The Orion CPP determination

1 Introduction

I have been asked to provide advice to the Commerce Commission in the context of the Commission's determination of a customised price-quality path (CPP) application made by Orion. The terms of reference are attached, and in brief they focus on three main questions:

- In principle, would the costs and risks of a catastrophic event such as an earthquake be borne by businesses or by consumers in workably competitive markets characterised by the existence, on the supply side, of long-lived, specialised assets?
- Taking into account specific features of the New Zealand regulatory regime, should Orion be allowed to claw-back: (i) the costs associated with repairing and replacing assets that were damaged by the earthquakes; and (ii) foregone revenues resulting from decreased electricity consumption after the earthquakes?
- If it is concluded that at least some degree of claw-back should be applied, how should recovery of the costs of the earthquakes be allocated between consumers and Orion's shareholders?

The first of these questions is of a general nature, whereas the second and third are both more specific and more narrowly focused on claw-back. My response will therefore address some general issues first, before considering matters that are more specific to the Orion application.

The Terms of Reference (ToR) go on to identify a number of particular issues and questions that I am required to consider when addressing the general questions. These will partly be covered in general remarks and partly in explicit comments in the second half of this paper.

2 General considerations

2.1 Risk sharing

It can be noted first that workably competitive markets come in a variety of shapes and sizes, exhibiting a range of different structures and patterns of business conduct. Indeed the concept of workable competition itself owes much to the recognition that markets that are relatively highly concentrated, and hence whose structure could be interpreted as indicating the presence of significant market power, might nevertheless 'work well for consumers' and be effective in promoting economic efficiency. Given the variation in contexts in which workable competition can be found, we might reasonably expect to find the existence of a range of different risk sharing mechanisms, and possibly also a range of different risk sharing outcomes.

The ToR specifically make reference to a particular set of contexts, characterised by the existence of long lived, specialised assets. This reduces the variety of situations that needs

to be considered but, even so, it is not to be expected that a common, uniform pattern of risk sharing arrangements will necessarily be observed: other variations in contexts will tend to lead to adaptive adjustments in market institutions, including forms of contracting for the supply of products and services which have implications for the distribution of risk.

In these circumstances, the general question is probably best approached first by the application of some general principles to the very specific events that have triggered the application for claw-back. The most basic of these principles is that, in the NZ context, a workably competitive market is one that 'works well for the long-term interests of consumers' (consistent with the linkage in legislation between the concept of workable competition and promotion of long-term consumer interests). The most basic of facts to which this principle is to be applied is that of major earthquake risks and, in this context, I think it is non-contentious to say that: (a) eventuation of the risk will likely cause significant, unavoidable harm to electricity consumers, if only because of supply disruptions, and (b) such harm occurs in circumstances where these consumers are also likely to be suffering significant harm/losses for other, earthquake-related reasons that are not directly linked to the supply of electricity (e.g. loss of life, injury, fire damage, building collapse, etc.)

It is to be expected that given the size of the potential losses from disruption to electricity supplies, and given that they are positively correlated with other losses likely to be suffered, electricity consumers would place significant value on some degree of insurance or real-income protection in the face of such risks. Markets that work well for consumers are, therefore, likely to evolve in ways that provide such protection, subject to some familiar limitations related to the costs of doing so (e.g. the limiting effects of moral hazard and adverse selection on the provision of insurance cover). Further, market arrangements might be expected to achieve the relevant consumer protections in ways that are reasonably efficient: i.e., and again taking account of factors such as moral hazard and adverse selection, in ways such that those most able to bear risk themselves, or most able to spread risk to others, take on the heaviest burdens.

Prima facie, it does not appear to be the case that Christchurch electricity consumers are so well placed to bear earthquake risk that workable competition would lead to outcomes and arrangements in which all relevant risk was removed from suppliers and allocated to consumers. Perhaps the most obvious point is that suppliers, particularly larger suppliers, at least have the opportunity to spread risks beyond the Christchurch area via ownership diversification or via borrowing in geographically wider markets.

As always, such general reasoning should give way to any available empirical evidence to the contrary. Suppliers based in Christchurch (and indeed elsewhere in NZ) who operate in other workably competitive markets will have faced issues of earthquake risk, and it is relevant to ask whether arrangements in any of these other markets can illuminate the issue. There is relatively little on this point in the documents I have read, but that is not to say that such evidence does not exist or could not be discovered.

As an aside at this point, I think it would prove helpful to the Commission if, given the use of the concept of workable competition in the legislation, those making economic submissions were encouraged to put more weight on empirical material drawn from comparator markets which might be held to be workably competitive. Sometimes an ounce of fact is

worth more than a ton of theory (even though, in other circumstances, an ounce of theory can be worth more than a ton of fact).

2.2 Claw-back

Turning to the more restricted set of issues surrounding claw-back, I note that the narrower focus allows for significant simplification of my task, since a number of the issues raised by Orion, Mr Balchin and NERA are more directly concerned with *ex ante* determination of a CPP for Orion. The two evaluations do, however, have elements in common, and it would not be appropriate to ignore forward looking considerations in their entirety when considering a claw-back application. For example, any decision made now in relation to claw-back is liable to affect assessments by EDBs of possible Commission decisions in the future (and see the points immediately below). Claw-back decisions also directly affect the long terms interests of consumers, which encompass consumer welfare today and the immediate future, as well as consumer welfare in the medium term and in the more distant future.

In common with regulatory regimes elsewhere, the NZ regime allows for the possibility of claw-back. It is relevant to note, however, that use of claw-back is something that good-practice regulation tends to seek to avoid *where feasible*, by which I mean *where such avoidance does not itself cause significant harm*. There are a number of reasons for this, including:

- In its general sense, claw-back has sometimes been used by regulators to 'correct' what have come to be perceived as over-generous regulatory settlements in the past. More active use of claw-back powers, therefore, corresponds to a widening of the domain of (*ex post*) regulatory review, which in turn can encourage hindsight bias and increase regulatory uncertainty.

- Where provisions for the possibility of *ex post* adjustments have been clearly defined *ex ante*, so as to limit scope for the aforementioned tendencies to develop, they nevertheless may come to be associated with the more active use of prudency reviews, or of something close to such reviews. This is because, if the *ex post* adjustments are substantial (as they frequently are), it is not usually thought permissible for a regulator simply to 'tick off' the expenditure items, since to do so would in effect be a reversion to cost-plus price setting, with its known adverse effects for consumers/buyers. The risk then is that the precedent may encourage more general tendencies toward reliance on overly stringent prudency reviews by a regulatory agency.

