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Executive Summary

This supplementary submission is provided by Lateral Economics on behalf of ExxonMobil Gas Marketing. It addresses the question of the marketing of gas by equity owners of joint venture producers (JVPs). Some gas consumers and

§ gas consumption within Australia has grown strongly over the same



A deep and liquid market enables producers to rely on the fact that there are always many consumers available and so if it is produced, gas can be sold. Though producers and consumers may choose to write long-term take or pay contracts with each other, they are also aided by a deep and liquid 'spot market' into which surplus gas can be sold and from which it can be purchased in the short-term. The spot market is also useful as a signal to producers and

Nor will 'balancing agreements' or any other 'borrow and bank' arrangements between co-venturers in JVPs facilitate the competing away of any scarcity rents controlled by the JVP. For such arrangements require co-venturers not only to have each other's permission to move away from balance, but also to make up any imbalances within a reasonable time.

The potential costs of mandating separate marketing

Requiring separate marketing is likely to accomplish a good deal more than nothing – by adding risk and cost to an industry where the management of risk is clearly a critical issue. Exploration, proving, development and production of a gas field requires access to large amounts of capital and the capacity to spread risk and to sustain this over many years. JVPs provide the means for spreading



Small countries often have limited competition in their natural gas markets, because the markets are not large enough to support efficient operation by a large number of domestic producers or suppliers. In these countries regulators should focus on lowering entry barriers rather than on regulating domestic firms. If entry barriers are low, the threat of entry by ... competitors can serve as an effective check on domestic market participants.

Andrej Juris (1998: 7).

1 Introduction

This supplementary submission to the Energy Market Review is provided by Lateral Economics on behalf of ExxonMobil Gas Marketing. It addresses the issue of joint marketing (JM) compared with separate marketing (SM) of gas by firms which are equity holders 0.4tos wivemeu arpnroductich rangplemeng VP 7).

lack of effective competition resulting from a high degree of concentration in the marketing of gas. The UIWG (1998; p.29) put it this way:

[T]he UIWG agrees with the argument that separate marketing is more competitive than joint marketing, and the aim of policy in this area should be to encourage the separate marketing of gas by individual participants in a joint venture. By creating price competition between as many suppliers of gas as possible, separate marketing should result in lower gas prices.

Nevertheless, the UIWG had some sympathy with the view, made in several submissions – typically reflecting producers' views, that parts of the Australian gas market are currently unable to support separate marketing. This is because they tend to operate as 'contract' or 'project' markets, where gas is only produced to meet specific long-term contractual obligations (1998; p.29).

Where joint venture production is seen as the most efficient way of undertaking gas developments, the UIWG considers that prohibiting joint marketing could raise the costs and/or increase the risks of entering gas production, where separate marketing is not viable.

