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# Expert report of Greg Houston

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A report for Clayton Utz on behalf of Anglo American  
Metallurgical Coal Pty Ltd

29 March 2016

**CONFIDENTIAL VERSION**

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## Contact Us

### Sydney

Level 40  
161 Castlereagh Street  
Sydney NSW 2000

Phone: +61 2 8880 4800

### Singapore

12 Marina View  
#21-08 Asia Square Tower 2  
Singapore 018961

Phone: +65 6653 3420

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# Contents

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Executive Summary	5
1. Introduction	7
1.1 Instructions	7
1.2 Expertise	7
1.3 Report structure	8
2. Industry context	9
2.1 Thoroughbred breeding industry	9
2.2 The equine CIC in the Upper Hunter region	14
3. Not in Coolmore and Darley's interests to leave the Upper Hunter	17
3.1 Change in perception will not affect where Darley locates	18
3.2 Darley would be better off remaining in the Upper Hunter	26
3.3 Not in Coolmore's interest to leave the Upper Hunter	30
4. Equine CIC is not under threat	34
4.1 Equine CIC would not collapse if Coolmore left with all its stallions	34
4.2 Ownership of assets is not important	41
4.3 Stallions would not leave the Hunter even if Coolmore and Darley left	42
4.4 Equine CIC would not collapse if Darley left with all its stallions	43
4.5 Equine CIC would not collapse if Coolmore and Darley left	45
5. Declaration	48
A1. Expansion analysis	49
A2. Materials relied upon	53
Annexure A. Curriculum Vitae of Greg Houston	57

## Figure

---

Figure 2.1: Summary of the breeding industry	10
Figure 2.2: Map of equine CIC and approximate location of Darley, Coolmore and the proposed mine	14
Figure 3.1: Map of Darley operations in Australia	19
Figure 3.2: Photo of Trig Hill	22
Figure 3.3: Number of mares covered in the Upper Hunter, Victoria and New Zealand	28
Figure 4.1: Cumulative number of covers for selected stud farms in the Upper Hunter	36
Figure 4.2: Number of stallions at selected Upper Hunter stud farms	37
Figure 4.3: Loss of covers by Coolmore taking into the account the potential for expansion by existing stallions	38
Figure 4.4: Number of covers in the Upper Hunter and other regions	39
Figure 4.5: Loss of covers by Darley taking into the account the potential for expansion by existing stallions	44
Figure 4.6: Number of covers in the Upper Hunter and other regions	45
Figure 4.7: Loss of covers by Coolmore and Darley taking into the account the potential for expansion by existing stallions	46
Figure 4.8: Number of covers in the Upper Hunter and other regions	47

## Tables

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Table 3.1: Top 10 stallions by service fee in the Upper Hunter, Victoria and New Zealand in 2015	29
Table A 1.1: Potential for non-Coolmore stallions to increase the number of covers they undertake	50
Table A 1.2: Potential for Darley stallions in the Upper Hunter to increase the cover fee revenue they earn	51
Table A 1.3: Potential for non-Darley stallions to increase the number of covers they undertake	51
Table A 1.4: Potential for non-Coolmore and non-Darley stallions to increase the number of covers they undertake	52
Table A 1.5: Potential for Coolmore stallions in the Upper Hunter to increase the over fee revenue they earn	52

# Executive Summary

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I have been asked to prepare this report by Clayton Utz on behalf of Anglo American Metallurgical Coal Pty Ltd (Anglo). The context for my report is Anglo's application for planning approval for the proposed Drayton South Coal Project (Drayton South), which is located in the Upper Hunter region<sup>1</sup> in New South Wales.

Clayton Utz has asked that I address three particular matters, being:

1. the likelihood that either Darley Australia's Woodlands broodmare farm and its Kelvinside stud would leave the Upper Hunter if the Drayton South mine proceeded and the reasons for that option;
2. the likelihood that Coolmore Australia would leave the Upper Hunter if the Drayton South mine proceeded and the reasons for that opinion; and
3. the economic impact on the Equine critical industry cluster (CIC) in the Upper Hunter if either or both of Darley Australia and Coolmore Australia were to leave the Upper Hunter and the reasons for that opinion.

## Not in Coolmore and Darley's interests to leave the Upper Hunter

In my opinion, on the presumption that Darley is a rational economic decision-maker, it is extremely unlikely that the proposed mine expansion would cause it to leave the Upper Hunter, because:

- any change in the perception of Darley's Woodlands broodmare farm would not induce it to relocate since:
  - > the perception of Darley's Kelvinside stud (a 30 minute drive from the proposed mine) will not be substantially affected by the proposed mine expansion; and/or
  - > other broodmare farms operate successfully in close proximity to coal mines;
- if Darley was to relocate its Woodlands broodmare farm, it would be better off moving to a new location in the Upper Hunter, rather than to a different state or country since:
  - > the Upper Hunter is the best location for breeding thoroughbreds in the southern hemisphere and moving away from the region is likely to reduce Darley's profits; and
  - > moving out of the Upper Hunter would involve a significant risk to Darley's most important source of revenue (stallion fees), and the substantial cost of moving a stud farm and a broodmare farm, and possibly some of its training operations; whilst
  - > staying in the Upper Hunter would not involve any risk to Darley's revenue and would involve a much lower relocation cost.

It follows that it is highly likely to be in Darley's strategic, operational and financial interest to maintain its operation in the Upper Hunter.

Many of these considerations also apply to Coolmore (although it has only one property), such that it would also not be in its interest to leave the Upper Hunter.

## Equine CIC is not under threat

In my opinion, even in the unlikely event that Coolmore left the Upper Hunter, the equine CIC would not be under threat because:

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<sup>1</sup> The Upper Hunter region comprises an area of 2.18 million hectares and includes the five local government areas of Singleton, Muswellbrook, Dungog, Upper Hunter and Gloucester. The Upper Hunter region forms the inland part of the broader Hunter region. See: Department of Planning and Infrastructure, *Upper Hunter Strategic Regional Land Use Plan*, September 2012, p 12.

- the equine CIC would continue to be successful if Coolmore *and its stallions* left the Upper Hunter because:
  - > the many attractive features and reputation of the Upper Hunter would remain;
  - > new stud farms and stallions are likely to enter the equine CIC, and existing stud farms and stallions would expand their services; and
  - > the equine CIC would still be the largest thoroughbred breeding region in Australia and New Zealand;
- the thoroughbred industry in the equine CIC is dynamic with ownership of stallions and studs changing hands without affecting the underlying economics of the cluster, or its success; and
- at least some of the stallions that currently stand at Coolmore would remain in the Upper Hunter because it would be in the interest of stallion owners to continue to stand their thoroughbreds in the location where they could earn the greatest revenue.

It is extremely unlikely that Darley would leave the Upper Hunter, for the reasons I explain above, However, even if Darley did leave the Upper Hunter:

- the equine CIC would still have the greatest number of covers of any thoroughbred region in Australia and New Zealand; and
- only around six per cent of covers would be lost in the Upper Hunter, once the ability of other stud farms to undertake additional covers is taken into account.

It is even less likely that both Coolmore and Darley would leave the Upper Hunter (as distinct from either one of them leaving), because each stud farm would stand to benefit materially from the other leaving by expanding to fill the gap left by any stallions that may also leave. However, the equine CIC would not collapse if they both left the Upper Hunter because it would still be approximately double the current size of the next largest thoroughbred breeding areas in Australia and New Zealand, even before the likely expansion by other, competing stud farms is taken into account.



# 1. Introduction

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I have been asked to prepare this report by Clayton Utz on behalf of Anglo American Metallurgical Coal Pty Ltd (Anglo). The context for my report is Anglo's application for planning approval for the proposed Drayton South Coal Project (Drayton South), which is located in the Upper Hunter region<sup>2</sup> in New South Wales. The proposed Drayton South mine is approximately 2.3km south of the Anglo-operated Drayton mine that is anticipated to be exhausted by mid-2016.<sup>3</sup> In November 2015, the Planning Assessment Commission (PAC) produced a report (the 'PAC review report') that recommended refusal of Anglo's application. The development application has not yet been determined.

## 1.1 Instructions

Clayton Utz has asked that I address three particular matters, being:

1. the likelihood that either Darley Australia's Woodlands broodmare farm and its Kelvinside stud would leave the Upper Hunter if the Drayton South mine proceeded and the reasons for that opinion;
2. the likelihood that Coolmore Australia would leave the Upper Hunter if the Drayton South mine proceeded and the reasons for that opinion; and
3. the economic impact on the Equine critical industry cluster (CIC) in the Upper Hunter if either or both of Darley Australia and Coolmore Australia were to leave the Upper Hunter and the reasons for that opinion.

I have applied my economic expertise to answer these questions and to make my assessment of the likely conduct of Coolmore and Darley on the assumption that they are rational economic decision-makers that are also subject to the competitive processes applying in the markets in which they operate. This implies that they are likely to act in a way that maximises their profits, particularly given that their rivals will do the same.

## 1.2 Expertise

I am a founding Partner of the firm of expert economists, HoustonKemp. Over a period of twenty five years I have accumulated substantial experience in the economic analysis of markets and the provision of expert advice and testimony in litigation, business strategy and policy contexts. I have developed that expertise in the course of advising corporations, regulators and governments in Australia and the Asia-Pacific region on a wide range of regulatory, competition and financial economics matters.

My industry sector experience spans aviation, beverages, building products, cement, credit reporting, e-commerce, electricity and gas, explosives, forest products, grains, medical waste, mining, payments networks, office products, petroleum, ports, rail transport, retailing, scrap metal, securities markets, steel, telecommunications, thoroughbred racing, travel agency, waste processing and water. I have testified on these matters on numerous occasions before arbitrators, appeal panels, regulators, the Federal Court of Australia, the Competition Tribunal and other judicial or adjudicatory bodies.

Of particular relevance to these proceedings is a report I prepared for Johnson Winter & Slattery and Yeldham Price O'Brien Lusk in 2011 on behalf of the Australian Jockey Club, the Victoria Racing Club, the Australian Racing Board and the Australian Turf Club. This report addressed a number of economic questions arising in the context of Federal Court proceedings brought by Mr Bruce McHugh against the

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<sup>2</sup> The Upper Hunter region comprises an area of 2.18 million hectares and includes the five local government areas of Singleton, Muswellbrook, Dungog, Upper Hunter and Gloucester. The Upper Hunter region forms the inland part of the broader Hunter region. See: Department of Planning and Infrastructure, *Upper Hunter Strategic Regional Land Use Plan*, September 2012, p 12.

<sup>3</sup> Planning Assessment Commission, *Drayton South Open Cut Coal Project: Review Report*, November 2015 (hereafter, the 'PAC review report'), p 1.

Australian Jockey Club Limited, the Victoria Racing Club Limited, the Australian Turf Club and the Australian Racing Board Limited.<sup>4</sup> Those proceedings related to whether the natural cover provisions that govern the breeding of thoroughbreds contravened section 45 of the *Competition and Consumer Act 2010* (CCA). In the course of preparing that report, I undertook detailed analysis of the structure and essential economic characteristics of the thoroughbred breeding industry.

I hold a BSc (Hons) in Economics, a University of Canterbury post-graduate degree, which I was awarded with first class honours in 1983. I have attached a copy of my curriculum vitae as Annexure A.

In preparing this report, I have been primarily assisted by my colleagues, Luke Wainscoat and Sarah Turner. Notwithstanding this assistance, the opinions in this report are my own and I take full responsibility for them. I attach a list of the documents I have relied upon at appendix A2.

### 1.3 Report structure

I have structured my report as follows:

- in section 2 I describe the principal economic characteristics of the thoroughbred breeding industry in the Upper Hunter;
- in section 3 I explain why, on the presumption that they are both rational economic decision-makers, it would not be in the best interest of Darley or Coolmore to leave the Upper Hunter; and
- in section 4 I set out the reasons for my opinion that the equine industry in the Upper Hunter would not be under threat if Darley, Coolmore or both of them left the region.

I confirm that in the course of preparing this report, I have been provided with a copy of and read, understood and complied with the Uniform Civil Procedure Rules 2005 [NSW] Schedule 7, entitled *Expert witness code of conduct* (hereafter referred to as 'the code of conduct'). My declaration, made in accordance with the code of conduct, is contained at the end of my report, as section 5.

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<sup>4</sup> McHugh v Australian Jockey Club Limited, matter NSD 1187 of 2009. See McHugh v Australian Jockey Club Limited (No 13) [2012] FCA 1441.

## 2. Industry context

The main objectors to Anglo's application for planning approval for the Drayton South mine are Coolmore and Darley, both of which are participants in the thoroughbred breeding industry in the Upper Hunter.<sup>5</sup> In this section I describe the structure of this industry in general and in the Upper Hunter in particular, which is helpful to understand how the proposed mine might affect that industry.

### 2.1 Thoroughbred breeding industry

The breeding of thoroughbreds involves the mating of a broodmare<sup>6</sup> with a stallion<sup>7</sup> in order to produce a foal, where the natural act of a stallion mating with a broodmare is known as 'covering'.<sup>8</sup> Since artificial breeding techniques of any form are not permitted for a thoroughbred to be registered for racing,<sup>9</sup> the physical presence of both a broodmare and a stallion are necessary for the production of a foal.

Stallion and broodmare owners are the principal economic decision-makers in the breeding industry. Stallion owners decide where their stallion will stand, and select the mares that they cover from those that apply.<sup>10</sup> Broodmare owners select a stallion to cover their broodmare, with that choice principally governed by the individual attributes of the stallion (and so the market value of the progeny), rather than the quality of the scenery the stallion enjoys.<sup>11</sup>

Stallions and broodmares may or may not reside, or participate in the act of covering, at the respective properties of either the stallion or broodmare owner. Instead, specialist stud and broodmare farms may offer agistment, with covering typically occurring at a stud farm.<sup>12</sup> There are numerous other parties that provide services in the breeding industry, including veterinarians, farriers, fodder producers and equine transport companies.<sup>13</sup>

The focus of the breeding industry is the production of horses to be used in thoroughbred racing.<sup>14</sup> The opportunity to compete for prize money generates demand for thoroughbred horses, and this in turn creates an economic incentive to breed these horses – in economic terms, the demand for the services provided by an individual stallion is derived from the demand to race thoroughbreds. Consequently, broodmare owners, who are typically the owners of the foals produced by the covering process, expect to generate income from either:

- prize money earned from racing the foal, once it is old enough;
- selling the foal, often when it is one year old, known as a yearling;<sup>15</sup> or

<sup>5</sup> Coolmore and Darley provided the greatest response to the PAC review in terms of number of documents. See: <http://www.pac.nsw.gov.au/Projects/tabid/77/ctl/viewreview/mid/462/pac/493/view/readonly/myctl/rev/Default.aspx>, accessed 23 February 2016.

<sup>6</sup> A female horse used to produce foals. See: Rules of the Australian Stud Book, 13 April 15, p 8.

<sup>7</sup> A male horse used to produce foals. See: Rules of the Australian Stud Book, 13 April 15, p 11.

<sup>8</sup> Rules of the Australian Stud Book, 13 April 15, p 9.

<sup>9</sup> Rules of the Australian Stud Book, 13 April 15, pp 18-19.

<sup>10</sup> In some cases, the decision of which broodmares to cover may not be made by the owner of the stallion but instead by the stud where the stallion stands. See section 2.1.5 below.

<sup>11</sup> Darryl Guihot, *Submission to the Planning Assessment Commission*, September 2015, p 17.

<sup>12</sup> Throughout this report I use the term 'stud farm' to refer to a property where stallion services are offered. See section 2.1.5 below.

<sup>13</sup> See section 2.1.6 below.

<sup>14</sup> *McHugh v Australian Jockey Club Limited (No 13)* [2012] FCA 1441, para 1369; and Darryl Guihot, *Submission to the Planning Assessment Commission*, September 2015, p 9.

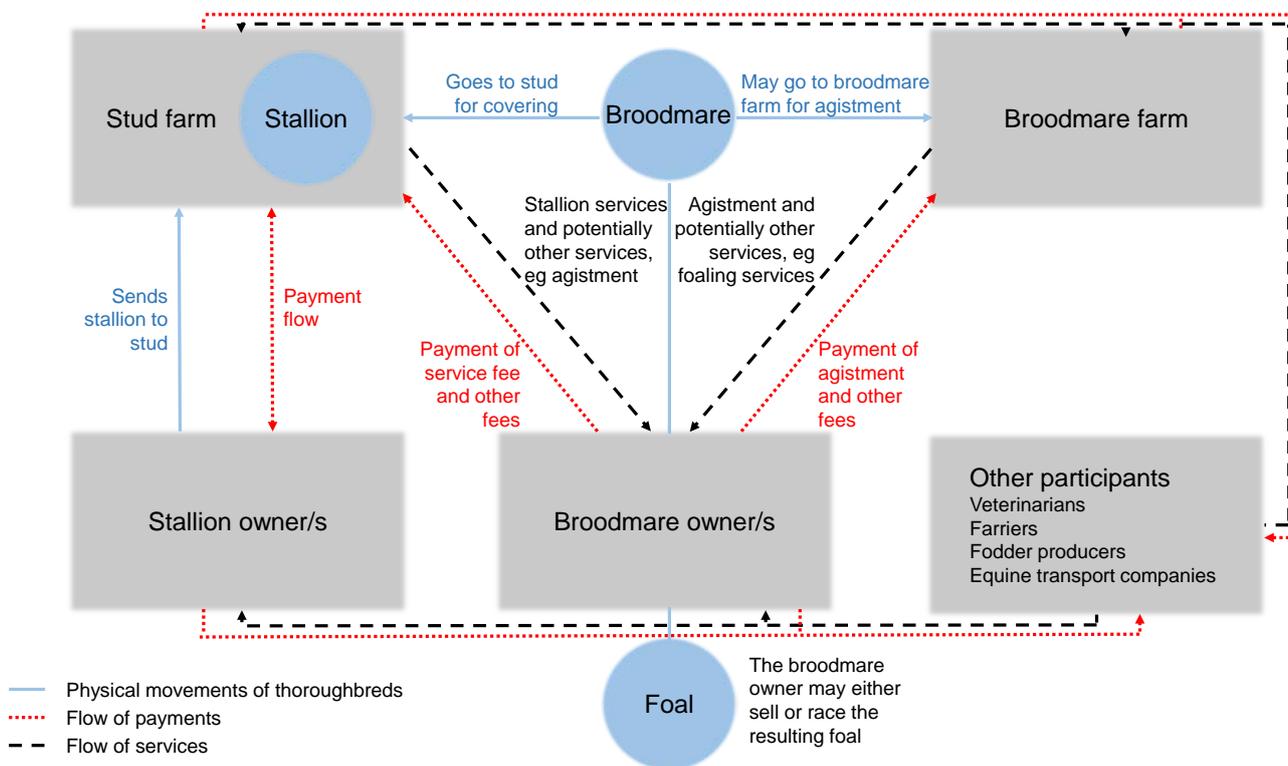
<sup>15</sup> The official age of a horse is reckoned from the first day of August next after its birth, when it becomes a yearling. See section 2.1.1 below.

