

24 November 2011

Mr John Pierce Chairman Australian Energy Market Commission PO Box A2449 SOUTH SYDNEY NSW 1235

Dear Mr Pierce

Potential Generator Market Power in the NEM

Loy Yang Marketing Management Company (LYMMCo) welcomes the opportunity to comment on the AEMC Directions Paper – National Electricity Amendment (Potential Generator Market Power in the NEM) Rule 2011, 22 September 2011.

LYMMCo trades the largest privately-owned generator in the National Electricity Market (NEM). In total, LYMMCo trades in excess of 2,200 MW which is approximately one third of Victoria's electricity needs and more than 8% of the total generation for the south-east of Australia.

LYMMCo draws the AEMC's attention to its initial submission on this issue which, in summary, stated that it did not support the proposed Rule change for the following reasons:

- The ACCC is the most appropriate body to address market power and any such concerns should be directed to it;
- Wholesale electricity price volatility is a positive feature of the NEM and the AEMC should not imply that only occasional high prices are efficient – LYMMCo is yet to see a measure of ideal NEM volatility;
- NEM data does not support the proposition that substantial market power is present. For example, 26 May 2011 365 rolling day average prices are: \$27.08 Victoria; \$37.13 for New South Wales; \$30.56 for Queensland; \$32.62 for South Australia and \$29.51 for Tasmania¹; and
- The proposed rule change significantly undermines the efficient operation of an energy only market and would adversely impact investment incentives, reliability and security of electricity supply.

LYMMCo considers these points remain valid and therefore continues to be unsupportive of the proposed rule change.

¹ Update: On 21 November rolling average prices were \$28.71 for Victoria; \$38.35 or New South Wales; \$34.21 for Queensland; \$36.77 for South Australia and \$28.21 for Tasmania.

Directions Paper: Proposed process

The Commission has proposed the following process to define market power in the NEM and to subsequently investigate whether there is evidence of the exercise, or likely exercise, of substantial market power by generators in the NEM:

- 1. Settlement of the definition of the exercise substantial market power;
- 2. Determination of the boundaries of the relevant geographic market; and
- 3. Assess whether there is evidence that any generators have exercised substantial market power in any relevant market, or are likely to do so in the near future, by:
 - a. determining recent annual average wholesale prices based on both spot and contract prices:
 - estimating Long Run Marginal Cost (LRMC) i.e. the cost (in net present value terms) of bringing forward capacity expansion to meet a specified increment in demand (as per the NERA Report *Potential Generator Market Power in the NEM: A Report for the AEMC*, June 2011;
 - c. if recent annual average wholesale prices exceed LRMC complete some, or all, of the following steps:
 - i. determine if there are significant barriers to entry; and
 - ii. assess whether any individual generator has the ability to engage in conduct that is likely to result in sustained annual average wholesale spot or contract prices that exceed LRMC.

LYMMCo provides detailed commentary on the proposed process, below. However, in summary, LYMMCo considers that:

- The definition of 'substantial market power' is appropriate.
- The definition of the 'exercise of substantial market power' is appropriate subject to:
 - o The removal of the phrase 'or is likely to be able to';
 - Clarification of the period of time in which the average wholesale price exceeds LRMC; and
 - Clarifying the definition of 'significant barriers to entry' in the context of the NEM.
- The process to determine the LRMC benchmark is unworkable because it relies upon value judgements with respect to modelling inputs and the subsequent comparison of outputs; and
- Contract data analysed by LYMMCo, and presented in this submission, does not:
 - o reveal evidence of sustained high price rises above LRMC:
 - o support the proposition that substantial market power is present in the NEM; and
 - o indicate that any special treatment is required to address perceived market power in any region, or to treat South Australia and Queensland as special cases.

1. Settlement of definitions:

Substantial market power

LYMMCo considers that the definition of "substantial market power", contained in the Directions Paper, is appropriate in distinguishing market power in a theoretical/perfectly competitive world (where any form of market power is suboptimal), as opposed to market power in the National Electricity Market where the exercise of market power – of temporary duration – is a necessary and acceptable feature of a 'workably competitive' energy only market.

Although LYMMCo supports the proposed definition of substantial market power, because "significant barriers to entry" are a pre-requisite for substantial market power being exercised, there is now uncertainty as to how significant barriers to entry are defined. LYMMCo suggests that resolving the definition of significant barriers to entry will be a complex task as noted in the following quote:

"The precise definition of barriers to entry is controversial; different versions have been proposed over the years. The issue is not one of pure semantics, since evidence of barriers to entry plays an important role in merger review and other areas of antitrust policy. One definition that seems to reflect current thought and practice is as follows: barriers to entry are structural, institutional and behavioural conditions that allow established firms to earn economic profits for a significant length of time²."

LYMMCo considers that barriers to entry in the NEM could include some, or all, of the following structural, behavioural or institutional factors that contribute to the NEM being a "workably" competitive market.

Structural, institutional factors

- · High fixed costs and the 'lumpiness' of new capacity investment;
- Transmission constraints;
- Green regulation e.g. the expanded Renewable Energy Target and the carbon price
- Fuel availability and its cost; and
- · Regulatory uncertainty which increases sovereign risk concerns.

Factors that influence participant behaviour

- Substantial sunk costs large fixed and sunk costs which may lead to substantial and prolonged oscillations in price;
- Significant project financing costs;
- · Lead time for new entry;
- Revenue uncertainty/risk; and
- Low market contract level with respect to overall demand

Given the noted difficulty of defining barriers to entry – their possible extent – and the importance of this term in the definition of substantial market power, LYMMCo urges the Commission to resolve the definition of barriers to entry and their significance as soon as practicable.

Exercise of substantial market power

LYMMCo supports, the proposed definition of the 'exercise of substantial market' power subject to the incorporation of the following amendments:

LYMMCo considers that the term "or is likely to be able to" should be removed from the
definition. The Commission justifies the inclusion of this language by stating that "it is not
necessary for ex post evidence of several years above LRMC pricing before taking action"³.
However, LYMMCo considers the inclusion of this language is nebulous and would require
subjective decision making on the part of the regulator. LYMMCo considers further that the

³ Directions Paper p.20

² Cabral, Luís M. B. *barriers to entry." The New Palgrave Dictionary of Economics. Second Edition. Eds. Steven N. Durlauf and Lawrence E. Blume. Palgrave Macmillan, 2008. The New Palgrave Dictionary of Economics Online.Palgrave Macmillan. 15 April 2008

assessment of substantial market power should be based solely on evidence of it being exercised.

