RESPONSE TO THE SENATE SELECT COMMITTEE ON THE NBN

30 April 2014

EXECUTIVE SUMMARY

The Senate Select Committee on the NBN tabled an interim report on 26 March 2014 in which Labor and Green Senators allege financial irregularities and manipulations in the NBN Co Strategic Review (which set out a 'Revised Outlook' for Labor's NBN and forecasts for five other scenarios). The Government rejects each of the seven key allegations:

1. The interim report alleges the Revised Outlook for Labor's FTTP NBN assumes delays "at odds with NBN Co's current run rate". In truth today's 950 brownfield premises per working day would need to increase five-fold for the Revised Outlook to finish in 2024. The financial impact of delays is clear – the network must be built before it can generate revenue and avert more borrowing (Page 6).
2. The interim report alleges the Revised Outlook ignores $4 billion in design savings 'signed off' and 'implemented' by NBN Co. KordaMentha determined $1 billion of savings were valid; the remainder had no finished business case and/or were inconsistent with the Corporate Plan (Page 11).
3. The interim report alleges the Revised Outlook inflates FTTP costs, adding $14 billion to capex. In fact most Revised Outlook costs, including FTTP, are well under actual costs to date. Costs to date have been understated because they were not 'commercially complete' (i.e. didn't finalise all claims from contractors) and much of the work up to now has 'cherry-picked' lower cost areas (Page 14).
4. The interim report alleges revenue estimates in the Strategic Review are too low. NBN Co's outside advisors stated previous forecasts conflicted with international benchmarks, double-counted sales to government, and were "very optimistic". Since 2000 broadband prices have barely changed – casting doubt on NBN Co's projection of strong ARPU growth over the next decade (Page 18).
5. The interim report notes the Revised Outlook includes the cost of a third satellite. Under Labor the rollout outside the fixed line footprint was so botched that service and coverage commitments can't be delivered. Capex of about $1.5 billion is needed to rectify coverage and capacity gaps (Page 19).
6. The interim report alleges a Strategic Review table comparing 2011-2021 revenue across scenarios treats FTTP unfairly, because the two FTTP scenarios aren't completed until 2023 and 2024. In reality this has no impact whatsoever on calculation (or comparison across scenarios) of total capex, total funding required, or return on investment over 2010-2040 (Page 22).
7. The interim report alleges the Strategic Review ignores the cost of upgrading a multi-technology mix NBN. In fact upgrade paths are identified and their costs analyzed - again proving a multi-technology NBN now and FTTP later costs less in today's dollars than deploying FTTP now. But upgrade costs are not scheduled, as it is unclear when (or whether) they will be needed (Page 23).

A response is also offered to several NBN myths perpetuated in the interim report. Labor's claims about material allegedly in the Incoming Government Brief and of reduced transparency at NBN Co are refuted (Page 25). The $41 billion cost of a multi-technology NBN is placed in context by noting Labor locked in $34-38 billion of NBN costs before any capex on fixed broadband (Page 26). And Labor's boast that it would have cut costs with a radically redesigned NBN is disputed (Page 28).

1. THE SENATE SELECT COMMITTEE'S INTERIM REPORT

The Senate Select Committee on the National Broadband Network was established in November 2013, in response to the Government's request in October 2013 that NBN Co conduct a Strategic Review of the network's progress and outlook. [1]

After inviting submissions and holding eight public hearings (including four where NBN Co executives gave evidence) the Select Committee released an interim report on 26 March 2014. [2]

The interim report is largely the work of the four Labor and Greens Senators who control the Select Committee. [3] Their 132-page contribution challenges the accuracy and credibility of the NBN Co Strategic Review. [4] It details what are alleged to be "seven major financial fiddles" in the Strategic Review's December 2013 report to the Government on the rollout options for the NBN. [5] These "financial manipulations and other irregularities" are claimed to render the Review's forecasts and findings "unreliable in the case of all examined scenarios." [6]

The Government categorically rejects each one of these claims.

The alleged financial irregularities and manipulations asserted by the Committee's Labor and Green Senators are examined and shown to be false or misleading in part 3 of this document.

This specious assault on the legitimacy of the Strategic Review was led by Senator Stephen Conroy, the former Minister for Communications, who has used the Select Committee to contrive an alternative (and entirely fictitious) history of the NBN. In Senator Conroy's parallel universe Labor's rollout was a well-oiled machine, on time and on budget. Witnesses who pointed out the project was a mismanaged and dysfunctional shambles under Labor were dismissed with bellicose contempt.

In their dissenting report, Coalition Senators highlight Senator Conroy's abuse of the Committee and its hearings, and correctly note the majority interim report is "grossly misleading and untruthful in its portrayal of the evidence provided to the Senate Select Committee". [7]

The basic facts about the NBN are incontestable. By September 2013, after six years of Labor in office, $6.5 billion had been invested in a network that reached less than 3 per cent of households and businesses and was delivering services to less than 1 per cent.

This was the context for the Strategic Review, whose conclusions were succinctly summarized by Dr Ziggy Switkowski, NBN Co's Executive Chairman, in evidence to the Select Committee in December:

> ***Dr. Switkowski:*** *We see the roll out of FTTP delayed by three years to the middle of 2024…We find that the costs have been underestimated, particularly in light of the experience that NBN Co. has had, and we find that the revenues have been overestimated.* [8]

[1] A summary of the NBN Co Strategic Review is included in the Appendix.

[2] http://www.aph.gov.au/Parliamentary_Business/Committees/Senate/National_Broadband_Network/NBN/Interim_Report/index

[3] The Select Committee on the NBN has seven members – three Labor Senators, one Green Senator, and three Coalition Senators.

[4] Senate Select Committee on the NBN – 'Interim Report' – Canberra, 26 Mar 2014, p.vii.

[5] Parliament of Australia – 'Senate Hansard' – 26 Mar 2014, p.83.

[6] Senate Select Committee on the NBN – 'Interim Report' – Canberra, 26 Mar 2014, p.vii.

[7] Senate Select Committee on the NBN – 'Interim Report' – Canberra, 26 Mar 2014, p.135 (Dissenting Report).

[8] Parliament of Australia – 'Senate NBN Select Committee Hansard' – 17 Dec 2013, p.2.

Yet the authors of the Select Committee's majority interim report – Senator Conroy, Senator Lundy, Senator Thorp and Senator Ludlum – appear just as unwilling to acknowledge NBN Co's inadequate past performance as they are to concede any need for change in the future.

The facts show 97 per cent of Australians did not have access to the National Broadband Network as of September 2013. [9]

The facts show that at three quarters of all established premises which in theory could connect to the NBN as of September 2013, residents faced delays of up to six months between requesting and obtaining a new service, or were not able to order service at all. [10]

The facts show Senator Conroy had six years in office to execute Labor's policy – yet when he resigned as Communications Minister, fewer than 80,000 premises had been connected to the NBN.

However uncomfortable the indisputable facts are for Senator Conroy and his colleagues, denying them or attempting to shift accountability onto others heightens public perceptions that politicians are more focused on point scoring than delivering outcomes. [11]

The Government looks forward to the continuing public hearings of the Senate Select Committee, as these will provide an opportunity to further examine the assertions in the interim report, correct the public record as necessary, and learn what evidence guided majority Senators to their unsubstantiated and inaccurate findings.

[9] NBN Co rollout data: http://www.nbnco.com.au/content/dam/nbnco/documents/nbnco-rollout-metrics-23032014.pdf

[10] As of September 2013, 78 per cent of brownfield premises passed by fibre were either service class 0 (unable to obtain service, typically because they were in multi-dwelling units or commercial premises) or service class 1 (no lead-in, meaning a delay of about six months for service at that time). NBN Co – 'Strategic Review Report' – Dec 2013, p.43.

[11] Over six years Senator Conroy identified a long list of culprits for the various setbacks, delays and wrong turns encountered by the two versions of the NBN Labor attempted to implement – the GFC, Sol Trujillo, the Coalition, the ACCC, allegedly price-fixing construction contractors, Telstra, Liberal State governments, NBN's delivery partners, News Limited and asbestos were all named and blamed at some point for the lack of progress on a project where Labor had the benefit of a blank canvas and complete control.

2. THE NBN CO STRATEGIC REVIEW

Given the Select Committee's interim report responds to the NBN Co Strategic Review and its December 2013 report, these are briefly summarized below (and described in more detail in the Appendix).

In October 2013 the incoming Government asked NBN Co (under its new leadership) to conduct a Strategic Review of the project. It was asked to assess: [12]

- The progress and cost of the NBN rollout to date.
- The 'Revised Outlook' – the time and cost to complete the FTTP NBN if it proceeded unchanged.
- The time and cost to complete the network under alternative designs.
- The impact of various scenarios on broadband prices and NBN Co's viability.

This work was overseen by NBN Co's Executive Chairman Dr. Ziggy Switkowski and carried out by a cross-divisional NBN Co team supported by consulting firms Boston Consulting Group and Deloitte Touche Tohmatsu, and financial restructuring experts KordaMentha. A report containing its findings was tabled in Parliament on 12 December 2013. [13]

2.1. Findings on the NBN's Progress

The Strategic Review's report to the Government found that as of 30 September 2013:

- A total of $6.5 billion had been invested on behalf of taxpayers in NBN Co. [14]
- The NBN 'passed' or 'covered' (i.e. was in theory available at) 384,000 premises – about 3 per cent of the total number required to finish the rollout. [15]
- While 227,000 established premises had been 'passed' with fibre, 32 per cent could not obtain a service and a further 46 per cent faced a wait of about six months if they ordered a service. [16]
- About 98,000 (fewer than 1 per cent) of Australian premises had service over the NBN. [17]

2.2. Findings on the Revised Outlook

Key findings on the Revised Outlook for Labor's fibre-to-the-premises (FTTP) NBN were:

- Labor's FTTP NBN would require $73 billion to complete (or $78 billion if its cost is estimated using the same contingency against capex cost overruns as all other scenarios in the Strategic Review). [18]
- Labor's FTTP NBN would not be completed until 2024 if it proceeded unchanged. [19]
- Labor's target rate of return and the expense of an FTTP NBN would result in a 50 to 80 per cent increase in retail broadband prices – adding up to $43 per month to a typical household bill. [20]

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[12] Minister for Communications & Minister for Finance – 'NBN Co Initiates Strategic Review' – Joint release, 3 Oct 2013.
[13] Online at: http://www.nbnco.com.au/content/dam/nbnco/documents/NBN-Co-Strategic-Review-Report.pdf
[14] NBN Co – 'Strategic Review Report' – Dec 2013, p.67.
[15] NBN Co – 'Strategic Review Report' – Dec 2013, p.40.
[16] In Sep 2013, 32 per cent of brownfield FTTP passed were service class 0 (unable to obtain service) and 46 per cent were service class 1 (no lead-in from the street to the premise). NBN Co – 'Strategic Review Report' – Dec 2013, p.43.
[17] NBN Co – 'Strategic Review Report' – Dec 2013, p.41.
[18] NBN Co – 'Strategic Review Report' – Dec 2013, p.55. The Revised Outlook' estimate of $73 billion for Labor's FTTP NBN assumes a 10 per cent capex contingency (reserved for cost overruns) in line with the NBN Co Corporate Plan. If the 20 per cent contingency used in all other scenarios is applied, the Labor FTTP cost rises to $78 billion.
[19] NBN Co – 'Strategic Review Report' – Dec 2013, p.11.

