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10 Jun 2011

The Chairman Australian Energy Market Commission Level 16, 1 Margaret Street SYDNEY NSW 2000

By email to submissions@aemc.gov.au

Dear Chairman,

Potential Generator Market Power in the NEM (ERC 0123)

AGL Energy provides the following response to the Australian Energy Market Commission's (AEMC) Consultation Paper - National Electricity Amendment - Potential Generator Market Power in the NEM.

AGL operates across the supply chain and has investments in coal-fired, gas-fired, renewable and embedded electricity generation and electricity retailing. AGL is Australia's largest private owner, operator and developer of renewable generation and has invested well over \$2 billion in renewable energy and has much more in its portfolio of development opportunities. AGL has over 3 million retail customers and operational control of some 3,000MW of generation capacity in the National Electricity Market.

As the leading investor in renewable energy in Australia, AGL Energy (AGL) is well placed to comment on proposed changes to the Rules which if made would make fundamental changes to the basis for future investment in the NEM and which will threaten the viability of the billions of dollars of investment already made.

AGL is of the view that this Rule should not be made for the following reasons;

- In considering the impact of the rule on the "mechanism efficiency" it is clear that constraining¹ some generators from revealing their true preferences by preventing them from submitting their preferred bid or offer imposes a cost on that participant, and creates inefficient outcomes, therefore economic efficiency is most likely to decrease if the rule is made, and
- This rule is clearly about modifying the behaviour of some participants at certain times. Interpreting the NEM as defined in the NEL s2 means that the AEMC is

> Being Australia's largest private owner and operator of renewable energy assets

¹ By preventing economic withholding and forcing commitment.

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AGL is taking action toward creating a sustainable energy future for our investors, communities and customers. Key actions are:

Gaining accreditation under the National GreenPower Accreditation Program for AGL Green Energy®, AGL Green Living® and AGL Green Spirit Being selected as a constituent of the FTSE4Good Index Series

limited in its power under s 34(1)(a)(i) to making rules in relation to regulating the operation of the "wholesale exchange operated and administered by AEMO" and the "national electricity system". That is the AEMC is not empowered to make Rules generally regarding the behaviour of sellers and buyers within the wider economic or wholesale market.

 The rule proposal if implemented would distort and lower pool price outcomes for the reason discussed in the "mechanism efficiency" section it will effectively cap pool prices outcomes a level lower than deemed prudent by the reliability panel and as a result (at least initially) lower wholesale market prices (this what the proponent intends). It is therefore likely to discourage supply side investment and hence reduce reliability. It is most likely that the rule will result in inefficient outcomes.

The Commissions "assessment framework decision tree" raises a series of questions which consider the economic impact of the exercise of market power and whether or not the conduct (exercise of market power) is likely to persist in the future.

However as identified in our submission regulators face considerable difficulties with economic analysis of competition,

- firstly with respect to the studies themselves, and
- secondly with determining the basis for comparison.

The ability to exercise market power is a feature of the NEM, included to allow generators to recover LRMC from a SRMC based dispatch process which in a workably competitive market is constrained as consequence of the market characteristics such as the:

- cost characteristics of suppliers,
- unique characteristics of power,
- characteristics of the NEM financial (wholesale trading) and wider financial markets,
- price caps (MPC, the CPT and APP), and
- because market power encourages new entry, which caps market power.

The real question being addressed here is whether any of the market characteristics are likely to allow generator behaviour that leads to inefficient outcomes. As noted by Henry Ergas²;

"Assessing the efficiency and competitiveness of power markets therefore requires attention to the features of those markets that make first-best outcomes impossible. Evaluation must be against an achievable benchmark. But even shortcomings relative to that benchmark need to be considered in terms of whether the gains from any proposed changes will outweigh the costs."

The answers to the questions depend upon the benchmark chosen. An achievable benchmark to assess whether that behaviour constitutes enduring market power must have regard to whether the generator is able to earn economic profits in the long-run or whether these profits will be reined in by new entry into (or expansion by other existing operators in) the market.

With respect to this rule change proposal, whether or not the AEMC identifies shortcomings relative to that or another benchmark the primary question remains; does the rule proposal better meet the NEM objective than the current NEM arrangements? The answer is clearly it does not.

² necg - Has the NEM failed?: A Critique of Papers Commissioned by the ACCC: Prepared on behalf of Macquarie Generation and the National Generator Forum April 2002. Section 4.4 .2 Outcome efficiency, page 35.

AGL has provided answers to the questions in Step1 of the assessment framework and has sought economic advice with respect to this issues raised by the Commission which will be provided in future submissions.

Should you have any questions in relation to this submission, please contact Roger Oakley, at <u>roakley@agl.com.au</u> or on (03) 8633 7665.

Yours sincerely,

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Alex Cruickshank Manager Wholesale Markets Regulation

Potential Generator Market Power in the NEM (ERC 0123)

The objective of the MEU rule change proposal.

The MEU is seeking to modify the offers (the amount of energy offered and the price) made by some generators in the NEM in certain high demand circumstances. The claim is that this change will reduce energy prices in the wholesale market and promote downstream (i.e. consumer) investment.

The proposal

The MEU has proposed this rule change because the NEM market outcomes are not consistent with the simple models of pricing behaviour or a perfectly competitive market. The MEU claims that prices in the wholesale market are higher than they need to be to facilitate new generation investment.

The proposal is essentially an attempt by the proponent to redesign the NEM so that pool outcomes are more aligned to a perfectly competitive market i.e. a theoretical economic concept on which the NEM is based and the MPC is determined, i.e. in theory generators will be scheduled on the basis of their SRMC and the "marginal generators" will have the highest SRMC and set the peak pool through competition at their SRMC. The proponent recognises that generators need to recover fixed costs from the pool but proposes that should only be "marginal generators" bidding up to the MPC.

In the MEU proposal, the term "dominant generator" has been used to describing a generator which is not the "marginal generator" that may have the ability to exercise "market power" because of the size of its portfolio of generation in a region. The proposal imposes restrictions on dispatch offers that may be submitted by the dominant generator in a region when demand exceeds the level where the dominant generator must be dispatched to meet demand. The first dominant generator will therefore be the largest capacity generation portfolio in the region. There may be more than one dominant generator in a region. The idea is that dominant generators at certain demand levels will be required to offer all their available capacity with the offers capped at \$300/MWh to avoid price spikes which may otherwise be induced by dominant generator offers, but generally not those made by mid merit and peaking generators.

The rule proposal does not constrain generators that are not classified as "dominant" so other generators and in particular the "marginal generator" are free to exercise "market power".

In summary, the objective³ of the rule proposal is to prevent the "dominant generator" from exercising "market power" to reduce some periods of high pool prices to;

- a) lower peak and hence average pool prices in the NEM, which as a consequence will,
- b) reduce retail energy prices in the wholesale market and promote downstream (i.e. consumer) investment.

Comparison with the NECA Bidding and Re bidding rule change.

The Rule change proposed by the MEU has strong parallels with the NECA Rule change proposal submitted to the ACCC on 13 September 2001. NECA made a series of

³ MEU Proposed Rule change to enhance Generation Competition Outcomes During High Demand Periods in the NEM 15 Nov 2010, pages 8 & 9.

applications to the ACCC relating to various proposed changes to the market rules governing the NEM (as contained in the Code).

