

**TELSTRA RESPONSE
BACKHAUL BLACKSPOTS INITIATIVE
STAKEHOLDER CONSULTATION PAPER**

MAY 2009

EXECUTIVE SUMMARY

Telstra supports the Government's desire to improve the availability of fibre transmission services in regional areas. Fibre transmission, and the increased capacity it provides, is a fundamental building block in the delivery of advanced fixed and wireless telecommunications services and the applications that can be provided over them.

Telstra acknowledges that in recent years concerns have been raised about regional transmission prices by internet service providers (ISPs) and industry observers. In response, the Government has announced it will invest up to \$250 million to improve the supply of regional transmission services with a view to increasing choice and lowering prices.

Telstra supports and welcomes Government investment where the market has not or cannot commercially provide critical infrastructure and there is a net benefit. After considering the Government's paper, Telstra believes there are a number of alternatives open to the Government to help it achieve its desired outcome which do not involve the duplication of existing infrastructure.

The proposal for duplication is well intentioned, but it is unlikely to address underlying economic issues and may make implementation of the National Broadband Network (NBN) more complex and costly.

As one alternative, Telstra believes a priority for the Government funding should be the extension of the fibre transmission network into under-served areas rather than duplication of existing transmission infrastructure. Extension projects could be offered on a competitive tender process as outlined in the Government's consultation paper with the assets potentially to be incorporated into the NBN company (NBNCo) at a later date.

Telstra estimates \$250 million in funding, if allocated solely to extension rather than duplication, could connect 140 communities in Australia to the high-capacity, national transmission networks, removing barriers to deployment of high speed fixed and mobile communications. Some of these communities are the most remote and isolated in Australia. It could lead to improvements in service delivery by local government, health, education and emergency services, and open up new opportunities for regional business, industry and tourism. Schools and health services in remote areas that are today cut off from broadband-based programs could have access to metropolitan standard Government services.

Telstra has provided a list of potential communities that could benefit from fibre transmission extension.

Another alternative is for the Government to obtain access to Telstra or others' existing transmission network, which is likely to be more cost effective than duplication.

Telstra has negotiated in the past, and continues to be keen to negotiate, long term access to its transmission network as a cost effective alternative to duplication. On many low-volume regional routes considered for duplication, there is existing spare capacity in the transmission network or the network could be readily and cost effectively upgraded to provide additional capacity if required. It is highly likely that additional, long term capacity would be able to be made available at a lower cost than building duplicate infrastructure.

There is potential for the Government to provide lower transmission prices by either purchasing capacity from Telstra's existing network and reselling it at a subsidised cost to access seekers, or by acting as a demand aggregator and negotiating on behalf of interested access seekers.

Accessing existing infrastructure in this way is also likely to be most compatible with the Government's plan for the NBN.

The Government has said it will encourage the private sector to vend assets into the NBNCo in exchange for equity. Telstra has indicated that it will consider vending in assets, which may include regional transmission, in exchange for equity in NBNCo. Providing access to existing infrastructure, rather than building duplicate infrastructure, reduces the risk of stranded transmission assets once the NBN is built.

Telstra believes that a fundamental economic issue to be considered in determining the most effective model is the tension between nationally based retail prices and route-based wholesale transmission prices. Telstra sells its main retail services, which use transmission as an input, at uniform national prices. This is a long-standing policy which has strong community and customer support.

In contrast, the price of wholesale transmission is largely determined by the infrastructure cost (including terrain and distance) of a route and the volume of traffic it carries. Most routes in regional Australia are relatively high cost to build and carry relatively low volumes, resulting in higher transmission pricing than in populated areas.

ISPs are able to purchase wholesale transmission capacity in more populated, higher-demand areas from a range of providers, enabling them to compete strongly on price with Telstra at the retail level. In the smaller markets, ISPs have expressed concerns that Telstra's wholesale transmission prices do not enable them to gain the same margins at the retail level that they are likely to experience in populated areas. In Telstra's view, the concern of the ISPs about their ability to compete in less populated areas is a direct result of the price tensions between wholesale transmission and retail services.

Duplicating regional transmission infrastructure is unlikely to fundamentally alter this retail-wholesale pricing tension. If Government policy on competitive neutrality is applied to the proposed investment, then wholesale prices may in fact rise rather than fall. Competitive neutrality policy requires government owned businesses to provide a commercial return on their investments. On this basis, dividing existing demand in a low population area across two pieces of infrastructure could realistically result in higher rather than lower prices.

The wholesale transmission service is subject to open access regulation on routes where there are fewer than three transmission providers with optic fibre infrastructure. If commercial access negotiations fail, the ACCC has the power to arbitrate. While there has been much public comment on transmission prices in regional Australia, there has nevertheless been a high degree of commercial agreement on the pricing of the service. To date, the ACCC has not been required to make any transmission pricing determinations due to the high level of commercial agreement reached on the pricing of the service.

It should be remembered that transmission is one component of the total costs that feed into end-user prices. Prices and service availability are influenced by a range of costs including costs of broadband or mobile access equipment, maintenance and customer service.