2.3. Findings on a Multi-Technology NBN

The Strategic Review recommended shifting from FTTP to an 'optimized multi-technology mix' NBN:

- A multi-technology NBN could reduce funding by $32 billion by leveraging existing infrastructure. [21]
- A multi-technology NBN could be rolled out faster: to 96 per cent of premises in the fixed line footprint and 100 per cent of premises outside the fixed line footprint by 2019. [22]
- By 2019 nine out of ten premises in the fixed line footprint would have access to download data rates of at least 50 megabits per second.
- Under a multi-technology NBN, the need for real retail price increases could be averted. [23]

2.4. NBN Co's Culture & Capabilities

Beyond headline numbers, the Strategic Review emphasised the need to transform NBN Co's internal culture and capabilities. KordaMentha found NBN Co's underperformance was due to "lack of deep internal experience in complex infrastructure, construction projects and project management," and "blind faith in the achievability of the Corporate Plan, notwithstanding clear factual evidence to the contrary." [24] Key decisions lacked "appropriate commercial rigour and oversight." In parts of NBN Co, "a fear of being blamed for mistakes has generated a lack of willingness to accept responsibility". [25]

2.5. Premises Passed versus Serviceability

Equally importantly, NBN Co's "relentless focus on the metric of premises passed" needed to broaden to include serviceability (whether premises could be connected) and revenue. [26] Blind pursuit of premises passed contributed to defective work, long waits for service, and negative experiences for end customers. Of 227,000 brownfield premises passed, 74,000 were 'service class zero' (unable to obtain service as they were in multi-dwelling or business buildings) and 104,000 had no lead-in (and hence faced a roughly six-month wait for service). [27]

The expense of achieving serviceability at every premise is far greater if this work occurs on an ad hoc basis after the rollout rather than as an integral part of it. The extra costs for NBN Co of not achieving serviceability at premises then claimed to be ready for service will be disclosed once they can be robustly calculated.

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[20] NBN Co – 'Strategic Review Report' – Dec 2013, p.106. Note this is a 'first round' rise. Since higher prices depress demand, generating enough revenue for the IRR of 7.1 per cent targeted by Labor would require another increase.

[21] NBN Co – 'Strategic Review Report' – Dec 2013, p.102.

[22] NBN Co – 'Strategic Review Report' – Dec 2013, p.98 and p.102.

[23] NBN Co – 'Strategic Review Report' – Dec 2013, p.106. Assumes nominal wholesale ARPU grows roughly in line with inflation and governments accept returns roughly equal to the long bond rate plus 1 percentage point.

[24] NBN Co – 'Strategic Review Report' – Dec 2013, p.37 and pp.72-73. The KordaMentha Independent Assessment of NBN Co internal culture reflected 60 interviews with management and employees from all levels and functions.

[25] NBN Co – 'Strategic Review Report' – Dec 2013, p.72.

[26] NBN Co – 'Strategic Review Report' – Dec 2013, p.37.

[27] NBN Co – 'Strategic Review Report' – Dec 2013, p.43. Premises with no lead-in are 'service class 1. As of Sep 2013, 78 per cent of brownfield FTTP passed were either service class 0 or 1, and hence practically not serviceable.

3. ALLEGED 'MANIPULATIONS' IN THE STRATEGIC REVIEW'S DECEMBER 2013 REPORT

The majority interim report of the Select Committee on the NBN prepared by Labor and Green Senators makes seven specific allegations of "financial manipulations and other irregularities" in the Strategic Review's Revised Outlook and other scenarios modelled in its December 2013 report. The claimed purpose of these manipulations is to make the FTTP NBN look less favourable compared to alternatives.

The seven alleged manipulations are:

1. The Revised Outlook assumes **FTTP deployment delays 'at odds' with current run rates** to justify a delay in forecast completion until 2024, $11 billion less revenue from 2011 to 2021, and $13 billion of additional required funding.
2. The Revised Outlook ignores more than $4 billion in **design savings 'signed off' by NBN Co**.
3. The Revised Outlook assumes **high per premise costs for FTTP** that conflict with evidence from NBN Co and the Department of Finance, and add $14 billion to capital expenditure.
4. The Strategic Review's **modelling of revenues is pessimistic**, and doesn't reflect strong demand from existing customers for higher NBN service tiers.
5. The Revised Outlook inappropriately bears the **costs of a third satellite** but no revenues.
6. The Strategic Review includes **unfair comparisons of scenarios** which include revenues for the multi-technology NBN up to its completion, but exclude revenues for FTTP over 2022-2024.
7. The Strategic Review notes **a multi-technology NBN will need upgrading** but ignores the cost.

These allegations are addressed in the above order. In the first six cases, Senator Conroy's description of the claimed financial or forecasting transgression in his speech to the Senate following the tabling of the interim report is included to provide additional colour and detail about the claim.

3.1. FTTP Deployment Delays 'at Odds' with Current Run Rates

> ***Senator Conroy:*** *The Committee's interim report has identified seven major financial fiddles that the strategic review makes. The first point: "It assumes a delay in the revised deployment schedule for a fibre build that is at odds with NBN Co's current run rate but is used to strip $11.6 billion out of NBN Co's revenues on their forecasts. It is used to strip out the revenues of $11 billion but it also, because of this effect, causes a $13 billion increase in peak funding. So we have the first significant dodgy decision. Let's just say it is going to take so long to roll out that it loses $11 billion. Oh! It loses $11 billion, therefore it is going to cost $13 billion extra to finance that. Wow. What geniuses we have...* [28]

The Revised Outlook for Labor's FTTP NBN forecast the network could be completed by June 2024. That is three years later than the June 2021 completion date in the NBN Co 2012-2015 Corporate Plan, and six years after the completion date indicated by Kevin Rudd in 2009. [29]

[28] Parliament of Australia – 'Senate Hansard' – 26 Mar 2014, p.83.
[29] NBN Co – 'NBN Co 2012-2015 Corporate Plan' – Aug 2012, p.12.

Current Run Rate

If anything, the current rollout pace suggests the Revised Outlook 2024 completion date may veer towards optimism rather than the pessimism Labor and Green Senators allege.

Rollout data shows that since June 2013, NBN Co has passed an average of 950 brownfield premises per working day with fibre, and added an average 1480 premises per working day across the whole project (excluding the interim satellite service). [30]

To achieve a 2024 finish, NBN Co needs to steadily accelerate its brownfield FTTP rollout over the next three years – from 0.2 million premises annually (or 950 per working day) in 2013-14 to 1.2 million premises annually (or 4800 per working day) in 2017-18 – and then sustain this peak over five years. Outcomes even slightly short of this will not be sufficient to complete an FTTP NBN in 2024. [31]

NBN Co's Challenges with Contractors

The Strategic Review's list of the factors impeding the rollout up to now makes it clear achieving these run rates would be a daunting task. Establishing and maintaining operationally and commercially effective relationships with construction partners has been a major challenge for NBN Co from the start of the project, particularly in the area of design work. [32]

Senator Conroy was largely silent on this problem in government, never publicly conceding the need for major change inside NBN Co in this or any other area. Only after the election, in October 2013, did he admit contractor relationships and performance had been a major issue – but even then, any delays or cost overruns were entirely the fault of NBN Co's construction partners and nothing whatsoever to do with the Labor government or NBN Co's former management.

> ***Senator Conroy:*** *Naively I believed that the construction industry would keep their contracts…back in March-April, the NBN Co actually sacked Syntheo…because Syntheo had failed to meet – by not just a small margin, but an extraordinary margin – their contractual obligations…what we've seen is some of Australia's largest construction companies failed to deliver on their contractual obligations.* [33]

Run Rate & 2024 Completion

Against this backdrop, the Select Committee's assertion that the Revised Outlook's estimated 2024 completion date for an FTTP network that would need to be largely built by those same contractors is "at odds with NBN Co's current run rate" is not easy to connect to observable reality.

If majority Senators literally believe a 2024 completion date is 'at odds' with the current FTTP run rate, this can be tested by determining the rollout duration if a consistent brownfield FTTP run rate of 950 premises per working day is applied to the remaining stock of premises. Simple arithmetic shows at this run rate, passing the remaining 9.8 million brownfield premises would take 41 years.

If majority Senators are instead suggesting the rollout is currently ahead of the expectations embodied in the Revised Outlook, and believe it will continue to exceed those expectations in future, then they

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[30] Assumes 250 working days per year. Brownfield FTTP premises passed totalled 163,500 on 30 June 2013 and 341,000 on March 31 2014. See NBN Co rollout data: http://www.nbnco.com.au/content/dam/nbnco/documents/nbnco-rollout-metrics-23032014.pdf

[31] NBN Co – 'Strategic Review Report' – Dec 2013, p.46.

[32] NBN Co – 'Strategic Review Report' – Dec 2013, p.44.

[33] ABC Lateline, 14 Oct 2013. At http://www.abc.net.au/lateline/content/2013/s3868978.htm

need to remember the current brownfields run rate in reality is barely a third of the work rate required to achieve the near-term targets in the NBN Co 2012-15 Corporate Plan. [34]

June 2014 Brownfield FTTP Target

Senator Conroy's run rate claims appear to boil down to an opinion that the Strategic Review's June 2014 brownfields FTTP target of 357,000 is conservative and may be exceeded. That is quite possible.

What is certain is the rollout will not achieve anywhere approaching even 50 per cent of the June 2014 brownfields target of 1.13 million in the 2012-2015 Corporate Plan that Senator Conroy and the former government approved in August 2012.

The 357,000 Revised Outlook brownfields FTTP target for June 2014 was a deliberately de-risked (i.e. highly achievable) forecast. [35] It was made in late 2013 after the 2012-2015 Corporate Plan's June 2014 brownfield target had already been slashed three times, in an environment of considerable uncertainty for NBN Co due to a three-month halt in Telstra's remediation work following asbestos issues, stalled building in Tasmania due to a commercial dispute, the exit of the Company's key construction delivery partner in South Australia, Western Australia and the Northern Territory, and bids for higher pay rates from NBN Co's remaining contractors. Given this context, there were reasons for conservatism.

In any case, even if Senator Conroy is correct and the June 2014 brownfields FTTP forecast is exceeded, this doesn't imply other Revised Outlook targets can or will be likewise exceeded.

It doesn't alter the estimated volume of FTTP premises which can be built annually by contractors in the Australian market, or the estimated volume that can be designed and project managed by NBN Co – which are the constraints NBN Co and KordaMentha considered in the Revised Outlook forecasts.

And it most certainly doesn't indicate an FTTP rollout can be completed in 9.5 years as claimed by the former government. The gap between both Corporate Plans approved by Labor and more realistically achievable forecasts is simply too wide to revert to the former.

Consider the Revised Outlook's estimate that by June 2016 the NBN will reach 2.57 million premises. This is 2.96 million fewer than the June 2016 estimate in the NBN Co 2012-2015 Corporate Plan. [36]

(Note 'fibre' premises passed in the table includes both greenfield and brownfield premises.)

	NBN CO 2012-2015 CORP PLAN (Aug 2012)		**NBN CO STRATEGIC REVIEW** (Dec 2013)		**SIZE OF REVISION**	
	Passed - Fibre	Passed - Total	Passed - Fibre	Passed - Total	Passed - Fibre	Passed - Total
30 June 2013	341,000	661,000	*207,000 actual*	*283,000 actual*	*(134,000)*	*(371,000)*
30 June 2014	1,307,000	1,681,000	467,000	637,000	(840,000)	(1,044,000)
30 June 2015	2,912,000	3,664,000	1,049,000	1,357,000	(1,863,000)	(2,307,000)
30 June 2016	4,625,000	5,532,000	2,012,000	2,572,000	(2,613,000)	(2,960,000)

[34] If ~950 brownfield premises per working day was sustained over 2013-14 year, brownfield FTTP would reach 401,000 by Jun 2014, 36 per cent of the 2012-2015 Plan target. NBN Co – 'NBN Co 2012-2015 Corporate Plan' – Aug 2012, p.37.

