which successful bidders can deliver the networks using the funding and resources available, while ensuring competition and transparency throughout.
- In marginal commercial areas where conditions are unlikely to support more than one FTTP network, Government should explore approaches to deployment with industry in order to maximise build efficiency and avoid delay.

4. What does take-up of broadband and mobile services indicate about consumer and business attitudes to digital connectivity? What needs to be learnt from this for the roll-out of, and switchover to, gigabit-capable networks?

Ofcom's Connected Nations Report¹¹ states that 10% of homes and businesses had access to full-fibre broadband connections in 2019¹². The gigabit-capable footprint is currently at 18%¹³. The number of homes with access to superfast broadband increased by over 500,000 from 2018 to 2019 and whilst the pace has inevitably slowed, the total is now approximately 97% of the UK. Where available, 57% of UK properties use superfast or ultrafast services (min 300 Mbit/s).

While some would argue that the majority of the UK is comfortable with current superfast capability, it is clear that typical average speeds of over 50Mbps will not deliver future needs of UK consumers and businesses. The supply of gigabit-capable networks needs to anticipate and foster wide-scale demand and unlock the huge economic benefits that speed, resilience and reliability of full-fibre are predicated to deliver.

BSG is commissioning research to understand the wider barriers to adoption of gigabit-capable services and learnings from other EU countries. Priority areas that have been identified for investigation include the provision of information to consumers, which Ofcom is reviewing and needs to be accelerated; and switching off the copper network, and the mechanism of consumer migration to full-fibre.

5. What will be the impact on individuals and communities whose broadband and mobile connectivity fails to keep pace with the rest of the country over the next 10 years? What is the link with other DCMS policy concerns, such as changing patterns in the consumption of digital media?

The majority of the UK already has access to superfast speeds in excess of 30Mbps as explained in our answer above. Since March, homes unable to get a decent broadband connection have a right to request one from BT under the new Universal Service rules, but there remains real concern for those who are non-internet users or are digitally excluded.

A report by the ONS¹⁴ published in 2019 highlighted that there were 5.3m adults in the UK who were non-internet users. BSG published a report on reasons why in 2019¹⁵. Of those interviewed who didn't use the internet and wanted to do so, 18% cited lack of connection, or lack of a device to be able to use it. Digital skills also remain a pivotal concern.

The Skills Funding Agency¹⁶ estimates that within the next 10-20 years 90% of jobs will require some sort of digital skills. In research by Lloyds Bank¹⁷ half of those online indicated that the internet helped them find work. This highlights that the digitally excluded will be increasingly at a disadvantage in the employment market unless they are specifically catered for.

¹¹ [Ofcom Connected Nations report – December 2019](#)

¹² Figure now stands at 13% ([thinkbroadband](#))

¹³ [thinkbroadband report](#)

¹⁴ [ONS Exploring the UK's digital divide – March 2019](#)

¹⁵ [ComRes Digital Exclusion research for BSG – January 2019](#)

¹⁶ [Review of publicly funded digital skills qualifications Feb 2016](#)

¹⁷ [Lloyds Bank UK Consumer Index 2018](#)

6. How effectively do the different stakeholders (UK and devolved governments, local authorities, Ofcom, industry) work together in both the mobile and broadband sectors? How might these relationships be improved to support gigabit-capable roll-out?

There are a number of examples where a bold vision and a common purpose can result in timely deployment and effective utilisation of technology and resources, such as the 5G Testbeds and Trials programme.

Greater cohesion between government departments and local agencies will unlock public investment. Devolved administrations means that there are differences in regimes, but wherever possible there needs to be alignment.

Cooperation between LAs and industry is vital to the efficient deployment of new infrastructure and in helping to remove obstacles. In the West Midlands it took over a year to get an access agreement in place with the councils; and in Coventry where they have not yet overcome the challenges presented by the PFI which manages their lampposts. BSG recognise that local government face resource constraints, and competing priorities, but inconsistency of traffic management and permitting across LAs are challenges which need to be addressed constructively.

As previously outlined, Government and Ofcom must provide a framework to collaborate effectively with industry on viable policy proposals to address roll-out challenges in marginal and uneconomic areas in support of the 2025 ambitions. Clarity on the intersection between Ofcom's proposals for uneconomic areas and Government's £5bn subsidy scheme is urgently required.