

Provision of telecommunications infrastructure in new developments Regulation Impact Statement for Final Assessment

Context

Since 1997, Australia has had an open market in telecommunications, both in terms of infrastructure provision and service provision. In the new developments space, carriers have been free to compete with one another to provide telecommunications infrastructure.

By 2009, Telstra was providing copper infrastructure, largely at its cost, in new developments in fulfilment of the Universal Service Obligation.¹ It was also offering a fibre-to-the-premises (FTTP) solution, branded as Velocity, on a commercial basis. There were a number of smaller providers competing with Velocity offering similar solutions on a cost recovery basis.

With the establishment of the National Broadband Network (NBN) in 2009, the then Government decided that there would be competing provision of infrastructure in new developments. The then Government also decided that NBN Co would be the infrastructure provider of last resort (IPOLR) and the company would not levy upfront charges on developers. These arrangements were set out in the *Fibre in new developments: policy update* (the 2011 policy).²

Under the 2011 policy, developers are allowed to choose any carrier to service their developments. If a developer does not choose a carrier, NBN Co and Telstra have responsibilities as providers of last resort to service developments. Generally, NBN Co must provide fibre to the premises (FTTP) infrastructure in developments that comprise 100 or more lots, while Telstra is responsible for other developments. Developers are responsible for meeting the cost of pit and pipe infrastructure, which houses the telecommunications network cabling, in their developments. In developments that NBN Co and Telstra service, developers are required to transfer ownership of pit and pipe to them after installation. It is up to other providers what arrangements they require in this area.

In the developments for which NBN Co is responsible, it must meet the cost of providing infrastructure (including backhaul) from the premises to its point of interconnect. NBN Co does not charge developers or customers upfront for the connection of developments to the NBN.

Assessing the problem

Problems have arisen with the 2011 policy. Smaller providers have pointed to competitive neutrality concerns because NBN Co does not charge developers upfront to service developments. In contrast, such smaller alternative providers must charge developers upfront to recover their capital costs as they do not have access to the capital that NBN Co does through Government equity. As a result, there is an incentive for developers to use NBN Co rather than alternative providers, undermining the business opportunities for those providers.

¹ The objective of the Universal Service Obligation (USO) is to ensure that standard telephone services are reasonably accessible to all Australians on an equitable basis, wherever they reside or carry on business. Telstra is the current universal service provider and must provide a standard telephone service on request.

² www.communications.gov.au/__data/assets/pdf_file/0017/136421/Fibre_in_New_Developments_Policy_Update_Statement_22_June_2011.pdf.

In the absence of such competition, there have been concerns about the efficiency of NBN Co's operations, both in terms of the average cost of servicing premises in new developments and its timeliness in providing infrastructure. Delays in the provision of infrastructure impact on both developer timeframes and access to services for occupants.

Most development is now occurring in established brownfield areas by way of infill or redevelopment or as greenfield development on the urban fringes. Competition in the provision of infrastructure is more likely to occur in such localities where there is existing infrastructure (e.g. backhaul) that can be leveraged, skilled labour is more readily available, and where customer numbers, densities and speed of take-up are likely to be higher. Information available to the Department of Communications suggests that competing providers are more interested in larger, higher value developments. These factors offer competing providers the opportunity of greater margins; however, competition in these markets is expected to keep downward pressure on prices and margins. In less attractive situations, for example, developments located further away from established centres, there may be less competition because commercial cost recovery would lead to prices levels that would be more difficult for developers and consumers to meet. In these instances NBN Co, as provider of last resort, could exert some market power, and increase its costs. In recognition that developers and end-users in these situations could face greater cost imposts, measures would be needed to keep costs manageable.

In 2011, three smaller alternative providers lodged a complaint with the Australian Government Competitive Neutrality Complaints Office (AGCNCO) against NBN Co. While the AGCNCO concluded that NBN Co's operations technically did not breach the competitive neutrality rules, the present Government is concerned that the arrangements under the 2011 policy provide NBN Co with an unfair advantage in the new developments market. While the Government considers that NBN Co should be able to compete in new developments, it does not consider alternative providers can compete fairly given how NBN Co currently operates. The Government is also concerned the rollout of infrastructure in new developments is inefficient because NBN Co does not have effective competition.

Against this background, in December 2013, the Government commissioned a panel chaired by Dr Michael Vertigan AC to review the market structure and competitive arrangements in the telecommunications sector, including the provision of infrastructure in new developments. The panel's report,³ published on 1 October 2014, recommended that NBN Co be required to recover from developers the full cost of providing telecommunications infrastructure in new developments, with a view to promoting competition and efficiency in the sector. In expressing this view, the panel, noted, amongst other things, that developers meet a large proportion of the cost of other infrastructure in new developments.

Australians expect a wide range of infrastructure to be available in new developments when they occupy them. Some of this is economic infrastructure or basic utilities such as roads, drainage, water, sewerage, electricity, gas and telecommunications; other infrastructure is social infrastructure, such as parks and libraries. According to the Productivity Commission, in the past 30 years there has been a strong trend towards upfront funding of such infrastructure as opposed to funding it through ongoing utility charges. Commonly these

³ www.communications.gov.au/broadband/national_broadband_network/cost-benefit_analysis_and_review_of_regulation/nbn_market_and_regulation_report.

costs will include costs for extending infrastructure to new developments (trunk and head-end cost) and in-estate costs (e.g. local distribution). Cost may be recovered in full or, in recognition of wider community benefits, in part. This accords with the research of the Department of Communications. The Productivity Commission has observed that upfront charging may encourage greater efficiency in the supply of infrastructure.⁴

The Department's research indicates that most infrastructure is provided by a single utility in a new development (e.g. a water or electricity authority or local government). Sometimes a developer may be required to fund that sole provider to provide the infrastructure; in other instances the developer may be able to contract a third party to provide the infrastructure to a standard required by the sole provider, enabling a degree of competition in the provision of that infrastructure. To the extent that the funding of telecommunications infrastructure in new developments in Australia has not followed the broader trend to infrastructure charging and developer contributions, there is a concern that telecommunications infrastructure provisioning has not been subject to the same efficiency disciplines as the provision of other infrastructure.

Further background on the problems being addressed by the policy, including the need to balance competing interests, is set out in section 2 of the *Telecommunications in New Developments* policy.

Objective

Following the release of the Vertigan panel's report, the Government indicated that it would work with developers and other stakeholders to finalise reforms in the area of new developments that address the imbalance in competition in a manner that is fair to all parties. That is, the Government recognised there were a number of competing objectives and range of stakeholder interests that needed to be balanced.

The different stakeholders' interests to be balanced are those of developers and end-users, as well as Government, NBN Co and competing providers. The competing objectives include maximising competition and efficiency, while not putting a significant financial burden on developers and end-users so as to minimise any impact on housing affordability and the cost of telecommunications.

To the extent that Commonwealth funding may be utilised to provide infrastructure, the Commonwealth has an interest in achieving value-for-money in the use of that funding and potentially retaining an interest in the assets that may be realisable sometime in the future.

The Government's objective therefore is to put in place a policy framework that effectively balances competing objectives and stakeholder interests so that there is greater scope for competition to foster efficiency and innovation in the servicing of new developments while delivering acceptable outcomes for consumers and developers.

⁴ Productivity Commission, *First Home Ownership*, Report no. 28, Canberra, 2004, pp. 155-178; *Public Infrastructure*, Report no.71, 2014, pp.69-71

This Regulation Impact Statement (RIS) considers options to encourage sustainable competition in the provision of telecommunications in new developments, while balancing the interests of developers and consumers. These objectives are reflected in the criteria used to assess the options considered.

Attachment A details the regulatory burden measurements and compliance costs for each option considered in this RIS.

Options

The following elements will be present under all options considered below:

- developers will meet the cost of pit and pipe infrastructure in new developments; and
- carriers will be free to require the provision of pit and pipe and the transfer of its ownership as a condition of providing infrastructure.

Requiring developers to meet the cost of pit and pipe recognises the investment carriers make in providing telecommunications infrastructure in new developments. This arrangement is also set out in the 2011 policy.