- producing further foals at the end of a successful racing career.

A broodmare owner may sell or race the horses that it produces but, either way, an owner’s aim is to create a thoroughbred that is expected to win races. Mare owners will seek to maximise their returns to breeding by selecting a stallion that will generate progeny with the best expected racing ability, at the lowest possible cost (including stallion service fees). Stallion attributes that influence the expected racing ability of thoroughbreds include the pedigree of the stallion itself, performance during its racing career, and the success of his offspring. The pedigree of any thoroughbred is very important since it provides the best sign that the family produces superior athletes.<sup>16</sup> The racing ability of a thoroughbred is not influenced by the scenery that it enjoys and so this is unlikely to have a material influence on the revenue earned by that horse.

At Figure 2.1 below I summarise the main participants in the breeding industry, and the flow of services and financial payments between the various parties.

Figure 2.1: Summary of the breeding industry



Broodmares and stallions (although not their owners) and other participants in the industry all benefit from being located in close proximity, and each requires the other two. In particular, the natural cover provisions, the desire to move broodmares only a limited distance whilst they are in foal, and the need for some of the other participants to visit the horse they are tending means that each participant is reliant on the proximity of others, ie:

- the broodmares need stallions to be nearby, so they can be moved only a short distance when they are in foal and after covering, and they need the other participants for the various services they provide;

<sup>16</sup> Statement of John Messara, director of Arrowfield Stud. See: *McHugh v Australian Jockey Club Limited (No 13)* [2012] FCA 1441, para 779.

- the stallions need to be in close proximity with the broodmares so as to maximise the number of covers they can perform in a season, while stallions also need the other participants for the various services they provide; and
- the other participants can only provide services if there are horses nearby.

I describe the essential economic characteristics of the breeding industry and its main participants in the remainder of this section.

### 2.1.1 Regulatory context

The thoroughbred industry is governed by the rules of thoroughbred racing, with the Australian Stud Book (ASB) setting out requirements relating to the breeding of thoroughbreds. The rules of the ASB include that only horses conceived by natural cover (and not by any form of artificial breeding) are eligible to participate in thoroughbred horse races in Australia.<sup>17</sup> The consequence is that broodmares need to be in the same location as the stallion for covering.

The ASB also stipulates the time periods during which covers may occur and foals may be born. The official covering season spans 1 September to 31 May, while the foaling season extends from 1 July to 30 June.<sup>18</sup> The covering of a thoroughbred broodmare is restricted to the official covering season if the owner wants the foal to be officially 'one year old' on the first day of the August that follows one month after the end of the foaling season.<sup>19</sup>

These rules give rise to an incentive for covers to take place as close as possible to the beginning of the breeding season so that the foal is born as early as possible in the foaling season. Foals born early in the season that commences on 1 July have a developmental advantage in races that establish eligibility or handicap according to age. Such advantage gives those thoroughbreds a superior chance of winning races and the ability to command a higher price at auction.

### 2.1.2 Broodmare owners

Broodmares may be owned by an individual breeder (or a syndicate of breeders) that holds a small number of mares, a broodmare farm or a stud farm. Around 80 per cent of thoroughbred breeders own three or less broodmares, representing a total of 34 per cent of registered broodmares.<sup>20</sup> By contrast, some of the largest individual breeders hold more than 200 broodmares.<sup>21</sup>

Broodmare owners purchase stallion services in order to produce foals, and the mare owner is usually the ultimate owner of any foal produced.<sup>22</sup> The natural cover requirements mean that the mare will generally travel to stud to be covered. Mares can either reside on the stallion stud farm or 'walk on' from other farms, including broodmare farms.<sup>23</sup>

<sup>17</sup> Rules of the Australian Stud Book, 13 April 2015, pp 18-19.

<sup>18</sup> Rules of the Australian Stud Book, 13 April 2015, p 7.

<sup>19</sup> The official age of a horse is reckoned from the first day of August next after its birth, when it becomes a yearling. Rules of the Australian Stud Book, 13 April 2015, p 7-8.

<sup>20</sup> Thoroughbred Breeders Australia, *Submission to the Senate Rural and Regional Affairs and Transport References Committee Inquiry into "Industry structures and systems governing the imposition of and disbursement of marketing and research and development (R&D) levies in the agricultural sector"*, 20 October 2014, p 14.

<sup>21</sup> Thoroughbred Breeders Australia, *Submission to the Senate Rural and Regional Affairs and Transport References Committee Inquiry into "Industry structures and systems governing the imposition of and disbursement of marketing and research and development (R&D) levies in the agricultural sector"*, 20 October 2014, p 14.

<sup>22</sup> Darryl Guihot, *Submission to the Planning Assessment Commission*, September 2015, p 2.

<sup>23</sup> Coolmore, *Submission to the Planning Assessment Commission*, September 2015, p 8.

### 2.1.3 Broodmare farms

Broodmare farms typically offer services to third party mare owners, although some consist only of broodmares owned by that particular farm, and so do not offer services to third parties. The services offered by broodmare farms usually include agistment prior to and/or after going to stud to be covered. Broodmare farms may also offer:<sup>24</sup>

- transportation – broodmares are transported to the stud farms for covering;
- foaling – the monitoring of pregnant broodmares and assistance with giving birth as necessary;
- weaning – assisting with the process of separating the foal from the broodmare; and
- sale preparation – the preparation of the foals for sale, which may include grooming and teaching the foals to walk in a parade ring.

### 2.1.4 Stallion owners

Stallions may be owned in full or in part by the studs where they stand, or they may be fully owned by third parties. For example, some of the stallions standing at Coolmore are owned by syndicates.<sup>25</sup> Syndicate ownership arises from the high cost and risks associated with purchasing stallions, with successful stallions valued in the tens of millions of dollars.<sup>26</sup> For example, So You Think and Vancouver were said to be valued at approximately \$60 million and \$40 million, respectively, at the time Coolmore purchased a majority share of these stallions.<sup>27</sup>

### 2.1.5 Stud farms

A stud farm is a property where stallion services are offered. Where a stallion is not owned in full by the stud, the stud will typically manage that stallion on behalf of an ownership syndicate.<sup>28</sup>

Studs can purchase stallions from public or private sales. For example, Darley purchased one of Australia's best three-year-old sprinters, Brazen Beau, from his owners in late 2014, while the horse was still racing.<sup>29</sup> Additionally, studs may lease stallions from other studs or owners, eg, Collingrove Stud leased Scenic from Durham Lodge for two breeding seasons.<sup>30</sup>

Some studs may also have 'shuttle stallions' in residence. These are international stallions sent by their owners to cover mares during the Australian breeding season, ie, the Northern Hemisphere's off season. In the 2014/15 season, there were 38 shuttle stallions standing at Australian studs.<sup>31</sup> Although shuttle stallions represented only 5.8 per cent of the number of breeding stallions in 2014/15, they accounted for 23 per cent of all mares covered.<sup>32</sup>

<sup>24</sup> For example see Toolooganvale Farm website, [http://www.toolooganvale.com/our\\_services.html](http://www.toolooganvale.com/our_services.html), accessed 17 February 2016 and [http://www.toolooganvale.com/sales\\_preparation.html](http://www.toolooganvale.com/sales_preparation.html), accessed 18 February 2016.

<sup>25</sup> Coolmore, *Submission to the Planning Assessment Commission*, September 2015, pp 3 and 6.

<sup>26</sup> Coolmore, *Submission to the Planning Assessment Commission*, September 2015, p 6.

<sup>27</sup> Sydney Morning Herald, *So You Think sold to Coolmore Stud*, 3 November 2010; and The Daily Telegraph, *Coolmore secures stake in unbeaten Golden Slipper winner Vancouver for \$40 million*, 2 April 2015.

<sup>28</sup> Coolmore, *Submission to the Planning Assessment Commission*, September 2015, p 6.

<sup>29</sup> Thoroughbred Content Management, *Darley acquires G1 Coolmore Stud Stakes winner Brazen Beau*, 10 December 2014, <http://www.thoroughbredcm.com.au/darley-acquires-g1-coolmore-stud-stakes-winner-brazen-beau/>, accessed 17 February 2016.

<sup>30</sup> The Australian, *New chapter for Swettenham Stud*, 24 August 2015.

<sup>31</sup> Racing Australia, *2014/2015 Fact Book*, p 30.

<sup>32</sup> Racing Australia, *2014/2015 Fact Book*, p 30.

## Services provided by stud farms

Studs offer stallion covering services and mare owners pay a service fee. The fee for each stallion is generally posted on an annual basis (although some remain private) and fees vary greatly between one stallion and another. In 2015, service fees listed in the ASB ranged from \$500 to over \$200,000,<sup>33</sup> with these service fees based on the perception of each stallion's pedigree and the success of its racing career.

Stallion service fees change over time, according to the popularity of any particular stallion and the success of its offspring. For example, in 2004/05 the service fee for Redoute's Choice was \$40,000<sup>34</sup> and, after siring successful progeny, his service fee increased to \$220,000 the following year.<sup>35</sup>

Stallions are limited in the number of broodmares they can cover during the breeding season – over the seasons 2010 to 2014, the maximum number of covers performed was between 220 and 249.<sup>36</sup>

Typically, mare owners must nominate their mare to be covered by a particular stallion and the stud farm at which that stallion stands will select the nominated broodmares that will be covered. The studs can be expected to select the broodmares that are most likely to produce the best offspring, since the success of the stallion's progeny can influence its popularity and hence the service fees achievable in future years.<sup>37</sup>

If selected, the broodmare will travel to the stud to be covered and the broodmare owner will be required to pay the service fee. Typically, a mare owner does not pay the service fee unless the mare falls pregnant, and some stallion services may offer free returns if the mare does not produce a live foal (which occurs about one third of the time).<sup>38</sup>

Stud farms may also provide other services, including some that are also offered by broodmare farms – such as agistment, foaling, weaning, and preparing horses for sale.

### 2.1.6 Other players

Other parties also play a role in the breeding industry, including:

- veterinarians, which provide equine healthcare services and either travel to thoroughbred properties or operate out of equine hospitals, eg, the Scone Equine Hospital;
- farriers, which provide equine hoof care, including fitting horses with shoes;
- fodder producers, which supply specialised feed for thoroughbreds;
- saddlers, which produce saddles and other riding equipment;
- equine transport companies, which provide transport for horses in specialised trucks and floats; and
- breeding agents, which assist broodmare and stallion owners with the choice of breeding partner for their horse.<sup>39</sup>

<sup>33</sup> ASB, *Stallions Standing in Australia, 2015*, available online to subscribers. The price of Fastnet Rock was listed as 'fee on application', however I understand that his fee for the 2015 season was over \$200,000. See: PAC review report, p 31.

<sup>34</sup> Australian Racing Board, *Australian Racing Fact Book 2004-05*, pp 42-43.

<sup>35</sup> Australian Racing Board, *Australian Racing Fact Book 2005/06*, pp 32-33.

<sup>36</sup> Racing Australia, *2014/2015 Fact Book*, p 35; Australian Racing Board, *2013/14 Australian Racing Fact Book*, p 37; Australian Racing Board, *2012/13 Australian Racing Fact Book*, p 37; Australian Racing Board, *2011/12 Australian Racing Fact Book*, p 37; and Australian Racing Board, *2010/11 Australian Racing Fact Book*, p 35.

<sup>37</sup> Dr Bell, *The Impact of The Drayton South Coal Mine Project Proposal on the Commercial Viability Of Coolmore Australia, September 10 2015*, p 6.

<sup>38</sup> Coolmore, *Submission to the Planning Assessment Commission, September 2015*, p 7; and see, for example, Vinery Stud website, <http://www.vinery.com.au/news/news-2010-and-older/vinery-introduce-a-transferable-free-return/>, accessed 17 February 2016.

<sup>39</sup> See, for example, Pedigree Dynamics website, <http://www.pedigree-dynamics.com.au/about/>, accessed 17 February 2016.

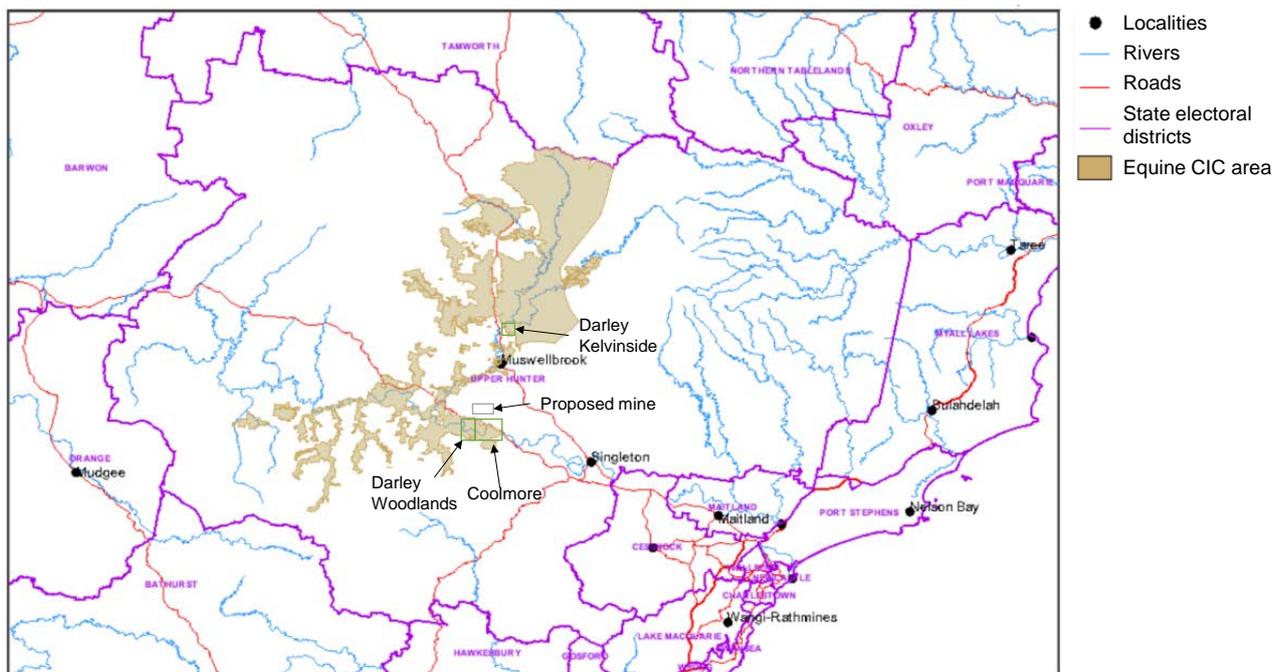
## 2.2 The equine CIC in the Upper Hunter region

The NSW Government identified an equine critical industry cluster (CIC) in the Upper Hunter in 2012,<sup>40</sup> where CICs are defined as:<sup>41</sup>

concentrations of highly productive industries within a region that are related to each other, contribute to the identity of that region, and provide significant employment opportunities.

The Upper Hunter equine cluster is one of the largest and most important thoroughbred breeding clusters in the world, along with Newmarket in the United Kingdom and Kentucky in the United States of America.<sup>42</sup> The Upper Hunter equine CIC has been defined as comprising 254,900 hectares,<sup>43</sup> and encompasses various businesses located in the area including thoroughbred studs, 150 broodmare farms, breeders, trainers, farriers, fodder producers, saddlers, equine transport companies and the Scone Equine Hospital.<sup>44</sup> I show a map of the equine CIC and the approximate location of Darley Kelvinside, Darley Woodlands, Coolmore and the proposed mine at Figure 2.2 below.

Figure 2.2: Map of equine CIC and approximate location of Darley, Coolmore and the proposed mine



Scale: 0 20 km

Source: MinView, provided by the NSW Department of Industry. See <http://www.dpi.nsw.gov.au/oasfs/resource-planning/cic-minview>, accessed 17 February 2016. Notes: The indicated locations of Darley, Coolmore and the proposed mine are my own additions to the map and are approximate only.

<sup>40</sup> Maps of the equine CIC were produced as part of the Upper Hunter Strategic Regional Land Use Plan in 2012. In October 2013, stakeholders were provided with a final opportunity for input before the maps were finalised.

Department of Planning and Infrastructure, *Upper Hunter Strategic Regional Land Use Plan*, September 2012; and NSW Government, *Frequently Asked Questions Critical Industry Clusters Upper Hunter*, January 2014, p 1.

<sup>41</sup> NSW Government, *Frequently Asked Questions Critical Industry Clusters Upper Hunter*, January 2014, p 1.

<sup>42</sup> PAC review report, pp 26-27.

<sup>43</sup> NSW Government, *Frequently Asked Questions Critical Industry Clusters Upper Hunter*, January 2014, p 2.

<sup>44</sup> PAC review report, p 29.

The Upper Hunter provides an ideal environment to raise horses. It contains businesses that support thoroughbred breeding and a large amount of high quality bloodstock that sets the region apart as a leading centre for thoroughbred breeding. Mr Guihot states that:<sup>45</sup>

The Hunter Valley, Kentucky and Newmarket provide wonderful environments for raising young horses, but the same could be said of several other locations in Australia and the rest of the world. What sets the horses produced in these locations apart from horses produced elsewhere is that they are the three locations in the world where the elite stallions and breeding mares are located in deep concentrations, and result in a critical mass of premium product that compels the attention of international buyers and their agents.

I provide further details below of some of the parties located in the equine CIC and the characteristics of the Upper Hunter region.

### 2.2.1 Parties located in the Upper Hunter equine CIC

There is a long history of horse breeding activity in the equine CIC.<sup>46</sup> There are various interdependent businesses located in the equine CIC, including thoroughbred studs and broodmare farms, as well as other support services.

There are around 15 to 20 stud farms in the Upper Hunter region, with Darley Kelvinside and Coolmore being two of the largest.<sup>47</sup> Darley stands 15 stallions in the Upper Hunter region,<sup>48</sup> and accounted for 19 per cent of the covers in the region in the 2014 breeding season.<sup>49</sup> Coolmore's Upper Hunter property currently stands 12 stallions,<sup>50</sup> and accounted for 17 per cent of the covers in the region in the 2014 breeding season.<sup>51</sup>

Other large studs in the Upper Hunter include Arrowfield, Vinery and Widden, which each accounted for between 10 and 15 per cent of the total number of covers in the Upper Hunter region in 2014.<sup>52</sup>

There are approximately 150 broodmare farms in the Upper Hunter, including Darley's Woodlands Farm. Darley expanded its breeding operations in the Upper Hunter region with the purchase of Woodlands Farm and its stallions from Inghams Enterprises in May 2008.<sup>53</sup> Woodlands is now used to hold the private bloodstock of Sheikh Mohammed,<sup>54</sup> which includes over 250 mares and produces in the order of 180 foals a year.<sup>55</sup>

There are a large number of high quality equine service providers located in the Upper Hunter, including:<sup>56</sup>

- a specialist equine hospital at Scone;
- the world class Hunter Valley Equine Research Centre at Scone;

<sup>45</sup> Darryl Guihot, *Submission to the Planning Assessment Commission*, September 2015, p 11.

<sup>46</sup> PAC review report, p 66.

<sup>47</sup> PAC review report, p 30.

