



Economic implications of proposed rule change criteria

A draft report to the National Generators Forum

August 2004

Executive Summary

In December 2003, the Ministerial Council on Energy (MCE) announced a programme for major reforms to the Australian energy market. The MCE Standing Committee of Officials (SCO) recently released a consultation paper, entitled *The Proposed National Electricity Rule Change Process*, setting out the proposed criteria for judging rule changes.

The proposed arrangements feature a net benefit test based on the achievement of the Market Objectives and any MCE Statement of Policy Principles. The proposed Market Objectives include a primary objective which is to promote the long term interests of consumers of electricity with respect to price, quality and reliability of electricity services and economically efficient investment and innovation. In seeking to achieve the primary objective, several (secondary) objectives are nominated, which are similar to the present Market Objectives in the Code.

The National Generators Forum (NGF) represents generators operating in the National Electricity Market. The Federal Minister for Industry, Tourism and Resources has suggested that some \$5 billion will need to be spent on new generation capacity in the next 5 years. Accordingly, the nature of generation investment and the conditions that are most conducive to investors committing to new projects are key considerations to the pursuit of an efficient economy.

The generation market is workably competitive: entry and exit are relatively unencumbered, there are a number of competitors, the market comprises a diverse range of technologies etc. Similarly, the retail market (at least extent that customers are contestable) is workably competitive. In contrast, it is generally recognised that the transmission and distribution functions are natural monopolies.

Despite being workably competitive, the generation sector exhibits several characteristics which make it prone to a regulatory environment that lacks credibility and stability. Generation investments are sunk (once installed, the physical assets cannot be redeployed for other purposes or in other markets). and are made in an environment characterised by considerable uncertainty.

Large long-lived sunk assets are always at risk from opportunism, either through hold up (where customers can, after the asset is sunk, force the generator to sell power at prices close to marginal cost) and regulatory opportunism (a regulator with an objective not strictly based on market efficiency may change the market rules to lower short run prices to customers thereby lowering returns on sunk investments).

The best way to alleviate the combined adverse impacts of uncertainty and opportunism is to provide credible commitments to the requirements which must be satisfied before changes can be made to the market rules.

Two key considerations to any rule change criterion are that it must provide market participants with confidence that the fundamental character of the market will be protected, and that it must reject arbitrary changes.

The NGF endorses the SCO proposal insofar as it requires a net benefit test be undertaken against a defined criterion. However, whilst necessary, this is not sufficient.

The NGF considers that the proposed inclusion of a “long term interests of consumers” as the primary criterion is inconsistent with an efficacious threshold test for the approval of changes to the market rules. The reasons for this are that:

- the approach is unclear, and as a consequence creates an unacceptable risk of promoting arbitrary and biased outcomes;
- the approach results in a “primary objective” in fact promoting two potentially inconsistent objectives; and
- the proposed test fails to consider the key considerations for rule changes to the wholesale market.

In the NGF’s view, the concept of the long term interests of consumers carries with it the heightened prospect of a distributional bias to the assessment of proposed rule changes. The history of regulatory intervention has been littered by decisions which impose substantial long term costs on the economy despite being inspired by a desire to improve consumer interests.

This experience only serves to underscore the NGF's concern that a Market Objective explicitly focused on consumer interests substantially increases the risk of errors being made in the assessment of proposed changes to the market rules. This is all the more the case given that there is no clear statement of the standard or the onus of establishing the satisfaction of the threshold test.

Rule changes could be justified on the basis of promoting the long term interests of consumers even though they impose efficiency costs on the market. Indeed, this appears to be precisely what is contemplated by the juxtaposition of the concepts of long-term interests of consumers and the promotion of efficient investment.

The mere fact that *both* concepts are contained within a single test creates a major concern that proposed changes which are *inconsistent* with the promotion of efficient investment and innovation will be legitimised under the criterion.

Indeed, if this were not the case, there would be no reason for the inclusion of the provision. The impact of this uncertainty is increased regulatory risk, and with it, increased generation costs.

The NGF considers that a useful means of ameliorating the risk of future changes to the Rules undermining the integrity of the market environment would be to specifically recognise the need for the Rules (and any proposed change to the Rules) to meet criteria such as:

- clarity of purpose and meaning;
- avoidance of possible bias;
- regulatory accountability;
- minimising the risk and adverse social consequences of error; and
- transactional efficiency, including administrative costs for market participants.

The key concern of the Rules in respect of the wholesale market concerns the integrity of the price formation process which in turn is completely captured by a test which focuses on economic efficiency – namely the efficient operation and use of and investment in the electricity supply industry. Since electricity generation is a workably competitive market, it is clear that the efficient investment in generation requires that the underlying competitiveness of that market be protected under such a formulation.

Accordingly, the NGF is of the view that:

- the best outcome for consumers will be achieved when all investment is economically efficient, and that the best way of achieving this outcome is through the process of competition, which in turn ensures efficient levels of innovation;
- the term “economically efficient investment” necessarily encompasses concepts that might ordinarily be considered consumer related, such as encouraging demand side participation;
- regulators do not necessarily need to develop precise metrics of what might constitute economically efficient investment, but can instead develop more tractable metrics of the efficacy of a process – competition – that can be relied upon to deliver it. This is considerably more complex and uncertain for the assessment of the long term interests of consumers; and

- the lack of well defined or tractable measures of when long term interests of consumers are met results in a high risk of errors and/or bias.

The mere apprehension of an attempt to interfere with the integrity of the competitive market through the preference of a particular sector will have adverse unintended impacts on the community and the economy – not only because of the impact on regulatory risk and the consequential implications for the cost of capital for competitive generators but also for the way in which it will change the dynamics of the market.

However, focusing exclusively on the economically efficient investment in and use of electricity will create an environment in which the long-term interests of consumers is most efficaciously and effectively advanced in practice.

Indeed, the risk under a formulation emphasising consumer interests is that investors will perceive the investments with the greatest likelihood of providing benefits to customers as those which are also most vulnerable under the proposed Market Objective.