- Further analysis is required to determine the period of time in which the average wholesale
 price should exceed LRMC in order to determine whether market power exists. LYMMCo is
 concerned that the proposal in the Directions Paper to consider a period of 1 to 3 years is
 insufficient and may not adequately account for fluctuations in price due to, for example,
 climatic events such as droughts. LYMMCo therefore requests that the Commission
 completes further analysis on this point.
- Addressing LYMMCo's concerns, outlined further below, with regards to the calculation of LRMC.

2. Boundaries of the relevant geographic market

LYMMCo considers that for the purposes of defining the boundaries of the relevant geographic market that the Commission should follow French J's decision in *AGL v ACCC* that the entire NEM should be treated as a single market⁴.

3. Assessing evidence of the exercise of substantial market power

a. Average wholesale pool prices

LYMMCo considers that the calculation of annual average spot prices is a relatively straight forward exercise, as this information is readily available. However, LYMMCo does not consider that the inclusion of pool prices in the assessment of the exercise of substantial market power is as relevant as wholesale contract prices. LYMMCo's rationale for this is that, the majority of market participants effectively manage electricity price risk directly through hedging contracts with generators – or indirectly through fixed price contracts with retailers backed by hedging contracts with generators.

In LYMMCo's view sufficient wholesale contract price information is available and greater weight should be given to these results in assessing the exercise of substantial market power.

Contract information

In the Paper the Commission states that "obtaining reliable information regarding contract prices will be one of the challenges in the next stage of this Rule change process"⁵. In response to this statement, LYMMCo notes that exchange traded contract prices and volumes are publicly available. Although the price of bilateral deals are not known, it is reasonable to assume that when these were established they would have been traded at the market price. As a consequence exchange traded contract prices (excluding those contracts traded after a contract commencement date) can be assumed to be a proxy for bilateral deals.

Furthermore, LYMMCo would not support any proposal to provide greater information – other than that currently available through brokers, exchanges or other market facilitators – regarding prices in the contract market. Contracts are an important element of the NEM and the provision of greater detail would require generators to divulge their contract positions which would undermine their continued economic operation.

⁵ Directions Paper p.14

⁴ Australian Gas Light Company v ACCC (No 3) [2003] FCA 1525.

b. Estimating LRMC

LYMMCo considers that the estimation of an annual LRMC, using either a least cost model or a market model approach, is problematic as such a calculation will not include all of the structural, institutional and behavioural conditions (as outlined above) that make the NEM a workably competitive market.

This means that in the event that the annual average wholesale price is greater than benchmark LRMC calculation it is not clear how Commission proposes to interpret – or give weight to – the various components that may have contributed to this difference. For example, a difference in the average wholesale prices and the LRMC estimate could be a result of:

- Outcomes reasonably expected in a workably competitive market;
- The "energy only" nature of the NEM i.e. individual generators exercising market power of temporary duration to recover LRMC; and/or
- Individual generators having the ability to exercise sustained market power due to significant barriers to entry.

As a consequence, LYMMCo considers that the use of the LRMC as a benchmark is compromised. Accordingly, LYMMCo seeks clarification from the Commission as to how it proposes to separate the components that could reasonably make up the difference in values.

Further LRMC commentary

The Commission is proposing to establish a benchmark LRMC against which it intends to assess whether generators have exercised – or are likely to exercise – market power both:

- In the immediate future and whether or not high prices are likely to be sustained in the future; and
- In the past.

Forecasting LRMC

Establishing an LRMC forecast will require a range of assumptions to be made including, for example, future load growth, the timing of new investment and a potential range of plant costs (physical capital costs, financial capital costs and operating costs) and utilisation rates. Given the potential range of outcomes possible in calculating LRMC sensitivity analysis should also be completed that account for variations in demand growth, plant costs and utilisation rates.

Other input assumptions for a least cost model calculation which will have a direct impact on the magnitude of the resulting LRMC will be the assumptions made on the level of excess capacity that should be maintained (for reliability) and the size of the load increment used to calculate the LRMC.

In regards to the calculation of LRMC, LYMMCo draws the Commission's attention to its comment in the Directions Paper, as follows "the Commission will also be mindful of the fact that there will be a degree of estimation required when calculating LRMC". Furthermore, the Commission also notes that, in comparing average annual spot prices and LRMC, "some judgement will be required as to whether [average annual spot prices or contract prices exceeding LRMC] represents evidence of the exercise of substantial market power".

⁶ Directions Paper p.58

⁷ Directions Paper p.58

Given the range of assumptions necessary to forecast LRMC and — the Commission's own acknowledgement that a degree of subjectivity is required in interpreting the results — LYMMCo is concerned that the range of outcomes could be large, uncertain and open to interpretation such that the robustness of the results derived will be highly questionable and potentially unusable.

Historical LRMC

Other issues arise in the calculation of historical LRMC. Specifically, if a least cost approach is adopted based on a historical starting point, (for example this could be the market conditions and the structure at market start) the least cost development projected from that time will include investment decisions based on assumed investment criteria resulting in a installed plant profile which may bear no relationship to the plant actually installed.

The result is more likely to be an assessment of whether participants have made efficient investment decisions. This will add another factor to be considered in making value judgements in the comparison with the annual average wholesale price.

An alternative approach

LYMMCo suggests that the following process to calculate LRMC could be adopted. It is essentially the same process as proposed by the Commission however, it avoids the uncertainty and complications of calculating LRMC as proposed. The process is as follows:

- Identify any barriers to entry that are consistent with a workably competitive market and if any new or changed barriers have arisen since market start;
- Monitor contract market outcomes and assess if there is any enduring divergence from historical market outcomes. Historical outcomes are proposed as a suitable benchmark on the basis that it is well documented that the introduction of the competitive energy market in its current form achieved significant reductions in electricity prices (in real terms) for consumers; and
- If a contract price divergence is found, establish the reason for this divergence and determine whether or not it is due to a significant barrier to entry, if it is likely to be enduring, and if so propose measures necessary to eliminate or mitigate their impact.