<sup>48</sup> Darley, *Submission to the Planning Assessment Commission*, 2 October 2015, p 7.

<sup>49</sup> Darley undertook 15 covers out of a total of 8,062 in 2014. Source: Analysis of data in the ASB.

<sup>50</sup> Coolmore, *Submission to the Planning Assessment Commission*, September 2015, p 3.

<sup>51</sup> Coolmore undertook 12 covers out of a total of 8,062 in 2014. Source: Analysis of data in the ASB.

<sup>52</sup> Based on analysis of coverings data from the ASB.

<sup>53</sup> Darley, *Media release: Darley's purchase of Woodlands approved*, 13 May 2008, <http://www.darley.com.au/news/darleys-purchase-woodlands-approved>, accessed 17 February 2016. ACCC, *Darley Australia Pty Ltd - proposed acquisition of Woodlands Stud*, May 2008, p 1.

<sup>54</sup> Darley, *Media release: Darley Australia to relocate its stallions in 2009*, 1 January 2009, <http://www.darley.com.au/news/press-release-1-January-2009>, accessed 17 February 2016.

<sup>55</sup> Darley, *Submission to the Planning Assessment Commission*, 2 October 2015, p 7.

<sup>56</sup> NSW Government Department of Primary Industries, *Upper Hunter Region Equine Profile*, June 2013, p 4.

- experienced veterinarians, equine dentists, international breeders, managers and support staff;
- specialist equine education and training facilities at Scone TAFE and Tocal Agricultural College;
- a complex network of horse transport, breeding, rearing, training, spelling and competition facilities and events; and
- hay and grain suppliers.

### 2.2.2 Characteristics of the Upper Hunter

The Upper Hunter region has a number of economic characteristics that make it a particularly attractive location for breeding thoroughbred horses, including:

- it is close to major ports and markets (in particular Sydney);<sup>57</sup>
- it has the best reputation of any thoroughbred breeding area in the southern hemisphere;<sup>58</sup>
- it has a large number of high quality service providers that are required by the thoroughbred breeding industry; and
- it has an ideal environment for breeding thoroughbreds, including a temperate climate, protected aspect and varied terrain combined with a lack of tropical diseases.<sup>59</sup> The resultant moderate climate, low risk of pests and diseases, topography, and reliable irrigation options are ideal for producing premium quality horses.<sup>60</sup>

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<sup>57</sup> NSW Government Department of Primary Industries, *Upper Hunter Region Equine Profile*, June 2013, p 2.

<sup>58</sup> The Upper Hunter is ranked second only to Kentucky, USA in terms of the concentration of thoroughbred stud properties, the quality and number of bloodlines. NSW Government Department of Primary Industries, *Upper Hunter Region Equine Profile*, June 2013, p 1.

<sup>59</sup> Department of Planning and Infrastructure, *Strategic Regional Land Use Plan*, September 2012, p 22.

<sup>60</sup> NSW Government Department of Primary Industries, *Upper Hunter Region Equine Profile*, June 2013, p 2.

### 3. Not in Coolmore and Darley's interests to leave the Upper Hunter

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The PAC review report explains that:<sup>61</sup>

...the impacts of the mine would generally be accepted in another location in the Hunter Valley. The mine is largely predicted to meet standard blasting and noise criteria and would not exceed the air emission criteria at the surrounding residential receivers sufficiently often to warrant grating acquisition options for those dwellings.

Notwithstanding the concessions of the Applicant and the relatively small predicted impacts, comparative to other open cut mines, the Commission has found that these impacts—mitigated to a reasonable extent—are still in relatively close proximity to the studs. At this proximity, the impacts represent a real risk to the brand and image of the studs, and more importantly to the studs' reputation, and consequent viability in this location.

I take these statements to mean that the PAC formed the view that, although the effect of the proposed mine on noise, air quality etc was acceptable, the potential harm is to the *perception of the studs* in the minds of their customers.<sup>62</sup>

Further, the PAC review report states that:<sup>63</sup>

The Commission considers that the scenario of the studs leaving the Hunter is the critical issue for the decision maker to weigh up in considering whether to approve the project.

... The proposal does not just threaten the viability of two neighbouring horse studs, but by virtue of the significance of those studs, it places the wider Equine Critical Industry Cluster under threat.

In other words, the PAC has identified the critical question in relation to the proposed project as being *whether the studs' reputations would be damaged sufficiently, such that they will leave the Upper Hunter, causing the equine CIC to be substantially damaged.*

In my opinion, on the presumption that Darley is a rational economic decision-maker, it is extremely unlikely that the proposed mine expansion would cause it to leave the Upper Hunter, because:

- any change in the perception of Darley's Woodlands broodmare farm would not induce it to relocate since:
  - > the perception of Darley's Kelvinside stud (a 30 minute drive from the proposed mine) will not be substantially affected; and/or
  - > other broodmare farms operate successfully in close proximity to coal mines;
- if Darley was to relocate its Woodlands broodmare farm, it would be better off moving to a new location in the Upper Hunter, rather than to a different state or country since:
  - > the Upper Hunter is the best location for breeding thoroughbreds in the southern hemisphere and moving away from the region is likely to reduce Darley's profits; and

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<sup>61</sup> PAC review report, p 47.

<sup>62</sup> The only potentially significant effect of the proposed Drayton South mine on the studs identified by the PAC outside of effects to their perception or reputation was that the blasting requirements of the mine may startle horses during the covering process. PAC review report, pp 41-42.

<sup>63</sup> PAC review report, p 51.

- > moving out of the Upper Hunter would involve a significant risk to Darley's most important source of revenue (stallion fees), and a substantial cost of moving a stud farm and a broodmare farm, and possibly some of its training operations; whilst
- > staying in the Upper Hunter would not involve any risk to Darley's revenue and would involve a much lower relocation cost.

It follows that it is highly likely to be in Darley's strategic, operational and financial interest to maintain its operation in the Upper Hunter.

Many of these considerations also apply to Coolmore (although it has only one property), such that it would also not be in its interest to leave the Upper Hunter.

### 3.1 Change in perception will not affect where Darley locates

The Darley operation in the Upper Hunter consists of:

- its Kelvinside stud farm at Aberdeen, where 15 stallions stand during the southern hemisphere breeding season<sup>64</sup> – this site is approximately a 30 minute drive from the proposed Drayton South mine; and
- its Woodlands broodmare farm near Denman, which is in the vicinity of the proposed Drayton South mine.

These two operations need to be in relatively close proximity to each other to allow Darley's stallions to cover its broodmares, and so the options available to Darley if it wished to move its Woodlands broodmare farm would be:

- to move both its operations outside of the Upper Hunter; or
- to move the Woodlands broodmare farm to another location in the Upper Hunter, whilst keeping its Kelvinside stud farm.

The Kelvinside stud farm is unaffected by the proposed Drayton South mine and so the perception of broodmare owners considering using Darley stallions will not be changed by the mine. It follows that the proposed mine will have no effect on the operation and expected revenue from Darley's Kelvinside stud farm.

Darley's operations in the Upper Hunter are part of an integrated racing, training and breeding operation in NSW that includes facilities in Warwick Farm (Crown Lodge) and Agnes Banks (Osborne Park).<sup>65</sup> Figure 3.1 shows that Darley also has breeding facilities in Northwood Park, Victoria and training and racing stables at Flemington, Victoria.<sup>66</sup>

<sup>64</sup> Darley website, <http://www.darley.com.au/stallions/our-stallions>, accessed 17 February 2016

<sup>65</sup> Darley, *Submission to the Planning Assessment Commission*, 2 October 2015, p 10; and Godolphin website, <http://www.godolphin.com/about-us/facilities/crownlodgeosbornepark/>, accessed 18 February 2016

<sup>66</sup> Darley, *Submission to the Planning Assessment Commission*, 2 October 2015, p 10.

Figure 3.1: Map of Darley operations in Australia



### 3.1.1 Perception of Darley Woodlands will not be substantially affected

Darley relies upon the opinion of Dr Bell to demonstrate that its reputation and brand will be damaged by the proposed Drayton South mine.<sup>67</sup> Darley's submission to the PAC highlights a number of points made by Dr Bell including:<sup>68</sup>

Dr Bell notes that if a premium property or stud farm was promoted to be located in close proximity to a coal mine, it would demonstrate that they are "completely out of touch with their market".....

Dr Bell attests to the fact that the physical beauty of the surrounding landscape represents a dedication to detail and a commitment to the customer that communicates attention to every detail.....

Dr Bell's professional opinion is that the presence of an open cut coal mine, such as that proposed at Drayton South, would present a definite threat to the commercial viability of the neighbouring studs.

In turn, – relying, in part, on the opinion of Dr Bell – the PAC found that:

<sup>67</sup> Darley, *Submission to the Planning Assessment Commission*, 2 October 2015, pp 32-33.

<sup>68</sup> Darley, *Submission to the Planning Assessment Commission*, 2 October 2015, pp 32-33.

...the indirect and dynamic visual impacts of the project represent a risk to the image and reputation of the studs<sup>69</sup>

In my opinion, the above statements by Dr Bell convey some important inaccuracies. In particular, it is not correct to imply that any Darley 'stud farm' will either be forced to *promote* its proximity to a coal mine, or that Darley would be prevented from paying close attention to its own properties in order to demonstrate that they are of a high quality.

Stud farms are not alone in wanting to portray a good image of themselves through the physical beauty of their premises. It is common in many customer-facing industries – from vineyards to retailers, shops and restaurants – for companies to manage their image and present their business in the best possible way, to customers and potential investors. Further, in my experience it is common for businesses producing high quality products or services to expend more effort to present and promote them.

A firm that is earning a high level of profit on a specialist and luxury product can be expected to spend a substantial amount of money trying to attract customers. This does not imply that elements of that perception are critical to the success of those businesses. Rather, the appropriate conclusion is that, by engaging in a high level of presentation and promotion, a firm expects to increase its revenue by more than the cost of efforts to improve its image.

Consistent with this principle, the amount of money that Darley and Coolmore spend on the image of their farms does not indicate that it is fundamental to their business. In his report for Darley and Coolmore, Dr Bell addressed the question as to why Coolmore would employ 12 full time gardeners if the visual experience of Coolmore was not important.<sup>70</sup> In my opinion:

- a certain amount of 'gardening' will inevitably be required to allow the farm to operate efficiently – Coolmore is located on over 8,000 acres, including 5,000 of irrigated river flats and paddocks<sup>71</sup> – and so I expect that not all the 12 gardeners are employed by Coolmore solely for the purpose of enhancing its image;
- further, as a business decision, the cost of employing gardeners for image purposes can be expected to be no more than the anticipated benefit of the improved image provided by employing additional gardeners; and
- this implies that the benefit of employing the additional gardeners is expected to be more than, say, \$450,000 per year, on the assumption that six of the gardeners are employed for the purpose of image alone,<sup>72</sup> whereas Coolmore's revenue from stallion fees alone is around \$50 million per year.<sup>73</sup>

Dr Bell states that, if employing gardeners:

...didn't effect [sic] their customers' perception and perceived value, there would be no logical reason to do it.<sup>74</sup>

I agree that Coolmore and Darley must expect to benefit from the image enhancing costs that they incur, but:

<sup>69</sup> PAC review report, p 40.

<sup>70</sup> Dr Bell, *The Impact of The Drayton South Coal Mine Project Proposal on the Commercial Viability Of Coolmore Australia*, September 10 2015, p 2.

<sup>71</sup> Coolmore, *Coolmore Australia 2015*, p 40.

<sup>72</sup> I assume that the annual cost of employing one gardener is \$75,000 per year.

<sup>73</sup> Coolmore's stallion fees in 2014 were around \$48 million, based on multiplying the average foaling ratio of 66.66 per cent by potential fees of \$71,464,800. Sources: Coolmore's potential fees were calculated from data in the ASB and the average foaling ratio was sourced from Darryl Guihot, *Submission to the Planning Assessment Commission*, September 2015, p 8.

<sup>74</sup> Dr Bell, *The Impact of The Drayton South Coal Mine Project Proposal on the Commercial Viability Of Coolmore Australia*, September 10 2015, p 2.

- the proposed Drayton South mine will not prevent Coolmore and Darley from continuing to present their farms in whatever manner they chose; and
- the relatively small cost of employing gardeners does not imply that the perception of the environment around Coolmore and Darley is vital to their businesses.

By contrast, Coolmore and Darley have collectively spent over \$100 million on horses in the last 12 months, suggesting that the benefit to owning those horses is expected to be at least this amount.<sup>75</sup>

Dr Bell also states that:

the presence of the existing mines, is not currently effecting [sic] Coolmore's business. In essence, I see the situation currently as being 'out of site and out of mind.' I do, however, have grave concerns if there is mining activity within eyeshot or earshot of Coolmore's customers...<sup>76</sup>

The same fact pattern would hold true for Darley who would suffer the same threats.<sup>77</sup>

In my opinion, these statements do not correctly characterise the change in the perception of coal mining at Darley's Woodlands property that may be caused by the Drayton South mine because:

- coal mining is generally apparent to visitors to the Upper Hunter,<sup>78</sup> indeed there are three large-scale coal mining operations currently within 10km of Darley Woodlands.<sup>79</sup> For example, visitors to Darley Woodlands that arrive by air will fly over an extensive array of open cut mining operations;<sup>80</sup>
- the proposed Drayton South mine will not be visible from Darley Woodlands, except from areas around Trig Hill – however, this will not change the perception of visitors to Darley Woodlands because:
  - > it is already possible to see open cut mining from Trig Hill, including Mt Arthur Coal Mine and Hunter Valley Operations – the Bayswater Power Station can also be seen from the hill, and so I expect the view of one additional mine would not materially change the perception of people who climb this hill;<sup>81</sup>
  - > by its very nature, Trig Hill must be sloped – Figure 3.2 shows that Trig Hill is fairly steep, and so it is unlikely to be a key operational area for a thoroughbred business; and
  - > it appears that the vast majority of the Darley's Woodlands property is relatively flat,<sup>82</sup> so Trig Hill cannot form a large part of the property – it follows that Darley could easily keep customers away from this hill.

<sup>75</sup> Darley, *Submission to the Planning Assessment Commission*, 2 October 2015, p 11.

<sup>76</sup> Dr Bell, *The Impact of The Drayton South Coal Mine Project Proposal on the Commercial Viability Of Coolmore Australia*, September 10 2015, pp 2-3.

<sup>77</sup> Dr Bell, *The Impact of The Drayton South Coal Mine Project Proposal on the Commercial Viability Of Coolmore Australia*, September 10 2015, p 9.

<sup>78</sup> Hansen Bailey, *Drayton South Coal Project Environmental Impact Statement*, p 5-25.

<sup>79</sup> These are Hunter Valley Operations, Mount Arthur Coal and Drayton. Source: Google Maps of the location around Darley Woodlands.

<sup>80</sup> Hansen Bailey, *Drayton South Coal Project Environmental Impact Statement*, p 5-25.

<sup>81</sup> Hansen Bailey, *Drayton South Coal Project Environmental Impact Statement*, p 5-25.

<sup>82</sup> See Google Maps ([www.googlemaps.com](http://www.googlemaps.com)) and topographic map of Muswellbrook available at <http://www.ga.gov.au/metadata-gateway/metadata/record/47028/> using latitude 32.447 S and longitude 150.793 E, and Coolmore, *Submission to the PAC: Appendix B*, September 2015.

Figure 3.2: Photo of Trig Hill



Source: Photo provided by Anglo

### 3.1.2 Other thoroughbred businesses already have the same perception and are not affected

There are a number of other thoroughbred businesses that are located in the proximity of industry that visitors may find distasteful or at odds with the image of clean, green, bucolic, rural idyll that a thoroughbred business such as stud and broodmare farms may want to portray.<sup>83</sup> For example, I understand that:

- Darley's Kelvinside stud was located immediately next to the Walfertan tannery until 2012,<sup>84</sup> which I understand generated a very unpleasant odour and effluent mist;<sup>85</sup>
- Darley Woodlands is approximately 5km from the Mt Arthur coal mine;<sup>86</sup>

<sup>83</sup> PAC review report, p 47.

<sup>84</sup> Darley Australia Pty Ltd v Walfertan Processors Pty Ltd [2012] NSWCA 48, para 8; and Walfertan Processors Pty Limited v Upper Hunter Shire Council & Ors [2009] NSWLEC 1260, para 13.

<sup>85</sup> See: Newcastle Herald, *Rehabilitation headache*, 31 July 2012, [http://newsstore.fairfax.com.au/apps/viewDocument.ac.jsessionid=271674AA5F89A3941D432A2854625874?sy=afr&pb=all\\_ffx&dt=selectRange&dr=1month&so=relevance&sf=text&sf=headline&rc=10&rm=200&sp=brs&cls=1002&clsPage=1&docID=NCH120731AAL2O60VC5F](http://newsstore.fairfax.com.au/apps/viewDocument.ac.jsessionid=271674AA5F89A3941D432A2854625874?sy=afr&pb=all_ffx&dt=selectRange&dr=1month&so=relevance&sf=text&sf=headline&rc=10&rm=200&sp=brs&cls=1002&clsPage=1&docID=NCH120731AAL2O60VC5F), accessed 17 February 2016; Walfertan Processors Pty Limited v Upper Hunter Shire Council & Ors [2009] NSWLEC 1260, para 38 and section 1.4; and Newcastle Herald, *Walfertan tannery closes, 23 jobs lost*, 30 July 2012.

<sup>86</sup> A Visual Impacts Management Report was prepared as part of the Open Cut Modification Project for the Mr Arthur Coal Mine. This report includes a map that indicates that Darley's location is approximately 5 km from the mine tenements. BHP Billiton, *Mt Arthur Coal Mine - Open Cut Modification Project Visual Impacts Management Report Prepared for Hunter Valley Energy Coal*, July 2015, p 12.

- Muswellbrook Race Club is around 1km from the Bengalla coal mine and 2.5km from the Mt Arthur coal mine;<sup>87</sup>
- the Osborne Park and Darley training facility is situated next to a sand mine;<sup>88</sup> and
- Argyle Thoroughbreds is a broodmare farm that also stands two stallions, which is located approximately 3-4km from the Cadia valley gold mine.<sup>89</sup>

In each of these examples, thoroughbred horses are in close proximity to a business that is at odds with the image of a rural idyll. The fact that these facilities for thoroughbred horses are in those locations suggests that thoroughbred owners' perceptions are not significantly affected by the presence of these other businesses located nearby. It is not clear why the same cannot be expected to apply to Darley Woodlands.

