



REPORT

MARCH 2014

Response to PAC Merit Review: Review of the Economic Analysis for Drayton South Open-cut Coal Mine

Report prepared for Coolmore Australia and Darley
Australia

Marsden Jacob Associates

Financial & Economic Consultants

ABN 66 663 324 657

ACN 072 233 204

Internet: <http://www.marsdenjacob.com.au>

E-mail: economists@marsdenjacob.com.au

Melbourne office:

Postal address: Level 3, 683 Burke Road, Camberwell

Victoria 3124 AUSTRALIA

Telephone: +61 3 9882 1600

Facsimile: +61 3 9882 1300

Brisbane office:

Level 14, 127 Creek Street, Brisbane

Queensland, 4000 AUSTRALIA

Telephone: +61 7 3229 7701

Facsimile: +61 7 3229 7944

Perth office:

Level 1, 220 St Georges Terrace, Perth

Western Australia, 6000 AUSTRALIA

Telephone: +61 8 9324 1785

Facsimile: +61 8 9322 7936

Sydney office:

119 Willoughby Rd, Crows Nest

NSW, 2065, AUSTRALIA

Telephone: +61 418 765 393

Authors: Rod Carr
Peter Jacob

This proposal has been prepared in accordance with the scope of services described in the contract or agreement between Marsden Jacob Associates Pty Ltd ACN 072 233 204 (Marsden Jacob) and the Client. Any findings, conclusions or recommendations only apply to the aforementioned circumstances and no greater reliance should be assumed or drawn by the Client. Furthermore, the proposal has been prepared solely for use by the Client and Marsden Jacob Associates accepts no responsibility for its use by other parties.

Copyright © Marsden Jacob Associates Pty Ltd 2014

TABLE OF CONTENTS

	Page
1. Summary Findings	4
1.1 Coolmore Australia and Darley Australia's business model	4
1.2 The Anglo American 'Justification' fails to address fundamental issues with the economic analysis that underpin the reported present values outcomes.	6
2. Introduction	10
2.1 Background to the review	10
2.2 Drayton South coal mine	10
2.3 The NSW Government already recognises the importance of the equine critical industry cluster ..	11
3. Review Findings	13
3.1 Business Model.....	13
3.2 Cost-Benefit Analysis.....	20

LIST OF TABLES

	Page
Table 1: Australian Stud Book data on Coolmore and Darley, 2011	15
Table 2: Top Ten Sires (2011-12 season)	15
Table 3: Thermal Coal Prices (Gillespie Economics)	23
Table 4: CBA scenarios	24
Table 5: Summary Results	25

LIST OF FIGURES

	Page
Figure 1: Coolmore and Darley in relation to Drayton South.....	11
Figure 2: Stallion Standing Fees (2011)	14
Figure 3: The Hunter Valley Thoroughbred Breeding Industry	17
Figure 4: World Bank price projections.....	21
Figure 5: Indexmundi Prices.....	22

1. Summary Findings

Marsden Jacob Associates (Marsden Jacob) has prepared this report in response to a request from Coolmore Australia and Darley Australia to review the Response to PAC Merit Review documentation on the NSW Government's Department of Planning and Infrastructure website. Two new documents have been reviewed:

- Anglo American (February 2014) Drayton South Coal Project – Justification; and
- NSW Trade and Investment (February 2014) Drayton South Coal Project – PAC Review and Gateway Panel Advice.

Marsden Jacob's review finds that the Anglo American 'Justification' report:

- demonstrates their fundamental lack of understanding of the Coolmore Australia and Darley Australia business models; and
- again fails to address fundamental issues with the economic analysis that underpins the reported present values outcomes.

The key findings from the review are discussed below.

1.1 Coolmore Australia and Darley Australia's business model

Key Finding 1: Coolmore and Darley – Australia's largest thoroughbred breeders in scale and market share.

Coolmore Australia and Darley Australia are the largest international scale thoroughbred studs in Australia (in both physical scale and market share). For example, Coolmore and Darley operations in the Hunter Valley have 40% of the Australian stallion market.

These two studs alone constitute the epicentre of Australia's and NSW's thoroughbred breeding industry and any impacts on their business operations will impact all other related and support services. A fact that is confirmed by NSW Department of Trading and Investment (2014): *"the Coolmore and Woodlands (Darley) thoroughbred stud enterprises are pivotal (core businesses) to the sustainability of the Upper Hunter Equine Critical Industry Cluster and should be protected."*

Key Finding 2: Coolmore and Darley's business model depends on their image, client perception, visual presentation and reputation

Image, client perception, visual presentation and reputation are all critical components in a premium equine stud's business model. This is consistent with international best practice and will be seen worldwide in both Coolmore and Darley, and other leading studs in Kentucky and Newmarket (see M Wright 2014).

Coolmore Australia and Darley Australia provides services to and compete in a highly competitive environment for investment catering to a broad spectrum of clients, including syndicates of everyday investors, high net worth investors and racing enthusiasts who are highly mobile in their market choices.

These clients choose to have their mares serviced by the stallions that stand at Coolmore Australia and Darley Australia because of their credentials for breeding successful elite athletes,

in line with world's best practice business models and in a proven environment for producing and rearing world class thoroughbreds.

To attract and retain their clients, Coolmore Australia and Darley Australia have invested millions of dollars into their bloodstock and properties to ensure they present as world class facilities to both existing and new clients.

Coolmore Australia and Darley Australia have publically stated that the development of the new coal mine *"will materially and adversely impact the productivity and investment attractiveness of the Hunter Valley studs located within 1km of this project, and the entire thoroughbred breeding and support industries concentrated in the Hunter Valley"* (page 4)¹.

If the Drayton South mine is approved it will adversely impact on the returns from their bloodstock. The mine will force Coolmore Australia and Darley Australia to consider all options, including moving interstate or overseas, to maintain the value of their bloodstock, businesses and reputation.

Key Finding 3: If Coolmore Australia and Darley Australia leave the Hunter Valley they will take their market with them and impact on the Critical Industry Cluster will be pronounced

If Coolmore Australia and Darley Australia are forced to move from NSW to Victoria they will not leave a void in the market that can be filled by other *"critical actors"*, as is argued by Dr Kannegeiter. They will take their clients and bloodstock with them and *"this would significantly impact on the equine industry in the Hunter Valley and its supporting industries"* (NSW Trade and Investment 2014).

Dr Kannegeiter reinforces this point when he states that: *"They (owners) will send a mare to a stallion anywhere in Australia if they consider him the most suitable mating for that mare"*. (page 6).

Anglo American and Dr Kannegeiter's comparison to Patinack demonstrates a clear lack of appreciation of the market impacts that would result from Coolmore Australia and Darley Australia leaving the Hunter Valley and taking their clients with them, because:

- Patinack cannot be likened to Coolmore Australia and Darley Australia in terms of global reputation, bloodstock value and role in the critical industry cluster. In 2011, Patinack's stallion fees were \$4.7 million (3% of the Hunter Valley), whereas the stallion fees earned by Coolmore Australia and Darley Australia were \$100 million (54% of the Hunter Valley)²; and
- Patinack Farm horse stud and racing operations were put on the market because the coal entrepreneur (Nathan Tinkler) had to liquidate assets. This left a gap in the market as Patinack's clients had to find a new stallion service provider.

Key Finding 4: Coolmore Australia and Darley Australia could not provide full assurances to their clients.