Option 1: Retain the current policy

Option 1 is to retain the 2011 policy without changes. Developers would continue to have the ability to choose any carrier to service their developments, with NBN Co and Telstra responsible for providing infrastructure where the developer does not choose another provider. NBN Co would not charge developers upfront to service developments.

Option 2: Vertigan recommendations, assuming full cost-recovery

Under option 2, the Government would replace the current policy with a new policy that sets out the Vertigan panel's recommendations in this area. Developers would still be able to choose any carrier to service their developments, but they would be responsible for meeting the cost of the infrastructure, including in-estate cabling and backhaul extensions required to connect the development to the provider's network.

Carriers servicing new developments would be free to set their charges on a cost recovery basis that reflects market factors. NBN Co would also charge developers to service their developments at commercial prices. It would be open to carriers, including NBN Co, to recover their full costs upfront if the market could bear this. Carriers would also be able to offer the provision of pit and pipe as part of a turn-key solution.

NBN Co has reported that, as of 31 December 2014, the design and build cost per lot for premises in new developments is \$1,616. Including the temporary transit network component, the total cost increases to \$2,780.⁵ In addition, developers already need to meet the cost of pit

⁵ Senate Estimates, Environment and Communications Committee, 24 February 2015. At the Senate Estimates hearing, NBN Co provided the Committee with a short paper outlining the estimated cost per premises to NBN Co to service premises in brownfield areas, new developments and fixed wireless areas. For new developments, the paper noted the cost per premises to be \$2,750 at December 2014. This figure comprises design and build (\$1,616) and temporary transit (\$1,135).

and pipe, the estimate cost of which is \$600-\$800 per lot. This would bring the typical cost of an NBN Co connection to \$3,380-\$3,580 per lot.

NBN Co would have provider of last resort responsibilities where it has a network presence, but would charge developers on a cost recovery basis to service developments. Telstra would continue to be the provider of last resort in smaller developments pending its structural separation or NBN Co's rollout in the area. In the absence of other providers wishing to service such developments, Telstra and NBN Co would have significant market power in setting their prices.

To ensure end-users in developments have access to quality services, carriers servicing developments would be required to meet minimum service benchmarks, set by the Government. The Government would also work with state and territory governments to amend their respective planning laws to require developers to contract a carrier to provide telecommunications infrastructure in their developments.

Option 3: Partial upfront cost recovery

Under Option 3, the Government would replace the current policy with a new policy that provides for NBN Co to recover from developers part of its costs upfront with the remainder recovered over time through ongoing charges. Alternative providers would be able to implement their own preferred pricing strategies in light of this, charging upfront in full or part and recovering any residual costs over time. This would create a more standardised charging framework, based on that currently applying, to support competition, in that some charges are recovered upfront, and others overtime, better allowing providers to compete on price and quality. Developers would be able to choose from competing providers to service their developments. NBN Co's charges would be set so that they created scope for other providers to compete with it, while providing protection to developers and consumers against significantly higher costs that could impact housing affordability and telecommunications usage. That is, the charges would act as price floors and price ceilings.

NBN Co and Telstra would be able to charge developers and end-users commercial prices to service new developments. In terms of proposed charges, NBN Co would:

- charge retail service providers (RSPs) a one-time connection contribution of \$300 per premises, which RSPs may pass through to end-users;
- charge developers a contribution for in-estate infrastructure of \$400 per lot for multi-dwelling units and \$600 per lot for single-dwelling units; and
- where there is no available backhaul, charge developers up to 50 per cent of the first \$1000 per lot of capital costs it incurs and 100 per cent of any additional backhaul costs that are in excess of \$1000 per lot capped at total cost.

There would also be an onus on NBN Co to offer backhaul services to alternative providers if this was necessary to future support effective competition.

The charging levels are based on five main inputs: estimated costs of providing pit and pipe in new developments; information from NBN Co on its costs in servicing new developments; information from competing providers on their costs and charges for servicing new developments; feedback from developers as to the level of additional costs they could

reasonably manage; and current charges faced by consumers. This data has been used to establish price points (based on turnkey solutions⁶) able to sustain competition and promote efficiency in NBN Co, while protecting against significant cost impacts for developers and consumers (on a per lot/premises basis).

Information from competing service providers indicated that they consider they could effectively compete with NBN Co if NBN Co's charges for SDUs (including the cost of pipe and pit and any end-user charge but excluding significant new backhaul) were around or above specified levels. However, higher density developments like MDUs are typically less expensive to service than less densely populated SDU developments. The Department also received reports that some providers' charges were significantly lower. (In the case of backhaul, it is assumed most providers, including NBN Co, will face similar costs if competitive backhaul is available, which is increasingly the case for most developments.)

Telstra currently charges consumers a \$300 connection charge. Competing providers charge consumers similar connection charges, although their rates can be higher, depending on how much the provider recovers directly from developers as opposed to the end-user.)

As noted above, NBN Co's typical costs in December 2014 for in-estate infrastructure were \$1,616 and, including backhaul, \$2,780.

Using this information, the charges proposed were constructed. First they seek to limit the additional impost on developers, noting developers will still need to meet pit and pipe costs of \$600-\$800 per lot. Second, they seek a reasonable contribution from end-users, consistent with existing market practice. Third, they aim to overlap with the costs and charges proposed by competitors, noting the risk the proposed prices were inflated, the need to encourage efficiency from these providers as well as NBN Co, and the scope for all parties to recover residual costs over time. This produced a \$300 charge for end-users; in-estate costs of \$600 for SDUs and \$400 for MDUs (reflecting variations in costs for these two types of premises); and backhaul costs of up to \$500 for typical lots/premises. All up, this would mean typical NBN Co charges could range from \$1300⁷ for MDUs to \$2200⁸ for SDUs with the cost of backhaul and pit and pipe being the main variables. Costs and charges reported by competing providers fall within this range, and their charging models are comparable in structure to that proposed. (While NBN Co (and other providers) can recover all backhaul cost in excess of \$1000 per lot, such estates are seen as outliers, and there is general consensus they should face full recovery of backhaul costs.)

As such the charges are constructed to provide competitive opportunities for other providers, in line with their own and other cost information. In addition to price competition through reducing costs in all areas, competitors can also compete on timeliness of delivery and network functionality (e.g. their ability to support television delivery and other value-added services). Given its reported cost levels and the prices specified, NBN Co will be under pressure to improve its efficiency. At the same time, protecting developers and consumers from excess price shocks will have flow-on benefits for housing affordability and telecommunications costs. Should the model work to promote competition and improve

⁶ A turnkey solution in this context is one that is inclusive of all infrastructure needed to provide services and includes pit and pipe, backhaul, in-estate infrastructure (e.g. cabling) and premises connection.

⁷ I.e. \$1300 = \$600 for pit and pipe; \$400 for MDU infrastructure; \$0 for backhaul; \$300 for connection.

⁸ I.e. \$2200 = \$800 for pit and pipe; \$600 for SDU infrastructure; \$500 for backhaul; \$300 for connection.

efficiency such that price shocks were unlikely, there would be scope to review the price levels to see if they could be removed or reduced.

Telstra and other network providers would be able to set its own charges for providing infrastructure in new developments.

Carriers, including NBN Co, would be able to offer pit and pipe infrastructure as part of a turnkey solution.

NBN Co and Telstra would continue to be providers of last resort for developments.

NBN Co would supply backhaul to competing providers on a commercial basis to help them compete on an equal footing. NBN Co would be able to charge developers a commercial price for the provision of backhaul.

To ensure end-users have access to quality services, carriers would need to comply with a licence condition to ensure their networks meet minimum standards are delivered.

The Government would work with state and territory governments to require the provision of telecommunications infrastructure as a condition of, for example, development approval and occupancy.

Option 4 – NBN Co subsidy to competing providers

Under Option 4, the Government would replace the current policy with a new policy under which NBN Co would be required to put in place a scheme to fund competing providers to install networks of an appropriate quality in new developments. Ownership of the networks would reside with the carriers installing the networks, the networks would not transfer to NBN Co. The scheme would be similar to a funding scheme.

The model would work in the following manner. A developer would call for tenders from carriers to roll out telecommunications infrastructure of the requisite standard in its development. NBN Co would be required to participate in the tender. Based on compliance with tender specifications, the price and any additional offerings, the developer would select its preferred carrier.