[35] See the discussion at: Parliament of Australia – 'Senate NBN Select Committee Hansard' – 17 Dec 2013, pp.9-10.

[36] NBN Co – 'NBN Co 2012-2015 Corporate Plan' – Aug 2012, p.72.

The scale of this downgrade is not easy to grasp. But in simple terms, the broadband plan the Labor government took to the September 2013 election stated the NBN would reach one in two Australian premises by June 2016; in December the Strategic Review's more realistic forecasts under the current Government revised this down to the NBN reaching one in four Australian premises by June 2016.

This huge revision down by almost 3 million premises is the primary reason the Coalition's original aim of rolling out the NBN in all areas without existing fast fixed line broadband by the end of 2016 – and so ensuring all premises could obtain 25 megabits per second download rates, whether on the NBN or another fast network – became unattainable.

Impact of Rollout Delays on Financial Outcomes

Senator Conroy and his majority colleagues apparently quibble with the effect of a delayed rollout on NBN Co's financial outcomes. But to earn revenues, the network needs to be built and serviceable. If the network build takes longer, take-up and revenues at any point in time will be lower.

Likewise, if the rollout in fibre areas has not been properly completed first time round and contractors need to go back to these areas to achieve acceptable levels of serviceability, as is currently the case across a range of geographies, then this will cause additional delays and a further financial impact.

The serviceability work NBN Co currently has underway is redressing situations such as cul-de-sacs only 'passed' in the sense of fibre running past the base of the street, gated communities that were completely ignored during rollout of FSAMs they are situated within, and entire streets or blocks that contractors were permitted to bypass because they had characteristics (such as being built on rock) that elevated their cost per premise.

NBN Co has the additional challenge of an unusually high level of overhead expenses (including employee salaries, consultants, office space, IT and travel) established and in certain cases locked in for the near future under the former government. These expenses were $586 million in 2012-13 and totalled a cumulative $1.6 billion up to September 2013, and a cumulative $1.8 billion to December 2013. [37]

In contrast NBN Co's revenues from broadband through its history were a cumulative $30 million up to September 2013 – or $1 for every $54 in overhead expenses. [38]

Allowing overhead costs to ramp up so far ahead of revenues means every year of delay in the rollout results in a huge addition to NBN Co's cumulative losses, and the total capital it requires.

Senator Conroy cited evidence to the Committee that the NBN's funding needs could be reduced f the rollout was delayed. This would only be true if the delayed deployment came after the Company was cashflow positive – which is not the situation NBN Co currently confronts.

'Political Control' of Rollout

A final assertion from majority Senators is that the rollout is being held back by Government 'political control' (the requirement for NBN Co to periodically seek Government approval for FTTP design and build instructions). [39] This is based on a misreading of one comment:

[37] NBN Co – 'Strategic Review Report' – Dec 2013, p.53.

[38] NBN Co – 'Strategic Review Report' – Dec 2013, p.51.

[39] Senate Select Committee on the NBN – 'Interim Report' – Canberra, 26 Mar 2014, p.ix, 41, 43.

> ***Dr. Switkowski**: In fact, we have spent time in recent weeks petitioning the government, as we must, to continue to authorise us to go as fast as we possibly can and not be required to keep checking in with the department or whatever with numbers.*

Dr. Switkowski made the comment in December 2013, at a time when the Government and NBN Co were discussing a rolling approval arrangement for FTTP build instructions that would better balance accountability and operational efficiency. [40] A more streamlined balance was found – but the Government has not retreated from emphasizing the importance of accountability and oversight.

If Senator Conroy wishes to confirm Government approvals for build instructions are neither a significant operational constraint nor some sinister attempt to exercise 'political control', he should ask NBN Co's executives.

Labor's Credibility on Rollout Forecasts

In closing this discussion of forecasts, deployment and delays, it is worth reflecting upon the irony of Senator Conroy presuming to question the Strategic Review's forecasts.

Under Senator Conroy one aspect of NBN Co's performance had the consistency of a metronome: it missed every one of its significant rollout targets in the original 2011-2013 and revised 2012-2015 Corporate Plans.

In addition, there is substantial evidence indicating the former Labor government knowingly misled the Australian public about the NBN's rollout forecasts on at least two occasions:

- On 5 May 2013 the Labor government announced an expansion of the three-year NBN rollout plan. The number of premises on the schedule increased from 3.5 to 4.8 million, and 190 localities were added to NBN Co's online maps. [41] Following this announcement, almost half of Australian premises had received a commitment that the work to extend the NBN to them would be 'commenced or completed' by June 2016.

  The new three-year rollout plan depended upon hitting the targets in the 2012-2015 Corporate Plan. Remarkably, this was taken as read despite months of delays from disputes and asbestos, which in March 2013 forced NBN Co to slash its June 2013 brownfield FTTP target by 43 per cent. (By coincidence, NBN Co publicly announced this downgrade – or what it at the time claimed was a "three month delay" that would be quickly made up – in the late afternoon of 21 March, just as media attention was fixed on Labor's leadership spill of that evening.) [42]

  Even more remarkably, the May 5 three-year rollout plan was unveiled even though the Labor Cabinet had decided to reduce NBN funding by $3.5 billion (20 per cent) over the forward estimates to June 2015 in the 2013-2014 Budget, due nine days later on 14 May 2013. [43] The Budget papers explicitly cited rollout delays as the reason.

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[40] Parliament of Australia – 'Senate NBN Select Committee Hansard' – 17 Dec 2013, p.57.

[41] Heath Aston – 'Conroy accelerates NBN rollout to 1.3m premises' – *Sydney Morning Herald*, 5 May 2013. This lifted total premises covered by the publicly stated rollout schedule and maps from 3.5 million to 4.8 million.

[42] NBN Co release: http://www.nbnco.com.au/about-us/media/news/nbn-co-updates-short-term-fibre-rollout-timeline.html

[43] NBN funding from 2012-13 to 2014-15 inclusive was estimated at $17.5 billion in the 2012-13 Mid-Year Economic & Fiscal Outlook published in Dec 2012 (after NBN Co's Aug 2012 update to its Corporate Plan). Estimated funding for the same three fiscal years was reduced by $3.5 billion or 20 per cent in the 2013-14 Budget. This was partly offset by a $0.5 billion increase from the 2012-13

Labor has never acknowledged or explained this contradiction.

- Prior to the 2013 election Labor insisted the NBN was on time and on budget, and promised the 2021 completion date forecast in the 2012-2015 Corporate Plan would be achieved. According to Labor communications minister Anthony Albanese in August 2013, just before the election was called: "…what is occurring here with the NBN is it's continuing to be rolled out – it's being rolled out on time and on budget. There's audits taking place by companies like KPMG…of what the figures look like and…the assumptions were all sound." [44]

  Yet as the Committee majority report admits, NBN Co's forecasts were repeatedly reduced over 2013. [45] The forecast for June 2014 brownfield premises was lowered from 1.13 million in the Corporate Plan to 850,000 in May, 600,000 in August, and 450,000 according to NBN Co advice received after the change of government in September (as acknowledged in the interim report). [46]

  On 22 July 2013 the Labor Cabinet reportedly considered a draft version of the NBN Co Corporate Plan that included some of these revised forecasts. [47] Cabinet also reportedly discussed advice provided to the Department of Communications by KPMG warning the rollout forecast was "a significant risk to the project" and "has not been achieved in any international comparison". [48]

  Despite evidence several sources warned the former government that the NBN rollout had fallen badly behind the 2012-2015 Corporate Plan, Labor chose not to share this information with the Australian public prior to the September 2013 election.

In the interests of a well-informed debate, Senator Conroy should provide a full explanation of these two instances before making any further assertions about the NBN's current rollout schedule.

3.2. Design Savings 'Signed Off' by NBN Co

> ***Senator Conroy****: "The review excludes approximately $4 billion in business-as-usual architecture savings, described by the chief technology officer as 'incremental changes' from the fibre build. But they were signed off by the previous NBN Co management. NBN Co management say, 'We recommend these changes, $4 billion worth of savings to NBN Co', and what does Mr Turnbull's mate say? 'No, we're not having them. Can't have them.'"* [49]

MYEFO to the 2013-14 Budget in estimated 2015-16 funding. Australian Government – '2012-13 Mid-Year Economic & Fiscal Outlook' – Dec 2012, p.285. Australian Government – '2013-14 Budget, DBCDE Portfolio Budget Statement' – May 2013, p.25.

[44] Anthony Albanese, transcript of interview with Chris Smith, 2GB, 7 Aug 2013: http://anthonyalbanese.com.au/category/ministerial-interview-transcripts/page/2

[45] Senate Select Committee on the NBN – 'Interim Report' – Canberra, 26 Mar 2014, pp.36-37.

[46] The first set of reduced brownfield FTTP forecasts are in the unapproved 'version 12' draft NBN Co 2013-2016 Corporate Plan dated 28 June 2013 reproduced on *The Australian Financial Review* website in September 2013. These revised forecasts were made on 18 May 2013 according to NBN Co documents. The second set of reduced brownfield FTTP forecasts are included in the unapproved 'version 13' draft NBN Co 2013-2016 Corporate Plan dated 17 September 2013 repeatedly referenced by Senator Conroy during Select Committee hearings and repeatedly cited in the Senate Select Committee's report.

[47] Chris Kenny & Annabel Hepworth – 'Labor knew of NBN rollout risk' – *The Australian*, 2 Nov 2013. The story quotes extensively from a Cabinet minute summarizing the draft Corporate Plan submission brought forward on 22 July by Anthony Albanese.

[48] Ibid. Ironically, the KPMG report warning of rollout risks may be the same KPMG report Senator Conroy has publicly cited as proving the NBN Co Corporate Plan under the previous government was properly scrutinized and judged to be robust.

[49] Parliament of Australia – 'Senate Hansard' – 26 Mar 2014, p.83.

Senator Conroy's description of the facts is very misleading, and the parallel assertion in the majority interim report from Labor and Green Senators is no more accurate:

> ***Senate Select Committee Interim Report:*** *"By end-September 2013, NBN Co had implemented, or was in the process of implementing, a number of incremental changes to the fibre rollout known as Architecture 2.x. Combined, these changes represented $4.5 billion in capital expenditure savings."* [50]

Bluntly, this can only be a calculated misrepresentation of the facts. Most of the potential savings in capex from the so-called 2.1 Architecture proposals for changes in the design of the FTTP network had not in reality been properly evaluated by a formal business case in September 2013 – much less gained the required technical and Board approvals to proceed, been incorporated into the design process (with its lead-times of multiple months) and implemented in the construction of the network.

KordaMentha's Independent Assessment

In late November 2013, the KordaMentha Independent Assessment prepared as part of the Strategic Review stated that out of what by then was $4.9 billion of potential design-related savings, "our view is that approximately $3.9 billion of the identified savings relate to a fundamental change to the construction program and are inconsistent with the Corporate Plan. We have been informed that these initiatives have not been approved by the Board of Directors. Most of these initiatives are still at a preliminary phase, with an internal business case not yet completed and the full implications of the proposed change and the reason for the change not yet completed." [51]

KordaMentha and the Strategic Review concluded changes which represented a fundamental change to the network design included reduced fibre counts per premise, increased premises per fibre distribution area (roughly equivalent to a Telstra pillar), reduced PON (passive optical network) redundancy and fault tolerance, and lower capacity distribution network cables.