The NGF proposes the following rule change criterion:

In order to justify a change to the rules, a proponent must clearly demonstrate that the proposed change will produce a net benefit in terms of the efficient operation and use of and investment in the electricity supply industry relative to the current rules.

In seeking to achieve that primary objective, regard is to be had to the following objectives:

(a) the market should be workably competitive;

(b) the operation, use of, and investment in, infrastructure in the electricity industry (including transmission and distribution services) should be economically efficient;

(c) customers should be able to choose which supplier (including generators and retailers) they will trade with;

(d) any person wishing to do so should be able to gain access to the interconnected transmission and distribution network on terms and conditions that reflect the outcomes that would be expected if such services were provided in a workably competitive market;

(e) a person wishing to enter the market should not be treated more favourably or less favourably than if that person were already participating in the market;

(f) a particular energy source or technology should not be treated more favourably or less favourably than another energy source or technology; and

(g) the provisions regulating trading of electricity in the market should not treat intrastate trading more favourably or less favourably than interstate trading of electricity

(h) the Rules generally should comply with best practice in terms of regulatory efficacy and as such should meet criteria such as:

- clarity of purpose and meaning;*
- avoidance of possible bias;*
- regulatory accountability;*
- minimising the risk and adverse social consequences of error; and*
- transactional efficiency, including administrative costs for market participants.*

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1 Introduction

In December 2003, the Ministerial Council on Energy (MCE) announced a programme for major reforms to the Australian energy market to be implemented in the period 2004-06. This reform package, which was subsequently endorsed by the Council of Australian Governments (COAG), is intended to strengthen competition and encourage investment in the Australian energy market.

A crucial element of the endorsed reform package was a decision to review the process for making changes to the National Electricity Code (the Code). The MCE Standing Committee of Officials (SCO) recently released a consultation paper, entitled *The Proposed National Electricity Rule Change Process*, setting out the proposed criteria for judging rule changes.

The purpose of this report is to assist the Governance Sub-Committee of the National Generators Forum make a submission in response to the SCO's consultation paper. The central theme of this response is that the reference to the "*long term interests of consumers*" introduces an unnecessary and potentially significant bias to decision-making that will serve to undermine confidence in the integrity and stability of the NEM.

The report is set out as follows.

- section 2 reviews the rule change criterion and process that has been proposed by the SCO;
- section 3 considers the ambit of the Code and the implications of this ambit for the rule change criterion;
- section 4 discusses the generation sector, and in so doing emphasises its vulnerability to opportunistic rule changes;
- section 5 considers the attributes of an efficacious rule change criterion;
- section 6 examines the proposed rule change criterion in light of attributes developed in the previous section; and
- section 7 posits an alternative rule change criterion and concludes this report.

2 Outline of the Proposed Rule Change Process

The MCE objective is to streamline the Code change process through:

- amending the National Electricity Law (NEL) to make it clear that the Code is a set of statutory rules made under NEL, to be known as the National Electricity Rules (the Rules); and
- converting key obligations in the Code that are referable to a consensual arrangement into mandatory obligations in the Rules, without changing their present substance.

The proposed amendments to the NEL confer on the AEMC a general rule-making power. Under the proposed arrangements, a successful Rule change will need to go through a four stage process to be managed by the AEMC, which incorporates the following elements:

- initiation by any person and preliminary assessment of a proposal. The AEMC itself will only be able to make a Rule change proposal where it relates to a minor administrative matter or to correct a manifest error;
- publication of the rule change proposal and a call for submissions;
- development and publication of a Draft Determination; and
- development and publication of a Final Determination.

Access-related Rule changes, where approved by the AEMC, will then need to be submitted to the ACCC for approval under Part IIIA of the Trade Practices Act.

The proposed arrangements feature a number of key changes to the existing Code Change process, including:

- absorption of the Code Change Panel into the AEMC, which will now be the body to consider and analyse proposals;
- ensuring that all persons can submit a Rule change proposal for consideration. While s. 8.3.4 of the Code states that a Code Participant or any person may suggest a change to the Code, it has been NECA's practice that only proposals from Code Participants are considered;
- the removal of the requirement for the ACCC to conduct a separate public consultation, once NECA has approved the proposal in the first instance. The

draft model provides for early referral of the Code change proposal to the ACCC on competition and access issues;¹ and

- in making a decision on any proposal, the AEMC will apply a net benefit test based on the achievement of the Market Objectives, which are to be incorporated into the NEL, and any MCE Statement of Policy Principles. Presently, in formulating any recommendations, the CCP must take into consideration both the Market Objectives (s. 1.3) and the Code Objectives (s. 1.4) and seek to give maximum effect to market mechanisms where feasible;
- the Market Objectives proposed to be included in the NEL include primary and secondary objectives:
 - the primary objective which is to promote the long term interests of consumers of electricity with respect to price, quality and reliability of electricity services and economically efficient investment and innovation; and
 - incorporate all of the existing Market Objectives (but not the Code Objectives) from the Code as secondary objectives. These has been supplemented by the objective that the operation of, and investment in, infrastructure should be economically efficient.

3 Scope of the National Electricity Code

The Code regulates the operation of infrastructure that is an essential prerequisite for workable competition in wholesale and retail electricity markets. This infrastructure includes physical transport infrastructure (transmission and distribution networks) and a range of associated market infrastructure (of which the real time 'pool' is one component). Most, if not all, of these components are natural monopolies.²

In contrast, the wholesale power market,³ which is currently governed by the Code, is clearly a workably competitive market: entry and exit are relatively unencumbered,

¹ Amendments to the Act were passed by the Commonwealth Parliament in June 2004 to enable the ACCC to rely on consultations carried out by the AEMC.

² Clearly, system operation is a natural monopoly. But there is some debate as to whether spot energy markets linked to system operation have natural monopoly characteristics. This debate is beyond the scope of this paper.