NECA sought authorisation for the following changes to the rebidding rules under the Code:

- requiring generators' bids and rebids to be made in good faith; and
- prohibiting bids or rebids that have the purpose, or are likely to have the effect, of materially prejudicing the efficient, competitive or reliable operation of the market.

Only the requirement to bid in good faith was included in the Code and remains in the Rules.

NECA stated that the proposed rule changes are aimed at;

- tackling directly the alleged inefficiencies that have led to the very short-term price spikes experienced in the NEM and that are said to have no basis in the NEM's underlying dynamics; and
- specifically addressing aspects of generators' bidding and rebidding strategies that give cause for concern by outlawing bids or rebids that, for example, withhold or withdraw capacity in order to artificially increase prices, establish circumstances where high-priced 'sleeper' bids are despatched, exploit network constraints or reductions in capacity, or manipulate other aspects of the market design

The MEU proposed rule changes are aimed at;

- tackling directly the alleged inefficiencies caused by so called dominant generators that have led to the very short-term price spikes experienced in the NEM and that are said to have no basis in the NEM's underlying dynamics, i.e. are inconsistent with a perfectly competitive market; and
- specifically addressing aspects of so called dominant generators' bidding strategies that give cause for concern by outlawing bids above \$300 at certain times of high demand, and preventing self commitment or decommitment i.e. constrain dominant generators ability to withhold or withdraw capacity.

The MEU proposed rule changes is a more specific version of the rule change proposed by NECA which was rejected by the ACCC.

Although the rationale for the proposed NECA rule changes, and the evidence in support of this rationale was less than entirely clear, NECA appeared to believe that:

- The electricity market is characterised by a substantial degree of market power. Rebidding facilitates the exercise of that power, on a unilateral or concerted basis by generators, resulting in prices above the competitive level.
- Certain price spikes that have occurred in the market either demonstrate, or may be attributable to, such an exercise of market power by the generators concerned.
- By inducing 'price spikes', rebidding leads to higher prices than would otherwise occur.
- Price spikes make no positive contribution to market efficiency.
 - Rebidding leads to outcomes that cannot elicit a market response, and hence can play no role in leading to an efficient allocation and reallocation of resources, and
 - Constraints on, or disincentives to, rebidding can be imposed at no net economic cost but rather, will result in net economic gain.

The rationale for the MEU proposal is also the same; certain price spikes are attributable to an inappropriate exercise of market power leading to inefficient outcomes and higher prices which result in an economic cost. As noted above, the objective of the rule proposal is to prevent the "dominant generator" from exercising market power to reduce some periods of high pool prices to;

- a) lower peak and hence average pool prices in the NEM, which as a consequence will,
- b) reduce retail energy prices in the wholesale market and promote downstream (i.e. consumer) investment.

The relevant markets

In responding to the NECA rule change the NGF obtained economic advice^{4,5} from the consulting firm Networks Economic Consulting Group, (necg) provided by Henry Ergas. Because the objective and nature of the MEU and NECA rule proposals are essentially the same these papers are a useful reference for analysing and assessing the economic efficiency of the MEU rule change. AGL has used this information in this submission.

In their analysis necg noted that there are two markets relevant to this type of rule change; National Electricity Market and the wider economic or wholesale market6⁻

National Electricity Market

In 2005, the NEL was substantially revised as a result of the *National Electricity (South Australia) (New National Electricity Law) Amendment Act* (**New Electricity Law Amendment Act**). It was this Act that first introduced a definition for "National Electricity Market" in the NEL. Specifically:

National electricity market means-

- the wholesale exchange operated and administered by AEMO under this Law and Rules; and
- the national electricity system.⁷

The Second Reading Speech for the New Electricity Law Amendment Act, as read in the South Australian parliament, provided further context to the new definition.

Under the new National Electricity Law, the national electricity market is comprised of the wholesale exchange that is operated and administered by the National Electricity Market Management Company under the Law and the Rules, as well as the national electricity system, that is, the interconnected electricity transmission and distribution system, together with connected generating systems, facilities and loads.

In this context the word "market" does not bear its ordinary economic meaning as it does under the *Competition & Consumer Act 2010* (**CCA**)⁸. Rather, the word "market" is used in the NEL as part of the composite phrase "National Electricity Market" or NEM. The definition of the NEM in the Dictionary to the NEL makes it clear that the term National Electricity Market is a statutory or regulatory construct and refers, relevantly, to the operation of the wholesale exchange operated by AEMO.

⁴ necg - Proposed rebidding rule changes for the National Electricity Market: Application by NECA for authorisation by the ACCC: Submission on behalf of Macquarie Generation and the National Generator Forum: November 2001.

⁵ necg - Has the NEM failed?: A Critique of Papers Commissioned by the ACCC: Prepared on behalf of Macquarie Generation and the National Generator Forum April 2002.

⁶ necg - Has the NEM failed?: A Critique of Papers Commissioned by the ACCC: Prepared on behalf of Macquarie Generation and the National Generator Forum April 2002. Section 4.1 page 16.

⁷ Section 2 of the NEL.

⁸ See for example Mason CJ and Wilson j in *Queensland Wire Industries Pt Limited v Broken Hill Pty Co Ltd (1989)* 167 CLR 177 at 187.

Necg defined the NEM as;

"a spot market, which is similar to a marketplace or a bourse in that the means of trade is closely prescribed and rule bound, and for which there are specific **global** requirements that must be met in order for participants to trade;"[®]

This market is relevant to the rule proposal objective a.

The wider economic or wholesale market

The wider market includes the wholesale or contract market for electricity where the term "market" bears its ordinary economic meaning as it does under the *Competition & Consumer Act 2010* (**CCA**)¹⁰, being a field of activity between sellers and buyers of products that are substitutes of one another.

Markets should be defined with a clear view as to the purpose of the definition and the question that the market concept is intended to be used to answer. To quote Maureen Brunt:

"As is often said, the market concept is an instrumental concept, designed to assist in the analysis of processes of competition and sources of market power."¹¹

In the present case, the purpose of the market definition exercise is to help determine whether certain generators have market power in certain circumstances, and then whether the implications of this are serious enough to warrant a change to the Rules. This suggests that market definition should be undertaken with a view to helping understand what factors are likely to control the pricing and output decisions of each generator in question.

Necg defined the wider economic market as;

"the broader market, of which the pool is but one component among several others including bilateral contract-based trading over longer periods of time such that entry and exit decisions are relevant."¹²

Subsequently the relevant wholesale market has been defined similarly by Justice French in the case AGL vs. ACCC¹³.

"I am satisfied that there is one NEM-wide geographic market for the supply of electricity, and associated with that, entry into electricity derivative contracts."

This market is relevant to the rule proposal objective b.

The definition of market power

Appendix 2 provides a discussion of the meaning of market power¹⁴ in the NEM

⁹ necg - Has the NEM failed?: A Critique of Papers Commissioned by the ACCC: Prepared on behalf of Macquarie Generation and the National Generator Forum April 2002. Section 4.1 page 16.

¹⁰ See for example Mason CJ and Wilson j in *Queensland Wire Industries Pt Limited v Broken Hill Pty Co Ltd (1989)* 167 CLR 177 at 187.