My view is that *ex post* review is less problematic in circumstances where the relevant standard of performance is one that is close to recklessness or negligence on the part of the regulated company, since the standard then provides protection against over-active re-visiting of the past. However, it is difficult to see how such a standard could apply in circumstances where it is the regulated firm itself which triggers the assessment. For example, a recklessness/negligence standard in such circumstances would be akin to a supplier arguing for more money to be paid for <u>past</u> services on the ground that the supplier had not been reckless or negligent in incurring costs. I do not think such conduct could take

hold in a workably competitive market, although stand to be corrected if there is evidence otherwise. Rather, I think it likely that consumers would need to be persuaded that a supplier had done much more (than not being reckless or negligent) in striving to keep costs down before even contemplating *ex post* adjustments to payments.

At a broad level, the NZ legislation seems to me to emphasise the desirability of guarding against the risks that are inherent in reliance in *ex post* adjustments to regulatory settlements. The concept of workable competition invites examination of practices to be found in other markets, and in general my own experience of such markets is that participants prefer to sort out as much as possible *ex ante* and, where that is not feasible, to seek to limit the scope for *ex post* haggling as best they can.

2.3 Costs and risks

In submissions to the Commission on the Orion determination there are multiple references to the idea that, in the end, it is consumers who must bear the increased costs that are consequential on a catastrophic event such as an earthquake. There is a sense in which this is true, and a sense in which it is not true.

Looking at matters *ex ante*, it is reasonable to anticipate that a regulator will allow for the recovery of efficiently incurred, expected costs (where by expected costs is meant the mathematical expectation or mean of probabilistic cost projections). Expected costs caused by catastrophic events are properly included in this calculation.

In practice, however, *ex post* outcomes differ from *ex ante* expectations, and it is an integral part of price or revenue cap regulation that, for the most part, such deviations of outcomes from expectations – which can be referred to as outcome risks – are borne by the supplier. Thus, if costs are lower than anticipated, the supplier retains the benefits. By the same token, if costs are higher than anticipated, those unanticipated costs are borne by the supplier, <u>not</u> by consumers.

In the latter case it is true that, if outcomes had been better anticipated, consumers may have been asked to pay more *ex ante*, but that is an irrelevant consideration when considering claw-back. Expectations are formed on the best information available at the time of decisions, and any reasonable business or regulator will recognise that there will inevitably be risks of deviations of outcomes from anticipations, which will have to be borne by one party or another; and, to repeat, it is a working principle of price or revenue cap regulation that such 'outcome risk' lies first with the regulated business.

I say 'first' because it is always possible for regulatory settlements to make explicit or implicit[1] provision, on an *ex ante* basis, for transfer of some risk toward consumers. Perhaps more significantly, since the allocation of risks to businesses is driven by a desire to strengthen incentives, so that the incentives of a regulated utility are moved closer to those of suppliers in workably competitive markets, there is an obvious case for a modified approach when the outcome risks derive from the operation of the regulatory regime itself (i.e. outcomes are subject to risks that are partly influenced by the conduct of the regulatory authorities, and hence are risks that would not normally be found, or not found on a similar

[1] Different forms of price control tend to imply different exposures to 'outcome risks'.

scale, in a competitive market). In this context, I note that the November 2012 DPP reset for 1 April 2012 to 31 March 2013 applied claw-back in circumstances where there had been delay in finalising the determination due to court action. That is, the claw-back was related to regulatory risk.

2.4 The distinction between revenue risks and cost risks

The ToR raise the question of whether different considerations apply to the assessment of claw-back of (a) costs associated with repairing and replacing damaged assets and (b) foregone business revenues resulting from reduced electricity consumption following the earthquakes.

In my view it is appropriate to consider repair and replacement costs separately from foregone revenues. Although each of these factors give rise to 'losses' to Orion, calculated relative to a relevant counterfactual position (e.g. estimated financial flows in the event that the earthquakes had not happened), it is simply not the purpose of the NZ legislation to protect businesses against such possible losses. Rather, the legislation is focused on the long term interests of consumers, and the appropriate approach to business profitability is derived from consideration of what would best serve those interests. Thus, the notion of ensuring that expected costs, if efficiently incurred and including a reasonable rate of return on capital, can be recovered flows from the point that, if it were otherwise, investment incentives would be chilled, *to the detriment of consumers in the longer term*.

From the perspective of consumers, a reduction in demand is a rather different matter from an increase in repair and replacement costs. In the absence of the second, there might have been, or might be, a deterioration in the services offered to consumers; and that is an obvious consumer detriment. A reduction in demand, on the other hand, has no such direct and immediate implications for quality of service. It may represent nothing more than some consumers moving out of the area, and there is no very obvious reason why consumers as a whole will benefit if some are asked to make good the entirety of the reduced business income caused by the decisions (to leave the area) of others.[2]

These considerations are reinforced by reference to the analysis of supply and demand shocks in workably competitive markets. It is trite economics to say that, in general, shocks to cost functions and shocks to demand functions can be expected to have differing implications for prices, volumes traded and profits in the short- to medium-term period that is relevant when assessing claw-back issues of the current type.

3 More specific questions

3.1 The relevance of insurance and self-insurance to the assessment of claw-back

To the extent that provision for insurance and/or self-insurance has been explicitly made by a regulated business, claw-back would be inappropriate for the relevant (insurance or self-

[2] It might be that, in the longer term, a smaller population base will raise unit costs, but such economies of scale or density are not universally present in electricity distribution systems and, in any event, it is to be expected that re-engineering of the system to reflect the changed population density would enable at least some costs to be saved in the longer term.

insurance) 'premia', these being expenditures that have been, or should have been, addressed under past regulatory arrangements. Ambiguities can arise, however, when self-insurance is not explicit.

By self-insurance here I mean any decision to bear or 'retain' a particular risk, which may or may not involve the deliberate setting aside of hypothecated or ear-marked funds. From an economics perspective, any ear-marking for particular purposes is usually notional only, since the relevant funds are, ultimately, not beyond the reach of companies if, at some future date, they are required for other purposes. In fact, the great majority of risks faced by businesses are 'self-insured' via balance sheet positions, not by hypothecation, and, if greater insurance is believed to be warranted, it is most commonly achieved by simple strengthening of balance sheets.

A more relevant distinction for the assessment of claw-back is whether the relevant risks have been adequately assessed by the regulated business, which leads on to questions concerning prudency. If the risk has not been assessed, it might be said that the supplier is 'not insured', although that terminology can be misleading. It may be, for example, that the risks are simply not sufficiently material to warrant separate assessment, and are swept up in general notions of what financial resources are required to sustain a business of the given type. That is, there might be a general 'self-insurance' assessment that encompasses a relatively large number of small risks and responds to them in aggregate, rather than individually.

This latter, common, business practice is mirrored in price and revenue cap regulation when the latter determines matters in terms of broad 'building blocks', rather than in terms of fine, line-by-line accounting detail; and the rationale is the same as in commercial practice, namely to economise on information costs. Thus, there is an expectation that things will not go exactly to plan, and that there will be 'swings and roundabouts' effects on the cash flows of regulated firms. Such 'swings and roundabouts' are generally unproblematic if they not large enough to give rise to decisions that can be expected to be materially adverse for consumers in the future.

