Submission in response to Issues Paper

Regional Telecommunications Review

Public Version

October 2021

EXECUTIVE SUMMARY

1. Optus welcomes the opportunity to provide a submission to the Regional Telecommunications Independent Review Committee's (RTIRC's) 2021 inquiry (the inquiry). These reviews provide an important opportunity to consider the telecommunications needs of regional, rural and remote Australians, the desired outcomes and whether existing policies and programmes are meeting those needs.

2. The 2021 inquiry has key themes of improving access, affordability, reliability and redundancy in telecommunications services for regional areas.

3. Optus considers that outcomes such as, improved regional connectivity, service reliability, and achieving broader regional development goals can all result from investment in competitive networks and alternative technologies. It is through competitive networks and alternative technologies that better access, affordability and reliability in telecommunications services can be achieved for regional, rural and remote areas. Such investment is also necessary to underpin the Government's national Digital Economy objectives and promote regional development with broader economic and social benefits to regional communities.

4. Many existing Government policies and programmes are inefficient, costly and ineffective and are not delivering maximum 'value for money'. These policies are no longer fit for purpose nor offer solutions that meet the needs of regional Australians.

5. Not only is the Government and consumers paying for the NBN to deliver regional services but funding to Telstra has increased fourfold to over $200 million per year since 2010. The Committee must query whether regional services have actually improved over the last decade.

6. Funding programmes like the Universal Service Obligation (USO) reduce the level of private investment in regional networks which have real negative impacts on regional consumers. Since 1992 Optus has paid Telstra $1.2 billion[1] in USO levies, which we could have invested in our own mobile network to extend our coverage and provide choice to many more regional customers. This in turn would likely have generated further investment from Telstra. This is the real world impact of the USO.

7. Regional areas deserve the benefits that come from better utilising existing infrastructure, increased investment in telecommunications infrastructure and greater competition. Optus considers that regional telecommunications policy requires a reboot to:

   (a) Replace the existing universal service and other funding arrangements with more cost-effective options that are targeted to deliver competitive industry investment;

   (b) Support the deployment of telecommunications infrastructure by granting this critical infrastructure the same rights of deployment as other critical utility assets such as electricity and water; and

   (c) Encourage the use of alternative existing technologies and investment in new technologies. For example, Optus could provide voice and broadband services

[1] 2020 real terms

through its satellites to rural Australia for less than half of the current annual USO/G funding.

8. Optus firmly believes that regional telecommunications policy has a critical role to play in the long-term sustainability of the industry and ensuring Australia achieves its broader Digital Economy 2030 goal. Supporting investment in infrastructure to provide multi-tiered and appropriately targeted solutions to regional Australia will deliver the benefits of competition with improved access, affordability and reliability.

PRIVATE COMPETITIVE INVESTMENT IS CRITICAL TO DELIVER DIGITAL SERVICES

9. There has undoubtedly been significant improvement in telecommunications services in regional, rural and remote areas over the last decade. Optus has a long-standing commitment to regional investment, having announced a $1 billion investment package in 2017.[2] Optus' investment in our mobile network has delivered competition to areas rural and remote Australia – often giving regional consumers choice in their telco provider for the very first time.

10. However, continuing private investment in regional areas is challenging. This is not just due to the lower economic returns from regional sites, but also from the disincentives private investors face from historic and current Government programmes which generally have the effect of entrenching the market position of the dominant mobile network.

11. Optus submits this should be the focus of this Committee. With increased investment by Governments, at both State and Federal levels, and many vital industries calling rural and regional communities home, Australia will not achieve its goals of being a leading Digital Economy by 2030 if regional Australia does not have access to the competitive telecommunications infrastructure and services it needs.

Telecommunications is critical to achieve government's broader goals

12. Competitive telecommunications services and infrastructure are essential to achieving the Government's broader Digital Economy and regional development goals, and in order to achieve these goals telecommunications infrastructure in regional, rural and remote areas cannot be left behind.

13. The Government recently set out its aspirations for Australia to be a leading digital economy by 2030. While achieving this goal relies on many elements, from ensuring the workforce is appropriately skilled and consumers are confident in their digital literacy, critical to success is wide availability of infrastructure providing the high-speed connectivity necessary to support a digital economy. Regional connectivity is a critical part of the digital infrastructure foundation to grow Australia's digital economy. Australia will not have a leading digital economy unless reliable and resilient connectivity exists nationally.

14. The importance of telecommunications infrastructure and services was also emphasised in Infrastructure Australia's recent plan for meeting Australia's future infrastructure needs. Key themes in the plan include harnessing transformative technology and digitalisation, delivering public value and recognises the challenges of embracing a diverse geography. It noted that "[d]igital infrastructure not only keeps Australians connected, it underpins the economy, encourages innovation, and supports people in their everyday lives including access to better health, education and services." The plan specifically identifies that digital inequality in regional, rural or remote areas must be tackled.