If NBN Co was not the preferred tenderer, it would pay the preferred carrier a subsidy equal to the amount it tendered. That is, the level of funding would be capped at the amount it would cost NBN Co to service the development. If the alternative provider's cost is lower, it would receive an incentive payment through the funding it receives from NBN Co.

Alternatively, the benefit could be shared with NBN Co. It would also be open to the developer to make an additional contribution over and above what NBN Co would pay if the developer wished to use an alternative provider, for example, because it thought it offered a superior product.

NBN Co would remain the provider of last resort to ensure there was at least one carrier to service all areas.

Option 5 – Buy-back scheme operated by NBN Co

Option 5 is based on the Government's election policy. Under option 5, the Government would replace the current policy with a new policy under which developers would contract a third party network provider to service their developments. NBN Co would then purchase the network from the developer for a pre-agreed price if the network meets NBN Co's specifications. Developers would be able to choose the provider of their choice.

NBN Co would secure ownership of the network, as opposed to ownership remaining with the network builder. The scheme would be similar to a sub-contracting scheme, in that NBN Co would effectively delegate construction to developers, with payment upon completion to an appropriate standard and transfer.

Network quality would be underpinned by funding only being paid where networks will built to relevant pre-contracted specifications and performance levels.

NBN Co would remain the provider of last resort to ensure there was at least one carrier to service all areas.

Analysis of options

This section discusses the relative costs and benefits of the five options and their impacts on stakeholders, namely NBN Co, alternative providers, developers, end-users in new developments and the Commonwealth as a potential funder of infrastructure.

The criteria used in the assessment relate to the Government's combined objectives:

- Does the option promote competition in the provision of telecommunications infrastructure in new developments and efficiency?
- Does the option deliver sustainable, quality telecommunications solutions for end-users?
- Does the option minimise the externalisation of telecommunications costs by developers, potentially distorting developer investment decisions?
- How are stakeholders affected by cost impacts?
 - Does the option impose costs on end users in new developments?
 - Does the option impose costs on developers?
 - Does the option impose costs on alternative providers?
 - Does the option impose costs on NBN Co?
 - Does the option impose costs on the Commonwealth?

The principal-agent issue is a market issue that exists in the new development sector. As developers have no ongoing obligations to landowners after they sell the land, developers may have an incentive to secure a lower cost and hence a lower quality telecommunications outcome in their new developments on the basis they can sell their land for a lower price knowing any problems will essentially be ones for the buyers. The contrary to this is that developers who seek lower costs may suffer an ongoing reputational risk.

Option 1: Retain the current policy

Advantages:

- The NBN provides a platform for retail competition. End-users in NBN Co-serviced new developments are able to choose to receive telecommunications services from a number of retail service providers.

- The 2011 policy aims to maximise the installation of fibre-to-the-premises (FTTP) infrastructure in new developments so that end-users in new developments have access to voice and high-speed broadband services.
- The 2011 policy does not impose any costs on developers if they choose NBN Co to service their developments.
- By virtue of developers not having to pay upfront costs for NBN infrastructure, end-users in NBN Co-serviced developments will not need to bear any additional infrastructure costs.

Disadvantages:

- Although the NBN provides a platform for retail competition, the option does not promote competition in the supply of infrastructure in new developments. This option does not respond to telecommunications industry concerns that the 2011 policy creates an unequal playing field. So long as NBN Co does not charge developers upfront to service their developments, developers will have an incentive to choose NBN Co over other providers.
- Because there is little competition in the provision of infrastructure in new developments, there is little discipline on NBN Co to maximise the efficiency of supply of telecommunications infrastructure in new developments.
- While the 2011 policy aims to maximise the installation of FTTP in new developments through the NBN, it does not ensure end-users in all developments will get quality services. There is no obligation on alternative providers to ensure their networks meet minimum voice and broadband service standards. As a result, there have been instances where end-users in developments have complained about network performance in their developments.
- This option does not promote efficient development investment decisions. The 2011 policy does not impose any cost discipline on developers in deciding where to develop new estates because they do not bear any upfront costs if they use NBN Co. This has resulted in NBN Co incurring, in some instances, high backhaul and managed service costs to connect developments to its network. In turn, this has resulted in some delays in providing services to occupants in these developments and has added to rollout costs.
- The 2011 policy imposes a cost on smaller alternative network providers in the form of lost revenue. As NBN Co does not impose upfront charges to service developments, there is an incentive for developers to use NBN Co rather than alternative providers, inhibiting alternative providers' ability to compete in this market. NBN Co faces these costs and needs to recover them over time. They are recovered over a wider customer base, meaning those customers are contributing to the cost of those end-users.
- To the extent the provision of infrastructure in new developments needs to be funded by the Commonwealth through equity (as opposed to NBN Co through retained earnings), this approach is costly to the Commonwealth.

Option 2: Vertigan recommendations

Advantages:

- Creates a more competitive market by requiring NBN Co to recover its infrastructure costs upfront from developers, like other network providers. This in turn creates incentives for NBN Co to service developments more efficiently.
- Competitive supply will put pressure on providers to provide quality outcomes to compete with NBN Co products, noting the principal-agent issue. Moreover, minimum service standards are proposed as a safety net. This will ensure end-users receive quality telecommunications services.
- The option does not allow costs to be externalised to the telecommunications sector because it imposes a cost discipline on developers. Some of the costs associated with installing telecommunications infrastructure (e.g. backhaul) depend on the design and location of developments and developers will need to factor in these costs when they decide where they want to develop.
- Reduces the cost to NBN Co and other providers of providing infrastructure in new developments. NBN Co and other providers would be able to recover their costs upfront when they install the infrastructure, rather than recovering their costs over time.
- To the extent the provision of infrastructure in new developments needs to be funded by the Commonwealth through equity (as opposed to NBN Co through retained earnings), this approach reduces the cost to the Commonwealth.

Disadvantages:

- In the face of charges, there is a risk that some developers may choose not to provide any telecommunications infrastructure in their developments. This would result in end-users not having access to broadband services. However, developers have a commercial incentive to provide broadband services to new homes and if they fail to do so, there is a high risk they will not be able to sell their land to an informed consumer and their reputation could suffer. The proposal for the Government to work with state and territory governments to require developers to ensure their developments have telecommunications infrastructure would provide a safety net for end-users. However, the process to establish the requirements in law can take time.
- Requiring developers to bear the cost of telecommunications infrastructure places an additional financial burden on them. This burden could be significant if competitors' and NBN Co's cost structures are similar. Cost structures are determined in part by the location and design of developments. In locations where NBN Co faces little competition, it would have an incentive and ability to charge the maximum prices the market would bear. NBN Co's reported costs are discussed above. These costs would be in addition to the costs of pit and pipe in developments which developers are already required to fund when they contract NBN Co to provide the infrastructure.
- If developers pass on the full infrastructure costs to new home buyers, the option would impose additional costs on end-users. This may, in turn, affect housing affordability. However, the cost per premises would depend on the full cost applying in the circumstance and able to be recovered given competition and willingness to pay.

Option 3: Partial upfront cost recovery by NBN Co

Advantages:

- Promotes competition by requiring NBN Co to charge developers and end-users prices based on its and other providers actual costs to service new developments. This allows other providers to compete with NBN Co on a more level-playing field. This in turn puts greater pressure on NBN Co and other providers to operate efficiently.
- Where NBN Co's competitors can provide infrastructure at lower cost than NBN Co's specified prices, developers and consumers will face lower costs than if they could only buy infrastructure from NBN Co. Where competitors' costs are higher, they will be able to recover them through ongoing charges, as will NBN Co.
- Competitive supply will put pressure on providers to provide quality outcomes to compete with NBN Co products, noting the principal-agent issue. Moreover, carrier licence conditions would provide a safety net to ensure end-users in new developments receive quality telecommunications services.
- The option would reduce telecommunications infrastructure costs being externalised to the telecommunications industry. Some of the costs associated with installing telecommunications infrastructure (e.g. backhaul) depend on the design and location of developments and developers will need to factor in these costs when they decide where they want to develop.
- The cost to NBN Co of providing infrastructure in new developments would be recovered sooner. The option would allow NBN Co to recover some of its costs upfront when it installs infrastructure, rather than recovering all of its costs over time. Similarly, other providers would be better positioned to charge for their services.
- In comparison to option 2, this option reduces the impact on developers and end-users because it does not require developers and end-users to bear all infrastructure costs upfront. As such, the option recognises that the benefits of telecommunications infrastructure flow through to future occupants and the wider community, not simply the first person being connected.
- To the extent the provision of infrastructure in new developments needs to be funded by the Commonwealth through equity (as opposed to NBN Co through retained earnings), this approach reduces the cost to the Commonwealth, but not as much as option 2.