Dr Kannegeiter believes that: *"Owner's perceptions will not be affected by the presence of the mine provided the studs can give full assurance that the mine will not have any adverse impact on the health of the mare or any progeny born or raised on the stud"*. (page 7)

¹ Darley Australia (2013) Submission, majorprojects.affinitylive.com/public/153bdb3e266a901d092ec3db215718ad/Drayton%20South%20-%20Darley%20Submission.pdf, accessed 16 March 2014

² Australian Stud Book, 2011

Coolmore Australia and Darley Australia are producing elite athletes that compete on a global stage. Coolmore Australia and Darley Australia could never give full assurance to their clients, because:

- their own independent expert advisors has identified a number of risks from the project; and
- such an assurance would probably have legal implications, which if proven otherwise by a client could result in them incurring a significant financial cost.

We also note that Dr Kannegeiter's argument reflects a reverse burden of proof, where the onus is being inappropriately placed on the stallion studs.

1.2 The Anglo American 'Justification' fails to address fundamental issues with the economic analysis that underpin the reported present values outcomes.

The Anglo American 'Justification' report fails to address fundamental issues with the economic analysis that have been exposed in previous reviews. The key issues are discussed below.

Key Finding 5: Gillespie Economics' assessment is fundamentally deficient and misleading

Our modelling shows that the Gillespie Economics assessment undertaken for Anglo-American's proposed Drayton South open cut coal mine over-estimates the benefit and under-estimates the cost impacts of the proposed Drayton South coal mine. We consider that the Gillespie economic assessment is deficient as the analysis:

- uses unjustified, unrealistic and artificially elevated coal prices;
- uses an implausible coal price sensitivity test scenario;
- overstates the benefits by including benefits that have no relevance to this project case (non-market employment benefits). Marsden Jacob Associates finds no evidence in any of the reports developed by Anglo American and its consultants that justifies the inclusion of non-market employment benefits in the economic analysis for this project;
- fails to address the Director General's requirements by assuming that open-cut coal mining and thoroughbred breeding studs are compatible operations and thus falsely assumes that Coolmore Australia and Darley Australia will not be impacted; and
- does not comply with Government guidelines by presenting an analysis period of only 33 years. The impacts from the coal mine will be experienced for more than 50 years so the analysis period should reflect this longer timeframe.

While our assessment focuses on these key deficiencies, it must be noted that other potential deficiencies (including the valuation of visual amenity, water quality, air quality, health, transport and water management impacts) could further increase the net economic loss to the NSW economy.

Key Finding 6: Thermal coal price average of \$118 per mt is unrealistically high and artificially elevates the economic benefits of the Drayton South Project

Anglo American's assumed thermal coal price path is yet to be transparently reported or justified:

- Gillespie Economics report (2012) states that the assumed thermal coal price is an “average \$118 per metric tonne”.
- Supplementary Submission (2013) by Anglo American stated: “The price of thermal coal from the Project is assumed to ramp up from Australia Dollars (AUD) \$107/t in 2015 to AUD\$120 in 2022 and then remain constant over time.”

Marsden Jacob Associates recognises that thermal coal is a heterogeneous commodity sold in an international market that can have different quality specifications and these quality specifications can affect its market value. We note that Gillespie Economics in their analysis has relied on thermal coal price information provided by Anglo American. We query the figure that has been used as all international forecasts indicate that thermal coal prices are declining and well below the values used in the analysis.

Because the economic assessment of the proposed Drayton South coal mine is highly sensitive to Anglo American’s assumed thermal coal price path (see Section 2.1.2), it is critical that Anglo American transparently justify why an elevated and escalating price for thermal coal is realistic. This is particularly important because Anglo American’s assumed thermal coal price is far higher than all of the international forecasts and is well above recent market prices reported by IndexMundi and Anglo American.

Key Finding 7: The Drayton South mine never reaches break-even point at coal price of \$90/mt

Our economic modelling reveals that the proposed mine never reaches an economic break-even point when a coal price of \$90 per mt is used. This result demonstrates that the mine is not economically beneficial, even before the impacts on Coolmore and Australia are considered.

The Drayton South Coal Project reporting claims that “the results of the BCA are not sensitive to reasonable changes in assumptions regarding the value of coal. A significant and sustained reduction in coal prices (48%) would be required to make the Project inefficient.”

Our modelling shows that this is a very misleading and implausible sensitivity test. Using the assumptions, and present value cost and benefit results detailed in the Gillespie Economics report our modelling finds that a 24% reduction in coal price (from \$118 to \$90 per mt) results in the project delivering a net economic loss of \$89m – before any impacts on Coolmore and Darley are taken into account.

Why are the results more sensitive? Marsden Jacob’s modelling is more sensitive because we have appropriately excluded \$298 million in non-market employment benefits from the analysis, see Section 3.2.3.

Key Finding 8: The Drayton South mine results in net economic loss of between \$153m - \$457m to NSW when impacts on the studs are taken into account

Our modelling of the Drayton South coal mine project reveals that if it were developed it could result in a net economic loss to the NSW economy of between \$153 m and \$457 m (in net present value terms) when the impacts to the thoroughbred breeding studs are taken into account.

Key Finding 9: Non-market employment benefits must be excluded from the cost-benefit analysis

Marsden Jacob recommends that non-market unemployment benefits be excluded from the cost-benefit analysis. The Gillespie Economics report (2012) states that: “There may also be some

non-market benefits of employment provided by the Project which are estimated to be in the order of \$298M” (page 3).

Economic theory and empirical evidence states that non-market employment benefits should only be included in cost-benefit analysis if labour resources used in the project would otherwise be unemployed. Marsden Jacob Associates finds no evidence in any of the reports developed by Anglo American and its consultants that justifies the inclusion of non-market employment benefits in the economic analysis for this project.

Key Finding 9: Drayton South mine will place 640 jobs risk; strip \$120m per annum from the local economy and fragment the Hunter Valley’s equine critical cluster

Our economic analysis reveals that if the mine was to proceed and Coolmore and Darley were forced to leave the Hunter Valley this would:

- put 640 sustainable jobs at risk in the Hunter Valley;
- strip over \$120 million per annum in gross regional production from the local economy;
- fragment the Hunter Valley’s equine critical cluster;
- destabilise the concentration of interconnected broodmare farms and equine support industries; and
- negatively impact NSW’s world famous breeding and racing reputation.

There is a very real risk that if the Hunter Valley were to lose the top of the thoroughbred breeding industry (Coolmore and Darley) there would be material and irreversible repercussions that would be felt throughout the NSW thoroughbred breeding, racing and service industries.

Key Finding 10: Support Industries depend on Thoroughbred Breeders

Stakeholder interviews conducted by Marsden Jacob confirmed the importance of the thoroughbred industry to their economic viability. Support industries including veterinary, electrical, timber, transport, capital equipment, hospitality and construction all confirmed:

- they do not provide services to the minerals industry;
- they are increasingly dependent on the thoroughbred breeding industry, because other agricultural sectors are contracting;
- Hunter Valley thoroughbred breeders were either their first or second most important client; and
- if Coolmore or Darley were to move the impacts on the Hunter Valley economy would be large. A number of those interviewed noted that the economic impact of the Equine Influenza outbreak would be small compared to Coolmore and Darley leaving the Hunter Valley.

Key Finding 11: Economic Diversification is critical to regional economic strength

A contraction in the size of the thoroughbred industry represents a critical risk to the residents and businesses in the Upper Hunter Valley as it will reduce the economic diversity. Recent analysis by the Regional Australia Institute highlights the critical importance of economic diversification in regional economies. This analysis concludes that without economic diversification regional economies are highly vulnerable to shocks that are outside their control.