Edinglassie is a successful broodmare farm located opposite an open cut coal mine

Edinglassie is a broodmare farm that offers agistment for mares and their progeny, along with foaling and hospital facilities.<sup>90</sup> It is located approximately 500 metres from the boundary of the Mt Arthur coal mine, the largest individual coal production site in the Hunter valley.<sup>91</sup> Mt Arthur mine first produced coal in 2002<sup>92</sup> and is separated from Edinglassie by Denman Road.<sup>93</sup> The farm is also located less than 2km from the Bengalla open cut coal mine,<sup>94</sup> operated by New Hope Corporation Limited.<sup>95</sup>

Edinglassie continues to produce winning race horses, despite its proximity to coal mines.<sup>96</sup> A number of horses produced at Edinglassie have recently won group 1 races, such as Shooting to Win, which won the Caulfield Guineas in 2014<sup>97</sup> and is now standing at stud at Darley's Kelvinside operation. The Thoroughbred Breeders of Australia awarded Listen Here – born and sold at Edinglassie Stud – as the Australian Broodmare of the Year 2014-2015.<sup>98</sup>

Edinglassie is a good comparator for the extent to which the perception of Darley Woodlands would be affected by the presence of a coal mine since:

- thoroughbred horses spend a substantial amount of time at both farms;
- the quality of thoroughbreds sold by Edinglassie are not inferior to those sold by Darley – in 2015, the average, publicly available sale price for horses sold by Darley and Edinglassie was \$20,694 and \$74,809 respectively;<sup>99</sup>

<sup>87</sup> Source: Google Maps, available at [www.googlemaps.com](http://www.googlemaps.com), using latitude 32.281 S and longitude 150.863 E.

<sup>88</sup> R Allen, *Drayton South Support Coexistence, PAC Hearing 10<sup>th</sup> & 11<sup>th</sup> September 2015*, p 7.

<sup>89</sup> R Allen, *Drayton South Support Coexistence, PAC Hearing 10<sup>th</sup> & 11<sup>th</sup> September 2015*, p 9 and [http://www.argylethoroughbreds.com.au/agistment\\_for\\_thoroughbreds\\_broodmares\\_foals\\_008.htm](http://www.argylethoroughbreds.com.au/agistment_for_thoroughbreds_broodmares_foals_008.htm), accessed 24 March 2016.

<sup>90</sup> Edinglassie website, <http://www.edinglassie.net.au/services/>, accessed 17 February 2016.

<sup>91</sup> BHP Billiton website, [www.bhpbilliton.com/businesses/coal](http://www.bhpbilliton.com/businesses/coal), accessed 17 February 2016.

<sup>92</sup> BHP Billiton, *Mt Arthur Coal: Investor/Analyst Presentation*, September 2003, p 14.

<sup>93</sup> NSW Mining, *Mining and horse breeding coexisting in the Hunter Valley Edinglassie Stud and BHP Billiton Mt Arthur coal mine*, April 2012, p 1.

<sup>94</sup> Source: Google Maps, available at [www.googlemaps.com](http://www.googlemaps.com), using latitude 32.284 S and longitude 150.862 E.

<sup>95</sup> NSW Mining, *Mining and horse breeding coexisting in the Hunter Valley Edinglassie Stud and BHP Billiton Mt Arthur coal mine*, April 2012, p 3. Rio Tinto sold its interest in the Bengalla mine in 2015. See: Rio Tinto media release, Rio Tinto agrees sale of interest in Bengalla Joint Venture for US\$606 million, 30 September 2015, [http://www.riotinto.com/media/media-releases-237\\_15787.aspx](http://www.riotinto.com/media/media-releases-237_15787.aspx), accessed 17 February 2016.

<sup>96</sup> NSW Mining, *Mining and horse breeding coexisting in the Hunter Valley Edinglassie Stud and BHP Billiton Mt Arthur coal mine*, April 2012, p 2.

<sup>97</sup> Edinglassie website, <http://www.edinglassie.net.au/gods-own/>, accessed 17 February 2016; and <https://www.racenet.com.au/horse/shooting-to-win>, accessed 17 February 2016.

<sup>98</sup> Edinglassie website, <http://www.edinglassie.net.au/australian-broodmare-of-the-year-2014-15/>, accessed 17 February 2016.

<sup>99</sup> Analysis of data from public horse auctions conducted by Inglis and Magic Millions in 2015, including broodmare, racehorse, yearling and weanling sales. See Inglis's website: <http://inglis.com.au/sales/results/#d3HqvJjHD7brKAX5.97>, accessed 21 January 2016; and Magic Millions' website: [http://www.magicmillions.com.au/calendar/category/sales/list/?tribe\\_paged=1&tribe\\_event\\_display=past](http://www.magicmillions.com.au/calendar/category/sales/list/?tribe_paged=1&tribe_event_display=past).

- a significant number of Edinglassie yearlings have been sired by stallions from Darley Kelvinside or other high quality studs, implying that broodmare owners are willing to send their horses to both Edinglassie and high quality stud farms, such as Darley Kelvinside – for example, in 2015 at least 24 per cent of yearlings sold by Edinglassie were sired by Darley's stallions, and at least 58 per cent were sired by stallions from the five best studs in the Hunter (as indicated by their average stallion fee), ie, Darley, Coolmore, Arrowfield, Vinery, or Widden;<sup>100</sup> and
- horses that are produced at Darley Woodlands and Edinglassie run in the same races – for example, Deep Field, Sebring Sun, Shooting to Win and Better Land were all born since 2010, sold by Edinglassie, competed in group 1 races, and against horses that were sold or owned by Coolmore or Darley.<sup>101</sup>

This analysis demonstrates that a large proportion of Edinglassie's customers use high quality stud farms (such as Darley Kelvinside) and are not put off by the presence of a coal mine close to their broodmare.

Numerous broodmare farms in the Hunter valley are not located as close to a coal mine as Edinglassie and, as such, broodmare owners could be expected to choose other farms if Edinglassie's proximity to the coal mine had a material effect on their perception of that farm. If such perceptions were in fact held by broodmare owners, Edinglassie would not be able to survive in its current location. In my opinion, the fact that Edinglassie is flourishing demonstrates that its customers do not generally perceive its proximity to mining operations to be a significant problem.

Claims that Edinglassie is not a good comparison are incorrect

The PAC notes in its report that there are a number of differences between the Edinglassie example and the presence of the proposed Drayton South mine near Darley Woodlands and Coolmore. In my opinion, none of the differences set out by the PAC are relevant to the question of whether the reputation and success of Edinglassie has been materially affected by the presence of two coal mines in close proximity. In particular, the PAC stated that:

- Edinglassie 'does not undertake covering on site'<sup>102</sup> – however, this observation is not relevant to the perception of Darley Woodlands where, similarly, no covers take place;
- the Edinglassie stud is owned by BHP Billiton, and so:
  - > 'priorities, operations and lines of communication between the stud and the adjoining mine should be able to be set out to ensure a cooperative partnership between the two land uses as they both form part of the one integrated business operation'<sup>103</sup> – however, this observation is neither correct nor relevant because:

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accessed 21 January 2016. All of the sales by Darley that are publicly available are those for broodmare and thoroughbred sales, rather than yearlings. Comparatively, Edinglassie's sales included broodmares, yearlings and weanlings.

<sup>100</sup> Darley, Coolmore, Arrowfield, Vinery and Widden had the highest average stallion fee in the Upper Hunter in 2015 based on information from the ASB. The percentage of yearlings sired by Darley stallions was calculated by dividing the number of yearlings vended by Edinglassie and sired by Darley stallions, by the total number of yearlings vended by Edinglassie. Data on yearling sales including the vendor, sire for each yearling are from Inglis and Magic Masters 2015 sales results <http://inglis.com.au/sales/results/#26oS7utJlvr5CeKA.97> [http://www.magicmillions.com.au/calendar/category/sales/list/?action=tribe\\_list&tribe\\_paged=1&tribe\\_event\\_display=past](http://www.magicmillions.com.au/calendar/category/sales/list/?action=tribe_list&tribe_paged=1&tribe_event_display=past). Data on the name of Darley's stallions are from Darley's websites <http://www.darley.com.au/our-stallions>, <http://www.darleyeurope.com/stallions/our-stallions/>, <http://www.darleyamerica.com/stallions/our-stallions/>, <http://www.darley.co.jp/stallions>, all accessed 17 February 2016.

<sup>101</sup> Source: Racenet website, <https://www.racenet.com.au/horse/better-land>, <https://www.racenet.com.au/horse/Deep-Field>, <https://www.racenet.com.au/horse/knoydart>, <https://www.racenet.com.au/horse/kumaon>, <https://www.racenet.com.au/horse/lands-end>, <https://www.racenet.com.au/horse/sebring-sun>, <https://www.racenet.com.au/horse/shooting-to-win>, all accessed 3 February 2016, accessed 17 February 2016.

<sup>102</sup> PAC review report, p 41.

<sup>103</sup> PAC review report, p 48.

- Edinglassie is located less than 2km from the Bengalla open cut coal mine,<sup>104</sup> which is not owned by BHP;<sup>105</sup>
  - the Edinglassie land is leased from BHP Billiton and the broodmare farm is operated by Mick and Michelle Talty,<sup>106</sup> ie, BHP Billiton does not own or operate the farm business;<sup>107</sup> and
  - a hierarchy of priorities or means of communication would have no apparent bearing on the perception of a broodmare owner who arrives at Edinglassie and sees the coal mine;<sup>108</sup>
- > 'the stud has the financial backing of a major multinational mining company, so profit and reliance on the whims and perceptions of external investors are less likely to constrain the operations than those of most studs'<sup>109</sup> – however, this observation is neither correct nor relevant because:
- as stated above, Edinglassie is not owned or operated by BHP Billiton;
  - Darley is owned by His Highness Sheikh Mohammed bin Rashid Al Maktoum, the Vice President and Prime Minister of the UAE and Ruler of Dubai – it is reasonable to conclude that Darley is less reliant on external investors than BHP Billiton, which has a wide, publicly traded shareholder base that expect the company to maintain profitable operations;
  - the extent of reliance on external investors is not relevant to the question of whether the reputation and success of Edinglassie has been materially affected by the presence of two coal mines in close proximity; and
- '...Edinglassie's ongoing success, reputation and viability is not of major significance to the broader sector'<sup>110</sup> – however, this observation is not relevant because the size and significance of Edinglassie does not have any bearing on whether its reputation and success has been materially affected by the presence of two coal mines in close proximity.

Darley itself did not state in its submission that Edinglassie was not a good comparison to its own Woodlands farm.

It is quite possible that the perception of Edinglassie's customers would have a more significant impact on it than any perception held by Darley Woodlands because:

- Edinglassie offers agistment and so broodmare owners may visit the farm, whereas this does not appear to be the case for Darley Woodlands;<sup>111</sup> and
- Darley's business model is to 'breed to race and race to breed',<sup>112</sup> which I take to mean that some of the thoroughbreds produced at Woodlands will be retained by Darley and so the perception of customers looking to buy the thoroughbreds that are being kept by Darley are not relevant – by contrast, it appears that none of the broodmares or foals kept at Edinglassie are owned by the farm itself, and so there must be potential customers for all of the foals produced there.<sup>113</sup>

<sup>104</sup> Source: Google Maps, available at [www.googlemaps.com](http://www.googlemaps.com), using latitude 32.284 S and longitude 150.862 E.

<sup>105</sup> NSW Mining, *Mining and horse breeding coexisting in the Hunter Valley Edinglassie Stud and BHP Billiton Mt Arthur coal mine*, April 2012, p 3; and Rio Tinto media release, Rio Tinto agrees sale of interest in Bengalla Joint Venture for US\$606 million, 30 September 2015, [http://www.riotinto.com/media/media-releases-237\\_15787.aspx](http://www.riotinto.com/media/media-releases-237_15787.aspx), accessed 17 February 2016.

<sup>106</sup> NSW Mining, *Mining and horse breeding coexisting in the Hunter Valley – Edinglassie Stud and BHP Billiton Mt Arthur Coal mine*, April 2012, p 1.

<sup>107</sup> Balmoral Operations Pty Ltd & The Trustee for Michael Talty Family Trust (ABN 73 362 149 289) is the holder of the business name 'Edinglassie Stud'. See the ASIC register of business names at: [https://connectonline.asic.gov.au/RegistrySearch/faces/landing/br/SearchBnRegisters.jspx?\\_adf.ctrl-state=19udw44y3\\_65](https://connectonline.asic.gov.au/RegistrySearch/faces/landing/br/SearchBnRegisters.jspx?_adf.ctrl-state=19udw44y3_65).

<sup>108</sup> There appears to be no evidence that these hierarchy of priorities and associated communication pathways exist.

<sup>109</sup> PAC review report, p 48.

<sup>110</sup> PAC review report, p 48.

<sup>111</sup> Darley, *Media release: Darley Australia to relocate its stallions in 2009*, 1 January 2009, <http://www.darley.com.au/news/press-release-1-january-2009>, accessed 17 February 2016.

<sup>112</sup> Darley, *Submission to the Planning Assessment Commission*, October 2015, p 10.

<sup>113</sup> Edinglassie website, <http://www.edinglassie.net.au/services/>, accessed 17 February 2016.

Consistent with the relative paucity of potential outside clients for its broodmare farm, I note that the Darley Australia website provides directions to its Kelvinside site, but does not list its Woodlands site. This suggests that potential clients rarely visit the Woodlands broodmare farm.<sup>114</sup>

Finally, a 2013 report states that there had been no credible data in relation to the impact of coal mining on Edinglassie.<sup>115</sup> However, I note that there is no need to investigate the nature or extent of any such effect, because the relevant question identified by the PAC is how thoroughbred owners will *perceive* the presence of a coal mine in the vicinity of their horses. In my opinion, the continued success of Edinglassie, including the sale of a horse in 2015 for \$700,000, strongly indicates that owners are not concerned by the presence of a coal mine nearby, even for very high quality horses.<sup>116</sup>

The conclusion I draw from my analysis above is that Edinglassie is a good comparison for Darley Woodlands and its continued success demonstrates that the owners of thoroughbred horses are comfortable using a broodmare farm that is in close proximity to coal mines. Consistent with this, there is no reason to expect that the same cannot be expected to occur at Darley Woodlands, if the Drayton South mine was to go ahead.

## 3.2 Darley would be better off remaining in the Upper Hunter

The PAC review report explains that:<sup>117</sup>

...it is of great concern to the Commission that the studs are considering leaving the Hunter Valley and that neighbouring states, or offshore locations such as New Zealand, could replace the Hunter Valley as the Southern Hemisphere's peak Thoroughbred Breeding Centre of Excellence. The Commission notes that Darley Australia already has facilities in Victoria, and that Australia and New Zealand have a long history of competition in thoroughbred breeding and racing.

I explain below the reasoning for my opinion that, if Darley nevertheless did wish to relocate its Woodlands broodmare farm in light of the Drayton South mine, it would be substantially more attractive for Darley to move to alternative sites in the Upper Hunter, as compared with alternative locations in Victoria or New Zealand.

### 3.2.1 Substantial benefits of being in the Upper Hunter

The Upper Hunter as a whole will not be affected by the proposed mine

The Upper Hunter will be essentially unchanged if the Drayton South mine goes ahead. The equine CIC has an area of 254,900 hectares<sup>118</sup> and the mine will not be on any of this land. If Coolmore and Darley Woodlands are taken to be affected by the mine, this would amount to 6,230 hectares or 2.4 per cent of the total area of the equine CIC.<sup>119</sup>

Similarly, the Drayton South mine will not have a significant effect on the total amount of coal produced in the Upper Hunter, increasing it by around seven per cent per year.<sup>120</sup> Consistent with this, the environmental impact of the Drayton South mine in the Upper Hunter as a whole is not expected to be substantial. The PAC

<sup>114</sup> Darley website, <http://www.darley.com.au/contact-us/australia/studs>, accessed 20 January 2016.

<sup>115</sup> La Tierre, *Potential Impacts of the Proposed Drayton South Coal Project on Coolmore and Woodlands Studs*, November 2013, p 36.

<sup>116</sup> Inglis, 2015 Australian Easter Yearling Sale results, Lot 279, <http://inglis.com.au/sales/info/2015+Australian+Easter+Yearling+Sale/index/1-0?listing=all#mMw1d3S70Kzby70D.97>, accessed 22 February 2016.

<sup>117</sup> PAC review report, p 49.

<sup>118</sup> NSW Government, *Frequently Asked Questions: Critical Industry Clusters Upper Hunter*, January 2014, p 2.

<sup>119</sup> See Figure 2.2 above for a map of the equine CIC and the proposed mine.

<sup>120</sup> The Drayton South mine will produce up to 6.4 million tonnes of ROM coal per year, whilst approximately 96 million tonnes is currently produced in the Hunter (159.2 million tonnes was produced in NSW with the Hunter making up 60 per cent of the total). PAC review report, p 1 and 11.

review report stated that 'the impacts of the mine would generally be accepted in another location in the Hunter Valley.'<sup>121</sup>

It is reasonable to assume that, after the proposed mine is constructed, the best location for Coolmore and Darley would continue to be the Upper Hunter, given that Coolmore and Darley currently locate there, and the area as a whole will be unchanged. There are many stud and broodmare farms that could be purchased within the area of the equine CIC, ie, the available land that is deemed to be ideal for thoroughbred breeding, is 254,900 hectares,<sup>122</sup> of which Darley Woodlands only has 2,630.<sup>123</sup> It therefore seems highly likely that suitable alternative sites could be found within the equine CIC.<sup>124</sup>

The Upper Hunter would remain the best place to stand stallions

The Upper Hunter has a number of key economic characteristics that make it particularly attractive for breeding thoroughbred horses (and which would remain the case if the Drayton South mine goes ahead). In particular:

- it is close to major ports and markets (in particular Sydney);<sup>125</sup>
- it has the best reputation of any thoroughbred breeding area in the southern hemisphere;<sup>126</sup>
- it has a large number of high quality service providers that are required by the thoroughbred breeding industry; and<sup>127</sup>
- it has an ideal environment for breeding thoroughbreds, including a temperate climate, protected aspect and varied terrain combined with a lack of tropical diseases.<sup>128</sup>

The Upper Hunter is also likely to be the most profitable region in which to stand stallions because it has:

- the largest number of potential customers (being broodmare owners); and
- customers that are willing to pay the highest fees.

First, the Upper Hunter has the most broodmares covered each year relative to any region in Australia and New Zealand by a significant margin, and so it will continue to have the most potential customers for any stallion owner. For example, the largest thoroughbred breeding location in Australia after the Upper Hunter is Goulburn, where there were 2,252 broodmares covered in 2011, compared to 8,286 in the Upper Hunter.<sup>129</sup> Similarly, the largest thoroughbred breeding region in New Zealand is the combined Auckland and Waikato region, which had 3,704 broodmares in 2010, and so is substantially smaller than the Upper Hunter.<sup>130</sup>

<sup>121</sup> PAC review report, p 47.

<sup>122</sup> NSW Government, *Frequently Asked Questions: Critical Industry Clusters Upper Hunter*, January 2014, p 2.

<sup>123</sup> Woodlands is 6,500 acres, which is equivalent to 2,630 hectares (using a conversion of 1 acre being 0.404686 hectares). Darley, *Submission to the Planning Assessment Commission*, October 2015, p 11.

<sup>124</sup> For example, I understand that the Richmond Grove farm is currently up for sale. This is a stud farm of 1,337.5 hectares in the Hunter valley that could form part of a larger operation. See: <http://www.meares.com.au/property/richmond-grove/gallery/richmond-grove.htm>, accessed 17 February 2016; and ABC, *Nathan Tinkler's horse stud sale on hold*, 17 September 2015.