15. The Australian Broadband Advisory Council (ABAC) recently released a report prepared by its Agri-tech Expert Working Group (the ABAC report) that notes that continuing

[2] https://www.optus.com.au/about/media-centre/media-releases/2017/07/optus-to-invest-1-billion-to-improve-regional-mobile-coverage

connectivity issues in regional and rural areas impedes the adoption of digital agriculture affecting the ability of producers to take full advantage of agri-tech services.

16. In addition, poor connectivity can also impact a producer's business operations, other entrepreneurial activities and more broadly, it can adversely affect agri-tech innovators and developers themselves. This has much broader economic consequences for regional and rural areas. Without addressing these gaps, there is a risk that regional, rural and remote areas will be left behind as Australia moves to be a leading Digital Economy by 2030.

Connectivity gaps remain in regional areas

17. Despite the NBN being declared complete with coverage of 100% of Australia via fixed line, fixed wireless or nbn satellite services, and with mobile networks covering more and more of Australia, connectivity gaps in regional, rural and remote areas can still remain.

18. But it is Optus' view that the connectivity issues of regional Australians are becoming more complex as needs become more sophisticated. The ABAC report identifies there are still localised connectivity 'gaps' in telecommunications coverage in regional, rural and remote areas beneath the broader NBN and mobile network coverage. This includes gaps on, across and between farms – what is termed 'salt and pepper coverage'.[3]

19. Other issues include, for example, farms that may partially fall within the NBN fixed wireless footprint but the homestead does not. ABAC notes that some famers implement their own DIY solutions to extend the fixed wireless signal to the homestead.[4]

20. Such gaps impede the ability of producers to take full advantage of digital agriculture, for example, by failing to support the full use of digital functionality on equipment or preventing the investment in new digital technologies and equipment that require reliable/ubiquitous coverage. Poor connectivity also holds primary producers back from using basic online business and administrative functions and means workarounds are time consuming and expensive, undertaking other entrepreneurial activities (such as a secondary online business) or engaging in social, educational or telehealth activities.[5] These connectivity impacts were keenly felt by regional areas during the COVID-19 pandemic when many services moved online. Some children were simply unable to participate when learning moved on-line.[6] This can have broader social and economic consequences for regional areas.

21. The continued existence of connectivity issues in regional areas – from needing a reliable broadband connection to the home, to more extensive coverage across and on farms – demands critical examination of existing policies and programmes to determine the extent these are addressing these issues.

22. The needs of regional Australians are clearly becoming more sophisticated – a reliable connection to the home is just the first step in overcoming connectivity challenges. History has demonstrated that relying on just a few dominant networks, backed by Government funding, has not addressed the needs of regional Australia. Regional Australia should have access to the same competitive private investment as people in urban Australia do – after all, it is private competitive investment that delivers the cutting

[3] Australian Broadband Advisory Council, Agri-tech Expert Working Group report, June 2021, p. 14.
[4] Australian Broadband Advisory Council, Agri-tech Expert Working Group report, June 2021, p. 21.
[5] Australian Broadband Advisory Council, Agri-tech Expert Working Group report, June 2021, p.14, p. 22.
[6] Australian Broadband Advisory Council, Agri-tech Expert Working Group report, June 2021, p. 26.

edge telecommunications networks that are needed to deliver the Government's Digital Economy aims.

23. It is Optus' view that existing policies are no longer meeting these more sophisticated needs of regional Australia and, in fact, may be entrenching some problems. The Government should be reviewing policies to ensure they are capable of delivery multi-technology solutions to regional areas.

EXISTING POLICIES NO LONGER MEET REGIONAL NEEDS

24. Historically lower population densities and high costs of deploying infrastructure means that there have been delays in rolling out and upgrading telecommunications infrastructure in regional areas. To try and address this, Government has put in place various programmes, regulations and policies aimed at encouraging infrastructure deployment in these areas.

25. However, more often than not, these regional assistance programmes have locked in market structures that lead to poorer outcomes for regional Australia and less investment. For example, in 1999 the Government provided $400m (equivalent to $690m in 2021 terms) to Telstra to deploy its then CDMA mobile network in regional areas amounting to around 1,000 sites.[7] While this brought 2G voice services to regional Australia, it also locked in Telstra's dominance which exists still today. Telstra has used these Government funded sites to deploy national 4G services ahead of the market and is again using these funded sites to provide 5G services ahead of the market. The ability of Telstra to deploy regional networks at a far lower costs than other networks is one of the main reasons why regional Australia continues to experience a digital divide with their city cousins.