¹¹ Brunt, M., "Market Definition Issues in Australian and New Zealand Trade Practices Litigation", *Australian Law Business Review*, Vol. 18, p. 193.

¹² necg - Has the NEM failed?: A Critique of Papers Commissioned by the ACCC: Prepared on behalf of Macquarie Generation and the National Generator Forum April 2002. Section 4.1 page 16.

¹³ Australian Gas Light Company v Australian Competition & Consumer Commission (19 December 2003) Market Definition 377 - 387

In summary market power is the ability to take less and give more and can be summarised in three key concepts often associated with the description of market power – it is the ability to:

- reduce output in order to increase prices i.e. it is the ability to "give less and take more"
- operate without constraint on such activity that would otherwise be imposed by competitors operating in a competitive market
- profitably alter prices away from their competitive level.

Market power is mostly of concern when it is enduring.

Measures of market power should focus on long-term considerations.

The MEU has essentially defined "market power"¹⁵ as the opportunity to make offers that set regional prices in the NEM in the absence of any competition or induce high prices by physical withdrawal of capacity.

The proponent recognises that "market power"¹⁶ is a design feature of the NEM¹⁷, and accepts that it is a necessary feature of the NEM, except when it is exercised by the "dominant generator".

In this rule proposal the MEU endeavours, as did NECA, to make a distinction between high prices which are consistent with underlying supply and demand conditions which are considered necessary to sustain a functioning market and prices which reflect systemic economic or physical withholding.

The MEU proposal is based on an incorrect premise that NEM outcomes should reflect a perfectly competitive market. The MEU, like NECA, does not recognise that the NEM is a "workably competitive market" that will not always reflect the outcomes expected in a perfectly competitive market for the reasons outlined in the following section.

The concept of a workably competitive market and the fact that 'perfect competition' does not and cannot exist; and is an unreal or ideal standard by which actual competitive outcomes can be assessed, is discussed in the 'The American Economic Review'¹⁸.

The NEM is a workably competitive market

In summary necg noted that disequilibrium conditions and price volatility in the electricity markets will occur commonly within discrete time periods over the long run due to the following factors which are described fully in the necg paper¹⁹;

Cost characteristics of suppliers

¹⁴ Frontier Economics

¹⁶ The exercise of market power in the NEM is sometimes described as economic and physical withholding.

- ¹⁷ MEU Proposed Rule change to enhance Generation Competition Outcomes During High Demand Periods in the NEM 15 Nov 2010, pages 3, 6 & 7
- ¹⁸ The American economic Review June 1940 Vol XXX No 2 Toward a Concept of Workable Competition
- ¹⁹ necg Has the NEM failed?: A Critique of Papers Commissioned by the ACCC: Prepared on behalf of Macquarie Generation and the National Generator Forum April 2002. Section 4.3 Characteristics of Electricity Supply page 20.

¹⁵ This is an interpretation of the MEU definition on page 32, to remove emotive terms and inaccuracies." "Generator market power" means an ability of a generator to manipulate the spot price at a regional demand less than the maximum regional demand, by either physical or economic withholding of its capacity."

- high fixed costs (40% to 100%) depending on the technology,
- substantial sunk costs large fixed and sunk costs suggest price oscillations may be substantial and prolonged,
- lumpiness in capacity capacity is installed in increments greater than necessary to met demand in the year capacity is added,
- lead time for entry which does not match the planned lead time,
- long lived assets generation plant type mix may not be optimal at any particular point in time,
- specialisation of capacity leading to mismatches between installed capacity and demand,
- transmission constraints,

Unique characteristics of power

- instantaneous supply and demand balance requirements, and
- stochastic effects generator and transmission availability due to temperature and other weather related impacts as well as rapid demand changes,

Financial characteristics, (These are not included in the necg report but can be significant constraint on generator behaviour.)

- mismatch of generator contract positions and demand, i.e. retailer contracting decisions, and
- project financing constraints and the wider financial market,

necg concluded that as a result disequilibrium²⁰, either a surplus or deficit of generation compared with demand can change sometimes occur frequently during the long run. Fluctuating prices (in both markets), are inevitable in the immediate and long term if supply and demand is too be kept in balance. The time to achieve equilibrium may be lengthy if new capacity is required.

necg conclude economic conditions underpinning the NEM are <u>not</u> those of a perfectly competitive market²¹.

- Simple models of pricing behaviour are not applicable
- Fixed and sunk costs can result in prolonged periods odd is equilibrium with prices above and below some notional long-run price,
- An assessment of behaviour which is anti- competitive must encompass the whole period over which above and below disequilibrium prices occur.

The market is based on self commitment and decommitment by generators and does not prescribe which generators must be responsible for maintaining capacity required to meet peak demand. All generators can be compensated for capacity held as all receive high prices. What this means is that generators that are highly contracted do not receive capacity payments through price spikes in the pool, but accept an average price over all periods, (because of difference payments made to retailers), while generators that are not highly contracted do retain the high pool prices and are compensated for holding capacity available.

That the NEM is a workably competitive market means that on occasion's outcomes that observers with incomplete information on which generator offers are based will observe unexpected outcomes such as base load or intermediate plant being the marginal

²⁰ necg - Has the NEM failed?: A Critique of Papers Commissioned by the ACCC: Prepared on behalf of Macquarie Generation and the National Generator Forum April 2002. Section 4.3.3 Disequilibrium and price volatility, page 25.

²¹ necg - Has the NEM failed?: A Critique of Papers Commissioned by the ACCC: Prepared on behalf of Macquarie Generation and the National Generator Forum April 2002. Section 4.3.4 Implications for evaluating electricity markets, page 28.

generator and setting price. This is not because the size of the generator confers ability to exercise of market power but the result of generators operating in a workably competitive market, subject to the constraints and externalities and the drivers to maximising profit which can results in the transient opportunity to exercise market power.

The premise on which this rule change is based, i.e. the current market is inefficient because it does not produce outcomes in the short term that are aligned with perfect competition, is not soundly based.

Test the impact of the rule change on market efficiency

With respect to the evaluation of power markets necg noted that from an economic perspective²²;

- it was necessary to distinguish assessments of design efficiency of the market mechanism, (the NEM spot market) from the overall efficiency of electricity supply in the wider market,
- the existence of market power cannot be considered with respect to the spot market alone,
- however spot markets outcomes could be used in conjunction with contract market analysis to study the issue of market power in generation.

The necg advice further proposed that the two markets must be assessed using different measures;

- "mechanism design efficiency" for the NEM and
- "outcome efficiency" for the wider market.

AGL has applied these concepts to evaluating the MEU rule proposal.

Mechanism design efficiency

With respect to a review of the NEM "mechanism design efficiency"²³, necg considered that the extent to which the NEM design allows efficient resource allocation the key issue is whether the market design gives rise to bids and offers in which the preference of all participants are accurately revealed at low transaction cost. In summary necg concluded that;

- The issue is not whether or not the market design gives rise to market power,
- A market design may efficient even if some participants in that market have and exercise some market power, due say to scale economies with respect to market size,
- Any rule change which imposes greater costs on bidding behaviour cannot be costless,
- Any rule change which prevents at least one participant from submitting their preferred bid or offer imposes a cost on that participant.