<sup>125</sup> NSW Government Department of Primary Industries, *Upper Hunter Region Equine Profile*, June 2013, p 2.

<sup>126</sup> The Upper Hunter is ranked second only to Kentucky, USA in terms of the concentration of thoroughbred stud properties, the quality and number of bloodlines. NSW Government Department of Primary Industries, *Upper Hunter Region Equine Profile*, June 2013, p 1.

<sup>127</sup> NSW Government Department of Primary Industries, *Upper Hunter Region Equine Profile*, June 2013, p 4.

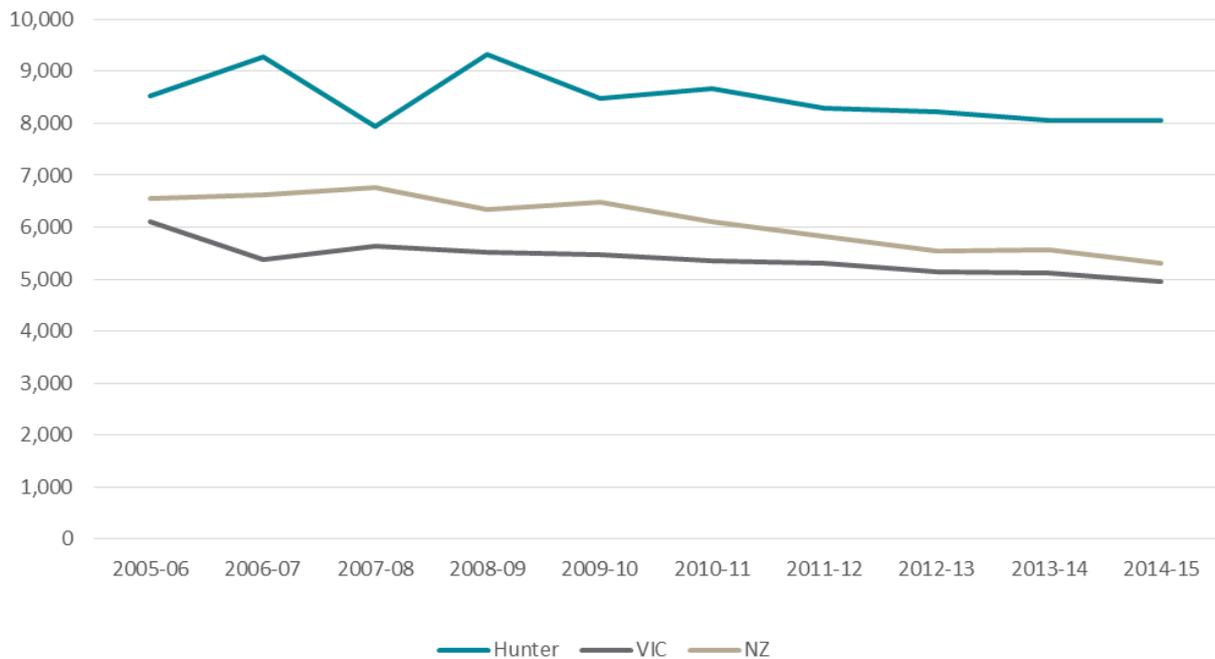
<sup>128</sup> Department of Planning and Infrastructure, *Strategic Regional Land Use Plan*, September 2012, p 22.

<sup>129</sup> The number of covers is an approximate measure of the number of broodmares. The number of covers may be less than the number of broodmares because there will be some broodmares that are not covered in each year. However, the number of covers may be higher than the number of broodmares if the mares are transported to an area to be covered.

<sup>130</sup> IER, *Size and Scope of the New Zealand Racing Industry*, October 2010, p 20.

Figure 3.3 shows that the number of mares covered in the Upper Hunter in each of the last ten years has been substantially more than all of Victoria and New Zealand.<sup>131</sup> It follows that the Upper Hunter has consistently had the most potential customers for stallion owners, over at least the last decade.

Figure 3.3: Number of mares covered in the Upper Hunter, Victoria and New Zealand



Sources: Coverings data from the ASB and New Zealand Thoroughbred Breeders' Association website, <http://www.nzthoroughbred.com/Facts-Figures/Facts-Figures/NZ-Breeding.aspx>, accessed 17 February 2016

Second, the Upper Hunter is likely to have by far the largest proportion of the highest quality broodmares of any region in Australia and New Zealand and, in turn, owners that are willing to pay the highest stallion fees. Table 3.1 below shows that the 2015 service fees of the top ten stallions in the Upper Hunter greatly exceeded those of the stallions standing in Victoria and New Zealand. For example, the fee for the tenth most expensive stallion in the Upper Hunter was still greater than all but one of the stallions standing in Victoria and New Zealand.

In addition, the total stallion fees paid in 2014 by broodmare owners in the Upper Hunter was \$192,298,040, whilst it was \$36,139,959 in Victoria.<sup>132</sup> Although some of this difference is due to the better quality stallions in the Upper Hunter, it seems likely that the willingness of broodmare owners to pay for stallion fees is likely to be lower in Victoria.<sup>133</sup>

<sup>131</sup> The number of broodmares in NSW has greatly exceeded the number of broodmares in Victoria throughout 1998-99 to 2013-14. See Australian Racing Board, *Australian Racing Fact Book 2003-04*, p 31; Australian Racing Board, *Australian Racing Fact Book 2006/07*, p 29; and Racing Australia, *2014/2015 Fact Book*, p 31.

<sup>132</sup> Source: analysis of data from the ASB.

<sup>133</sup> The much lower total value of yearling sales in New Zealand for 2014 (\$69,625,000) as compared to Australia (\$342,420,600) also indicates that the demand for stallions is lower in that country. Sources: New Zealand Thoroughbred Breeders' Association website, <http://www.nzthoroughbred.com/Facts-Figures/NZ-Yearling-Sales.aspx>, accessed 17 February 2016; and Australian Racing Board, *2013/14 Australian Racing Fact Book*, p 47.

Table 3.1: Top 10 stallions by service fee in the Upper Hunter, Victoria and New Zealand in 2015

Upper Hunter		Victoria		New Zealand	
Stallion	Service fee (AUD)	Stallion	Service fee (AUD)	Stallion	Service fee (NZD)
1 Fastnet Rock (AUS) 2001	\$200,000+ <sup>134</sup>	Brazen Beau (AUS) 2011	\$44,000	Savabeel (AUS) 2001	\$100,000
2 Exceed And Excel (AUS) 2000	\$110,000	Starspangledbanner (AUS) 2006	\$44,000	Ocean Park (NZ) 2008	\$30,000
3 Medaglia D'Oro (USA) 1999	\$110,000	Zoustar (AUS) 2010	\$44,000	Sacred Falls (NZ) 2009	\$30,000
4 Redoute's Choice (AUS) 1996	\$110,000	Helmet (AUS) 2008	\$33,000	Charm Spirit (IRE) 2011	\$25,000
5 Lonhro (AUS) 1998	\$88,000	Artie Schiller (USA) 2001	\$22,000	Pins (AUS) 1996	\$25,000
6 Pierro (AUS) 2009	\$77,000	Written Tycoon (AUS) 2002	\$19,800	Darci Brahma (NZ) 2002	\$20,000
7 Snitzel (AUS) 2002	\$71,500	Fiorente (IRE) 2008	\$17,600	Makfi (GB) 2007	\$17,500
8 All Too Hard (AUS) 2009	\$66,000	Magnus (AUS) 2002	\$17,600	Rip Van Winkle (IRE) 2006	\$16,000
9 More Than Ready (USA) 1997	\$66,000	Equiano (FR) 2005	\$16,500	Reliable Man (GB) 2008	\$15,000
10 Sepoy (AUS) 2008	\$66,000	Reset (AUS) 2000	\$16,500	Tavistock (NZ) 2005	\$15,000

Sources: Stallions Standing in 2015 by Service Fee – NSW, <http://www.tbaus.com/NSWstallions>, accessed 17 February 2016; Stallions Standing in 2015 by Service Fee – Victoria, <http://www.tbaus.com/VICstallions>; and Stallions Standing accessed 17 February 2016; <https://www.nzracing.co.nz/Breeding/Stallions-Standing.aspx>, accessed 17 February 2016.

Finally, the total demand for thoroughbreds in New Zealand is much lower than in Australia. For example, the total value of yearlings sold in New Zealand and Australia in 2014 was \$69,625,000<sup>135</sup> and \$342,420,700,<sup>136</sup> respectively. It follows that the demand for stallion services required to produce these yearlings will also be much lower in New Zealand.

The Upper Hunter is also the best place for Darley Woodlands to be situated, because it has the largest number of high quality stallions. To the extent Darley Woodlands' broodmares are covered by non-Darley stallions, the ready availability of high quality stallions is important to produce good quality foals.<sup>137</sup>

<sup>134</sup> The price of Fastnet Rock was listed as 'fee on application', however I understand that his fee for the 2015 season was over \$200,000. PAC review report, p 31.

<sup>135</sup> New Zealand Thoroughbred Breeders' Association website, <http://www.nzthoroughbred.com/Facts-Figures/NZ-Yearling-Sales.aspx>, accessed 17 February 2016

<sup>136</sup> Australian Racing Board, *2013/14 Australian Racing Fact Book*, p 47.

<sup>137</sup> Table 3.1: shows that the price of the stallions standing in the Upper Hunter is typically greater than the price of stallions standing in Victoria and New Zealand. Further, the number of stallions located in the Upper Hunter (81) exceeds the number of stallions located in Goulburn, Victoria (56) and Waikato and Auckland, New Zealand (50). Source: analysis of data from the ASB; IER, *Size and Scope of*

### 3.2.2 Staying in the Hunter will maximise revenue and minimise costs for Darley

Much more costly to leave the Hunter

I explained in section Figure 3.1 that Darley has an integrated operation in the Upper Hunter including a stud farm, a broodmare farm,<sup>138</sup> and two other training facilities nearby. The relocation of its broodmare farm would require the sale of its Woodlands property alone, and the purchase of a replacement property in the Upper Hunter, or an expansion of its Kelvinside farm. On the other hand, a move outside of NSW would involve at least the sale of the broodmare farm and the stud farm. Darley may also need to seek new customers, suppliers and potentially staff if it closed its NSW operations.

Darley also states that its breeding and racing operations are integrated, which includes facilities in NSW at Agnes Banks and Warwick Farm – see Figure 3.1. A move to Victoria would mean that these NSW facilities would be further from its breeding operations, which can be presumed to increase the overall cost of running those facilities.

Significant risk to revenue in leaving the Hunter

There is no apparent reason why Darley's revenue would change if it moved its broodmare farm to another location in the Upper Hunter. For example, it could have the same customers, horses, staff, suppliers etc. I explain in section 4.1.2 below that Darley's revenue in the Upper Hunter is likely to rise if Coolmore leaves, since it would have the opportunity to increase the number of covers it secures each season. In contrast, if Darley left the Upper Hunter there would be a significant risk that it would suffer a substantial reduction in its revenue, because the demand for stallion services in other regions is much lower (see section 3.2.1).

Any risk to Darley's stallion fee revenue would have a significant impact on its overall profitability, given that it earned around \$43 million from stallion fees in the Upper Hunter in 2014 and only \$3.7 million from the public sale of horses (some of which may have been from Woodlands).<sup>139</sup>

To summarise, moving out of the Upper Hunter would expose an important revenue source to substantial risk, and involve the very large cost of moving a stud farm and a broodmare farm. By contrast, remaining in the Upper Hunter would not involve any material risk to its revenue and the much lower cost of moving one farm a relatively short distance. In my opinion, it is highly likely to be in Darley's strategic, operational and financial interest to maintain its operation in the Upper Hunter.

### 3.3 Not in Coolmore's interest to leave the Upper Hunter

Coolmore will be in a very similar situation to that of Darley if the proposed Drayton South mine goes ahead, and so, for the same reasons I explain above for Darley, it will not be in Coolmore's best interest to leave the Upper Hunter. The main difference between Coolmore and Darley is that Coolmore has one only property in the Upper Hunter, being a stud farm located next to Darley Woodlands.<sup>140</sup>

*The Victorian Racing Industry*, September 2013, p 45, (Data for 2011); and New Zealand Studs & Stallions data, <http://www.nzthoroughbred.co.nz/studs-stallions/stallions.aspx>, accessed 22 February 2016.

<sup>138</sup> Darley, *Submission to the Planning Assessment Commission*, 2 October 2015, p 13.

<sup>139</sup> Darley's stallion fees for 2014 can be approximated by multiplying the foaling ratio of 66.66 per cent by the total potential stallion fees of [REDACTED] to give [REDACTED]. Sources: Darley's potential fees were calculated from data in the ASB and the average foaling ratio was sourced from Darryl Guihot, *Submission to the Planning Assessment Commission*, September 2015, p 8. The value of thoroughbreds sold by Darley was calculated by summing the auction sales price of thoroughbreds listed with Darley as the vendor, divided by the number of thoroughbreds sold with Darley listed as a vendor. Sales data, including the vendor and sale price, are from Inglis and Magic Masters 2015 sales results <http://inglis.com.au/sales/results/#26oS7utJlvr5CeKA.97> [http://www.magicmillions.com.au/calendar/category/sales/list/?action=tribe\\_list&tribe\\_paged=1&tribe\\_event\\_display=past](http://www.magicmillions.com.au/calendar/category/sales/list/?action=tribe_list&tribe_paged=1&tribe_event_display=past), accessed 17 February 2016. I have assumed that Darley owns all of its stallions and so receives all of the stallion fees. I understand that Woodlands may also contribute to Darley's revenue through private sales, on which I have no information. Further, Darley benefits from having its own horses raised at Woodlands, although there is no threat to this revenue from a change in customer's perceptions because there are no external customers in the case of its own horses.

<sup>140</sup> See Figure 2.2.

### 3.3.1 Change in perception will not affect where Coolmore locates

By virtue of the same reasoning I explain in section 3.1.1 in relation to Darley Woodlands, the perception of Coolmore will also not be substantially affected by the proposed Drayton South mine. This is because:

- coal mining is generally apparent to visitors to the Upper Hunter;
- Coolmore is already close to open cut coal mining operations – it is less than 5km from the Hunter Valley Operations coal mine;<sup>141</sup> and
- the Trig Hill area, being the point from which the Drayton South mine will be visible from Coolmore's property, must be sloped – Figure 3.2 shows that Trig Hill is fairly steep, and so it is unlikely to be a key operational area for a thoroughbred business. It appears that the vast majority of the Coolmore's property is relatively flat,<sup>142</sup> so Trig Hill is unlikely to form a large part of the property.

There are a number of other thoroughbred businesses located in the proximity of industry that visitors may find distasteful or at odds with the image of clean, green, bucolic, rural idyll that a stud farm may want to portray.<sup>143</sup> The fact that these facilities for thoroughbred horses are in those locations suggests that thoroughbred owners' perceptions are not significantly affected by the presence of these other businesses located nearby.

Coolmore has stated that some of the examples of other thoroughbred business to which I refer in section 3.1.2 are not relevant for a number of reasons, including that some of them are not breeding operations, and others have smaller operations than Coolmore.<sup>144</sup> In my opinion, these observations do not address the relevant question identified by the PAC, being the extent to which the perception of thoroughbred owners may change as a consequence of their animals being located in the vicinity of a business such as a mine.

A person that owns a thoroughbred will see, hear and smell the same things no matter what service is being purchased, or how many thoroughbreds are nearby. It follows that I expect customers' perceptions will not be affected by the service that is being purchased, or the number of thoroughbreds that are nearby.

Dr Bell contended that the Edinglassie example I set out in section 3.1.2 is not a good comparison to Coolmore's operations. Dr Bell stated that:<sup>145</sup>

To purport that such a farm [ie, Edinglassie] could be deemed comparable to Coolmore or capable of capturing a discerning clientele such as Coolmore's demonstrates a lack of understanding of the actual workings of the commercial thoroughbred horse business.

Dr Bell does not offer any further explanation or evidence to support his claim. On the contrary, in my opinion the comparison is a good one because:

- thoroughbred horses spend a substantial amount of time at both farms;
- some of Coolmore's customers have also been customers of Edinglassie.<sup>146</sup> The average price of yearlings sold by Coolmore and Edinglassie was approximately \$212,000 and \$100,500, respectively, in

<sup>141</sup> Source: Google Maps, available at [www.googlemaps.com](http://www.googlemaps.com), using latitude 32.470 S and longitude 150.880 E.

<sup>142</sup> See Google Maps ([www.googlemaps.com](http://www.googlemaps.com)) and topographic map of Muswellbrook available at <http://www.ga.gov.au/metadata-gateway/metadata/record/47028/> using latitude 32.452 S and longitude 150.847 E, and Coolmore, *Submission to the PAC: Appendix B*, September 2015.

<sup>143</sup> See section 3.1.2.

<sup>144</sup> Coolmore, *Submission to the Planning Assessment Commission*, September 2015, p 22.

<sup>145</sup> Dr Bell, *The Impact of The Drayton South Coal Mine Project Proposal on the Commercial Viability Of Coolmore Australia*, September 10 2015, p 7.

<sup>146</sup> For example, seven per cent of yearlings sold by Edinglassie were sired by Coolmore's stallions in the 2016 Magic Millions Gold Coast Yearling Sale, at. The percentage of yearlings sired by Coolmore stallions was calculated by dividing the number of yearlings vended by Edinglassie and sired by Coolmore stallions (one), by the total number of yearlings vended by Edinglassie (15). Data on horses sold is from: [http://www.magicmillions.com.au/calendar/category/sales/list/?action=tribe\\_list&tribe\\_paged=1&tribe\\_event\\_display=past](http://www.magicmillions.com.au/calendar/category/sales/list/?action=tribe_list&tribe_paged=1&tribe_event_display=past), accessed

2015, but many of Coolmore's horses were sold for less than the maximum price that Edinglassie achieved, demonstrating that there is a significant overlap in the quality of their horses;<sup>147</sup> and

- a significant number of Edinglassie yearlings have been sired by stallions from Coolmore or other high quality studs.<sup>148</sup>

Coolmore has stated that Edinglassie:<sup>149</sup>

- does not stand stallions;
- accommodates approximately 50 mares compared to over 600 at Coolmore; and
- has a small client base.

I note that whilst Coolmore stands stallions, both Edinglassie and Darley Woodlands do not, and so this first observation distinguishes Edinglassie from Coolmore, but not from Darley Woodlands.

Second, the fact that Edinglassie has fewer mares than Darley and Coolmore does not mean that the perception of each customer would be less affected by the existence of a coal mine nearby. It is difficult to imagine that a customer would hold the perception that:

- it was fine for their thoroughbred to be in the vicinity of a coal mine if there were few horses in the same farm; but
- it was problematic for their thoroughbred to be in the vicinity of a coal mine if there were many other horses in the same farm.

Third, there is no apparent reason that a smaller client base would mean that the perception of each customer of Edinglassie would be less affected by a coal mine – either a customer perceives that having a coal mine in close proximity to their thoroughbred is a problem, or it is not. There is no reason to expect that the number of other customers that a broodmare (or stud) farm has will not affect an individual customer's perception of the coal mine.