26. Optus submits that one of the largest barriers to better services in regional areas are the range of Government funding programmes which often entrench poor service and a lack of choice for regional consumers.

27. The question this Committee must ask itself is whether regional Australians are being best served by Government funding locking in a sole provider of mobile services in regional Australia. History has shown that supporting policies that promote one network solutions has not delivered regional Australia the same level of service that is experienced in areas covered by multiple competitive networks.

28. The Universal Service Obligation / Guarantee (USO/G) is another example which has provided Telstra over $2.8 billion in real terms[8] since 1992-3 and will continue to provide around $205 million each year until 2035 under current contractual arrangements. Yet the actual services provided to regional Australia remain unclear. More importantly, such largesse diverts significant funds from industry which would otherwise be used for competitive regional investment and works to entrench Telstra's dominant position in regional Australia.

29. Optus considers, in particular, that the USO/G arrangements are failing to meet the needs of regional Australians and are no longer fit for purpose as they do not deliver value for money. In addition, the under-allocation of funding in the last two MBSP funding rounds suggests that this programme has reached its use-by date.

30. The priority for Government should be to review all existing programmes to assess whether they promote investment in competitive infrastructure. And if it does not, the funding should be re-directed to competitive infrastructure.

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[7] The Federal Government had provided $400m to Telstra in 1999 to provide CDMA services; and directly funded 1,000 regional sites. In addition, several States also funded the roll-out of CDMA sites. See https://www.abc.net.au/news/2005-11-16/govt-holds-key-to-telstras-cdma-network-shutdown/741670 ; https://www.itnews.com.au/news/federal-work-group-to-oversee-cdma-3g-transition-35148 ; https://www.mediastatements.wa.gov.au/Pages/Court/2001/01/Government-to-boost-regional-mobile-phone-coverage-(with-Pic).aspx

[8] Amount is net of Telstra's contribution. Expressed in 2020 real dollars.

Universal service arrangements are not fit for purpose

31. The universal service arrangements are a mess of outdated, poorly managed, and costly arrangements that do not meet value for money principles and do not ensure delivery of the services needed in regional areas.

32. Since 1992, Telstra has received more than $2.8 billion in universal subsidies, of which Optus has contributed over $1.2 billion and Government has contributed $725 million.[9] The USO/G is a material transfer of value from Government and competitive investors to Telstra for no measurable and clear benefit to regional Australia.

33. The impact of this value transfer can be seen be examining the opportunity cost of Optus' USO/G cost of $1.2 billion over the last 30 years. If Optus had the ability to re-direct its USO/G liabilities to regional funding, this $1.2 billion could have built over 1,500 new regional mobile sites providing coverage to many more Australians and driving Telstra to invest further.

34. In other words, the real world impact of the USO/G has been to decrease the level of investment in regional Australia and has led to less coverage and lower service levels. Optus has consistently made representations to Government to allow us to redirect our USO/G obligations to regional investment to no avail. Further, we have offered to build a dedicated satellite solution to deliver voice and minimum 25Mbps broadband services to all premises outside of current network coverage for less than half of the current annual USO/G cost. Again, this opportunity has not been taken up by Government.

35. The failure to modernise the 30 year old USO/G funding arrangement is the single largest handbrake on regional investment and the delivery of modern communications services to regional Australia.

36. Reviews over the last several years found in relation to the USO arrangements that:

    (a) Arrangements were 'anachronistic and costly' as these were locked in for 20 years to deliver only basic telephone and payphone services. [10]

    (b) Key aspects of the contract did not reflect value for money principles because they did not reflect the decline in demand for standard telephone and payphone services

    (c) The contract lacked a mechanism that would enable the Government to manage the financial risk should it wish to end the contract before the 20-year term; and

    (d) Performance reporting provided limited transparency over whether the contract services were achieving the stated policy objectives.[11]

37. The Department acknowledged these concerns in its development of the proposed universal service guarantee (USG).[12] The USG was intended to amend the USO to include access to broadband. However, the Government indicated four prerequisites

[9] In 2020 real terms.
[10] Productivity Commission, Telecommunications University Service Obligation – Productivity Commission Inquiry Report No. 83. April 2017, p. 2, p. 105.
[11] ANAO, The Auditor-General, ANAO Report No.12 2017–18, Performance Audit - Management of the contract for Telephone Universal Service Obligations Department of Communications and the Arts, 2017, p. 8.
[12] Department of Communications and the Arts, Development of the Universal Service Guarantee – Summary Report, November 2018, p. 7.

would need to be met before any changes to the current USO arrangements are made. These prerequisites include:

(a) broadband services would need to be available to 100% of Australian premises, on request, at the completion of the NBN rollout in 2020;

(b) voice services would need to be available to 100% of Australian premises on request;

(c) any proposed new service delivery arrangements would need to be more cost effective than the existing USO contract (including any transitional costs); and

(d) a new consumer safeguards framework would need to be in place, following a review and associated public consultation process.[13]

38. Currently, it would seem the relevant pre-requisites have not been met. Despite the NBN being declared officially complete in 2020 by the Minister for Communications, there are still premises that are not NBN serviceable and would not be able to receive broadband services over the NBN on request.