The issues raised by the possibility of catastrophic events are chiefly to do with the scale and unpredictability of the potential losses, which may give rise to substantial 'uninsured' losses (i.e. losses beyond those covered by explicit insurance or self-insurance provisions, or by the regulated business's balance sheet). It is only this 'uninsured quantum' that is relevant in assessing claw-back.

To illustrate, if (a) an *ex ante* insurance assessment concluded, reasonably, that cover up to $100m might be warranted, and (b), in the event, losses amounted to $110m, it is only the additional $10m that would be relevant to assessment of claw-back. That is, the claw-back assessment should be limited to determining whether none, some, or all *of the $10m* should be recouped. This is most obvious if insurance or explicit (ear-marked) self-insurance arrangements have been put in place, but it is also the case if the business judges that its balance sheet is strong enough to absorb $100m of losses if they eventuate.

The situation is no different in the event that the relevant business had unreasonably concluded that only up to $50m of cover was warranted or if it had failed to address the

insurance issue at all. In these cases, there would have been an element of imprudency in the decision making process, which would not merit compensation. Nevertheless, it would remain the case that the additional $10m merits an appropriate assessment.

I understand from the documents that I have seen that Orion did explicitly address insurance issues, and that it insured against some potential losses but not others. I also understand that Orion had a reasonably strong balance sheet, and therefore that the decision not to insure against some contingencies, on grounds of cost, does not necessarily indicate imprudent or inefficient conduct.

However, the fact that Orion may well have been acting efficiently in making the risk management decisions that it did points to the conclusion that there was a conscious decision to 'self-insure' at the time. As indicated above, this does not mean that Orion necessarily set aside funds that were ear-marked for making good losses consequent on a major earthquake. It requires only the inference that, having considered the relevant matters, Orion was satisfied that it could absorb losses up to a reasonably estimated maximum level through a combination of explicit insurance contracts (where these were considered 'economic') and the strength of its balance sheet. On this basis, Orion should be deemed to have (insurance and self-insurance) cover up to at least the maximum amount that was in contemplation at the time that insurance decisions were made. This level of cover, which, on the basis of the information that I have seen, will likely exceed the level of cover under explicit insurance contracts, does not, in my view, merit the application of claw-back.

If, on the other hand, the proposition that Orion considered the relevant matters and made appropriate risk management decisions is not accepted, the prudency of the relevant decisions then becomes open to question on the ground that management failed to make reasonable provision for earthquake risk.

In considering any prudency issues, it is relevant to note that sometimes things happen that are simply beyond the imagination of the decision making process of the business, events that are sometimes referred to as 'unknown unknowns' or 'black swan' events. In such circumstances, if the effects are large in magnitude, the rationale for allowing claw-back might be considered to have more, although not necessarily compelling, force. Earthquake risk in NZ does not fall into this category, however: it is a known unknown (the uncertainties are to do with timing and magnitude), and, as Orion's business conduct shows, something that a reasonably efficient EDB will almost certainly have assessed.

Consumer preferences in relation to risk and loss avoidance (discussed above) are a much more obviously relevant factor. I would expect a prudent and efficient supplier to take steps to reduce consumer risk burdens by some mixture of (a) insurance, (b) self-insurance and (c) pursuit of other feasible means of reducing consumer risk. As just indicated, I think it reasonable to interpret Orion's actions as a combination of (a) and (b) but, as I understand matters, other diversification (of consumer risks), such as might be attainable via full or part privatization of the EDB, were not pursued.

The reasonableness of Orion's conduct not to obtain explicit insurance cover for the whole of the potential losses consequent on catastrophic events is also supported by well-known

limitations of insurance markets. Thus, in the face of significant moral hazard problems, efficient insurance contracts are typically subject to provisions such as deductibles which maintain some business exposure to the relevant risks in order to provide incentives for insured parties, where feasible, to take actions that will reduce the likely level of losses in the event of catastrophe. The incidence of earthquakes may not be something that itself gives rise to moral hazard, but the cost of responding to such events *is* something that is directly affected by the actions of the insured party.

It is to be expected, therefore, that, even if Orion had sought full insurance cover from the market, it would not have been able to achieve such an outcome, except perhaps at an inefficiently high cost. Some degree of self-insurance was therefore most likely inevitable and, for reasons given above, it is not in my view appropriate to allow claw-back of the relevant loss exposures *up to what might be determined by the Commission to be a reasonable total level of cover, irrespective of the mix of purchased insurance and self-insurance that is actually chosen.*

This obviously raises the question of how to arrive at an estimate the appropriate level of cover. A number of questions might be asked, including:

- Did Orion estimate its potential, maximum losses in the event of a major earthquake?
- If so, what was the estimate?
- If not, why not?
- Did management estimate annualised economic costs (in terms of 'self insurance premia') of the risks it was taking on?
- If not, was management satisfied that the EDB had sufficient balance sheet strength to absorb possible losses?
- Did Orion raise these issues with its owners?

Matters relevant to these and related questions are discussed in the Aon Expert Opinion on insurance issues. I note in particular Aon's view that it is possible for an EDB such as Orion both to estimate the level of coverage that might be required and to compare the costs of alternative ways of addressing the relevant risks (see section 6).

There are probably two or three main points to take from the discussion at this stage:

- Full insurance cover purchased from the market, or anything approximating it very closely, is unlikely to be achievable on an efficient basis;
- The residual risk is borne in the first instance by the company, and a reasonably efficient company will recognise this fact;
- Hence, unless further steps are taken to spread the risk, it is borne as a matter of choice by the company;

- It is possible that, in the event of a major earthquake, losses turn out to be higher than reasonable *ex ante* estimates of maximum likely exposures, and it is in such circumstances that there is a good case for consideration of claims for claw-back (which is not to say that those claims should necessarily be accepted, either in part or *a fortiori* in their entirety).

- The amounts at issue in such assessments should, however, be restricted to the excess of losses above reasonably estimated exposures that are covered by a combination of explicit insurance contracts and self-insurance.

- A claim for full claw-back invites a detailed 'prudency' assessment of the relevant decisions and estimates, and in particular of the EDB's view of potential losses.

Finally, I note some potential analogies with banking regulation. Regulated companies sometimes operate on the basis of an expectation that, if something goes badly wrong, they can expect to be 'bailed out' by regulators. In utility cases the bail-out typically occurs by allowing utilities to charge higher rates. Such an expectation tends to give rise to excessive risk taking (it is another form of moral hazard problem). As we have seen from banking supervision, such excessive risk taking can be said to be imprudent and, when risks eventuate, it tends to lead to calls for much tighter, more intrusive regulation.