Key Finding 12: Failure to comply with Director General's Requirements

The Gillespie Economics assessment fails to meet the Director General's requirements because it does not pay "*particular attention to the thoroughbred breeding industry*" and it does not consider "*the costs and benefits of the project as a whole and whether it would result in a net benefit for the NSW community.*"

The analysis therefore appear to be biased in favour of the proposed mine development. Illustrating this, no impacts are factored into the Gillespie Economics cost-benefit analysis. This is despite Coolmore Australia and Darley Australia (Australia's premier thoroughbred studs):

- having publically stated that if the coal mine is constructed then they may be forced to relocate away from the Hunter Valley.
- being located across the Golden Highway and within close proximity to the proposed Drayton South Mine development:
- being market leaders in both the Hunter and Australian thoroughbred breeding industry;
- owning high value land and bloodstock assets;
- being employment intensive businesses that have close links to the regional; and
- being important and sustainable contributors to the regional economy.

2. Introduction

2.1 Background to the review

Marsden Jacob Associates (Marsden Jacob) has prepared the following report in response to a request from Coolmore Australia and Darley Australia to review the Response to PAC Merit Review documentation on the NSW Government's Department of Planning and Infrastructure website. Two documents have been reviewed:

- Anglo American (February 2014) Drayton South Coal Project – Justification; and
- NSW Trade and Investment (February 2014) Drayton South Coal Project – PAC Review and Gateway Panel Advice.

Marsden Jacob's review has also been informed by:

- Anglo American (2012) Drayton South Coal Project – Environmental Assessment;
- Marsden Jacob (2013) Economic impact of the proposed Drayton South Open-cut Coal Mine development on the Hunter Valley Thoroughbred Industry; and
- Anglo American (2013) Supplementary submission from Anglo American in relation to the Drayton South Project.

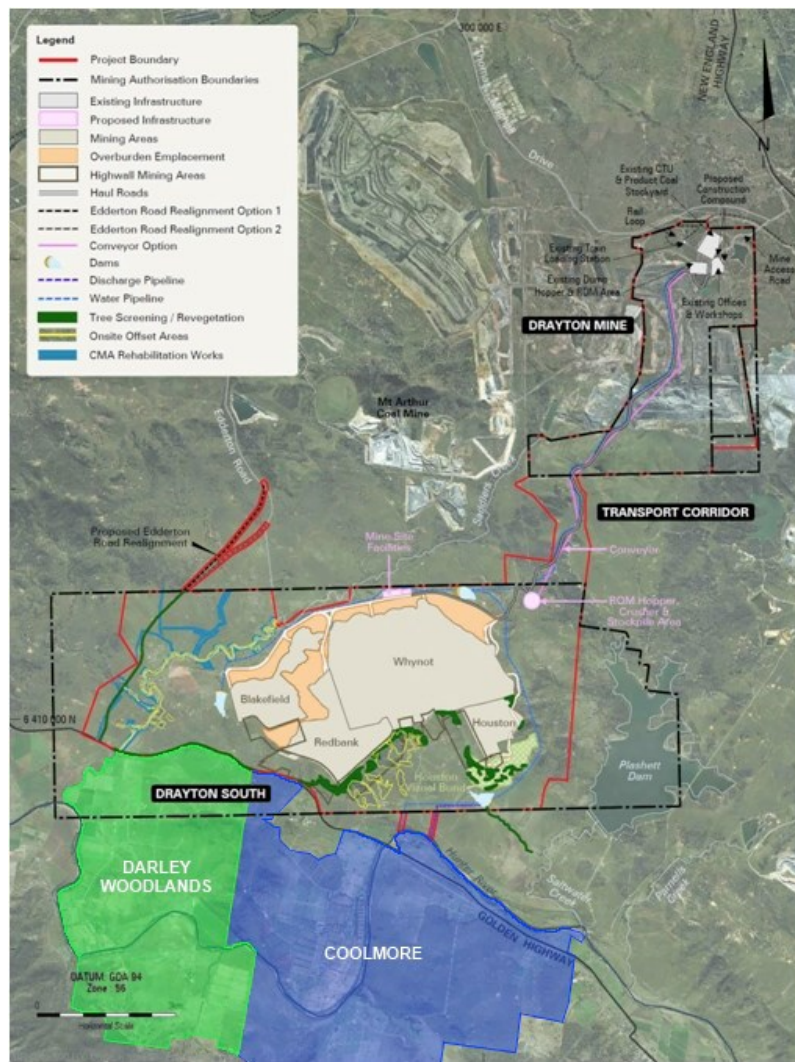
2.2 Drayton South coal mine

Anglo American is the proponent seeking development approval for the Drayton South coal mine. The Drayton South coal mine involves the development of a new open-cut and highwall mining operation in a new location for a period of 27 years.

The project is directly across the road from two top-end stallion and racing farms owned and operated by Darley Australia (Woodlands) and Coolmore Australia (see Figure 1) and report by Michael Wright.

The Drayton South Mine is a new mine, but it is being promoted as an extension of the Drayton North Mine. The Drayton North Mine is managed by Anglo Coal (Drayton Management) Pty Ltd which is owned by Anglo American.

Figure 1: Coolmore and Darley in relation to Drayton South



Source: Hunter Thoroughbred Breeders Association

2.3 The NSW Government already recognises the importance of the equine critical industry cluster

The NSW Government's Strategic Regional Land Use Plan: Upper Hunter (2012) states "*The national and international significance of the Upper Hunter's wine and thoroughbred industries has also been recognised, with large areas of the region also identified for heightened protection.*"

(Premier O'Farrell Foreword) identifies that the Upper Hunter economy is: "*currently underpinned by the main industries of coal mining, agriculture (particularly dairy and beef cattle and pasture production) and associated service industries, horse breeding, electricity production, tourism, viticulture and wine making.*" (p12).³

The thoroughbred industry is recognised as a critical industry cluster in the NSW Government's Strategic Regional Land Use Plan: Upper Hunter (2012), which notes that:

³ Upper Hunter Strategic Land Use Plan, www.nsw.gov.au/sites/default/files/uploads/common/UpperHunterSLUP_SD_v01.pdf, accessed 21 June 2013

“The horse breeding cluster includes a highly integrated concentration of horse breeding facilities and related infrastructure covering thoroughbred and stock horse breeding centres and numerous other equine developments and support services, such as a specialised veterinary centre 5. In 2009 - 2010 the region provided 80 to 90 per cent of the total value of stud horses exported by Australia. It is also the headquarters for the NSW Stockhorse Society.

The attraction for equine interests to the region lies in its combination of a temperate climate, protected aspect and varied terrain combined with a lack of tropical diseases and accessibility to Sydney. The breeders are supported by the aggregation of equine industry infrastructure and good transport routes.” (page 22)

On 28 January 2014, Deputy Premier Andrew Stoner MP and Minister Brad Hazzard MP⁴ confirmed the importance of protecting the Upper Hunter equine Critical Industry Cluster when they announced that:

“The Hunter’s wine and horse-breeding industries have been confirmed as Critical Industry Clusters and will now be off-limits to CSG activity.”