Disadvantages:

- Partial upfront cost recovery may mean it is still difficult in some instances for alternative providers to compete with NBN Co if the prices NBN Co is to charge under the policy do not reflect the cost of provisioning. This would mean the pressure on NBN Co to operate efficiently may not be as great as it could be (i.e. competitors would not enter these markets and put pressure on NBN Co). This would typically be in markets where the prices NBN Co needs to charge to keep prices reasonable for developers and consumers are below the costs of provision. However, these instances may be limited as it is likely other providers can compete effectively with NBN Co at the prices set, given they have been set with regard to other providers' reported costs and charges. That is, NBN Co's costs are being partially recovered; that does not mean, other providers costs are not being recovered because they may be more efficient. Two important considerations here will be the cost of their pit and pipe solutions and their access to competitively priced backhaul. Moreover, other providers will also be able to recover residual costs over times, like NBN Co.

- The proposal for the Government to work with state and territory governments to require developers to ensure their developments have telecommunications infrastructure would provide a safety net for end-users. However, the process to establish the requirements in law can take time.
- Smaller providers may point to ongoing competitive neutrality concerns on the basis that NBN Co will charge developers prices that are below NBN Co's costs, reducing the margins available to them and potentially reducing their ability to compete. However, as noted above the charges are based on industry input, and will be subject to review.
- Developers will be required to bear an upfront cost for the provision of telecommunications infrastructure in their developments, which they will need to factor in to their development decisions. This will be particularly important in the case of backhaul, the full cost of which they may need to meet over \$1000 per lot. However, because NBN Co will not recover its full costs upfront, the cost discipline may be lower than that under option 2.
- End-users will be required to bear an end-user contribution fee when they first connect to the NBN in their developments, but may also bear additional costs if developers pass through the developer charges to new home buyers. This may, in turn, affect housing affordability. However, because NBN Co will not recover its full costs upfront, the cost per premises would be modest relative to the total cost of house and land.

Option 4: NBN Co subsidy to competing providers

Advantages:

- Promotes more infrastructure competition in the sector because funding by NBN Co would enable competing providers to compete against the company. This would be reinforced by the tendering process that would occur. This competition should produce efficiency gains in providing telecommunications infrastructure in new developments.
- Ensures end-users in developments receive quality telecommunications services because alternative providers will only be able to access funding from NBN Co if they meet the relevant criteria for network standards.
- Reduces the cost on alternative providers because they will be able to receive a subsidy from NBN Co if they are chosen to service a development. If the alternative provider's cost is lower than NBN Co's cost, the alternative provider would receive a benefit from the NBN Co subsidy.

Disadvantages:

- The option does not minimise the externalisation of infrastructure costs to the telecommunications sector because it imposes minimal cost discipline on developers. Developers would not bear costs because providers would receive a subsidy to install infrastructure in developments.
- Imposes costs on NBN Co and the Commonwealth to fund and administer the subsidy scheme. In addition, NBN Co will not receive an asset that it can sell in the future because NBN Co does not purchase the network it subsidises. There is a risk that this option will not be sustainable for the company or the Commonwealth in the long term.
- While a subsidy scheme would enable competing providers to compete, the scheme is also open to gaming which may lead to a decrease in competition and inefficiencies. Because competing providers would be able to receive a subsidy to install networks, they

may under-estimate their prices during the tender stage to maximise the chance of being selected by a developer. It is usually larger companies that have the ability to offer cheaper prices. If this happens, there is a possibility that smaller providers will be pushed out of the market.

Option 5: Buy-back scheme operated by NBN Co

Advantages:

- Promotes more infrastructure competition in the sector because funding by NBN Co would enable competing providers to compete against the company.
- Ensures end-users in developments receive quality telecommunications services because developers will only be able to transfer to and receive payment from NBN Co if the networks are built to NBN Co specifications.
- Reduces the cost to developers and, in turn, end-users, for the provision of telecommunications infrastructure. Developers will be able to receive payment from NBN Co and recover their costs if the network is built to NBN Co specifications. In some cases, the developer will receive a benefit if the pre-agreed price is more than the cost the developer paid to have the network installed.

Disadvantages:

- While the scheme can utilise competitive forces to improve delivery, control and timeframes for developers, the scheme by itself may not enhance infrastructure competition. The option does not benefit alternative providers as it does not provide for them to have ongoing businesses as the networks are acquired by NBN Co. While alternative providers may install the networks and recover the cost of doing so, they do not retain ownership of the networks. As such, there may be less incentive for competing providers to compete in the market.
- Imposes costs on NBN Co and the Commonwealth because the company will be paying developers a price to purchase networks and will not be able to recover those costs. However, in contrast to option 4, NBN Co will secure ownership of the network and therefore retain a long-term asset.
- Imposes costs on competing providers. While competing providers will recover their costs from the developer for installing networks, they will not be able to hold onto the network asset. As such, competing providers will not be able to receive a long-term revenue stream from the operation of the network or later sale of the asset.

Preferred option

While Option 1 would not impose any additional costs on developers and end-users, it does not promote infrastructure competition and efficiency in the sector and does not address the telecommunications industry and Government concerns that the 2011 policy is unfair to alternative providers. Without effective competition, NBN Co has no impetus to roll out its infrastructure in new developments in a more efficient manner or to offer additional services on its network beyond basic broadband and voice to meet changing consumer demands. Consequently, this option is not favoured as its advantages do not outweigh its benefits.

Option 2 would promote a more level playing field by requiring NBN Co to charge developers upfront to service their developments. However, the option is not a balanced

option and could require developers and end-users to bear a significant financial burden. To the extent that competition drives costs down to levels manageable for developers and consumers, these concerns may not arise. However, to the extent that competition does not have this effect, full recovery of costs by NBN Co could involve significant amounts as noted above. While the Government's view is that users of infrastructure should fund that infrastructure, the Government also recognises that the provision of telecommunications involves high upfront capital costs that may discourage take-up and, as a networked infrastructure, there are multiple beneficiaries of the infrastructure, not simply the first person being connected. There is also a risk that, faced with the prospect of charges, some developers will not install telecommunications and therefore leave end-users without any services. To ensure there is a safety net, the Government would work with state and territory governments to require developers to do so, but the process for establishing this requirement could take time. On balance, the disadvantages of option 2 outweigh its advantages.

Option 3 also promotes infrastructure competition but not necessarily to the same extent as Option 2. However, as the prices proposed are based on competitors' claims about costs and charges (as opposed to NBN Co's), there are still good reasons to expect strong infrastructure competition. Moreover, it is a more balanced option in comparison to option 2 because the cost of NBN infrastructure in new developments would be shared between NBN Co, developers and end-users. Option 3 recognises that network infrastructure is a shared infrastructure and the developer and first occupants should not have to bear all costs.

Like option 2, there is a risk that in the face of charges, some developers may not install telecommunications infrastructure and end-users would be left without access to fixed services until a requirement is placed on developers to install the infrastructure. However, because developers will incur lower infrastructure costs relative to what they would incur under option 2, the risk of developers not installing infrastructure is reduced. On balance, option 3 is a reasonable approach.

Option 4 would promote infrastructure competition because an NBN Co subsidy to competing providers to install infrastructure in new developments allows those providers to compete against the company. However, the scheme is costly for NBN Co and the Commonwealth. In addition, it costs NBN Co money to provide subsidies and because it is a funding scheme, the company does not receive any network assets in return for the payment. For these reasons, the disadvantages of option 4 outweigh its advantages.

