

## Senate Submission (10 December 2014)

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### *Asset Valuation for Tariff Setting*

I will keep this submission short and straightforward. A full version of the argument was published in:

Johnstone, D.J. Abacus. *Replacement Cost Asset Valuation and Regulation of Energy Infrastructure Tariffs*. *Abacus* 39 (2003) 1-41.

This paper was cited extensively by the Productivity Commission in its (2001) *Review of National Access Regime: Position Paper*. March. Canberra: Commonwealth of Australia

Johnstone, D.J. and Lonergan, W. (2006) The DORC valuation model of regulated infrastructure assets. *JASSA* Issue 2 WINTER 2006.

The asset valuation rules were somehow set up from the start to favour asset owners, including State Governments. Regulators, lobbyists, consultants and State Treasuries all shared in this, intentionally and otherwise (regulators came under pressure from all these other parties). This would not have occurred in countries with larger more influential manufacturing sectors.

#### The Game

Here's how it works:

Suppose the asset owner has an asset that cost \$100 years ago, and would cost \$1000 to build today (at a guess, and with some discretion on the part of the consultant valuer producing this estimate). Suppose also that the asset is currently "depreciated" by 20% in terms of its existing life span, and is expected to depreciate by another 2% this year (at a guess). Lastly, suppose that the WACC return regulated in the access arrangements to owners (from users) is 10%. The regulated asset base (RAB), also known as the depreciated replacement cost (DORC) is therefore  $80\%(1000)=\$800$ .

The tariff payable on this asset this year is then

$\$800 * 10\% = 80$  paid as "interest" or "return" on depreciated assets

*plus*

$800 * 2\% = 16$  paid as compensation for this year's depreciation on assets

Total \$96.

So the owner gets 12% of an imaginary cost base of \$800, an amount that was never actually paid (the owner actually paid \$100 years earlier).

### Supposed Rational

There are many bits of convoluted economic rhetoric that have been put forward for this obviously generous set up.

The one that regulators are most accepting and proud of is the “new entrant exclusion” rule. This rule says that the owner should be able to charge up to the point where charges are so high that the owner risks a new entrant replicating or bypassing its (massive) assets and stealing all its customers.

This is really leg pulling by whoever invented the idea. Neither the economic rationale nor the political acceptability of large scale duplication of natural monopoly assets will ever exist. The new owner would have to pay current asset replacement cost, whereas the existing owner could compete against them without paying another cent.

Ultimately this means that existing owners of assets that would cost let’s say \$500 to replicate today (if those assets could be built given the need for easements etc.) can charge customers as if those same assets would cost \$1000 (i.e. “double DORC”) or an even greater multiple of true current replacement cost. They can charge this much because there is no realistic threat of a new entrant. So the sky is the limit in relation to any actual true threat of major infrastructure duplication or bypass. (Think of those massive electricity stanchions that we see running across country, is any competitor going to build an identical network running hundreds of miles right next to it?)

This “new entrant” rationale is a clever contrivance, one of many superficially plausible economic theory arguments that any vested interest could mount to suit its case.

### Gold Plating

Gold plating will naturally occur when the owner is allowed an overly generous % return on its new investment, especially if there is potential for revaluing/reconfiguring its notional asset base (DORC) in the future (remember this regulatory asset base becomes just a number written on a piece of paper, and is therefore open for possible renegotiation in the future). Every extra 1% added to the WACC (return) is extra profit, just like when a bank borrows at 4% and lends at 7% instead of 6%.

The short term return to owners from spending big money now on its asset base goes straight to the annual bottom line and to the management’s salaries and bonuses. The incentives are obvious, especially since the dollars earned by owners come down to a multiple of the paper asset base (DORC) times the generous regulated interest rate (WACC).

## Role of Regulators

Some regulators admit they are squeezed very hard politically by asset owners and by the State Treasuries keen to sell off infrastructure for maximum money. Others will claim that they successfully constrain gaming behaviour by the owners. The truth is that this has been a one-sided contest in Australia.

Asset users (e.g. manufacturers) are affected by their energy bills but have many other costs and business issues they are equally or more concerned with. They are also loath to antagonise Governments. Asset owners on the other hand have their entire bottom line at stake in regulatory tariff decisions. This has put them in an economic position to “recruit” the consulting industry by employing consultants to argue only their side of the equation. I have regularly heard consultants quote the size of their effect on regulator decisions in hundreds of millions of dollars

(Remember the characterization of economist-consultants by Nobel economist George Stigler. He said economists are hired guns essentially satisfying the “market for excuses”; e.g. the excuses that warrant higher tariffs to owners).

## The Problem

We can look back with regret about the arrangements that were made. The facts are that they were and that, in the case of Government owned assets, the tariff formula has been used effectively as a tax on energy users, helping to pay Government bills and prop up budgets.

By further privatisation of the infrastructure assets that are treated this way, Governments choose the short term over the long term. They will lose the “tax” or dividend stream (whichever you call it) from users but gain the large one-off capital sums that asset sales bring. The hard question in all this is to judge what damage inflated energy costs have had, and will have in future, on parts of the downstream economy that could equally pay taxes to Governments and add to employment.

At a philosophical level, the tariff regulation regime could have been biased in energy users’ direction rather than in the asset owners’ direction. The thinking could have been that pre-existing infrastructure was a “sunk cost” (i.e. it’s there already, whatever we do today) so let’s just charge users whatever is necessary to operate it. Instead, a formula was imagined that allowed infrastructure owners to charge users as if they had to rebuild it all, even its most perfectly functional parts - at today’s supposed prices.

The most absurd application of this idea is in the case of easements. Many of these were acquired by Governments decades earlier (at little cost in today’s terms, and long “paid for”) and yet they appear in the tariff asset base (DORC) as if they must be re-acquired today. Not only that, they are valued widely at the per foot replacement cost of the land involved, which is not only a conceptual nonsense, it is an open invitation to inflate the asset base

(DORC) by introducing factors and market conditions entirely unrelated to the asset owners cost of delivering energy.

Making things worse is that over the years since this tariff-setting regime began, owners have increased their borrowings so as to finance (i) all new investment, including gold-plating and (ii) dividend payments to Governments, in the case of State owned assets. These borrowings must be financed into the future, meaning that owners need an inflated tariff stream to continue.

So now, largely because of this borrowing, there are, for the first time in the regime, threats to owners' viability. These are coming from two directions: (i) consumers have worked out how the tariff game was set against them, and (ii) energy consumption has fallen, reducing the customer base from which the current tariffs need to be extracted.

In a sense this is the natural end point of an all too clever idea. The high tariffs from which the owners have benefitted are a big part of why the customers, who are required to keep those tariffs flowing, have disappeared.