This is a similar approach to that proposed by the Commission however it avoids the value judgements required with respect to calculating the LRMC and the value judgements in making comparisons of the LRMC with pool and contract prices. Although some value judgement will be required in comparing current market outcomes with historical market outcomes at least the benchmark and the measure are consistent.

LYMMCo analysis of recent market outcomes

As noted previously LYMMCo considers that the contract market data more accurately reflects the impact of NEM market outcomes on consumers – and not pool prices – and that there is sufficient wholesale contract market data available to assess whether "substantial market power" has been exercised.

Attachment 1 includes a series of graphs, prepared by LYMMCo, showing NEM contract market data for the period 2002 to 2012. Analysis of this data reveals that:

- High contract prices for C2008, C2009 and part of C2010 which likely gave rise to the MEU rule change – have impacted all NEM regions not just South Australia;
- The high calendar year prices can be attributed to the drought which reduced the available supply of base load plant in Queensland and hydro generator output. The drought caused higher cost plant to be scheduled and increased pool prices as well as wholesale contract prices. Prices reduced to normal on the cessation of the drought.
- That the high prices were significantly driven by a reduction in supply caused by the drought is demonstrated by the fact that price increases occurred in all quarters not just in Q1 when demand is high.
- It is most likely that the flat prices for Q1-2008 and Q1-2009 for Queensland and South Australia were higher than other regions which may be due to the fact that:
 - These regions are less interconnected than other regions;
 - o The effects of the drought on Queensland prices may be greater since the supply shortfall due to the drought occurred mainly in Queensland:
 - In South Australia the increased volatility in price may be due to changed structural conditions resulting from the transfer of ownership of Torrens Island Power Station from Truenergy to AGL Energy; and
 - Extreme high prices occurred in South Australia due to high temperatures.
- There is evidence that retailers or consumers could obtain reasonably priced cover for these periods.

Conclusion

In conclusion, LYMMCo considers that:

- The proposed definitions, subject to amendment and clarification, are an appropriate means by which to define substantial market power, and its exercise, in the NEM.
- The process to determine the LRMC benchmark appears to be unworkable because it relies upon subjective judgements with respect to modelling inputs and subsequent comparison of outputs.
- An alternative approach to the calculation of the LRMC would involve using wholesale contract price history as a benchmark.
- Contract data collected by LYMMCo, and presented in this submission, does not:
 - o reveal evidence of enduring high price rises above historical contract cost;
 - o support the proposition that substantial market power is present in the NEM; and
 - o indicate that any special treatment is required to address perceived market power in any region, or to treat South Australia and Queensland as special cases.

If you have any questions in relation to this submission please contact Simon Camroux on 03 9612 2236.

Yours sincerely,

Simon Camroux

Manager Regulation and Market Development

ATTACHMENT 1: Contract Market Prices

The MEU submission has attributed recent high prices to the **ex**ercise of generator market power in the years 2007, 08 and 09. The submission has focused primarily on the behaviour of generators in SA and to a lessor extent in NSW. The analysis by the MEU has been based primarily on pool price outcomes and the observation that on occasions some generators were dispatched out of merit order, leading MEU to conclude that a rule change is required to address the high pool price outcomes.

The focus on pool prices alone can be misleading because pool prices are not the primary basis on which generator operating and investment decisions, or the purchase of electricity by consumers, are generally made. Wholesale contract prices negotiated between buyers and sellers are a more reliable representation of NEM outcomes and better reflect the impact of electricity prices on the wider economy.

The following graphs provide a record of contact price movements in the NEM since 2000 or market start in the region. The contract prices are driven in part by buyers and sellers views of historical, current and expected future pool prices.

The information in these graphs is based on observable bids and offers made through brokers and on exchange based trading systems which have been recorded by LYMMCo on a daily basis for each of the products traded on the exchange. The products traded include for each region, Flat, Peak and Off Peak contracts for financial years, calendar years and quarters within those years. The prices are plotted against trading days before contract start, (trading days to delivery). If trades are made for the day these are signified by a dot and if no trade is made for a product on a day the price recorded is the mid point of the bid - offer spread. The contracts shown on the following graphs are flat calendar year and quarter contracts. The information does not include bilateral OTC contracts traded between participants outside the exchange, however it would be expected that the price established for these contracts would be guided by the market price at the time a bilateral contract is negotiated.

Calendar Year Flat Contracts - SA, Vic, NSW, Qld. 2000 - 2012

The graphs (Figures 1 to 4) show contract price histories from market start (or when data on exchange based trades became available) to 2012. Except for a few notable years contracts have traded in the approximate range \$30 to \$45 in Vic, NSW and Qld, and \$35 to \$50 in SA.

The recent exceptions to this are the Calendar Year Flat contracts for C2008, C2009 and to a lessor extent 2010 which traded at higher prices in all regions. The C2008 Flat contract peaked at \$84 in SA, \$76 in Vic, \$84 in NSW and \$91 in Qld. It is notable however that Cal 2008 contracts in all regions were not always at that level contracts traded from 340 to 300 days before delivery were traded in the range \$30 to \$40.

It can be seen that the C2009 contract prices traded decreased progressively in most regions prior to the commencement of 2009 and the C2010 contracts reduced to average historical levels in prior to 2010. That these high prices were not enduring is also demonstrated in the graphs (Figures 5 to 8) which exclude the C2008, C2009 & C2010 flat contracts. These figures clearly demonstrate that prices for contracts in C2011 and C2012 have traded in the same range as those prior to C2008.

What is notable however is that for example calendar year contract prices traded in SA, Vic and Qld in 2010 for C2011 were at about the same level as those traded in 2003 for C2004. For NSW calendar year contract prices traded for C2011 were at about the same level as those traded in

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2005 for C2006. That wholesale contract prices for C2011 are at the same level as those traded 5 to 7 years later demonstrates that generators do not have the ability to "exercise substantial market power". In fact, in real terms, contract prices for C2010 and C2011 are lower than those traded at market start.

Higher prices which occurred in all regions of the NEM can be attributed to the drought temporarily reducing the available supply of base load plant in Queensland and hydro generator output in other regions. The drought caused higher cost plant to be scheduled and increased pool prices and wholesale contract prices. The graphs show that prices reduced to normal on the cessation of the drought.