Option 5 can enable developers to take more control of the timeframe and delivery of telecommunications infrastructure to their developers, while at the same time allowing developers to recoup its costs through funding from NBN Co. However, the scheme does not support long-term ongoing competition because it allow other providers to continue to operate in the market. It also involves significant costs for NBN Co. Once providers install a network to NBN Co specifications, the network is transferred to NBN Co and the provider retains no asset. It also imposes costs on NBN Co and the Commonwealth because the company will pay developers a price to secure ownership of the networks. For these reasons, option 5 by itself is not preferred.

The preferred option is option 3 but with elements of option 5. Charging supports competition as it allows other providers to compete on a more level playing field with NBN Co, whose charges would be based on lower costs and charges reported by other providers. It therefore promotes efficiency. Charging also promotes efficient decision making by

developers when they acquire land because they can no longer externalise the cost but must instead account for it when they decide where to develop. In addition, the cost of infrastructure is spread amongst different stakeholders, recognising wider community benefits, so developers and end-users only face partial (or efficient) costs upfront. The approach also reduces the call on Commonwealth funding.

By integrating aspects of the buy-back scheme into the option 3 model, developers can be given greater control over delivery and timeframes where this is useful to them and NBN Co. However, the charging requirement would still apply in such situations, meaning developers would effectively build for NBN Co or pay.

Consultation

Vertigan review

The Vertigan panel undertook extensive consultation in early 2014 prior to publishing its reports. For the Regulatory Report, the Vertigan panel released a Regulatory Framing Paper in February 2014 to take soundings from industry and the public on key factors that should be considered, including the provision of telecommunications infrastructure in new developments. The panel received 43 submissions.

Following the release of the Regulatory Report, the Department of Communications had discussions with carriers and industry organisations in relation to the panel's recommendations and invited industry stakeholders to provide feedback on the recommendations.

Release of draft policy paper

On 11 December 2014, the Minister released for comment a paper setting out the Government's preferred approach (combination of options 3 and 5) to the provision of telecommunications infrastructure in new developments. The paper set out and expanded upon the key elements of the Government's proposed approach. The paper set out a proposed commencement date for the policy of 1 March 2015.

Submissions received on the draft policy paper

The Government received 19 submissions on the draft policy paper from a range of stakeholders, including industry bodies, developers, carriers and consultants in the new developments sector. The Government intends to publish the formal submissions on the Department of Communication's website.

Following the release of the draft policy paper, the Department of Communications and the Minister for Communications participated in a range of follow-up discussions with stakeholders, including state and territory government representatives, developers, developer organisations, NBN Co and Telstra.

Overview of feedback on draft policy paper

This section provides a summary of industry feedback on the main policy issues and the adjustments made in response to feedback.

Proposed charges

Developers generally oppose the charges set out in the draft policy on the basis that the charges will affect housing affordability and represent an additional cost burden on developers. Carriers support the proposed policy objective to level the playing field and increase competition in the provision of telecommunications infrastructure in new developments. NBN Co and Telstra support the proposed charges. However, smaller providers consider the proposed charges do not do enough to promote competition and recommend that NBN Co's role in the sector be cut back.

Charging is an inherent part of the policy model as it will help level the playing field and increase competition. Charging for telecommunications infrastructure is consistent with charging for other infrastructures and utilities in new developments. Other utility providers, (water, electricity and gas) generally attribute costs to developers on a full cost recovery basis. However, this does not mean NBN Co should replicate full cost recovery in new developments. The Department understands that there is generally no competition at the infrastructure level in these utility sectors, rather it occurs at the retail level; although there may be scope to contract out construction work. Generally each state and territory has one provider for each utility that connects new premises to their respective networks. In contrast, competition exists in relation to telecommunications in new developments. A number of providers compete to provide telecommunications infrastructure in new developments. As such, the Department has set the proposed charges in light of what it understands competing providers charge in new developments.

In addition, NBN Co will not be recovering its full costs upfront and the estimated costs per premises will be modest relative to the total cost of house and land.

In relation to smaller providers' concerns, NBN Co should be able to compete in the new developments market and smaller providers may not be able to meet the demand in the sector across Australia. Even though NBN Co is not charging full cost, the proposed charges were set with regard to the prices competing providers say they can compete at.

Backhaul

Developers expressed concern about the level of backhaul charges and recommended that the charges be aligned with developer cash flows because the sale of house and land packages can spread over a number of years. Many developers also expressed concern that the proposed approach to backhaul charging will be unfair on the first developer to develop in an area. The draft policy requires the first developer to develop in an area to fund backhaul costs, which later developers would benefit from.

In light of feedback, the Government amended the policy to provide NBN Co with flexibility to set backhaul payment terms with developers. The Government also amended the policy to provide NBN Co with greater flexibility to set backhaul charges so the company could more fairly recover costs from the range of developers making use of the backhaul concerned.

Timing

Developers were concerned that the proposed 1 March 2015 policy start date did not provide industry with sufficient lead time to prepare for the changes. Developers also requested clarity about what developments will be subject to charging and when charging would commence.

In light of feedback, the Government amended the policy to clarify that in-estate deployment charges on developers will apply to new applications approved by NBN Co on or after 1 March 2015, as envisaged in the draft policy. However, because of notification requirements these charges will only be collected from the second half of the year. In addition, the end-user contribution and backhaul charges are scheduled to commence on and from 1 July 2015 to provide the development and communications industries with more time to adjust.

Cost offset measures (pit and pipe and buy-back scheme)

Developers generally support the proposal to standardise pit and pipe specifications, but would like NBN Co's pit and pipe specifications to be simplified first. Many consider NBN Co's current specifications to be 'gold-plated'. The policy will continue to provide for the simplification of NBN Co's pit and pipe specifications, but will provide for a specialist working group to do this.

Some developers are also interested in the buy-back scheme because it can be cost-effective and will give developers more control over the delivery of infrastructure in their developments. On the other hand, other developers see the scheme as posing too much risk. In light of this feedback, the Government has amended the policy to remove the requirement on NBN Co to conduct trials for the buy-back scheme. Instead, the policy will give NBN Co discretion to engage with developers to conduct pilots of the scheme.

Telecommunications requirements in state and planning law

Some developers did not support the inclusion of telecommunications requirements in state and planning law (i.e. requirements on developers to contract with a carrier to install infrastructure before they can sell land). Developers consider current planning processes are already time consuming and costly. The Government considers that there should be an onus on developers to ensure their developments have telecommunications infrastructure before they sell lots so that end-users have ready access to services when they move in. However, in light of this feedback, the Government has amended the policy so that the language is more general on how this objective will be achieved.

Regulatory costings

The Department wrote to 33 stakeholders who had shown interest in the policy to seek their views on the regulatory costings. This included developers who had provided a submission on the draft policy, developer bodies, carriers and state and territory governments. Five stakeholders provided submissions on the regulatory costings.

The Department has considered the comments received on the costings and is of the view that the reduction in carriers' inspection costs resulting from the standardisation of pit and pipe

guidelines should be reflected in the costings. The Department considers that the administrative cost of each option should be increased in recognition that full time equivalents would need to maintain and undertake ongoing work on the pit and pipe standard once it is established. The Department also considers the estimated average number of residential premises completed each year should be increased after taking into account more historical data and the estimated average number of 'other' premises completed each year should be reduced. The Department now estimates the annual average regulatory saving under the preferred option over ten years at \$61.33 million.

The Department does not consider the costing should be adjusted to provide for the cost of a standardised business-to-business interface for RSPs and network providers. While the new policy acknowledges the benefits of a standardised interface, it leaves it to industry as to whether it implements one and how it is best done. As such, if industry were to build its own interface, it would be a commercial decision for it. It would not be appropriate to include it in the costing framework. By contrast, the policy provides for NBN Co to make its interface specification available to other provider on a commercial basis if that is industry's preferred course of action. Again, this would be a commercial arrangement.

The Department does not consider the costing should be adjusted to provide for the cost on carriers to provide geospatial information on developments it has contracted to serve. This requirement will be included in a new carrier licence condition, which will require a separate RIS. As such, the costs associated with providing geospatial information would be better suited to being considered in the carrier licence condition RIS.

The Department does not consider the costing should be adjusted to provide for costs associated with the proposed IPOLR adjudicator. The adjudicator system is envisaged to be a user-pays scheme that will be utilised by carriers if they cannot come to a commercial agreement. As such, it would not be appropriate to include it in the costing framework.