3.2 Demand risk

The extent to which regulated suppliers are exposed to demand risk is a matter of policy choice. Price cap regimes will typically give greater exposure than revenue cap regimes. The *quid pro quo* for any reduction in risk borne by the regulated supplier is usually an appropriate adjustment in the cost of capital, other things equal; although it can be noted that, since variations in the capping approach chosen are likely to be correlated with underlying differences in context, other things are unlikely to be equal, and hence, because of confounding factors, there may be no actually observed correlation between the allocation of demand risk via regulatory formulae and the relevant cost of capital.

In the context of a regulatory regime that is guided by views about the incentive structures of workably competitive markets, it is to be expected that suppliers will be exposed to significant demand risk, unless there has been explicit provision to the contrary. The general expectation under workable competition is that unanticipated reductions in demand will lead to unanticipated reductions in suppliers' revenues,[3] although it is possible for there to be situations where 'take-or-pay' contracts, which guarantee the revenues of a supplier, are compatible with competition.[4]

This link between demand and suppliers' revenues should be unsurprising: since effectively competitive markets are markets that work well for consumers, it is natural that suppliers'

[3] In many cases this will be the consequence of both falling volumes sold and falling prices. This combination is not inevitable however. In monopolistically competitive markets where products/services are differentiated, price may be unaffected by the demand reduction, or may even rise (e.g. if demand becomes less price elastic for some reason or other).

[4] That said, it seems to be much easier to find examples of such contracts in contexts characterised by the existence of substantial market power.

revenues are linked directly to demand in such a way that suppliers do better when consumer welfare increases (as occurs when demand for a product or service increases), and do worse when consumer welfare falls (as occurs when demand falls). That is, it is an important aspect of workably competitive incentive structures that they tend to align suppliers' rewards to consumer choices in this type of way.

To be more specific, in the context of a supplier who relies heavily upon long-lived, specialised assets, the sunk nature of the relevant assets generally implies that, other things equal, a downward demand shock tends to lead to excess capacity and to operations at relatively low levels of marginal cost. In electricity distribution, the marginal costs of energy losses also tend to fall with demand. In a competitive market, these tendencies tend to lead to price discounting, not to price increases, and suppliers who have high levels of operating leverage (because of high fixed costs, due say to the specificity of their assets) tend to be particularly exposed to negative demand shocks. This, of course, is to the advantage of consumers in the relevant circumstances, and it is one of the ways in which consumers benefit from competition.

As emphasised above, however, there is no simple characterisation of what will necessarily happen in a workably competitive market. The supplier might hedge against negative demand shocks by means of longer-term contracts, and it would not be surprising to find examples of fixed-priced contracts in a workably competitive market. I would expect, however, that the form of the contract would respect the principle set out earlier, that risk will tend to be allocated to those can most efficiently bear it, and repeat that distressed electricity consumers in a region hit by a major earthquake are unlikely to be in a good position to bear risk.

Similarly, suppliers in workably competitive markets might seek to protect themselves against revenue risks via business loss insurance, but will likely find it difficult to obtain such insurance other than in a relatively limited range of circumstances, and then, for moral hazard and adverse selection reasons, at a less than 100% exposure for the insurance company. Loss of revenue attributable to an identifiable event is often very difficult to quantify because it requires comparison of observed revenues with a counterfactual estimate of what revenues would have been if the event had not occurred (i.e. with a demand forecast).

In general, demand risk is something that is most usually borne by suppliers, and the arguments why this is so are not substantially different in relation to catastrophic risks. Such risks are defined in terms of the high degree of harm that they can cause, but harm caused by catastrophic events is not necessarily evenly distributed, and a particular regulated entity might suffer only limited losses of demand, even though extensive damage has occurred all around. In evaluating the extent to which suppliers should bear relevant risks, therefore, a first exercise is to assess the magnitude of the impact on the regulated supplier.

Since the NZ regulatory regime, in the pursuit of better incentives, contemplates non-trivial risk bearing by the regulated supplier (the 'swings and roundabouts' of incentive regulation, as compared to a cost-plus approach), it is only to the extent that the catastrophic event

causes a level of harm that lies outside the limits of what might be considered a normally anticipated range that new issues arise.

The chief issue of relevance for claw-back is probably simply that the impact of a catastrophic event on the finances of an EDB might be so overwhelming that it materially impairs its ability to serve the EDB's customers in the future. This is more than just bankruptcy – since bankruptcy might be resolvable by capital restructuring, and can sometimes put a business in better shape to meet future challenges – but it is when such a situation arises that the arguments for regulatory adjustments determined on an *ex post* basis are strongest. This is not unlike the effect of Force Majeure provisions in commercial contracts: there are certain circumstances in which it is recognised that *ex ante* commitments should reasonably be set aside.

The Commission will need to make a judgment on the quantitative significance of any revenue losses relative to the financial capacity of Orion to absorb such losses. However, on the specific matter of claw-back of revenue losses, the *prima facie* evidence does not suggest an obvious case for compensation. Among the relevant factors here are the following:

- Orion was operating under a price-cap, rather than a revenue-cap arrangement.
- Orion had considered earthquake risks, and its risk management approach and balance sheet position do not immediately suggest imprudency in the face of such risks.
- The claw-back assessment relates to a finite time period, and is not focused on how revenues are set for the future. However, even under price (rather than revenue) cap arrangements, a fall in demand is likely to lead to higher price caps going forward, and this is one aspect of regulatory arrangements where it is difficult to fully replicate the characteristics of workably competitive markets (in which it is unlikely that prices would increase in the short to medium term when assets are specific to the activities concerned and are long-lived), to the benefit of shareholders of EDBs. In effect, the long-term regulatory bargain already provides for customers to bear some demand risks by paying higher prices following a CPP determination. Moreover, anticipation of this incremental revenue stream (associated with higher allowed prices) will automatically strengthen the capacity of an EDB to raise additional finance.
- Although significant, the revenue losses (in the claw-back period) do not obviously lie outside of a normal range. By way of a rough indicator, it can be noted that London Stansted airport, which is still price controlled, suffered a fall in passenger volumes of around 24% between 2007/8 and 2011/12.[5] Whilst airports tend to have more volatile demand than electricity networks, very large swings in global energy prices in recent years have also produced some quite significant fluctuations in demand for energy network services.

[5] Similarly, Dublin airport saw a decline in passenger numbers of around 21.5% over the two years from 2008 to 2010.

To give the evaluations more precision, I suggest that one indicative measure of the quantum of the revenue shock suffered by Orion in the claw-back period – under current arrangements, and without claw-back – is the ratio of the present value of the estimated revenue losses in the claw-back period to an estimate of the present value of projected revenues in the absence of the shock in both the claw-back period and thereafter. The 'thereafter' calculation will necessarily be somewhat rough and ready, but I would not expect the results to be particularly sensitive to reasonable variations in the assumptions used.

