

TREASURY EXECUTIVE MINUTE

Minute No.

20 September 2010

Deputy Prime Minister and Treasurer

NATIONAL BROADBAND NETWORK - IMPLEMENTATION STUDY BUSINESS CASE

Timing: For information – requested by your Office.

Issue:

- The Government commissioned McKinsey/KPMG (Lead Advisers) to complete an Implementation Study (IS) for the National Broadband Network (NBN), which concluded that the NBN is both technically and financially viable. As part of the IS, the Lead Adviser undertook a detailed financial analysis of the NBN, including revenue and cost modelling.
 - The Lead Advisers were not asked to prepare a formal cost-benefit analysis.
 - : The Opposition and a number commentators have criticised the Government for not undertaking a cost benefit analysis.
 - : The Minister for Broadband, Communications and the Digital Economy has previously indicated in Senate Estimates that the Government would not be undertaking a cost-benefit analysis, and instead cited general, local and overseas studies that highlight the benefits of high-speed broadband.

Noted

Signature:/...../2010

KEY POINTS

- The Lead Adviser's analysis indicates that, under a range of realistic scenarios, NBN Co will be a viable business and that the Government can expect to generate a rate of return consistent with the long term bond rate, allowing the Government to fully cover its cost of capital.
 - Capital cost is estimated at a maximum of \$43 billion, of which taxpayers will contribute \$26 billion, with the balance funded by debt.
 - : These estimates do not factor in the Heads of Agreement with Telstra, which should reduce the overall cost of delivering the NBN.
 - The IS indicates that, prior to sale, \$20 billion used by the rollout of the NBN will be returned over the first 14 years of the project and will be available for other Government activities, with taxpayers owning a profitable asset at the end of that time.
 - The Government's projected financial return is less than a typical private sector investment because the Government is seeking to deliver a public good. The NBN will build out in regional and rural areas that are deemed not commercially profitable and will provide equitable pricing for all customers.
- The Government has provided \$18.3 billion over the forward estimates for the NBN based on the recommendations of the NBN IS (including \$18.1 billion in equity).

- The exact timing and quantum of funding for the NBN will be determined in the Government's response to the IS and following settlement of the Definitive Agreements between NBN Co and Telstra.
- We have include some material developed by the Department of Broadband, Communications and Digital Economy to assist Minister's when commenting on the financial viability of the NBN (see **Additional Information**).
- Further information on the IS analysis is provided at **Attachment A**.

Contact Officer:

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[Pages 3-4 have been redacted under s.22]

METHODOLOGY

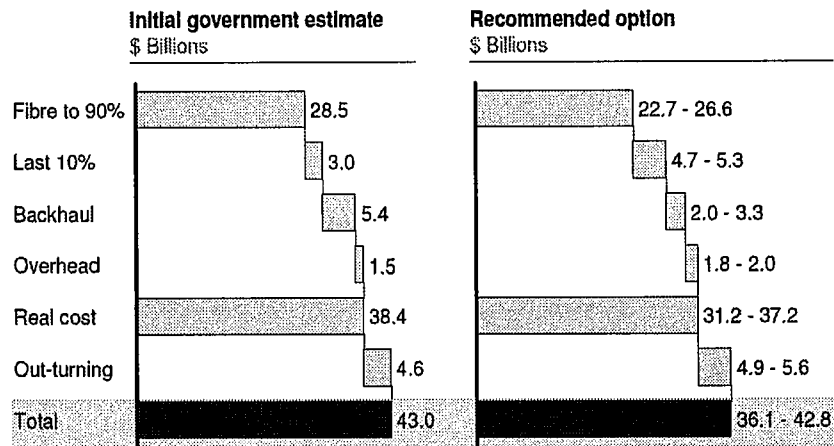
- The IS modelled potential revenue, build and ongoing costs to generate a matrix of potential rates of return.
 - The IS used detailed geospatial modelling to calculate distances and densities covering the entire country.
 - Unit cost estimates are based on analysing local and international deployment experiences.
- Based on these projections, the IS calculated a funding profile and the appropriate balance between debt/equity for the roll-out of the NBN.

NBN BUSINESS CASE

Build cost

- The IS modelled four of cost scenarios:
 - higher end of plausible range;
 - lower end of plausible range;
 - blowout in fibre deployment costs; and
 - : Modelled four variants of cost blowout.
 - a reasonable sharing of infrastructure.
- Assuming a unilateral build, the higher end estimate for the build cost for:
 - a fibre network covering 90 per cent of the population is \$26.6 billion (includes installation of drop cable and ONT);
 - a mixed technology solution for the last 10 per cent is \$5.3 billion (includes installation of drop cable and ONT, antennas, modems and satellite dishes);
 - transit backhaul is \$3.3 billion;
 - overheads is \$2 billion; and
 - \$5.6 billion to adjust for inflation hold in real terms.

Figure 1: NBN build costs



- The Lead Advisers suggest that this should be seen as a conservative estimate, because it:
 - assumes no re-use of existing infrastructure;
 - assumes conservative (higher) estimates of input costs and other parameters;
 - does not factor in productivity improvements gained by NBN Co and its contractors over the course of the rollout; and
 - identifies a number of other opportunities that could reduce NBN Co's total capital cost.
- The IS estimated that a reasonable sharing of infrastructure could reduce the headline build cost by around \$5 billion, although the change in the net present value will be smaller.
- Modelling the 'blowout in fibre deployment costs' indicated under the worse case scenario the build cost would increase by around \$6 billion compared to the higher end scenario. However, under the lower end scenario the NBN build cost would be \$4 billion lower.