In addition, the Department does not consider the costing should be adjusted to increase the cost estimates for backhaul contribution and labour costs. The estimated backhaul contribution in the costings is a 'national average' estimate. Given the different make-up of new developments in each state and territory, the average estimate may be high for some areas (where developments occur in established areas close to existing backhaul) and may be low for other areas (where developments occur on the urban fringe). In relation to the labour cost, in the absence additional comments from multiple stakeholders, the Department's preference is to use the current average wage rate provided by the Australian Bureau of Statistics.

Implementation and review

The implementation of option 3 and with elements of option 5 will be achieved through the publication of a policy paper. This will require NBN Co to charge for the provision of NBN infrastructure in new developments. The new policy will effectively free the company from the past restrictions on doing this. Other supporting elements of the proposed policy will be implemented as soon as practicable with further stakeholder engagement. The minimum broadband and voice service standards for carriers servicing new developments will be implemented, likely through carrier licence conditions made by the Minister. There was stakeholder support for appropriate service outcomes, but little comment on the use of a carrier licence condition to do this or what a carrier licence condition should include. As

such, the Government will be further engaging with stakeholders on this and other elements and will be preparing a further RIS.

The Government will evaluate the effectiveness of the new policy, including the proposed charges, through its ongoing monitoring of industry developments and liaison with carriers and developers. The Government will review the policy framework and adjust the proposed charges as needed in response to developments in the market. The Government will comprehensively consult on any future proposed changes to the policy. If it has not done so beforehand, the Department envisages the policy, including charging levels, will be reviewed three years after implementation.

Regulatory costings

All RISs must be accompanied by a costing of the regulatory compliance burden of regulatory and policy options. If costs will be imposed by the new measures, the RIS must also identify measures that offset those costs, including countervailing savings from the changes. The regulatory burden measurement (RBM) framework involves consideration of:

- compliance costs (administrative costs⁹ and substantive compliance costs¹⁰); and
- delay costs (expenses and loss of income incurred by a regulated entity through an application or approval delay).

The RBM Framework

The additional cost on developers and end-users under options 2 and 3 that results from NBN Co imposing upfront charges is not considered under the RBM framework. This is because the RBM does not cover business-as-usual costs. Rather, the RBM only measures regulatory burden over and above what a normally efficient business would do in the absence of regulation. Any upfront payment that NBN Co or other carrier charges to a developer would be considered a business-as-usual cost to the developer. The size of the charge is considered a commercial arrangement between the developer and NBN Co or any other carrier and is irrelevant to the RBM.

The purpose of the RBM framework is to determine the annual regulatory costs or savings incurred by the regulated entity under each option considered in the RIS measured over a 10-year period. The average annual regulatory costs (or savings) set out in the tables below are determined by dividing the sum of regulatory compliance and delay costs and savings over a 10-year period (in this case, the period is 2015-2024) by the number of years (10). The costings and savings outlined below are measured against the status quo, or business as usual scenario. That is, they are measured against option 1 (retaining the 2011 policy). Hence, the costs of option 1 are neutral.

⁹ Costs incurred by regulated entities primarily to demonstrate compliance with the regulation or policy (usually record keeping and reporting costs). See: Australian Government, *Regulatory Burden Measurement Framework Guidance Note*.

¹⁰ Costs incurred to deliver the regulated outcomes being sought (usually purchase and maintenance costs e.g. training, plant and equipment). See: Australian Government, *Regulatory Burden Measurement Framework Guidance Note*.

Base case assumptions

Average number of new residential premises built per year	146,000 ¹¹
Average number of other premises built per year (commercial, industrial and government premises)	14,600
Number of premises in NBN Co's new developments pipeline ¹²	200,000
Number of premises in Telstra's new developments pipeline	100,000
Number of new premises subject to policy changes in 2015	10,600 ¹³
Number of new premises in 2016 subject to policy changes in 2016	10,600
Average number of new premises to be built per year between 2017-2024 that would be subject to any policy changes	160,600 ¹⁴
NBN Co's market share of new premises in 2015-2019 ¹⁵	50%
NBN Co's market share of new premises in 2020-2024	50%

Of the NBN Co's 50% market share, it is assumed that 5% of these premises will be situated in non-commercial areas that NBN Co, as the IPOLR, must provide infrastructure to.

Overview of options

Options	Preferred	Costs
1: Retain the 2011 policy	No	Neutral –NBN Co will be required to continue waiving upfront costs for the provision of infrastructure in new developments.

¹¹ Australian Bureau of Statistics (ABS), *8752.0 – Building Activity, Australia, Sep 2014*, 'Table 37 – Number of Dwelling Unit Completions by Sector, Australia', accessed at www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/8752.0Sep%202014?OpenDocument. The table provides historical data on the number of dwelling units completed (houses and other residential dwelling units) each quarter from 1955 to 2014. As the number of dwelling units completed is largely consistent from year to year, the Department has estimated the number of new residential premises to be completed over the next 10 years using this historical data. Based on an analysis of the number of dwelling units completed per year between 2004 and 2013, the average number of completions per year is 146,593. As such, it is estimated that about 146,000 new residential premises will be completed each year over the next 10 years.

¹² The number of premises currently in Telstra's and NBN Co's pipelines is important because they comprise new premises under legacy contracts which NBN Co and Telstra contracted to connect for free under the 2011 policy. As such, these premises would not be subject to the effects of any policy changes.

¹³ Assuming the pipeline covers two years and half of the premises (150,000) will be built in 2015 and the other half in 2016, then the number of new premises that will be subject to policy changes would be affected in these two years. If 206,000 premises are built each year, then the number of new premises that would be subject to policy changes would be reduced by 150,000 in 2015 and 150,000 in 2016 (56,000 in each year).

¹⁴ 144,000 new residential premises + ,14,600 other premises.

¹⁵ The NBN rollout is estimated to finish in five years (2019). Until then, Telstra will continue to have a transitional role in new developments, including fulfilling its role as IPOLR in sub-100 premises developments. After 2019, Telstra is expected to no longer have a role in new developments. In 2012, the Australian Competition and Consumer Commission accepted Telstra's Structural Separation Undertaking (SSU). The SSU commits Telstra to structurally separate its retail arm from its wholesale arm through the progressive migration of voice and broadband services from Telstra's copper network onto the NBN. As a result of the SSU, Telstra will not be rolling out new access networks after it has structurally separated.

<p>2: Vertigan recommendations</p>	<p>No</p>	<p>Deregulatory Savings</p> <ul style="list-style-type: none"> • The regulatory change would permit NBN Co to charge in accordance with market forces and potential full cost recovery in exchange for providing infrastructure in its capacity as provider of last resort. <p>Administrative Costs</p> <ul style="list-style-type: none"> • Establishment of minimum service standards for carriers servicing new developments. • Establishment of industry standard for provision of pit and pipe infrastructure.
<p>3: Partial upfront cost recovery</p>	<p>Yes – but combined with option 5 (see option 6)</p>	<p>Deregulatory Savings</p> <ul style="list-style-type: none"> • The regulatory change would permit NBN Co to charge specific and directly attributable charges (set out in contract) in exchange for providing infrastructure in its capacity as provider of last resort. <p>Administrative Costs</p> <ul style="list-style-type: none"> • Establishment of minimum service standards for networks in new developments. • Establishment of industry standard for provision of pit and pipe infrastructure.
<p>4: NBN Co subsidy to competing providers</p>	<p>No</p>	<p>Substantive Costs</p> <ul style="list-style-type: none"> • NBN Co would be required to provide a subsidy to competing providers if they were selected by developers to roll out infrastructure. Ownership of network assets would reside with the competing provider. The subsidy is considered a cost to deliver the regulated outcome. <p>Administrative costs</p> <ul style="list-style-type: none"> • NBN Co would be required to administer what is in effect a complex tendering and funding scheme to fund networks built by competing providers. It is envisaged the funding scheme would set out minimum service requirements and pit and pipe requirements.