³ The wholesale market is the market in which generators generally compete. The terms 'generation market' and 'wholesale market' are often used synonymously.

there are a number of competitors, the market comprises a diverse range of technologies etc. Similarly, the retail market (at least extent that customers are contestable) is workably competitive. In contrast, it is generally recognised that the transmission and distribution functions are natural monopolies.⁴

The Code differs from other instruments governing Australian infrastructure (such as the National Third Party Access Code for Natural Gas Pipeline Systems) in that it is not simply confined to the determination of prices, terms and conditions for the use of transportation infrastructure. Instead, its coverage extends into the way in which participants in competitive markets trade with each other.

This may be necessary to the orderly operation of wholesale and retail markets,⁵ but it creates an additional area of regulatory concern. For example, in the context of the management of the market, there is a risk that regulations which should aim to prevent monopoly pricing of system control services and market services (such as the services involved in conducting the market including the provision of the trading infrastructure) instead distort wholesale market trades.

This aspect of the Code has important implications for the proper specification of the Market Objectives. In particular, it is important to recognise that the Market Objectives in respect of natural monopoly sectors can quite properly depart materially from those governing the competitive sectors of the market.

In other words, whilst economic efficiency should underpin regulatory intervention in each functional step of the industry, it is important to ensure that intervention that prevents misuse of market power by the natural monopolistic sectors of the industry does not interfere with competitive sectors.

For example, it may be appropriate to set an objective such as “*the long-term interests of customers*” in respect of the natural monopoly sectors of the industry (although a better criterion might be to produce outcomes consistent with those that would be expected in a workably competitive market). However, the “long-term interests of customers” in respect of the competitive sectors of the market introduces an unnecessary and potentially significant bias to decision-making.

Instead, the focus of the Market Objectives in respect of the competitive sectors of the market should simply confirm the importance of promoting economic efficiency, that is

⁴ Although in some respects, electricity transmission provides a service which is a substitute for generation.

⁵ We do not explicitly address this question in this submission.

the efficient operation and use of and investment in the electricity supply industry. Economic efficiency is likely to be best promoted by protecting the integrity of the price formation process and competition in the relevant markets (as opposed to protecting competitors or other sectoral interests).

4 The generation sector

4.1 Electricity generation investment

Generation investment in the NEM

The total installed generation capacity in Australia is approximately 43,000 MW.⁶ Future investment in generation capacity will need to be considerable to meet the anticipated growth in demand for electricity and to replace existing capacity which is nearing the end of its economic life.

The Federal Minister for Industry, Tourism and Resources has suggested that some \$5 billion will need to be spent on new generation capacity in the next 5 years. Accordingly, the nature of generation investment and the conditions that are most conducive to investors committing to new projects become material considerations to the pursuit of an efficient economy. We now turn to a consideration of why the stability and credibility of the regulatory environment and the associated minimisation of regulatory risk is particularly important for generation investment.

Nature of generation investment

Generation assets are long-lived. Modern gas fired open and combined cycle plant are expected to have operating lives of at least twenty five years. These figures may well be conservative. Large coal fired plant, through judicious expenditure on maintenance and refurbishment, can routinely extend lives to well in excess of forty years.⁷

⁶ ESAA (2002), Australian Electricity Supply Development 2000-2002.

⁷ It is interesting to note that Hazelwood had been scheduled for closure by the State Electricity Commission of Victoria (SECV) prior to the date of its privatisation on the grounds of age, but still commanded a price well in excess of \$1bn.

The longevity of the assets is reflected in the typical financial and trading arrangements that surround new investments. It is not unusual to see power off-take agreements lasting 10 to 15 years, and the debt component for financing new investments normally has a tenor of 5 or more years.

Generation investments are also sunk. That is, once the investments have been made, the physical assets cannot be redeployed for other purposes or in other markets. Large long-lived sunk assets are always at risk from opportunism, either:

- **hold up** – whereby customers can, after the asset is sunk, force the generator to sell power at prices below their average cost and, conceivably, at prices close to marginal cost.⁸ The hold up problem is generally solved through some form of commitment (typically a contract) to buy the power from customers prior to the investment taking place. It is also ameliorated by modern market arrangements that are credible and minimise regulatory risk; and
- **regulatory opportunism** – a regulator with an objective not strictly based on market efficiency (or who interprets an efficiency objective inappropriately) may change the market rules to lower prices to customers (in the short run) thereby lowering returns on sunk investments.

The two problems are related. The willingness of a customer to enter into a contract with a prospective generator is a function of (amongst other things) their expectations of the level of and volatility of future prices. If the customer suspects some regulatory opportunism – perhaps an inherent bias towards lower prices to final customers in preference to higher returns for investors – then they may prefer to place less reliance on long-term contracts to manage future price risk and greater reliance on regulatory intervention. This makes investment in generation riskier, and has the inevitable consequence of making the system less reliable than it might be for a given level of market prices.⁹

⁸ Hold up works as follows. Prior to investment, the customer promises to buy from the generator in question, but subsequent to sinking the asset refuses to do so. The generator cannot deploy its assets elsewhere and is forced to buy at whatever price the customer offers.

⁹ The mechanism works as follows. Customers show less willingness to contract, which raises risks for generation investors and hence their required rate of return. The quantum of new entry that will occur at a given level of price and price uncertainty will depend upon the required rate of return for investors. If investment is seen as riskier because suspected regulatory opportunism reduces customer contracting, then less entry will occur. Less entry translates into a greater risk of supply interruptions.

Not only are the problems inter-related, but there is a potential for a damaging vicious cycle. Regulatory opportunism that reduces entry for a given price level necessarily reduces system reliability, thereby increasing the likelihood of short-duration extreme price outcomes. A higher frequency of extreme price diversions increases the prospect that regulators will intervene. This is precisely the evolution of the deregulated power markets in the United States. Regulatory responses to price concerns in the early evolution of their markets had the effect of capping prices. This, in turn, reduced the attractiveness of contracts to customers (who can rely on regulators to manage prices), making the markets much less attractive markets for investment.