The MEU rule change will prevent "dominant" generators from submitting their preferred offer and hence imposes a cost on that participant, so that if the current design of the NEM is not inefficient, which it does not appear to be, (i.e. the preference of all participants can

²² necg - Has the NEM failed?: A Critique of Papers Commissioned by the ACCC: Prepared on behalf of Macquarie Generation and the National Generator Forum April 2002. Section 4.4.1 Mechanism design efficiency, page 30.

²³ necg - Has the NEM failed?: A Critique of Papers Commissioned by the ACCC: Prepared on behalf of Macquarie Generation and the National Generator Forum April 2002. Section 4.4.2 Outcome efficiency, page 35

be accurately revealed at low transaction cost by bids and offers) this rule change is unlikely to improve efficiency and may decrease efficiency.

Because of the distortion of offers, pool price outcomes will be distorted in nature, duration and timing, (resulting in a distorted price duration curve) the shape of which provides a signal to investors as to the appropriate type and timing of new investment. These inefficient price signals will distort outcomes in the wholesale market.

AGL is of the view that this Rule should not be made for the following reasons;

- In considering the impact of the rule on the mechanism design efficiency it is clear that constraining²⁴ some generators from revealing their true preferences by preventing them from submitting their preferred bid or offer imposes a cost on that participant, and creates inefficient outcomes, therefore economic efficiency is most likely to decrease if the rule is made, and
- This rule is clearly about modifying the behaviour of some participants at certain times. Interpreting the NEM as defined in the NEL s2 means that the AEMC is limited in its power under s 34(1)(a)(i) to making rules in relation to regulating the operation of the "wholesale exchange operated and administered by AEMO" and the "national electricity system". That is the AEMC is not empowered to make Rules generally regarding the behaviour of sellers and buyers within the wider economic or wholesale market.

Outcome efficiency

With respect to a review of the NEM wider market "outcome efficiency"²⁵ necg noted that the key outcome is whether or not the wholesale market outcomes will support new entry and reflect some notional long-run price.

Pool price outcomes in the NEM will be reflected in the wholesale contract market which if sufficiently high will provide investment signals to support new investment in generation. In the long run, providing there are low barriers to entry, new investment will occur which will reduce pool prices and cap wholesale prices.

The reduction and distortion in wholesale prices that will occur due to this rule proposal will distort the wholesale market investment signals in terms of magnitude, timing and duration. This may reduce wholesale prices in the short term but is likely to delay and cause inefficient investment which in the long term is likely to increase pool volatility and reduce reliability.

Further, pool prices in the NEM are already capped by the MPC and the APC, at levels determined periodically by the Reliability Panel to ensure that the price caps do not distort investment signals which would discourage new investment but are at a level to ensure participants do not face excessive risk due to high prices.

The ability of any generator to exercise market power i.e. the ability to set regional prices in the NEM at times when available supply approaches demand in the absence of any competition is a design feature of the NEM it is transitory in nature and capped by new entry, and the MPC, the CPT, APP & APC.

The Reliability Panel has recently determined through extensive modelling that the MPC and the linked CPT may not be sufficiently high to encourage new investment and has

²⁴ By preventing economic withholding and forcing commitment.

²⁵ necg - Has the NEM failed?: A Critique of Papers Commissioned by the ACCC: Prepared on behalf of Macquarie Generation and the National Generator Forum April 2002. Section 4.4 Evaluating system performance, page 29

recommended an increase in the MPC and the CPT. The proposed rule if implemented will cap pool prices below the level considered prudent by the Reliability Panel and is therefore likely to discourage supply side investment and hence reduce reliability.

Given that the rule proposal if implemented would distort and lower pool price outcomes for the reason discussed in the "mechanism efficiency" heading it will effectively cap pool prices outcomes a level lower than deemed prudent by the reliability panel and as a result (at least initially) lower wholesale market prices (this what the proponent intends). It is therefore likely to discourage supply side investment and hence reduce reliability. It is most likely that the rule will result in inefficient outcomes.

Assessment framework

The AEMC has developed an "assessment framework decision tree" to assist in the assessment of the rule proposal. It is not clear to AGL that this is an appropriate approach. In our view the rule should be assessed using the framework proposed by necg generally as we have outlined above. The primary question is does the rule proposal better meet the NEM objective than the current NEM arrangements.

The questions in the assessment framework primarily relate to the exercise of market power the impact of market power on efficiency and whether or not the conduct (exercise of market power) is likely to persist in the future.

These questions are largely imponderable not the least because the ability to exercise market power is a feature of the NEM included to allow generators to recover LRMC from a SRMC based dispatch process which in a workably competitive market arises as consequence of the characteristics described earlier, namely the:

- cost characteristics of suppliers,
- unique characteristics of power, and the,
- characteristics of the NEM financial (wholesale trading) and wider financial markets.

Further the market framework has been designed to control the exercise of market power to an efficient level, through the price caps (MPC and the CPT and APP) and because market power encourages new entry which caps market power. The real question is whether any of the market characteristics are likely to lead to inefficient outcomes.

The difficulties associated with the economic analysis of competition are described by both Stephen Littlechild and Henry Ergas.

Stephen Littlechild²⁶ comments on the difficulties regulators face with economic analysis of competition,

- firstly with respect to the studies themselves, and
- secondly with determining the basis for comparison.

Stephen Littlechild²⁷ noted that with respect to determining the basis for comparison;

"The second difficulty has to do with the economic analysis of competition. Given that a particular type of conduct has been identified, how are we to interpret and treat it? Underlying the analyses just referred to, and many more, is the proposition that in a

²⁶ Electricity: Regulatory Developments Around the World - Stephen Littlechild1 - The Beesley Lectures on Regulation Series XI - IEA/LBS, London 9 October 2001 - (Revised version 12 November 2001) Competition in Generation: Conduct and Structure page 8

²⁷ Electricity: Regulatory Developments Around the World - Stephen Littlechild1 - The Beesley Lectures on Regulation Series XI - IEA/LBS, London 9 October 2001 - (Revised version 12 November 2001) Competition in Generation: Conduct and Structure page 8

competitive market, price should equal marginal cost. If price is systematically above marginal cost this indicates market power. The most familiar derivation of the optimality of marginal cost pricing is within the models of theoretical welfare economics, in which the market and all firms within it are assumed to be in equilibrium. Typically there is perfect knowledge, and the firms have made optimal decisions about technology, scale of output, and so on."

"This is not to argue that the generation market is different from other markets. I am arguing that, in the real world, competitive markets generally are not characterised by price equal to marginal cost. That is the wrong benchmark for judging possibly anticompetitive behaviour. Life is more complex and in particular more risky than the marginal cost criterion recognises. In a competitive market each participant will seek to reduce its risks and cover its investment whenever and wherever it can. It cannot price at any time on the basis that each of its assets will earn an equilibrium return for the rest of its life."

Henry Ergas²⁸ concludes in the section of his paper headed "Outcome efficiency"

"Assessing the efficiency and competitiveness of power markets therefore requires attention to the features of those markets that make first-best outcomes impossible. Evaluation must be against an achievable benchmark. But even shortcomings relative to that benchmark need to be considered in terms of whether the gains from any proposed changes will outweigh the costs."