All were judged inconsistent with the 2012-2015 Corporate Plan approved by the Labor government, leading the Strategic Review to give them no weighting for the purposes of budgeting. [52]

Tenuous Evidence for Select Committee Findings

Senator Conroy was surely aware most of the changes by value were neither being implemented nor seen to be consistent with the existing Corporate Plan. Yet he and his co-authors obscure this by attempting to make the case that all of these changes had been approved, using fragments of testimony from public hearings that upon careful reading prove no such thing.

Consider the evidence presented in the interim report to prove NBN Co "had implemented" reduced fibre counts in distribution cable – a change which potentially saved over a hundred million dollars but was judged by NBN Co and its advisors to be "inconsistent with the Corporate Plan". The basis for the Committee's statement that this change had been implemented amounts to the following exchange between Senator Conroy and NBN Co's CTO, Gary McLaren:

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[50] Senate Select Committee on the NBN – 'Interim Report' – Canberra, 26 Mar 2014, p.34.

[51] The quote is from KordaMentha's Independent Assessment of NBN Co. This document was provided to NBN Co but cannot be publicly released as it contains a large quantity of commercially sensitive data. Any information from it that is quoted or referenced in this document is not commercially sensitive. KordaMentha – 'NBN Co: Independent Assessment' – 29 Nov 2013, pp.113.

[52] KordaMentha – 'NBN Co: Independent Assessment' – 29 Nov 2013, pp.113-114.

Senator Conroy: Has NBN Co. ever looked at reducing the fibre counts in distribution cable from 576 fibres to 433 fibres?

***Mr McLaren:** Yes, we have been investigating that opportunity. Again, it is an opportunity to have smaller diameter cables, as we talked about.* [53]

According to NBN Co's CTO the Company was "investigating that opportunity" in December 2013. That is a materially different claim than stating NBN Co "had implemented" this change in September 2013.

Likewise, consider the evidence presented to demonstrate NBN Co "had implemented" reduced redundancy in PON fibre loops – again, a change which potentially saved over a hundred million dollars but was judged to be "inconsistent with the Corporate Plan":

***Senator Conroy:** Has NBN Co. ever looked at removing the second leg of a distribution loop in certain FSAMs where the effect can be managed within the terms of the WBA?*

***Mr McLaren:** Yes. In some instances in the current build of our network where that second leg is very difficult and costly, we have made the decision not to build it.* [54]

Permitting exceptions from design rules "in some instances" where costs and construction difficulty are particularly high is entirely different to implementing a fundamental architectural change across the network – as Senator Conroy must know.

A third saving stated by Senator Conroy and his colleagues as having been implemented in September 2013 – optimised fibre testing – was still under business case scrutiny as of November 2013. [55]

Lack of Evidence on Largest Saving

Unless readers of the Select Committee's majority interim report possess NBN Co's list of potential architecture-related savings considered by Project Fox (the Company's internal project to identify savings in the second half of 2013) they wouldn't realise Labor and Green Senators only briefly mention the largest single identified saving: a proposal to reduce fibre count per premise from 3 to 1.2 and assign more premises to each fibre distribution area. Together, these changes were claimed to generate a potential saving of $3.2 billion, out of the total of $4.9 billion. [56]

Given Senator Conroy's strident assertions that "$4 billion of savings" had been "signed off" and were either implemented or in the process of being implemented by September 2013, why didn't he ask NBN Co's executives directly and in more depth about the implementation of the largest source by far of the claimed reductions in cost? (There instead was a circuitous exchange with Mr. McLaren about these changes that Senator Conroy swiftly moved on from.)

The answer is because the design changes to deliver this $3.2 billion saving had not in truth been evaluated, tested, approved, incorporated into design or implemented in the field in September 2013. Once again, they were also judged by KordMentha and the Board to represent a fundamental change to the design of the NBN inconsistent with the Labor-approved Corporate Plan. There was no prospect of such a shift proceeding to full implementation without further analysis and debate. Senator Conroy

[53] Senate Select Committee on the NBN – 'Interim Report' – Canberra, 26 Mar 2014, p.31.
[54] Ibid.
[55] KordaMentha – 'NBN Co: Independent Assessment' – 29 Nov 2013, p.114
[56] KordaMentha – 'NBN Co: Independent Assessment' – 29 Nov 2013, pp.113-114.

must have known this, but instead apparently encouraged his Select Committee majority colleagues to report that these savings had indeed been implemented in their interim report.

Strategic Review Accepted Savings with Business Cases

The Strategic Review correctly states that internal business cases for about $1 billion of identified savings had been completed by September 2013. In several cases these were in the process of being introduced – notably mandrel and FOND cable diameter correction, which remedied a basic fault in technique which had led to inflated costs for NBN Co prior to being identified and redressed.

These savings were included in the Revised Outlook. But long lead times and uncertainty over the magnitude of cost reduction and execution caused the Strategic Review to conclude: "...allowing for the time to introduce these concepts and other risks, it is prudent to adjust the amount by 50 per cent." [57]

In December 2013 NBN Co's CTO accurately summed up the character of the design changes genuinely in the pipeline at the change of government as 'incremental':

> ***Mr McLaren:*** *2.x is not a big bundle of change. There are incremental changes in many different parts of the network. We mentioned the small footprint multiport. We mentioned techniques, and I think you mentioned the now more efficient [mandrel]. There is testing which we use in our rodding and roping, giving us a more accurate gauge on the available duct space, and we have introduced those changes. So a number of changes are incrementally being introduced into the design process over time.* [58]

The relatively limited changes to the FTTP architecture under Labor (which match those assumed in Scenario 1, and which only won acceptance after repeated failures to achieve rollout and budget targets) – are clearly differentiated from the more substantial and extensive changes required to achieve the cost savings modelled in the Strategic Review 'Radically Redesigned FTTP' (Scenario 2). The latter involved fundamentally different calculations and judgements regarding network reliability and uptime, fault tolerance and commercially acceptable service levels in a fixed line access network.

But the Select Committee's majority interim report doesn't differentiate between the two in its strongly worded claims about what must (for three of the four Senators) have been unfamiliar matters. It would be instructive to understand the basis for these assertions by Labor and Green Senators.

3.3. Higher Per Premise Costs for FTTP

> ***Senator Conroy****: "The review assumes higher unit costs for the fibre build that add $14.4 billion in capital expenditure but are at odds with evidence from the NBN Co's chief financial officer—who was excluded from being part of the strategic review, was not allowed to participate, not part of the team, just putting together the strategic review—and the Department of Finance. Then, in a staggering admission, when asked, 'Did NBN Co, when you forecast into the future, Mr Rousselot, forecast into the future because you might learn something and make some efficiency savings?' The answer: virtually none. This has got to be the dumbest management in the country, on the planet, at the moment. It is going to enter an alleged 10-year build and it is barely going to*

[57] NBN Co – 'Strategic Review Report' – Dec 2013, p.63.

[58] Senate Select Committee on the NBN – 'Interim Report' – Canberra, 26 Mar 2014, p.31.

make a single efficiency saving over the 10 years. That has got to be the dumbest bunch of managers I have ever encountered in my life." [59]

Accurate information regarding NBN construction costs per premise was elusive prior to the change of government. Once this data was properly compiled, however, it told a clear story. Average costs per premise up to September 2013 were materially higher for all types of deployment (except greenfield FTTP costs, and customer connect costs for a small sample of multi-dwelling units) than had been disclosed to the public or Parliament. [60]

Further, costs per premise were continuing to rise as contract variations were settled:

> ***Dr. Switkowski:*** *A rigorous analysis of costs not yet brought to account suggests to me that the actual costs will vary from anything that has been in any plan…Most of the plans I have seen have had numbers that are well away from the actual experience…My own recent experience, when you go out into the field and talk to contractors, and you look at the stats around how the work is being done, it confirms that the costs are higher than what people had hoped they would be.* [61]

In the majority interim report, Senator Conroy and his colleagues question the credibility of the Revised Outlook's cost estimates for brownfield FTTP:

- $1997 per premise for the fibre access network.
- $2100 per premise with active service for customer connection (equivalent to $1450 per premise if brownfield customer connection costs are amortized across all brownfield FTTP premises). [62]

Access Network Costs

According to the financial data available to the Government, per premise costs – including capitalised design and infrastructure leases – for the fibre access network in commercially completed brownfield FSAMs up to 31 August 2013 (i.e. where all commercial claims between NBN Co and its construction partners had been resolved) averaged $4229. [63]

Per premise costs – including capitalised design costs and infrastructure leases – for the access network across all 205,000 brownfield premises passed up to 31 August 2013 (where significant claims for variations, disputes and other additional costs remained outstanding in more than 80 per cent of cases, and average costs were certain to rise) averaged $2589. [64]

It can be seen that compared to actual costs up to the change of government for the fibre access network in brownfield areas, the Revised Outlook forecasts assume a considerable reduction in average costs, reflecting improved productivity and efficiency.

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[59] Parliament of Australia – 'Senate Hansard' – 26 Mar 2014, p.83-84.

[60] This included NBN Co's evidence to the Parliament's Joint Committee on the NBN public hearing of 19 Apr 2013.

[61] Parliament of Australia – 'Senate NBN Select Committee Hansard' – 29 Nov 2013, p.32.

[62] NBN Co – 'Strategic Review Report' – Dec 2013, p.61. Total forecast Revised Outlook customer connection costs are $14.7 billion. If these are spread across all 10.1 million brownfields premises passed with fibre, rather than just the 7 million (70 per cent) of premises projected to be connected at the time the network is completed, per premise costs fall to $1450.

[63] This figure represents information available to the Department of Communications as of 30 Sep 2013. The figure breaks down into capex of $3849, capitalized design costs of $474, and capitalized lease costs of $266.

[64] Ibid.

Customer Connection Costs

According to financial data available to the Government, costs for fully completed customer connections (fibre running from street-side pits where multi-ports were located to optical network termination devices inside premises) were only available for 29,000 brownfield premises by 31 August 2013. [65]

The only meaningful available cost data was 'estimated at completion' or EAC (and therefore excluded variations and other post-EAC claims from contractors, which had driven access network costs to higher than anticipated rates). Up to the end of August 2013 brownfield FTTP EAC receipted costs averaging $1016 per premise. Receipted costs were at that time on average only 75 per cent of actual EAC costs, however, and there were still numerous additional claims for variations, rework, contract disputes and other items outstanding. [66]

In addition, there were a series of other reasons to expect that long-run customer connection costs per premise would be materially higher than to date:

- Lead-ins were longer, costs for using Telstra conduits higher, and design customizations and complexity more prevalent than originally forecast. [67]
- Around 44 per cent of customer connections requires multiple truck rolls. [68]
- Aerial drops (which had been expected to cost 10-20 per cent as much as new underground lead-ins) were forecast in both Corporate Plans to be 25 per cent of connections. [69] But NBN Co's lack of commercial agreements with utilities resulted in this being halved in the Revised Outlook.
- Although in August 2012 NBN Co announced it was shifting to a 'build drop' strategy to reduce lead-in costs by minimising mobilisation and demobilisation, virtually no build drop work had been performed. Nor had there been significant 'bulk drop' deployment (returning to passed premises and installing lead-ins). Both approaches were expected to accelerate capex per premise. [70]
- Few 'difficult' premises had been connected.
- Contractors engaged in customer connections claimed to be losing money or breaking even at best, suggesting unit prices would need to be increased.

After reviewing these factors, NBN Co and its advisors chose to assume a higher brownfields FTTP customer connection cost in the Revised Outlook than EAC outcomes.

Additional Costs to Achieve Serviceability

Once again, it should be noted that the significant work currently underway at NBN Co to achieve higher levels of serviceability will add substantially to historical costs.

