

The Chairman  
Productivity Commission  
LB 2 Collins Street East  
Melbourne Victoria 8003

### **Public Infrastructure - Supplementary Submission**

I write to make a supplementary submission on the Draft Report, to support my appearance on Friday 11 April. I thank the Commission for the opportunity to present in person and for the invitation, extended at the briefing, to submit additional material on the matter of governance.

Some of my supplementary evidence runs counter to the economics-focused line of analysis which is the Commission's specialty. I submit that the greatest service I can do to the Commission is to give frank advice from a different disciplinary perspective. Given that the three "wrecking balls" identified in this supplementary submission are all externalities to functioning markets, it follows that they cannot be mastered by recourse to market theory alone.

#### **My credentials relevant to this enquiry**

##### ***Qualifications***

Bachelor of Science in ecological science (Monash 1969).

Master of Public Administration (University of Queensland 2004).

Doctor of Philosophy (Griffith University 2008) for analysis of where the 'public interest' lies.

Company Directors' Course (Australian Institute of Company Directors 2006 - non-academic).

##### ***Experience***

I worked in national parks and Crown land administration before managing Melbourne's metropolitan parks system and then the parks and sports grounds of Port Moresby, Papua New Guinea. From 1980-86 I was a local government Councillor and for one term Shire President in the Shire of Sherbrooke in the Dandenong Ranges in Victoria.

From 1991-2006 I served in Queensland's Department of Lands/Natural Resources as Manager, Land and Regional Planning. For 18 months in 2007-08 I acted as Chief Executive Officer, South West NRM Ltd, one of Australia's 56 regional catchment bodies, based in Charleville. I returned to the Department of Mines and Energy to work on energy policy, and retired from the public service in July 2011.

##### ***Role as an independent scholar***

I have published in animal biology, economics, foreign affairs and public policy. My current research interests include analysis of the preconditions of economic prosperity - grand projects or public institutions, the growing complexity in society, the civic responsibilities of corporations and the environmental limits to economic growth. At the date of writing, I am President of the Royal Society of Queensland.

Geoff Edwards B.Sc.(Hons.); M.Pub.Ad.; PhD  
Adjunct Research Fellow  
Centre for Governance and Public Policy  
Griffith University, Brisbane

## THREE WRECKING BALLS

### Introduction

Three wrecking balls are headed towards infrastructure projects (and especially public-private partnerships) progressed under the model of governance outlined in the Draft Report. These will invalidate the model, which lacks the brakes necessary to keep these three regressive forces in check.

I submit that the Productivity Commission has an opportunity in this paper to stand out as a thought leader in infrastructure planning.

The key sentences in the Draft Report on which I wish to focus this presentation are:

“In many sectors of economic infrastructure, project selection is strengthened through privatisation or corporatisation subject to good governance frameworks.” (page 217).

“Institutional arrangements for the provision and delivery of public infrastructure should incorporate good governance arrangements, including:

- the principal objective of ensuring that decisions are undertaken in the public interest
- ...
- effective processes, procedures and policy guidelines for planning and selecting public infrastructure projects, including rigorous use of cost-benefit analysis and transparency in cost-benefit assessments, public consultation, and public reporting of the decision (including a transparent review of the decision by an independent body, for example, an auditor-general or Infrastructure Australia).” (page 223).

Strategic, multi-disciplinary planning – which by definition lies outside the market – is invisible in this model. Strategic, multi-disciplinary planning is necessary to avoid misallocation of resources on unnecessary or sub-optimal projects. The Draft Report focuses on how to manage good projects once they gain momentum, but is light on detail about how to identify and endorse good projects.

### Wrecking Ball 1: Climate change

The private sector will generally not adequately factor the risk of climate change (and policy responses to climate change) into project planning. This is partly because of the long time horizon necessary, partly because of the sunk costs and momentum of business-as-usual and partly because of the orchestrated and well-documented campaign by certain opinion leaders in business and the media against action (refer to exposés by Naomi Oreskes and Australians Clive Hamilton, Guy Pearse and David McKnight).