Importantly, this implies that observations of prices being above a generator's SRMC in a specific period are not sufficient to characterise a generator as having market power. As indicated above, all firms facing large fixed costs require the price they receive to exceed their marginal cost at least at certain times if they are to be able to recover their total costs. It is for this reason that regulated utility prices are generally set with reference to some long-run average cost concept rather than to a short-run marginal cost price.

This is not to deny that generators at particular times are able to set spot prices in excess of their SRMC in a given trading interval. However, whether such behaviour constitutes enduring market power must be considered having regard to whether the generator is able to earn economic profits in the long-run or whether these profits will be reined in by new entry into (or expansion by other existing operators in) the market.

²⁸ necg - Has the NEM failed?: A Critique of Papers Commissioned by the ACCC: Prepared on behalf of Macquarie Generation and the National Generator Forum April 2002. Section 4.4 .2 Outcome efficiency, page 35.

Issues for consultation

AGL provides the following answers to the questions for Step 1 of the assessment framework.

Question 1 What is market power in the context of the NEM?

Appendix 2 contains a discussion of the meaning of market power in the NEM.

Since the exercise of transient market power is a design feature of the NEM which drives economically efficient outcomes we have assumed in answering these questions that the Commission is referring to enduring market power and not the exercise of transient.

1.1 What is an appropriate definition for the relevant market in which to examine whether enduring market power is being exercised? What are the relevant product, functional, geographic and temporal dimensions?

Market definition should be undertaken with a view to capturing all relevant factors that are likely to constrain the pricing and output decision of the electricity generator(s) in question. This process should consider all the factors likely to constrain those generators' pricing and output decisions, including the extent to which they are likely to do so.

As a result, the product and functional dimensions of the relevant market are relatively straightforward to define – they are the wholesale trading of electricity.

The geographic and temporal dimensions of the market are somewhat less obvious. The interconnected nature of the NEM suggests that the geographic dimension should be national rather than state-based, and should include interconnected participants in Queensland, New South Wales, the ACT, Victoria, South Australia and Tasmania. This is because the interconnected nature of the NEM implies that generators from across these jurisdictions are able to supply consumers in any one of those jurisdictions. This means that generators across the NEM can constrain, at least to some degree, the prices bid by any given generator.

However, the ability of electricity generators in one NEM region to supply consumers in another region can be limited at particular times due to the binding of constraints on transmission interconnectors. These limitations should be taken into account when assessing the extent to which generators throughout the NEM are likely to constrain the pricing and output decisions of individual generators.

With regard to the temporal dimension of the market, one approach is to narrowly define the market at the level of a 30-minute trading interval. However, this would be misleading as it would not reflect the basis on which generators operate their businesses. Generators make their business and investment decisions having regard to their ability to earn a commercial return over the life of their investment and do not enter or exit the market on the basis of the price they receive for their output in a particular trading interval. This suggests that the appropriate temporal dimension of the market should be substantially longer than a single trading interval. This view is consistent with the findings of the New Zealand High Court in *Power New Zealand Ltd v Mercury Energy Ltd* where the court found that:

We are fortified in this approach by the Court of Appeal's treatment of market definition in *Tru Tone Ltd v Festival Records Retail Marketing Ltd*, (1988) 2 NZBLC 103,286; [1988] 2 NZLR 352. In that case, the Court had been invited to find that a single album (whether record, cassette or disc) might constitute the relevant market. *Richardson* J said at p 360-

"Viewed in relation to product and time the single album definition of market ignores commercial realities. It focuses on short run phenomena. It presents a snapshot rather than a moving picture of continuing commercial reality."

The learned Judge accepted the view presented in the High Court that "in reality no distributor or retailer could run a business on the basis of a market confined to one album".²⁹

As noted above, Justice French took a similar view on the appropriate temporal dimension of the market in the ACCC - AGL decision.

1.2 How should enduring market power be defined in the context of the NEM?

Consistent with the discussion above, enduring market power should be defined as the ability of electricity generators to act without competitive constraint in the long-run such that they are able to earn long-run economic profits.

Importantly, this implies that observations of prices being above a generator's SRMC in a specific period are not sufficient to characterise a generator as having enduring market power. As indicated above, all firms facing large fixed costs require the price they receive to exceed their marginal cost at least at certain times if they are to be able to recover their total costs. It is for this reason that regulated utility prices are generally set with reference to some long-run average cost concept rather than to a short-run marginal cost price.

This is not to deny that generators at particular times are able to set spot prices in excess of their SRMC in a given trading interval. However, whether such behaviour constitutes enduring market power must be considered having regard to whether the generator is able to earn economic profits in the long-run or whether these profits will be reined in by new entry into (or expansion by other existing operators in) the market.

1.3 Do barriers to entry in the market exist such that the exercise of enduring market power would not be constrained by potential entrants?

Barriers to entry are a relevant consideration in the context of determining whether a generator has enduring market power. The key barriers to generator entry in the NEM relate to the need to incur high fixed costs that become sunk after entry and the lead-time for investment. Combined with the discreteness or 'lumpiness' of generation capacity, this means that investors will not seek to develop new generators unless they have a reasonable level of confidence that average wholesale prices will remain sufficiently attractive post-entry that they will be able to earn a normal profit on their investment over time. This is consistent with the proposed temporal dimension of the market as encompassing the time period over which generators base their entry decisions.

Nevertheless, the history of generation investment in the NEM indicates that the barriers to entry are relatively low. Over 12 GW of new capacity has entered the market since the NEM commenced in December 1998.³⁰

The recent Reliability Panel in their recent review did not identify barriers to NEM entry and as noted above were concerned that prices may not be sufficiently high to facilitate new investment to meet the NEO.

Question 2 What is 'exercise' of enduring market power in the context of the NEM?

²⁹ Power New Zealand Ltd v Mercury Energy Ltd (1996) 5 NZBLC 104,015.

³⁰ AER, State of the Market 2010, p.37.

2.1 Are the existing competition law tests for 'taking advantage' or 'abuse' of market power an appropriate test in the context of this Rule change request?

While the notion of market power used in competition law is relevant to informing the appropriate definition of market power, the competition law tests for "taking advantage" or "abuse" are not helpful to assessing what is an "exercise" of market power in the context of the NEM. This is because the notions of "taking advantage" or "abuse" generally relate to conduct that would have the effect of *lessening* competition in a relevant market. This is <u>not</u> the basis for deciding whether a Rule change is appropriate. This is because the statutory regime set out in the National Electricity Law (NEL) is designed not with the purpose of preventing a lessening of competition in a relevant market, but instead with promoting efficient investment in, and efficient operation and use of, electricity services for the long term interests of electricity consumers.

This distinction is important. For instance, the exercise of transient market power by a generator in the NEM wholesale market may not harm a competitor or deter competitive conduct in any market. Indeed, it is more likely to encourage entry. In circumstances where there is an exercise of transient market power, such behaviour may not raise concerns about a "taking advantage" or "abuse" of market power in a competition law sense. However, such behaviour may reduce the efficiency of the wholesale market and, as such, may give rise to concerns about the appropriateness of the NEM design.

2.2 Alternatively, should the Commission develop a different test for assessing whether market power has been exercised in the context of generation in the NEM? If so, what elements might it contain? For example, should it contain the concepts of sustained price rises above the competitive level and/or profitability?