Perceptions matter

It is important to note that prospective investors in generation cannot precisely predict future market and regulatory conditions, but none the less have to form expectations. There is no doubt that they will base these expectations, in part, on current circumstances. This is particularly so in respect of regulation. The appearance of stability, consistency and lack of bias in regulation in today's market will be instrumental in convincing potential investors that those same conditions will extend into the future.

These propositions are confirmed by empirical evidence. For example, Spiller and Levy¹⁰ examined the performance of various international telecommunication utilities in different political and social circumstances. In this context, they analysed the interaction of political institutions with economic conditions and the established regulatory frameworks. A key consideration to industry performance was the extent to which arbitrary administrative action is restrained or minimised. In addition, they found that the role of regulatory credibility was seen to be paramount in the establishment of commitments for long-term investments.

Two consequences follow:

- the very act of changing regulations increases future regulatory uncertainty. If regulations are changed, it is essential that the decision to change is well researched and broadly agreed. It is also important that market participants are given plenty of opportunity to manage the consequence of change; and

¹⁰ Levy B, Spiller P (1994), "The Institutional Foundations of Regulatory Commitment: a Comparative Analysis Of Telecommunications Regulation", *The Journal of Law, Economics and Organization*, October, pp 201-246.

- regulations should minimise the extent of subjectivity (or even discretion) in their application.¹¹

Unfortunately, in most markets there has been a tendency to tinker with market rules and regulations. Indeed, change has been a constant in the evolution in the Code. Since the Code commenced in 1998, we have seen substantial amendments. For example, we have seen the regulatory test (which determines whether new transmission investment may proceed) change from a customer driven test to a market-based test, with further amendment foreshadowed by the MCE.

4.2 Impact of uncertainty

The environment confronting potential investors in electricity generation projects is highly uncertain for a range of reasons including:

- uncertainty in relation to costs;
- uncertainty in supply;
- uncertainty in demand; and
- uncertainty over the costs of access to the market.

Cost uncertainty arises in respect of any new project. The nature and extent of this uncertainty varies with the project lead time and project type. Once a generator commences generating, there will be uncertainty as to the operating costs associated with the plant. So generators are exposed to risks from technological innovation, environmental pressures (eg emission taxes), new energy sources, changes in fuel costs and regulatory risks (an issue to which we return below).

In addition, the augmentation of an existing transmission link or the construction of a new transmission line can substantially affect power flows. Implications of increased power flows can include reduced (or increased) pool prices and with it, reduced (or increased) revenue for incumbent generators.

There is also clearly a great deal of uncertainty as to demand growth, particularly peak demand growth.¹² The strength and variability of load growth will be influenced by

¹¹ Investors will also obtain confidence from a history (of several years) of objective and unbiased application, even if the regulations themselves leave scope for discretion.

several factors, including economic growth, energy intensity and the market share of electricity in the energy market. In turn these parameters will be affected by amongst other things the location of major new loads and population change, changes in incomes or income distribution, climatic change, technological change, which can increase energy efficiency of appliances but also require a higher quality electricity system and the demand profile changing over time, such as changes in the size of peaks.

Another source of uncertainty for a generation investor is the costs of access to the market. Specifically, changes in the location of new generation and new demand on the network can cause congestion and change marginal loss factors. Under the current NEM rules, generators would have to bear some of the resultant cost.¹³ Generators are also exposed to the risk that market zones change over time. A critical consideration to the economics of the generation investment is therefore that there is considerable uncertainty associated with any new investment in the environment where that investment is substantially sunk once it is made.

Of course, it is true that electricity transmission and distribution are also substantially sunk once funds are irreversibly committed to projects (and hence prone to hold up or opportunism problems). However, what distinguishes electricity transmission and distribution from generation is that they are subject to regulated rates of return. Consequently, the risk associated with these investments is to a large extent driven by the decisions made by a regulator. In the context of the hold-up discussion above, the regulator essentially guarantees the revenue stream on regulated assets, in lieu of contracts with final customers. As a result transmission and distribution revenue is considerably less volatile than generation revenue.

Indeed, investors in electricity generation must commit substantial sums of money to projects in relation to which the future cash flows can be highly uncertain. Moreover, the volatility and expected mean of these future cash flows are particularly sensitive to the market rules that prevail at any point in time.

¹² Demand for energy and peak demand can grow at different rates. The latter is generally more important for generation investors because market clearing prices are very sensitive to the balance of peak demand to installed capacity. Tight supply demand balances tend to cause substantial increases in market clearing prices and, all other things equal, higher returns on generation investment.

¹³ Of course, generation investors can also gain if changes in the disposition of supply and demand reduce congestion and losses. Nonetheless, this remains an important source of risk for generation investors.

The economics of proposed generation investment are sensitive to the market rules, in two senses:

- specific rule changes may reduce returns to some or all generators; and
- changes to the rules today may undermine investor's confidence in the stability of those market rules in the future.

For reasons noted above, reduced confidence in the stability of regulation is likely to increase regulatory risk and increase market prices. The mere apprehension of future changes to the market rules can itself substantially affect the preparedness of investors to commit funds to sunk investments in generation, and with it, the commerciality of new generation investment proposals.

The best way to alleviate the adverse impacts of this uncertainty is to provide credible commitments to the requirements which must be satisfied before changes can be made to the market rules. Other things being the same, the more certain the regulatory environment, the greater the confidence investors will have in the market, and the lower the risk premium arising from the investor's exposure to changes in the regulatory environment, and with it, we will see lower electricity generation costs.

The threshold test for the acceptance of proposed rule changes therefore plays a pivotal role in providing this confidence to the market. With this in mind, we turn to a consideration of the economic theory behind institutional design and the application of this theory to the proposed rule change criteria.