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[65] Ibid. This is partly because NBN Co began the rollout using a 'demand drop' model for customer connection, where the lead-in and internal optical network termination device were only installed when an RSP order was received. But this led to unacceptable delays in providing service, leading to NBN Co's mid-2012 switch to 'build drop' (where all lead-ins were installed during the rollout). By the change of government virtually no lead-ins had been installed on a build or bulk drop basis, however – meaning no genuine cost data was available for NBN Co's stated rollout strategy.

[66] Ibid.

[67] NBN Co – 'Strategic Review Report' – Dec 2013, p.64

[68] Ibid.

[69] NBN Co – 'NBN Co 2012-2015 Corporate Plan' – Aug 2012, p.15.

[70] NBN Co – 'NBN Co 2012-2015 Corporate Plan' – Aug 2012, p.13.

This work includes extending the fibre access network to cul-de-sacs, gated communities and streets or blocks with 'difficult' geotypes bypassed during the original rollout for reasons of convenience or to keep stated per premise costs down.

It also includes the gradual retrofitting of lead-ins and fibre termination devices by 'bulk drop' deployment in FSAMs which were completed under the assumption that customer connection work could be performed efficiently and in a timely fashion on a demand drop basis.

The precise magnitude of these additional FTTP construction costs to achieve serviceability and their impact on historical rollout costs per premise will be made public once robust data is available.

Cherry-picked or Commercially Incomplete Data

The FTTP access and connection cost forecasts in the Revised Outlook exceed any of the public claims regarding NBN Co's FTTP costs per premise made prior to September 2013. [71] That is because the latter were in most cases distorted by use of cherry-picked and/or commercially incomplete data.

- Cost data is only meaningful after it incorporates all claims and variations from contractors (and the cost of identifying and repairing defective or unfinished work) and all premises in a particular FSAM are serviceable. There is empirical evidence that measured EAC costs for all major elements of the rollout so far are materially below commercially complete costs.
- Distortions from 'cherry-picking' arose in the first instance from NBN Co's decisions about which geographies to deploy FTTP in, and in the second instance because construction partners were permitted to 'hand back' (i.e. decline to build) FSAMs where detailed design suggested their work was likely to be time-consuming and costly.

  In addition, even in areas where FTTP was rolled out, it later became clear some contractors bypassed higher-cost streets or premises to save time and keep stated average costs per premise down. As a result in many 'ready for service' FSAMs significant numbers of premises are not serviceable (a situation now being redressed at substantial cost).

Learning & Productivity Gains

Contrary to the claims of the Select Committee's interim report, the Revised Outlook does not ignore efficiencies and learning arising from repeated tasks – even though, under Labor's oversight, few processes were put in place at NBN Co or its partners to log and learn from experience, benchmark contractor performance, identify and share best practices, or otherwise achieve the improved productivity Senator Conroy apparently believed could spontaneously materialize without such effort.

The Revised Outlook's assumption that NBN Co would not realise any rollout productivity dividend until 2017-18 reflects retention of improvements by delivery partners, given most were participating in the NBN on uneconomic terms and accumulating losses. [72] (It has been reported Silcar, for instance, has lost $60 million from NBN Co contracts.) Under any scenario, involvement in the NBN build must be commercially viable for contractors or it will not proceed.

[71] See, for instance, the NBN Co's evidence to Parliament's Joint Committee on the NBN at its public hearing of 19 Apr 2013, which cited EAC data without making any provision for variations or other post-EAC costs. This data also cherry-picked between FSAMs constructed using NBN Co's Type 1 and Type 2 architectures, and demand-drop and build-drop customer connection costs.

[72] NBN Co – 'Strategic Review Report' – Dec 2013, p.63.

Contrary to the claims of the Select Committee's interim report, NBN Co's CFO was not excluded from the Strategic Review. The finance team contributed detailed analysis throughout the process.

3.4. 'Unduly Pessimistic' Revenue Projections

> ***Senator Conroy**: The fourth point: Just because even all of those fiddles were not enough to be able to give a misleading report to the Board and to the Minister, it presumes overly pessimistic revenue assumptions for a fibre build. It does not reflect the existing strong demand for NBN services or the high data usage patterns of Australians using the NBN. There is a 50 per cent increase in data usage, just by being on the NBN. I know, Mr Acting Deputy President Bernardi, if you got hold of the real NBN you would have more than a 50 per cent increase in your usage. I have no doubt – for entirely appropriate reasons, can I say, Senator Bernardi. There is no suggestion there whatsoever. And it ignores demand for important elements of broadband quality, particularly reliability and upload speeds. Even those in this chamber – and you would be one of them, Senator Bernardi – would understand that you like uploading things. People might have thought I was suggesting you were downloading things before, but no. I know you like uploading things, and you have got so many websites that you would like to upload that would be of such benefit for the political discourse in this country that it would be staggering. But Mr Switkowski knows best. He sat in front of the committee the other day and he said, 'No Australians want 100 megabit per second speeds.' Twenty per cent of his existing customer base have taken 100 megabit per second speeds! And another five per cent have taken 50 megabit per second speeds. Twenty-five per cent of users of NBN want speeds faster than Ziggy Switkowski, Mr Turnbull or Mr Abbott have said. I will take a bet: If Senator Bernardi got a chance to sign up he'd be on the top package too. He'd want the fastest speeds and the biggest data caps. He would absolutely want it.*[73]

The Strategic Review uses exactly the same assumptions about the revenue potentially available in the market across all of its scenarios, so there is no relative disadvantage for the FTTP scenarios.

One key reason that projected revenues are lower for the two FTTP scenarios than for other Strategic Review scenarios in the fiscal years prior to 2024 is because FTTP takes significantly longer to construct – and so at each point in time until these versions of the network are finished, there are fewer served premises potentially generating revenue. As the Strategic Review points out: "premises need to be connected before they can support revenue".[74]

NBN Co Forecasts Out of Step with Benchmarks

This is not the only reason revenues under all scenarios modelled in the Strategic Review are lower than those in the two NBN Co corporate plans, however. As the Review's December 2013 report notes, NBN Co's "Corporate Plan revenues appear to be higher than justified by international benchmarks and estimates for Australian revenue evolution."[75]

Although consumers have increased their use of broadband and telephony for years, telecom carriers have not been able to extract increased revenue for providing these extra services.

[73] Parliament of Australia – 'Senate Hansard' – 26 Mar 2014, p.84.
[74] NBN Co – 'Strategic Review Report' – Dec 2013, p.57.
[75] NBN Co – 'Strategic Review Report' – Dec 2013, p.58.

- Nominal spending on fixed line telecommunications in Australia has fluctuated between $10 and $11 billion since 2000 – a chart illustrates this in the original NBN Co 2011-2013 Corporate Plan. [76]
- From 2010-11 to 2011-12 Australian fixed-line nominal revenues fell by 0.4 per cent. [77]
- Once growth in premises is factored in, flat revenues imply falling average revenue per user (ARPU). The Strategic Review estimates real broadband ARPU in Australia declined 1.9 to 2.8 per cent from 2008 to 2013, "in line with the typical experience that consumers pay "less for more" or "the same for more" in nominal terms for broadband as speeds advance". [78]

In contrast, both approved NBN Co Corporate Plans projected strong real growth in ARPU from the beginning of construction until 2021, and indeed for a few years beyond.

Government Revenues Double Counted

The Strategic Review also reduced its estimate of revenues after discovering that the NBN Co 2012-2015 Corporate Plan had effectively double-counted government revenues (by counting them once as a stand-alone category, and once as a part of broader non-residential revenues). NBN Co likewise overstated its likely revenues for business customers and from multi-cast products relative to international benchmarks. [79]

The proportions of users currently willing to pay for higher NBN Co speed tiers cited by Senator Conroy as being ahead of plan are actually broadly in line with the proportions forecast in both the Corporate Plan and the Strategic Review. But this is before the migration onto the NBN of late adopters likely to wait until the disconnection of the copper network, which may reduce the proportion of users on those higher data rate plans.

Further Price Rises if FTTP NBN Proceeds

In considering whether NBN Co's original revenue projections were realistic or optimistic, it should not be forgotten that the current level of prices represents an artificial construct, and have little to do with either actual costs or achieving the 7.1 per cent IRR target set by the previous government.

Current prices are not high enough for the latter and under a mostly-FTTP rollout will have to follow what NBN Co describes as a decade-long 'glide path' that increases revenues per user to levels sufficient to earn the targeted return. The Corporate Plan assumes this will not have any effect on usage – prompting international experts to suggest its forecasts are implausible. [80]

3.5. Costs of a Third Satellite

> ***Senator Conroy****: The fifth point: It adds a third satellite to Labor's NBN, without direct explanation. It just lumps it in—'We're going to buy a new satellite'. Here is the fiddle for this: We'll pay for it and have it launched in 2021, which means we count the cost of the satellite in NBN's cost base but the 100,000 customers that are projected to use the new satellite all happen*

[76] NBN Co 2011-2013 Corporate Plan, p.35.

[77] JP Morgan: 'Australian Telecom Sector in FY2012,' p.51.

[78] NBN Co – 'Strategic Review Report' – Dec 2013, pp.58-59.

[79] Ibid.

[80] Robert Kenny: 'NBN Co's Bold Assumptions on Australians' Willingness to Pay' Nov 2011, online at: http://commsthought.blogspot.co.uk/2012/11/nbn-cos-bold-assumptions-on-australians.html

after 2021—so we cannot include the revenues from the NBN's new satellite in the business plan. So you put a satellite cost in, charge it to the NBN for the whole future cost basis of this rort, but you are not allowed to include the revenue from the customers. Pathetic really, isn't it? Yes. [81]

NBN Co is chartered to provide fast broadband to all addressable premises in Australia. Its fixed wireless and satellite networks serve 1 million premises outside the fixed line footprint – on the fringes of major cities, and in less populated regional, rural and remote areas. [82] These homes and businesses are the 'last 7 per cent' of the broadband cost curve: the premises it is most expensive to connect.

The second phase of NBN Co's Strategic Review (the Fixed Wireless and Satellite Review) will provide a report to the NBN Co Board and Government on progress in these areas shortly.

Without pre-empting the report's findings, it is clear there are a number of impediments to a successful rollout in the 'last 7 per cent' – and equally clear they mostly arise from inept or inexplicable decisions by NBN Co's former leadership. Shamefully, failures of planning and execution have set back the rollout of the NBN to those communities with the most urgent need for publicly-funded broadband.

NBN Co Significantly Underestimated Demand

The most significant self-inflicted wound is a forecasting error – NBN Co vastly underestimated household and business take-up of fast broadband outside the fixed line footprint. A key finding of the Fixed Wireless and Satellite Review will be that take-up of the NBN in these areas is likely to be 2 to 3 times higher than anticipated. [83]

NBN Co's original 2011-2013 and revised 2012-2015 Corporate Plans both forecast that in 2021, when the rollout finished, there would be about 230,000 fixed wireless and satellite users. [84]

But the Fixed Wireless and Satellite Review estimates demand from between 440,000 and 620,000 users is a more likely range.

If demand of that scale materialized for the NBN in regional and remote areas planned by Labor, up to 200,000 users would be excluded entirely, while those households and businesses which could connect would receive service levels significantly below those committed to by NBN Co and Labor. [85]

Clearly this has prompted the Government and NBN Co's new leadership to evaluate the most cost-effective adjustment of the rollout plan that can effectively accommodate the increase use. The Fixed Wireless & Satellite Review will set out the options for re-aligning the rollout to resolve the mismatch between capacity and demand. This will necessarily require additional capital expenditure.

It is not clear how non-fixed-line demand came to be underestimated, but the low take-up assumption has remained constant across multiple approved and draft versions of the Corporate Plan.