“The expanded safeguards for horse-breeders and wineries, and residential areas, are in addition to the recognition already given to 210,000 hectares of strategic agricultural land in the Upper Hunter”.⁵

⁴ Andrew Stoner MP is the Deputy Premier of NSW, Minister for Planning & Minister for Trade and Investment Infrastructure. Brad Hazzard MP is the Minister for Regional Infrastructure and Services

⁵ [Horse and wine industries declared a CSG-free zone](#), accessed 16 March 2014

3. Review Findings

Marsden Jacob's review finds that the Anglo American 'Justification' report:

- demonstrates their fundamental lack of understanding of the Coolmore Australia and Darley Australia business model; and
- again fails to address fundamental issues with the economic analysis that underpins the reported present values outcomes.

These finding only reinforce our earlier conclusions about the deficiencies with the current analysis. These issues are discussed below.

3.1 Business Model

Hunter Valley thoroughbred operations are a critical part of a vertically integrated and interdependent regional and national industry whose reputation is internationally acclaimed. The regional industry includes stallion farms, broodmare farms and a sophisticated network of support and supply industries that would not be in the region but for the stallion farms. The industry employs over 1,000 people directly and thousands of people indirectly in the Hunter Valley and is a critical contributor to the many thousands of people and participants in NSW and Australia's thoroughbred breeding and racing industry.

The thoroughbred industry is a critical source of employment and economic diversification in the Hunter Valley. Recent analysis by the Regional Australia Institute highlights the critical importance of economic diversification in regional economies: *"Economic diversification plays an important role in providing resilience and flexibility for regional Australia's economies. Without this cushion, regional economies may suffer disproportionately during adverse external shocks, with exacerbated negative effects on employment security, income and living standards."* (page 3)⁶

A wide range and large number of local businesses depend on the thoroughbred industry, including feed merchants, saddlers, farriers, horse transportation, vets (and the Scone Equine Hospital) and tourism.

A recent survey by Ernst & Young (2009) found that thoroughbred industry income was \$298 million. This is nearly double the gross value of irrigated agricultural production for the Hunter-Central Rivers region of \$155 million (excluding the thoroughbred industry), based on ABS data. The next biggest sectors are dairy (\$65 million), meat cattle (\$30 million) and hay (\$7 million).

3.1.1 Coolmore Australia and Darley Australia: the biggest thoroughbred studs in Australia

The Anglo American analysis fails to recognise the importance of Coolmore Australia and Darley Australian in the Hunter Valley equine Critical Industry Cluster.

⁶ www.regionalaustralia.org.au/wp-content/uploads/2013/07/Diversification-Policy-Paper-RB_V2.pdf, accessed 10 March 2014

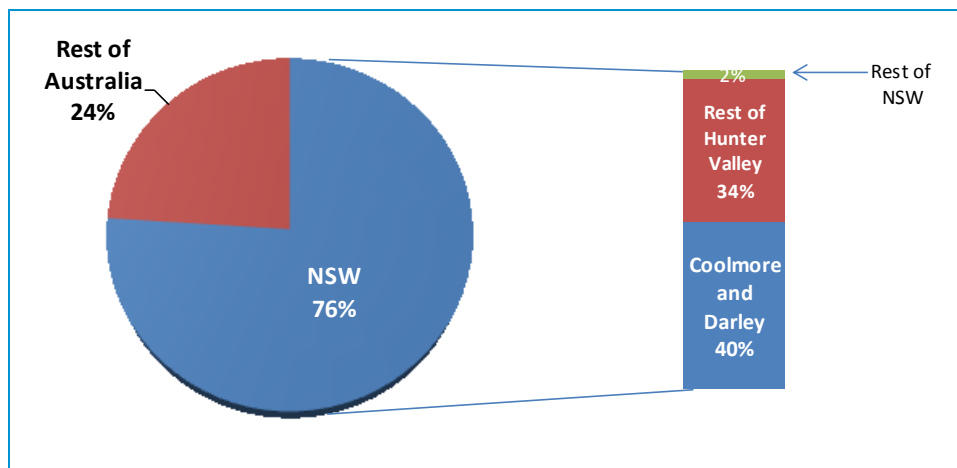
Coolmore Australia and Darley Australia are:

- market leaders in both the Hunter and Australian thoroughbred breeding industry;
- owners of high value land and bloodstock assets. For instance, in May 2008 Darley Australia purchased Woodlands for nearly \$500 million; and over \$1 billion of bloodstock assets reside in the Hunter Valley during the breeding season (August to December) ;
- employment intensive businesses that have close links to the regional economy;
- important and sustainable contributors to the regional economy; and
- an important source of economic diversification in the Hunter Valley.

Coolmore Australia and Darley Australia are the largest international scale thoroughbred studs in Australia (see Figure 2). As Michael Ford, Keeper Australian Stud Book, recently stated:

“The stand-out fact is that Coolmore and Darley produce 40% of the estimated income earned in Australia, while the Hunter Valley produces 74% leaving only 2% for the rest of New South Wales, and 24% for all the other states” (27 March 2013).

Figure 2: Stallion Standing Fees⁷ (2011)



Source: Australian Stud Book, 2011

Coolmore Australia and Darley Australia are premium stallion farms. Their average service fees are over \$40,000, nearly double the average for the Hunter Valley (\$23,413), more than treble the NSW average (\$11,507) and nearly 700% higher than the national average (\$6,110).

⁷ Stallion standing fees are paid by a mare owner to a stallion owner for the right to breed to it. Stallion standing fees are a key source of income for stallion farms. Other income sources include yearling sales and agistment of pregnant mares.

Table 1: Australian Stud Book data on Coolmore and Darley, 2011

	Coolmore & Darley	% of Hunter Valley	% of NSW
Stallions covering mares	30	28.8%	12.6%
Mares covered	3,419	40.1%	32.7%
Live foals	2,249	40.4%	33.7%
Average service fee	\$40,828	-	-
Estimated income from service fees	\$99.6M	53.8%	52.5%

Source: Australian Stud Book 2011

At the 2013 Inglis Easter Yearling Sales, Coolmore and Darley stallions had sired just over 40% of the yearlings catalogue. Of the total 569 yearlings catalogued:

- 119 yearlings (or 20.9%) were sired by Coolmore stallions; and
- 112 yearlings (or 19.7%) were sired by Darley stallions.⁸

Coolmore Australia and Darley Australia's market dominance has resulted from the success of their leading stallions and the presentation of the properties. In 2011-12 of the top 10 ranked sires in Australia 5 (or 50%) were Coolmore and Darley sires between them producing 548 winners and 57 Stakes and Group1 winners with earnings of \$41.6 million (see Table 2).

At the top of Coolmore's stallion roster are Fastnet Rock, Encosta De Lago and High Chapparral. In 2011-12, Fastnet Rock was Australia's leading sire (see Table 2). At the top of Darley's stallion roster are Lonhro, Street Cry and Exceed and Excel. Exceed and Excel has recently been awarded top sire for the 2012-13 season⁹ and in 2011-12, Lonhro was Australia's second placed sire (see Table 2).

