INSTITUTE OF VALUE MANAGEMENT AUSTRALIA

Ensuring better value for money

Submission to the Productivity Commission's Inquiry into Public Infrastructure

3 April 2014

The Institute of Value Management Australia (IVMA) agrees with the Commission's statements that:

- "The overriding message of this draft report is the need for a comprehensive overhaul of processes in the assessment and development of public infrastructure projects.

    - There are numerous examples of poor value-for-money arising from inadequate project selection.
    - Without reform, more spending will simply increase the cost to users, taxpayers, the community generally, and the provision of wasteful infrastructure." **PC p 2**

"Therefore, the implementation of the Commission's proposed package of reforms is essential to achieving value-for-money on behalf of taxpayers and the community more generally." **PC Box 4 p16**

"An important lesson from this experience is that what works in one infrastructure sector will not necessarily work in another. This is because there are important differences between sectors that should influence arrangements for provision, funding, financing and achieving value for money in procurement. Accordingly, policymaking for public infrastructure — seen as simple in some public contributions to the debate — is actually very complex." **PC p 46**

"However, poorly chosen public infrastructure investment can also crowd out private investment, thereby reducing growth and productivity. Further, such infrastructure can harm the economy through the diversion of resources used in construction and maintenance to purposes not valued by users." **PC p 52**

"Economic Efficiency and Value for Money" **PC Box 1.5 p 63**

'In principle, the choice of delivery model should be based on providing the best value for money to the community. Of course, value for money also depends on how well projects are selected in the first place. A key determinant of value for money is risk allocation.' **PC p 89**

"More broadly, a number of participants pointed to the availability of procurement and

project management skills within government agencies as an impediment to the efficient delivery of, and value for money provided by, public infrastructure projects." **PC p 115**

"An important part of any consideration of value for money from the delivery of public infrastructure includes appropriate *ex post* evaluation." **PC p 119**

"Where risks are appropriately allocated then value for money from public infrastructure investment is likely to be greatest." **PC p 120**

The IVMA notes however that in **PC p 105** when talking about project risks that the risks at the brief, concept design and option selection stage are not mentioned. In our experience risks here can be fundamental to the success or failure of the project. Once identified however, they can often be overcome at zero or minimum cost with significant long-term benefits to the project or program.

The words **"value"** and **"value for money"** are used extensively in the PC Report and elsewhere in government websites and documents but nowhere are these terms defined. The IVMA has proposed recommendations as to their definition and that these specific definitions be adopted generally.

The IVMA believes that the **Public Infrastructure Procurement Process** proposed in this report should comprise a large part of the reform that the Productivity Commission is seeking. In general this Process focuses on the early stages of project or program development where research and experience tells us that best value for money is achieved at least cost by developing an **effective** project or program.

If followed conscientiously, this Methodology will deliver best value for money public infrastructure whether on improving operations on existing infrastructure, augmentation of infrastructure or new projects and programs. The IVMA looks forward to the PC's support for the incorporation of this Methodology in all public infrastructure investments.

1 Economic Background

Between 1991 and 2013 Australia experienced the longest period of economic expansion of any country ever resulting in average incomes 25% higher than those in the USA and 50% higher than those in the European Union. Our exchange rate rose rapidly largely as a consequence of mining exports making other exports relatively expensive for foreign buyers.

The Reform Era of the mid-80s to the mid-90s improved our productivity significantly but then a 'Great Complacency' set in in the late 90s (1). The boom days are over and there is a need to divert resources into improving areas of our economy where productivity gains have been sluggish since the mid 90s, particularly manufacturing where the remaining protection needs to be removed, utilities that must adapt to global warming and improve efficiency, and financial services which will improve with increased competition (2).

Unless there is significant depreciation in the value of the Australian dollar borrowing to return to full employment or for infrastructure spending will see *"…the current account deficit and foreign debt as a share of the economy blow out to unsustainable levels."* (3). It follows therefore that any borrowing for infrastructure (or for any other purpose) must not be wasted and must deliver the intended benefits at the lowest total cost of ownership and operation.

2 Public Infrastructure Demand

Largely as a result of migration Australia has a consistently high population growth rate when compared with other developed nations (2012: Australia 1.6%, Canada 1.1%, UK 0.8%) and a relatively healthy population that is living longer than in most other countries (4).