39. Yet guaranteed broadband connectivity is exactly what all Australians, particularly regional Australians, need. A basic connection to the home is the first step in ensuring connectivity to support online business, learning, social and telehealth activities.

40. The USO/G arrangements continue to focus on outdated concepts such as prioritising millions of dollars of support for declining services like payphones. The increase in mobile phone usage and expansion of mobile phone coverage (also funded under Government programmes such as the MBSP or RCP) is no doubt contributing to the decline in payphone usage. Payphones are a 19th century concept when regional Australia needs 21st century solutions.

41. Therefore, four years after the Productivity Commission and ANAO raised serious criticisms about the value for money, effectiveness and management of the universal service arrangements, very little has changed. Industry is continuing to fund a programme that is clearly failing to meet the needs of regional, rural and remote areas, is no longer fit for purpose and does not represent value for money.

42. Optus submits that with more complex telecommunications needs in regional areas requiring better targeted multi-tiered infrastructure-based solutions, Government should again review the universal service arrangements to develop appropriately targeted policies and programmes that:

(a) Use existing alternative technologies (including satellite) to deliver voice and broadband services if these better meet value for money principles; and

(b) Support industry sustainability and ongoing infrastructure investment to deliver multi-tiered solutions to meet the more complex needs of regional Australia.

43. It is time for action on USO/G reform not just words and commitments.

[13] Department of Communications and the Arts, Development of the Universal Service Guarantee – Summary Report, November 2018, p. 8.

Regional mobile funding requires reform

44. In recent years the Government has implemented programmes to expand mobile coverage and address 'blackspots' in regional areas. Both the MBSP and RCP seek to address these issues.

45. The MBSP has been in existence over the last few years with the overarching aims to promote investment in telecommunications infrastructure to improve mobile coverage and competition across Australia.[14]. Optus views the MBSP as a successful program and a strong example of Government-industry partnership delivering results for regional consumers. Through base stations that Optus has built under the MBSP, Optus has delivered mobile connectivity to a number of regional and remote communities for the very first time.

46. The programme has clearly delivered improved coverage and increased the number of base stations in regional areas. As part of the existing Commonwealth MBSP Optus will co-fund and build a total of 260 mobile sites, with many already delivered.

47. However, Optus is concerned the programme is not always achieving the complementary aim of promoting competition which should come from this increased investment in telecommunications infrastructure.

48. Optus is concerned that the MBSP is having the unintended consequences of further entrenching Telstra as a monopoly provider in regional areas. To date, the MBSP has awarded Telstra three times the number of sites as other MBSP participants. This means some regional areas will not realise the benefits from competition and alternative networks, such as, more choice, lower prices or improved redundancy.

49. In addition to this, the programme in its current format seems to have simply run its course, with the last two rounds of funding being significantly undersubscribed (by $43.2 million in Round 5 and $10 million in Round 5A).

50. Further, it is also unclear how the MBSP interacts with the RCP. Optus considers it would be appropriate to clarify the operation of the MBSP in conjunction with the RCP. The RCP was established to fund the delivery of 'place-based' telecommunications infrastructure projects in regional Australia, beyond mobile base stations.[15]

51. However, in Optus' view there needs to be clearer guidelines about the interaction between the MBSP and RCP and what sites will be considered under which programme. If its not clear to participants whether a site will be considered under one programme or the other, then companies may not participate in a funding process and there is a risk of poor outcomes for regional users.

52. In relation to the RCP, Optus was initially advised by Government that if a site should fall under the MBSP for a mobile solution then it would not be considered in relation to the RCP. On this basis, Optus did not apply for certain sites under the RCP program. However, Optus subsequently became aware that Telstra applied for sites under both programs and awarded sites under the RCP, which based on the Government's own guidance, should have been considered in relation to the MBSP. This also resulted in delaying the funding for the next round of the MBSP.