5: NBN Co-operated buy-back scheme for developers	No	<p>There is no change in substantive cost to NBN Co because in this instance it is not recovering costs from the developer. NBN Co is still funding infrastructure but effectively sub-contracting its provision.</p> <p>Administrative Costs</p> <ul style="list-style-type: none"> NBN Co would need to establish a scheme where it enters into agreements with developers under which the developer contracts a provider to build a network to NBN Co's specifications and then transfers the network to NBN Co at a pre-agreed price.
6: Combination of option 3 and option 5	Yes	Sum of regulatory costs/savings of options 3 and 5.

Option 1 – retain the 2011 policy: assumptions

There is no change in regulation – regulatory burden impact is neutral. Under the 2011 policy, NBN Co did not charge developers for the installation of telecommunications infrastructure in new developments. Instead, the company absorbed the costs of providing infrastructure. However, as the costs/savings of the options in this RIS are measured against the 'status quo', the average annual regulatory costs for option 1 is \$0.

Average Annual Regulatory Costs for Option 1 (compared to Option 1)				
Change in costs (\$million)	Business	Community Organisations	Individuals	Total change in cost
Total by Sector	\$0	\$0	\$0	\$0

Option 2 – Vertigan recommendations: assumptions

Substantive Compliance Savings

- Under this option NBN Co would be free to charge any rate and would not be operating under a price cap. This would reduce the cost imposed on NBN Co.
- If the provision of new developments infrastructure was completely left to the market (noting NBN Co is still obligated to operate as the infrastructure provider of last resort) then it is assumed that NBN Co would charge the maximum rate developers were able to pay for the provision of infrastructure where competition does not exist (noting this rate may be below marginal cost).

- It is assumed that it would cost NBN Co around \$1,600¹⁶ to service each new premises. If it is assumed that developers are able to pay this rate, it is then assumed that NBN Co would charge around \$1,600 per premises to service new developments.
- Based on the total number of premises NBN Co is estimated to service over the next 10 years (see base case assumption above), NBN Co would receive an estimated \$1,062 million over the next 10 years if it charges \$1,600 per premises (\$106.18 million per year).
- It is estimated that the establishment of a pit and pipe standard will also reduce the inspection costs on network providers by about \$1 million per year.
- Taking into account the average annual administrative costs outlined below, the average annual regulatory costs to NBN Co under option 2 is -\$105.20 million (i.e. an overall saving of \$105.20 million per year to NBN Co). This figure is set out in table below.

Administrative Costs

- As part of the proposed reforms developers would be required to notify authorities that they have made arrangements for telecommunications infrastructure to be installed. An analysis of NBN Co data indicates there are roughly 5,010 individual development applications approved per annum (which we assume means 5,010 notifications to local planning authorities). Each notification is assumed to require 2 hours for the developer to prepare and lodge. Assuming the wage rate is \$65.45¹⁷ per hour, the total compliance cost on developers over the next 10 years is estimated to be \$6.6 million (about \$660,000 per year).
- There are already several well developed specifications for pit and pipe, including those of the Communications Alliance and NBN Co. Given this, the development of a binding minimum specification for pit and pipe infrastructure is estimated to cost no more than \$150,000 to establish based on industry and regulator estimates of similar technical code establishment processes. It is estimated that it would cost \$15,000 (10 per cent of the initial cost) each year thereafter to maintain the standard.
- Given the development market can change from time to time and the development industry may have queries about the pit and pipe standard after it is established, ongoing work would be required to monitor, update and respond to industry queries. It is estimated that 5 full-time equivalents (FTE) would be required to do this work. Assuming the wage rate is \$65.45, there are 260 working days in the year and the average working day comprises 7.5 hours, the estimated cost is \$638,000 per year.
- It is estimated to require a one-off 80 hours of administrative effort to ensure compliance with the proposed carrier licence condition to provide infrastructure in new developments. This is estimated to impact ten businesses who currently operate in the new developments market in the first year (as existing businesses will need to ensure they comply with the carrier licence condition) and one additional business each year thereafter (assuming that from 2016, there will be one new provider entering the market each year). Assuming the

¹⁶ Senate Estimates, Environment and Communications Committee, 24 February 2015. At the Senate Estimates hearing, NBN Co provided the Committee with a short paper outlining the estimated cost per premises to NBN Co to service premises in brownfield areas, new developments and fixed wireless areas. For new developments, the paper noted the cost per premises to be \$2,750 at December 2014. This figure comprises design and build (\$1,616) and temporary transit (\$1,135). For the purposes of the RBM, we have eliminated the temporary transit component. As such, we assume the average cost per premises to be about \$1,600.

¹⁷ The hourly wage rate is based on data published by the ABS. The currently hourly wage rate is \$37.40. With the wage adjusted for an oncost multiplier of 1.75, the adjusted hourly wage is \$65.45.

wage rate is \$65.45, the estimated cost on businesses in the first year is about \$52,300 and \$5,200 each year thereafter.

- It is estimated NBN Co would require 5 full-time equivalents (FTE) to administer charging arrangements. This is less than the amount of FTE required for option 3 (see below) as NBN Co would have greater flexibility in competing for developments in commercial areas (and therefore the resourcing is not an outcome arising from the Governments directions). Assuming the wage rate is \$65.45 per hour, there are 260 working days in the year and a working day comprises 7.5 hours, the estimated total cost to NBN Co to administer charging arrangements over the next 10 years is \$6.38 million (about \$638,100 a year).

Average Annual Regulatory Costs for Option 2 (compared to Option 1)				
Change in costs (\$million)	Business	Community Organisations	Individuals	Total change in cost
Total by Sector	(\$105.20)	\$0	\$0	(\$105.20)

Option 3 – partial upfront cost recovery: assumptions

Substantive Compliance Savings

- Under this option, NBN Co would be able to charge commercial prices that reflect actual cost to service new developments. This would reduce the cost impost on NBN Co.
- Based on the proposed charges under this option, it is assumed that NBN Co will charge about \$1,100¹⁸ per premises for SDUs and \$900¹⁹ per premises for MDUs.
- Based on the total number of premises NBN Co is estimated to service over the next 10 years (see base case assumption above) and an assumption SDUs make up 60% of new premises and MDUs make up 40% of new premises, NBN Co would receive an estimated \$676.87 million over the next 10 years if it charges \$1,100 for SDUs and \$900 for MDUs (\$67.69 million per year).
- It is estimated that the establishment of a pit and pipe standard will also reduce the inspection costs on network providers by about \$1 million per year.
- Taking into account the average annual administrative costs set out below, the average annual regulatory costs to NBN Co under option 3 is -\$66.07 million (i.e. an overall saving of \$66.07 million per year to NBN Co). This figure is set out in the table below.

Administrative Costs

- As part of the proposed reforms developers would be required to notify authorities that they have made arrangements for telecommunications infrastructure to be installed. An

¹⁸ The estimate of \$1,100 per premises comprises the proposed end-user contribution (\$300), deployment contribution (\$600 for SDUs) and backhaul contribution (\$200). The backhaul contribution estimate is based on an assumption that 80% of new premises will be in proximity of existing transit and will not attract backhaul charges. 20% will attract charges. Assuming the average backhaul charge for these premises is \$1000 per lot, the backhaul contribution charge across all premises averages out to be about \$200 (\$1000 x 20/100). Please note that the \$200 estimate is a national average. Given the different makeup of new developments in each state and territory, this figure may be an underestimate for some areas (where developments are mostly situated on the urban fringe) and may be an overestimate in other areas (where developments occur in established areas).

¹⁹ The estimate of \$700 per premises comprises the proposed end-user contribution (\$300) and deployment contribution (\$400 for MDUs). Backhaul contribution has not been included because it is assumed that about 80% of new premises will be in proximity to existing transit and would not attract backhaul charges.

analysis of NBN Co data indicates there are roughly 5,010 individual development applications approved per annum (which we assume means 5,010 notifications to local planning authorities). Each notification is assumed to require 2 hours for the developer to prepare and lodge. Assuming the wage rate is \$65.45 per hour, the total compliance cost on developers over the next 10 years is estimated to be \$6.6 million (about \$660,000 per year).