The population of Australia's major cities is forecast to grow from 2013 to 2060 as follows: Sydney 4.7 million to 8.4 million, Melbourne 4.2 million to 8.6 million, Perth 2 million to 5.5 million, Brisbane 2.1 million to 4.8 million (5).

To effectively address anthropogenic global warming Australia will also have to face up to the significant challenge of reducing its greenhouse gas emissions by 92% by 2050. This is on the basis of a September 2013 total of 24.7 tonnes of carbon dioxide (CO2) equivalent emissions per person per annum (567.5 million tonnes CO2 equivalent / 23 million population) (6) to 2 tonnes of CO2 equivalent emissions per person per annum (7)(8)(9).

There will therefore be a significant challenge to provide the necessary public infrastructure to support the future population based on a predominantly 19th and 20th century built environment and a predominantly fossil-fuel powered economy.

3 Public Infrastructure Provision - Performance to Date

There are clear examples where better targeting of projects, improved critical project examination and improved funding methodologies can assist in delivering infrastructure needed by the community whilst making best use of resources.

Sydney's Rail Infrastructure has been the subject of a great number of investigations into various schemes to provide additional infrastructure that have subsequently been abandoned. From 1968 to the present day a total of 34 major track infrastructure schemes have been proposed to expand Sydney's rail network, yet just 7 of these have actually been constructed, or are in the course of construction. During that period most of the proposed major roadwork augmentations have proceeded (10).

Whilst many of the rail proposal did not proceed past a feasibility stage the $5.4 billion, 7 km two-track, CBD Metro from Central Station to Rozelle was abandoned after $330 million had been spent on design plus land and property acquisitions. There was no known publicly available economic evaluation of the proposal, which was heavily criticized by the community as delivering no tangible benefit (11).

The concept design basis of the chosen $1.14 billion tunnel / surface road option for the Lane Cove Tunnel was unsound from the start which led the Mathematics Learning Centre to summarise their analysis of the completed project with the words: *"It is hard to see how one Bus Lane each way for two kilometres could be worth over a billion dollars."* The traffic funneling and therefore financing relied in part on the closure of some local roads that was strongly resisted by residents and the roads were partially reopened thus further reducing the return to the investors. Also, traffic forecasts used in the modelling were subsequently found to be unrealistic (12).

Western Australia (WA) has some significant problems with capital works projects as evidenced by the General's Report into Major Projects in 2012:

"The expected cost of the 20 projects we reviewed is $6.157 billion which is $3.275 billion (114 per cent) more than the total original approved budget estimates:

- *15 of the 20 projects are expected to exceed their original approved budgets, of which four are expected to exceed it by more than 200 per cent*
- *six of those 15 projects expect to exceed their original approved budget by more than $100 million."* (13).

"Approximately 90 per cent ($2.953 billion) of the cost variance for projects occurred during the evaluation phase of the project when the project business case was developed and the project scope and costs were more accurately defined.

The overall cost variance after the conclusion of the project evaluation phase is $322 million or approximately 10 per cent, indicating effective project management by SP and BMW and the value of robust planning in project performance.

Changes that have occurred to some projects are so significant that the revised projects are considerably different to that which was initially approved and announced. The resulting variance to budget and timelines were often outside the control of the agencies tasked with delivering the assets and does not reflect project management performance. Four projects – the New Children's Hospital and Midland, Busselton and Albany Health Campuses were examples of this. Together these projects account for over $1.347 billion of cost variance. If these projects are excluded from the cost analysis, the total variance is $1.928 billion.

The implications of these findings are clear, but not surprising. It is critical to project performance to get the early stages right. A sound asset management framework and robust planning need to be consistently applied across all major projects to ensure investment decisions are well informed and project expectations are realistic. Fixing projects gets harder as they progress and, as a number of projects in the report show, the impact of departing from good process at the start stays with them." (14).

WA's "Capital Investment Policy for Project Proposals" however recognises very well the need for very thorough identification, and justification of projects from inception: *"It is important to do sound planning before committing to a capital project. The greatest capital and recurrent savings are achieved in the early planning stages of a project."* The accompanying diagram demonstrates that the greatest project benefits are achieved in the project inception phases. However, in the document, project and program evaluation strategies such as "business case" and "value management" are mentioned but not mandated and there is minimal explanation of either (15).