5 Economics of rule change criteria

Two key considerations to any rule change criterion are that it must provide market participants with confidence that the fundamental character of the market will be protected, and that it must reject arbitrary changes. With this in mind, the key characteristics of an effective threshold test to rule changes are:

- clarity of purpose and meaning;
- avoidance of possible bias;
- regulatory accountability;
- minimising the risk and adverse social consequences of error; and
- transactional efficiency, including administrative costs for market participants.

Clarity of purpose and meaning

There are often a number of different ways to express an objective. All other things being equal, the most desirable characterisation of a test will be that which conveys the objective in a way that minimises ambiguity. Accordingly, a test which exhibits clarity minimises the risk that decisions will be taken that are inconsistent with the underlying objective and which minimises unintended side-effects. There are numerous benefits from the adoption of clear rules, including:¹⁴

- assisting in the formation of a body of precedent and with it, accumulated experience;
- promoting equality of treatment across cases;
- facilitating more efficient decision-making processes;
- establishing the legitimacy of decisions has been consistent with precedent;
- reducing discretion and the risk of bias or arbitrariness; and
- strengthening accountability.

A rule change criterion which promotes a single objective that is able to be understood and transparently applied is unlikely to suffer from a lack of clarity and is likely to provide confidence to market participants that it will be applied in a predictable and consistent way. For example, the meaning of a test requiring a clear demonstration of a net benefit in terms of an improvement in economic efficiency to justify a change to the market rules is unambiguous. Such a criterion leaves little room¹⁵ for it to be applied in an arbitrary or a biased way. As such, it is likely to promote confidence in market participants in the robustness of the market environment.

Conversely, a rule change criterion that contains multiple (possibly conflicting) objectives will fail to provide clarity. This is because the existence of multiple objectives effectively confers upon the decision maker considerable discretion as to which objectives could be pursued in any particular case. This means that any number of

¹⁴ See Baldwin R., (1995) *Rules and Government*, Oxford Socio-Legal Studies, The Clarendon Press and Priest G., (1977) "The Common Law Process and the Selection of Efficient Rules", *The Journal of Legal Studies*, vol 6 No. 2, pp 65-82.

¹⁵ If there is ambiguity, it derives from the scope for different interpretations of the meaning of economic efficiency.

outcomes could be justified under such a criterion. The uncertainty associated with such a rule will undermine confidence in the market.

Consequently, it is desirable if a rule change criterion can avoid promoting multiple objectives. And if multiple objectives *are* necessary, it is desirable that they be consistent with one another. In such an environment market participants (and investors) can have confidence in the stability and the efficacy of the regulatory environment.

Avoidance of possible bias

Related to the desirability of the clarity of objectives is the avoidance of possible bias. This requires the criterion be specified in a way that minimises the scope for biased interpretations. This is a particular concern for investments such as generation assets which are sunk, and as a consequence are particularly prone to the hold-up and opportunism problems described above. In workably competitive markets, such as generation, this means that the market rules should be characterised in a way that avoids promoting distributional objectives or sectoral interests.

Regulatory accountability

Regulatory accountability is often associated with process related considerations (including the conferral of rights of judicial or merits review). Indeed, the nature of the interactions that may take place between the MCE and the AEMC - whereby the MCE may request the AEMC to consider an issue and make recommendations to the MCE and then subsequently to adjudicate on a proposed Rule change submitted by the MCE - creates a concern for the accountability of the rule change assessment process.

Moreover, the reality is that the accountability of the regulator is a function of the clarity of the rule change criterion that the regulator is required to apply. Clearly, vague rules or those involving multiple objectives can only serve to undermine the accountability of the regulator's decisions about proposed rule changes.

Clear and unambiguous rules provide one of the best ways to reduce regulatory risk and enhance regulator accountability.

Minimising the risk and adverse consequences of error

The risk of error is inevitable for any decision-making process. It is usual to consider these errors in terms of:

- the social cost of falsely identifying market failure (or condemning competitive behaviour), which is commonly referred to as a Type I error; and
- the social cost of failing to correct market failure (or erroneously exonerating anti-competitive behaviour) which is commonly referred to as a Type II error.

The balance between Type I and Type II errors has implications for the characterisation of both the standard of proof¹⁶ and the burden of proof¹⁷ that should be required in order to justify a change to the market rules.¹⁸

Whilst the NGF recognises the very nature of a rule change criterion confirms the need for there to be ongoing evolution of regulatory arrangements, it submits that stability in the market rules is inherently desirable in the absence of a proposed amendment demonstrably improving the efficiency of the market.

If we accept that, other things being equal, the social costs of error are minimised by preferring the current rules instead of an alternative (if nothing else because of the stability and confidence that provides to investment) then it is appropriate to characterise the rule change criterion so as to accept a risk of a Type II error in order to minimise the likelihood of a Type I error.

The NGF therefore believes that it is important that a substantive demonstration of a net benefit should be required before a proposed rule change is accepted and that the wording of the rule change criterion should reflect this. The current proposal is silent on this point. The NGF is aware of competition related threshold tests which have established a low threshold for the satisfaction of tests that have profound implications

16 The standard of proof indicates the degree to which the point must be proven. In a civil case, the standard of proof generally relates to the balance of probability. In a more serious criminal action, the standard of proof refers to proving a defendant guilty beyond reasonable doubt.

17 The burden of proof is the obligation on a party to establish the facts in issue in a case to the required degree of certainty in order to prove their case.

18 See, for example, in the context of anti-trust rules Easterbrook, F., "The limits of antitrust" (1984) 63 Texas Law Review 1 and Bernado, A., Talley, E. and Welch, I. (2000) "A theory of legal presumptions", 16(1) Journal of Law, Economics and Organisation. Indeed, some have argued that the nature of an effective decision rule is that it be under or over-inclusive (see Schauer, F, *Playing by the Rules: A Philosophical Examination of Rule-Based Decision-Making in Law and in Life* (1991) The Clarendon Law Series: Oxford University Press, Oxford).

for asset owners and does not consider such an outcome would be appropriate in the rule change arrangements.¹⁹

Accordingly, the NGF considers that changes to the market rules should not be endorsed unless there is a clear demonstration that the proposed change to the market rules can be expected to generate a net benefit. The NGF considers that this approach has the additional benefit of reducing the likelihood of poorly conceived proposals imposing substantial costs on market participants.