Telstra believes that the costs and benefits to customers from transmission duplication should be estimated and weighed up against the costs and benefits of alternative solutions that are available to the Government.

The alternatives outlined above support the Government's NBN objectives and potentially extend the benefit that could be achieved by making funds available to connect communities that are not already linked to national, high-capacity transmission networks. Telstra would welcome the chance to engage constructively with the Government to assist in achieving the greatest return, in terms of social and economic benefits, from its proposed investment.

1. INTRODUCTION

The Government has announced it will dramatically change the telecommunications landscape in Australia with the building of a NBN. As part of the Government's announcement it stated that it would invest up to \$250 million to improve the supply of transmission ("backhaul") services in regional Australia.

Telstra supports the Federal Government's commitment to improving the speed, coverage and availability of broadband in Australia. Investment in the fundamental building blocks of broadband provision, such as transmission, is critical to making this happen.

Telstra, as the largest investor and operator of transmission in Australia, is pleased to have the opportunity to provide the following response to the Government's Backhaul Blackspots Initiative Stakeholder Consultation Paper (the "Paper"). This response provides a number of options that Telstra believes would generate greater community and economic benefit from the Government's investment.

Telstra recognises that while the detail of the Government's NBN plan will not become available until it completes its implementation study, any private or public investment in telecommunications infrastructure over the next five years must be considered in the context of the Government's plan and the future existence of the NBNCo.

2. PRIORITY LOCATIONS

The Paper seeks information on identification and prioritisation of regional centres to be addressed through the initiative.

Telstra believes that rather than fund duplication of optic fibre transmission on routes where Telstra or other providers already have fibre, this is a one-off opportunity for the Government to extend high-capacity transmission to some of the more remote and isolated communities in Australia.

Telstra has made initial estimates that the \$250 million in funding, if allocated on extension rather than duplication, could connect over 140 communities to the high speed, national telecommunications networks, largely future proofing the network for their telecommunication needs.

A summary of the projects is contained in Table 1 below and a list of project locations is contained in Attachment 1.

TABLE 1: ESTIMATED COST PER STATE BASED ON ATTACHMENT 1

	NSW	NT	QLD	SA	TAS	VIC	WA	TOTAL
Projects	16	4	58	20	12	13	17	140
Capital \$M	\$17.0	\$32.0	\$97.4	\$23.4	\$45.2	\$10.5	\$24.7	\$250.2
Est. population in project locations ('000s)	4.5	5.4	19.4	4.1	6.2	3.4	2.7	45.6

These are estimates only and are provided for the consideration of Government and should be subject to appropriate assessment of their cost and benefit to communities and business. The Government could put the build out to tender and run the process in the same way as proposed in its Paper, with the asset becoming part of the NBN at a later date.

This strategy would mean that economic obstacles to providing metro-standard communications in these remote communities could be overcome, contributing to significant

improvements in social and economic outcomes. It could enable improved service delivery by local government, health, education and emergency services and support regional business development.

As set out in the following section, most existing and new transmission links are open for use by all wholesale telecommunication providers. Once transmission is installed any provider could potentially use it to deliver services to end-users, through either fixed services such as ADSL or ADSL 2+ or through wireless broadband. If broadband or wireless services are uneconomic to provide commercially, the Government could use the Australian Broadband Guarantee subsidy or other forms of support to deliver services.

Table 2 contains examples of potential locations and the benefits that could be achieved from extension of the national optic fibre transmission network. From a social policy perspective, Telstra believes greater benefit could arise from connecting locations without access to urban standard advanced communications than from duplication of available transmission capacity. In addition to extending the fibre network, some of the proposals will improve resilience of the transmission network by becoming a diverse fibre path for other destinations. The types of locations in Table 2 include:

Indigenous communities located in isolated areas such as the Plenty-Sandover region north-east of Alice Springs. Some of these communities have substantial populations spread over large areas and are among the most disadvantaged in Australia. They include centres for providing education, health and community services. Often they are provided with services today using low capacity radio links. Upgraded transmission and network infrastructure would underpin improved availability of a wide range of services in these communities.

The communities listed in Attachment 1 are predominantly not included in the Council of Australian Government (COAG) infrastructure investment plan for the Northern Territory, although Angurugu on Groote Eylandt is included.

The success of previous projects indicates that improved telecommunications in these areas would contribute to better indigenous health, education and quality of life. It can support introduction of patient care systems and remote medical prescriptions. Telemedicine could be undertaken with specialists located elsewhere. High speed broadband would support remote learning, video-conferencing and access to specialist teachers in other locations. Better telecommunications makes it easier to attract and retain specialist personnel in remote areas and gives people in isolated communities opportunities for self development. Day to day living of community members, such as access to bank accounts and purchasing at community stores, would also be improved.

Small service and tourist towns in remote areas such as Bedourie in south-west Queensland, are currently connected to the main network by low capacity radio transmission systems. These radio links do not provide adequate capability for mobile voice and broadband or ADSL terrestrial broadband. Upgrading transmission links and providing power would support broadband and mobile services and may allow transmission rings to be created, improving network diversity. Many of these towns are centres for education, health and local government, and support tourism and resource industries.