Q1 to Q4 flat all regions

Quarterly flat prices for all regions and all years are shown on Figures 9 to 12. That the prices for all quarters from Q2-2007 to the end of 2008 are at an increased level supports the view that a reduction in supply is the primary driver of the price increases. The movements of the quarterly prices, for the high price periods are more readily observable on the graphs. Figures 14 to 16.

The quarterly flat prices show a trend where quarterly prices for Q2-2007 (Figure 14) increased and remained above the normal level for Q3 (Figure 15) & Q4-2007 (Figure 16) and Q1 (Figure 13), Q2 (Figure 14), Q3 (Figure 15) & Q4 2008 (Figure 16), and reduced thereafter. Although the highest prices occurred as would be expected in Q1 2008, that these prices were high through 6 successive quarters in all regions demonstrates that the price increases can not be totally attributed to the exercise of market power at times of high demand.

Exercise of market at times of high demand

The graph of Q1 flat contracts for all regions shows a similar pattern to that for the flat calendar contracts in that the Q1-2008, 2009 & 2010 contracts are higher than the previous years and returned to normal levels for the Q1-2011 year. The peak prices for Qld and SA are higher than the other regions which may be partly due the fact that Qld and SA are at each end of the NEM and only linked to one other region, which in the case of:

- Qld may have exacerbated the effects of the drought since the supply shortfall due to the drought occurred mainly in Qld;
- SA, exacerbated the increased volatility in price which may be due to changes in market structure resulting from the transfer of ownership of Torrens Island Power Station from Truenergy to AGL Energy.
- SA, are the consequence of high temperature events that can typically occur in SA in Q1 will drive increases in contract prices for subsequent years. With respect to the period in question, March 2008⁸ and January 2009⁹ are examples significant high temperature events.

LYMMCo considers that this information clearly demonstrates that the causes of historically high prices was transitory in nature.

⁸ During the period 5 to 17 March 2008 demand peaked at 3077 MW, due to an extended heatwave which created unprecedented levels of electricity demand. This was the highest demand ever recorded in South Australia at the time.

⁹ On the 13 January 2009 temperatures in excess of 41 degrees saw demand exceed 2600 MW and later in January 2009 Temperatures in South Australia exceeded 40 degrees for six days in a row from 27 January to 1 February. The highest temperature during this period was 45.7 degrees on Wednesday 28 January creating a new record demand of 3317 MW.

Over the period from 2006/07 to 200010/11 the NEM wide energy produced increased by 1% and the NEM wide summer maximum demand increased by 2744MW and installed capacity by 7855 MW, 2872MW of which was wind energy generators¹⁰. LYMMCo is not aware of any significant barrier to entry that arose during the period of high prices and the market appears to have returned to equilibrium.

Range of Contract Prices

The wide range of contract prices that occurred for some years demonstrates that it would be beneficial for consumers, particularly large consumers to have a sophisticated purchasing policy. Historically electricity contracts with end users have been established for a fixed period and then renewed through signing the best deal available just before the contract terminates.

The time at which a contract is established can have a substantial impact on the price paid. For example as can be seen from the graphs there were a wide range of prices for Cal 2008 contracts traded in all regions. Prices for contracts traded in 2007 and earlier ranged as follows:

- SA from 42.00 to 84.00,
- Vic from 38.52 to 76.70
- NSW from 38.55 to 83.94
- Qld from 32.84 to 91.21

To avoid cyclic variations in electricity prices a more sophisticated approach for large consumers could include:

- taking a realistic long term view of future prices;
- contracting for longer periods;
- contracting well ahead of the termination of existing contracts; and
- establishing a portfolio of supply agreements that terminate at different times.

Conclusion

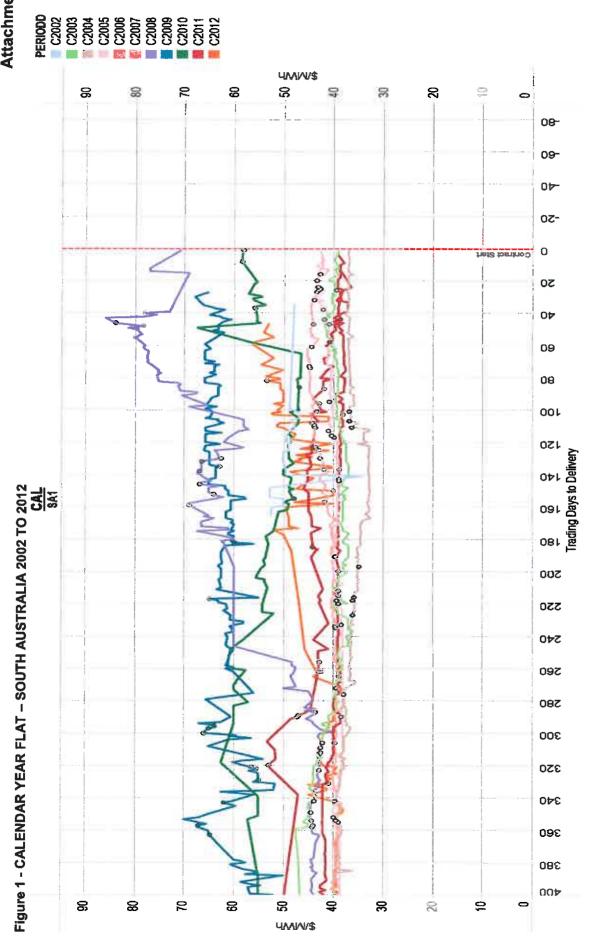
These higher prices which occurred in all regions of the NEM can be attributed to the drought reducing the available supply of base load plant in Queensland and hydro generator output in other regions. The drought caused higher cost plant to be scheduled and increased pool prices and wholesale contract prices. Prices reduced to normal after the cessation of the drought

The peak prices for Qld and SA are higher than the other regions which may be partly due the fact that:

- the effects of the drought on Qld prices may be greater since the supply shortfall due to the drought occurred mainly in Qld;
- in SA the increased volatility in price may be due to changed structural conditions resulting from the transfer of ownership of Torrens island power station from Truenergy to AGL Energy; and
- extreme high price events in SA.