As discussed above, the appropriate test for whether a generator has exercised enduring market power is whether it is able to sustain wholesale prices in excess of its costs over the long term. The relevant costs parameter in this context is the total costs of the generator, sometimes described as its long-run marginal cost (LRMC).³¹ As noted above, success in raising spot prices above a generator's SRMC reflects transient market power and may not reflect enduring market power.

Question 3 What impact is the exercise of enduring market power likely to have on efficiency?

In a perfectly competitive market there would be no loss of efficiency (productive, allocative or dynamic); however the NEM design diverges in a number of ways from a perfectly competitive market:

- Firstly by a design choice to allow generators to recover capacity payments from an energy only market, the marginal generators is not restricted to bidding at its SRMC, (as it would be by competitive pressure in a perfectly competitive market), at times in the NEM when demand approaches available supply, a generator is able to offer in the absence of competition, offers are only restricted by the MPC, and
- Secondly as a consequence of disequilibrium conditions and price volatility in the electricity markets due to the following;

³¹ In their reports on generator costs, consultants ACIL Tasman define LRMC as "the cost of an incremental unit of generation capacity, spread across each unit of electricity produced over the life of the station" – see ACIL Tasman, *Fuel resource, new entry and generation costs in the NEM, Prepared for the Inter-Regional Planning Committee*, April 2009, p.5. The term LRMC is also often used – typically in the context of regulatory decision-making – to describe the incremental cost of an expansion of the <u>overall</u> generation system.

- high fixed costs (40% to 100%) depending on the technology,
- substantial sunk costs large fixed and sunk costs suggest price oscillations may be substantial and prolonged,
- lumpiness in capacity capacity is installed in increments greater than necessary to met demand in the year capacity is added,
- \circ ~ lead time for entry which does not match the planned lead time,
- long lived assets generation plant type mix may not be optimal at any particular point in time,
- specialisation of capacity leading to mismatches between installed capacity and demand,
- transmission constraints,
- \circ $\;$ instantaneous supply and demand balance requirements and
- stochastic effects generator and transmission availability due to temperature and other weather related impacts as well as rapid demand changes,
- project financing constraints,
- o mismatch of generator contract positions and demand

The difficulties associated with the economic analysis of competition are described in the Littlechild paper.

The following comments by Stephen Littlechild in a paper³² where the author comments on the difficulties regulators face with economic analysis of competition , firstly with respect to the studies themselves and secondly with determining the basis for comparison.

"The second difficulty has to do with the economic analysis of competition. Given that a particular type of conduct has been identified, how are we to interpret and treat it? Underlying the analyses just referred to, and many more, is the proposition that in a competitive market, price should equal marginal cost. If price is systematically above marginal cost this indicates market power. The most familiar derivation of the optimality of marginal cost pricing is within the models of theoretical welfare economics, in which the market and all firms within it are assumed to be in equilibrium. Typically there is perfect knowledge, and the firms have made optimal decisions about technology, scale of output, and so on.

It is fair to say that no one assumes that this is really the world we live in, and the authors cited do not assume that. It is surely more realistic to assume that we live in a world of constant and moreorless unexpected change. Neither the generation market nor any other is ever actually in equilibrium. Certainly there may be equilibrating tendencies – an increase in price will stimulate existing generators to try to produce more, and (depending on their estimates of future prices) generators will be more inclined to enter the market, including by building plant. But equally there are disequilibrating tendencies – an explosion at a plant, unexpected movements in gas prices, levels of rainfall affecting hydro capacity, changes in the growth of consumer demand, events in the macro-economy (no small factor after September 11) and not least intervention and changes in policy by regulatory and government authorities.

In such a world, it would be commercial suicide for a generator to assume that the market will always be in equilibrium and that it should price at marginal cost. The world is too risky for that. Investment in new plant is very expensive and typically takes a long time to recover. The entrant must reduce its risks and plan to get its investment back as soon as possible. It will do this by a variety of long term and short term contracts to allocate risk to those parties best able to control them – which will typically include fuel suppliers and equipment manufacturers as well as retailers and customers. In the absence of regulatory or other constraints, there is a continual process of trading and re-trading such contracts

³² Electricity: Regulatory Developments Around the World - Stephen Littlechild1 - The Beesley Lectures on Regulation Series XI - IEA/LBS, London 9 October 2001 - (Revised version 12 November 2001)

in the face of ever-changing market conditions. The bid that a generator makes in the spot market, if indeed it chooses or is forced to be in the spot market, is thus just a small part of its whole strategy for coping with the substantial risks of a generation business.

This is not to argue that the generation market is different from other markets. I am arguing that, in the real world, competitive markets generally are not characterised by price equal to marginal cost. That is the wrong benchmark for judging possibly anticompetitive behaviour. Life is more complex and in particular more risky than the marginal cost criterion recognises. In a competitive market each participant will seek to reduce its risks and cover its investment whenever and wherever it can. It cannot price at any time on the basis that each of its assets will earn an equilibrium return for the rest of its life."

3.1 How might the exercise of enduring market power impact on allocative efficiency in the NEM?

The exercise of transient market power will tend to reduce allocative efficiency to the extent demand is not perfectly inelastic. This means that in the short term, such as during real-time dispatch, when demand is almost perfectly inelastic, there is likely to be little to no effect on allocative efficiency from the exercise of transient market power. However, in the longer term when demand tends to be more elastic, a market price above the fully-competitive level will lead to a degree of inefficient under-consumption of electricity.

The size of any deadweight loss will depend on:

- The relevant long term elasticity of demand,
- The extent to which the NEM diverges from a perfectly competitive market due to the requirement for generators to recover capacity payments (LRMC) from a market with SRMC based offers, and
- The extent of disequilibrium conditions and price volatility in the electricity markets due to the following;
 - \circ high fixed costs (40% to 100%) depending on the technology,
 - substantial sunk costs large fixed and sunk costs suggest price oscillations may be substantial and prolonged,
 - lumpiness in capacity capacity is installed in increments greater than necessary to met demand in the year capacity is added,
 - \circ ~ lead time for entry which does not match the planned lead time,
 - long lived assets generation plant type mix may not be optimal at any particular point in time,
 - specialisation of capacity leading to mismatches between installed capacity and demand,
 - o transmission constraints,
 - \circ $\;$ instantaneous supply and demand balance requirements and
 - stochastic effects generator and transmission availability due to temperature and other weather related impacts as well as rapid demand changes,
 - project financing constraints,
 - o mismatch of generator contract positions and demand

3.2 How might the exercise of enduring market power impact on productive efficiency in the NEM?

The exercise of transient market power through physical or financial withholding will tend, on the margin, to reduce productive efficiency. This means the resource costs of meeting load may be higher than would otherwise be the case. However, the extent of the inefficiency will depend on the extent to which the generation merit order and dispatch changes as a result. If the exercise of transient market power leads to a plant of a given technology and fuel-type displacing another plant of the same or similar technology and fuel-type, the magnitude of the inefficiency will be small.