[14] https://www.infrastructure.gov.au/media-technology-communications/phone/mobile-services-coverage/mobile-black-spot-program.
[15] https://www.infrastructure.gov.au/media-technology-communications/internet/regional-connectivity-program

53. All of these factors suggest it is an opportune time to review the MBSP, provide clarification on the operation of the RCP and reform regional funding more broadly, so that Government programmes can better achieve the outcomes of promoting investment in telecommunications infrastructure and competition in regional areas.

54. Funding for regional telecommunications needs to be reformed for a sustainable and strategic approach to delivering the complex telecommunications solutions that regional Australia needs. Infrastructure Australia also supports the need to reform the regional investment model.[16]

55. While the regional MBSP has improved mobile coverage, there are areas in regional and remote Australia where issues remain. This requires a strategic approach by governments and industry to identify key communities, transport corridors and businesses that would benefit from improving existing terrestrial mobile services or new terrestrial mobile coverage.[17]

56. The MBSP now requires reform to ensure that future decisions do not lead to greater problems by inhibiting alternative investment and stymieing competition. Optus remains concerned that the MBSP is now entrenching the dominance of Telstra in regional areas when many in those areas want choice and competition. Optus considers that Telstra should be precluded from participating in future MBSP funding rounds.

57. Optus considers the two programmes should be reviewed and that the interaction between the two programmes be clarified to ensure the purpose and intended outcomes for each programme is clear. Further, Government programmes should be reformed to ensure they are not perpetuating traditional problems, such as entrenching a monopoly service provider. Focus should be on encouraging alternative investment and competition in regional areas to achieve outcomes of improved access, affordability and reliability.

[16] Infrastructure Australia, Reforms to meet Australia's future infrastructure needs – 2021 Australian Infrastructure Plan, August 2021, pp. 32, 496-497

[17] Infrastructure Australia, Reforms to meet Australia's future infrastructure needs – 2021 Australian Infrastructure Plan, August 2021, p. 477.

GOVERNMENT SHOULD SUPPORT COMPETITIVE INFRASTRUCTURE INVESTMENT

58. Optus submits that Government should reform existing programmes to ensure that they continue achieving desired outcomes, such as promoting access, affordability and reliability through competitive infrastructure investment and alternative technologies.

59. There is scope for improvement in provision of telecommunications services in regional areas by supporting programmes targeted at different and complementary infrastructure solutions. As ABAC recognises in its report, meeting the more sophisticated telecommunications needs of regional Australia is likely to require a multi-tiered solution.[18] Connectivity gaps could be addressed by a range of technological solutions, including a role for satellite technologies.[19]

60. Optus considers there is considerable opportunity for existing telecommunications technology to meet regional needs if there is a renewed focus on promoting competitive investment in regional telecommunications infrastructure. This includes escalating the roll out of 5G infrastructure and embracing new satellite technologies.

Policies need to encourage 5G site deployment

61. The Government's final 5G Inquiry report recognises the potential for 5G but rightly calls out that it is not the end-game. 5G technology builds on the current 4G technology, but the capabilities of 5G are also derived not only from access to higher spectrum frequencies used, but also from access to more efficient network technologies and infrastructure that accompany technology evolutions;

> Fifth-generation mobile network technology, or '5G', will create the architecture which will underpin new uses and services. It will allow innovation by opening up possibilities for businesses, industries, services and leisure through 'intelligent connectivity.*[20]*

62. While 5G is still in the relatively early stages of rollout in Australia, speed results so far have been promising. Optus has recently been recognised as a global leader in 5G experience for the following:

    (a) 5G download speeds; and

    (b) 5G games experience.[21]

63. However, the benefits of 5G go beyond speed, and offer advantages such as greater capacity, reliability and lower latency, meaning services are better able to support:

    (a) Ultra-reliable low latency communications necessary for critical remote activities (including remote surgery, remote emergency management responses and connected vehicles),

[18] Australian Broadband Advisory Council, Agri-tech Expert Working Group report, June 2021, p.
[19] Australian Broadband Advisory Council, Agri-tech Expert Working Group report, June 2021, p. 17-19.
[20] House of Representatives Standing Committee on Communications and the Arts, The Next Gen Future: Inquiry into the deployment, adoption and application of 5G in Australia, March 2020, p.1
[21] Opensignal, 5G Global Mobile Network Experience Awards 2021, September 2021, p. 3. Available at: https://www.opensignal.com/sites/opensignal-com/files/data/reports/pdf-only/data-2021-09/opensignal5gglobalmobilenetworkexperience2021_0.pdf

(b) massive machine-to-machine communications (such as low-cost sensors, meters and trackers); and

(c) enhanced mobile broadband which enables transfer of large volumes of data at very fast speeds.