- There are already several well developed specifications for pit and pipe, including those of the Communications Alliance and NBN Co. Given this, the development of a binding minimum specification for pit and pipe infrastructure is estimated to cost no more than \$150,000 to establish based on industry and regulator estimates of similar technical code establishment processes. It is estimated that it would cost \$15,000 (10 per cent of the initial cost) each year thereafter to maintain the standard.
- Given the development market can change from time to time and the development industry may have queries about the pit and pipe standard after it is established, ongoing work would be required to monitor, update and respond to industry queries. It is estimated that 5 FTE would be required for this ongoing work. Assuming the wage rate is \$65.45, there are 260 working days in the year and the average working day comprises 7.5 hours, the estimated cost is \$638,000 per year.
- It is estimated to require a one-off 80 hours of administrative effort to ensure compliance with the proposed carrier licence condition to provide infrastructure in new developments. This is estimated to impact ten businesses who currently operate in the new developments market in the first year (existing business will need to ensure they comply with the carrier licence condition) and one additional business each year thereafter (assuming that from 2016, there will be one new provider entering the market each year). Assuming the wage rate is \$65.45, the estimated cost on businesses in the first year is about \$52,300 and \$5,200 each year thereafter.
- It is estimated that NBN Co would require 10 FTE to administer the charging arrangements. Assuming the wage rate is \$65.45 per hour, there are 260 working days in the year and a working day comprises 7.5 hours, the estimated total cost to NBN Co to administer charging arrangements over the next 10 years is \$12.76 million (about \$1.28 million a year).

Regulatory Burden and Cost Offset Estimate Table

Average Annual Regulatory Costs for Option 3 (compared to Option 1)				
Change in costs (\$million)	Business	Community Organisations	Individuals	Total change in cost
Total by Sector	(\$66.07)	\$0	\$0	(\$66.07)

Option 4 – NBN Co Subsidy to competing providers: assumptions

Substantive Costs and Savings

- Under the RBM there would be a substantive cost to NBN Co because it would be required to subsidise other providers.
- It is envisaged that the amount of the subsidy would be equal to how much it would cost NBN Co to service the relevant development. For the purposes of the RBM, we assume that it would cost NBN Co around \$1,600²⁰ to service each new premises.
- The scale of the subsidy would depend on several factors, including the number of providers competing for a subsidy.
- As set out in the base case assumption, above, if other providers capture 50% of the new premises market, the estimated total cost to NBN Co to subsidise other developers over the next 10 years is \$1,062 million (about \$106.18 million per year).
- It is estimated that the establishment of a pit and pipe standard will also reduce the inspection costs on network providers by about \$1 million per year.
- Taking into account the average annual administrative costs outlined below, the average annual regulatory cost to NBN Co under option 4 would be \$113.51 million (i.e. an overall cost of \$113.51 million to NBN Co per year).

Administrative Costs

- Under this option NBN Co would in effect be required to establish an administrative scheme to channel the funding to competing providers. Given the scale of administrative overlay it is assumed NBN Co would require 60 FTE. Assuming the wage rate for FTE per hour is \$65.45, there are 260 working days in a year and a working day comprises 7.5 hours, the total cost to NBN Co to administer the scheme over the next 10 years is about \$76.58 million (about \$7.66 million per year).
- NBN Co would need to develop a minimum specification for pit and pipe infrastructure and minimum service standards that it will embed in the subsidy scheme. As with option 3, the development of a minimum specification for pit and pipe infrastructure is estimated to cost no more than \$150,000 to establish based on industry and regulator estimates of similar technical code establishment processes. It is estimated that it would cost \$15,000 (10 per cent of the initial cost) each year thereafter to maintain the standard.
- Given the development market can change from time to time and the development industry may have queries about the pit and pipe standard after it is established, ongoing work would be required to monitor, update and respond to industry queries. It is estimated that 5 FTE would be required for this ongoing work. Assuming the wage rate is \$65.45, there are 260 working days in the year and the average working day comprises 7.5 hours, the estimated cost is \$638,000 per year.
- It is estimated to require a one-off 80 hours of administrative effort to ensure compliance with NBN Co's minimum service standards to provide infrastructure in new developments. This is estimated to impact ten business who operate in the new developments market in the first year (as existing businesses will need to ensure they comply with the carrier licence condition) and one additional business each year thereafter (assuming that from 2016, there will be one new provider entering the market each year). Assuming the wage rate is \$65.45, the estimated cost on businesses in the first year is about \$52,300 and \$5,200 each year thereafter.

²⁰ See footnote 9, above and option 2.

Regulatory Burden and Cost Offset Estimate Table

Average Annual Regulatory Costs for Option 4 (compared to Option 1)				
Change in costs (\$million)	Business	Community Organisations	Individuals	Total change in cost
Total by Sector	\$113.51	\$0	\$0	\$113.51

Option 5 – buy-back scheme: assumptions

Substantive Compliance Savings

- It is estimated that the establishment of a pit and pipe standard will also reduce the inspection costs on network providers by about \$1 million per year.
- There are no new substantive costs under this option because NBN Co is effectively meeting the cost as under option 1, except it would be using a type of subcontracting model.
- Taking into account the average annual administrative costs outlined below, the average annual regulatory cost to NBN Co under option 5 would be \$4.78 million (i.e. an overall cost of \$4.78 million to NBN Co per year).

Administrative Costs

- Under this option NBN Co would in effect be required to establish an administrative scheme to manage contractual and administrative interactions with providers rolling out infrastructure. Under this scenario NBN Co is effectively outsourcing the build of infrastructure to sub-contractors through agreements with developers. Given the requirement for additional administrative work, it is estimated NBN Co would require an additional 40 FTE to administer the scheme. Assuming the wage rate for FTE per hour is \$65.45, there are 260 working days in a year and a working day comprises 7.5 hours, the total cost to NBN Co of administering the scheme over the next 10 years is about \$51.05 million (about \$5.1 million per year).
- NBN Co would need to develop a minimum specification for pit and pipe infrastructure and minimum service standards that it will embed in the buy-back scheme. As with option 3, the development of a minimum specification for pit and pipe infrastructure is estimated to cost no more than \$150,000 to establish based on industry and regulator estimates of similar technical code establishment processes. It is estimated that it would cost \$15,000 (10 per cent of the initial cost) each year thereafter to maintain the standard.
- Given the development market can change from time to time and the development industry may have queries about the pit and pipe standard after it is established, ongoing work would be required to monitor, update and respond to industry queries. It is estimated that 5 FTE would be required for this ongoing work. Assuming the wage rate is \$65.45, there are 260 working days in the year and the average working day comprises 7.5 hours, the estimated cost is \$638,000 per year.
- It is estimated to require a one-off 80 hours of administrative effort to ensure compliance with NBN Co's minimum service standards to provide infrastructure in new developments. This is estimated to impact ten business who operate in the new developments market in the first year (as existing businesses will need to ensure they comply with the carrier licence condition) and one additional business each year thereafter (assuming that from 2016, there will be one new provider entering the market

each year). Assuming the wage rate is \$65.45, the estimated cost on businesses in the first year is about \$52,300 and \$5,200 each year thereafter.

Regulatory Burden and Cost Offset Estimate Table

Average Annual Regulatory Costs (from Business as usual)				
Change in costs (\$million)	Business	Community Organisations	Individuals	Total change in cost
Total by Sector	\$4.76	\$0	\$0	\$4.76

Combination of Options 3 and 5 – preferred: assumptions

This is the preferred option. It combines option 3 (partial up front cost recovery) with elements of the buy-back scheme described under option 5. The administrative costs for option 5 would be added onto the administrative costs outlined for option 3. Therefore the RBM for this option would result in an average annual regulatory saving of \$61.29 million to NBN Co per year for the next 10 years. This is equal to the subtraction of the average annual regulatory cost of option 5 from the average annual regulatory saving that would result from option 3.

Regulatory Burden and Cost Offset Estimate Table

Average Annual Regulatory Costs (from Business as usual)				
Change in costs (\$million)	Business	Community Organisations	Individuals	Total change in cost
Total by Sector	(\$61.29)	\$0	\$0	(\$61.29)
Cost offset (\$million)	Business	Community Organisations	Individuals	Total by Source
Agency	\$0	\$0	\$0	\$0
Are all new costs offset?				
<input type="checkbox"/> No, costs are not offset <input checked="" type="checkbox"/> Deregulatory, no offsets required				
Total (Change in costs – Cost offset) (\$ million) = N/A				