Transactional efficiency, including administrative costs for market participants

The proposed rule change criterion and associated process envisages that one of the filters that has previously existed for changes to the Code, being the Code Change Panel, will cease to operate. As a consequence, the informal approach that limited the application of Code changes to market participants will no longer function.

The NGF notes the proposal to open the process so that any person is able to seek an amendment to the market rules. The NGF reiterates the concerns expressed in its earlier correspondence on this issue. Nevertheless, if the standing for applying for rule changes is to be opened to non-market participants, the NGF also submits that a consequence of this change is that there is a corresponding need for the rule change criterion to promote transactional efficiency.

Transactional efficiency can be applied by the decision maker applying regulatory filters, including, for example, the demonstration of a net benefit before this proposal is formally progressed. The capacity of a decision maker to apply such filters will be in part a function of the clarity of the rule change criterion.

Any failure to achieve such clarity and absence of ambiguity in this environment could encourage a wide range of proposed changes to the market rules that have little prospect of success but that nevertheless impose a substantial cost on market participants and other interested parties. These costs would arise from the need to consider the proposed rule changes and prepare submissions in response to them etc.

These criteria in mind, we tend to a consideration of the inclusion of the proposed Market Objectives.

¹⁹ For example, if a threshold of a likely net benefit were established, the NGF refers to the recent decision of French J in the AGL litigation which confirms that such a criterion means a “real chance” (or a mere possibility) of producing a net benefit. Similarly, the “promotion of competition” test in declaration applications under Part IIIA of the Trade Practices Act in which a very low threshold has been applied in practice for a satisfaction of this requirement.

6 Implications for the proposed rule change criterion

SCO's consultation document sets out the rule-making criteria that the AEMC would apply in order to assess whether or not a proposed rule change would be accepted. SCO proposes that prospective rule changes be assessed on the basis of a net benefit test which would be determined in the context of the achievement of the Market Objectives.

The NGF endorses the SCO proposal insofar as it requires a net benefit test be undertaken against a defined criterion. However, whilst necessary, this is not sufficient. The consultation paper also suggests that the AEMC's decision will need to be consistent with the Market Objectives and the MCE Statement of Policy Principles.

Consequently, the Market Objectives becomes pivotal in deciding whether suggested rule changes are accepted. The NGF accepts that this is a logical approach to establishing a threshold on which proposed code changes should be assessed, so long as an appropriate Market Objective is adopted. The proposed Market Objectives provide that:

The primary market objective of the national electricity market is to promote the long term interests of consumers of electricity with respect to price, quality and reliability of electricity services, and economically efficient investment and innovation.

In light of the characteristics of an efficacious rule change criterion, we turn to a consideration of the proposed arrangements. The NGF considers that the proposed inclusion of a "long term interests of consumers" as the primary criterion is inconsistent with an efficacious threshold test for the approval of changes to the market rules. The reasons for this are as follows:

- the approach is unclear, and as a consequence creates an unacceptable risk of promoting arbitrary and biased outcomes;
- the approach results in a "primary objective" in fact promoting two potentially inconsistent objectives; and
- the proposed test fails to consider the key considerations for rule changes to the wholesale market.

Lack of clarity of the test

The fact that consumers are not a homogeneous set of economic agents has been widely recognised in the economic literature. For example, Baldwin and Cave (1999) note that:

The interests of different consumer groups may, however, diverge. Where a regulator encourages competition, for example, this may benefit large industrial and commercial customers, who can show around, but it may prejudice domestic and small business consumers. The increasing emphasis on competition in the utilities tends also to heighten differences between large and small consumers.

Accordingly, the “long term interests of consumers” is not well defined, and this gives rise to considerable uncertainty – for example:

- it is unclear as to the length of the time horizon involved in “a long term”. Is long term different for investors and for consumers, and across different types of consumers?²⁰ What type of discount rate is appropriate for a consideration of the long term interests of consumers?
- different customers in different geographical regions will be affected by changes to the market rules in different ways;
- different customers with different consumption levels and consumption patterns will be affected by changes to the market rules in different ways; and
- how should differing impacts on differing classes of consumer be traded off between one another?

There are numerous groups of consumers that have differing interests in the electricity market. There is no definitive model for resolving their different interests. Even if there were such, it is not clear that regulators have the necessary information about different consumer classes to construct a model.

In the NGF’s view, the concept of the long term interests of consumers carries with it the heightened prospect of a distributional bias to the assessment of proposed rule

²⁰ The concept of economically efficient investment is fairly well defined in economics, and is generally seen as the end product of workable competition. That is, the objective can be confidently met by regulators focusing on improving mechanisms in the market and the process of competition (for which there are some reasonable metrics). This is much more difficult with the “long-term interest” test.

changes. In other words, rule changes could be justified on the basis of promoting the long term interests of consumers even though they impose efficiency costs on the market.

This is borne out by the application of the long term interests of consumers test in the telecommunications sector. Here, the test has provided the primary criterion used to assess whether or not services ought to be declared. The declaration test also requires, as a secondary criterion, whether or not declaration encourages the economically efficient use of, and economically efficient investment in, the infrastructure by which telecommunications services are supplied.

It is true that the ACCC has resisted a declaration on the basis that the result would be inconsistent with the economically efficient investment in the infrastructure by which telecommunications services are supplied.²¹ However, it is also the case that the ACCC has frequently exhibited a preference for service based rather than facility based competition on the basis of this promoting the long term interests of consumers.