Since the original NBN Co 2011-2013 Corporate Plan in late 2010, NBN Co's forecast take-up rates for fixed wireless and satellite of 22-25 per cent have been virtually unchanged – barely budging in a draft

[81] Parliament of Australia – 'Senate Hansard' – 26 Mar 2014, p.84.

[82] In 2021 NBN Co estimates 11.7 million premises in the fixed line footprint (and served by FTTP, FTTN, FTTB/dp or HFC) and 1 million premises served by fixed wireless and satellite. NBN Co – 'Fixed Wireless & Satellite Review' – Draft Version, Apr 2014, p.24.

[83] NBN Co – 'Fixed Wireless & Satellite Review' – Draft Version, Apr 2014, p.9.

[84] NBN Co – 'NBN Co 2011-2013 Corporate Plan' – Dec 2010, p.134 & NBN Co – 'NBN Co 2012-2015 Corporate Plan' – Aug 2012, p.72

[85] NBN Co – 'Strategic Review Report' – Dec 2013, p.57.

2013-2016 Corporate Plan leaked in mid-2013, even though the Company doubled the maximum download rates for both services to 25 Mbps in early 2013. [86] [87]

Take-up rates for wireless and satellite similar to those assumed by NBN Co were implicit in the 2010 McKinsey/KPMG Implementation Study. Drivers it cited included competition from 4G mobile, scope for a bigger wireless rollout (and hence more overlap with DSL) and the potential impact of Telstra competing rather than co-operating with NBN Co. [88]

The 'last 7 per cent' includes both outback hamlets and premises on the outskirts of large cities. This means there are large variations in the alternative connectivity available. Some premises can access excellent 4G networks; others have no alternative except costly commercial satellite broadband. [89]

Even so, it is instructive to consider what needed to happen for NBN Co's fixed wireless and satellite forecast to be right: across the million Australian premises with least adequate broadband prior to the NBN, the offer of a high-quality heavily-subsidised fast connection at metropolitan-equivalent prices had to be rejected by three out of four consumers.

Heavy Demand & Usage for Interim Satellite Service

An indication of pent-up demand came in 2013 from rapid take-up and heavy use of the NBN Interim Satellite Service (ISS), which took 14 months to hit its effective capacity of 45,000. The former government informed 165,000 and then 250,000 premises they were eligible, leading to thousands attempting to sign up only to find the ISS fully subscribed.

NBN Co's design of the ISS provided it with no lever to enforce its 'fair use' ceiling on usage per customer. This allowed Retail Service Providers to ignore the ceiling and sell far more capacity to users than the ISS could deliver. A minority of users made use of the outsized monthly download quotas the more irresponsible RSPs had sold them – degrading ISS download rates to little better than dial-up for everyone, and trashing most of the value of $350 million NBN Co spent on the service. [90]

NBN Co is examining how to alter its product offering on the Long Term Satellite Service (LTSS) to prevent similar gaming by RSPs and service deterioration due to excessive use.

Satellite Capacity

The least flexible technology used in the NBN is satellite. Satellites can't be fine-tuned once launched, and their 'beam' configuration (each of the two identical LTSS NBN satellites delivers 101 geographically-specific spot beams that serve between 500 and 15,000 premises) must be specified years in advance of entry to service.

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[86] Draft (but unapproved) NBN Co 2013-2016 Corporate Plan dated 28 Jun 2013, reproduced on *The Australian Financial Review* website Sep 2013. Combined fixed wireless/satellite take-up projected for 2021was 24 per cent.

[87] Take-up is briefly discussed in the original Corporate Plan. The 1-in-4 take-up estimate is explained as reflecting lagged broadband penetration in regional areas and competition from substitutes such as Telstra Next-G mobile. NBN Co – 'NBN Co 2011-2013 Corporate Plan' – Dec 2010, p.131.

[88] See McKinsey/KPMG for DBCDE – 'NBN Implementation Study' – Mar 2010, p.288 and pp.294-295. Originally 10 per cent of premises were to be served by fixed wireless/satellite, but this was reduced to 7 per cent after the McKinsey/KPMG study. In 2010 3G broadband reached 98 per cent of premises and DSL reached 92 per cent of premises.

[89] Measured in terms of dollars per month per GB of downloaded data, commercial satellite broadband services can cost up to 100 times as much as the product offerings proposed for the NBN LTSS.

[90] An account of the ISS issues will be included in the NBN Co Fixed Wireless & Satellite Review's report.

NBN Co locked in the design for its two LTSS satellites before its underestimation of demand was realised. Their entire capacity was fully committed to a level of product that can only be provided to a maximum of 209,000 users – a subset of the demand now expected from isolated premises. And the useable capacity is less, since total capacity is allocated across spot beams that in many cases align poorly with demand. Beams in south-eastern Australia are forecast to be substantially oversubscribed, while beams serving the outback will be under-utilized. By delaying design and launch of the second satellite, more capacity could have been redirected to areas of highest demand.

Spectrum Gaps

Another contributor to the 'last 7 per cent' mess was NBN Co's decision in early 2011 to buy 2.3 GHz spectrum licenses from Austar covering regional areas but not the fringes of the major capitals (where Optus owns this spectrum). The resulting spectrum gaps contain 80,000 premises modelled as cost-effectively served by wireless. There is no alternative cost-effective means of reaching most at present.

Following acquisition of the Austar spectrum and lock-in of the LTSS usage, there was little planning inside NBN Co to address the increasingly evident coverage and capacity gaps in both networks until the change of government. NBN Co did book a provision against the spectrum issue, however, albeit a provision short of the $400-500 million it expected a solution to this problem to cost.

Closing Capacity & Coverage Gaps is Costly

The 2012-2015 Corporate Plan forecast capex of $3.1 billion for the LTSS, ISS and fixed wireless rollouts (later revised to $3.2 billion in an unpublished version). But the self-created tangle NBN Co currently faces of underestimated 'last 7 per cent' demand, spectrum coverage and capacity gaps, lock-in of the LTSS capacity and similar delays and budget overruns as the fixed line rollout is neither inexpensive nor easy to resolve. So this capex figure will rise.

One possible approach to these issue would be a third satellite – as the Revised Outlook appropriately assumed, as a placeholder. But there are other options available for reconfiguring the non-fixed rollout (e.g. rolling out FTTN to small towns, or increasing the number of wireless towers) which the Fixed Wireless and Satellite Review will set out. Regardless, it is currently estimated by NBN Co that extra capex in the last 7 per cent is likely to equal or exceed $1.5 billion. [91]

3.6. Exclusion of Revenues

> ***Senator Conroy****: The sixth point: In scenario comparisons the strategic review includes costs and revenues for the multi-technology mix bill at assumed completion—but excludes the revenues, worth $50 billion, from the fibre build. That's right! They package it up to 2021 and then say, 'Because we have extended the deadline for the completion, we're going to rule out $15 billion worth of revenue that should be included, because we're just saying, no, you can't count it after 2021. We've got to compare the revenues at 2021 against our dodgy model at 2021. (Time expired)* [92]

[91] As Senator Conroy's accusation notes, capex additional to the Corporate Plan forecast of $3.1 billion on the combined fixed wireless and LTSS was allowed for in the Strategic Review's December 2013 report. The second phase of the Strategic Review will determine if the $5 billion assumption now embedded is sufficient.

[92] Parliament of Australia – 'Senate Hansard' – 26 Mar 2014, p.84.

Senator Conroy fundamentally misunderstands how peak funding requirements and return on investment are calculated. The peak funding for each scenario occurs at the point when cumulative combined operating and capital expenses minus cumulative revenues is at its greatest point – typically the year before the scenario turns cashflow positive. Revenues after that point are of relevance to how soon the capital raised to provide funding is paid off, but not to the amount of peak funding.

Identical Comparison Periods for IRR & Peak Funding

No revenues have been excluded from any of the scenarios in calculating the required funding for each, or their internal rates of return – IRRs are all calculated over the same period: 2010 to 2040.

The table of revenues over 2011-2021 was chosen purely to assist comparison with past Corporate Plans – all previous NBN Co documents have included costs and revenues over 2011-2021. [93]

In any case, focusing on revenues earned in the 2022, 2023 and 2024 fiscal years in comparing the various Strategic Review scenarios is not some silver bullet that transforms consideration of Labor's FTTP NBN as Senator Conroy and a few others appear to believe.

- For the Revised Outlook (Scenario 1) revenues over the three years are $15 billion.
- For Radically Redesigned FTTP (Scenario 2, a more efficient and streamlined FTTP rollout that Labor would never have been able to execute for reasons explained in section 4) revenues over those three years are less than $15 billion.
- For the multi-technology mix NBN (Scenario 6) revenues over those three years are $17 billion, higher than either FTTP scenario, in large part because it is completed for the whole period.

3.7. A Multi-Technology NBN Will Need to be Upgraded

Senator Conroy did not canvass this point in his speech in the Senate following the tabling of the interim report, but the gist of the Committee's objection is clear from various passages in its interim report:

> ***Senate Select Committee Interim Report**: Although the Strategic Review discusses 'illustrative' upgrade paths and 'hypothetical' upgrade timing, no upgrade costs for the MTM are included in the financial metrics…* [94]

The Strategic Review's discussion of upgrade paths is necessarily illustrative because there is no certainty when (or whether) the upgrades described will be required as a response to increased demand for broadband.

In addition, there is also considerable uncertainty about the future path of technological advances, which may continue to extend the life of certain parts of existing networks, particularly lead-in cables.

It is not accurate to state that the Strategic Review is silent on these costs, however. On the contrary, its analysis demonstrates that even after allowing for possible future upgrade costs, there is a significant net benefit in choosing the multi-technology mix NBN over FTTP.

What the treatment of upgrade paths in the Review shows is that:

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[93] See, for example, the approved 2011-2013 Corporate Plan, the approved 2012-2015 Corporate Plan, and the two leaked versions of the 2013-2016 Corporate Plan ('version 12' and 'version 13') that majority Senators cite repeatedly in the interim report.

[94] Senate Select Committee on the NBN – 'Interim Report' – Canberra, 26 Mar 2014, pp.87-88.

- A credible upgrade path to download data rates higher than 100 megabits per second is available for all of the technologies used in the fixed line footprint in the multi-technology mix NBN.
- Even if the multi-technology mix NBN has to be upgraded to FTTP at a later date, a net financial benefit arises from deferring the latter expenditure as long as the multi-technology mix NBN operates for about five years, once the time value of money is taken into account.
- The assessed benefit does not account for any option value that is created by deferring commitment to a large irreversible upgrade (and keeping open the option of taking advantage of technical advances or reductions in unit costs that arise over that interval). [95]

Uncertain Timing

Given the upgrades presented in the Strategic Review are likely not to be needed until the 2020s, and in some cases longer, it is difficult to make plausible assumptions as to how their financial cost should be any more fully factored into the financial modelling of the proposed multi-technology mix NBN. Instead, the Strategic Review demonstrates that whenever these costs materialise, the option of waiting until demand is more clearly understood is positive in net present value terms.

[95] NBN Co – 'Strategic Review Report' – Dec 2013, p.101.

4. OTHER MATTERS RAISED IN THE INTERIM REPORT

There are a number of other claims in the Select Committee's majority interim report, which were not pertinent to the attack on the Strategic Review, but are equally misleading and require a response.

4.1. Documents Alleged to be in the Incoming Government Brief

> ***Select Committee Interim Report****: The committee considers that all substantial information from this advice dealing with the issues/problems of implementing the Coalition broadband policy was included in the Incoming Government Brief.*

The Government has made a decision not to release incoming government briefs (IGBs).

The Opposition has asserted that several documents authored inside NBN Co (but not necessarily representing the views of the Company) that it obtained and later selectively leaked to the media, were part of the 2013 election communications portfolio IGB. The quote from the Select Committee majority report suggests even Senator Ludlum believes he knows exactly what was in the IGB.