3.3 Separate treatment of repair and replacement of damaged assets

As indicated earlier, it is appropriate to consider application for claw-back for repair and replacement of damaged assets separately from application for compensation for loss of revenues due to lower demand. It is possible that, having conducted such assessments, the Commission might conclude that these two different impacts on Orion's financial flows should be treated in a similar way. For example, claw-back might be rejected for both; or a similar fraction of Orion's financial losses might be allowed for both. That, however, is a conclusion that would follow from the analysis, and would likely be contingent on the particularities of the relevant circumstances. It is not something that should be presumed in advance.

I understand that recognition of the difference is built into the current IMs in that damaged or destroyed assets that remain *in situ* are retained in the regulatory asset base, and hence are capable of generating continuing financial returns for an EDB. This approach might be interpreted as reflecting the likelihood that substantial damage to a capital stock, unlike substantial reductions in demand, will tend to create upward pricing pressures in a competitive market (reflecting a consequent shortage of capacity).

Since these wider arrangements concerning damaged or destroyed assets clearly affect the distribution of risk between consumers and shareholders when catastrophic risks eventuate, it would be advisable for the Commission to give them some consideration in the current evaluations. To the extent that they lead to higher prices being set in a CPP – in consequence of a higher RAB (than would otherwise be the case) – consumers will, in effect, bear a degree of outcome risk. There is, therefore, a possibility of double counting if EDBs are allowed to recover, by other means (including by claw-back), all additional expenditures on repair and replacement of assets that are consequential on the catastrophic events, and which have not been financed from explicit insurance cover; since at least some of any such shortfall will automatically be recovered in the future by virtue of the higher RAB.

One possible response to the risk of double counting (to the detriment of consumers) might be to conclude that the current IMs should be amended such that damaged or destroyed assets are removed from the RAB. That would move NZ arrangements in the direction of tests that require assets to be 'used and/or useful' for them to be included within the RAB. Whilst there are arguments in support of such a directional shift, it is not one that I would personally recommend, precisely because it increases the scope and likely influence of *ex post* review (which in my view is better limited to matters that concern conduct that might be said to be negligent, reckless or egregiously inefficient). The RAB can be viewed as a concept that stands at the centre of a long-term bargain between customers and

shareholders, and I think the better course is to recognise that this bargain *already* (i.e. in an *ex ante* sense) establishes risk sharing arrangements for damage or destruction of assets. The implication of this latter view is that double counting is to be avoided by appropriate determination of claw-back, not by disallowances of past investments from the RAB.

An example of the potential economic differences between asset damage and demand reduction is the potential for redistribution of demand among regional utilities following the incidence of a large (overall) demand shock. I understand that one of the causes of lower demand is relocation of customers to other areas of the country, which can be viewed as switching between alternative EDBs (implying a low-intensity form of competition among EDBs). In that case, loss of demand for Orion implies increased demand for other EDB's, and allowing claw-back of revenue losses for Orion without making adjustments to other price controls could be held to be discriminatory in nature, and certainly difficult to square with the notion of promoting the long-term interests of consumers.

In the context of supply of a reasonably homogeneous product/service, using long-lived specialised assets, demand reduction in a competitive market can be expected to put downward pressure on prices, more or less immediately in spot markets and potentially more gradually in contract markets (depending upon the form of the contracts used: a long term contract for specified volumes at a price determined by a spot price index would likely show a price response almost quick as the spot price response itself). It would, I think, be surprising if, having lost some customers, competitive firms with excess capacity and short-run marginal costs well below the prevailing price level, then increased prices to remaining customers to restore their profitability. Cartelisation might do the trick, but the market could not then be said to be workably competitive.

If there are empirical examples of such an occurrence, it would be helpful for them to be identified by Orion or its experts, so that the Commission can identify and explore the relevant mechanism by which this comes about, and can assess whether or not there are any accompanying consumer benefits.

In contrast, the costs of repairing or replacing damaged assets may be vital to meet demand in region which, because of the disruption, has suddenly become unmet demand. And it is clear how the consumer benefits: customers always gain from measures to increase supply at a given price to satisfy demand that was previously unmet at that price. As noted above, the current IMs already provide for consumers to bear at least some of costs of repair/ replacement by allowing damaged/destroyed assets that remain *in situ* to be included in the RAB to be used in setting a subsequent CPP.

3.4 Possible, implicit *ex ante* compensation via cost of capital allowances

The existence or non-existence of implicit allowances for catastrophic risks in components of the cost of capital such as the market risk premium and the debt premium depends upon the precise detail of the regulatory arrangements, including methodologies used to estimate the cost of capital, and on the nature of the relevant events and their effects.

It is not clear how relevant the issue is to Orion's claw-back application, since I understand that Orion's existing DPP was not set using the current approach that is applied in NZ, but

was based on a rollover from an historic price. The remarks below may, therefore, only be of relevance to forward looking price capping by the Commission.

That said, the following comments may assist the Commission in developing its views on the relevant issues:

- Most regulatory price setting, particularly when price- or revenue-cap regulation is the norm, 'aims off' a little, usually to allow for asymmetries in the effects of risk and, slightly more controversially, as an aid to developing more effective incentive-regulation. The existence of caps means that a given price/revenue outcome cannot be exceeded, but it can fail to be reached. This general asymmetry is typically recognised by regulators and regulatees alike in arriving at regulatory settlements. It doesn't matter whether or not any such 'aiming off' is associated with a particular cost of capital but, to answer the question in the ToR precisely, it is possible that it occurs through relatively generous (to the company) estimates of the market risk premium and the debt premium.

- The cost of capital used is, on conventional approaches, derived from expected/ mean/average rates of return; and the projected cash flow stream that is discounted by the cost of capital (in reaching valuations) should likewise be an average or mean (not a mode or median for example). Such expectations/averages of revenues and costs are properly formed over all possible outcomes. It is not of course administratively expedient to seek explicitly to consider <u>all</u> factors that might influence costs, and implicit/judgmental allowances are typically involved. It is only when something happens that is out-with the *ex ante* state of knowledge (a black swan event) that it is typically possible to conclude that no allowance has been made for the relevant factor. As discussed, however, this latter possibility does not appear to be the case in relation to earthquake risk in New Zealand.

- It is perhaps easiest to see the implications of these points in relation to debt premia, although similar effects might also occur for the NZ market premium. If capital markets believe that the incremental effect of the existence of catastrophic event risk is to raise the probability of default on debt, then the result will be higher debt premia. A regulator using market data to estimate the cost of capital would therefore tend to allow higher prices in the presence of catastrophic risk, so that the higher debt premium can be covered. I note that there is a potential element of circularity here in that, if the market has always anticipated that regulators will fully protect the net income of the regulated firm from the effects of catastrophic events, then there will be no increment to the observed debt premia. I therefore agree with NERA about the relevance and importance of expectations in the period from which data required to estimate the debt and market premia were drawn. Is there, for example, evidence from company documents or from analysts' reports that it could reasonably be expected that, in the event of losses caused by a catastrophic event, companies would be entitled to 100% claw-back? If not it is reasonable to infer that the debt premium contains at least some allowance for catastrophic risks borne by an EDB.

