



**Minister for Housing and Public Works
Minister for Digital Technology
Minister for Sport**

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Ms Sussan Ley MP
Chair
Joint Standing Committee on the National Broadband Network
PO BOX 6100
Parliament House
CANBERRA ACT 2600

Dear Ms Ley

I refer to your letter of 26 February 2018 to the Honourable Annastacia Palaszczuk MP, Premier of Queensland, inviting the Queensland Government to provide a submission to the Joint Standing Committee (the Committee) on the National Broadband Network (NBN) Inquiry into the business case for the NBN, and the rollout of the NBN in rural and regional areas.

As this matter falls within my portfolio responsibilities, the Department of Housing and Public Works has coordinated the enclosed submission on behalf of the Queensland Government for consideration by the Committee.

This submission supports the comprehensive submission provided by the Queensland Government to the Committee on the National Broadband Network's Inquiry into the rollout of the NBN in March 2017.

I look forward to the Committee's report on the inquiry into the rollout of the NBN.

If you need more information or help with this matter, Mr Andrew Spina, Assistant Director-General, Digital Capability, Information and Transaction Based Services, Department of Housing and Public Works can be contacted

Yours sincerely

Mick de Brenni MP
**Minister for Housing and Public Works
Minister for Digital Technology
Minister for Sport**

Enc.

QUEENSLAND GOVERNMENT SUBMISSION

**Joint Standing Committee on the National Broadband Network's
Inquiry into the rollout of the NBN in rural and regional areas**

April 2018

Inquiry into the rollout of the NBN in rural and regional areas (March 2018)

1 EXECUTIVE SUMMARY

The Queensland Government welcomes the Joint Standing Committee on the National Broadband Network's (the Committee's) *Inquiry into the rollout of the NBN in rural and regional areas*.

Given the importance of digital infrastructure, the Queensland Government is taking a more active role in ensuring the digital infrastructure across the State supports and drives the development of the digital economy in Queensland. The strategy and approach to be taken in this regard will be outlined in the Queensland Digital Infrastructure Plan (QDIP) which is under development.

Key recommendations from the Queensland Government to the Committee are:

In seeking to achieve the outcomes summarised in this and previous submissions, the Queensland Government is willing to work closely with nbn Co and local governments to help prioritise the NBN roll-out and select the most appropriate technology solutions based on need. The Queensland Government would do this by leveraging its deep understanding of regional economic and social challenges, together with its strong relationships with stakeholders in rural and regional Queensland.

The Queensland Government would welcome the opportunity to have greater input into and visibility of the NBN rollout schedule where the delivery of Queensland Government services is potentially impacted, particularly where critical public safety services are concerned e.g. hospital care, emergency calls and traffic control.

To improve the resilience, performance and future growth capacity of the NBN, the Queensland Government strongly encourages nbn Co to deploy Fibre to the Premises (FttP) or Fibre to the Distribution Point (FttDP) technologies instead of Fibre to the Node (FttN).

To ensure that lifesaving and other public safety services can be relied upon during power outages, the Queensland Government strongly encourages nbn Co to deploy only FttP technologies to buildings, roadside or other infrastructure supporting these critical services.

The Queensland Government would welcome the opportunity to discuss with nbn Co the responsibilities for provision of backup power and its ongoing maintenance for lifesaving and other public safety services, and to agree on a forward plan to ensure a seamless transition to NBN services where appropriate and safe to do so – ideally including the opportunity to proof services in advance.

The Queensland Government strongly encourages nbn Co to use Sky Muster™ services only as a last resort for remote properties and sites in Queensland, with fixed line or fixed wireless services to be made available to all Queensland cities and towns.

The Queensland Government encourages nbn Co to explore opportunities to improve the services offered to existing Sky Muster™ customers, particularly those in remote areas operating agricultural or other businesses, and to acknowledge that a unique Sky Muster™ service is required for these customers.

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The Queensland Government encourages nbn Co to work with Retail Service Providers (RSPs) to provide greater flexibility in the installation of Sky Muster™ services to remote properties, and to provide improved on the ground support to ensure these services are appropriately supported.

The Queensland Government encourages nbn Co to consider ongoing and additional Connectivity Virtual Circuit (CVC) charge reductions to RSPs to reduce network congestion and make connections to higher speed plans more affordable for Queenslanders.

While the Queensland Government recognises nbn Co as the primary operator in delivering broadband digital connectivity, the Queensland Government is encouraged to see independent operators stepping forward to provide improved and alternative digital connectivity technology choices to rural and regional Queensland.

The Queensland Government has committed to undertake a due diligence assessment of the viability of providing access to spare capacity in the Queensland Government's optical fibre network to improve digital connectivity for Queenslanders.