Small towns or communities in sparsely populated dry land farming areas like Collarenebri, in north-west NSW are also connected today by relatively low capacity radio systems. This form of transmission limits the capability to provide broadband and mobile services.

Schools in this part of NSW were excluded from a State school broadband program when it became apparent that there was no transmission to the sites. Extension of optic fibre

transmission would be likely to mean that most schools and health services in all but the most remote communities of Australia could be part of mainstream programs based around high speed broadband.

Small communities in mountainous areas, like Buchan in Gippsland or Rosebery in south-west Tasmania are today served by lower capacity radio transmission. In some cases, this transmission may support basic mobile or ADSL services where populations are low. In many cases, the absence of high speed transmission makes mobile services non-commercial. Provision of optic fibre transmission would improve on the ability to support better emergency, education and health services.

TABLE 2: EXAMPLES OF PRIORITY LOCATIONS

Location	Description and benefits
New South Wales	
Collarenebri, north-west NSW	The installation of new optic fibre transmission, and other infrastructure to Moree, Watercourse, Kurraboona, Wenna, Collymungle and Collarenebri in NSW would help open up employment and educational opportunities. These areas are currently serviced by radio and cable that passes through a large flood plain area and are prone to cutting residents and businesses off for long periods of time. The educational benefits for this project are also significant with schools at Collarenebri and Kurraboona being covered by this potential project. These two schools were initially part of the NSW Department of Infrastructure school broadband project but were removed from the project when it became apparent that there was no transmission to the sites.
Rowena, north-west NSW	Rowena is a small town of over 200 in the far northwest of New South Wales and lies in the Walgett Shire Council. It serves an agricultural community which consists of both dry and irrigated cropping as well as grazing, and has a public school, which opened in 1923 and was rebuilt in 1996. The community currently has no ADSL. Optical fibre transmission could support the installation of technology that would deliver broadband to the community. There are approximately 183 homes in this area and these support a large farming community. This technology would also allow the use of remote classrooms and help to retain young people in the community.
Wyangala Dam	Wyangala Dam near Cowra is a popular tourist destination with a permanent population of over 100 and a total population of approximately 500 in the local area. It has extensive tourist facilities linked to the Dam. Presently the area is without ADSL and the installation of optic fibre transmission would support mobile and broadband services for the township.
Northern Territory	
Utopia, northeast of Alice Springs	The Plenty communities are located northeast of Alice Springs around the Plenty Highways. The communities of Engawala and Harts Range are home to approximately 1200 people. Serviced by narrowband radio systems, the district includes 2 schools, 2 health clinics, and a police station as well as numerous agencies for Centrelink, EFTPOS and banking facilities, and stores, art centres and women's centres. Optical fibre transmission would lay the groundwork for terrestrial broadband for business and consumer as well as potential mobile coverage.

Groote Eylandt	<p>Groote Eylandt and surrounds is home to four towns and communities: Alyangula, Umbakumba, Milyakburra and Angurugu. Located in the top northeast portion of the NT coastline, it has a population of approximately 2500 people. The Eylandt has medical facilities, police, and local government and is a base for four schools in the area.</p> <p>Angurugu, which is the largest indigenous community in the region, has become a hub under the NT Shire Restructure which has also seen the creation of nine hubs across the Territory. The hubs are service centres for the surrounding outstations and communities and are tagged for future growth and development. Angurugu is one of 20 sites identified under COAG for housing programs, government investment, growth and development.</p> <p>An upgrade of the existing radio network to optical fibre transmission will increase network robustness to the island, particularly during the tropical cyclone season. The augmentation in transmission links would allow for the deployment of broadband and other technologies.</p>
Ltyentye Apurte	<p>The Aboriginal community of Ltyentye Apurte is located 80km from Alice Springs (also known as Santa Teresa). It is a community of about five hundred people with extensive rock art, artefacts and ceremonial sites. It is a strong community with good support services, including schools, police station and health clinic, and recreation facilities. The Ltyentye Apurte Community Education Centre includes a preschool, primary and secondary classes. The Keringke Aboriginal Arts Centre is Aboriginal owned and operated and is an important source of local income.</p> <p>The community is served by radio transmission and has access to mobile services today but not fixed broadband. Significant transmission upgrades would be required to provide fixed broadband and higher bandwidth services in the future.</p>
Queensland	
Bedourie, Birdsville	<p>Bedourie and Birdsville in the Diamantina Shire are major tourist destinations and service centres for businesses in Southwest Queensland. The Shire has over 27,000 visitors each year. The permanent population of Bedourie is 142 and Birdsville, 115. Birdsville and Bedourie are served by radio systems.</p> <p>Providing high speed transmission capacity would enable broadband and other communications services for education and health, and increase communications capability for local businesses.</p> <p>Both towns are centres for service delivery towns including police, education, health and local government.</p>
Windorah	<p>Windorah is one of two administration centres for the Barcoo Shire. It has a population of 158 people. The town is a service centre for pastoral, tourism, oil and gas industries. It is also a centre for a major solar farm. State Government agencies also present, including health, education and police.</p> <p>Upgrading existing radio links to higher capacity transmission would enable the provision of broadband and IP services and the improved delivery of government services. It would also increase the communications capability serving local business.</p>
Stonehenge, Jundah	<p>The extension of the optical fibre transmission from Isisford to Stonehenge, Jundah and Windorah would provide additional capacity to both towns and would link with the optical fibre transmission from Windorah to Quilpie. Jundah is an administration centre for Barcoo Shire and Queensland Government agencies present include Health, Education, Police and a Qld-Government Q-Gap Agency.</p> <p>Together with the projects in the Diamantina Shire, this would allow all local governments in Queensland to have the same technology platform, which could further advance the delivery of local government services in the region.</p>
Western Cape York	<p>The Kowanyama Aboriginal Shire Council (population 1023) is located on western Cape York. This community is a centre for education, health, tourism and police.</p> <p>Increased transmission capacity and replacement of radio-based transmission systems with optical fibre transmission would improve services to these communities.</p>