- The default/customised path price policy might also embody some *ex ante* 'slack' which, among other things, provides revenue to cover unspecified costs. This is because the policy introduces an asymmetry that, other things equal, is favourable to companies. If a DPP is too tight, there is the option to request a CPP; but if the DPP is particularly favourable to the firm, there is no requirement that the firm should seek adjustment (the option is therefore unlikely to be exercised) and no mechanism for the Commission to seek to re-set the DPP if it subsequently concludes that an EDB is making excessive profits.

As discussed earlier, I think it is a significant fact that insurance issues were explicitly considered by Orion before the relevant events. There is no indication in the literature I have looked at to indicate that, having done so, Orion flagged that it believed that it was being inadequately funded to insure against earthquake risk, whether that insurance took the form of explicit contracts, establishment of an ear-marked fund to cover losses, or simply a suitably strong balance sheet. An obvious inference from this (in the absence of evidence to the contrary) is that, whether via cost of capital effects or via other mechanisms, prospective revenues were considered adequate.

3.5 Implications of investor diversification

In theory, the capital-asset pricing model (CAPM) assumes full portfolio diversification against localised events such as an earthquake (whether the effects of the event fall on costs or on revenues). That is, the cost of earthquake risk would be negligible if such an assumption were warranted. In reality transactions costs and other barriers to diversification mean that diversification is far from complete, and the CAPM should not be taken as precise characterisation of reality. In practice we can expect only partial diversification, and hence only partial risk spreading, in consequence of dispersed share ownership. It is because diversification is likely to be partial that we might expect NZ earthquake risk to be a factor that influences New Zealand capital markets more than, say, UK capital markets.

It is to be stressed that these remarks, which encompass both cost and demand shocks, are made in the context of an assessment of claw-back. When it comes to *ex ante* assessment, the changes in both costs and demand caused by a catastrophic event are relevant factors to be taken into account in setting a CPP, consistent with established regulatory practice (a review is a reset that looks forward, not backwards).

3.6 WACC estimation that is not based on mid-points

Given the Commission's long-standing use of an estimate of WACC which is above the mid-point of the possible range (to ensure there are incentives to invest given the uncertainty of estimating the true WACC and to reflect the asymmetric consequences of under-investment), the ToR ask to what extent there is a need to compensate explicitly for the costs attributable to catastrophic events.

The relevant points have already been made above, and I note again that this is perhaps a question that is more relevant to the forward looking Orion CPP determination than to the application for claw-back. The (not unusual) regulatory practice of 'aiming off' implies that

some allowance is made *ex ante* for downside risks that are not explicitly addressed in regulatory assessments, but there remains a question of the magnitudes of the implicit allowances relative to the sums now at stake. Since it might be argued that, whilst the practice is common, the degree of 'aiming off' in NZ lies at the generous end of the spectrum of international practice, one possible way of getting a handle on magnitudes might be to do a quick back-of-envelope calculation using an alternative WACC.

Suppose, for example, that the deviation of the WACC decision from the mid-point of the estimates had been only one half of what it was (e.g. 75% along the range might become 62.5% along the range). What difference would this make to the present value of a future net income stream of NZD 1 million, say, extending over period roughly commensurate with the expected time between major earthquakes in a given location? The figure could then be proportioned to the pre-earthquake revenue stream, and compared with the losses being claimed by Orion.

3.7 Implications of specific features of the NZ regulatory regime

As discussed, the interplay between the DPP and CPP creates an asymmetry that is favourable to regulated suppliers, and it should certainly be taken into account by regulators. The opportunity to apply for a CPP in circumstances where things are working out relatively badly for an EDB provides a mechanism for mitigating losses that might otherwise accumulate. As such, by limiting the scope of losses, it provides an additional reason for treating such losses as do occur under a DPP as within the normal 'swings and roundabouts' approach of RPI/CPI-X regulation.

I note, however, that some care is required to avoid double counting. If adjustments for the favourable asymmetry have already been factored into other regulatory decisions, these adjustments also need to be taken into account, since they may reduce the size of the mitigating effect offered by the CPP option.

The transitional nature of the NZ regime suggests that the Commission needs to exercise some care in dealing with claw-back issues, since these may have unintended consequences for future CPP determinations. As indicated above, I do not think that the Commission's 2012 claw-back decisions have any particular relevance for the Orion application, since they concerned a situation in which delays arose from the operation of the regulatory regime itself. In a sense the risks to businesses were, at least in part, a form of regulatory risk, which gives rise to a particular set of issues of its own.

Catastrophic risk is different however, and it is possible to envisage a number of different ways in which it might be addressed, involving different combinations of *ex ante* and *ex post* provisions. Since a claw-back determination for Orion might have implications for these choices, it may perhaps be helpful to the Commission for me to give my views on the *ex ante* issues at this point.

In broad terms, I would advocate:

- explicitly determining risk sharing arrangements *ex ante*, in a way that

- allocates the risk burden principally to suppliers[6],
- does not rely heavily on prudency reviews, and
- does not compensate for financial losses due to demand reductions.

One way of meeting these criteria is the view that appears to have tentatively been reached by the Australian Energy Regulator (AER) in relation to the treatment of "nominated pass through events", as indicated in its March 2013 Powerlink decision (see further below). The approach is first to determine an expected present value of future 'catastrophic' costs and second to determine an annual operating allowance with the same present value. The operating allowance is then treated as a cost element in all price determinations.

Under these arrangements the EDB would be free to determine the balance between explicit insurance cover and self-insurance, which might be implemented by means of an ear-marked fund or by balance sheet adjustments. Consumers pay for the expected value of (forward looking) catastrophic costs, whilst suppliers bear the risks of deviations between outcomes and expectations. This basic arrangement could be supplemented by a liability threshold, such that, if the costs that eventuate after some specific event are so large that they would overwhelm the financing capacity of a prudent and efficient EDB, additional *ex post* compensation would be allowed.

Note that this is not the same as a scheme in which (a) suppliers put aside a certain amount each year into a fund from which they draw when catastrophic losses occur, and (b) the regulator allows for recovery from consumers of any excess of losses over the value of the fund that has been accumulated in the period up to the incidence of the excess losses. In this latter case, which at first sight might look almost indistinguishable, it is consumers, not suppliers, who bear the risks of outcomes deviating from expectations, including risks of financial losses to EDBs due to demand reduction, an implication that, in my view, is inconsistent with the NZ legislation.

An appropriate *ex ante* scheme could, at the Commission's discretion, be extended backwards via Orion's claw-back determination. For example, the Commission could ask whether the prices allowed to Orion in the past were sufficient to allow it to achieve revenues in excess of costs, including capital costs, sufficient to finance the appropriate 'annual allowance'. If they were, the conclusion might be that no claw-back is merited; if they were not, claw-back might be allowed up to a level that would be sufficient to make good any assessed deficits in the 'annual allowances'.

