

Mr. R. Oakeshott MP,
Chair of the Joint Committee on the National Broadband Network
Department of House of Representatives
PO Box 6021
Parliament House
CANBERRA ACT 2600

10 April 2010,

Dear Mr Oakeshott,

A Submission to the Joint Parliamentary Committee on the National Broadband Network

It is claimed that all is largely going according to plan with the NBN and that any delays that have emerged were necessary and were due in large part to the drawn out negotiations with Telstra. Despite such claims it is clear from the recently released 3 year rollout schedule that the project is now at least 15 months behind the schedule set out in the 2010 corporate plan but the protracted Telstra negotiations and delays in approval of its Structural Separation Undertaking are not the prime cause of those delays. These delays flow from fundamental shortcomings and miscalculations in the policy that underpins the NBN. Foremost amongst these are:

the initial \$43 billion cost guesstimate which has created unreasonable expectations about NBN Co's capex and the consequent price to be paid to contractors to build the network and:

a massive underestimation of the sheer complexity of renewing the national network within a short timeframe without the direct involvement of the current national network operator.

Although NBN Co claim they had to wait for the final approval of the Definitive Agreements before they could gain access to Telstra's infrastructure, NBN Co had an interim agreement on access and they also had a right under the Telecommunications Act to access Telstra facilities that would have been needed for the initial stages of the 'brownfield' rollout that was planned for 2011/12. Despite this interim agreement which it is presumed would have facilitated serving the 63,500 premises in the second release sites it would seem that in the second year of the rollout fewer premises will be passed than in the first year when the first release sites were completed. In the first year some 18200 premises were passed but this year the total passed will be around 16500.

The failure to deliver on the second release sites in 2011/2012 cannot be solely blamed upon a lack of access to infrastructure. It may have also been due to the botched negotiations in April 2011 with contractors about the price of building

the network. Fourteen major contractors were unable to meet NBN Co's hoped for prices suggesting either, as the government claimed, a conspiracy and price gouging by 14 companies, or that NBN Co had massively underestimated the costs of building the fibre network.

It appears that NBN Co were trying to reverse engineer costs into the capital expenditure estimate of \$36 billion which they were locked into by the implementation study. Based on international benchmarks and precedents the latter explanation seems more plausible – the cost of building the NBN has been massively under estimated.

Given the picture that now emerges from the three year rollout programme and the monthly updates (the ready for service updates for both greenfield and brownfield sites) the rollout is likely to achieve the following compared to the corporate plan.

NBN Rollout in both Brownfield and Greenfield sites (premises passed)

	June 2011	June 2012	June 2013	June 2014	June 2015
Cumulative target under Corporate plan 2010	58,000	317,000	1,269,000	2,711,000	4,173,000
Achieved	18,200				
Likely to be achieved		42,000*	440,000	1,540,000**	2,750,000**

* Contingent on 7000 greenfield premises under the latest monthly schedule being completed over the next three months – At March 2012 only 798 greenfield premises had been passed with fibre – the greenfield target had been 172,000

** Based on revised rollout schedule announced on 29 March 2012

It should also be noted that now that the Definitive Agreements are in place the actual timing of connections is dependent upon Telstra. Telstra has up to eighteen months after a Fibre Serving Access Module (FSAM) is completed before cutting over customers from copper. Given this right, based on the NBN Co's expected 66% take up rate as few as 20,000 premises could be connected to the NBN's fibre by the third quarter of 2013 even though 400,000 plus premises may have been passed. The corporate plan target was 511,000 connections by mid 2013.

It remains to be seen how expeditiously customers will be cutover from the copper network but what is clear is that the failure to meet targets in the initial years is in large part due to problems with the greenfield rollout. The greenfield rollout was initially to have been executed through a Build Own Transfer (BOT) model . That model was not predicated upon access to Telstra infrastructure nor was it dependent upon the goodwill of Telstra. It was dependent upon NBN Co reaching commercial terms with the dozen or so companies building and operating greenfield fibre .

NBN Co failed to reach the hoped for agreement and consequently the BOT model proved unworkable. Following the abandonment of that policy NBN Co

has been charged with the responsibility of being (in reality) the provider of first, rather than as intended, the provider of last resort of fixed line connections to new premises. There has been no explanation of why the BOT policy failed or any explanation of the consequences of its failure although the growing complaints from new homeowners about not having fixed line access and the limited inroads NBN Co have made into the backlog of greenfield orders suggests the problems in the greenfield areas are set to grow rather than lessen.

At the beginning of April the NBN rollout map indicated less than 800 greenfield premises were ready for service against a cumulative greenfield target for mid 2012 under the corporate plan of 172,000 premises that would be passed . Following the collapse of the BOT policy the targets under the greenfield programme were revised. NBN Co said in June 2011 that in partnership with its prime contractor Fujitsu "For this fiscal year we expect to pass approximately 65,000 lots and connect approximately 40,000 premises."