South Australia	
Leigh Creek South	<p>Leigh Creek is situated 200 km north of Port Augusta in the northern Flinders Ranges and is the service town for the Leigh Creek Coalfields. It caters for tourists to the Flinders Ranges as well as travellers accessing the Oodnadatta, Strzelecki and Birdsville tracks. The population of Leigh Creek is approximately 550 and has an area school, hospital, police station, library and airport. The radio system between Hawker and Leigh Creek has limited transmission capacity.</p> <p>Providing an optical fibre transmission cable between Hawker and Leigh Creek would improve network diversity, and enable the provision of broadband and other services to business and residents. A transmission link to the existing optical fibre transmission cable running from Leigh Creek to Marree would allow the provision of other services at Marree and Lyndhurst. It may also allow the provision of wireless services at Parachilna and lead to improved highway coverage. A new cable would open up possibilities for improved services to several indigenous communities further north.</p>
Ceduna to Port Lincoln	<p>This route follows the Flinders Highway between Ceduna and Port Lincoln, through significant population centres at Smoky Bay, Streaky Bay, Elliston and Coffin Bay as well as the smaller centres of Port Kenny, Venus Bay, Sheringa and Mount Hope.</p> <p>Smoky Bay is situated 40 km south of Ceduna along the Flinders Highway. It is a popular seaside town and oyster farming area, with a population of approximately 200. Streaky Bay, approximate population 1,100, and is a prawn and cray boat fishing hub, abalone farming area and major tourist destination. Elliston with a population of approximately 380 is a fishing, aquaculture and tourist location on Eyre Peninsula, 169 km northwest of Port Lincoln. The town houses the district council and has an area school, hospital and police station. Coffin Bay, population of approximately 584 located on lower Eyre with a population which swells by a further 3,000 people during the summer school holidays and Easter periods.</p> <p>The transmission link from Ceduna to Port Lincoln would allow the provision of other services at Smoky Bay, Calca, Port Kenny and Venus Bay. It would also provide an upgrade to the existing limited capacity Streaky Bay and Coffin Bay fibre links. It may also allow the provision of wireless services where they currently do not exist along this route. It will also provide redundancy options for Eyre Peninsula.</p>
Tailem Bend to Halidon	<p>Tailem Bend, the northern gateway to the Limestone Coast, lies alongside the Murray River. It is a commercial centre for the surrounding mallee area. Approximate populations for the regions are Karoonda 1200, Kulde 155, Wynarka 160, Borrika 98, and Halidon 91. There is zircon mining activity in the area, intensive livestock industries and general agriculture.</p> <p>A transmission link from Tailem Bend to Halidon would allow the provision of other services at Kulde, Wynarka, Karoonda, Borrika, Halidon. It may also allow the provision of wireless services where they currently do not exist along this route. It will improve network reliability for the Mid Mallee region in the event of a cable cut.</p>
Mannum to Bowhill	<p>Mannum on the Lower Murray is approximately 1 hour 15 minutes from Adelaide. It is a popular tourist destination and includes a large house boat marina. Approximate populations for the area are Mannum 2042, Punthari 109, Walker Flat 152, Nildottie 142, Copeville 118, and Bowhill 226.</p> <p>The transmission link from Mannum to Bowhill would allow the provision of other services at Punthari, Walker Flat, Nildottie, Copeville and Bowhill. It may also allow the provision of wireless services where they currently do not exist. It will also provide redundancy options for the Murraylands region, improving network reliability in the event of a cable cut or other network break.</p>
Summertown to Montacute	<p>Summertown is located in the Adelaide Hills and supports vineyards, orchards, market gardens and residential areas. The approximate population for the area is Uraidla 461, Basket Range 534, Ashton 479, Norton Summit 320, Cherryville 320, and Montacute 248.</p> <p>An optical fibre transmission link from Summertown to Montacute would allow the provision of other services at Montacute and could allow the provision of other services at Uraidla, Basket Range, Ashton, Norton Summit and Cherryville. It may also allow the provision of wireless services where they currently do not exist along this route.</p>