The WA's Auditor General identified the following weaknesses generally in public sector agencies:

- *"428 financial and management control weaknesses were identified in 2012-13, up from 360 last year. Twenty-two per cent were unresolved from the previous year.*
- *282 information system control weaknesses were identified. The majority are simple to fix but if not resolved they will leave agencies vulnerable to security incidents and disruptions to systems."* (16)

Further, *"Outdated policies and procedures in various aspects of agency operations including strategic planning, risk management and internal audit"* put the operation of government at risk (17).

Little wonder that in September 2013 Western Australia lost its triple-A credit rating, which reflected the mining state's *"limited political will"* in enforcing its "Fiscal Action Plan" a component of its 2014 State Budget (18).

There is therefore a critical necessity to improve the identification, definition and delivery of major capital works projects including infrastructure.

4 Evaluation of Infrastructure Projects

"Publicly provided infrastructure in NSW has typically experienced very little objective assessment of its value to the community despite the existence of a quite comprehensive Total Asset Management Plan" (19) as assessed by the University of Leeds:

"Economic appraisal has only had a minor role in developing either the Infrastructure New South Wales (INSW) or Transport for New South Wales (TfNSW) long term plans. Unlike the State Master Plan which includes getting State finances back on track as a key goal, the TfNSW Long Term Transport Master Plan did not include affordability or cost as one of its eight criteria by which projects and initiatives were evaluated.

Moreover, projects included in the TfNSW and INSW Plans have been announced as 'happening' by State Government before business cases have been completed or started. As a consequence for these projects, economic appraisal can become to be seen by the public as retrospective justification." (20)

5 Best Practice Infrastructure Identification and Delivery

There are three fundamental issues in public infrastructure identification and delivery:

- The identification of what functions need to be performed in order to meet social, environmental and economic needs both now and into the foreseeable future;
- How the required functions can be delivered reliably, to the required quality for the lowest life-cycle cost;
- How the provision of these functions will be provided, funded and paid for.

In many tender evaluation processes the technical submissions of tenderers are examined, evaluated and scored before the team performing the evaluation is provided with any commercial information and performs a commercial evaluation of the bids. Experience has shown that it is most beneficial if the same approach is taken to the development of infrastructure projects and programs: separate the functional (non-price) issues from the financial (21).

As early as 1983 Australia's Department of Defence advised; *"Overall project benefits are greatest at the commencement of the process and are obtained at the least cost; benefits in detailed design financing and construction are the lowest and may come with a cost premium."* (22)

6 "Value" and "Value for Money"

The terms "value" and "value for money" are used in the PC Public Infrastructure Draft Report and in many government and non-government documents. These are important terms but they are seldom defined in the relevant documents. The IVMA believes that is essential that these terms are defined where they are used and that a common definition be adopted, at least by Australian governments at all levels, and preferably by the private sector also. The definitions proposed are those contained in the Australian Standard for Value Management (23) and are summarised below:

Value

"An attribute of an entity determined by the entity's perceived usefulness, benefits and importance"

(The entity is the subject or scope of the project or program proposed.)

Value for Money

"A measure used for comparing alternatives based on the relationship between value and total cost." This term recognises that money is a proxy for a variety of resources used to achieve particular value for an entity. These resources may include energy, time, natural resources, etc.

Three further very useful definitions that should be used from the inception of entity development are:

Function Analysis

"A structured process that identifies, describes and analyses functions, their interrelationships and, where appropriate, total costs of total resources used."

Function

"What an entity does."

Essential Function

"What an entity must do."

An important consideration in evaluating entities is value for whom and in what timeframe? It needs to be clearly stated that the objective of delivering "value" is that it must accrue to the general community, not to particular service providers or industry sectors. Infrastructure should not be built with the primary objective of protecting particular organisations or industry sectors.

Public infrastructure typically has a very long life (measured in centuries) and in making decisions on its provision it is very important to do so within a strategic framework that serves the needs of future generations.