Table 2: Top Ten Sires (2011-12 season)

Rank	Stallion	Runners	Winners	Stakes Winners	Group 1 Winners	Earnings	Stud
1	Fastnet Rock	273	130	16	4	\$12,683,189	Coolmore
2	Lonhro	273	129	8	1	\$9,391,368	Darley
3	Redoute's Choice	267	131	12	1	\$8,648,647	
4	More Than Ready	238	99	9	2	\$7,841,145	
5	Commands	289	137	10	0	\$7,197,975	Darley
6	Bel Esprit	285	127	2	1	\$6,575,510	
7	Encosta De Lago	297	131	10	0	\$6,227,297	Coolmore
8	Exceed and Excel	257	121	7	1	\$6,156,460	Darley
9	Snitzel	119	65	6	1	\$5,792,904	
10	Testa Rossa	274	122	7	1	\$5,457,320	

Source: Stallions¹⁰

⁸ Inglis Easter Sales Catalogue 2013

⁹ Exceed And Excel crowned Champion, www.stallions.com.au/news/2013/08/exceed-and-excel-crowned-champion-stallion/, accessed 20 September 2013

¹⁰ Stallions, www.stallions.com.au/statistics/sirelists/index_2012.php, accessed 17 May 2013

If Coolmore Australia and Darley Australia were to leave the Hunter Valley and move to Victoria – a likely scenario which has been modelled in our cost-benefit analysis (see Section 3.2) – it would have a massive impact on the thoroughbred breeding industry and related industries, both within the Hunter Valley and NSW.

3.1.2 Coolmore Australia and Darley Australia: Business Model

Image, client perception, visual presentation and reputation are all critical components in a premium equine stud's business model. This is consistent with international best practice and will be seen worldwide in both Coolmore and Darley and other leading studs in Kentucky and Newmarket¹¹.

Coolmore Australia and Darley Australia provide services to and operate in a highly competitive environment for investment catering to a broad spectrum of clients, including syndicates of everyday investors, high net worth investors and racing enthusiasts, all of whom are highly mobile in their market choices.

These clients choose to have their mares serviced by the stallions that stand at Coolmore Australia and Darley Australia because of their credentials for breeding successful elite athletes, in line with world's best practice business models and in a proven environment for producing and rearing world class thoroughbreds. Based on these attributes, clients hope to invest in and breed successful race horses.

To attract and retain their clients, Coolmore Australia and Darley Australia have invested millions of dollars into their bloodstock and properties to ensure they present as world class facilities to both existing and new clients.

Coolmore Australia and Darley Australia have publically stated that the development of the new coal mine *"will materially and adversely impact the productivity and investment attractiveness of the Hunter Valley studs located within 1km of this project, and the entire thoroughbred breeding and support industries concentrated in the Hunter Valley"* (page 4)¹².

If the Drayton South mine is developed it will adversely impact on the returns from their bloodstock. This will force Coolmore Australia and Darley Australia to consider all options, including moving interstate or overseas, to maintain the value of their bloodstock, businesses and reputation.

3.1.3 Anglo American, Dr Kannegeiter and Gillespie Economics: Do not understand Coolmore Australia and Darley Australia's business model

Anglo American, Dr Kannegeiter and Gillespie Economics do not understand Coolmore Australia and Darley Australia's business model.

Dr Kannegeiter argues that:

- *"Owner's perceptions will not be affected by the presence of the mine provided the studs can give full assurance that the mine will not have any adverse impact on the health of the mare or any progeny born or raised on the stud"*. (page 7)

¹¹ See analysis by Michael Wright (2014)

¹² Darley Australia (2013) Submission, majorprojects.affinitylive.com/public/153bdb3e266a901d092ec3db215718ad/Drayton%20South%20-%20Darley%20Submission.pdf, accessed 16 March 2014

- *“Darley and Coolmore have established significant infrastructure on their properties, which would require significant cost to establish a new location” (page 19).*
- *“If the studs were to relocate it is most likely to be elsewhere in the Hunter Valley, which would also not negatively affect the CIC” (page 8).*
- *If the studs “were to leave the Hunter Valley, it is very likely that other “critical actors” would fill the void left” (page 8). “The loss of Patinack Farm from the equine CIC did not have a significant impact on the equine industry in the Hunter Valley. The horses owned by Patinack Farm were acquired by other studs, so the “gap” left by the loss of Patinack Farm was rapidly filled by other studs” (page 11, Appendix A).*

Gillespie Economics argues that:

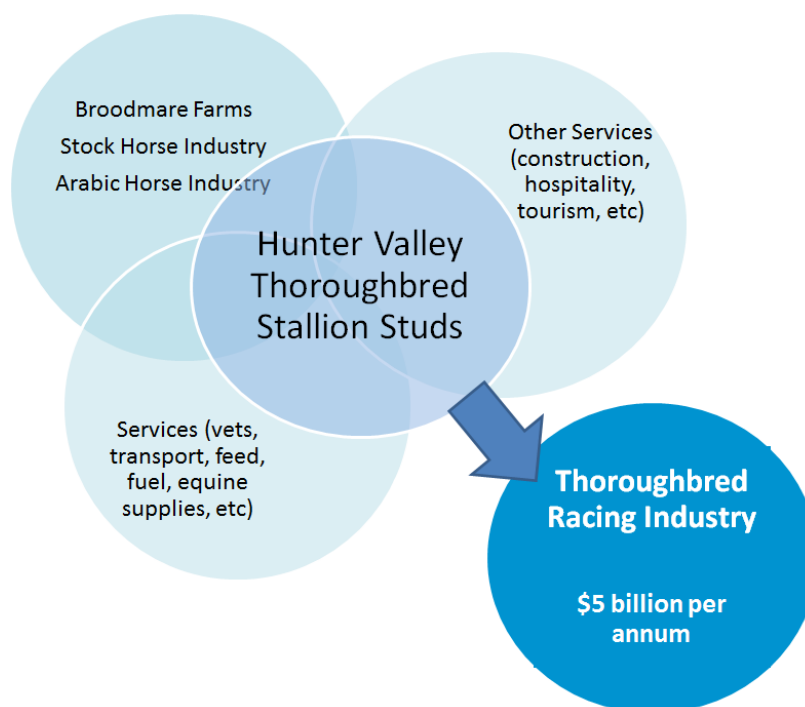
- *“one of the key barriers to the relocation of Coolmore and Darley is the level of physical infrastructure that has been sunk into the property” (page 3); and*
- *“the Brand of Coolmore and Darley is largely around the racing credentials of the stallions and brood mares it uses and the progeny that has been produced” (page 3).*

Coolmore Australia and Darley Australia’s bloodstock value needs to be maintained

These statements by Dr Kannegeiter and Gillespie Economics demonstrate their fundamental misunderstanding of Coolmore Australia and Darley Australia’s business model and the market forces that led to the formation of the Critical Industry Cluster.

First, the Critical Industry Cluster did not start with broodmares and support industries, it started with stallions. The market follows the stallions and not the other way around (see Figure 3).

Figure 3: The Hunter Valley Thoroughbred Breeding Industry



Source: Marsden Jacob analysis

Second, the relative value of Coolmore and Darley’s bloodstock (hundreds of millions of dollars) is far greater than the value of their properties. Consequently if the value of their

bloodstock is impacted, they may be forced to relocate as earnings from stallion fees are fundamental to their business viability.

Third, Dr Kannegieter boldly assumes that there is a ready stock of comparable land in the Hunter Valley just waiting for Coolmore Australia and Darley Australia to relocate: *“if the studs were to relocate it is most likely to be elsewhere in the Hunter Valley, which would also not negatively affect the CIC”* (page 8). However, Dr Kannegieter presents no credible and market-based evidence that there is comparable land that is not subject to mining encroachment within the Hunter Valley.