The Queensland Government also notes the Australian Government's December 2017 response to the Productivity Commission's report into the *Telecommunications Universal Service Obligation*, including the commitment to establishing a future Universal Service Guarantee. The Queensland Government looks forward to the opportunity to contribute to the development of this important regulatory mechanism in setting a baseline standard that provides a meaningful safeguard for regional Queenslanders' access to voice and broadband telecommunications services, once the NBN rollout is finalised.

Additional detail is provided in the remainder of this submission.

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2 INTRODUCTION

The Queensland Government welcomes the Committee's *Inquiry into the rollout of the NBN in rural and regional areas* and is pleased to provide this submission.

This submission builds upon the submission provided by the Queensland Government in March 2017 to the Committee's *Inquiry into the roll-out of the National Broadband Network (NBN)* by providing targeted assessments based on the evolving telecommunications and digital infrastructure policies of the Queensland Government, and on anecdotal observations made over the past 12 months.

3 BACKGROUND

Queensland is the most decentralised state in Australia, which impacts on the connectivity and reliability of digital infrastructure. The challenges of decentralisation and extreme weather events elevate the importance of robust and reliable telecommunications and digital infrastructure.

Given the importance of digital infrastructure, the Queensland Government is taking a more active role in ensuring digital infrastructure across the State supports and drives the development of the digital economy in Queensland.

The Queensland Digital Infrastructure Plan (QDIP) will articulate the Queensland Government's strategy in relation to the state's digital infrastructure. The QDIP will outline the Queensland Government's willingness to work across agencies, with telecommunication providers (such as nbn Co), with other tiers of government, with industry and with the Queensland community at large – to better coordinate the state's digital infrastructure and position Queensland to meet its future digital needs.

4 RESPONSES TO SPECIFIC AREAS OF FOCUS

4.1 Planning, mapping and eligibility for satellite, fixed wireless and fixed line services

4.1.1 Continue strong working relationship with nbn Co

The Queensland Government currently has a good working relationship with nbn Co. Regular meetings are held between the two organisations where anecdotal evidence, regional intelligence and priorities are shared. The Queensland Government wishes to continue to work closely with nbn Co in this way to ensure improved broadband digital connectivity is delivered to rural and regional Queensland.

A barrier to investment by RSPs into regional and rural areas has been the absence of affordable backhaul capacity. Prioritising backhaul and Point of Interconnect (POI) infrastructure in regional and rural areas will create opportunities for RSPs to provision 'last mile' services and help accelerate the delivery of improved digital services. This will also help accelerate the delivery of improved mobile communications, such as 4G/5G services, to these areas.

To lower these barriers, the Queensland Government has committed to undertake a due diligence assessment of the viability of providing access to spare capacity in the Queensland Government's optical fibre network to improve digital connectivity for Queenslanders.

In seeking to achieve the outcomes summarised in this and previous submissions, the Queensland Government is willing to work closely with nbn Co and local governments to help prioritise the NBN roll-out and select the most appropriate technology solutions based on need. The Queensland Government would do this by leveraging its deep understanding of regional economic and social challenges, together with its strong relationships with stakeholders in rural and regional Queensland.

The Queensland Government would welcome the opportunity to have greater input into and visibility of the NBN rollout schedule where the delivery of Queensland Government services is potentially impacted, particularly where critical public safety services are concerned e.g. hospital care, emergency calls and traffic control.

4.2 Adequacy of plans and service reliability of satellite, fixed wireless and fixed line services

The Queensland Government still has concerns with the adequacy of plans and service reliability offered to rural and regional Queensland via the NBN. These concerns are outlined below.

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4.2.1 Poor performance and resilience delivered over Fibre to the Node (FttN) technologies – particularly with extended interruptions to power supply

Queensland experiences regular natural disasters, such as cyclones and floods, which cause outages in power and telecommunications services. Some of these outages can result in the complete isolation of communities.

As stated in the submission provided to the Committee by the Queensland Government in March 2017, the FttN footprint of the NBN is prone to extended interruptions where power is lost to nodes, such as during and after extreme weather events.

The public safety, community and economic impacts of the fragility of FttN technologies during and after extreme weather events was clearly demonstrated when Tropical Cyclone Debbie caused extensive damage to large areas of Queensland in March 2017. Strong frustration was conveyed by large areas of the state regarding the inability of the NBN to provide digital connectivity to businesses and residences for an extended period after Tropical Cyclone Debbie, because of a lack of power supply to NBN nodes. For example, businesses that had not transitioned to the NBN and were still using ADSL services could access the internet after powering their businesses with a generator, whereas customers serviced by the NBN's FttN service could not.

As stated in the Queensland Government's submission in March 2017, there is also a large body of additional anecdotal evidence to suggest that the performance and future growth capacity of the NBN's FttN service is inadequate for current and future needs – particularly those in rural and regional Queensland.