A slightly different implementation of the same ideas would be to determine explicit 'burden sharing' up to and beyond the liability threshold, which is an approach that has been adopted in the UK in a range of different circumstances (and not just for identified events). The arrangement just discussed effectively places 100% of the relevant costs with EDBs up to the liability threshold, and 0% beyond the threshold; but these figures could be varied to, say, 80% of costs up to the threshold, and 20% of costs beyond the threshold, so as not to lose all incentives in the event of particularly bad outcomes.

[6] Suppliers might, of course, decide not to retain part of the burden so allocated.

3.8 The relevance of the form of Orion's ownership to claw-back issues

Whether or not the form of Orion's ownership is a relevant consideration for assessment of claw-back depends on the favoured regulatory philosophy/policy. I understand that, in general, the NZ policy is that regulatory decisions be blind to the precise details of equity ownership, and much depends upon the degree of rigor with which this policy is enforced.

To give an analogy, some regulatory systems take the view that they should be entirely blind to the actual choice of debt/equity mix (as opposed to taking a view on capital structure for the purpose of estimating the cost of capital for an efficient firm). Thus, if a company chooses to be highly geared, and if projections turn out to be over-optimistic and it subsequently faces the prospect of bankruptcy (because of the high gearing), no adjustments should be made to allowed prices/revenues to reduce bankruptcy risk. In practice, it is not unknown for regulators to soften this stance in difficult circumstances, for example because they fear future, negative effects on investment if they maintain a hard line.

The advantage of the 'softer' regulatory decision here is that it increases the adaptability of the regulatory system in the face of unexpected developments. Against this, it introduces additional moral hazard and provides a mechanism for strategic manipulation of regulatory decisions. For privately owned utilities at least, the most significant tendency is toward imprudent risk taking.

In the circumstances that are of current interest, ownership does not appear to be a major issue in relation to Commission decisions on claw-back. On the blind-to-ownership approach, Orion's owners had the option of seeking a much wider ownership base (by privatization) to spread earthquake risk, and public ownership implies a definite choice to accept greater risks for the inhabitants of the Christchurch area, presumably in the pursuit of other, perceived advantages of public ownership. Since the decision was made by 'owners', it can be argued that it is the owners who now should bear the relevant burdens.

There could be an argument to the effect that public sector management is less liable to imprudent risk taking that private sector management, and hence that a softer regulatory approach can be adopted without introducing significant moral hazard, but, against this, it can be noted that:

- Orion operated on a fully commercial basis, and
- As a matter of general historical record, public sector enterprises facing heavy losses tend to be more readily bailed out by their owners than private companies. Thus, even if the temptation to imprudence may be weaker on account of the residual influence of public sector cultures, the sanctions in the event of imprudence tend also to be weaker.

My general view, then, is that ownership is not a matter for the Commission, but for the current owners and managers of Orion.

3.9 Implications of the claw-back decision for future incentives

I have already commented, in the sub-section on transitional aspects of the NZ regime, on the likely linkages between the claw-back decision and forward looking CPP determinations.

The decision can be expected to affect perceptions of the approach the Commission takes to the distribution of risks, and hence to the incentive properties of the regime (which are intimately bound up with risk allocation issues). Roughly, the greater the extent of *ex post* compensation for unanticipated financial shocks, the closer we are to cost plus regulation, at least in a particular, defined set of circumstances, and the weaker the strength of incentives for cost reductions and innovation. The *quid pro quo* for consumers should then be a lower cost of capital, for all EDBs and not just for Orion.

There are, however, well known difficulties with the cost-plus approach, and the broad trend of regulatory practice has been towards sorting things out *ex ante*. In particular:

- Full cost-plus adjustment has very poor incentive properties, reflecting the much more general economic trade-off between insurance and incentives.

- It therefore attracts more intrusive forms of oversight which introduce inefficiencies of their own, including risk of hindsight bias.

These implications would again apply to all NZ EDBs, not just to Orion.

3.10 Overseas comparators

The most obvious comparator cases are in Australia, where, like in the UK, there are provisions in regulatory arrangements for price or revenue caps to be adjusted in for 'pass through' or 'notified' events. Such events can encompass a range of different factors, which include climate events such as extensive flooding.

A number of points can be made about such pass-through arrangements:

- There is recognition by the regulatory authorities of their potentially negative effects on consumers and on incentives. The AER's recent Powerlink decision states that:

  "We are currently reconsidering our previous position of approving nominated pass through events in determinations. As an initial step in this process we sought expert actuarial advice on our current approach to nominated pass through events, and on the practical implications of an insurance cap event in particular. Based on that report there appear to be grounds for revising the AER's approach to nominated pass throughs, to better reflect appropriate risk sharing arrangements between service providers and their customers. That is, the implications of the actuarial advice received are that a risk sharing arrangement, implemented through the operating expenditure allowance, is likely to result in lower imposts on customers overall." [My emphasis].

- There is also recognition that part of the problem here is that *ex post* requests for cost pass through entail prudency reviews of the relevant expenditures, with all the costs and risks that such reviews tend to bring. Thus 6A.7.3(j)(3) of the Australian NER provides that the regulator must consider:

"… in the case of a positive change event, the efficiency of the provider's decisions and actions in relation to the risk of the positive change event, including whether the provider has failed to take any action that could reasonably be taken to reduce the magnitude of the eligible pass through amount in respect of that positive change event and whether the provider has taken or omitted to take any action where such action or omission has increased the magnitude of the amount in respect of that positive change event;"

- In the UK, when *ex post* pass through has been allowed it has typically not been at a rate of 100%, and there has been widespread use of explicit cost-sharing rules with 'caps', 'collars', 'sharing factors' (i.e. partial pass-through) and 'dead-bands' appearing in different implementations.

  Partial pass through, at a rate agreed *ex ante*, is typically used where it is known that there are likely to be changes in cost items that are (a) mostly, but not entirely, beyond the control of the firm and (b) large in relation to the net income of the firm. The precise causes of major swings in costs may be unpredictable, but the fact that such movements are liable to occur is known. Arguably, earthquake risks meet these criteria, although the probabilities of major cost changes are rather lower than in most of the cases where partial pass through has been adopted. Examples of the latter include gas input costs in the determination of retail prices when British Gas was still vertically integrated, pension fund determination costs for water utilities, and security costs in airports.

  Partial pass through is akin to that form of co-insurance, to be found in competitive insurance markets, where the insured party bears a fraction of the overall risk. It is particularly relevant where the financial outcome can be influenced, at least in part, by the insured party, since full insurance would mean full exposure of the insurance supplier to the effects of moral hazard. Thus, the co-insurance provides at least some incentives for the insured party, where feasible, to mitigate the scale of the damage. Again, this fits with earthquake risk since, although the event itself is wholly uncontrollable, the scale of the damage it causes is not: costs are influenced both by the preventative measures of the insured party and by its efficiency in dealing with the consequences of the event.