Tasmania	
West Coast	The towns of Zeehan (population 845), Rosebery (population 1032), Queenstown (population 2169) and Strahan (population 690) are on the west coast of Tasmania. These towns support extensive resource and tourism industries, and provide health, education and local government services to local populations. Communications to the region are fed by single high-capacity radio transmission link from Burnie. While radio based transmission allows provision of ADSL and mobile services today, it does not have the high-capacity capabilities of optical fibre and may be a constraint on future services. Building an optical fibre transmission network through the mountainous areas of the West Coast of Tasmania would be a major undertaking. It would benefit Queenstown, Savage River, Strahan, Zeehan, Rosebery, Waratah, Tullah, Bronte Park, Hermitage, Maydena and Miena. It would enable the provision of higher speed services for education and health, enable higher bandwidth consumer and business services, and provide network redundancy and reliability in case of a network break.
Blessington, Northern Tasmania	Blessington is only half an hour north of Launceston and is located on the way to Tasmania's Ben Lomond ski resort. Optical fibre transmission would provide the foundation for the provision of ADSL and wireless services.
Victoria	
Mallacoota, Gippsland	Mallacoota is a popular tourist destination near the Victoria-New South Wales border. With around 1,000 permanent residents, the local population swells significantly over summer months with visitors from Melbourne and Sydney. Optical fibre transmission would enable higher speed future fixed and broadband services, and be more robust during the bushfire season.
Buchan, Gippsland	World famous for its limestone caves, Buchan is located on the banks of the Buchan River in a mountain valley. The town provides services for surrounding farmland and is an important stopover for travellers heading into more remote regions such as Gelantipy, Tubbut, Bendoc and Bonang. Buchan is currently serviced by Telstra's Next G™ network however fibre transmission would enable the delivery of ADSL services that would benefit local residents and travellers.
Woods Point, Gippsland	Woods Point is an iconic Australian mining town. It is situated in a low, narrow valley surrounded by forest, with no ADSL or Next G™ mobile coverage. The town can only be accessed by a single road, making Woods Point one of the most vulnerable locations in Victoria during the bushfire season. An optical fibre transmission network would improve the reliability of the network in the event of major fires.
Redesdale, (Lake Eppalock), Central Victoria	Redesdale is the gateway to Lake Eppalock and a major tourist attraction in the region. It attracts large numbers of fishermen and sports enthusiasts. Optical fibre transmission would be a foundation for improved communications and emergency services in the region.
Dargo, Victorian High Country	Many High Country communities are served by radio links, including Dargo. Optical fibre based transmission supports mobile and broadband services for local residents, but would also greatly enhance emergency services in areas that are prone to bushfires.
Western Australia	
Nullagine, Irungadji	Nullagine is located 300 kilometres south-east of Port Hedland and has a population of approximately 200. Provision of optical fibre transmission to this town would enable services to the nearby indigenous community of Irungadji as well as supporting economic development of mines. It would improve network redundancy and reliability. It could also provide redundancy from Marble Bar to Newman increasing reliability in the event of a cable cut.
Wyndham to Kalumburu	Kalumburu is located approximately 400 kilometres from Wyndham, has a population of 400 people. It is the most northerly settlement in Western Australia. It is remote from main roads. It is currently served by wireless backhaul. Provision of optical fibre based transmission would enable the provision of a range of services to Kalumburu and other towns on the route.
Porongurup	This town north of Albany has a population of around 200 and is a very popular tourist area and attracts many more residents during holiday seasons. It is similar to other small Western Australian towns in the wheat belt, served by wireless transmission.
Marvel Loch	Marvel Loch is a small town within the Shire of Yilgarn. It is located 30 km south of Southern Cross and 400 km east of Perth. It has a primary school, some retail, and nearby mines. Replacement of narrowband radio with optical fibre transmission would improve diversity and enable deployment of broadband ADSL and other technologies to the town and local mines.

Communities and areas in Table 2 are among the most difficult to serve due to location, terrain and small population. More detailed work would be required to improve the preliminary estimates of the costs of individual projects. A wide variety of terrains, transmission and power requirements are involved. Costs may be high for particular projects if construction involves rugged terrain.

Without external support, it is unlikely the extension of high-capacity optical fibre transmission would be commercially viable to these locations. Small communities in isolated areas generally have transmission capacity adequate to meet voice requirements as a minimum. The size of these communities, combined with their location or nature of the terrain is such that it is not economic for any carrier to deploy optical fibre networks to deliver the transmission capacity required to support very high speed mobile and terrestrial broadband services.

Attachment 1 shows a list of locations corresponding to an estimated capital expenditure of \$250m. The projects included in Attachment 1 were selected to represent a cross section of regional Australia, broadly ranked according to Telstra understanding of population and need.

In addition to the projects in Attachment 1, there are major strategic optic fibre transmission projects that do not directly serve a large local population that Government could consider. An optic fibre link along the Landsborough Highway between Winton and Cloncurry in Queensland could support mobile telecommunications on this important regional transportation route. Another example would be an optic fibre transmission link from New South Wales to Lord Howe Island. Further examples of very large transmission projects exist in areas such as northwest Western Australian mining areas and Square Kilometre Array radio telescope.

3. REGIONAL TELECOMMUNICATIONS FUNDAMENTALS

Telstra believes that the fundamental economic issue that needs to be considered is the tension between national uniform retail prices and route based transmission prices, and the relationship of this to wholesale prices.