The ACCC appears to hold a similar view. One might say that it exhibits some unease with JM, though it also appreciates that forcing SM before a market is sufficiently deep and liquid can harm economic efficiency, not least by preventing otherwise viable gas production from being commissioned (see below). Nevertheless, on occasions the Commission and its predecessor have acted as if requiring separate marketing of joint producers can improve the competitiveness of markets. Thus for instance the ACCC's predecessor permitted CRA and North Ltd to aggregate their lead and zinc production facilities in Pasminco providing the original owners of the merged facilities continue to produce efficiently. (AG 2016/29, paras 8.16-8.17, 8.20-8.21, 8.23-8.24, 8.26-8.27, 8.29-8.30, 8.32-8.33, 8.35-8.36, 8.38-8.39, 8.41-8.42, 8.44-8.45, 8.47-8.48, 8.50-8.51, 8.53-8.54, 8.56-8.57, 8.59-8.60, 8.62-8.63, 8.65-8.66, 8.68-8.69, 8.71-8.72, 8.74-8.75, 8.77-8.78, 8.80-8.81, 8.83-8.84, 8.86-8.87, 8.89-8.90, 8.92-8.93, 8.95-8.96, 8.98-8.99, 9.01-9.02, 9.04-9.05, 9.07-9.08, 9.10-9.11, 9.13-9.14, 9.16-9.17, 9.19-9.20, 9.22-9.23, 9.25-9.26, 9.28-9.29, 9.31-9.32, 9.34-9.35, 9.37-9.38, 9.40-9.41, 9.43-9.44, 9.46-9.47, 9.49-9.50, 9.52-9.53, 9.55-9.56, 9.58-9.59, 9.61-9.62, 9.64-9.65, 9.67-9.68, 9.70-9.71, 9.73-9.74, 9.76-9.77, 9.79-9.80, 9.82-9.83, 9.85-9.86, 9.88-9.89, 9.91-9.92, 9.94-9.95, 9.97-9.98, 10.00-10.01, 10.03-10.04, 10.06-10.07, 10.09-10.10, 10.12-10.13, 10.15-10.16, 10.18-10.19, 10.21-10.22, 10.24-10.25, 10.27-10.28, 10.30-10.31, 10.33-10.34, 10.36-10.37, 10.39-10.40, 10.42-10.43, 10.45-10.46, 10.48-10.49, 10.51-10.52, 10.54-10.55, 10.57-10.58, 10.60-10.61, 10.63-10.64, 10.66-10.67, 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33.69-33.70, 33.72-33.73, 33.75-33.76, 33.78-33.79, 33.81-33.82, 33.84-33.85, 33.87-33.88, 33.90-33.91, 33.93-33.94, 33.96-33.97, 33.99-34.00, 34.02-34.03, 34.05-34.06, 34.08-34.09, 34.11-34.12, 34.14-34.15, 34.17-34.18, 34.20-34.21, 34.23-34.24, 34.26-34.27, 34.29-34.30, 34.32-34.33, 34.35-34.36, 34.38-34.39, 34.41-34.42, 34.44-34.45, 34.47-34.48, 34.50-34.51, 34.53-34.54, 34.56-34.57, 34.59-34.60, 34.62-34.63, 34.65-34.66, 34.68-34.69, 34.71-34.72, 34.74-34.75, 34.77-34.78, 34.80-34.81, 34.83-34.84, 34.86-34.87, 34.89-34.90, 34.92-34.93, 34.95-34.96, 34.98-34.99, 35.01-35.02, 35.04-35.05, 35.07-35.08, 35.10-35.11, 35.13-35.14, 35.16-35.17, 35.19-35.20, 35.22-35.23, 35.25-35.26, 35.28-35.29, 35.31-35.32, 35.34-35.35, 35.37-35.38, 35.40-35.41, 35.43-35.44, 35.46-35.47, 35.49-35.50, 35.52-35.53, 35.55-35.56, 35.58-35.59, 35.61-35.62, 35.64-35.65, 35.67-35.68, 35.69-35.70, 3

Is upstream competition weak?

The central arguments of this submission take their cue from these two claims. The first assertion is an important one with which we disagree. There are of course critical benefits to consumers and to economies from having vigorous competition between producers of commodities, not least gas. Nevertheless judgements must still be made about both the degree of competition which is present and immediately threatened in the marketplace and the optimal policy responses to any shortfall in competition. As with many areas of competition



This submission argues that the enthusiasm to 'constrain' participants in joint

Table 1.1: Australian Gas Production Fields and Potential Developments



According to projections compiled by ABARE (2001), natural gas consumption is projected to continue to increase as a component of final energy

Esso/BHP Billiton is still the dominant producer, however it is expected that within the next five years there will be an additional six gas producers and the wholesale market will be fully developed.

Further:

Gas can be bought and sold from various sources in the system. Traders can buy and sell gas from other market participants and producers, through either commercial contracts or through the wholesale gas market (the "spot market").³