4 Comments on the expert reports commissioned by Orion

4.1 PwC

The PwC report addresses relevant issues in the context of both a forward looking CPP exercise and an assessment of claw-back. The two are not clearly distinguished in the Report, and this makes it difficult to determine what is being argued where. For example, I am unclear whether the statement at the bottom of page 3 – *"… the full cost caused by the catastrophic event should be recovered from consumers"* – is intended to apply only in an *ex ante* setting, or is also intended to be applicable to claw-back of costs already incurred. If the latter, it should be clear that, for reasons discussed above, I think the conclusion is flawed. For example, it glosses over the obvious moral hazard problems, and ignores the

evidence from insurance markets which seek to mitigate those problems by exposing the insured party to some of the risks.

If this argument (consumers should bear all costs) is to be maintained, my advice is that the Commission should ask for substantiation based on observations of such an outcome drawn from workably competitive markets.

Part of the issue here might be that the distinction between *ex ante* expectations and actual outcomes is not rigorously maintained in the paper. It is not that the distinction is not recognised – it is – but rather that the text glides between the two. In relation to outcomes, price-cap regulation generally affords no absolute guarantees, *even to efficient firms*, that full costs will be recovered. This is emphasised in NZ in by the adoption of the workable competition benchmark. Thus, suppliers in workably competitive markets are not guaranteed to recover full costs, even if efficient. For example, they may suffer unexpected loss of demand in consequence of product innovations in substitutes.

4.2 NERA

I agree with NERA in their advice that examination of the issues is clarified by a distinction between the two exercises (*ex ante* review and *ex post* claw-back assessment). Among other things this helps maintain the distinctions between arguments about expectations and arguments about outcomes.

NERA also recognise that *ex post* recovery might not be consistent with practices in workably competitive markets, and suggest it might be favoured on grounds of practicality and consistency with the regulatory bargain (page 6). The Report then quotes from the EDB Reasons Paper to the effect that the Commission has appeared to rule out a hybrid approach for CPP's. Irrespective of whether this is a correct reading of the Commission's intentions, it is unclear what relevance this has to the actual factual situation. Claw-back (in the current case) concerns losses in a period when Orion was not subject to a CPP, whereas the quotation, if I understand it correctly, concerns the different circumstance in which a firm is already subject to a CPP.

Moreover, in the context of cost of capital issues that cover both DPPs and CPPs, the Commission's comments on its experts' views seem to indicate that a hybrid approach is indeed something that might be adopted. Thus, for example, Professor Myers argued for *ex ante* provisions, coupled with the possibility of *ex post* adjustments.

My own view is that some *ex post* adjustment is warranted when things go very badly wrong in ways that require further regulatory intervention if the interests of consumers are to be protected, but that such intervention should be kept to the minimum necessary level to serve this purpose. As much as possible should be done *ex ante*, both to provide stronger incentives to regulated businesses (consistent with incentives to be found in workably competitive markets) and to ring fence the scope of prudency reviews, which introduce risks of over-intrusive regulation and hindsight bias. However, it is to be recognised that sometimes unanticipated events can give rise to a situation in which *ex ante* arrangements become severely sub-optimal, and insistence on rigid adherence to those arrangements becomes harmful.

The issues are familiar from the financial sphere, where the position of Euro-north countries might be characterised as strong attachment to *ex ante* arrangements, and the position of Euro-south countries pleading for *ex post* adjustments. The outcome when things go badly wrong is almost invariably a hybrid one, with proximities to the two ends of the spectrum depending upon how much harm is anticipated from different mixes of approaches. In the NZ case, the objective is the long-term interests of consumers, and one of the weaknesses of the submissions in support of full recovery of business losses via claw-back is a lack of any substantial demonstration of how consumers' interests would be affected by different levels of claw-back.

Finally, I note that these points have some support from practices in workably competitive markets that are characterised by the existence of long-term contracts. Thus, for example, it is not unusual to see the terms of long-term contracts whose provisions have become relatively remote from current, shorter-term market realities being voluntarily renegotiated by the parties. The key point to note here is that, being voluntary, renegotiation will only be successful if customers, as well as suppliers, anticipate that they will be better off as a result of *ex post* adjustments to the contract. This again points toward the proposition that claw-back is only warranted to the extent that it can be expected to be in the interests of consumers.

4.3 Marsh

The Marsh Report is helpful in introducing relevant empirical material. Among other things:

- It confirms the general observation that insurers tend to be reluctant to take on 100% of relevant risks, which is, in effect, what Orion, PwC and NERA advocate customers should do (via *ex post* claw-back at a rate of 100%).

- It draws attention to the systematic nature of earthquake risk in NZ. Thus: "All onshore (land based) property risks in NZ are dominated by the natural disaster exposure" (page 8) and *"Clearly, the Canterbury earthquakes have worsened the MD/BI insurance situation for all NZ EDBs – and Orion in particular. They have also worsened the insurance situation for all buyers of property and loss of revenue insurance in NZ."*

- There is an informative discussion of the collapse of the TRIP scheme in 2001, and the substantial increase in insurance rates since then. However, it appears that, when the high deductibles ($5m) and premia (7.5% to 10%) are mentioned, this represents coverage against a range of events, including windstorm and snow damage, as well as earthquakes. The fraction of the cost that might specifically be ascribed to earthquakes is unclear. This would be one of the issues that a prudency review would need to consider in the event that it was decided that a policy of allowing 100% claw-back were adopted.

- It notes that *"BI is only very rarely offered by insurers on a stand-alone basis"*, indicating that different factors are at work than for MD and, more broadly, that it would be unsafe for the Commission to proceed on the basis that claw-back of

incremental capex, incremental opex and decremental revenues are to be treated in an identical way.

- Issues are raised for other EDBs by the statement (page 11) that Marsh is not aware of any EDB in Australasia that has achieved any effective and material risk transfer for the bulk of its T&D assets. The implication is that EDBs have self-insured within existing pricing constraints. Alternative inferences from this are that EDBs are: (a) content that they can bear losses within their existing price or revenue caps, (b) acting inefficiently by failing to address the issue, (c) reasonably expecting *ex post* compensation in the event of large losses on the basis of clear regulatory guidance that such will be forthcoming, and (d) imprudently expecting ex post compensation in the event of large losses without any firm basis in regulatory promises or statements. If substantial claw-back is to be contemplated, it may be necessary to pursue this issue further. In relation to claw-back, for example, is there any implication in the legislation that, in the event of very substantial losses, substantial compensation can be expected, or is it the case that the legislation provides only for the possibility of claw-back, with decisions taken on a rule of reason basis in the particular context of relevance?

George Yarrow

30 May 2013