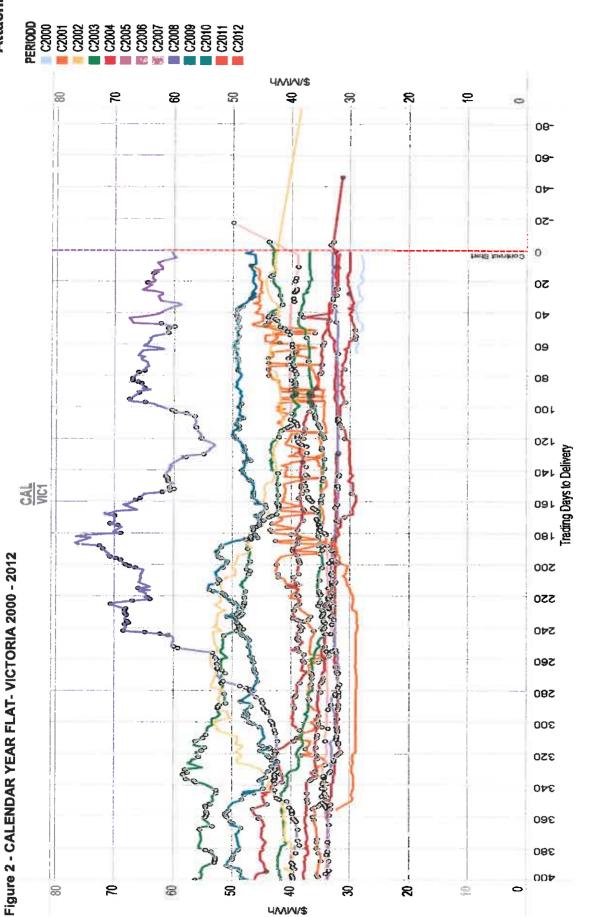
The contract data analysis demonstrates that there is no need for a rule change to address the high prices as the underlying conditions that caused the price increases no longer exist. Furthermore, in an energy only market there would be a significant risk to new entrant supply if price signals were manipulated through regulatory change.

¹⁰ AEMO 2011 Electricity Statement of Opportunities



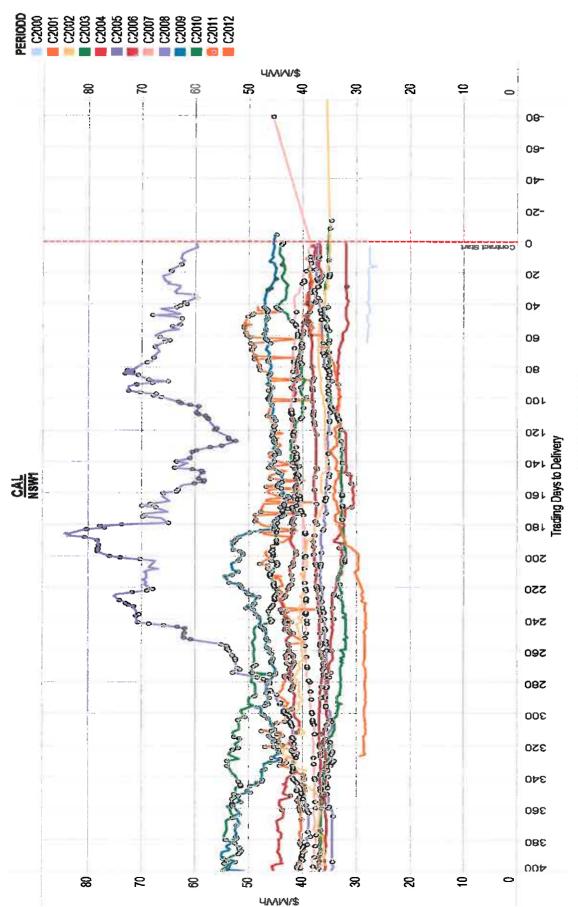
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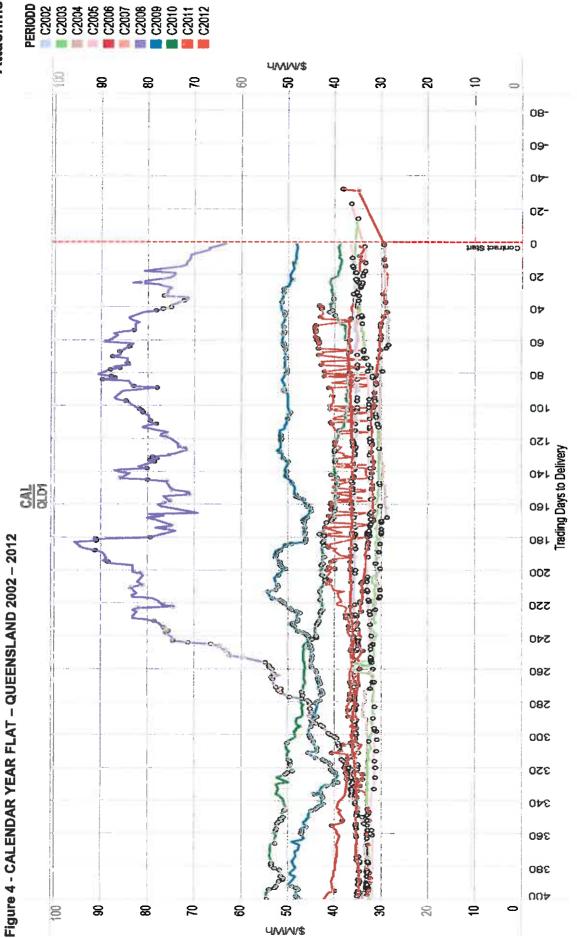
Figure 3 - CALENDAR YEAR FLAT - NEW SOUTH WALES 2000 - 2012