### 3.3.2 Coolmore would be better off remaining in the Upper Hunter

The substantial benefits of locating in the Upper Hunter that I set out in section 3.2.1 also apply to Coolmore and similarly, for the reasons I explain in section 3.2.2, staying in the Upper Hunter would maximise Coolmore's revenue, ie:

- leaving the Upper Hunter would involve the significant risk that:
  - > some of the stallions' owners would keep their thoroughbreds in the Upper Hunter when Coolmore left;
  - > Coolmore would lose key members of staff;
  - > Coolmore would require new suppliers; and
  - > Coolmore would lose customers, many of which are likely to remain in the Upper Hunter; whilst
- staying in the Upper Hunter at another high quality property would not involve the same risks.

<sup>17</sup> February 2016. Data on the name of Coolmore's stallions are from: Coolmore's website <http://www.darley.com.au/our-stallions>, accessed 17 February 2016.

<sup>147</sup> In 2015, 95 per cent of Coolmore's yearling sales were for a value less than the maximum achieved by Edinglassie (ie, \$700,000) based on analysis of data from public yearlings auctions conducted by Inglis and Magic Millions in 2015. See Inglis's website: <http://inglis.com.au/sales/results/#d3HqvJjHD7brKAX5.97>, accessed 21 January 2016; and Magic Millions' website: [http://www.magicmillions.com.au/calendar/category/sales/list/?tribe\\_paged=1&tribe\\_event\\_display=past](http://www.magicmillions.com.au/calendar/category/sales/list/?tribe_paged=1&tribe_event_display=past), accessed 21 January 2016.

<sup>148</sup> For example, of Edinglassie yearlings sold in 2015, 58 per cent were sired by stallions from the five best studs in the Hunter (as indicated by their average stallion fee), ie, Darley, Coolmore, Arrowfield, Vinery, or Widden. See footnote 100.

<sup>149</sup> Coolmore, *Submission to the Planning Assessment Commission*, September 2015, p 23.

The difference between Darley and Coolmore leaving is that Coolmore must move one farm, whether it moves within the Upper Hunter or moves out of the region altogether. It follows that the cost of moving out of the Upper Hunter is not so much greater than moving to another Upper Hunter property for Coolmore.

## 4. Equine CIC is not under threat

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The PAC found that the Drayton South proposal:<sup>150</sup>

...does not just threaten the viability of two neighbouring horse studs, but by virtue of the significance of those studs, it places the wider Equine Critical Industry Cluster under threat.

In my opinion, the equine CIC would not be under threat even in the unlikely event that Coolmore left the Upper Hunter because:

- the equine CIC would continue to be successful if Coolmore *and its stallions* left the Upper Hunter because:
  - > the many attractive features and reputation of the Upper Hunter would remain;
  - > new stud farms and stallions are likely to enter the equine CIC, and existing stud farms and stallions would expand their services; and
  - > the equine CIC would still be the largest thoroughbred breeding region in Australia and New Zealand;
- the thoroughbred industry in the equine CIC is dynamic with ownership of stallions and studs changing hands without affecting the underlying economics of the cluster, or its success; and
- at least some of the stallions that currently stand at Coolmore would remain in the Upper Hunter because it would be in the interest of stallion owners to maintain their horses in the location where they could earn the greatest revenue.

For the reasons I set out in section 3, it is extremely unlikely that Darley would leave the Upper Hunter. However, even if it did:

- the equine CIC would still have the greatest number of covers of any thoroughbred region in Australia and New Zealand; and
- only around six per cent of covers would be lost in the Upper Hunter, once the ability of other stud farms to undertake additional covers is taken into account.

It is even less likely that both Coolmore and Darley would leave the Upper Hunter (as distinct from either one of them leaving), because each stud farm would stand to benefit materially from the other leaving by expanding to fill the gap left by any stallions that may also leave. However, the equine CIC would not collapse if they both left the Upper Hunter because it would still be approximately double the current size of the next largest thoroughbred breeding areas in Australia and New Zealand, even before the likely expansion by other, competing stud farms is taken into account.

### 4.1 Equine CIC would not collapse if Coolmore left with all its stallions

#### 4.1.1 The attractive features of the Hunter would be unchanged

The many attractive features of the equine CIC for breeding thoroughbreds that I set out in section 2.2.2 would remain if Coolmore and its stallions left the Upper Hunter, ie:

- it would still be close to major ports and markets;
- its reputation and history would be the same;
- it would still have a large number of high quality service providers that are required by the thoroughbred breeding industry; and

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<sup>150</sup> PAC review report, p 51.

- its ideal environment for breeding thoroughbreds would not change.

I described in section 3.2.1 that the equine CIC would only be affected marginally by the Drayton South mine because none of the mine will be on the equine CIC land and, even if the proposed mine could be said to affect Coolmore and Darley Woodlands, this equates to only around 2.4 per cent of the equine CIC that is close to the mine.

#### 4.1.2 Entry and expansion would be likely

##### Stud farms

I assume that, if it left the Upper Hunter, Coolmore would seek to maximise the revenue from the sale of its stud farm. The value of its farm would be very substantially greater if it was sold as a thoroughbred stud farm rather than in any other use, such as cattle grazing.<sup>151</sup> It follows that Coolmore can be expected to try and sell its property as a thoroughbred stud farm, in which case the amount of land used for this purpose in the Upper Hunter would remain unchanged.<sup>152</sup>

Further, the exit of Coolmore would provide an excellent opportunity for entry by another stud farm. For example, Wattle Grove became a stud farm in around 2011 after the owners noticed that a number of stallions had left the area with the closure of Darley's stud at Cootamundra and the nearby Riverdene Stud scaled back its activities.<sup>153</sup> One example of how it was able to acquire stallions was that it secured a proven and well-recognised stallion from a stud farm in Victoria.<sup>154</sup> This is consistent with the conclusion of the Australian Competition and Consumer Commission (ACCC) in 2008 that 'barriers to entry into the national market for breeding thoroughbred horses appear to be relatively low'.<sup>155</sup>

Expansion by existing studs to stand more stallions at their farms in the Upper Hunter could be expected to replace some of the Coolmore stallions that had left the region. It is reasonable to assume that at least the Darley, Arrowfield, Vinery and Widden stud farms could expand by taking on a number of additional high quality stallions because:

- they are of a similar quality to those at Coolmore, based on their average stallion fees in 2014;<sup>156</sup>
- they had 50 stallions in 2015,<sup>157</sup> and so the addition of, say, six stallions would be an increase in the number of stallions by 12 per cent; and
- Figure 4.1 and Figure 4.2 show that those stud operations have been expanding their number of covers and stallions over the last decade – for example, Arrowfield, Vinery and Widden have collectively increased the number of covers they undertake per year by about 33 per cent from 2005 to 2014.<sup>158</sup>

<sup>151</sup> The gross margin (\$/hectare) for the thoroughbred breeding industry has been estimated at 20 times the value for premium cattle grazing. Marsden Jacob Associates, *Economic impact of the proposed Drayton South Open-cut Coal Mine development on the Hunter Valley Thoroughbred Industry*, 2013, p 39.

<sup>152</sup> There have been a number of examples of thoroughbred farms changing hands as set out in section 4.2. Coolmore would incur a very substantial cost if it left the Hunter and sold its farm for a purposes other than breeding thoroughbreds. Therefore, it would have a strong incentive to stay in the Upper Hunter if it could not sell its farm to be used for breeding thoroughbreds.

<sup>153</sup> Stallions website, <http://www.stallions.com.au/bluebloods/content/article.php?ArticleID=142>, accessed 17 February 2016.

<sup>154</sup> Bloodstock website, <http://www.bloodstock.com.au/news/story.php?id=58#9hUIZQOWaLQrDswC.97>, accessed 17 February 2016.

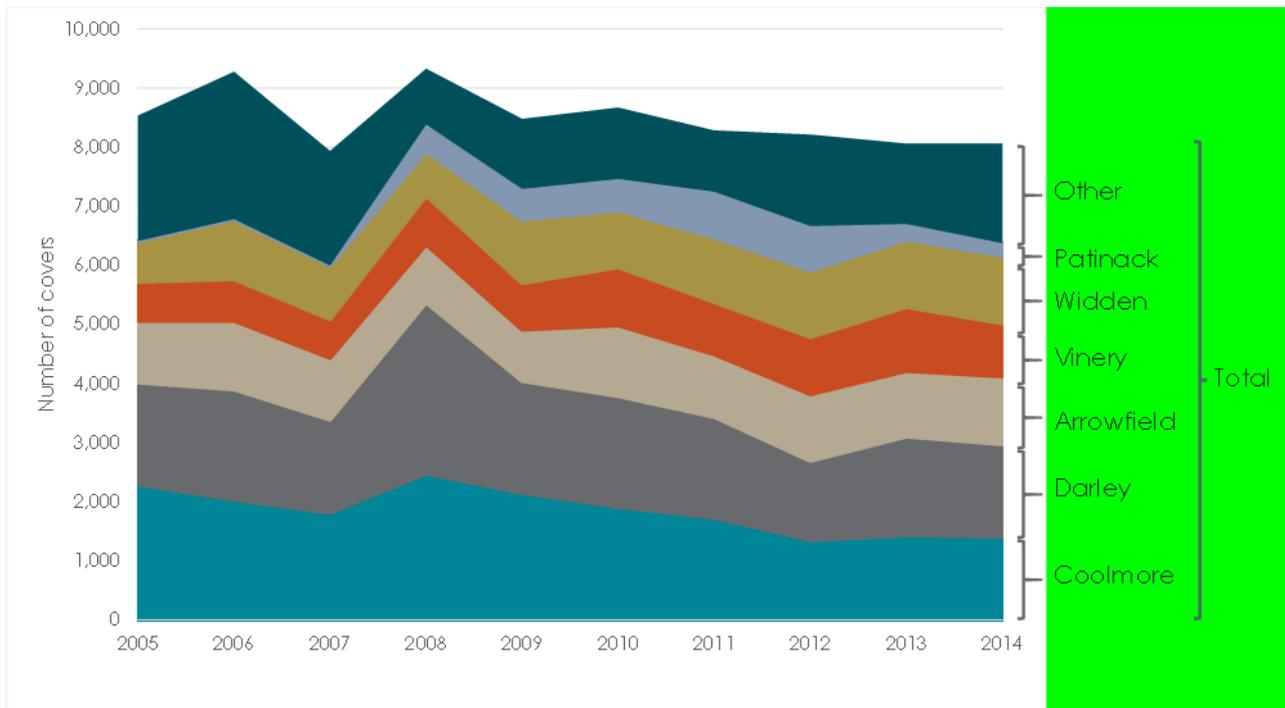
<sup>155</sup> ACCC, *Darley Australia Pty Ltd - proposed acquisition of Woodlands Stud*, May 2008, p 1.

<sup>156</sup> In 2014, Coolmore, Darley, Arrowfield, Vinery and Widden had an average stallion fee of around [REDACTED] respectively in the Hunter valley. Source: analysis of data in the ASB.

<sup>157</sup> Stallions Standing in 2015 by Service Fee – NSW, <http://www.tbaus.com/NSWstallions>, accessed 17 February 2016.

<sup>158</sup> Source: analysis of information from the ASB.

Figure 4.1: Cumulative number of covers for selected stud farms in the Upper Hunter



**Stallion services**

There are a large number of broodmare farms that could enter the stud farm business. Newgate farm was a broodmare farm in the Upper Hunter that established a stallion division in 2012 before acquiring a 1,000 acre Hunter stud property in 2013.<sup>159</sup> After selectively standing Australian and American stallions over several years, Newgate Farm is now an established top tier stud with seven stallions.<sup>160</sup>

Patinack Farm is another example of a recent entrant to the stallion services industry. The entry, expansion and exit of Patinack Farm occurred in a relatively short period with no material effect on the equine CIC as a whole. Figure 4.1 shows that the first covers for Patinack farm were in 2008, when it had four stallions.<sup>161</sup> Patinack Farm grew to have five stallions by 2012,<sup>162</sup> without having any noticeable difference to the number of covers in the Upper Hunter as a whole.<sup>163</sup>

These examples demonstrate the potential for a new stud to enter the Upper Hunter through the purchase of existing properties or expansion using an existing broodmare farm.

Stallion services

Figure 4.2 shows that the number of stallions standing at each stud changes over time, which may occur for a number of reasons, including that the stallions:

- are bought and sold;

<sup>159</sup> Newgate Farm website, <http://www.newgate.com.au/about.html>, accessed 17 February 2016.

<sup>160</sup> Newgate Farm website, <http://www.newgate.com.au/about.html>, accessed 17 February 2016.

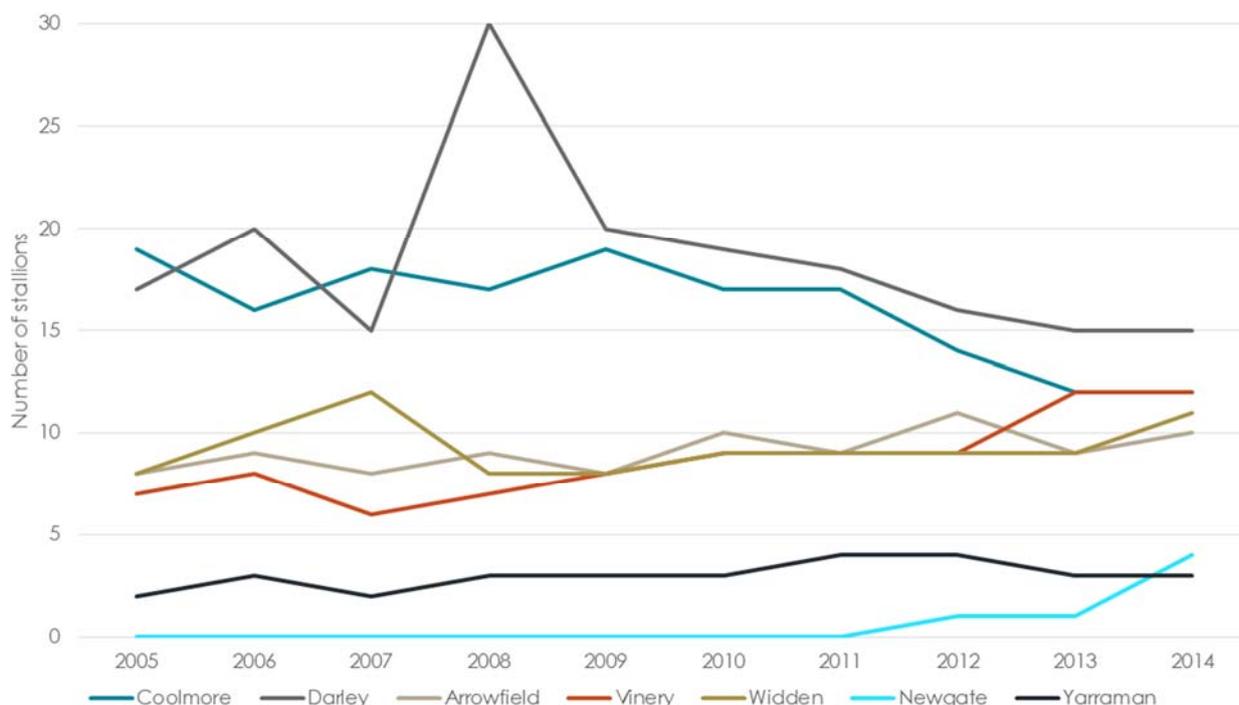
<sup>161</sup> Thoroughbred News, Patinack Farm announces inaugural stallion roster, 20 May 2008, <http://www.thoroughbrednews.com.au/australia/Archive.aspx?id=34950>, accessed 23 February 2016.

<sup>162</sup> Brissy Races website, <http://www.brissyraces.com.au/patinack-service-fees/>, accessed 23 February 2016.

<sup>163</sup> The total number of covers in the Hunter fell in 2011 (see Figure 4.1), when there was a big increase in the number of covers undertaken at Patinack Farm.

- are moved from one location to another, eg, shuttle stallions move between the northern and southern hemispheres;
- become more or less popular, eg, a stallion may become more desirable when its prodigy win significant races; and
- die or retire to stud.

Figure 4.2: Number of stallions at selected Upper Hunter stud farms



Source: analysis of information in the ASB. Notes: Darley refers to Kelvinside apart from 2008 when there were stallions at Woodlands. See Darley, Media release: Darley Australia sets its fees for the 2008 season, 1 June 2008, <http://www.darley.com.au/news/darley-press-release-1-june-2008>, accessed 22 February 2016; and Darley, Media release: Darley Australia to relocate its stallions in 2009, 1 January 2009, <http://www.darley.com.au/news/press-release-1-January-2009>, accessed 17 February 2016.

If the Coolmore stallions left the area, there would be an excess supply of broodmares in the Upper Hunter. This would create an opportunity and incentive for other owners to bring their stallions into the region from overseas or interstate, and for existing stallion owners in the Upper Hunter to increase the number of covers undertaken by stallions already standing in the Upper Hunter.

Figure 4.3 shows that the existing stallions in the Upper Hunter could undertake additional covers and easily replace all the covers provided by stallions from Coolmore that have fees under \$50,000. There is less capacity for expansion by more expensive stallions because there are fewer of them and they are working at closer to capacity. The net effect of Coolmore leaving and expansion by other studs is that there will be a loss of around 500 covers for horses with a stallion fee of over \$50,000. In other words, there would be a loss of approximately six per cent of covers, or three good quality stallions.

Darley would be in a position to benefit from Coolmore leaving by increasing its covers by up to around 450 per year, and its revenue by up to \$18 million.<sup>164</sup> This further increases the incentive for Darley to stay in the Upper Hunter.

<sup>164</sup> See Appendix A1 for the method I applied to reach these results.