Given that the bulk of the NEM generation stock is coal-fired, the exercise of transient market power will often not to lead to material deadweight losses. Further, even where the exercise of transient market power leads to gas-fired plant running in place of coal-fired plant, the effect on productive efficiency may be small because of the ongoing narrowing of the costs of coal- and gas-fired plant in the NEM, due to rising international black coal prices and falling domestic gas prices due to the development of major reserves of coal-seam methane in southern Queensland. The implementation of a carbon pricing regime would further narrow the cost differences between coal- and gas-fired plant. Therefore, it may not be the case in practice that the exercise of transient market power leads to a material loss of productive efficiency in the NEM.

The size of any productive efficiency loss will depend on:

- The extent to which the NEM diverges from a perfectly competitive market due to the requirement for generators to recover capacity payments (LRMC) from a market with SRMC based offers, and
- The extent of disequilibrium conditions and price volatility in the electricity markets due to the following;
 - $_{\odot}$ high fixed costs (40% to 100%) depending on the technology,
 - substantial sunk costs large fixed and sunk costs suggest price oscillations may be substantial and prolonged,
 - \circ $\;$ lumpiness in capacity capacity is installed in increments greater than necessary to met demand in the year capacity is added,
 - \circ lead time for entry which does not match the planned lead time,
 - long lived assets generation plant type mix may not be optimal at any particular point in time,
 - specialisation of capacity leading to mismatches between installed capacity and demand,
 - transmission constraints,
 - instantaneous supply and demand balance requirements and
 - stochastic effects generator and transmission availability due to temperature and other weather related impacts as well as rapid demand changes,
 - project financing constraints,
 - \circ $\;$ mismatch of generator contract positions and demand

3.3 How might the exercise of enduring market power impact on dynamic efficiency in the NEM?

The exercise of transient market power is capable of distorting generation investment signals. Distorted investment signals may lead to sub-optimal patterns of investment that compromise dynamic efficiency.

However, as noted above, the extent of any dynamic efficiency will depend on a number of factors apart from the exercise of market power, such as the availability and proximity of fuel, land, water and transmission network. Many of these other influences will be far more important to generation investment decisions than the effect of the exercise of a degree of market power.

The size of any dynamic efficiency loss will depend on:

- The extent to which the NEM diverges from a perfectly competitive market due to the requirement for generators to recover capacity payments (LRMC) from a market with SRMC based offers, and
- The extent of disequilibrium conditions and price volatility in the electricity markets due to the following;
 - $_{\odot}$ high fixed costs (40% to 100%) depending on the technology,
 - substantial sunk costs large fixed and sunk costs suggest price oscillations may be substantial and prolonged,
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 - specialisation of capacity leading to mismatches between installed capacity and demand,
 - o transmission constraints,
 - \circ ~ instantaneous supply and demand balance requirements and
 - stochastic effects generator and transmission availability due to temperature and other weather related impacts as well as rapid demand changes,
 - project financing constraints,
 - \circ \quad mismatch of generator contract positions and demand

Further, present uncertainty over the introduction and nature of a carbon pricing regime is leading many investors to limit their investments to open-cycle gas plant irrespective of any price signals provided through the NEM wholesale market. In this environment, the exercise of market power may have, in reality, little or no practical effect on the level, technology and timing of generation investment.

3.4 What other impacts might the exercise of enduring market power have on efficiency and/or the long term interests of consumers?

The exercise of enduring market power may also have implications for retail markets in the NEM. The exercise of market power will tend to increase the volatility of spot prices, which may change the nature of the type of hedging contracts sought by retailers. It may also mean that retailers require higher margins to help compensate for any increases in risk that cannot be managed by altering their mix of hedge purchases. To the extent that required retailer margins rise, this will tend to deter entry into the retail market and/or lead to higher retail prices paid by consumers.

Meaning of market power in the NEM

Introduction

The Consultation Paper begins by seeking to characterise the problem that the Rule change proposal is intended to address. According to the Consultation Paper, the Proponent considers that the problem is the exercise of market power by generators in the NEM.³³ In particular, the Proponent appears concerned that in periods of high demand, certain generators may be able to 'manipulate' the spot price of electricity by engaging in physical or economic withholding of its capacity. Physical withholding refers to a generator determining not to offer a proportion of its available capacity to the market. Economic withholding is described as a generator offering a proportion of its capacity near the Market Price Cap (MPC) in order to reduce its dispatch.

To consider whether generators do have market power, and the extent to which this is likely to compromise the achievement of the National Electricity Objective, it is important to first clarify what is meant by market power.

Market power is the ability to give less and take more

There is an extensive literature in economic theory and competition case law that seeks to define market power. While market power may be described in different ways by different economic theorists or in different case law judgements, there is a common theme that runs through most concepts of market power. In essence, it is the idea that in competitive markets, firms (either acting individually or in concert) are unable by their own actions to influence the level of output and prices in the market. In turn, this means they are unable to reduce the supply of their product to increase its price above its cost. Each firm in a competitive market is said to be a 'price taker'. By contrast, where a firm has market power, it is able to influence the market price of its product by choosing to supply less. By restricting its output, it is able to increase price above cost. In other words, it becomes a 'price maker'.

Therefore, economic theory views market power and competition as opposites: "market power and competition are but the inverse of each other".³⁴ The essential feature of market power is that a firm possessing market power is able to act without constraint. This is the opposite of competition – where a firm is constrained by its rivals in its business activities. This is explained in the famous words of the United States Attorney-General's National Committee to Study the Antitrust Law in its report of 1955:

"The basic characteristic of effective competition in the economic sense is that no one seller, and no group of sellers acting in concert, has the power to choose its level of profits by giving less and charging more. Where there is workable competition, rival sellers, whether existing competitors or new or potential entrants into the field, would keep this power in check by offering or threatening to offer effective inducements"³⁵

These notions of market power are summarised in three key concepts often associated with the description of market power – it is the ability to:

 reduce output in order to increase prices – i.e. it is the ability to "give less and take more"

³³ Consultation Paper, p.5.

³⁴ Maureen Brunt, "Market Definition" Issues in Australian and New Zealand Trade Practices Litigation', *Australian Business Law Review*, 1990, Vol. 18, No. 2, pp. 86-128, at p. 95.

³⁵ Quoted in Brunt, *op. cit,* p. 95.

- operate without constraint on such activity that would otherwise be imposed by competitors operating in a competitive market
- profitably alter prices away from their competitive level.

Market power is mostly of concern when it is enduring

An important finding in both economic theory and competition law is that the ability of a firm to increase prices above cost is of less concern if this ability is only temporary in nature. In the words of Kaysen and Turner:

A firm possesses market power when it can behave **persistently** in a manner different from the behaviour that a competitive market would enforce on a firm facing otherwise similar cost and demand conditions.³⁶ [Emphasis added]

This is recognised in *Queensland Wire*, where the High Court defined market power as:

... the ability of a firm to raise prices above the supply cost without rivals taking away customers **in due time**, supply cost being the minimum cost an efficient firm would incur in producing the product...³⁷ [emphasis added].