The documents in question all originated inside NBN Co, commented on aspects of Coalition broadband policy, were reported in the media after September 2013, and were claimed by Labor to be part of the IGB. To assist public debate without breaching the important principle that material in the IGB should remain confidential, this statement can be made: none of these documents were in the IGB.

The Senate Select Committee's claim otherwise is without foundation.

4.2. Redactions & NBN Co Transparency

> ***Select Committee Interim Report****: The committee notes the heavily redacted nature of the public version of the Strategic Review. In-depth scrutiny of the Strategic Review's findings with regards to delays in FTTP deployment (including construction delays), Fixed Wireless deployment, and financial performance (particularly Direct Operating Expenditure) is compromised by these redactions.*

> ***Select Committee Interim Report****: Transparency has decreased markedly at NBN Co since the change of government, despite undertakings prior to the election.* [96]

The Government did not ask for any part of the Strategic Review report to be redacted, and would have supported full release if this had been legally and commercially feasible. It was not – because the report included confidential data NBN Co was legally obliged to not disclose.

All redactions were at the request of NBN Co to fulfil legal obligations or protect its commercial interests. Excised material fell into one of three categories:

- Information whose publication would violate legal commitments about its handling entered into by NBN Co (e.g. payments to Telstra under the Definitive Agreements, which are confidential).
- Information whose publication would weaken NBN Co's position in commercial negotiations with parties such as Telstra or construction contractors (e.g. detailed cost breakdowns).

[96] Senate Select Committee on the NBN – 'Interim Report' – Canberra, 26 Mar 2014, p.xi.

- Characterizations of NBN Co's conduct or capabilities whose publication would impair NBN Co's position in existing legal proceedings or provoke new proceedings.

The Strategic Review discusses many sensitive issues and contains detail well beyond the disclosures public listed companies are required to make. From this perspective, the redactions NBN Co argued for are modest – as they are compared to the volume of material excised under the previous government from other NBN-related documents of similar sensitivity (e.g. Greenhill Caliburn's review of the NBN Co 2011-2013 Corporate Plan). [97]

Some critics have claimed the redactions discredit the Government's push for transparency at NBN Co – and as the quote above demonstrates, the Select Committee alleges transparency has been reduced since the election.

Steps Forward on Transparency

Increased transparency at NBN Co has been addressed in many ways – including the introduction of weekly online publication of rollout and customer data, monthly reports to Shareholder Ministers, quarterly financial and operational reports to Parliament, and the recent initiation of public briefings on NBN Co's quarterly results, which are open to analysts, media and other stakeholders.

But transparency, like any other objective, must be lawful and avoid commercial damage to taxpayers – which required redaction of commercially sensitive and legally protected data.

Rollout Information

Additional concerns have been raised about NBN Co's online release of certain rollout data. It might be noted that of the several types of detailed rollout information claimed to have been removed from the NBN Co website 'since the change of government' in the Select Committee's interim report, at least one was removed prior to the 2013 election, in August, and none was removed at the behest of the current Government.[98]

To the extent that such information avoids creating a misleading impression of the rollout (like the former government's maps) and is not commercially sensitive, the presumption of the current Government is that such data should be published.

4.3. Estimated Costs for a Multi-Technology Mix NBN

> ***Select Committee Interim Report:*** *The Committee reiterates its concerns about the heavily redacted nature of the public version of the Strategic Review. As noted, the Strategic Review underpins a potential Commonwealth investment of more than $40 billion – not including flagged technology upgrades – and should be made available to the Parliament.*

[97] Greenhill Caliburn – 'Review of NBN Co Limited's Corporate Plan' – Jan 2011. When this document was finally made public (which only happened in response to a Freedom of Information request, it) this document was so heavily redacted that the second half may as well not have been released. Out of 14 pages examining NBN Co's revenue forecasts, only a dozen paragraphs and a few tables of data mostly available from public sources were not redacted.

[98] Senate Select Committee on the NBN – 'Interim Report' – Canberra, 26 Mar 2014, p.121.

The NBN Strategic Review estimates a mixed technology NBN will require $41 billion of funding. It can be compared to Telstra's projected costs for a broadly similar upgrade which were put at $15 billion by its then-CEO Sol Trujillo in May 2008. [99]

As Coalition senators noted in their contribution to the Select Committee's interim report, some of the factors driving up the price of the NBN are outside government's control.

- Labour and materials are more expensive in Australia than comparable countries.
- Australia's geography raises the cost of serving the most remote premises.
- Unlike Telstra, NBN Co doesn't own a network and must pay to make use of legacy infrastructure.

Greater prudence in forecasting is also a factor. All but one of the cost estimates in the Strategic Review reflect the new NBN Co leadership team's view that the Company should allow for a 'contingency reserve' (funds budgeted to cover cost overruns) of 20 per cent of capex, given the project's risks and complexity. The exception is the Revised Outlook (Scenario 1) for the Labor FTTP NBN, where the contingency reserve is only 10 per cent of capex, as it was in the NBN Co 2011-2013 and 2012-2015 Corporate Plans.

(Note that on a 'like-for-like' basis where all scenarios are costed using a 20 per cent contingency reserve against capex, funds required for Labor's FTTP NBN rise from $73 billion to $78 billion.)

But the real drivers of the NBN's final price tag are the vast financial obligations entered into under the Labor government that the network must now bear.

Opex Dominated By Payments to Telstra & Optus

In June 2011 NBN Co agreed to pay Telstra and Optus to gradually migrate their customers over to the NBN and decommission or deactivate their rival networks. NBN Co also agreed to enter into leases over Telstra dark fibre, ducts and exchange space with an average duration of 35 years. The 2012-2015 Corporate Plan forecasts the resulting operating expenses for payments to Telstra and Optus will total $17 billion and account for 90 per cent of direct opex in the period between 2011 and 2021. [100] A further sense of the magnitude of these costs can be obtained from media reports in April 2014 of financial information reportedly prepared by Goldman Sachs for presentation to the NBN Co Board in May 2013, which showed that over the life of the Definitive Agreements, nominal payments by NBN Co to Telstra would exceed $98 billion.[101]

Higher Capex on Non-Fixed Line Assets

To deliver the network coverage and service levels promised by the Labor government, NBN Co has committed to a larger investment in satellite, wireless, the transit network and the Company's IT and BSS/OSS systems than previously estimated. The Strategic Review forecasts capex on these (and

[99] Grahame Lynch – 'Comment: Here Cometh the Reality Check' – CommsDay, 28 May 2008.

[100] NBN Co – 'Strategic Review Report' – Dec 2013, pp.51-52: "Approximately 90 per cent of total direct operating expenditure" in 2011-2021 is paid to Telstra and Optus. Exhibit 2-17 shows direct opex is $19 billion in those years. Note this excludes payments to Telstra for lead-in conduits, which is classed as capex.

[101] CommsDay, 14 April 2014. The nominal figure appears to include renewal of NBN Co's leases over Telstra infrastructure which expire in 2047 for a further 20 years, as NBN Co has the option to.

network design) will total $12.8 billion from 2011 to 2021 – $3.6 billion or 40 per cent more than in the 2012-2015 Corporate Plan. [102]

Excessive Cumulative Corporate Overheads

Under the previous government, NBN Co ramped up its corporate overheads (spending on salaries, consultants, legal advice, employee travel, office space, recruitment and advertising) far ahead of its revenues and rollout. [103] The current Corporate Plan forecasts 'other' (overhead) operating expenses will total a staggering $7.9 billion from 2011 to 2021. That is more than double the estimate offered to the public by the Labor Government and NBN Co in the original Corporate Plan in 2010. [104] About $1.8 billion had already been spent to December 2013. While these costs are so some extent controllable, many have been locked in far ahead of expected growth.

$34-38 Billion of Costs for Any NBN

Combined, these three areas amount to $34-38 billion of spending commitments between 2011 and 2021 locked in under Labor's watch. It is important to realize this is before a single cent is spent upgrading the fixed line network that 93 per cent of Australian premises will rely on for very fast broadband.

The overwhelming majority of these obligations must be met in full if the NBN is to be completed.

This is true regardless of choices about network design or technology. It is true under Labor's FTTP NBN, under the Coalition's multi-technology-mix NBN, and under the five other scenarios modelled in the Strategic Review. All face the same $34-38 billion baseline of financial commitments if the NBN's fixed, wireless and satellite networks are rolled out.

These expenses are so vast that they make immensely challenging for NBN Co to earn commercially adequate returns on its invested capital.

4.4. Labor's Capacity for Radical Change at NBN Co

> ***Select Committee Interim Report**: In fact, the so-called "radically redesigned" FTTP scenario represents a better estimate of the costs that would be incurred by an active and interested management than the Revised Outlook.*

The Senate Select Committee claims that the Strategic Review's 'true' forecast for continued deployment of a Labor FTTP NBN was not the $73 billion Revised Outlook (Scenario 1), but 'Radically Redesigned FTTP' (Scenario 2).

This scenario cuts costs per FTTP premise by a third and funding by $9 billion by streamlining and simplifying the construction delivery model, smoothing work flows, systematizing learning and

[102] NBN Co – 'Strategic Review Report' – Dec 2013, exhibit 2-25, p.61. Revised non-FTTP capex is $12.8 billion excluding the contingency, up from $9.2 billion. Most satellite, transit, IT BSS/OSS and wireless capex is committed.

[103] NBN Co – 'Strategic Review Report' – Dec 2013, exhibit 2-18, p.53.

[104] In 2010 'other' (non-direct) opex was forecast at $3.7 billion for 2011-2021. In 2012 this increased to $7.9 billion. NBN Co – 'NBN Co 2011-2013 Corporate Plan' – Dec 2010, p.135; 'NBN Co 2012-2015 Corporate Plan' – Aug 2012, p.77.

feedback to improve productivity, and using more aerial deployment, lower fibre counts, less redundancy and more cost-efficient materials and techniques. [105]

Far from being the outcome achieved under 'an active and interested management,' this would have represented a profound challenge to the engineering-driven culture, gold-plating, risk aversion and closely managed delivery model that became entrenched at NBN Co under Labor.

Could Labor Have Transformed NBN Co?

Indeed, to argue Labor's FTTP NBN could have shifted smoothly from the Revised Outlook trajectory to the Radically Redesigned FTTP trajectory (and cost savings) requires explaining exactly how the vast transformation in organizational culture, behaviour and capabilities necessary for such a shift would have been achieved.

Given the former government's incompetent oversight of NBN Co, it is hard to envisage.

In fact it is doubtful whether NBN Co would have been in a position to achieve the Revised Outlook if Labor had been re-elected, given its dysfunctional final 12 months under the former government, when infighting was rife and the rollout pace was erratic. Addressing profound but unacknowledged cultural and organizational challenges would have taken significant time and effort.

Revised Outlook Isn't Just 'Business as Usual'

It is also important to understand that in important respects, the Revised Outlook is not really 'business as usual'. Rather, it estimates the time and cost to complete Labor's FTTP NBN assuming there are significant improvements in the management of the project (notably a less complex and adversarial delivery model), productivity and efficiency gains are made, and no other unexpected problems or impediments are encountered. [106]

Therefore, for NBN Co's former leadership and the former government to have delivered the NBN by the 2024 completion date or within the $73 billion funding envelope estimated in the Revised Outlook would have required far better informed and adroit handling of the project – and far more public candour about its shortcomings – than was ever displayed up to September 2013.