64. All of these features of 5G technology can help support increased adoption of Digital Agriculture and agri-tech innovators and developers, helping to close the connectivity gaps in regional areas. ABAC notes that 5G has the capability to support agri-tech applications that require broadband and a substantially larger number of Internet of Things (IoT) narrowband devices but there are still significant uncertainties around 5G deployment in rural communities.[22]

65. But 5G will require significant investment in telecommunications infrastructure, including physical equipment, devices and spectrum bands used to carry the signals between base stations and devices. The rollout of 5G infrastructure – to support its true potential – is still in its infancy as many 5G services and applications continue to be developed.

66. 5G clearly has the capability and potential to underpin Digital Economy objectives and broader regional development goals for regional communities. PwC modelling indicates that 5G could provide 1.4% extra GDP; $38 billion extra economic activity and 45,000 new net jobs for regional Australia. The broader economic gains from 5G investment in Australia could amount to $130 billion over the decade to 2030 – and create 205,000 net new jobs. Without a competitive 5G market, these potential gains are projected to be $55 billion lower.

67. However, realising these benefits depends upon policies that support a sustainable industry, accelerate 5G investment and ensure a competitive 5G market emerges:

(a) Enabling efficient use of spectrum for 5G; and

(b) Recognising telecommunications infrastructure as critical infrastructure with commensurate rights of deployment.

Spectrum costs should be minimised

68. Management of spectrum which promotes the public benefit of use should reflect the current market circumstances that the mobile industry is currently facing, namely: long term industry service revenue decline, which has fallen 25% over the last five years; mobile subscriber levels at their lowest since June 2017; continual increases in annual depreciation and amortisation costs, which have grown by 16% since 2016; and record low industry returns on capital down which have halved since 2017 at less than 5%.

69. Too often the potential revenue benefits to Government are prioritised over the interest of consumers through access to lower priced services. Too often ‘price discovery’ is placed ahead of efficient pricing.

70. While the recent allocation of mm-Wave spectrum offers the potential to unlock new services and applications in the 5G environment, the upcoming low-band spectrum auction provides the underlaying foundation in which to ensure the coverage reach 5G spectrum strategies must be built on. For mobile operators, to ensure continuing development and the ability to meet consumer demands, 5G networks cannot no longer rely on access to a single-band of spectrum access alone.

[22] Australian Broadband Advisory Council, Agri-tech Expert Working Group report, June 2021, p. 48.

71. Spectrum access has also been a significant driver of underlying operational costs. In addition to participation in spectrum auctions, there are also large ongoing spectrum-related costs (such as annual apparatus licence fees, spectrum taxes, etc) that often do not receive the same headline coverage. Forward looking costs associated with spectrum licences and potential release of additional spectrum is also on the horizon. In aggregate, these spectrum costs are significant and increasing unsustainable as the quantum of spectrum access needed also continues to grow.

72. The pricing of spectrum is a central determinant of its efficient and effective use. Efficient pricing requires that it be based on opportunity cost – the value of the best alternative use of the spectrum forgone. If there is no scarcity, that is, demand can be met by available supply, then price should be limited to the recovery of the regulator's costs.

73. However, the focus of policy makers is often on how much revenue is raised from spectrum allocations. This approach risks diminishing the potential benefits of use of the spectrum. Economic studies have shown that increasing allocation of spectrum and promoting competition produces benefits that far outweigh any social gains from increased government revenue through auctions.[23]

74. The GSMA also finds that lower spectrum costs can be linked to gains in consumer welfare. Lower prices can increase consumer surplus by supporting a reduction in consumer prices for mobile data and lead to an increase in the quantity of mobile data consumed.[24]

75. The sustainability of industry needs a long-term plan from Government and regulators to provide a roadmap for accessing new spectrum and a commitment to minimise the cost of spectrum assets. Given the significant investments potentially involved, operators need to understand spectrum availability. Further, pricing of new spectrum needs to be flexible and sustainable to ensure the delivery of 5G networks and the long-term health of the industry.

Physical access issues must be addressed

76. Notwithstanding challenges regarding the substantial financial investment required to roll out a 5G network and access the necessary spectrum, physical access to land and site approvals remain a significant impediment to timely network deployment. This is related to both:

    (a) Access to land with appropriate tenure, including rent levels; and

    (b) Planning approvals for construction.

77. While there is an expectation that telecommunications services are an essential service, like electricity, water or gas; telecommunications carriers like Optus do not have corresponding rights to install infrastructure. Industry have long-called for reforms for telecommunications infrastructure deployment but there has been little movement from Government to address these issues. Recent changes proposed by Government to 'streamline deployment arrangements'[25] are relatively minor and much larger barriers

[23] Hazlett and Muñoz, A Welfare Analysis of Spectrum Allocation Policies, The RAND Journal of Economics, Vol. 40, No. 3 (Autumn, 2009), pp. 424-454.