7 Room for Improvement in Public Infrastructure Decisions

There would appear to be considerable scope for improvement in the decision-making and delivery process to provide public infrastructure if the demand challenges outlined in **section 2** are to be successfully addressed. The scope of considerations will include environmental, social and economic factors impacting on the proposed entity or on which the entity impacts.

Overarching considerations when developing new entities or significantly upgrading existing entities are:

Effectiveness – Doing the right thing
Efficiency - Doing things right

The key hierarchies in delivering public infrastructure are:

1 Transparency of Process
2 Total System Viewpoint
3 Strategic Planning
4 Network Issues
5 Identifying functions that are really needed to be performed by the entity under consideration
6 Achieving best value in delivering the required functional performance
7 Achieving best value for money (all resources used) from the completed and operating entity (life cycle cost)
8 Ensuring that value accrues to the general community both now and in the future
9 Identification, elimination, minimisation and management of risks over time
10 Ensuring that the nature and timing of funding is compatible with the nature of the project and the planned benefit stream.
11 Post Completion Reviews

8 Public Infrastructure Procurement Methodology

There is therefore evidence of a need for a best practice methodology for the identification, development, optimisation and delivery of public infrastructure that can deliver the benefits required by the public for the most effective and efficient use of resources. This methodology will deliver maximum benefits if used throughout Australian Federal, State and Territory public sector investments, irrespective of the source of funding used.

8.1 Transparency of Process

Transparency is critical to achieving optimum public infrastructure provision and performance. We live in an increasingly complex world where the ‘law of diminishing

returns' is increasingly at work in our crowded cities. Infrastructure decisions are increasingly multi-disciplinary involving consideration of environmental, social and economic issues and a variety of stakeholders need to be consulted in the strategic planning and entity development process. Further, since the infrastructure in question here is by definition **public** it needs to be demonstrated that all relevant stakeholders have been consulted and that value can be **seen** to be delivered to the public.

8.2 Total System Viewpoint

This refers to understanding how a particular entity will be developed and managed throughout its life cycle and also its 'fit' with other public sector infrastructure. Eg. would significant expenditure on public transport in preference to roads commensurately reduce the need to provide hospitals and courts as accidents and legal actions related to road use would decrease? A total system viewpoint will also identify externalities to the proposed entity (environmental, social and economic) so that they can be evaluated in the Economic Appraisal.

Rapid development of technology can significantly impact on the development of a preferred option to perform certain functions traditionally performed by other methods. For example in the last 5 years or so solar and wind power has increased in efficiency and dramatically reduced in cost so that for many countries it can provide 5 to 10% of electricity generation at a cost equivalent to fossil fuel generation. Currently, up to 45% renewable energy generation in many countries is possible for a premium over fossil fuel generation of 10% to 15% (24).

Total system viewpoint needs to recognise changing conditions and community values and expectations, including the significant increase in the extent and cost of chronic disease health care that is 70% of healthcare costs in the UK (25).

8.3 Strategic Planning

It is important to plan on a long-term horizon, say 30 to 50 years, and to monitor the actual needs in relation to the forecast needs and assumptions that drove them and to modify the implementation accordingly. Long term planning and subsequent adjustment to actual conditions provides a useful learning experience. Again the community's inputs are important with regard to identifying a future world in which it or its descendants would like to live.

A strategic planning framework will permit interrelated matters to be considered together with infrastructure needs, including environmental issues, social and urban planning.

8.4 Network Issues

This consideration ensures that the proposed entity fits with others of a similar nature, eg. ensuring a balance of the type of schools in an area, for a roadworks project ensuring that it does not just result in shifting a congestion problem to another location.

Many infrastructure projects currently proceed based on a single network option, eg. add an additional runway to an airport; build a single additional train line. A far more sound approach would be to examine a series of options all of which have potential **network** benefits to bring particular functional benefits For example, comparison of an additional airport runway with the provision of a new airport in another location, comparison of a number of rail corridor improvements / augmentation simultaneously to ascertain value to the community and priority of implementation.

8.5 Identifying functions that are really needed to be performed by the entity under consideration

This activity is critical if effectiveness and value for money is to be achieved. Rather than being a projection of past solutions function analysis permits innovation in methods of delivering the required functionality. This process is critical to clear project definition and justification and forms a fundamental input to the project brief for the designers (26).