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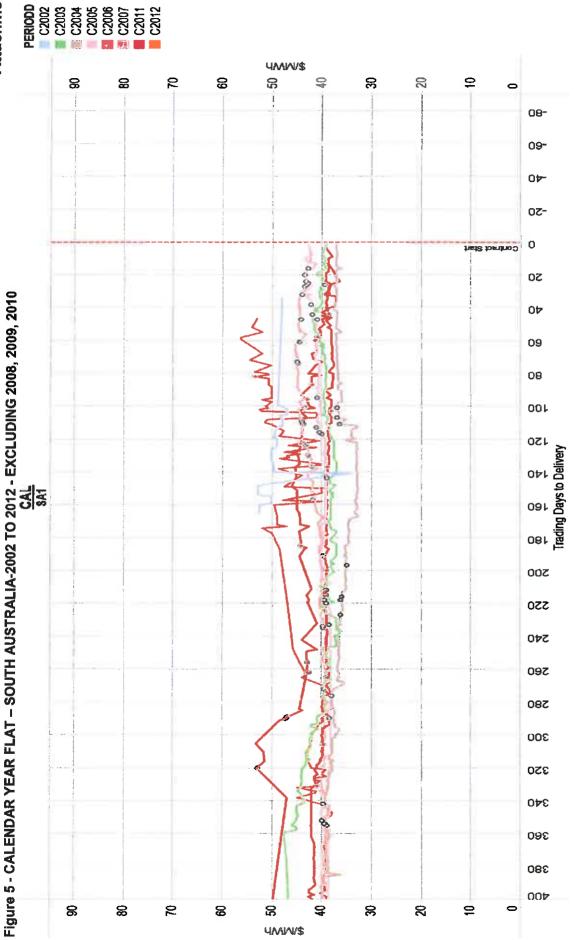
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CONTRACT MARKET PRICES



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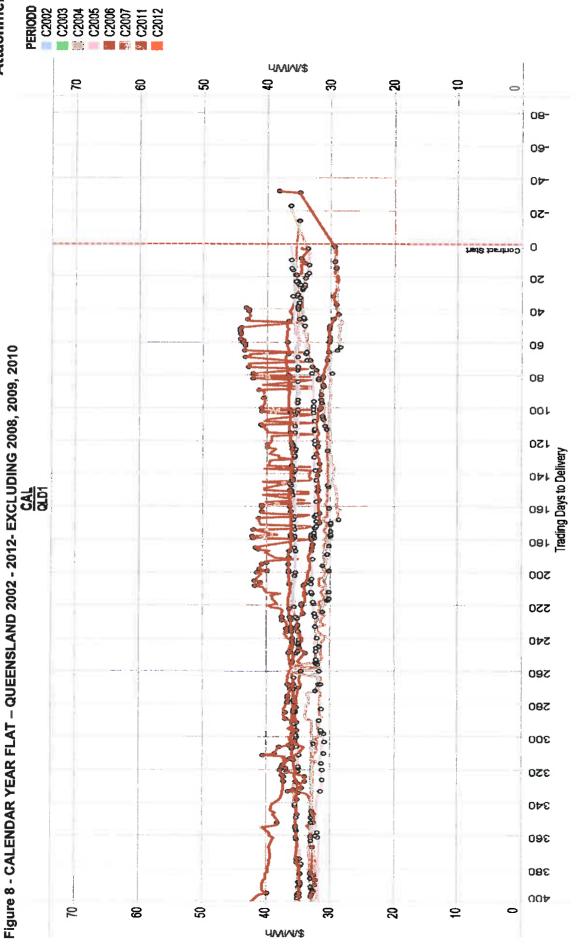
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PERIODD C2000 C2002 C2003 C2004 52001 C2005 C2006 52011 C2012 **4**/\/\/\/\/ 2 ස S 송 ೫ 23 2 0 08-09-01 0Z-0 50 Figure 7 - CALENDAR YEAR FLAT - NEW SOUTH WALES 2000 - 2012- EXCLUDING 2008, 2009, 2010 0Þ 09 08 100 150 Trading Days to Delivery 07L 160 180 500 220 240 500 280 300 350 340 360 380 005 \$ 8 S 2 9 0 2 **4**/\/\/\/\$

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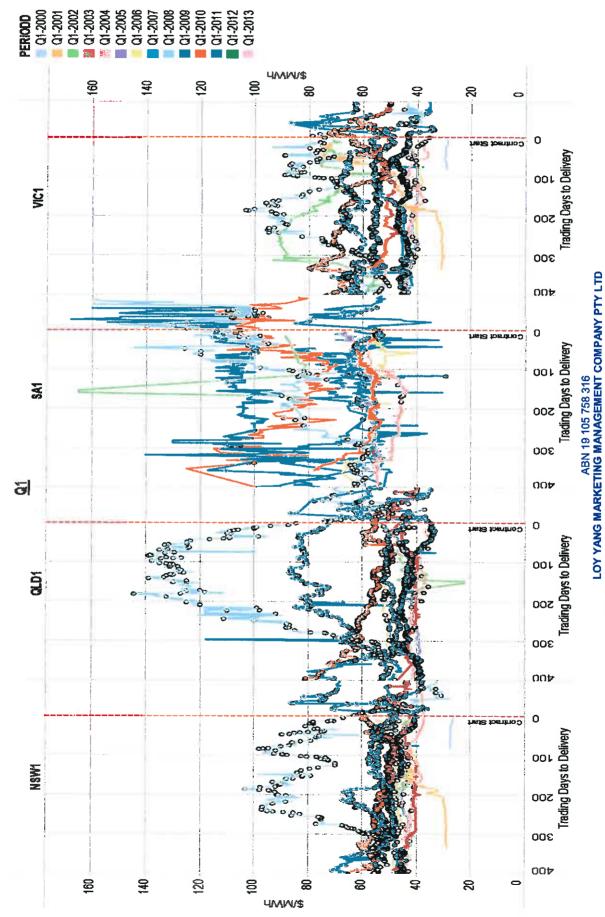