[24] GSMA, Effective Spectrum Pricing: Supporting better quality and more affordable mobile services, February 2017, p.29

[25] Australian Government, Digital Economy Strategy 2030, 2021, p. 26.

remain. Carriers remain largely dependent on the approach taken by individual councils or state authorities responsible for land (e.g., road, rail and crown land authorities).

78. Access to and tenure on crown land and council approval processes remain the largest barrier to physical deployment of telecommunications 5G infrastructure. Fundamentally, it is Optus' view that many local government and state authorities do not view telecommunications companies as infrastructure partners providing an essential service, but instead view telecommunications companies as revenue growth opportunities.

79. For example, the New South Wales government asked IPART to provide advice on setting appropriate levels of rent for crown land. The carriers raised material legal issues with such an approach, but notwithstanding this, the draft report proposed material increases in rent for regional sites and to provide a rental markup for sites located in national parks. While these proposals have not been adopted, it demonstrates the inconsistency across levels of governments and government agencies on their level of support for regional communications.

80. In addition, delays in approval processes are slowing down the 5G rollout, instead of supporting its acceleration. For example, a site in the Sunshine Coast in Queensland was originally planned to be built in 2014 but due to local council "buffer zones" could not be built. The site eventually received approval in 2021 but not till after incurring material legal fees which effectively doubled the cost of the tower. In addition, we continue to see funded MBSP sites being delayed due to unreasonable leasing terms by local councils and planning approval delays.

81. In far too many cases, the only recourse left in such circumstances is to engage in legal action which is costly and time consuming. While this may be consistent with Optus' legal rights, having to revert to legal action is not a sustainable nor commercially sound solution for dealing with access issues. It risks alienating landowners and further delaying approvals processes.

82. It is Optus' experience that not all levels of government are working towards the same objective of providing services to regional Australia and reducing the digital divide. There is a role for the Commonwealth to take the lead and provide national leadership.

83. There is a clear need to address these deployment issues, including the inconsistency in processes across different levels of government, if the rollout of 5G infrastructure is to happen in a timely and efficient manner. Ultimately, telecommunications is a topic over which the Commonwealth has legislative power and where Commonwealth rules overrule any state or local rules.

84. Optus recommends the Committee look at the extent to which the Commonwealth can adopt a uniform national approach to land access, rents and approvals which is consistent with the mandate to improve regional communications. This could include:

    (a) Federal Government guidance to states and council on uniform rental approaches. COAG agreement and way forward agreed to enable deployment;

    (b) Consideration of a model leasing agreement for all councils; and

    (c) A consistent approach to rental agreement returns, including a requirement to set rents as a specific yield on unimproved land value.

85. A slow 5G rollout means Australia is less likely to achieve the Government's goal to be a leading Digital Economy by 2030 as well as increasing the digital divide.

Government should look to alternative satellite solutions to overcome existing issues

86. Satellite could – and should – be used to take on more capacity to improve the connectivity solutions for those Australians living in regional and remote locations. Further investment by Government could help to build scale and reduce the cost of supplying services to remote Australians.

87. Optus is currently the only telecommunications carrier to own and operate a fleet of satellites and Optus' satellite capabilities remain one of Australia's biggest untapped resources for meeting the needs of regional, rural and remote Australia.

88. Optus has consistently called for greater use of Australia's satellite assets to provide services to rural Australia. We expand on some of these calls below.

Optus GovSat – an alternative to the current USG arrangements

89. As outlined previously to the Committee, Optus has a vision for a GovSat, which would incorporate the payloads of various Government Departments, and could be tailored to their needs. Such a satellite would have the capacity to provide alternative voice and data solutions for customers whose only option is the USG solution.

90. Optus has delivered voice, data and broadcast services for remote and regional Australians for 35 years. Today via satellite, we provide the Government-funded Viewer Access Satellite Television (VAST) television, sites built under the MBSP, and we are also trialling solutions under the Alterative Voice Services Trial. Optus sees opportunity to continue to provide satellite-based services which address the ongoing need for regional Australians.

91. The software defined capabilities of newer GEO satellites – such as Optus 11 which we will launch in 2023 – allow for voice, broadband and broadcast capacity. It would be feasible for an Optus Satellite to deliver dedicated voice, data and broadcast services as a replacement to the USG, potentially at a much more reasonable cost.

92. There could be improvements in data delivery, with capabilities for broadband data delivered on a software defined satellite, such as Optus 11, being up to 400 Mbps download and up to 25 Mbps upload. This is in line with the design specification provided to our vendors.