8.6 Achieving best value in delivering the required functional performance

Best value is delivered when the functionally preferred option is identified by a group of stakeholders in the planned entity. This is the option that best fits the group's assessment of *'useful purpose' 'beneficial outcomes'* and *'important features and characteristics'* that are required of the entity under study (27). Selection of the functionally preferred option is undertaken in the critical concept design phase of the project using weighted evaluation or comparison of advantages. This important decision will lock in long-term functionality for users and life-cycle costs for the entity.

8.7 Achieving best value for money (all resources used) from the completed and operating entity (life cycle cost)

Achieving best value for money involves comparison (28). It may be within the entity itself, for example a comparison of options such as 'do nothing' to a building, change the operation in preference to the infrastructure, refurbish it, or demolish it and rebuild. These options will have different costs (resource use) and different benefit streams. The comparison may be made between different entities, eg: should we initiate a preventative health strategy in preference to constructing a new hospital?

8.8 Ensuring that value accrues to the general community both now and in the future

The NSW government has a comprehensive Total Asset Management Manual (TAMM) which, provided it is used and the results are transparent, can provide good assurance of the delivery of best value for money for the community. It covers critical infrastructure investment issues and tools, including strategic planning, value management, risk management and economic and financial evaluation (29).

8.9 Identification, elimination, minimisation, management of risks over time

As noted above risk management is a component of the NSW TAMM and should be employed as required as the project or program is developed. It is particularly important that risk is understood and managed in PPP projects – lack of transparency should not eliminate risk management. Of particular importance is the combination of value and risk management in a single study or closely coupled studies. The intention of such an approach is to use the creative phase of value management to eliminate or reduce risks to "as low as reasonably practicable." Where there is residual risk to be managed it is important that it is allocated to the project participant best able to manage it (30).

8.10 Ensuring that the nature and timing of funding is compatible with the nature of the project and the planned benefit stream.

Development of optimally effective and efficient entities should maximise the benefits accruing to the general community whilst minimising the funding requirements. In the medium to long term this process should reduce the cost of funding as bond markets gain confidence in the competence of governments to achieve best value for money from their investments. Intergenerational issues need to be considered when assessing funding as we should not saddle future generations with debt levels that we would not be comfortable with just to save some political skins now.

A compatible method of funding appropriate to the nature of the infrastructure needs to be identified and put in place. In this regard Garnaut's suggestion that an efficient method of funding could be 50% raised from Federal government borrowings plus 50% from the respective State or Territory government. Selection of discount rates in the Economic Appraisal is particularly important when evaluating many public infrastructure projects because (as noted before) many have a very long life. For the last century Australian federal government ten-year borrowing costs have been about 2% per annum in real terms and if this rate is used many useful projects can proceed with very low risk – provided that the 9 steps above have been completed competently and transparently (31).

By contrast, several independent analyses have been made of privately funded infrastructure projects and they raise serious questions as to the real long-term value of this method of financing major projects.

Goldberg, writing in 2006, observed that most prospectuses for private toll roads use the internal rate of return (IRR) in preference to return on investment (ROI) as a measure of the potential returns to investors. Specifically, in the case of Sydney's Lane Cove *Tunnel "It will be noted ……that the value of the internal rate of return IRR = 12.8% pa claimed in the model does not agree with the value IRR = 2.12% pa, obtained by calculation from the undiscounted equity dividends. Moreover, the value of ROI obtained from the discounted dividends is -2.2% pa, a loss on invested equity."* (32) It was little wonder then that the Lane Cove Tunnel went into receivership in January 2010, joining the Airport Rail Link and the Cross City Tunnel both projects entering receivership in 2000 and 2006 respectively (33).

In respect of Sydney's M2 Motorway*: "The financial reality of this strategy should now be clear. Over eight years of operation, the average return on investment (ROI) is only 3.5% pa, whereas the average cost of capital is 11.8% pa. This example, based on data from the annual reports of the Hills Motorway Group, the owners and operators of the M2 emphasizes the adverse outcome of financial engineering for institutional investors such as superannuation funds."* (The original owners of the M2, the Hills Motorway Group, was taken over by Transurban in 2005 thus subsuming it financial position.)