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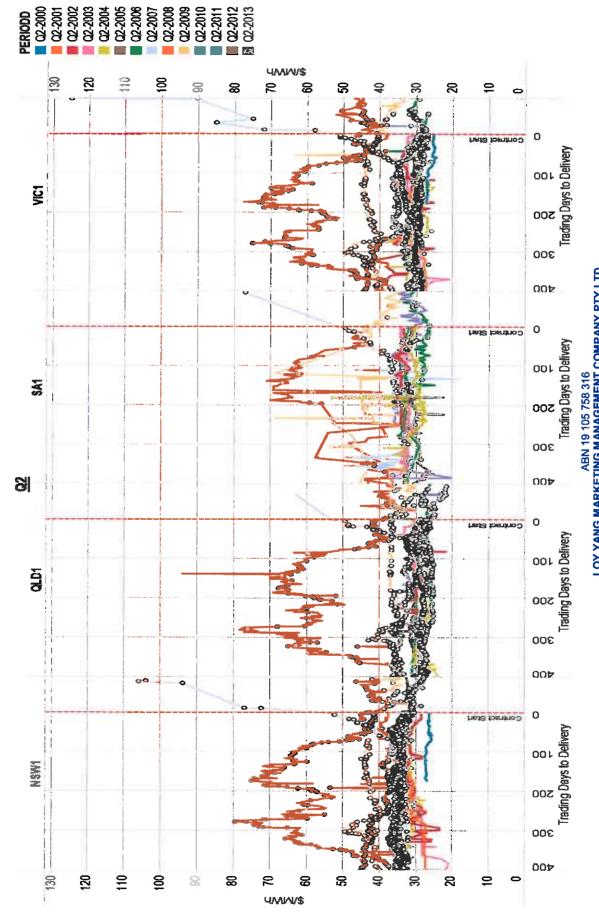
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Figure 9 - Q1 FLAT - ALL REGIONS 2000 to 2012



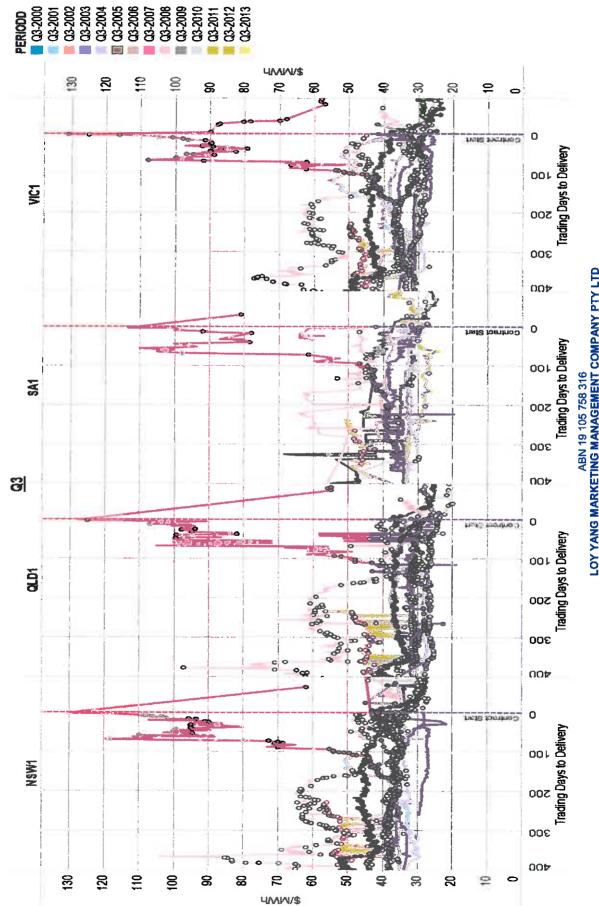
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Figure 10 - Q2 FLAT - ALL REGIONS 2000 to 2012



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Figure 11 - Q3 FLAT - ALL REGIONS 2000 to 2012



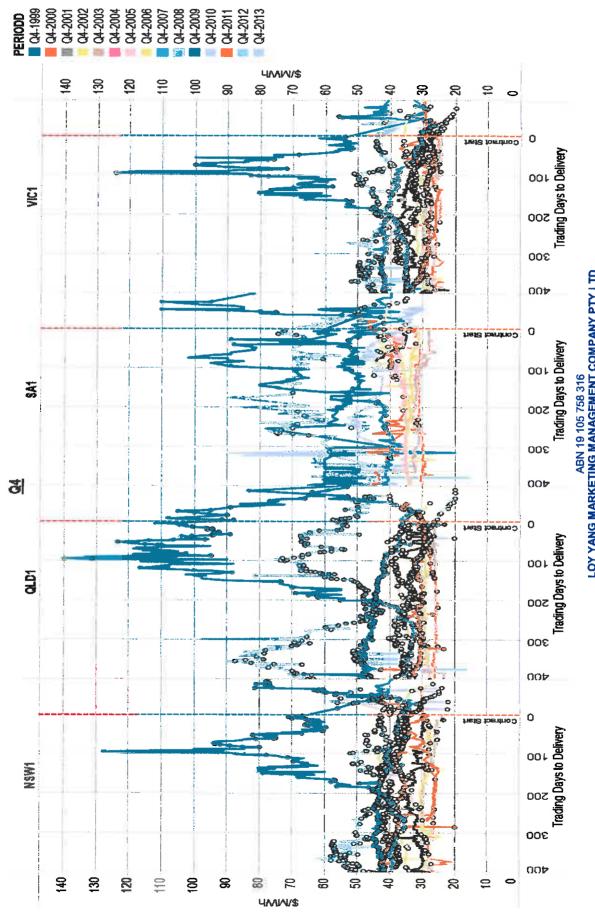
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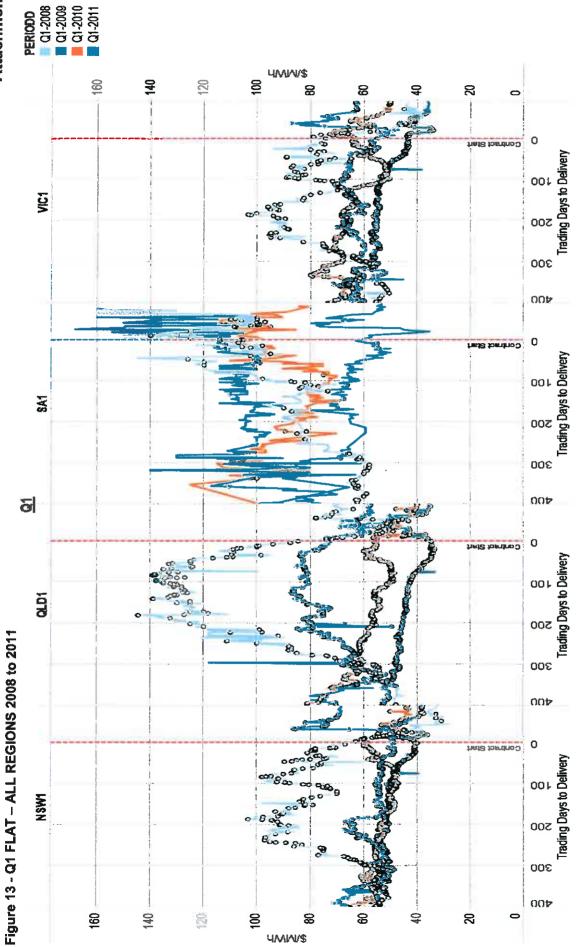
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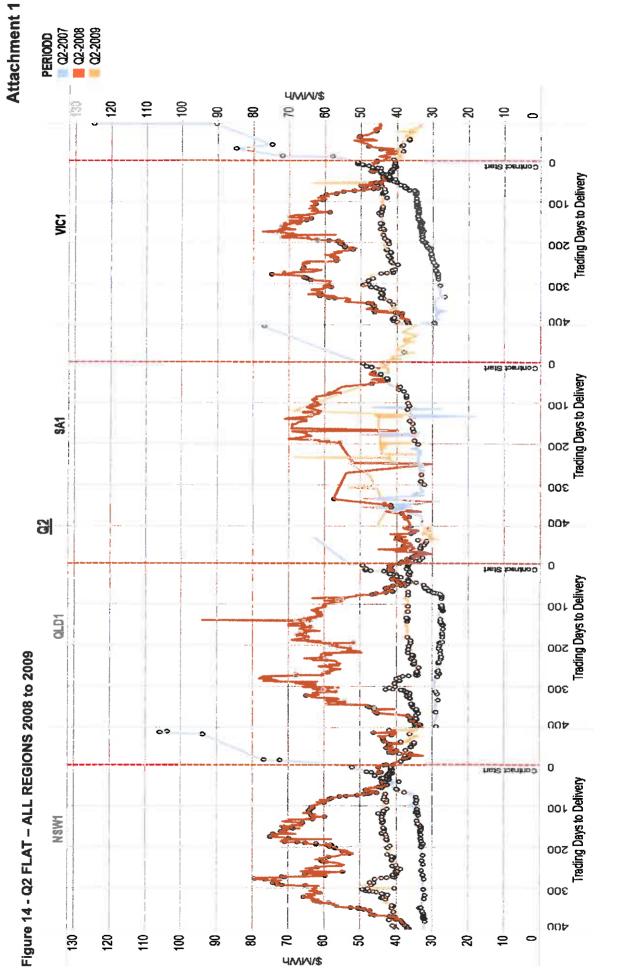
Figure 12 - Q4 FLAT - ALL REGIONS 2000 to 2012