The reality is that the expanding mining footprint means that there is no investment certainty for landholders. Confirming the untenable nature of the proposed Drayton South Coal Mine, Coolmore Australia’s chairman Ken Barry recently stated *“As far as we are concerned we have reached the end of the road as far as open-cut mines moving closer to stud farms.”*¹³

Coolmore Australia and Darley Australia will take their market with them

If Coolmore Australia and Darley Australia are forced to move from NSW to Victoria they will not leave a void in the market that can be filled by other *“critical actors”*, as is argued by Dr Kannegieter. They will take their clients and bloodstock with them which will have a devastating impact on the equine Critical Industry Cluster.

Coolmore Australia and Darley Australia will retain their bloodstock and take their market with them, because the cost of transporting a mare (estimated at around \$1,500 per mare based on discussions with transport operators) is considerably less than the service fees which range from tens to over a hundred thousand dollars. In fact, both operations have advised that a number of their clients already transport their mares over considerable distances to be serviced by their stallions.

The comparison to Patinack demonstrates a clear lack of appreciation of the market impacts that would result from Coolmore Australia and Darley Australia leaving the Hunter Valley and taking their market with them, because:

- Patinack cannot be likened to Coolmore Australia and Darley Australia in terms of global reputation, bloodstock value and role in the critical industry cluster. In 2011, Patinack’s stallion fees were \$4.7 million (3% of the Hunter Valley), whereas the stallion fees earned by Coolmore Australia and Darley Australia were \$100 million (54% of the Hunter Valley)¹⁴; and
- Patinack Farm horse stud and racing operations were put on the market because the coal entrepreneur (Nathan Tinkler) had to liquidate assets. This left a gap in the market as Patinack’s clients had to find a new stallion service provider.

Coolmore Australia and Darley Australia could never provide full assurances to their clients.

Dr Kannegieter believes that: *“Owner’s perceptions will not be affected by the presence of the mine provided the studs can give full assurance that the mine will not have any adverse impact on the health of the mare or any progeny born or raised on the stud”*. (page 7)

¹³ Horse breeders may walk if mine approved, www.theherald.com.au/story/1832937/horse-breeders-may-walk-if-mine-approved/?cs=305, accessed 16 March 2014

¹⁴ Australian Stud Book, 2011

This suggestion by Dr Kannegeiter demonstrates a complete lack of commercial reality. Coolmore Australia and Darley Australia could not give full assurance to their clients, because:

- their own independent expert advisors has identified a number of risks from the project; and
- such an assurance would probably have legal implications, which if proven otherwise by a client could result in a significant financial cost.

Testament to the fact that Coolmore Australia and Darley Australia believe that “*open-cut coal mining and a viable international-scale thoroughbred breeding enterprise are incompatible land-use*” is the fact that they are confident based on the advice of their experts that the mine will irreparably damage their business model. Coolmore Australia and Darley Australia’s expert advisors have identified:

- serious deficiencies in the air quality analysis;
- unacceptably high visual risks which will irreversibly alter the Hunter Valley landscape and topography. The visual impact of this proposed mine will be evident for over two decades; and
- that the horse health assertions are incorrect or have little relevance to the majority of horses in the Hunter Valley region.

Finally, it is our understanding that the burden of proof lies with Anglo American, not with Coolmore Australia and Darley Australia. Whereas, Dr Kannegeiter appears to be arguing that a reverse onus of proof should be applied, despite the fact that Coolmore Australia and Darley Australia’s independent experts have identified very real and high risks associated with the proposed mine.

3.2 Cost-Benefit Analysis

Based on the available information, we find that the economic assessment undertaken for Anglo-American's proposed Drayton South coal mine over-states the benefits and under-estimates the cost impacts of the proposed mine. In particular, our review identifies that the following critical issues with the Drayton South cost-benefit analysis remain unaddressed:

- unrealistic and unjustified thermal coal prices and price path;
- the results are much more price sensitive than is reported;
- inappropriate inclusion of non-market benefits; and
- the analysis fails to assess the impacts on the NSW economy associated with Coolmore Australia and Darley Australia moving their operations to other locations outside of NSW or overseas, despite public statements to this effect.

Consequently, the analysis continues to fail the Director General's requirements. These issues are discussed below.

3.2.1 Thermal coal prices are falling not increasing

Marsden Jacob Associates recognises that thermal coal is a heterogeneous commodity sold in an international market that can have different quality specifications and these quality specifications can affect its market value. We note that Gillespie Economics in their analysis has relied on thermal coal price information provided by Anglo American. We query the figure that has been used as all international forecasts indicate that thermal coal prices are declining and well below the values used in the analysis.

Because the economic assessment of the proposed Drayton South coal mine is highly sensitive to Anglo American's assumed thermal coal price path (see Section 2.1.2), it is critical that Anglo American transparently justify why an elevated and escalating price for thermal coal is realistic. This is particularly important because Anglo American's assumed thermal coal price is far higher than all of the international forecasts (discussed below) and is well above recent market prices reported by IndexMundi and Anglo American.

Anglo American's assumed thermal coal price path is yet to be transparently reported or justified:

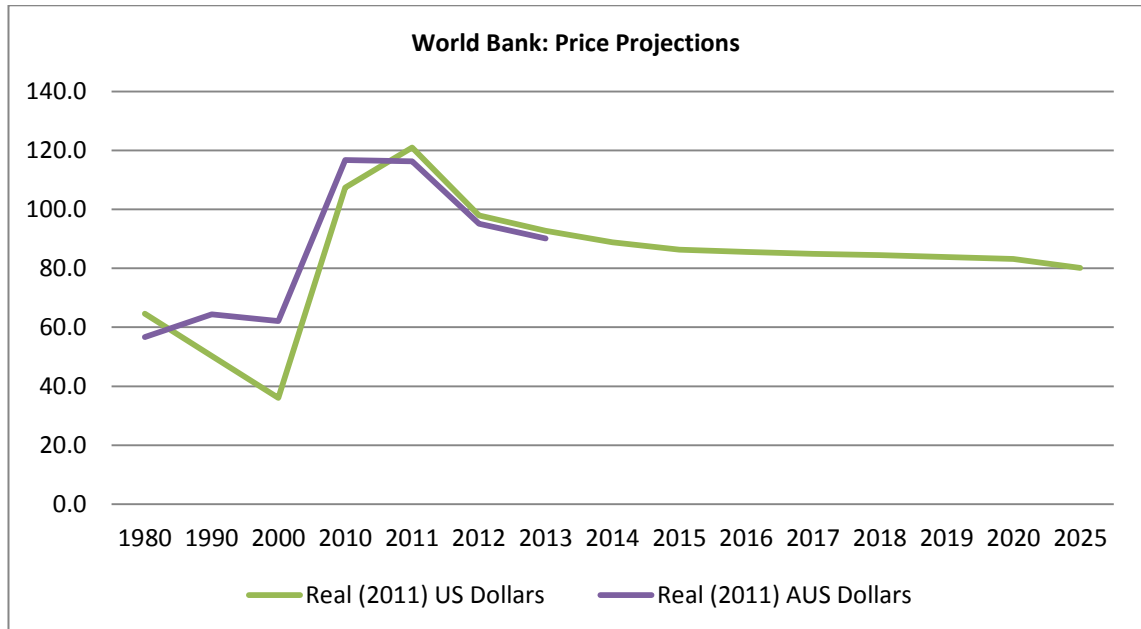
- Gillespie Economics report (2012) states that the assumed thermal coal price is an "*average \$118 per metric tonne*".
- Supplementary Submission (2013) by Anglo American stated: "*The price of thermal coal from the Project is assumed to ramp up from Australia Dollars (AUD) \$107/t in 2015 to AUD\$120 in 2022 and then remain constant over time.*"

This is despite there being consensus across the international forecasts that the Australian thermal coal price is falling, see below.