Goldberg's concluding remarks are, in part: *"This approach (financial engineering) to financing road infrastructure is not a financially or economically responsible one."* (34) In this regard there is considerable scope for increased competition in the provision of financial services and insurance, which may improve the potential return on investment in PPP projects (35).

The above does not bode well for potential investors in "over the counter" investment and superannuation products that will be easier to sell following former assistant treasurer Arthur Sinodinos's announcement on 20 December 2013 that the government would wind back Labor's reforms that strengthened consumer protections against financial planners and banks (36).

8.11 Post Completion Reviews

Post completion reviews once a particular facility has a number of years of operation are essential if we are to 'close the loop' and really understand the results of our actions. These reviews should be a formal requirement of the procurement methodology, completed and reported on by an independent organisation. The information needs to be available to all public and private agencies engaged in public infrastructure provision (and private infrastructure also).

9 Prerequisites for Successful Procurement Methodology Application

9.1 Consistency of application

The discipline to ensure consistency of application of the Procurement Methodology is essential if best value for money is delivered for the community. Initiatives and projects that are excluded from the discipline threaten the credibility of the entity, particularly in regard to its long-term performance and value to investors.

Consistency is also required with regard to the value of projects to be subject to the Procurement Methodology and it is suggested that all entities exceeding $10 million capital cost should be examined. Projects below $10 million should be subject to the Procurement Methodology if they are complex or involve the use of innovative science or technology. Otherwise entities below $10 million should at the minimum be subject to an appropriate benefit / cost analysis.

9.2 Independence of process

Critical to the credibility of the Procurement Methodology is the demonstration of transparency of process. This can best be achieved by independence of provision of the Facilitation process, Economic Appraisal, Value Management, Risk Management, Post Completion Review and, where necessary Environmental Impact Statement.

9.3 Stakeholder participation as equals

Independence of process (above) needs to ensure that all stakeholders in development of a new entity or modification of an existing one participate as equals. This is important to ensure that decisions are made on the basis verifiable information and avoids ‘groupthink’ in which there is fear in questioning the status quo. Transparent independent advice and analysis has the potential to generate significant innovation on the development of solutions including ‘step-changes’ in processes that can be highly beneficial to the community.

9.4 Avoidance of “capture” of regulators and authorities

Application of a standard Procurement Methodology by independent service providers may also be able to counter the ‘capture’ of regulators or authorities by sectional interests with their own, rather than the general communities’ interest at heart.

9.5 The Information / Misinformation Age

The beginning of the 21st century has been characterised by a mushrooming of information sources. We live in the Information Age. Unfortunately we also live in

the misinformation age where it is easy for opinions to become 'factoids' with significant difficulties for people to actually determine what really is the 'source of truth'. In this century private interests have been particularly dominant in working the media to advance their agenda to minimise the taxing of minerals profits (even though 80% of these profits leave Australia) and to minimise, and now to eliminate, effective action to combat anthropogenic global warming (even though public support for this action has varied between 54% and 84% of those surveyed) (37).

Sorting information from misinformation is critical to effective decision-making and the process outlined **section 8** must achieve this at every step.

10 Electricity Privatisation PC p 34

We note that the Draft Report contains DRAFT RECOMMENDATION 2.1 on p 16 to privatise government owned:

- *"electricity generation, network and retail businesses*
- *major ports*

subject to appropriate processes to ensure value for money."

Both of these utilities are near service monopolies or actual geographical monopolies and are therefore potentially subject to predatory pricing practices.

Indeed an examination of Victorian electricity privatisation, which occurred in the early 1990's found:

"Over the period since March 1995 electricity prices have outpaced the CPI with an increase of 170 per cent compared with an increase of 60 per cent for the CPI.

Over the period June 1995 to the present, productivity across all industries in Australia increased by 33.6 per cent. However, in electricity, gas and water, productivity actually declined by 24.9 per cent. On the face of it, output per worker fell markedly in electricity while it increased in most of the rest of the economy. This is a major adverse finding for an industry that has supposedly been the subject of an enormous reform effort on the part of Australian governments." (38)

Further, fossil fuel subsidies in Australia totaled $11 billion in 2012/13 whilst the Carbon Tax is expected to raise $3 billion to $4 billion in the same period. Coal fired electricity generation received a subsidy of $1 billion and accelerated depreciation (of which the coal industry would receive a part) was $1.5 billion (39).