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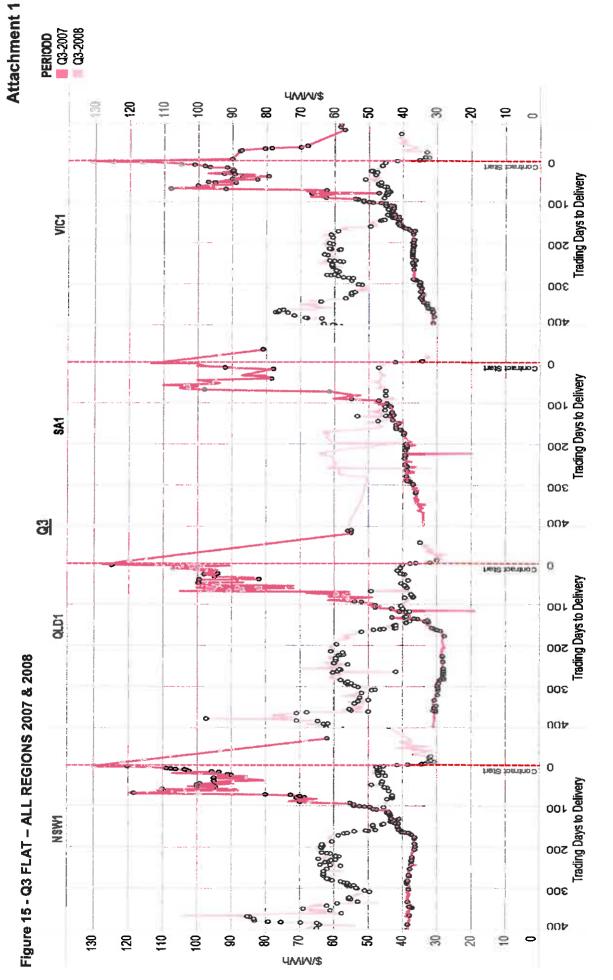


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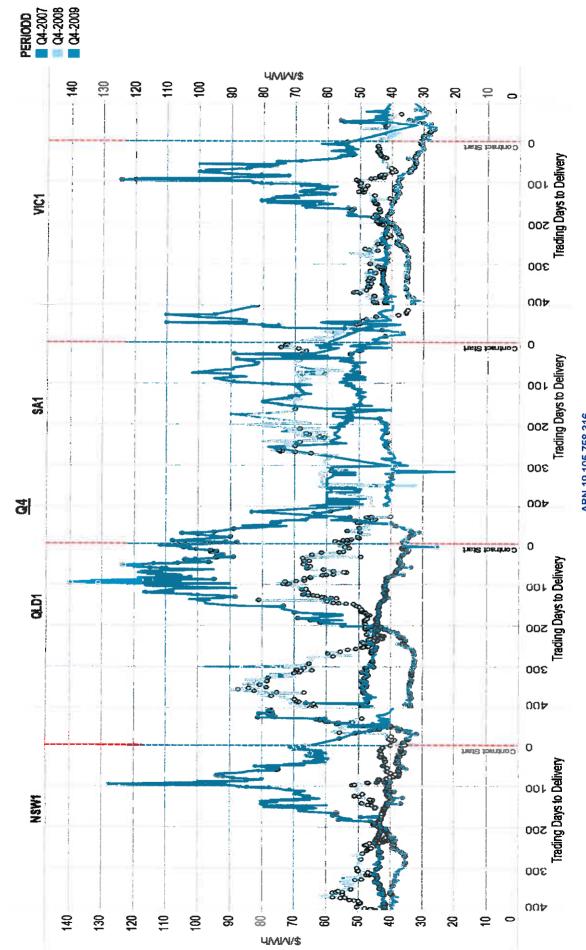
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Figure 16 - Q4 FLAT - ALL REGIONS 2007 to 2009



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