To improve the resilience, performance and future growth capacity of the NBN, the Queensland Government strongly encourages nbn Co to deploy FttP or FttDP technologies instead of FttN.

By eliminating the use of FttN technologies in this way, the Queensland Government would expect to see:

- Improved public safety as community members can be reliably advised of warnings, actions to be taken during and after disaster events.
- Improved ability for local governments to communicate with residents during and after disaster events to advise of warnings, actions to take etc.
- Improved ability for community members to request emergency assistance and to communicate with each other during emergencies.
- Improved ability for businesses to start trading immediately after disaster events, allowing communities to recover more quickly.

4.2.2 No access to critical public safety services via FttN or Hybird Fibre Coaxial (HFC) technologies during interruptions to power supply

As stated in the Queensland Government's submission in March 2017, FttN and HFC technologies are unable to provide access to lifesaving services (e.g. calling 000) during

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power outages. This situation creates serious public safety issues. Any NBN technology solution deployed should always provide access to such lifesaving services, even when power supply is interrupted.

Similarly, the Queensland Government has concerns around the suitability of FttN and HFC technologies to connect critical roadside infrastructure including roadside help phones or roadside cabinets that service utilities e.g. traffic lights and variable message signs. This infrastructure has been, and must continue to be, designed as an emergency-based service.

Currently, roadside help phones are exempt from transition to NBN due to their critical nature. However, the Queensland Government understands that at some point in the future they will need to be transitioned, at which point their resiliency to power outages may become compromised.

Responsibility for the provision of backup power and its ongoing maintenance for the road side infrastructure that currently operates on Asymmetric Digital Subscriber Line (ADSL) or Integrated Services Digital Network (ISDN) services still needs to be determined. The Queensland Government would welcome the opportunity to discuss this transition process with nbn Co.

FttN has been deemed “not fit for purpose” for Queensland Health’s critical sites due to the lack of guaranteed power supply to maintain these services. Hospital services such as blood fridges, vaccination fridges and critical voice resilience lines require a higher level of availability utilising on-site power, such as generators and Uninterruptible Power Supplies.

To address these issues, and to reiterate the recommendation noted earlier, the Queensland Government strongly encourages nbn Co to deploy FttP or FttDP technologies instead of FttN.

To ensure that lifesaving and other public safety services can be relied upon during power outages, the Queensland Government strongly encourages nbn Co to deploy only FttP technologies to buildings, roadside or other infrastructure supporting these critical services.

The Queensland Government would welcome the opportunity to discuss with nbn Co the responsibilities for provision of backup power and its ongoing maintenance for lifesaving and other public safety services, and to agree on a forward plan to ensure a seamless transition to NBN services where appropriate and safe to do so – ideally including the opportunity to proof services in advance.

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4.2.3 An over reliance on satellite technologies

The nbn Co policy is to use the Sky Muster™ satellite service wherever it is too costly to deploy fixed line or fixed wireless services. While the use of Sky Muster™ is acceptable in limited cases, the Queensland Government believes it is not suitable for widespread deployment. The widespread deployment of satellite services would leave many residents and businesses with inadequate services, raising public safety concerns and creating a digital connectivity divide.

While improvements have been made to the Sky Muster™ service in the last 12 months, such as some increases in data limits and improved service availability, fundamental issues remain with using satellite technologies in comparison to fixed line or fixed wireless technologies. These include:

- lower speeds
- higher latency
- lower data caps
- restricted or disrupted services with heavy cloud cover – often present during emergency situations such as storms and/or flooding.

While these issues make Sky Muster™ unsuitable for most applications, there are opportunities to improve the services offered to existing Sky Muster™ customers. The 'one-size-fits-all' approach to Sky Muster™ services offered by nbn Co does not meet the unique business needs of remote businesses. In particular, agricultural businesses are micro-towns, with multi-faceted business and housing compounds where Sky Muster™ is their only internet option.

The Queensland Government believes the following exceptions to standard Sky Muster™ services need to be made to better support remote businesses:

- Sky Muster™ beams with few subscribers (i.e. those in remote Australia) should offer a different service to those within peri-urban beams. Customers in peri-urban areas typically have access to nearby 3G/4G mobile services and town Wi-Fi services, whereas remote customers are solely dependent upon Sky Muster™ services. In response, remote customers within remote beams should have their service options (in terms of data caps, speeds and Fair Use Policies) reviewed and upgraded to reflect their disadvantage and limited choice.
- More flexibility is needed in how infrastructure is deployed on remote compounds to reflect business needs. Dishes and modems need to be able to be installed on buildings in accordance with the businesses' strategic connectivity plan wherever possible.
- Modems on remote properties need to have additional ports enabled. A second business port needs to be provided on every remote home's modem to allow the resident to activate a separate personal business account. In addition, a modem with up to four ports needs to be provided to properties where barracks and quarters are a standard form of housing. If all four ports were activated, much greater flexibility would then be available to access the online services necessary to run these multi-faceted businesses.