Despite this subsidy the Australian National Electricity Market has suffered a 30% loss in forecast consumption since 2009 although in the same period $45 billion was invested just in "poles and wires" (40).

The G20 will meet in Brisbane later this year and one of the objectives of its Energy

Sustainability Working Group is to *"focus on issues relating to energy efficiency, global energy architecture, market transparency and investment, and continued work on inefficient fossil fuel subsidies."* (41)

In Western Australia the electricity generator and retailer, Synergy, receives a taxpayer-funded subsidy of $500 million per year. Despite this subsidy, *"The WA grid faces unique pressures due to the level of government subsidy, rising fossil fuel costs, ageing infrastructure, and the popularity of solar PV, even after the removal of most solar incentives."* (42)

If economic efficiency really is the objective of electricity privatisation (rather that generating capital for Australian States) then the proposed privatisation plus all other options should be the subject of a transparent Procurement Methodology investigation contained in **section 8** of this Submission before any action is taken.

11 National Broadband Network (NBN) PC p 73

We note that the Draft Report points out that the Hon. Malcolm Turnbull MP, has announced that a cost–benefit analysis of the economic and social returns from broadband will be undertaken (Turnbull 2013). p 73

The NBN Co's. (heavily redacted) Strategic Review, 12 December 2013, (the cost-benefit analysis referred to by Malcolm Turnbull), reveals that significantly more work needs to be done on the technical, non-financial aspects of the project before the general community can have any confidence that it will receive best value for money.

The NBN Co's Strategic Review, 12 December 2013 shows six broadband scenarios, which range in Cumulative Capital Expenditure from $56 billion to $33 billion and in Peak Funding requirement from $73 billion to $41 billion. There is considerable variation in the stated performance of the options, although, as we note below (Ziggy Switkowski), that would appear to be largely irrelevant (43). Summary investment performance of the six scenarios is stated only in terms of IRR – see **section 8** item **8.10** of this Submission for the caveat on this approach.

The head of the NBN Co, Ziggy Switkowski's statement to a Senate Committee just 5 days after the release of the Strategic Review that guarantees about minimum internet speeds to be delivered under Australia's national broadband network (Coalition predominantly copper-wired) proposal have *"lost currency"* does not inspire one with confidence (44).

This lack of confidence is further reinforced by Corning's advice that *"fiber optics are more reliable and have a longer service life than twisted pair metallic telephone cable, and this is accepted across the industry."* (45) Many Australian broadband customers who have experienced repeated problems with copper cable to their

premises will be able to relate to this technical information.

Royal Melbourne Institute of Technology lecturer Dr. Mark Gregory opined that with regard to the Coalition's NBN proposal, from his extensive knowledge and experience of the subject, *"They are selling us a technology that's already obsolete, this is the greatest con in Australian history."* (46)

The proposed NBN is a textbook example of the need for transparency of the whole evaluation and investment process and the application of our proposed Public Infrastructure Procurement Methodology to this massive scheme should be mandatory, because:

- it exists in an environment of rapidly evolving technology
- some of the development scenarios cross boundaries into other utilities, some do not (eg: fixed line telephony)
- it has very long term implications as it will set the direction for Australia's communication technology for decades if not centuries
- there are significant competition issues of common user access and pricing for service providers on the network
- option evaluation and selection will require an understanding of **marginal** technical performance, benefits and costs derived from a wide variety of stakeholders
- risks will need to be identified, eliminated, minimised or managed across the whole entity lifecycle from project inception to completion and operation
- the broadband rollout program has partially commenced and that work will need to be taken into consideration in any evaluation
- it will have communication competitiveness implications for Australia internationally.

By 12 April 2013 The Government of India had signed Memoranda of Understanding with 26 States and Territories to provide the National Optical Fibre Network (NOFN) to 250,000 'gram panchayats' (local government institutions in villages and small towns) at a minimum speed of 100 megabits per second. India has some 262,000 gram panchayats in total (47). The rollout is currently under way and has experienced delays but the NOFN is expected to serve 175 million subscribers by 2017 and 600 million subscribers by 2020. India currently has 15 million broadband customers (48).