Figure 4.3: Loss of covers by Coolmore taking into the account the potential for expansion by existing stallions

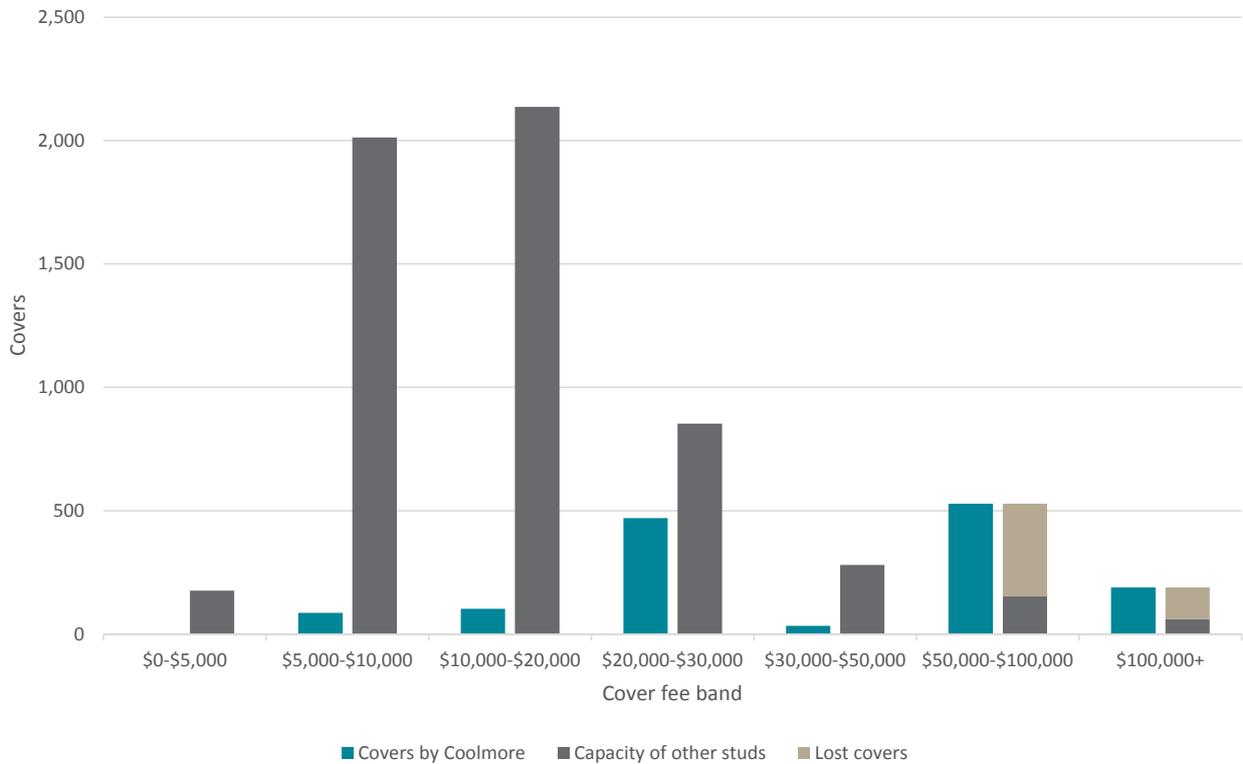


Figure 4.4: Loss of covers by Coolmore taking into the account the potential for expansion by existing stallions

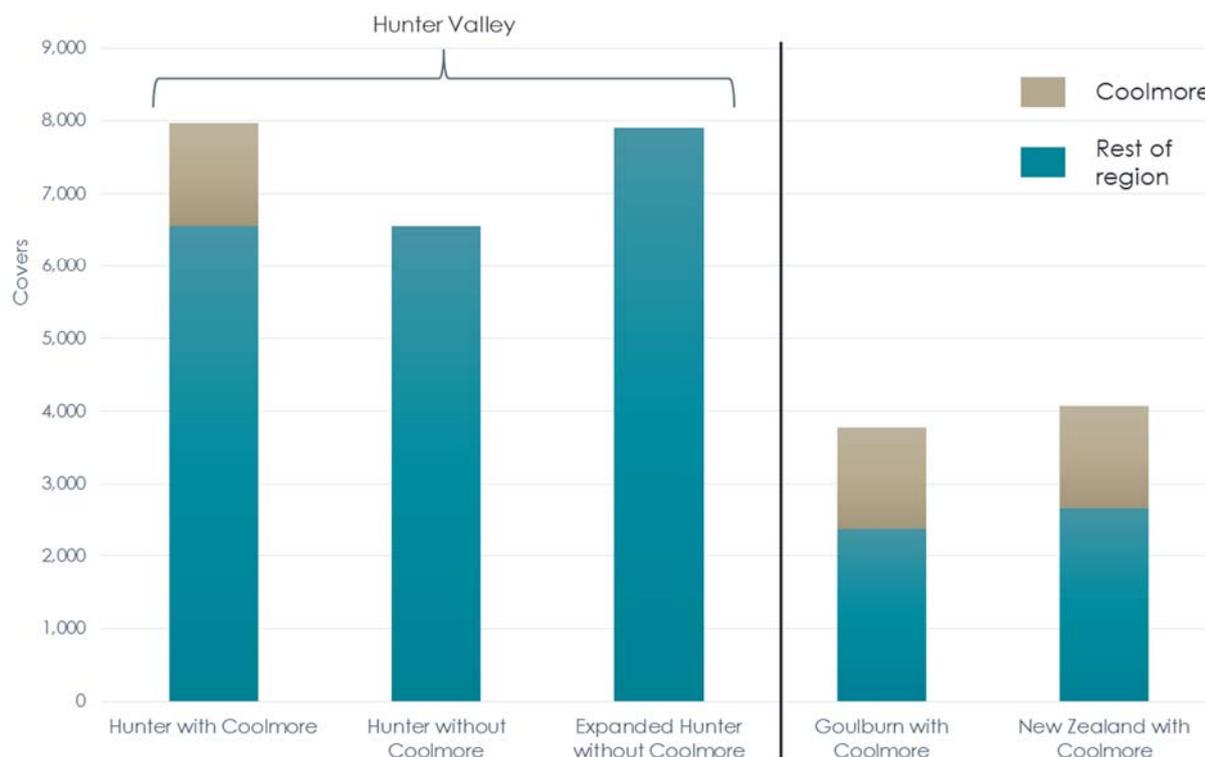
### 4.1.3 The equine CIC would reduce in size, but not collapse if Coolmore left

Equine CIC would still be the largest in Australia and New Zealand

Figure 4.4 shows that the Upper Hunter would still be the largest thoroughbred region in Australia and New Zealand by a large margin if Coolmore moved to one of the two next biggest thoroughbred breeding regions in Australasia, without any change to the number of covers it undertook.<sup>165</sup>

<sup>165</sup> In my opinion, it is more likely that the number of covers that Coolmore would undertake outside of the Hunter would be much lower than its current number because there would be a lack of broodmares outside the Upper Hunter.

Figure 4.4: Number of covers in the Upper Hunter and other regions



Source: [redacted], the number of covers in the Upper Hunter without Coolmore and the number of covers in expanded Hunter are derived from the ASB. In 2014 there were approximately 2,365 and 2,671 covers in the two biggest thoroughbred breeding areas of Victoria and New Zealand. See footnote 167 for a description of how these values were calculated.

There is no reason that the equine CIC would collapse, given that it would still be larger than other successful thoroughbred breeding regions. In the remainder of this section I assess the effect of stallions leaving on the decision of broodmare and stallions owners regarding where to locate.

#### Broodmare owners

I understand that some broodmare farms own some of their broodmares. A move out of the Upper Hunter is likely to be very costly for these businesses, because they would need to sell their farms whilst others were also selling in the same region and purchase a new one in an area in which others were also buying.

The broodmare owners that do not own farms can move their thoroughbreds at relatively modest cost and can be expected to locate them near the stallions they would like to use. These broodmare owners may move their thoroughbreds to be near Coolmore if:

- they typically use Coolmore stallions;
- there are sufficient good broodmare farms in the vicinity of the new Coolmore location; and
- the owners are not concerned about their broodmares being located further away from Sydney.

In 2014, Coolmore was responsible for around 1,400 covers, or 17 per cent of those that took place in the Upper Hunter, which I expect would represent the maximum number of broodmares that would leave the Upper Hunter.<sup>166</sup> There would be no need for owners to move their broodmares that will not be covered by Coolmore stallions.

<sup>166</sup> Coolmore undertook [redacted] covers out of a total of 8,062 in 2014. Source: Analysis of data from the ASB.

The number of broodmares that could leave the Upper Hunter is likely to be constrained by the availability of good broodmare facilities near to Coolmore's new location. In 2014 there were approximately 2,365 and 2,671 covers in the two biggest thoroughbred breeding areas of Victoria and New Zealand.<sup>167</sup> It follows that there would need to be an expansion in the number of covers in those locations of 60 and 53 per cent if all of the covers that were undertaken by Coolmore in 2014 were added to the two biggest thoroughbred breeding areas of Victoria and New Zealand, respectively.<sup>168</sup>

I expect that this degree of expansion would not be possible in the short term. For example, it would be likely to require more than 50 per cent more land, facilities and staff at broodmare farms and more associated services, such as veterinary, farrier, and feed. It follows that I expect that substantially fewer than 1,400 of broodmares to leave the Hunter if Coolmore and its stallions left.

I expect that a large proportion of the owners of broodmares in NSW also reside in the same state.<sup>169</sup> This implies that the owners would have to travel further to visit their horses if they move to Victoria or New Zealand, and I expect that this would put some owners off moving their horses outside of NSW.

#### Stallion owners

I expect that stallion owners will stand their stallions where they can expect to earn the highest revenue, ie, in the Upper Hunter.<sup>170</sup> Further, I expect that Coolmore would have to leave the Upper Hunter first before any broodmare owners would move their horses. It follows that there would be a period in which there would be an excess of broodmares in the Upper Hunter, or a lack of stallions. This would create a strong incentive for stallion owners from outside the Hunter to move their stallions there.

Other stallion owners in the Upper Hunter would also benefit from Coolmore leaving and can be expected to increase the number of covers they undertake, as shown in section 4.1.2.

#### Number of thoroughbreds is the key variable

The best way to assess how the exit of Coolmore may affect the equine CIC is to examine how many horses will leave the region, rather than, say, the value of the stallion fees that are earned by Coolmore. A stallion that is able to earn a higher fee will return more money to its owners. These owners need not reside anywhere near the Upper Hunter and the money may not be spent in the region.

By contrast, every thoroughbred in the Upper Hunter must be looked after, which involves spending in that region. One estimate puts the spending on service providers in the region to be around \$30,000 for each broodmare, not including the cost of a service fee.<sup>171</sup> It is this spending that keeps the broodmare farms, vets, farriers and other services providers in the equine CIC.

<sup>167</sup> There were approximately 2,671 covers in Waikato and Auckland in 2014/15. This is calculated by multiplying the number of broodmares serviced in New Zealand in 2014/15 (5,300) by an estimate of the proportion of the total covers in New Zealand that take place in Waikato and Auckland. The proportion of broodmares in Waikato and Auckland was estimated by dividing the total number of broodmares Waikato (2,542) and Auckland (1,162) by the total number on New Zealand in 2010 (7,350). Sources: New Zealand Thoroughbred Breeders' Association website, <http://www.nzthoroughbred.co.nz/Facts-Figures/Facts-Figures/NZ-Breeding.aspx>, accessed 17 February 2016; and IER, *Size and Scope of the New Zealand Racing Industry*, October 2010, p 20. There were 2,525 covers in Goulburn in 2010/11. Source: IER, *Size and Scope of the Victorian Racing Industry*, September 2013, p 45. I have adjusted this by the percentage change in the number of covers in Victoria from 2011 to 2014 which is a fall of six per cent, giving 2,365. The six per cent fall was calculated by dividing the total number of covers in Victoria in 2014 (4,964) by the number in 2011 (5,299), using figures from the ASB.

<sup>168</sup> Coolmore undertook 1,400 covers in 2014. Source: analysis of data from the ASB. Percentage expansion calculated by dividing the number of Coolmore covers by the number of covers in Goulburn (2,365) and Auckland/Waikato (2,671), based on previous footnote.

<sup>169</sup> There are a large number of individuals that own race horses in NSW. Racing Australia, *Annual Report 2015*, p 49.

<sup>170</sup> See section 3.2.1.

<sup>171</sup> Darryl Guihot, *Submission to the Planning Assessment Commission*, September 2015, p 23.

It follows that the best way to measure the change in the equine CIC as a result of Coolmore leaving is that there would be a loss of six per cent of covers, or around six per cent of horses at most,<sup>172</sup> leading to the same level of reduction in demand for services associated with taking care of thoroughbred horses. This does not take into account the likely entry by new stallions and/or stud farms that would reduce the reduction in demand.

## 4.2 Ownership of assets is not important

There is a long history of horse breeding activity in the equine CIC. For example, the land in the Upper Hunter occupied by Coolmore has been used for breeding horses since the 1800s, ie, almost 200 years before either Coolmore or Darley entered the Upper Hunter.<sup>173</sup>

There has been a history of changes of ownership of studs and stallions in the Upper Hunter, including the examples of Newgate given in section 4.1.2 above. Darley began its breeding operations in the Hunter less than 15 years ago with the purchase of Kelvinside Stud from Hilton Cope in 2003.<sup>174</sup> Darley leased Collingrove Stud and individual stallions to farms in Australia and New Zealand prior to purchasing the Kelvinside Stud.<sup>175</sup>

Darley expanded its breeding operations in the Upper Hunter with the purchase of Woodlands Stud and its stallions from Inghams Enterprises in May 2008.<sup>176</sup> The Woodlands Stud had been continuously operating as a thoroughbred stud since the 1800s, with owners including HC White, George Ryder, Lord Derby and the Ingham brothers.<sup>177</sup>

Other examples of studs changing ownership include Coolmore, Arrowfield and Richmond Grove. Coolmore purchased its Upper Hunter stud farm in 1995 from Arrowfield,<sup>178</sup> which then relocated to its present location near Scone and has remained very successful.<sup>179</sup>

Richmond Grove was established by Patinack Farm, with the purchase of seven adjoining properties between August 2008 and December 2011 – including the established Swettenham Stud near Sandy Hollow.<sup>180</sup> It was estimated that the stud will accommodate 300 to 500 mares plus weanlings.<sup>181</sup> The property has been listed for sale since 2013, and is yet to be sold.<sup>182</sup>

Other examples of entry and exit in the Upper Hunter include:<sup>183</sup>

<sup>172</sup> I estimate that there would be a reduction in the number of covers of six per cent in section 4.1.2, after taking into account expansion by other stud farms. This would lead to a six per cent reduction in the number of broodmares only if all of the broodmares that were covered by Coolmore left the Upper Hunter. This does not take into account the number of stallions, but this is very small compared to the number of broodmares.

<sup>173</sup> Coolmore, *Submission to the Planning Assessment Commission*, September 2015, p 24.

<sup>174</sup> Darley website, <http://www.darley.com.au/about-us/introduction>, accessed 17 February 2016.

<sup>175</sup> Blood-Horse article, *Darley purchases Australian property*, 19 August 2002, <http://www.bloodhorse.com/horse-racing/articles/11008/darley-purchases-australian-property>, accessed 17 February 2016.

<sup>176</sup> Darley, *Media release: Darley's purchase of Woodlands approved*, 13 May 2008, <http://www.darley.com.au/news/darleys-purchase-woodlands-approved>, accessed 17 February 2016. Darley, *Media release: Darley Australia to relocate its stallions in 2009*, 1 January 2009, <http://www.darley.com.au/news/press-release-1-January-2009>, accessed 17 February 2016.

<sup>177</sup> Darley, *Submission to the Planning Assessment Commission*, 2 October 2015, pp 10-11.

<sup>178</sup> Coolmore, *Submission to the Planning Assessment Commission*, September 2015, p 24.

<sup>179</sup> Arrowfield is one of the top five studs in the Upper Hunter (as indicated by service fees) and accounted for 14 per cent of the total number of covers in the Upper Hunter region in 2014. Source: data from ASB.

<sup>180</sup> Meares and Associates website, <http://www.meares.com.au/property/richmond-grove/gallery/richmond-grove.htm>, accessed 17 February 2016; ABC, *Prominent Hunter stud farm up for sale*, 4 June 2008; and ABC, *Tinkler buys Swettenham Stud*, 21 August 2008.

<sup>181</sup> Newcastle Herald, *Patinack property fire sales*, 7 October 2014.

<sup>182</sup> ABC, *Nathan Tinkler's horse stud sale on hold*, 17 September 2015. Patinack Farm could be purchased by Coolmore or Darley for example.

<sup>183</sup> Based on analysis of ASB data.

- Baerami Thoroughbreds, which stopped doing covers in 2012;
- Lincoln Farm, which began doing covers in 2009; and
- Ilala Stud, which undertook a large number of covers in 2009 but almost none in 2013.

The equine industry in the Upper Hunter has been successful throughout the period of the studs listed above changing hands.<sup>184</sup> This indicates that it is not the name of the owner of each stud farm that is important. Rather, it is the underlying characteristics of the industry, its reputation, the skilled workforce, the Hunter environment, the quality and quantity of bloodstock in the region, and the hundreds of businesses that are part of the equine CIC that are more important (see section 3.2.1 for details of the benefits of being in the Upper Hunter for an equine business).

### 4.3 Stallions would not leave the Hunter even if Coolmore and Darley left

It is in the interests of owners to stand their stallions in the location that will maximise the fees that can be earned for providing covers, which will be dependent upon:

- the number of broodmares that are covered in the region each year – the more potential customers there are, the greater is the number of covers that a stallion can perform each year;
- the quality of the broodmare stock – the price of yearlings produced by broodmares with better bloodlines will be higher, and as such, owners of those broodmares will be willing to pay more for services from higher quality stallions; and
- the degree of competition from other stallions in the same location.

It is also in the interest of owners to have their stallions cover the highest quality broodmares so that they are more likely to produce horses that will win races, and further increase the willingness of broodmare owners to pay for stallion services in the future.

Stallion fees are likely to be maximised by being located in the Upper Hunter because:

- moving to a new area will increase in the number of stallions in that location leading to greater competition for stallion services; and
- the Upper Hunter has the greatest number of covers and broodmare owners are willing to pay the highest amounts for stallion fees of all thoroughbred regions in Australia and New Zealand, and the demand for yearlings is much greater in Australia as compared to New Zealand.<sup>185</sup>

Coolmore has acknowledged the risk that stallion owners may choose to stand their stallions at other stud farms.<sup>186</sup> It follows that at least some of the owners of the stallions that currently stand at Coolmore can be expected to move their stallions to another high quality stud in the Hunter, if Coolmore left the region.

The cost of leaving the Upper Hunter for Coolmore would be substantially increased if some stallion owners moved their thoroughbreds away from the Coolmore stud. Further, the broodmare owners and associated industries would have no reason to leave the Upper Hunter if the stallions stayed in the Hunter whilst

<sup>184</sup> According to the Hunter Thoroughbred Breeders Association, the Hunter Valley has a proud heritage spanning more than 150 years of thoroughbred breeding. See Hunter Thoroughbred Breeders Association website, <http://www.htba.com.au/#/our-industry/c17w3>, accessed 17 February 2016. In 2006, the Upper Hunter had at least 119 studs and 6,617 stud horses (presumably these are broodmares and stallions together). See: NSW Government Department of Primary Industries, *Upper Hunter Region Equine Profile*, June 2013, p 2.

The presence of Coolmore and Darley has not substantially affected the distribution of thoroughbreds across Australia. In 1999/00, NSW had 36 per cent of broodmares (11,323 out of a total of 31,654). See: Australian Racing Board, *Australian Racing Fact Book 2005/06*, p 29. Similarly in 2013/14, NSW had 37 per cent of broodmares in Australia. See: Australian Racing Board, *2013/14 Australian Racing Fact Book*, p 32.

<sup>185</sup> See section 3.2.1.

<sup>186</sup> Coolmore, *Submission to the Planning Assessment Commission*, p 7.

Coolmore left, and so the effect on the Upper Hunter economy of Coolmore and Darley leaving would be reduced.

#### 4.4 Equine CIC would not collapse if Darley left with all its stallions

I explain in section 4.1.1 that the attractive features of the Upper Hunter would be unchanged if Darley left, and so, for the reasons set out in section 4.1.2, entry and expansion would be likely.