Telstra sells its main retail services that use transmission as an input at uniform national prices. This is a long-standing policy which has strong community and customer support. In effect, it entails a retail cross subsidy from more populated urban areas in the cities and regional centres to smaller towns and less populated areas.

Customers in smaller towns and less populated areas benefit as prices in these areas reflect competitive conditions in the urban centres. It places Telstra at a competitive disadvantage in populated areas, as prices are higher than would be the case in a purely cost based model.

In contrast, the price of wholesale transmission is largely determined by the cost of deployment of a route and the volume of traffic carried. Most routes in regional Australia are long, traverse difficult terrains and serve small populations. They are relatively high cost and carry relatively low volumes, resulting in higher transmission pricing than in populated areas.

ISPs are able to purchase wholesale transmission capacity in more populated areas from a range of providers, enabling them to compete strongly on price with Telstra at the retail level. Transmission in more populated areas will be lower cost than in less populated areas since demand is greater, distances are shorter and costs lower.

In the smaller markets, ISPs have expressed concerns that Telstra's wholesale transmission prices do not enable them to gain the same margins at the retail level that they are likely to experience in populated areas.

In Telstra's view, the concern of the ISPs about their ability to compete in less populated areas is a direct result of the price tensions between wholesale transmission and retail services. This is an issue about necessarily conflicting pricing structures.

Duplicating regional transmission infrastructure is unlikely to solve this retail-wholesale pricing tension. If Government policy in relation to competitive neutrality is applied to the proposed investment, then wholesale prices may in fact rise rather than fall. Competitive neutrality policy requires government owned businesses to provide a commercial return on their investments. On this basis, dividing existing demand in a low population area across two pieces of infrastructure could result in higher rather than lower prices.

4. WHOLESALE ACCESS REGULATION

Telstra's facilities and core services such as transmission are today subject to extensive regulation that allows third parties access to its infrastructure. The domestic transmission capacity service (backhaul) is a declared service under the Trade Practices Act 1974 ("Act"). In March this year the ACCC declared the transmission service for a further five years, until March 2014, which is the maximum possible term under the Act. The ACCC decided it would not re-declare the routes on which there were a total of three competitors or more providing transmission backhaul using optic fibre.

Declared services are subject to access obligations that require the owner of the infrastructure to supply the service (amongst other obligations and subject to some limitations) to third parties upon request. The open access arrangements enshrine the importance of negotiation between parties to agree terms and conditions for access. The legislation also allows the ACCC to arbitrate outcomes if negotiation fails; the ACCC to issue pricing principles and the access provider to undertake to sell services at publicly specified terms, subject to ACCC approval.

To date, transmission terms and conditions have been agreed between parties. The ACCC has not had to determine a price for the service. This reflects Telstra's willingness to reach commercial agreement with its wholesale customers in the provision of transmission services. Telstra remains keen to commercially negotiate terms of access for the provision of long term transmission services over its existing network as a cost effective alternative to network duplication.

Open access arrangements continue to be a central pillar of the national competition regime of Australia. Open access arrangements were introduced to avoid the heavy and unnecessary financial burden of inefficient duplication of networks.

Telstra believes that if particular regional transmission links are duplicated by the Government, then regulation of infrastructure over these routes should no longer be necessary, or the regulatory responsibility should be transferred to the owner of the Government subsidised transmission.

5. COST EFFECTIVE ALTERNATIVES

The Paper seeks views on the proposed model, including on ownership arrangements, commercial viability, and alternative models that would meet the Government's objectives.

Telstra's position that the Government funding would best be used to extend fibre rather than duplicate existing infrastructure has been set out in the Priority Locations section of this response.

Another alternative is for the Government to obtain access to Telstra or others' existing transmission network, which is likely to be more cost effective than duplication.

Telstra has negotiated in the past, and continues to be keen to negotiate, long term access to its transmission network as a cost effective alternative to duplication. On many low-volume regional routes considered for duplication, there is existing spare capacity in the transmission network or the network could be readily and cost effectively upgraded to provide additional capacity if required. It is highly likely that additional, long term capacity would be able to be made available at a lower cost than building duplicate infrastructure.

There is potential for the Government to provide lower transmission prices by either purchasing capacity from Telstra's existing network and reselling it at a subsidised cost to access seekers, or by acting as a demand aggregator and negotiating on behalf of interested access seekers.

The Government has said it will encourage the private sector to vend in assets to the NBN for equity in the NBNCo. Telstra, like other industry participants, will consider vending in assets for equity in the NBNCo, possibly including regional transmission. It is likely the private sector will not be able to make any commitment in this regard until the Government completes its implementation study and regulatory reform review. To that extent, the Government's proposal to duplicate transmission infrastructure is pre-empting the outcome of its implementation study.

Given this risk, and the capacity that is potentially available on existing regional transmission links, there are more cost-effective alternatives available to the Government to achieve the same outcome.

These alternatives, which are outlined above, support the Government's NBN objectives and potentially extend the benefit that could be achieved by making funds available to connect communities that are not already linked to national, high-capacity transmission networks.