12 The Contribution of Value Management to achieving Value

Value management is a structured and analytical process which follows a prescribed workplan to achieve best value, or where appropriate best value for money. The facilitation process covers all of the first eight processes in the Public Infrastructure Procurement Methodology (**section 8** of this Submission) and many practitioners have considerable risk management experience.

With public infrastructure projects becoming more complex in cities with rising densities and increasing environmental, social and economic constraints a tool is required that permits stakeholders from a wide variety of disciplines to communicate with a common understanding of the issues from a position of equality. Value management is the pre-eminent technique to achieve this level of communication and decision-making.

Value management is in use in the public and private sectors in Australia today and in over 25 economies worldwide. However if we are to improve the effectiveness and efficiency of Australian public infrastructure there is considerable scope to expand its use and deliver value for money for the Australian community.

Specific examples of the use of value management are:

- The Sydney Olympic Games in 2000 was widely endorsed as the most successful to date. Much of this success was due to the enthusiasm of the thousands of volunteers who assisted visitors. Underneath this daily operation was a strong 'nuts and bolts' underpinning of value management, initially used to agree the transportation strategy and subsequently applied to transport and sports infrastructure.

- The plan for the public infrastructure works at Darling Harbour was the result of an initiative that the then Managing Contractor, Leighton Contractors Ltd., took early in its appointment. Senior members of the Darling Harbour Authority and the architects for the major buildings participated in a study that resolved the key site planning aspects including the location of buildings and the need to plan for very high stormwater flood flows across the site.

- In the UK value management has been used extensively on the complex CrossRail project in East London and on the Terminal 5 development at Heathrow. The design and construction process of the £4.3 billion Heathrow project (£1.2 billion on the terminal itself) was completed on time and with savings due to value management exceeding £200 million. The terminal was the largest construction project in Europe at the time (49).

Application of value management and thorough follow-up has a proven record of delivering best value for money on public and private projects and programs. Typical benefits are delivered by its application are:

Reduced:

- capital cost
- operating cost
- maintenance cost
- design and construction time

Increased:

- return on investment
- functional efficiency
- user acceptance
- communication
- motivation and teamwork

Ensured:

- agreement of project objectives
- quality appropriate to function
- fulfillment of users real needs
- input by all project stakeholders

13 Recommendations

McKinsey Global Institute stated in January 2013 that, *"A key source of savings in project delivery is investing heavily in early-stage project planning and design. This can reduce costs significantly by preventing changes and delays later on in the process when they become ever more expensive. Bringing together cross-functional teams from the government and contractor sides early in the design process can avoid the alterations that lead to 60 percent of project delays."* (50)

The Institute of Value Management Australia makes the following recommendations in response to the Productivity Commission's Public Infrastructure Daft Report, March 2014.

Australia already has the necessary tools to achieve significantly improved productivity of public sector investment – those responsible for the provision of public infrastructure just have to ensure that they are applied rigorously to entities within their responsibility. As observed by McKinsey (above) the key areas for 'savings' and therefore increased productivity is in the early brief and design stages of the development of an entity when achieving a common understanding of the functions required by the customers / users of the facility are critical to achieving entity **effectiveness**. Importantly, action at this stage is inexpensive by comparison with the value generated for customers and users and by comparison with actions take later in the entity development process.

- The "**Definitions**" used in the Australian Standard for Value Management, AS 4183 – 2007 (**section 1.2**) should be used in all public infrastructure procurement methodologies and documentation to ensure consistency of understanding.

- An understanding of the “Definitions” should be an essential part of education of politicians and all staff, whether in the public or private sectors responsible for the procurement of infrastructure.
- The Public Infrastructure Procurement Methodology described in **section 8** of this Submission should be applied to the development of all public infrastructure projects in excess of $10 million estimated capital cost.

- The Public Infrastructure Procurement Methodology should be applied to projects below $10 million estimated capital cost where new technology is involved, on information technology projects and projects where there is a degree of uncertainty as to the required outcomes or where scope and procurement risk is perceived to be high.

- The Public Infrastructure Procurement Methodology should be applied irrespective of the source of funding: i.e. it should be applied to publicly and privately funded infrastructure projects and programs.

Further information can be found on the Institute of Value Management Australia’s website: http://www.ivma.com.au .

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