A simple piece of evidence of this on the public record is the article by business leader Dick Warburton in 2009: “An inconvenient truth leads to lurking doubt”. Warburton is now leading the Australian Government’s review of the renewable energy targets scheme.

The nation’s political leadership has failed to adjust policy settings appropriately to accommodate the unambiguous scientific evidence about global warming. I suggest that this is partly because of the low level of scientific literacy in the nation’s two Houses of Parliament (Edwards 2011b): while Members and Senators are not expected to be experts, a higher level of scientific literacy would help to inoculate the Parliament against false advocacy.

Given a contemporary lack of preventative policy settings, I submit that there is a heavier burden of responsibility upon the Commission to flag this question in their Report, as a service to governments and the construction industry.

## Wrecking Ball 2: Peak or plateau oil

Peak oil (the date at which supply cannot be increased further to meet growing demand) is an intertwined problem of economics and geology. Yes, economics can slow or hasten the rate of extraction of a non-renewable resource, up to a point; but it cannot hasten the rate beyond that which geology will permit.

Will price signals constrain demand to match supply? Yes, they will and arguably are already doing so (the price of petrol has arguably been a factor in the financial collapse of the Brisbane and Sydney road tunnels). The problem that the Commission faces in this Report is the forward lag time. Price signals will kick in only at or after peak, because until then, by definition, supply can be increased to meet demand. Peak is too late to unwind physical infrastructure built on the assumption that there will be no shortage of supply. Engineering for a world in which petrol and diesel are expensive *should have commenced three decades before peak*, because of the lifetime of physical assets constructed to facilitate anticipated volumes of traffic.

This did not happen. Warning signals have been ignored. Peak oil is now upon us. The precise date is difficult to pin down as data from the Middle Eastern OPEC countries are unreliable, and definitions vary between observers. There is strong evidence that global production of conventional oil peaked in 2006 and global production of conventional oil plus variants such as condensates from gas plants peaked in 2008. The shale oil program in the United States has probably flattened the peak and may have pushed these dates forward by a few years.

Scepticism about peak oil centres on expectations that large resources of unconventional oil such as tar sands in Canada and oil shale near Gladstone and elsewhere can be brought online to supply petroleum fuels. These large resources however will not be monetised at a rate sufficient to affect the timing of peak, partly because they will fall foul of global carbon initiatives (excessive carbon emissions to extract the oil); and partly because the energy profit ratio is too small. The opportunity cost of burning natural gas and diesel fuel to extract oil with an energy profit of only two or three to one is too great and planners will seek better solutions for transport.

Even the most optimistic economists have conceded that the rate of peak production will occur by 2035 – the resource is not renewable and is clearly depleting. *The time to commence shaping long-life infrastructure around a peak of 2035 is 10 years ago*. The problem is accentuated if peak arrives earlier or has already arrived – and we will not know the precise date except in retrospect.

### ***Theoretical explanation: Why is the geological and production evidence so widely ignored?***

The private sector will generally not adequately factor the risk of peak oil and rising oil prices into project planning. There are several reasons for this. The cultural explanation is technological optimism: faith that science or business or engineering will find a solution so that economic growth can continue as it always has.

More fundamentally, there is a theoretical weakness in orthodox (neoclassical) economics: the market does not recognise absolute scarcity – scarcity outside the arena being modelled. There is indeed an absolute scarcity in atmospheric sink capacity and an absolute scarcity in world stocks of liquid hydrocarbon fuels. Orthodox economics tends to claim that the market will find a solution to supply of a natural resource if the price is adequate. However, if the supply is difficult to bring forward, for geological or engineering reasons, the price necessary to dampen demand in line with supply may be so high that it sends a wrecking ball through the economy.