World Bank: \$US 79 per mt in 2025

The World Bank (authoritative source for commodity prices) forecast in January 2014 that the price of Australian thermal coal will be US\$90 per mt in 2015 and then continue to fall to around US\$79 per mt by 2025 (in real 2011 dollars), see Figure 4.¹⁵

Figure 4: World Bank price projections



Source: World Bank 2014, Marsden Jacob analysis

Bureau of Energy and Resource Economics: USD\$90 per mt

The Bureau of Energy and Resource Economics identified that thermal coal supply has grown strongly over the past decade, but its growth may begin to slow by the end of the outlook period as a result of fuel switching and increased electricity generation from renewables. In 2018, the bureau forecasts a coal price of USD\$ 90 per mt. *“In the medium term, thermal coal prices ... are projected to increase slightly in the short term, before decreasing later in the outlook period when large additions to supply are projected to come online. Consumption demand in key markets is projected to grow substantially over the next five years, but strong competition among coal producers is expected to moderate any price growth.”*¹⁶

In December 2013, the Bureau of Energy and Resource Economics stated that the *“world thermal coal market has become oversupplied as new mine capacity developed over the past few years has been commissioned at a time when demand growth has moderated in key consuming regions such as the US.”*¹⁷

¹⁵ World Bank, Commodity Prices and Price Forecast
siteresources.worldbank.org/INTPROSPECTS/Resources/334934-1304428586133/Price_Forecast_Jan14.pdf

¹⁶ Resources and Energy Quarterly (March 2013)
www.bree.gov.au/documents/publications/req/REQ_MAR2013.pdf

¹⁷ Resource and Energy Quarterly (December 2013)
bree.slicedlabs.com.au/sites/default/files/files/publications/req/REQ-2013-12.pdf

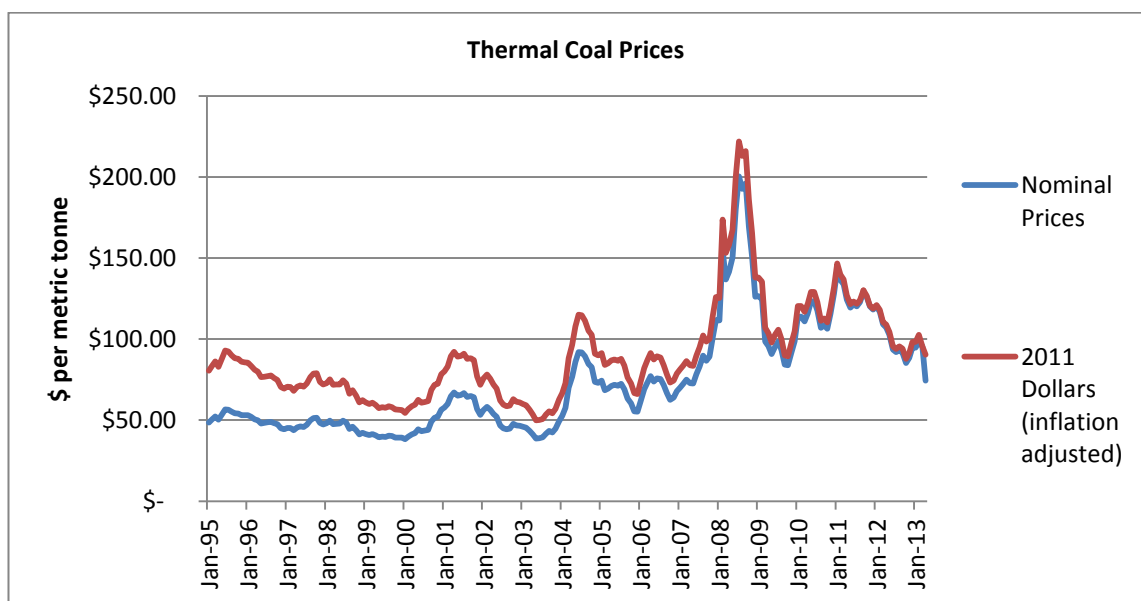
Anglo American

Anglo American's Preliminary Results for 2013¹⁸ identify that the year-end spot price for thermal coal (FOB Australia) was US\$85/tonne (2013) and US\$91/tonne (2012), (page 84). These values are well below the prices assumed in the economic analysis.

Indexmundi

Marsden Jacob analysis (based on Indexmundi monthly prices) identifies that the average price of thermal coal was AUD\$90 per mt (real, 2011 dollars), over the period January 1995 to March 2013. Furthermore, if you remove the effect of the price spike in 2008-09 the price drops to approximately AUD\$85 per mt (real 2011 dollars), see Figure 5.

Figure 5: Indexmundi Prices



Source: Indexmundi, Description: Coal, Australian thermal coal, 12000- btu/pound, less than 1% sulfur, 14% ash, FOB Newcastle/Port Kembla, Australian Dollar per Metric Ton

NSW Trade and Investment

NSW Trade and Investment (2014) identifies that the current average price for thermal coal is “\$100/tonne (rather than the \$118/tonne mentioned in the 2012 EA)”. Furthermore, they note that Drayton South needs to blend coal from its proposed pits to meet export specifications. Presumably this is necessary because “the coal seams proposed to be mined at the Drayton South Project are highly variable (ranging from very high-quality to relatively low-quality coal)” (page 4).

Gillespie Economics

Gillespie Economics (2014) also confirms that thermal coal prices are expected to fall, not escalate in the future:

“Coal will remain the cheapest source of fuel for electricity generation for many years. However, investment in alternative forms of energy will eventually bring down the

¹⁸ www.angloamerican.com.au/~media/Files/A/Anglo-American-Australia-V2/pdf/pr2014-02-14.pdf, accessed 10 March 2014

comparative price of these alternative forms of energy and the energy market will gradually shift away from coal fired electricity.” (page 2)

Recent cost benefit analyses undertaken by Gillespie Economics have been based on a thermal coal price of around \$89 per mt, nearly \$30 per mt lower than the value used in the Drayton South economic assessment.

Table 3: Thermal Coal Prices (Gillespie Economics)

Project Name	Proponent	Assumed Thermal Coal Price	
Chain Valley Colliery	Lake Coal Pty Ltd	\$89 per tonne	Gillespie Economics, March 2013
Mangoola Coal Modification 6	Xstrata Mangoola Pty Limited	\$89 per tonne	Gillespie Economics, May 2013
Moolarben Coal Project Stage 1 Optimisation Modification	Moolarben Coal Operations Pty Limited	\$85 per tonne (US\$) \$84-95 per tonne (AUS\$)	Gillespie Economics, May 2013

Source: NSW Planning and Infrastructure, Major Project Assessments, <http://majorprojects.planning.nsw.gov.au/>

3.2.2 The Cost-Benefit Analysis is highly sensitivity to thermal coal price assumptions

In the absence of information that supports a price premium for thermal coal from the Drayton South coal mine, our economic analysis used benchmark values for thermal coal. Consistent with the Gillespie Economics approach we modelled these values in AUD. The benchmark values are based on the Newcastle Thermal Coal price, because “*Newcastle thermal coal spot price is the benchmark price for most Australian thermal coal on short term contact*”¹⁹.

Our analysis found that the cost benefit analysis of the proposed Drayton South coal mine is highly sensitive to the assumed thermal coal price path. This is to be expected because revenue from the sale of coal is the dominant benefit in the analysis.