This view is also found in the writings of Niels *et al*, who note in reference to market power being the ability to price above the competitive level that:

This pricing power must also persist for some considerable time to be deemed more than transient market power. $^{\rm 38}$

A key reason why the transient ability to raise prices above costs is not properly considered market power is that it is the pursuit of the ability to charge prices above cost that is an important motive that drives firms to compete more vigorously or to enter the market. As noted by Niels et al:

The very prospect of high profits is what drives companies to reduce costs and introduce new products and technologies to become market leader. The prospect of these profits being regulated once a dominant position is obtained may distort these incentives the high profit made by the incumbent company is precisely what attracts those entrants. Regulatory control of those profits may distort this efficient signalling function of prices, and may thus paradoxically slow down the process of erosion of market power. Hence, the crucial question in each specific case is whether new competitors are indeed likely to enter the market and in what timeframe.³⁹

Hence, the pursuit of market power can be an important part of the *process* of competition. If such market power were to be transient, however, and quickly addressed by new entrants or expansion by other competitors, it can be counter-productive to seek to control market power through price control arrangements. Market power is likely to be of more concern when it is *enduring* – where natural market forces will not serve to correct short-term increases of price above cost.

This explains why some economists believe that the existence of barriers to entry is a key determinant of whether firms have market power. This is reflected in the Australian Competition Tribunal's findings in *QCMA*, where it noted that:

³⁶ Kaysen, C. and Turner, D. F., (1959), *Antitrust Policy* at p. 75.

³⁷ Queensland Wire Industries Pty Ltd v Broken Hill Pty Co Ltd (1989) 167 CLR 177.

³⁸ Niels, G., Jenkins, H. and Kavanagh, J., Economics for Competition Lawyers, Oxford University Press 2011, p. 119.

³⁹ Niels, G., Jenkins, H. and Kavanah, J., *op. cit.*, pp. 270-271.

Competition is a process rather than a situation. Nevertheless, whether firms compete is very much a matter of the structure of the markets in which they operate... Of all these elements of market structure, no doubt the most important is ... the condition of entry. For it is the ease with which firms may enter which establishes the possibilities of market concentration over time; and it is the threat of entry of a new firm or a new plant into a market which operates as the ultimate regulator of competitive conduct.⁴⁰

It follows that evidence of prices being above costs is of less concern if there are low barriers to entry into the market. This is because the existence of above-cost pricing will act as an incentive for other suppliers to either enter the market, or for existing suppliers to replicate the competitive advantage of a supplier that is able to presently set prices above cost. In the absence of major barriers to entry, above-cost pricing may be transient and competitive forces can serve to prevent this from enduring over time.

Measures of market power should focus on long-term considerations

Given that market power should describe an enduring ability to act without constraint, it is important that measures of market power be based on long-term rather than short-term considerations. In this regard, care must be taken in finding that a firm has market power simply because it is paid more than its marginal cost. In reality, firms price above marginal cost in practically all industries in the economy. This is especially the case in high fixed-cost industries – such as electricity and other utility industries – where firms need to receive a price above their marginal cost, at least in some periods, in order to recover their fixed costs. This implies that the mere observation of the spot electricity price being above the marginal cost of a generator in particular periods is not sufficient to find that the generator is pricing in a way that enables it to recover more than its total costs over time.

This leads Niels *et al* to favour measuring market power by considering whether a firm is making economic profits <u>over time</u>. They note that:

"... profitability over a longer term can be used as an indicator of market power. Like the Lerner index, it has the benefit of directly capturing the essence of the definition of market power: the ability to keep price above the competitive level for a sustained period of time without being undermined by consumers switching or competitors entering the market."⁴¹

Market power should be identified and assessed with this longer-term perspective in mind. The ability of a generator to cause the spot price to rise above the generator's avoidable resource costs (also known as short-run marginal cost or SRMC) for shorter periods of time will be described in this report as 'transient market power', as it was by French J (as he was then) in the *AGL* decision:

No doubt, as Victoria's largest generator, it is in a position opportunistically to respond to supply/demand imbalance in very short time intervals and if all the variables are in the right place, to affect both spot and forward contract prices. The question is whether the existence of such opportunities and the fact that it responds to them from time to time reflects the existence of market power. There is here a distinction to be drawn between what was referred to as 'transient market power' and 'persistent but intermittent' market power.⁴²

Further:

⁴⁰ Re Queensland Co-Op Milling Association Limited and Defiance Holdings Limited (1976) 8 ALR 481, at p. 515.

⁴¹ Niels, G., Jenkins, H. and Kavanah, J., *op. cit.*, pp. 270-271.

⁴² Australian Gas Light Company v Australian Competition and Consumer Commission (No. 3) [2003] FCA 1525 (19 December 2003), para 453.

I am prepared to accept that there are periods of high demand where a generator may opportunistically bid to increase the spot price. I do not accept that such intertemporal market power reflects more than an intermittent phenomenon nor does it reflect a long run phenomenon having regard to the possibilities of new entry through additional generation capacity and the upgrade of interconnections between regions. It does not amount to an ongoing ability to price without constraint from competition.⁴³

Market definition should be conducted with the purpose of assessing market power

Markets should be defined with a clear view as to the purpose of the definition and the question that the market concept is intended to be used to answer. To quote Maureen Brunt:

As is often said, the market concept is an instrumental concept, designed to assist in the analysis of processes of competition and sources of market power.⁴⁴

In the present case, the purpose of the market definition exercise is to help determine whether certain generators have market power in certain circumstances, and then whether the implications of this are serious enough to warrant a change to the Rules. This suggests that market definition should be undertaken with a view to helping understand what factors are likely to control the pricing and output decisions of each generator in question. This approach to market definition is frequently identified with Edward Mason, the founder of the field of industrial organisation:

"... the market, and market structure, must be defined with reference to the position of a single seller or buyer. The structure of a seller's market, then, includes all those considerations which he takes into account in determining his business policies and practices. His market includes all buyers and sellers, of whatever product, whose action he considers to influence his volume of sales."⁴⁵

This means that in making conclusions about the boundaries of a market, it is important not to be overly limited in assessing the factors that are likely to constrain a given generator's activities. It is better to define markets in a way that includes all relevant considerations that are likely to constrain a generator's pricing and output decisions. The extent to which they are likely to do so can be separately considered when determining the extent to which the generator is likely to have market power in that market. For instance, if another generator is likely to only weakly constrain the pricing and output decision of a given generator, this can be noted when deciding the extent to which the generator in question is likely to have market power.

Importantly, the process of market definition should not be seen as an end in itself – it should not determine whether or not a generator has market power on its own. Its main purpose is to help identify the forces that operate within a market. As noted by the eminent economist Franklin Fisher, commenting on a famous US anti-trust case:

If the case really turns on market definition – and especially if small changes in definition are likely to lead to large changes in other arguments or conclusions - then there is something wrong. In such circumstances, market definition is obscuring the

⁴³ Para 493.

⁴⁴ Brunt, M., "Market Definition Issues in Australian and New Zealand Trade Practices Litigation", *Australian Law Business Review*, Vol. 18, p. 193.

⁴⁵ E. S. Mason, "Price and Production Policies of Large-Scale Enterprise", American Economic Review, 1939, Reprinted in E. S. Mason, Economic Concentration and the Monopoly Problem, Harvard University Press, 1957, pp. 52-72, at p. 65.

facts rather than organizing them, and the outcome is being affected by the way in which the analyst chooses to categorize the information.⁴⁶

This suggests that the AEMC should err on the side of a broader market definition than an artificially narrow definition.

⁴⁶ F. Fisher, J. McGowan, J. Greenwood, *Folded, Spindled and Mutilated: Economic Analysis and US v. IBM*, 1983, p. 343