Revenue

- The IS estimated different revenue streams varying take up rates and price.
 - Modelled the NBN having 70, 80 and 90 per cent of the total fixed-line wholesale broadband market, with real price rises for wholesale broadband services.

Revenue Scenario	Revenue (2022-23 \$ billion real)
Higher demand	4.8
Mid-case demand, higher price	4.4
Mid-case demand, lower price	4.2
Lower demand	3.9
Other sources of revenue	0.2

Operating costs

- Operating expenditure is expected to reach around \$1 billion per annum by 2022-23, in real terms.
 - The IS estimated that network operations and maintenance costs are significantly lower for an FTTP network than a copper or FTTN network.

Rate of Return

- Based on the above information the IS generated a matrix of potential rates of return.
 - The middle four boxes show the expected IRR under the more conservative scenarios. These show a reasonable estimate for the project is 6-7 per cent.

Figure 3: IRR estimates (per cent)

Revenue Scenarios

Higher demand (\$35 basic service)	5.0	6.7	7.5	8.3
Mid-case demand (\$35 basic service)	6.5	6.3	7.0	7.9
Mid-case demand (\$35 basic service)	6.2	6.1	6.8	7.7
Lower demand (\$30 basic service)	3.6	5.6	6.3	7.2
	Fibre deployment cost blowout	Build cost at higher end of plausible range	Reasonable infrastructure sharing	Build cost at lower end of plausible range

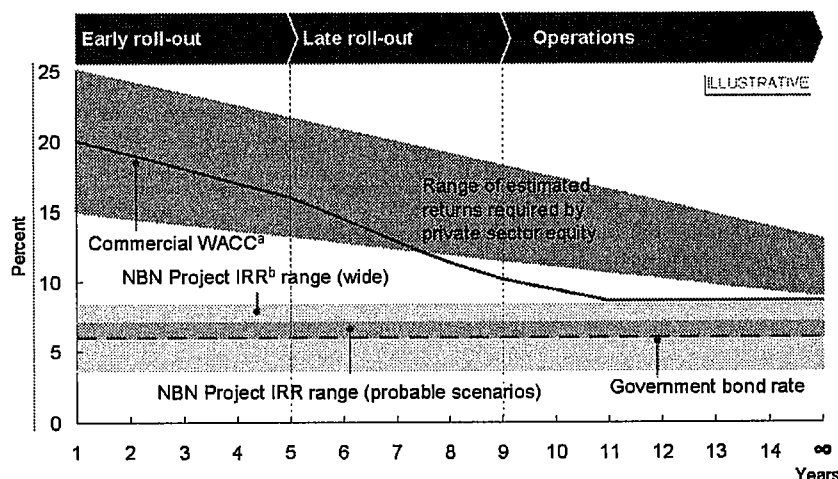
Managing the risks

- The IS concluded that the NBN is a highly repetitive project. This repetition has real benefits for managing the project costs, in comparison to one-off projects as there is significant scope to trial deployment techniques.
 - If the NBN is facing cost blowouts the IS recommended the Government:
 - : tailor the rollout schedule;
 - : slow down the rollout; and /or
 - : allow HFC and VDSL to meet the coverage objective.

FUNDING

- The NBN was estimated to require \$26 billion in Government equity by Year 6.
 - However, the final deal between the NBN and Telstra will have an impact of the Government's funding commitment.
- Sensitivity analysis conducted by the IS estimated that the Government contribution could be as low as \$23 billion under a favourable scenario and \$32.6 billion under an extreme negative scenario.
- The IS recommended the NBN be wholly Government funded, as NBN will not generate a high enough return during the early stages to attract private equity and Government ownership will make establishing the policy setting more straight forward (see Figure 4).
- During the first 5 years of the roll-out the NBN would rely on Government equity. Beyond this point the NBN could begin taking on private sector debt.

Figure 4: NBN projected IRR versus required returns for private equity



Debt

- The NBN Co will be able to support large amounts of debt, \$25 billion in year 12 and \$32 billion in year 15.

- The IS based its debt strategy calculations on the maximum amount debt the NBN Co could take on, while maintaining a BBB-/BBB rating when it starts raising debt and an A-/A rating when debt requirements become too large for the BBB market.
- To achieve these rating the IS estimated that the NBN Co will need a debt/total capital ratio of about 50 to 60 per cent (see figure 5). This suggests that approximately \$14.2-\$17.8 billion of equity is required in the first 10 years.
- In excess of \$10 billion of Government equity could be returned as capital repayments by year 11 and \$20 billion by year 15.

Figure 5: Recommended funding approach

	Early rollout					Late rollout				Operations					Privatisation					
Private sector equity	* Avoid due to adverse impact on Government flexibility and limited benefits										* Access to fulfil privatisation commitment									
Private sector debt	* Unlikely to be attractive as risk profile limits availability					* Maximise use once available in substantial amounts as NBN Co achieves an Investment grade credit rating									* Refinance at privatisation					
Government funding	* Use as main funding source in early years					* Supplement private sector debt if required				* Reduce with dividends as appropriate					* Reduce with sell off					
Debt capacity	0	0	0	0	0	5	13	22	31	41	46	51	54	56	56	% capital ^b				
Government funding and potential returns^a	2.7	4.5	6.4	4.7	4.1	2.4	0.8	0	0	0					-1.1	-1.8	-2.6	-3.1	-33.6	\$ Billions
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	>15	Year				

Note. Based on funding reference scenario.

a. Debt maximised to meet funding requirement, privatisation occurs at year 15, privatisation value based on DCF of future project cash flows (equivalent to 7.7x EBITDA), dividends paid to Government from operating cash flows

b. Proportion of debt capacity to total capital (debt and equity)

SOURCE: Implementation study model