Market economics is a social construct and cannot prevail over the First and Second Laws of Thermodynamics which are absolute.

Another reason why the private sector cannot be expected to adequately forewarn of peak oil is groupthink (herd instinct) in the business community. Orthodoxy is that “limits to growth” doomsayers are fringe dwellers. There is also the sunk cost and momentum of conducting business

as usual. Governments are best placed to steer investment decisions in a brand new contrary direction because of their long time horizon.

A further reason is the disaggregation of “the private sector”. Modern corporate structures separate risk from reward. Economics textbooks claim that private firms can foresee unviable projects because their own money is at stake. The ideal of the family firm on which this view is based may have been applicable in the days of the foundations of economics. But a modern private sector partnership is not a single company using its own funds and operating in a competitive market place, as envisaged by the founders of economics. The infrastructure industry is disaggregated into assemblers, facilitators, financiers, consultants, super funds and other players, all with distinctive roles which allow them to insulate their source of profit from risk.

Also, modern companies enjoy limited liability and can walk away from financial disasters. Collapses can be transferred to, commonly, the taxpayers or the depositors and shareholders of financial institutions who have little say or control over the managers. This cannot happen with government, which bears ultimate accountability even for corporate failures.

### *Australian Government neglect*

Responsibility for the lack of official awareness of peak oil can partly be laid at the feet of the International Energy Agency (IEA), which until about 2010, modelled consumption to grow steadily and assumed that supply would be found somewhere to meet demand. Under heavy criticism from petroleum geologists for ignoring evidence including that of declining production figures from past-peak fields, IEA’s Chief Economist Fatih Birol in an interview on ABC in 2011 conceded that crude oil probably peaked in 2006 (Herbert 2011).

But the IEA cannot be blamed for the misrepresentation of its position in the national Government’s 2012 *Energy White Paper*, which in the only reference in the body of its report refers dismissively to the phenomenon:

“Physical production limits (so-called ‘peak oil’) are unlikely to be reached before 2035.”

Given this official neglect of a phenomenon that will have profound consequences for transport infrastructure, I submit that it is incumbent upon the Productivity Commission to draw attention to the phenomenon and to accommodate it in its model of governance.

### **Wrecking Ball 3: Bypass or atrophy of comprehensive strategic planning by governments**

The model for selecting projects outlined in the Draft Report is a project-by-project one. Cost-benefit assessment, for example, is a project assessment tool not a strategic planning tool. Strategic, multi-disciplinary, consultative forward planning by governments is missing from this model. Cost benefit analysis is a subset of or ancillary to strategic infrastructure planning, necessary but not sufficient by itself. Cost benefit addresses primarily the economic value of a project which is only one of the parameters that need to be satisfied.

Traditional procedures for evaluating potential projects that were grounded in analysis by an expert public service have been weakened by the modern enthusiasm for bringing private sector partners in earlier and even for entertaining proposals from the private sector for projects that are not yet on the public policy agenda. This pernicious practice is a wrecking ball that will result in misallocation of resources on a colossal scale and opens the door for corrupt practices.

Traditionally, private sector partners were confined to earning their profits on the basis of their own investment of capital, labour and materials – “return on investment” pricing. Nowadays, public-private partnerships or certain design-and-construct tenders open up the prospect of windfall profits beyond return on investment. These profits come at the expense of others: taxpayers, bank depositors, shareholders of victim companies and so on.

### *The traditional way*

Traditionally, when a perceived need for infrastructure arose (from industry, from another arm of government, from the public service, from a citizen), it would be subject to a fairly thorough and often lengthy process of investigation, overseen by the public service, and ending in a submission to Cabinet. This process would be nested within or derive from or await some form of strategic planning such as the regional land-use plan for the locality. Inter-jurisdictional dialogue would be a feature of this process. Usually, the Cabinet submission would examine the proposal on its merits and make a merits decision of its desirability. Commonly, the Cabinet decision would initially not be on the individual project – that would be a later, separate evaluation – but on a regional plan or an infrastructure plan or a local government planning scheme or similar instrument.