Warren and Landrigan²² have argued that the ACCC's interpretation of the long-term interests of end-users has been to promote the declaration of services without proper regard to the impact of those declarations on investment in infrastructure. This is despite the likelihood of significant detrimental impacts for investment incentives from these declarations, as indicated by Hausman:²³

Facilities based competition is much more beneficial to economic efficiency than is resale competition... Facilities based competition creates important dynamic economic efficiencies as carriers compete to lower their costs so they can lower their prices. Carriers also compete to offer new services to consumers which are another form of dynamic efficiency. To the contrary, resale competition does not cause these dynamic economic efficiencies to occur... Facilities based competition [also] eliminates the need for further regulation because market based competition determines prices and services offered.

²¹ Such as in relation to domestic inter carrier roaming where informal undertakings were made by existing carriers to enter negotiations with new entrants on a commercial basis.

²² Warren T and Landrigan, M, (2001), Promoting the long term interest of end users: applying the statutory criteria of the telecommunications access regime, Telemedia, vol 5 (5) September 2001 : 65-77.

²³ Hausman G, cited in Cable & Wireless Optus, Submission to the Productivity Commission's inquiry into Telecommunications Market Regulation, p 15 at www.pc.gov.au.

This in turn highlights a wider concern about the application of a “long-term interests of consumers” criterion in the context of the Market Objective. There is a real risk that the adoption of such criterion could result in the shorter term objectives of promoting consumer interests dominating longer term efficiency considerations.

Another example of where such risks arise was highlighted by Train, who has argued that:²⁴

There is often a tendency for regulators, in an attempt to protect the public, to treat extraordinary losses and gains differently. For example, if a firm makes a decision that later proves to have been wrong (eg. to build a power plant that ends up being unneeded, or ends up costing much more than expected), there is a tendency to force the firm (namely, the shareholders) to bear the part of the cost of the ‘mistake’ rather than pass on the entire cost to the firm’s customers. On the other hand, if the utility makes a decision that results in much greater profits than expected (eg. negotiates long-term contracts for the supply of inputs just before the spot price of these inputs unexpectedly skyrockets), then there is a tendency for the gains to be passed on to customers, because allowing the firm to retain the extra profits would result in the firm earning more than a ‘fair’ return. (Train 1991, pp. 96–7)

The key point is that the history of regulatory intervention has been littered by regulatory decisions which impose substantial long term costs on the economy despite being inspired by a desire to improve consumer interests.

A good example of these risks is provided by gas regulation in the United States during the 1970’s and 1980’s. Professor Paul MacAvoy’s²⁵ analysis of regulation on the US natural gas market highlighted the adverse effects that can arise from regulation designed to improve long-term consumer interests.

The Natural Gas Policy Act of 1978 allowed unregulated prices for new production but sought to maintain regulated prices for owners of existing reserves to prevent them from benefiting from price increases.

MacAvoy concluded that this environment created significant distortions by encouraging very significant investment in production which led to oversupply and eventual collapse in the price for spot gas. These distortions extended to affect existing

²⁴ Train, K. E., (1991) *Optimal Regulation: The Theory of Natural Monopoly*, MIT Press.

²⁵ MacAvoy, Paul W. (2000) The natural gas market: sixty years of regulation and deregulation. Yale University pg 15-17

contract holders from old reserves. Initially, these customers benefited from controlled prices, but, as the spot price fell, they eventually ended up holding expensive contracts. Controls on wellhead prices were removed by 1995.

This experience only serves to underscore the NGF's concern that a Market Objective explicitly focused on consumer interests substantially increases the risk of errors being made in the assessment of proposed changes to the market rules. This is all the more the case given that there is no clear statement of the standard or the onus of establishing the satisfaction of the threshold test.

Finally, the NGF is unaware of how the interests of a diffuse group could be considered in the context of a net benefit test. Regulators do not need to necessarily develop precise metrics of what might constitute economic efficiency investment. Instead, one can instead develop more tractable metrics of the efficacy of a process – competition – that can be relied upon to deliver it. This is considerably more complex and uncertain for the assessment of the long term interests of consumers.

Multiple objectives

The “primary market objective”, in actual fact, establishes *two* objectives that may well be incompatible. This incompatibility arises from the potential for inconsistency between:

- the promotion of the long-term interests of consumers of electricity; and
- the promotion of economically efficient investment and innovation.

The juxtaposition of the long-term interests of consumers and the promotion of efficient investment makes the test unclear, since it implies that the interests of consumers are not served by economically efficient investment and innovation (or whether different regulators will take the same view), but provides no explanation why that might be.

This key point is borne out in a recent survey of the objectives of competition policy in OECD member countries. In this survey, the OECD noted that competition policy is often underpinned by a range of objectives in addition to the encouragement of competition, finding that:

The inclusion of multiple objectives, however, increases the risk of conflicts and inconsistent application of competition policy. The interests of different stakeholders may severely constrain the independence of competition policy authorities, lead to political intervention and compromise and adversely affect one of the major benefits of the competitive process, namely economic efficiency. (p. 9)

In the current instance, the mere fact that *both* concepts are contained within a single test which is referred to as the “primary market objective” highlights the risk that the term “long term interests” will have an independent meaning in the practical operation of the test.

This in turn creates a major concern on account of the fact that it contemplates legitimising proposed changes that in fact are *inconsistent* with the promotion of economically efficient investment and innovation.

In other words, the wording of the proposed rule change criterion suggests that proposed rule changes that impose an efficiency cost on the economy, but are said to be in the (long term) interests of (unidentified) consumers could be approved. Indeed, if this were not the case, there would be no reason for the inclusion of the provision. The impact of this uncertainty is increased regulatory risk, and with it, increased generation costs.

This in turn highlights a more fundamental issue concerning the proposed Market Objectives, namely the need to infuse an element of best practice to the process of assessing changes to the Rules in terms of the intrinsic suitability in the way in which proposed Rules are articulated.

Incorporating such a change would provide a substitute for the Code objectives (which are proposed to be removed from consideration for amendments) and a useful means of ameliorating the risk of future changes to the Rules undermining the integrity of the market environment would be to specifically recognise the need for the Rules (and any proposed change to the Rules).