The Revised Outlook's forecast that the FTTP network could be completed by June 2024, for example, depends upon overcoming a broad group of interrelated weaknesses and challenges, including: [107]

- Resolving outstanding commercial disputes with construction partners.
- Improving NBN Co's ability to provide predictable, visible deployment workflow.
- Improving NBN Co's ability to provide a predictable stream of constructable designs to partners.
- Avoiding further delays from duct remediation (restoration) or augmentation (widening) – the areas where asbestos safety concerns became a major driver of cost and delay during 2013.
- Preventing NBN Co's internal project management constraints becoming a bottleneck.
- Ensuring the availability of sufficient construction partners in the market capable of dealing with the complexity and scale of the required work.

[105] NBN Co – 'Strategic Review Report' – Dec 2013, p.85.

[106] The range of changes needed to make NBN Co's pre-existing construction delivery model less cumbersome and more effective are discussed on page 80 of the Strategic Review.

[107] NBN Co – 'Strategic Review Report' – Dec 2013, p.45.

Bluntly, there is limited evidence supporting the proposition that all of these fixes were likely to be expeditiously achieved under Labor oversight of NBN Co – in part because there was no indication Labor understood there was any problem with NBN Co's leadership, culture or capabilities.

Labor Never Publicly Acknowledged NBN Co Problems

On the contrary, there was outright denial of these problems. When the NBN Co Board reportedly recommended to Senator Conroy in May 2013 that the former government terminate the employment of the then-CEO Mr Michael Quigley, as part of an urgent push to redress deep organizational flaws at the Company, Senator Conroy blocked the request. [108]

Given Labor's inability to even acknowledge NBN Co's dysfunctional leadership and culture, gaps in capability and competence, lack of accountability and underperformance – much less to actually redress these deficiencies – it is questionable whether an FTTP NBN could have been finished at all under the former government.

To simply assert, as the Senate Select Committee has done, that the 'Radically Redesigned FTTP' scenario depicts the 'true' FTTP costs achievable under Labor is to profoundly underestimate the yawning gaps in capability, hostility to external advice and dysfunctional culture that became established at NBN Co under the former government – and to ignore the limited insight and capacity at governmental level to respond to these.

[108] John McDuling – 'McKenna in push to replace NBN chief Quigley' – *The Australian Financial Review*, 30 May 2013.

5. APPENDIX – NBN CO STRATEGIC REVIEW

On 3 October 2013 the Government issued terms of reference for a Strategic Review of the National Broadband Network and asked NBN Co under its new leadership to carry out this work, consistent with the Coalition's pre-election broadband policy.

The initial phase of the Strategic Review was directed to assess: [109]

- The progress and cost of the NBN rollout to date.
- The 'Revised Outlook' – the time and cost to complete the FTTP NBN if it proceeded unchanged.
- The estimated time and cost to complete the network under various alternative designs.
- The impact of these alternatives on broadband prices and NBN Co's commercial viability.

This work was overseen by NBN Co's Executive Chairman Dr. Ziggy Switkowski and carried out by a cross-divisional NBN Co team supported by Boston Consulting Group, Deloitte Touche Tohmatsu and KordaMentha.

A report containing its findings was approved by the NBN Co Board, presented to the Government and tabled in Parliament on 12 December 2013. [110]

Broadly, the report found Labor's fibre-to-the-premises NBN was a year behind schedule, would required almost $30 billion more than had been previously estimated, and would take at least a decade to finish.

5.1. Findings on the Progress of the NBN

The Strategic Review found that as of 30 September 2013:

- The Government had invested a total of $6.5 billion in NBN Co. The Company's accumulated losses totalled $2.2 billion. [111] Total capital expenditure was $3.7 billion. [112]
- The NBN 'passed' or 'covered' (extended to) 384,000 premises. This was 3 per cent of the total premises required to finish the network. [113]
- The fibre rollout had passed 227,000 premises. But 74,000 could not obtain service because they were in multi-dwelling or business buildings and 104,000 faced delays of months for service. [114]
- Cumulative spending on 'indirect' overheads such as salaries, consultants, legal advice, IT, travel and entertainment, office space and advertising was $1.6 billion. [115]
- From April 2009 to September 2013 revenue from broadband was $30 million – or $1 for every $54 spent on salaries, consultants and other overheads. [116]
- About 98,000 homes and businesses had an active service over the NBN. This compared to 152,000 users forecast by the same date in the 2012-2015 Corporate Plan. [117]

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[109] Minister for Communications & Minister for Finance – 'NBN Co Initiates Strategic Review' – Joint release, 3 Oct 2013.
[110] Online at: http://www.nbnco.com.au/content/dam/nbnco/documents/NBN-Co-Strategic-Review-Report.pdf
[111] NBN Co – 'Strategic Review Report' – Dec 2013, p.50 (losses) and p.67 (funding).
[112] NBN Co – 'Strategic Review Report' – Dec 2013, p.54.
[113] NBN Co – 'Strategic Review Report' – Dec 2013, p.40.
[114] NBN Co – 'Strategic Review Report' – Dec 2013, p.43.
[115] NBN Co – 'Strategic Review Report' – Dec 2013, p.53.
[116] NBN Co – 'Strategic Review Report' – Dec 2013, p.51.
[117] NBN Co – 'Strategic Review Report' – Dec 2013, p.41.

5.2. Findings on the Revised Outlook

Key findings on the Revised Outlook for Labor's fibre-to-the-premises (FTTP) NBN were:

- Labor's FTTP NBN would cost $73 billion – 66 per cent more than budgeted. Its cost was $78 billion using the same contingency against cost overruns as other scenarios in the Strategic Review. [118]
- Capital expenditure to complete Labor's FTTP NBN would be $56 billion over 2011 to 2024, against the $37 billion over 2011 to 2021 claimed in the Corporate Plan. [119]
- The Labor NBN would not be completed until 2024 if it proceeded unchanged. [120] When Kevin Rudd unveiled the FTTP network in 2009, he stated it would be finished in 2018. [121]
- The Revised Outlook forecast by June 2016 the Labor NBN would be available at 2.6 million premises – less than half the 5.5 million forecast to have access in the 2012-2015 Corporate Plan. [122]
- Because of rollout delays, less revenue per customer, and lower take-up, the Revised Outlook estimated total revenues between 2011 and 2021 for an FTTP NBN would be up to $14 billion (or 61 per cent) less than the $23 billion in both Corporate Plans. [123]
- The returns required under the Labor NBN would result in a 50 to 80 per cent increase in retail broadband prices – adding up to $43 per month to a typical household's bill. [124]
- It was doubtful the Labor NBN could borrow in its own right from capital markets in the near to mid-term without a government guarantee.
- If it is assumed that returns on investment greater than the inflation rate are required to keep the NBN off the Budget outlays statement, the FTTP NBN would struggle to achieve this benchmark.

5.3. Findings on a Multi-Technology NBN

NBN Co recommended shifting from FTTP to an optimized multi-technology mix NBN. Under this model very fast broadband could be provided using any one of six technologies: fibre to the premises (FTTP), fibre to the node (FTTN), fibre to the distribution point (FTTdp), hybrid fibre-coaxial cable (HFC), fixed wireless or satellite. Which is chosen would depend on a locality's geotype, population, density, level of demand and existing infrastructure.

- A multi-technology NBN could save $32 billion by leveraging existing infrastructure. [125]
- A multi-technology NBN could be rolled out faster: to 96 per cent of premises in the fixed line footprint and 100 per cent of premises in the non-fixed footprint by 2019. [126]

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[118] NBN Co – 'Strategic Review Report' – Dec 2013, p.55. The 'Revised Outlook' estimate of $73 billion for Labor's FTTP NBN assumes a 10 per cent capex 'contingency reserve' (set aside for cost overruns) in line with the NBN Co Corporate Plan. If the same 20 per cent contingency used in all other Review scenarios is applied to Labor's FTTP NBN, the cost estimate rises to $78 billion.

[119] NBN Co – 'Strategic Review Report' – Dec 2013, p.36

[120] NBN Co – 'Strategic Review Report' – Dec 2013, p.11.

[121] Prime Minister, Treasurer, Minister for Finance & Minister for Communications – 'New National Broadband Network' – Joint release, 7 April 2009: "…the Government and the private sector will invest up to $43 billion over 8 years to build the national broadband network" with rollout commencing "in early 2010".

[122] NBN Co – 'Strategic Review Report' – Dec 2013, pp.45-46.

[123] NBN Co – 'Strategic Review Report' – Dec 2013, p.37 and p.102.

[124] NBN Co – 'Strategic Review Report' – Dec 2013, p.106. Note this is only a 'first round' rise. Since higher prices reduce demand, to generate revenues sufficient for the 7.1 per cent return on capital targeted by Labor would require further price increases.

[125] NBN Co – 'Strategic Review Report' – Dec 2013, p.102.

[126] NBN Co – 'Strategic Review Report' – Dec 2013, p.98 and p.102.

- By 2019, in the fixed line footprint, seven out of ten premises would have access to download rates of at least 100 megabits per second and nine out of ten to at least 50 megabits per second. [127]
- Prices would not have to rise (assuming Government accepted returns near the long bond rate). [128]
- If it is assumed that returns on investment greater than the inflation rate are required to keep the NBN off the Budget outlays statement, a multi-technology NBN should meet this hurdle under most scenarios.

5.4. NBN Co Culture & Capabilities

Beyond headline numbers, the Strategic Review emphasised the need to transform NBN Co's internal culture and capabilities. KordaMentha found NBN Co's underperformance was due to "lack of deep internal experience in complex infrastructure, construction projects and project management," and "an unrealistic assessment by key internal and external stakeholders of the complexity and time required to complete the task". [129] Management had displayed "blind faith in the achievability of the Corporate Plan, notwithstanding clear factual evidence to the contrary," while key decisions lacked "appropriate commercial rigour and oversight." In some parts of NBN Co, "a fear of being blamed for mistakes has generated a lack of willingness to accept responsibility". [130]

5.5. Premises Passed versus Serviceability

Equally importantly, NBN Co's "relentless focus on the metric of premises passed" needed to broaden to include serviceability (whether premises could be connected) and revenue. [131] Pursuit of premises passed had contributed to defective work, lack of serviceability, connection backlogs and poor customer experiences. Of 227,000 brownfield premises passed, 74,000 were 'service class zero' (unable to obtain service as they were in multi-dwelling or business buildings) and 104,000 had no lead-in (and faced a roughly six-month wait for service). [132] The expense of making premises serviceable after the rollout is multiple times higher than the expense during the rollout.

5.6. Strategic Review's First & Second Phases

The first phase of the Strategic Review focused on the fixed-line footprint which will serve 93 per cent (about 12 million) Australian premises.

A second phase of the Strategic Review began in February 2014 focused on the fixed wireless and satellite networks serving 7 per cent (about 1 million) premises outside the fixed line footprint. Once again, Boston Consulting Group is assisting NBN Co. This phase will report in mid-2014.

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[127] NBN Co – 'Strategic Review Report' – Dec 2013, p.98

[128] NBN Co – 'Strategic Review Report' – Dec 2013, p.106. Assumes nominal wholesale ARPU grows roughly in line with inflation and government accepts returns approximately equal to the long bond rate.

[129] NBN Co – 'Strategic Review Report' – Dec 2013, p.37 and pp.72-73. The KordaMentha Independent Assessment of NBN Co's organization and culture reflected 60 interviews with management and employees from all levels and areas.

[130] NBN Co – 'Strategic Review Report' – Dec 2013, p.72.

[131] NBN Co – 'Strategic Review Report' – Dec 2013, p.37.

[132] NBN Co – 'Strategic Review Report' – Dec 2013, p.43. Premises with no lead-in are 'service class 1. As of Sep 2013, 78 per cent of brownfield FTTP premises were in either service class 0 or 1, and hence essentially not serviceable.