Traditionally, the Cabinet decision on the merits of the plan or the project would be separated from the funding decision. The proposal would then be remitted to the budget process so that all proposals for government expenditure were assessed at the one time of the year during the budget deliberations.

Features of this process are that proposals were first considered on strategic need without rejecting or approving on the grounds of cost; and then their affordability was considered in a systematic process of comparison with other calls upon the public purse.

### *Theoretical explanation: Weaknesses of a private sector-led model*

The private sector-led model of infrastructure provision eliminates these two safeguards. First, by allowing and even encouraging the private sector to put forward its own ideas for projects, a proposal can gain significant momentum without first passing the multilateral investigation needed to satisfy the public interest test that the Draft Report has laudably included as its first principle of good governance (page 223).

The private sector-led model obliges the government that is recipient of the proposal to consider a cost-benefit analysis in absolute not comparative terms. In other words, if a proponent can table an assessment that shows a surplus of benefits over costs, even if the margin is small, it is likely to be viewed favourably. The opportunity to compare expenditure on the project with expenditure on libraries, scientific research, public hospitals, preventative policing and so on during budget deliberations is neglected. Opportunity cost is not factored in.

This will apply, even if the proposal is a full private-public partnership with no direct outlays by the public budget. The opportunity cost of investing our society's design capacity, engineering capacity, financing capacity, land, cement and petroleum into sub-optimal projects is substantially more significant than the direct fiscal cost.

So projects that suit the interest only of the facilitators, consultants or construction companies and not the public interest can bypass the first principle of good governance. The wrecking ball will take the form of a pipeline of projects that suit private sector opportunists but may bear little relationship to the deep-seated needs of the economy or the wishes of the community.

Evidence that this is already happening is embodied in Infrastructure Australia's June 2013 *National Infrastructure Plan*. In the highest priority category "Ready to proceed", the weighted average benefit-cost ratio of more than \$16 billion worth of projects is less than 1.5, so low that one cannot be confident that it is even positive.

The next highest category of "Threshold" projects fares little better: \$15.5 billion worth have a benefit-cost of less than two. The \$5.4 billion to be spent on Western Australia's Oakajee port expansion, mainly to facilitate exports of iron ore, has a ratio calculated at only 1.2, barely scraping over the threshold at which estimated benefits exceed costs.

### *Opportunity cost*

The Commission's own 2007 report on the benefit-cost of scientific research and development and tabulated a typical benefit-cost of 40 to one. This figure is entirely respectable and consistent with international studies. My own staff within the Department of Natural Resources in Queensland in 2005 calculated a benefit-cost of 50-150 to one for a land resource assessment study in North Queensland.

Herein lies a response to the question, how can the Commission's model accommodate rigorous cost-benefit analysis retrospective to election announcements? The answer is, reinstate a strategic forward planning process and establish a convention that election commitments are not made until a project has passed first the planning process and then a cost benefit analysis. I don't underestimate the influence of the Commission in establishing a new orthodoxy along those lines and in the next section will suggest how this might be done.

## A NEW MODEL OF GOVERNANCE

### Introduction

At its hearing on 11 April 2014, the Chairman invited submissions on how governance arrangements might be improved to avoid the pitfalls identified in the Draft Report and in submissions.

The apparent incapacity of our national Government to craft workable solutions to complex policy problems (as evidenced in the analytical weakness of the *Energy White Paper* and the dysfunctional political debate over climate change) has had a long gestation. Nothing in this paper yearns for some mythical earlier golden age and nothing here denies large improvements in efficiency as a result of the reform agenda. In very many ways, the modern Australian Public Service is a vast improvement on the earlier. However, the new managerialist reforms marked by the introduction of a generalist senior executive service in 1983 and the Bastille Day machinery of government reforms in 1987 have weakened technical competence within the public service and have transferred initiative and capacity to the private sector.