93. While there has been much hype around the potential for Low Earth Orbit (LEO) satellites, this is yet to translate to a better value for money proposition than existing satellite technology, such as Optus 11. It is Optus' view that the Government should look to support established alternatives that offer a strong value for money solution to address remaining regional connectivity gaps. Low Earth Orbit satellites are a still developing technology, which is currently prohibitively expensive while still having design limitations. A fleet would require billions of dollars of investment to complete, with continuous investment to maintain during the 5-8 year lifespan of the spacecraft. The design limitations of LEO satellites include smaller beam coverage and wasted useable capacity from weather conditions, and the need to handover data between satellites to relay data from source to earth stations.

94. By contrast, the Optus 11 satellite has a 15-year lifespan with lower initial capital investment and lower ongoing operational costs. Geo-stationary (GEO) satellites offer far wider coverage potential, making them optimal for connectivity solutions across the Australian continent. Optus 11's footprint will cover Australia coast to coast, as well as reaching from Antarctica to the Cocos Islands and covering a vast majority of the Pacific

region. Ultimately, the Optus GEO satellite fleet offer better value for money options than LEO satellites.

95. Optus also proposes to launch an additional future spacecraft, Optus 12, to replace our existing D3 satellite (which provides the VAST service). With a software defined satellite, in addition to the remote TV we provide today under VAST, Optus could deliver a next generation version of VAST, including a Direct to Home (DTH) TV for regional broadcasters.

96. With further development and funding, this next generation of satellite technology could also provide a USG style voice line from the single box or device in the home, effectively providing a voice and video to remote Australian via a single satellite service. The voice service concept is currently being tested as part of the Alternative Voice Services Trial (AVST) and which could be bundled with VAST.

97. Additionally, there could be additional options for voice solutions, which could be tailored to the local community in question. This includes:

(a) **Satellite Small Cells.** Satellite small cells have been deployed with great success under the Commonwealth's MBSP. The mobile base station is connected to our mobile network using satellite backhaul. We have deployed these small cell solutions at significant remote tourist destinations, at roadhouses and in very remote communities. These types of small cells are suitable for smaller towns where construction of a macrocell (i.e., a typical mobile phone tower) is not commercially feasible to construct.

(b) **Femto cells.** A femtocell is a small, low-power cellular base station (smaller than a small cell, as mentioned above). A femtocell similarly connects to the Optus Satellite network and delivers mobile coverage within approximately a one-kilometre radius. Femtocells could be deployed in numerous locations, including agricultural properties. Optus has partnered with the Commonwealth to deploy a femtocell solution at a property in regional NSW under the Alternative Voice Services trial.

98. Satellites offer great potential to service remote areas in a potentially more cost effective way and could be used as part of multi-tiered solutions to meet additional regional telecommunications needs.

Alternatives trialled under the Alternative Voice Services Trial

99. Optus is pleased the Government is embracing satellite technology as part of trials for delivering voice and data services in regional and remote locations.

100. Optus is a participant in the Commonwealth's Alternative Voice Services Trial (AVST), being administered by the Department for Infrastructure, Transport, Regional Development and Communications.

101. With co-funding from the Commonwealth under the AVST, Optus is delivering three solutions using satellite technology to regional and remote locations:

(a) Satellite VOIP: Users will be provided with a landline phone number and a cordless handset. The user's modem is connected via an Optus satellite backhaul, which also provides optional internet.

(b) Satellite wireless POP: From a central satellite dish location, users will have WiFi links to their homes where a landline phone number and dial tone is provided. Like the

(c) Satellite VOIP solution, this is delivered using Optus satellite backhaul, also with optional internet. Optus femtocell: 4G coverage is provided over a radius of approximately one kilometre at a remote homestead. Emergency 000 calling is also provided to mobile phone users not on the Optus network. This trial is in the Primrose Valley, NSW, a short drive from Canberra.

102. The 12 month pilot programme will provide high quality reliable voice and data services to regional, rural and remote Australians.

103. Once deployed, Australians in rural and remote areas will have access to mobile services through satellites comparable in quality to that of traditional copper wires. This will open coverage up beyond the fixed line socket in the homestead to the surrounding paddocks giving Australians more options on how and where they connect.

104. The three satellite solutions are being tested separately across rural locations in South Australia, New South Wales and Queensland, with Optus supplying all communication infrastructure, including satellite terminals and antennas, wireless equipment, handsfree handsets and mobile phones for the Femto Cell 4G site. The trial will continue until May 2022.

105. If successful, the trials will demonstrate existing alternative technology is available that can be used as part of policy solutions to deliver reliable services to regional and remote Australia. This could form part of a broader reboot to regional telecommunications policy so that Government can promote investment in appropriately targeted, multi-tiered solutions that better meet the more complex needs of regional areas.