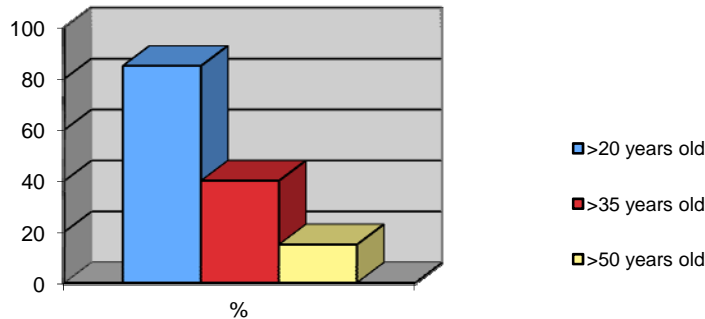
Given that less than only 800 greenfield premises/lots have been passed NBN Co cannot even meet its revised target despite the contract with Fujitsu which NBN Co said in May 2011 would be worth \$100 million over the following twelve months. Nor will the situation improve rapidly given that in seeking an exemption from the requirement that it provide 'wholesale' voice services over NBN greenfield estates Telstra has said it has been advised by NBN Co that only 4000 greenfield services will be connected by September 2012. In summary a crisis is emerging in the provision of new services and the clock has been turned back to the 1970's when the demand for new telephone services could not be satisfied.

In contrast to the difficulties experienced in the fibre rollout, progress is being made on the other two platforms wireless and satellite although that may reflect that these components of the network are being delivered on a turn key basis with seemingly little NBN Co responsibility beyond the initial engineering design and specification. But the progress that is being made by contactors on wireless and satellite must be considered against the considerable cost of these elements of the NBN. Based on the capital expenditure set out in the corporate plan and the estimated take up of these two services in the 7% of premises outside the fibre footprint, each satellite connection will cost some six or seven times that of an average fibre connection whilst wireless will come in at four times the cost of fibre. The average capital cost across the satellite and wireless platforms is over \$14000 per service yet revenues based on the entry 12/1 Mbs. tariff will be \$24 per month. Both services will demand a level of subsidy that far exceeds any seen in the Australian telecommunications sector.

On announcing the three year rollout NBN Co said that with the Telstra agreement complete the volume rollout can proceed and will accelerate to hit the hoped for 6000 premises a day passed. There is an element of misplaced optimism in this for although use of existing exchange space, ducts, pit and pipe (local street ducting) and the lead in should theoretically speed the rollout that depends entirely on the condition of these facilities. Based on the growth of the PSTN over the last fifty years it is reasonable to assume that 85% of the ducts

and pit and pipe are more than 20 years old and much of the infrastructure is older than that with 15% being over 50 years old.

Estimated Age of Telstra 'Duct' Infrastructure



Until ducts are surveyed and found to have spare capacity and are then either deemed 'fit for purpose' or capable of remediation then NBN Co cannot know what its construction costs will be. Until the availability of ducts etc is determined NBN Co cannot know the mix between aerial and underground cabling and how much new civil works will be needed if Telstra ducts and perhaps more significantly the 'pit and pipe' cannot be used. Also the 'lead ins' which will be transferred to NBN Co may be of limited use even with the right to use the existing copper as a draw wire for fibre. Lead in conduits consist of a mix of materials ranging from PVC conduit to galvanised pipe which may have rotted whilst some lead in cabling was directly buried. Even where the existing copper lead in can be readily used to draw through the fibre there are unknown costs. If the copper is used as a draw wire then it must be reinstated as the copper network must continue to provide service until the fibre network is cut over and that means any damage done to copper in the ducts when pulling fibre through or installing sub ducts must be repaired and paid for.

Consequently despite finalising the Telstra deal there are massive uncertainties surrounding the rollout and these flow from fundamental flaws in the policy rather than logistic issues which can be readily overcome. The NBN is unique in a number of critical respects and it is this uniqueness which means that it may not meet expectations either in terms of its rollout or the costs ultimately imposed on users or taxpayers. Nowhere in the world is there a large scale wholesale only network let alone a national wholesale only network. Whilst it is argued the NBN is essentially a utility and can generate the necessary returns despite the large capital outlays demanded, unlike true utilities it faces competition from substitutable services namely wireless.

Although wireless cannot provide the massive bandwidth or sustainable speed of fibre, for many applications other than video it will find favour with consumers. At the minimum the utility of wireless will lead to spending on broadband being 'split' between the two meaning consumers may not purchase higher cost higher speed NBN services but prefer a bundle of entry level NBN

and wireless . Consequently there is a massive level of risk attached to the NBN both on the demand and cost side. Those risks are compounded by the fact that no fibre rollout of any scale proceeded without the direct involvement on the incumbent.

Given the lack of any precedent the NBN is entering uncharted waters and will find it extremely difficult to deliver all that is being promised and most certainly find it difficult to deliver its network within the promised cost. At every level the NBN's predictions are optimistic and the record to date ,in which NBN Co has got its estimates of the complexity and timing of the Telstra deal wrong and missed its initial corporate plan targets does not augur well.

NBN Co is now nearly three years old and is no longer a start up yet it is not delivering. In the interim the policy settings framed to support the NBN have frozen investment by other fixed line carriers whilst NBN Co seeks the right to invest without any real constraints on its expenditure or scrutiny of its efficiency.

My headline concerns about the problems inherent in the NBN are set out in the attached article and presentation. I would welcome the opportunity to further detail my concerns to the committee.

Yours Faithfully,

Kevin Morgan

Attached: Presentation to Smart Workshop University of Wollongong

Article The Australian – 3 April 2012