Modelled Scenarios

Marsden Jacob has modelled three scenarios incremental to a ‘business as usual’ base case. Estimation of the base case is required as the CBA measures the costs and benefits incrementally to the base case (counterfactual case). The scenarios are discussed in Table 4.

¹⁹ Reserve Bank of Australia, Statement on Monetary Policy (February 2013)

Table 4: CBA scenarios

Option Cases	Description
Drayton South is not developed (Base Case)	Coolmore Australia and Darley Australia thoroughbred studs operate in perpetuity (conservatively modelled as 50 years). Drayton South coal mine is not developed. Coal mining at the Drayton North Mine ceases in 2017.
Coolmore and Darley relocate overseas (Scenario 1)	Coolmore Australia and Darley Australia relocate their thoroughbred studs operations overseas in 2015, for example New Zealand. Drayton South coal mine is developed.
Coolmore and Darley relocate to Victoria (Scenario 2)	Coolmore Australia and Darley Australia relocate their thoroughbred studs' operations inter-state (to Victoria) in 2015. Drayton South coal mine is developed.
Gillespie Economics Assumptions (Scenario 3)	Coolmore Australia and Darley Australia thoroughbred studs are unaffected by the development of Drayton South coal mine. Drayton South coal mine is developed.

Source: Marsden Jacob analysis

Scenarios 1 and 2 arise from the proposed Drayton South Coal mine project because Darley Australia and Coolmore Australia believe their business model will be critically impacted by the development of the proposed Drayton South coal mine. Darley Australia and Coolmore Australia have advised that if the coal mine were developed they would probably be forced to move their stud operations, either interstate or overseas.²⁰ They would not move their stud operations to somewhere else in the Hunter Valley or NSW because of the risk of future mine development in NSW undermining their investment certainty and decisions.

Results

Marsden Jacob's analysis finds that the Drayton South project delivers a net economic loss for all scenarios. Under the base assumptions used in the analysis, the project results in a net economic loss of between \$89 and \$318 million (in net present value terms). When a lower discount rate is used for the thoroughbred industry, reflecting the sustainable nature of the industry, the project results in a net economic loss of between \$89 and \$457 million (see Table 5).

²⁰ While the businesses pend the PAC's recommendation before making a decision on this matter, should the PAC approve the project they will consider all options to maintain their reputation and businesses. Neither Coolmore Australia or Darley Australia have decided whether they would move overseas or inter-state, so both scenarios have been modelled.

Table 5: Summary Results

	Base Assumptions (NPV)	Sensitivity Test (NPV)
Coolmore and Darley relocate overseas (Scenario 1)	-\$153 million	-\$198 million
Coolmore and Darley relocate to Victoria (Scenario 2)	-\$318 million	-\$457 million
Gillespie Economics Assumptions (Scenario 3)	-\$89 million	-\$89 million

Source: Marsden Jacob analysis

Notes: 1. The base assumptions include: 7% discount rate, 50 year analysis period and \$90 per mt coal price, not an average coal price of \$118 per mt that was used by Gillespie Economics.

2. The sensitivity test assumptions include: 4% discount rate for the thoroughbred industry (NSW Treasury's lower bound), 50 year analysis period and \$90 per mt coal price. The discount rate sensitivity test reflects the fact that the CBA is dealing with two very different types of industry: minerals with a finite life (27 years) versus equine and other industries that are sustainable over an infinite time horizon.

Discussion

The Gillespie Economics (2012) analysis finds that *“The results were most sensitive to any potential decreases in the sale value of coal. Although a significant and sustained reduction in coal price (48%) would be required to make the Project inefficient.”* (page 23)

Whereas our analysis finds that the cost benefit analysis is far more sensitive. A 24% reduction in the assumed thermal coal sale value results in a net present value loss of between \$89 and \$318 million.

Why are our results more sensitive? Marsden Jacob's modelling is more sensitive because we have appropriately excluded \$298 million in non-market employment benefits from the analysis. Our reasoning for this is discussed below.

3.2.3 Non-market employment benefits

Non-market unemployment benefits should be excluded from the cost-benefit analysis. The Gillespie Economics report (2012) states that: *“There may also be some non-market benefits of employment provided by the Project which are estimated to be in the order of \$298M”* (page 3)²¹.

Economic theory and empirical evidence states that non-market employment benefits should only be included in cost-benefit analysis if labour resources used in the project would otherwise be unemployed. There is no evidence in any of the reports developed by Anglo American and its consultants that justifies the inclusion of non-market employment benefits in the economic analysis for this project. To the contrary, the:

²¹ The basis for this non-market unemployment benefit estimate is a study of the Bulli Seam Operations *“which estimated the value the community would hold for the 1,170 jobs provided over 30 years at \$870M (present value)”* (page 17).

The Bulli Seam Operation report states that: *“Historically employment benefits of projects has tended to be omitted from BCA on the implicit assumption that labour resources used in a Project would otherwise be employed elsewhere. Where this is not the case and labour resources would otherwise be unemployed for some period of time, Streeting and Hamilton (1991) and Bennett (1996) outline that otherwise unemployed labour resources utilised in a project should be valued in a BCA at their opportunity cost (wages less social security payments and income tax) rather than the wage rate which has the effect of increasing the net production benefits of the Project. In addition, there may be social costs of unemployment that require the estimation of people's willingness to pay to avoid the trauma created by unemployment. These are non-market values.”* (page 19)

- Social Impact Assessment undertaken in support of the Drayton South Coal Mine project identifies that the *“estimated unemployment rate for the Muswellbrook, Singleton and Upper Hunter Local Government Areas were well below the New South Wales rate in both September 2010 (NSW 5.5%) and 2011 (NSW 5.1%). In September 2011, Singleton Local Government Area recorded the lowest unemployment rate at 1.1%, followed by the Upper Hunter at 1.2% and Muswellbrook at 2.2%. Falls in all unemployment rates of approximately 0.5% were recorded for all areas since the previous year (DEEWR, 2011).”* (page ii)
- the Bureau of Resource and Energy Economics’ publication Resources and Energy Major Projects identifies that there are over a dozen expansion or new mines proposed to be developed in the Hunter Valley. These proposed developments are going to put increasing pressure on an economy which already has extremely low rates of unemployment; and
- Gillespie Economics (2012): *“In the context of a fully employed economy there may be some contention about the inclusion of this value, particularly as it requires benefit transfer from a study of an underground mining operation in another region of NSW.”* (page 17)

3.2.4 The analysis fails to meet the Director General’s requirements

The Gillespie Economics assessment fails to meet the Director General’s requirements because it does not pay *“particular attention to the thoroughbred breeding industry”* and it does not consider *“the costs and benefits of the project as a whole and whether it would result in a net benefit for the NSW community.”*

The analysis therefore appear to be biased in favour of the proposed mine development. Illustrating this, no impacts are factored into the Gillespie Economics cost-benefit analysis. This is despite Coolmore Australia and Darley Australia (Australia’s premier thoroughbred studs):

- having publically stated that if the coal mine is constructed then they may be forced to relocate away from the Hunter Valley.
- being located across the Golden Highway and within close proximity to the proposed Drayton South Mine development:
- being market leaders in both the Hunter and Australian thoroughbred breeding industry;
- owning high value land and bloodstock assets;
- being employment intensive businesses that have close links to the regional; and
- being important and sustainable contributors to the regional economy.