Within this context, a virus has infected the system and I will call it "a responsive public service", in other words, a public service that is there simply to serve ministers' wishes and has a minimal role in advocating independently for the public interest. I have previously published on this subject (Edwards 2011a) and will not repeat that analysis. Instead, I will suggest some first principles relevant to public infrastructure and lead from there to recommend a new model of governance for evaluating projects.

### Some foundational principles

1. *Governments exist to serve the public interest.*

I applaud the Commission for including in its first principle of governance: "the principal objective of ensuring that decisions are undertaken in the public interest." This is pivotal to everything that needs to follow and I strongly urge the Commission to retain that principle in just that form.

*Implication of this principle:* the final Report should illuminate a feasible path between this foundational principle and the governance arrangements that follow.

2. *Modern corporations do not necessarily or inherently work for the public interest.*

Traditionally (during the first two thirds of the 20<sup>th</sup> century) the private firm or company was viewed as sitting at the hub of a network of stakeholders including suppliers, customers, their communities and the governments of the localities in which they operate. It was possible to plausibly argue that business served the public interest by supplying goods and services within this network. More recently, the concept of "shareholder value" has taken hold within the business community. The notion that corporations exist to generate wealth and transfer it to the

shareholders is a modern enthusiasm that pits the modern corporation in direct opposition to the concept of “serving the public interest”. There is therefore a tension in the Draft Report’s advocacy of a public interest test and its advocacy of private sector-led infrastructure planning.

It is certainly in the public interest to have a vigorous, profitable business sector in which individual enterprise and ambition can flourish and that is not unduly hamstrung by regulation. This is not the same as equating the interest of private firms with the public interest and, in particular, is definitely not the same as assuming that a particular firm always operates in the public interest.

*Implication of this principle:* the model should edit out any language that suggests that the private sector is better able to achieve the public interest than the private sector.

3. *Most decisions on infrastructure lie with the Australian States.*

By Australia’s Constitution, the functions of the Commonwealth are derivative. Given that most transport, environmental, natural resource management, land-use planning and development control functions lie with the States, any model for efficient governance of public infrastructure must place the States in a central position.

The modern enthusiasm for “national consistency”, coupled with the vertical fiscal imbalance, has animated the Commonwealth to take over many coordination functions – and modern telecommunications have facilitated that process.

There is a strong temptation to regard a shift of authority to the national arena as improving efficiency. In fact the opposite can be the case, as any such shift inherently weakens the capacity of the States to fulfil those functions. Yes, there are some economies of scale in devolving functions to Canberra; but there is also such a phenomenon as diseconomy of scale which shows up as insensitivity to the unique statutory, cultural, organisational and environmental context in which infrastructure is planned and constructed in each State.

*Implication of this principle:* any proposal to gravitate expertise and control to Canberra on the basis of “national consistency” should be critically reviewed to also tabulate the dis-benefits.

4. *When a function is removed from an organisation, its residual capacity to fulfil that function is diminished.*

Organisations shrink when functions are transferred out. The most capable experts in the field leave, files are archived or wheelie binned, corporate memory is lost, and practical responsibility is surrendered.

This is particularly problematic if a State function is transferred to the Commonwealth without a concurrent change to or referral under the Constitution. Legally, the State remains accountable as the Commonwealth’s jurisdiction is commonly *additive to* and does not replace the State’s residual responsibility. But the State Treasury may de-fund the function so responsibility is fragmented and expertise is eroded.

*Implication of this principle:* complexity increases and inter-jurisdictional transaction costs escalate when the Commonwealth takes a role in a matter that is constitutionally that of the States.

5. *Coordination is a core function of government.*

Coordination – between jurisdictions, disciplinary experts, academe, the business sector, NGOs, different arms of the same government – and the citizens is a central and never-ending function of government. No private firm can replace this capacity.