expected to create a more open and competitive market that, based on

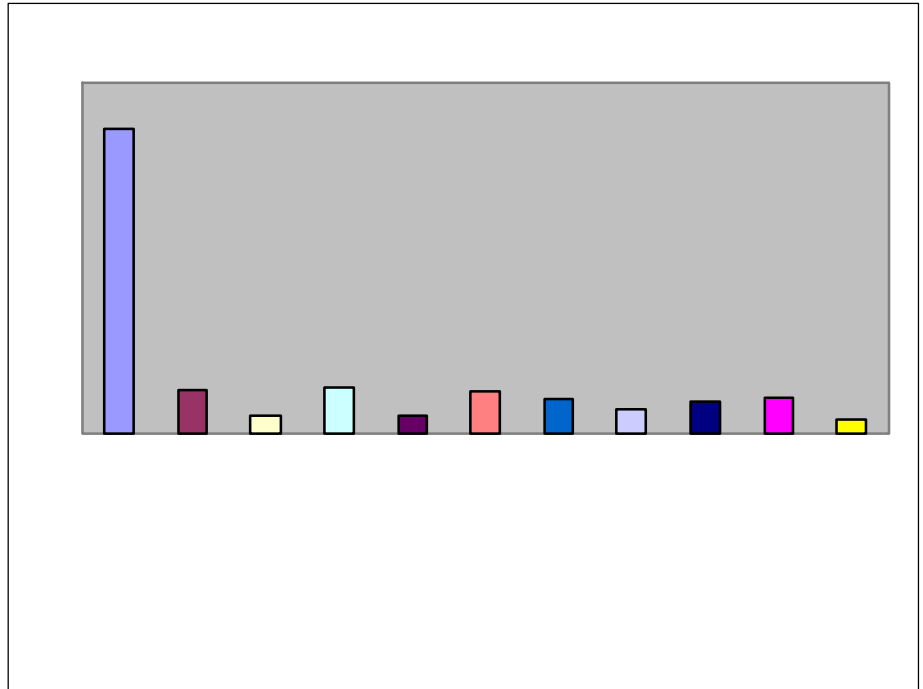
Producers include firms that explore for new gas resources and expand production from known reserves. The market for wellhead natural gas purchases is unregulated; that is, producers may negotiate prices and

- § Liberal balancing, borrowing and banking arrangements between JV co-venturers;
- § Low cost means of storing gas within the JV or outside it;
- §





Figure 2.4: Consumption of Natural Gas by Region, Industrialized Countries, 1999





institutional infrastructure necessary for liquid markets to develop, substantial



- § Geology – the proximity of gas production and potential gas production to consumption.⁹
- § Institutions – properly managed deregulation allows a market to develop
- § History – where it has been necessary to award large acreages to stimulate gas exploration and development, and/or where gas fields exhibit production interdependencies, gas fields may be unitised or otherwise jointly developed over a large area.

There is another sense in which history is crucial. Many of the institutions of liquidity have the characteristics of a *self-organising system*. There is a degree of circularity – or through time *cumulative causation* – in their establishment. Even in the most propitious of circumstances, a deep and liquid market will take time to develop as producers and consumers learn to trust the competitiveness and the predictability of the physical and institutional infrastructure which makes up the market in gas. And buyers and sellers will participate more in a spot market where the liquidity it offers provides a degree of security that can substitute for the security of long-term contracts.

As liquidity and size grows, so too does the attractiveness of the spot market pool to aggregators and other traders, insurers and those providing derivative



- The quality and mix of the raw hydrocarbons and other substances produced by the field; and
- The amount of gas available and the proportion expected to be recovered.

And the resource depletion of each field – and the fields within the JVP jointly – must be technically optimised. Wells must be depleted consistent with customer supply requirements.

The quality and mix of the raw hydrocarbons and other substances produced by the field; and the amount of gas available and the proportion expected to be recovered. And the resource depletion of each field – and the fields within the JVP jointly – must be technically optimised. Wells must be depleted consistent with customer supply requirements.



Figure 5.2: Average costs of gas from different fields

Unit Cost



the gas. We explain these features, firstly, with regard to the more normal 'expansion or depletion driven' wells, and then explain how they might differ in the case of 'water driven' wells such as those produced by the Gippsland Basin





Providing it is consistent with technically optimising depletion, this can be useful for the producer as it provides more consistent pressure to maintain lift for the gas. However, there are two difficulties with water driven fields. The first is the need to manage the presence of the water, which can add to cost. More critical from the perspective of the issue at hand is that total production from water driven fields is less predictable. The pressure of the gas is an important signal of gas volume but this is masked by water pressure in water driven wells. Because water pressure remains high for much longer, it is more difficult to



6 *The economics of depletable resources*

Any market power available to producers acting jointly is inherent in the exploration and production leases they collectively control. It is exercised when



returns are maximised by following Hotelling's rule – the resource will be exploited at a rate that allows the price to increase at the market rate of interest (equivalent to the scarcity rent). Because the monopolist maximises profit by focussing on marginal revenue, the monopolist will exploit the resource at a rate that permits marginal revenue to increase at the market rate of interest.