Accordingly, the NGF recommends that future changes to the Rules be required to meet criteria such as:

- clarity of purpose and meaning;
- avoidance of possible bias;
- regulatory accountability;
- minimising the risk and adverse social consequences of error; and
- transactional efficiency, including administrative costs for market participants.

Key concerns of the generation market

With these limitations of the proposed test in mind, we turn to a consideration of the factors likely to be important in the assessment of Rule changes in respect of the wholesale market.

In essence the wholesale market operates as a repeated auction process. Consequently, the key concern of the Rules in respect of the wholesale market concerns the integrity of this price formation process. In turn, this suggests that (subject to issues concerned with competition which are addressed by Part IV of the Trade Practices Act) the main concerns of market design should ensure the Rules are designed so that:

- the gains from trade are fully captured;
- prices reflect conditions of underlying supply and demand
- prices provide appropriate signals for new investment.

However, these desires are completely captured by a test which focuses on economic efficiency – namely the efficient operation and use of and investment in the electricity supply industry. Since electricity generation is a workably competitive market, it is clear that the efficient investment in generation requires that the underlying competitiveness of that market be protected under such a formulation.

Summary

In summary, the NGF believes that:

- the best outcome for consumers will be achieved when all investment is economically efficient;
- the best way of achieving this outcome is through the process of competition, which in turn ensures efficient levels of innovation;
- the term “economically efficient investment” necessarily encompasses concepts that might ordinarily be considered consumer related, such as encouraging demand side participation;
- regulators do not necessarily need to develop precise metrics of what might constitute economically efficient investment, but can instead develop more tractable metrics of the efficacy of a process – competition – that can be relied

upon to deliver it. This is considerably more complex and uncertain for the assessment of the long term interests of consumers;²⁶ and

- the lack of well defined or tractable measures of when long term interests of consumers are met results in a high risk of errors and/or bias.

The impact of these concerns is that the application of the test as it is currently prescribed will increase regulatory risk, and with it, the cost generating electricity in the NEM.

Accordingly, the NGF believes that focusing exclusively on the economically efficient investment in and use of electricity will in fact create an environment in which the long-term interests of consumers is most efficaciously and effectively advanced in practice. It further believes that addition of a second, poorly defined and somewhat subjective objective is not harmless, but rather, will result in inferior outcomes for the market.

7 Proposed test and conclusions

The NGF believes that the key consideration for deciding whether proposed changes to the market rules that affect the generation sector should be accepted relates to whether there is evidence that the change would promote economic efficiency. That is, the key consideration is to protect the integrity and efficacy of the price formation process and the underlying competitiveness of the market, rather than, for example, particular competitors, of that matter, particular sectoral interests.

It is the protection of the competitive process that in the context of the market environment in which generators operate which is most likely to advance the long-term interests of consumers. However, it is likely to operate in a way that will minimise the risk of changes to the market rules that adversely affect economic efficiency.

In contrast, “the long term interests of consumers”, at least in respect of the competitive sectors of the market, creates an unnecessary risk of adverse outcomes and an expectation that distributional objectives should dominate efficiency considerations.

²⁶ Except in the trivial case where competition is deemed to meet the long term interests of consumers, in which case half of the two part objective is redundant.

Consequently, it is submitted that the concept of the long-term interests of consumers should be jettisoned from the proposed rule change criteria.

Ultimately competition will produce outcomes that are in customer's long term interests. Superficially, the "long term interests of consumers" is consistent with such an objective. However, the problem is that the "long term interests of consumers" is vulnerable to a more opportunistic interpretation. Focusing on economic efficiency and the promotion of competition overcomes these concerns.

Accordingly, the NGF proposes the following test:

In order to justify a change to the rules, a proponent must clearly demonstrate that the proposed change will produce a net benefit in terms of the efficient operation and use of and investment in the electricity supply industry relative to the current rules.

In seeking to achieve that primary objective, regard is to be had to the following objectives:

(a) the market should be workably competitive;

(b) the operation, use of, and investment in, infrastructure in the electricity industry (including transmission and distribution services) should be economically efficient;

(c) customers should be able to choose which supplier (including generators and retailers) they will trade with;

(d) any person wishing to do so should be able to gain access to the interconnected transmission and distribution network on terms and conditions that reflect the outcomes that would be expected if such services were provided in a workably competitive market;

(e) a person wishing to enter the market should not be treated more favourably or less favourably than if that person were already participating in the market;

(f) a particular energy source or technology should not be treated more favourably or less favourably than another energy source or technology;

(g) the provisions regulating trading of electricity in the market should not treat intrastate trading more favourably or less favourably than interstate trading of electricity; and

(h) the Rules generally should comply with best practice in terms of regulatory efficacy and as such should meet criteria such as:

- *clarity of purpose and meaning;*
- *avoidance of possible bias;*
- *regulatory accountability;*
- *minimising the risk and adverse social consequences of error; and*
- *transactional efficiency, including administrative costs for market participants..*

The NGF believes that focusing exclusively on the economically efficient investment in and use of electricity will in fact create an environment in which the long-term interests of consumers are most efficaciously and effectively advanced in the context of the competitive wholesale market.

Whilst it is acknowledged that focusing on economic efficiency for proposed rule changes will have the effect of protecting the competitiveness of the generation market, and in turn, the long term interests of consumers, the use of that terminology has been repeatedly shown to deliver outcomes which depart from the objective.

In the case of the generation sector, the mere apprehension of an attempt to interfere with the integrity of the competitive market through the preference of a particular sector will have adverse unintended impacts on the community and the economy – not only because of the impact on regulatory risk and the consequential implications for the cost of capital for competitive generators but also for the way in which it will change the dynamics of the market. Indeed, the risk under such a formulation is that investors will perceive the investments with the greatest likelihood of providing benefits to customers as those which are also most vulnerable under the proposed Market Objective.