Telstra would welcome the chance to engage constructively with the Government to help it get the greatest return in terms of social and economic benefits from its investment.

6. BENEFIT ASSESSMENT

The Paper states that a competitive assessment process following stakeholder consultation will determine which investments in regional backhaul infrastructure are undertaken.

Government procurement guidelines state that a comparative analysis of all relevant costs and benefits of each proposal should be undertaken. The efficient and effective use of resources and indirect and direct benefits should be taken into account.¹

¹ Commonwealth Procurement Guidelines, Financial Management Guidance No. 1, December 2008, Section 4 Value For Money.

Consistent with these policies, Telstra believes quantitative estimates of the benefits to end-users and Government of alternative proposals should be made. Telstra believes that price and product choices flowing from transmission duplication may be over-estimated and should be compared to the alternative of better utilising existing transmission capacity.

A comparative assessment should also be made of the benefits that duplication of fibre would bring in the target areas versus the benefits that the extension of fibre would bring to communities that currently are not serviced by optic fibre transmission. While duplication could increase the number of providers of services in some areas, it may not improve access or availability of services. In contrast, extension of the network will greatly enhance access, speed and quality of service in communities that are currently isolated from high-capacity transmission.

For example, in one of the regional centres proposed to get duplicated transmission, Mildura, broadband is already available. ADSL and ADSL 2+ is available from Telstra and resellers, cable broadband from Neighbourhood Cable, and wireless broadband from Telstra, Optus and Neighbourhood Cable. 3G mobile coverage is already provided by Telstra and Optus. Duplicating the fibre link to Mildura may mean a wider choice of transmission providers but it is unlikely to improve access or availability of broadband and mobile services.

In contrast, funding a fibre transmission link to replace the existing radio link between Hawker and Leigh Creek in South Australia would bring significant benefit to communities in the region. Leigh Creek itself is a significant tourist destination, catering to tourists visiting the Flinders Ranges and is the gateway to the famous Strzelecki and Birdsville tracks. Its population of approximately 550 is served by an area school, hospital, police station, library and airport.

Extending fibre transmission would improve network diversity and enable the provision of broadband and other services to business and residents. This would mean greater opportunities for the delivery of remote health, education (and other government services) and help local tourism. Further extending the fibre north to Marree would allow the provision of other services at Marree and Lyndhurst, potentially allow the provision of wireless services at Parachilna (an iconic outback tourist town), lead to improved highway coverage and open up possibilities for improved services to several indigenous communities further north.

Telstra already makes retail services available in regional areas at urban prices through extensive use of national retail pricing. Prices for many services in regional areas have declined in recent years, driven by national price decreases and competition in urban areas. Telstra believes it is likely that this trend will continue.

Expected savings in the costs incurred by access seekers from lower transmission prices may not have a material impact on the availability and prices of end-user services as suggested by proponents of duplication. This is because transmission is only one component of the total cost of providing end to end services. Other factors include sales, operations and maintenance costs, and the cost of “last mile” infrastructure. Even with lower transmission prices, it cannot be guaranteed that the low-population target markets of this initiative could generate sufficient revenue to make a commercial return, particularly given the high fixed costs including mobile or broadband network access equipment required in addition to transmission, and the costs of operations and maintenance. In many cases, reductions in the price of transmission to a provider are unlikely to alter the economic fundamentals that make it difficult to sustain a business case for commercial investment in these small markets.

7. COMPETITIVE NEUTRALITY

The Paper states that the Australian Government may own the transmission infrastructure and that in the future, it may transfer its ownership to NBNCo. If this occurs, then Telstra believes that competitive neutrality principles should apply to the infrastructure.

The Commonwealth Competitive Neutrality Policy specifies that government businesses should not enjoy net competitive advantages over their private sector competitors simply by virtue of public sector ownership. This policy is intended to remove resource allocation distortions arising out of public ownership of significant business activities and to improve competitive processes. It seeks to avoid distortion of investment and other decisions of private sector competitors.²

Consistent with the competitive neutrality policy, rates of return on regional transmission assets funded under the program for their commercial operations should be equivalent to the long-term bond rate plus an appropriate margin for risk. Prices charged to access seekers should reflect full cost attribution for these business activities.

Telstra is concerned that provision of uneconomic additional transmission capacity on routes where spare capacity could readily be made available has the potential to damage the market for regional transmission services, impacting upon possible future investment. On some regional transmission routes, upgrades are likely to be marginally economic for one provider; which means that with duplicate infrastructure, it is likely to be uneconomic for either of the two providers to upgrade their services in the future.

8. STANDARDS AND TECHNOLOGY CONSIDERATIONS

Telstra has in excess of 22 years experience in planning, designing and installing optic fibre transmission networks in Australia. This experience includes direct buried and conduit laid fibre cables in all terrains of Australia. Telstra has an extensive recent history of delivering very large projects. The most recent example is over 800 kilometres of optic fibre through Arnhem Land in NT providing broadband services to remote communities and mining interests.

Transmission construction must include fibre route selection, survey and production of detailed build plans across relevant terrains, taking into account considerations such as cultural heritage, archaeological and environmental concerns.