In respect of a competitive market structure, Conrad and Clark (1987; p. 121) observe that:

[T]he competitive industry initially exploits the resource at a higher rate, and also ultimately exhausts the resource more rapidly than the monopolist. This is not very surprising – the monopolist restricts production so as to maintain a higher price level.

They further note that:

In the simple model ... the competitive extraction path is also socially optimal (in the usual sense), and the monopolistic path is dynamically

exploration effort for new mineral deposits by reducing (increasing) the expected pay-off from discovering new deposits.

Conrad and Clark (pp.123-124) relax the assumption of zero extraction costs and demonstrate that, for a well behaved cost function, the competitive outcome shows that price net of marginal cost rises at the rate of interest. By



illusion. That is, the amount of the resource, R , remains the same and each unit holder has a claim to a proportion of the resource based on a collectively





Figure 7.1: The economics of separate marketing without price discrimination



NWSJV. Western Power was not prepared to allow its consultants to participate in the discussion with the applicants, nor in a private discussion with the Commission.

In summary, no-one has been able substantively to counter the applicant's proposal that separate marketing of gas by the NWSJV is not currently viable in WA. Given the substantial public benefits associated with the proposed expansion and the assurance of the applicants that the expansion will not proceed unless they are authorised to co-ordinate their marketing, Clause 1 of the proposed authorisation set out below authorises coordinated marketing by the Joint Venture parties.

Notwithstanding these observations and though it accepted the difficulty of separate marketing in insufficiently deep and liquid markets, the ACCC made the following comment in its Submission to the Gas Reform Implementation Group on Upstream Issues (1988b: 9).

Clearly, where possible, separate marketing is more competitive than joint marketing and is to be preferred. By creating price competition between as many suppliers of gas as possible, separate marketing

References

ABARE (1999), *Australian energy: Market developments and projections to 2014-15*



EIA (2000), *The U.S. natural*



$$p(0) = \frac{ae^{-rT}}{b} \quad (7)$$

and

$$() \quad (1 \quad e^{r(t/T)})$$



$$R = \frac{\partial \tilde{H}}{\partial \mathbf{m}(t)} = -q(t) \quad (16)$$

The expression P(·





pay a higher price for the gas. Thus, in the absence of the kind of competition between producers which is coming to characterise the South East Australian market, or any opportunity for firms receiving lower gas prices to on-sell to the higher price customers, price discrimination can occur.

A priori there is no way of deciding whether this price discrimination is more or less efficient than selling at a single price. On the one hand if this level of discrimination – or the expectation that it may be possible – were necessary to have funded the original investment then it will be strongly efficiency enhancing. On the other hand in practice price discrimination can never be perfect. Thus the higher price to the peak load power generator is likely to depress its output



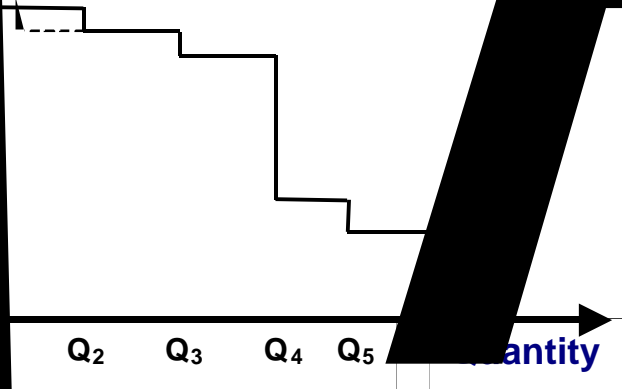
Projects become viable whenever sufficient consumers can be aggregated to share between them the fixed costs of the project – in addition to the variable costs that will be charged to all consumers. This could be the case where the demand curve lay everywhere below the average cost curve.



and ruling out game theoretic strategic interaction for the sake of the analysis, the higher prices would all converge to a single price. It would be the lowest



to maintain JV market power



Of course as the efficiency of price discrimination degrades, where the joint venture producers are kept further away from their ultimate customers, some buyers will receive a gas price which is a little lower than they would have achieved with more accurate price discrimination through joint marketing. On the other hand this inaccuracy will lead to other gas buyers being asked to pay more than they are prepared to pay. They will substitute away from gas, or not expand production in each case lowering economic efficiency and output.

Disclaimer

The material in this report reflects Lateral Economics' best judgement in the