*Implication of this principle:* If a department lacks the skills to coordinate effectively, it must be re-resourced or re-trained to do so as our society cannot function without a public service that is skilled at inter-governmental and inter-sectoral coordination.

6. *To minimise gold-plating of projects, the commissioning authority must itself conduct design to a sufficiently advanced stage to support rigorous cost benefit analysis.*

An understaffed public authority will often be tempted to outsource design to proponents as superficially this seems to require less effort by the authority. So by the time that a project crystallises sufficiently to allow a rigorous cost benefit analysis, it will have gained political momentum.

*Implication of this principle:* projects must be selected and scoped by the public sector before contractors are engaged to build.

7. *It is not true that only the business sector creates economic activity and jobs.*

The Prime Minister himself has recently opined that only the business sector creates jobs, not government. This is manifestly invalid, as public authorities on their own account generate large fields of economic activity. In any case, business cannot operate except within a framework of public institutions – prudential regulation, contract law, property titles, public infrastructure and currency to mention only a few pre-conditions.

*Implication of this principle:* confidence in the capacity of the public sector to drive economic activity by selecting and funding the most beneficial public infrastructure projects is being eroded by invalid assumptions about the efficiency of business. Loss of capacity follows loss of confidence.

### **Building a model of governance from these principles**

If the above list of principles be accepted, then an effective governance arrangement steps out of the page. The model will have the following elements. The theme underpinning this model is that faith in the capacity of the public service to progress the public interest must be restored. There is no other institution in sight that is capable of doing this.

1. A coordinating bureau within the federal ministerial department responsible for infrastructure, charged with nourishing the capacity of the States to conduct strategic, multi-disciplinary infrastructure planning; and with advising Commonwealth ministers. It will have a multi-disciplinary staff recruited for their networking skills.
2. A standard agreed with all States for a minimum-standard process for infrastructure planning then rigorous cost benefit analysis that must be followed for any contribution of federal funds.
3. A protocol approved by COAG that requires all jurisdictions to skill their departments sufficiently to conduct strategic, multi-disciplinary infrastructure planning to provide the context for selecting suitable projects that serve the public interest and not rely on private sector advocates with a vested interest.
4. A protocol approved by COAG that inhibits political leaders from making political announcements ahead of full evaluation.
5. Advisory committees, each multi-lateral and each chaired by a public servant. On request, an advisory committee could meet with the minister once per year for an overview briefing. Otherwise, the committees are there to augment the capacity of the public service and not to advocate politically for their members' projects. All committees constituted of business representatives only would be abolished as these don't broaden their members' horizons and merely entrench business orthodoxy.



## RECOMMENDATIONS

1. That the Commission augment the Draft Report with three new sections: on the implications of climate change for infrastructure planning, on the implications of peak oil for transport planning and on a model of strategic, multi-disciplinary infrastructure planning that will enable jurisdictions to adequately identify and scope projects that are in the public interest, prior to application of a rigorous cost benefit method.
2. That the Commission if necessary recruit experts in these three fields to complete these sections.
3. That the Commission seek an interview with the Chief Economist of the International Energy Agency to confirm their current position on global rates of production of petroleum.
4. That the Commission seek a mandate to conduct two new enquiries: one on the significance of peak oil for the Australian economy; and another on the real preconditions for sustainable economic activity.

Ends

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Herbert, Bronwyn. 28 April 2011. "Age of cheap fuel is over: IEA". <http://www.abc.net.au/news/2011-04-28/age-of-cheap-fuel-is-over-iea/2695928> . Also see Catalyst story – Newby, Jonica. 28 April 2011. "Oil Crunch". <http://www.abc.net.au/catalyst/stories/3201781.htm>.

Warburton, Dick. 21 Oct. 2009. "An inconvenient truth leads to lurking doubt". *The Australian Financial Review* page 60.