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The Queensland Government strongly encourages nbn Co to use Sky Muster™ services only as a last resort for remote properties and sites in Queensland, with fixed line or fixed wireless services to be made available to all Queensland cities and towns.

The Queensland Government encourages nbn Co to explore opportunities to improve the services offered to existing Sky Muster™ customers, particularly those in remote areas operating agricultural or other businesses, and to acknowledge that a unique Sky Muster™ service is required for these customers.

The Queensland Government encourages nbn Co to work with RSPs to provide greater flexibility in the installation of Sky Muster™ services to remote properties, and to provide improved on the ground support to ensure these services are appropriately supported.

By reducing the reliance on satellite services in this way, the Queensland Government would expect to see:

- Greater uptake of digital services (particularly in the remote delivery of health and education services) leading to improved community outcomes.
- Greater participation in the digital economy by industries and businesses based in rural and regional Queensland, leading to improved economic outcomes.
- Increased levels of innovation, potentially leading to improved economic and environmental outcomes, such as reduced resource use and/or strengthened supply chains.
- Reduced barriers to access the digital economy, encouraging the migration of businesses and residents into rural and regional areas of Queensland and strengthening these communities.
- Improved reliability of telecommunications services during adverse weather conditions and emergency situations, leading to improved public safety.
- Reduced isolation and improved social interactions via improved access to social media and mainstream media, and remote connections via videoconferencing services.

The Queensland Government has committed to undertake a due diligence assessment of the viability of providing access to spare capacity in the Queensland Government's optical fibre network to improve digital connectivity for Queenslanders.

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4.3 Issues in relation to the future capacity of satellite, fixed wireless and fixed line services

Demand for data across Australia's digital networks is growing exponentially – predicted to quadruple by 2020 – by which time Australians will be downloading over 9 million Terabytes of data every three months¹. This growth in demand will be primarily driven by an increase in the online streaming of video content, an exponential growth in the number of IoT-connected devices, and continued strong growth in the use of cloud services by residents, businesses and organisations.

4.3.1 Concerns over future network capacity

Given this growth, the Queensland Government has concerns that the NBN will not be able to adequately accommodate future needs for Queensland businesses and communities. The Queensland Government is particularly concerned that the NBN Sky Muster™ satellite service will not provide the required future capacity, given that strong frustrations have been expressed across rural and regional Queensland – particularly by small and medium enterprises and families with school-aged children – that current capacity is inadequate.

The Queensland Government strongly encourages nbn Co to use Sky Muster™ services only as a last resort for remote properties and sites in Queensland, with fixed line or fixed wireless services to be made available to all Queensland cities and towns.

This approach will allow Queenslanders to adopt the latest in digital technologies and services as they become available – such as cloud computing services and eHealth – regardless of their location.

4.3.2 Welcome reductions in Connectivity Virtual Circuit (CVC) charges

The Queensland Government welcomes the recent reductions in wholesale charges for CVC offered by nbn Co. These price reductions have already encouraged RSPs to enhance their service offerings, such as by offering increased speed and data limits, which will hopefully result in a greater take-up of higher speed services and reduce network congestion.

The Queensland Government encourages nbn Co to consider ongoing and additional CVC charge incentives to RSPs in order to reduce network congestion and make connections to higher speed plans more affordable for Queenslanders.

¹ Australian Bureau of Statistics (2016) *Internet Activity*, Catalogue 8153.

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The Queensland Government has committed to undertake a due diligence assessment of the viability of providing access to spare capacity in the Queensland Government's optical fibre network to improve digital connectivity for Queenslanders.

4.4 Provision of service by alternative providers of satellite, fixed wireless and fixed line services

4.4.1 Increased activity by fixed wireless service providers

The Queensland Government is seeing a significant increase in the deployment and adoption of non-NBN fixed wireless services across rural and regional Queensland. In many cases, these operators have been able to gain significant presence in areas that are scheduled to receive NBN fixed line or fixed wireless services and are yet to receive them, or areas that will not be receiving either of these services and will become reliant on Sky Muster™ satellite services.

Anecdotal evidence suggests that customers find these competitive offerings attractive for one or more of the following reasons:

- Services are offered sooner than NBN.
- Services are offered with higher data limits.
- Services are offered with higher speeds – with symmetrical services being offered in some cases.
- Services have lower latency than satellite services.
- Services provide lower contention ratios.
- Some services provide enterprise grade solutions.

These services are being adopted by residents, businesses, Not for Profit organisations and local councils.

While the Queensland Government recognises nbn Co as the primary operator in delivering broadband digital connectivity, the Queensland Government is encouraged to see independent operators stepping forward to provide improved and alternative digital connectivity technology choices to rural and regional Queensland.