Specialised capabilities are required to construct optic fibre transmission networks. Telstra has highly specialised and patented “zero tension” laying and hauling equipment to ensure no damage to the delicate fibres during the cable laying process. Telstra employs a heavy machinery fleet of 23 bulldozers, of which 15 are equipped with specialised, patented, zero tension cable laying kits. Specialised equipment perform clearing and ripping activities in advance of the ploughs.

A critical aspect of Telstra network design is the intended and actual level of reliability. We seek to ensure the network can continuously support end-user applications even under circumstances of major events such as natural disasters, human error or terrorism. ‘Self-healing’ network rings create diversity where communications can be re-routed when a single link is broken. Without this, cyclones, cable cuts caused by digging equipment, or other incidents that break a single transmission link can isolate whole communities. Telstra builds

² Commonwealth Competitive Neutrality Policy Statement, Australian Treasury, June 1996, p.4. See also discussion on rate of return requirements, debt neutrality, regulatory neutrality and full cost pricing principles.

network rings wherever possible in regional Australia to improve network robustness and reliability.

The quality of a transmission service is also influenced by operational support capabilities including systems, processes, people and training. Telstra provides its customers with a choice of service level commitments, from basic to enhanced commitments each with varying committed response and restore times.

These service commitments are backed up by a 24 hour x 7 day Network Operational Centre (NOC) for monitoring and proactive identification of faults and an extensive, geographically diverse, organisation of fully trained Field Engineers.

Customers of backhaul networks should also have a choice of bandwidths (speeds) to suit various needs. This flexible choice of speeds also needs to be coupled with the ability to upgrade or scale the bandwidth as their needs grow overtime. Telstra offers a range of bandwidth choices from 2Mbps to 10Gbps with flexible upgrade paths along the way.

Telstra believes these key transmission characteristics are the minimum required to offer a suitable and viable backhaul service and should be reflected in the design rules of any future transmission network.

ATTACHMENT 1 – LOCATIONS OF POTENTIAL FIBRE TRANSMISSION PROJECTS

The attached list of 140 locations of potential optical fibre transmission projects has been developed to correspond to an estimated capital cost of \$250m. The list has been prioritised based on the number of services in the particular location combined with local knowledge of community priorities.

A number of these locations have existing mobile telephone services or ADSL broadband that uses wireless transmission with less capacity than optical fibre based transmission. Optical fibre transmission is preferable for providing highly reliable, low latency, very high speed services.

Costs of projects have been estimated based on Telstra experience of previous projects and knowledge of the terrain to be covered. In some cases, detailed engineering studies have been undertaken. Some contingency is included in the estimates, in particular where land access issues can be expected to increase base engineering estimates.

Population estimates have been made based on Telstra knowledge and review of available ABS data. ABS data may not be able to be used directly, because published data may not correspond to telecommunications based definitions of populations.

NSW	Bellbrook	Burncluith	Upper Barron
	Ben Lomond	Chahpingah	Wallangarra
	Bocoble	Chillagoe	Windorah
	Boomi	Cockatoo	Yarrabah
	Collarenebri	Condamine	SA
	Gundabloui	Crownthorpe	Alford
	Hill End	Dalrymple Heights	Biscuit Flat
	Liston	Dirranbandi	Borrika
	Niangala	Elbow Valley	Bowhill
	North Star	Eukey	Calca
	Orita	Glenden	Copeville
	Rowena	Glenmorgan	Elliston
	Sofala	Gordonbrook	Halidon
	Talbingo	Gunpowder	Iron Knob
	Watercourse	Hervey Range	Kulde
	Wyangala Dam	Hopevale	Leigh Creek South
	NT	Groote Eylandt	Jundah
Kaltukatjara		Karumba	Montacute
Plenty		Kowanyama	Nildottie
QLD	Santa Teresa	Kumbarilla	Port Kenny
	Amiens	Lockhart River	Punthari
	Aurukun	Lundavra	Smoky Bay
	Ballandean	Maidenwell	Walker Flat
	Baralaba	Marpuna	Wanbi
	Bedourie	Miamba	TAS
	Beebo	Millaroo	Wynarka
	Bennett	Moonie	Blessington
	Binjour	Muttaburra	Bronte Park
	Birdsville	Nandi	Hermitage
	Bloomfield	Nandowrie	Maydena
	Bollon	Orion	Miena
	Boondooma	Ravenswood	Queenstown
	Booyal North	Rolleston	Rosebery
	Bramston Beach	Second Beach	Savage River
	Broadsound Range	Thallon	Strahan
	Brooweena	Turkey Beach	Tullah
Burketown	Ubobo	VIC	
			Waratah
			Zeehan
			Baynton

Benambra
Buchan
Dargo
Ensay
Gelantipy
Genoa
Goon Nure
Hordern Vale
Mallacoota
Mia Mia
Redesdale
Woods Point
WA
Allanooka
Balgo
Beacon
Burracoppin
Cascade
Cundinup
Horrocks
Irrungadji
Kalumburu
Marvel Loch
Pingelly East
Porongurup
Pumphreys
Quindanning
Round Hill
Westonia
Yealering