Expansion by existing studs to stand more stallions at their farms in the Upper Hunter could be expected to replace any stallions that left the region. It is reasonable to assume that at least the Coolmore, Arrowfield, Vinery and Widden stud farms could expand by taking on a number of additional high quality stallions because:

- they are of a similar quality to those at Darley, based on their average stallion fees in 2014;<sup>187</sup>
- they had 47 stallions in 2015<sup>188</sup> and so the addition of, say, six stallions would be an increase in the number of stallions by 13 per cent; and
- a number of those stud operations have been expanding their number of covers and stallions over the last decade – see Figure 4.1 and Figure 4.2.

Figure 4.5 shows that the existing stallions in the Upper Hunter could undertake additional covers and replace almost all those provided by stallions from Darley that have fees under \$50,000. The net effect of Darley leaving and expansion by other studs is that there will be a loss of around 458 covers (six per cent of the total), which is equivalent to around three good quality stallions.

Coolmore would be in a position to benefit from Darley leaving by increasing its covers by up to around 610 per year, and its revenue by up to \$14 million.<sup>189</sup> This further increases the incentive for Coolmore to stay in the Upper Hunter.

<sup>187</sup> In 2014, Coolmore, Darley, Arrowfield, Vinery and Widden had an average stallion fee of around [REDACTED] respectively in the Hunter valley. Source: Analysis of data in the ASB.

<sup>188</sup> Stallions Standing in 2015 by Service Fee – NSW, <http://www.tbaus.com/NSWstallions>, accessed 17 February 2016.

<sup>189</sup> See Appendix A1 for the method I applied to reach these results.

Figure 4.5: Loss of covers by Darley taking into the account the potential for expansion by existing stallions

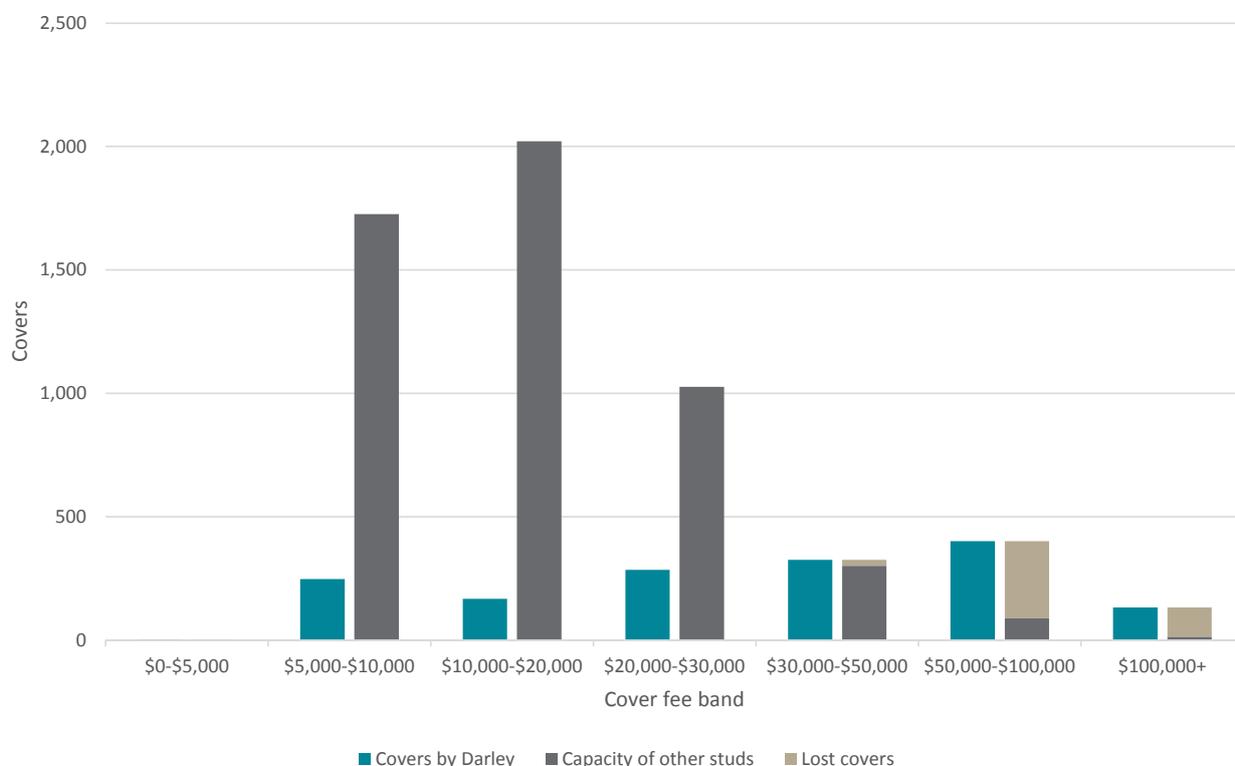


Figure 4.6: Expansion of the Upper Hunter region of broodmare covers

In 2014, Darley was responsible for 1,561 covers or 19 per cent of those that took place in the Upper Hunter, which I expect would represent the maximum number of broodmares that would leave the region.<sup>190</sup>

The number of broodmares that could leave the Upper Hunter is likely to be constrained by the availability of good broodmare facilities near to Darley’s new location. In 2014 there were approximately 2,365 and 2,671 covers in the two biggest thoroughbred breeding areas of Victoria and New Zealand.<sup>191</sup> It follows that there would need to be an expansion in the number of covers in those locations of 66 and 58 per cent if all of the covers that were undertaken by Darley in 2014 were added to the two biggest thoroughbred breeding areas of Victoria and New Zealand, respectively.<sup>192</sup>

I expect that this degree of expansion would not be possible in the short term and so substantially fewer than 1,561 of broodmares to leave the Upper Hunter if Darley and its stallions left.

Figure 4.6 shows that the Upper Hunter would still be the largest thoroughbred region in Australia and New Zealand by a significant margin if Darley moved to one of the two next biggest thoroughbred breeding regions in Australasia, without any change to the number of covers it undertook.<sup>193</sup> There is no reason that the equine CIC would collapse, given that it would still be larger than other successful thoroughbred breeding regions.

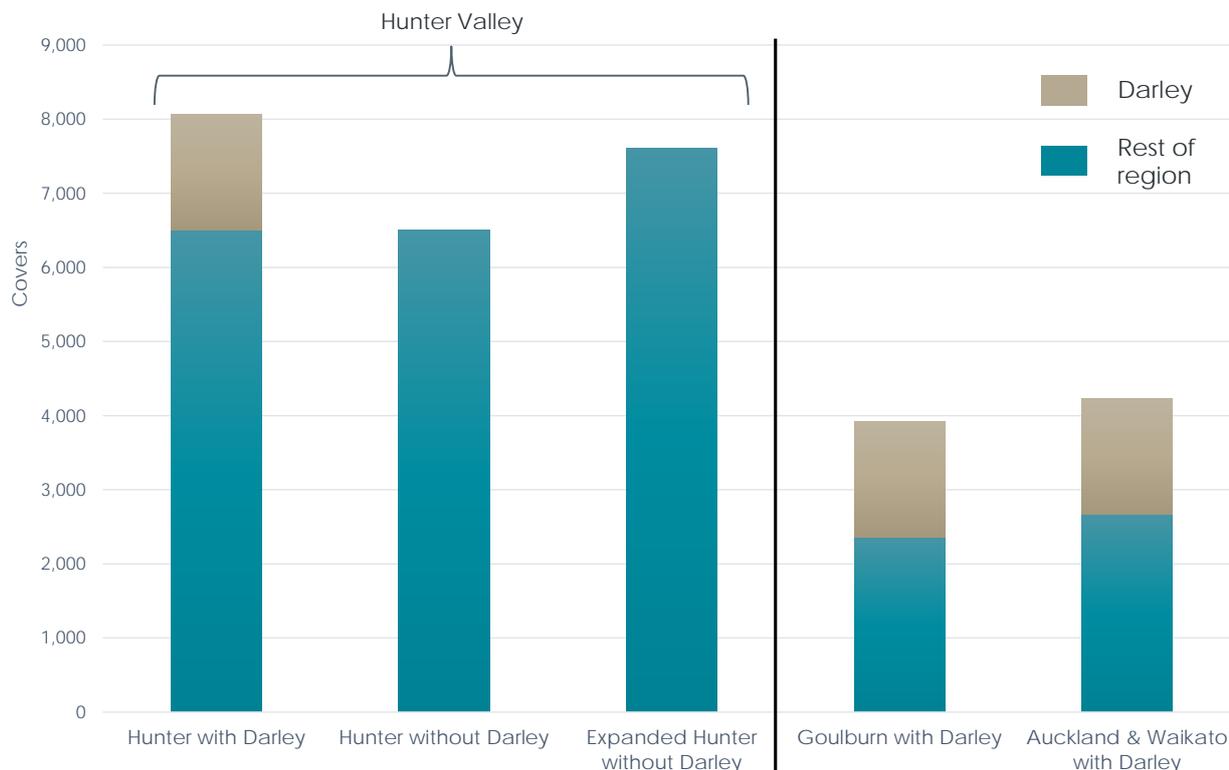
<sup>190</sup> Darley undertook 1,561 covers out of a total of 8,062 in 2014. Source: Analysis of data in the ASB.

<sup>191</sup> See footnote 167.

<sup>192</sup> Darley undertook 1,561 covers in 2014. Source: Analysis of data in the ASB. Dividing 1,561 by the number of covers in Goulburn (2,365) and Auckland/Waikato (2,671) gives 66 and 58 respectively.

<sup>193</sup> In my opinion, it is more likely that the number of covers that Darley would undertake outside of the Upper Hunter would be much lower than its current number because there would be a lack of broodmares outside the Upper Hunter.

Figure 4.6: Number of covers in the Upper Hunter and other regions



Source: **The number of covers undertaken by stallions in 2014**, the number of covers in the Upper Hunter without Darley and the number of covers in expanded Hunter are derived from the ASB. In 2014 there were approximately 2,365 and 2,671 covers in the two biggest thoroughbred breeding areas of Victoria and New Zealand. See footnote 167 for a description of how these values were calculated.

#### 4.5 Equine CIC would not collapse if Coolmore and Darley left

I explain above that the attractive features of the Upper Hunter would be unchanged, and that entry and expansion by competitors would be likely, if Darley and Coolmore were to leave the Upper Hunter.

Expansion by existing studs to stand more stallions at their farms in the Upper Hunter could be expected to replace any Coolmore or Darley stallions that left the Upper Hunter. It is reasonable to assume that at least the Arrowfield, Vinery and Widden stud farms could expand by taking on a number of additional high quality stallions because:

- they are of a similar quality to those at Coolmore and Darley, based on their average stallion fees in 2014;<sup>194</sup>
- they had 32 stallions in 2015<sup>195</sup> and so the addition of, say, six stallions would be an increase in the number of stallions by 19 per cent; and
- they have been expanding their number of covers and stallions over the last decade – see Figure 4.1 and Figure 4.2.

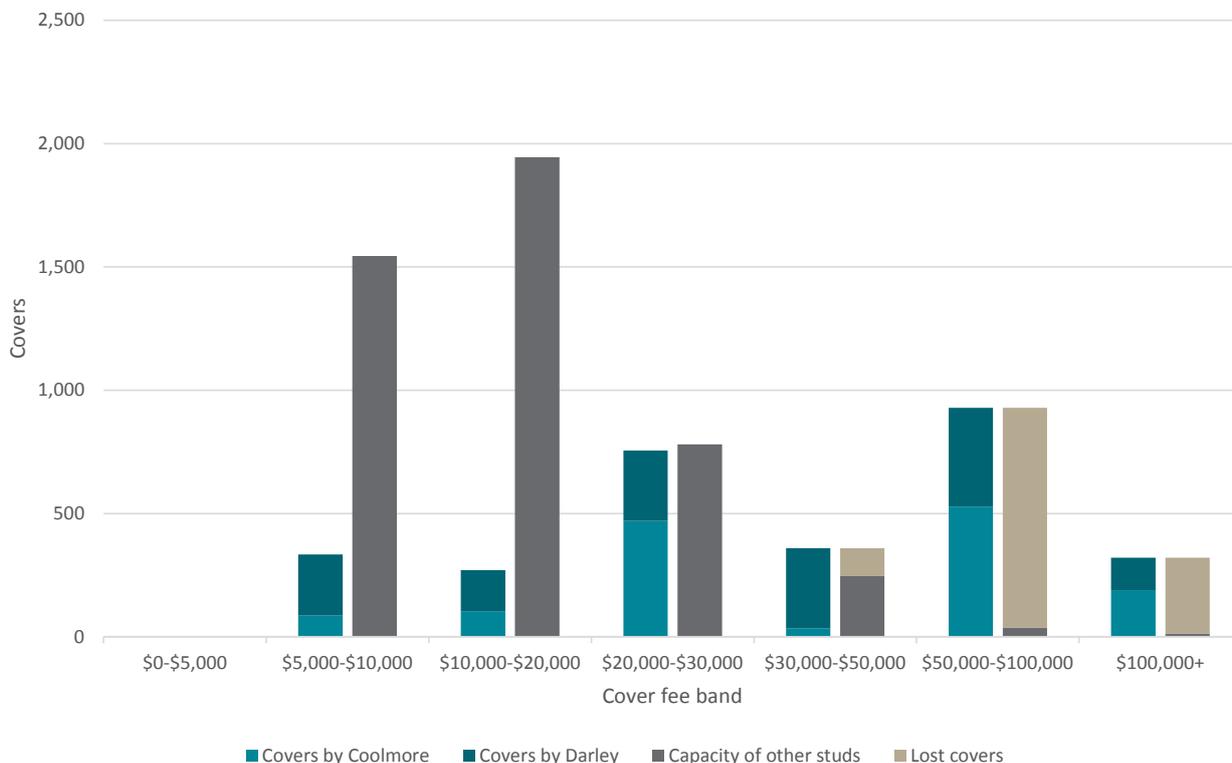
**Figure 4.7** shows that the existing stallions in the Upper Hunter could undertake additional covers and replace the vast majority of those provided by stallions from Darley and Coolmore that have fees under

<sup>194</sup> In 2014, Coolmore, Darley, Arrowfield, Vinery and Widden had an average stallion fee of around **\$10,000** respectively in the Hunter valley. Source: analysis of data in the ASB.

<sup>195</sup> Stallions Standing in 2015 by Service Fee – NSW, <http://www.tbaus.com/NSWstallions>, accessed 17 February 2016.

\$50,000. The net effect of Darley and Coolmore leaving and expansion by other studs is that there would be a loss of around 1,314 covers (16 per cent of the total), which is equivalent to around eight good quality stallions.

Figure 4.7: Loss of covers by Coolmore and Darley taking into the account the potential for expansion by existing stallions



Source: See Appendix 1 for the method I applied to reach these results.

In 2014, Coolmore and Darley were responsible for around 3,000 covers, or 37 per cent of those that took place in the Upper Hunter, which I expect would represent the maximum number of broodmares that would leave the Upper Hunter.<sup>196</sup>

The number of broodmares that could leave the Upper Hunter is likely to be constrained by the availability of good broodmare facilities near to Coolmore’s and Darley’s new location. In 2014 there were approximately 2,365 and 2,671 covers in the two biggest thoroughbred breeding areas of Victoria and New Zealand.<sup>197</sup> It follows that there would need to be an expansion in the number of covers in those locations of 126 and 111 per cent if all of the covers that were undertaken by Coolmore and Darley in 2014 were added to the two biggest thoroughbred breeding areas of Victoria and New Zealand, respectively.<sup>198</sup>

I expect that this degree of expansion would not be possible in the short term and so substantially fewer than 3,000 broodmares would leave the Upper Hunter if Coolmore and Darley left the region.

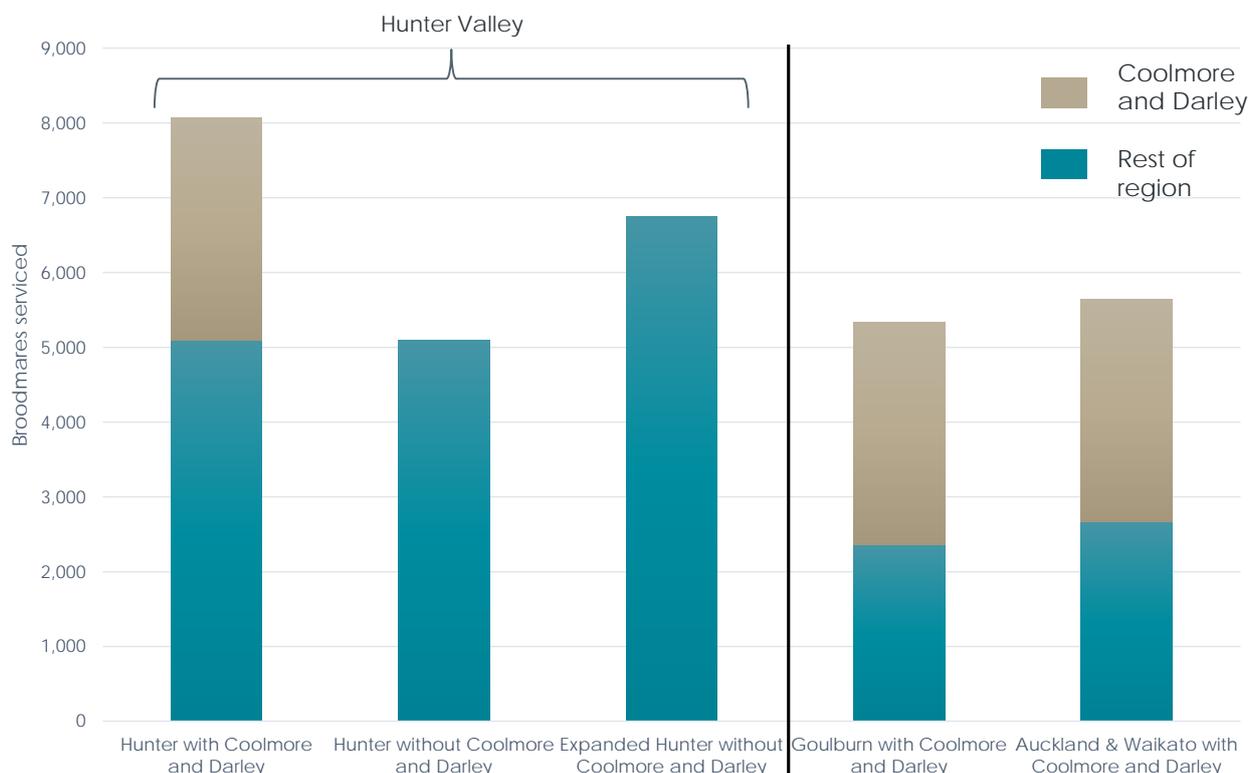
<sup>196</sup> Analysis of data in the ASB.

<sup>197</sup> See footnote 167.

<sup>198</sup> In 2014, Coolmore and Darley were responsible for 1,500 and 1,500 covers respectively. Source: Analysis of data in the ASB. Dividing the total number of Coolmore and Darley covers by the number of covers in Goulburn (2,365) and Auckland/Waikato (2,671), yields 63 per cent and 56 per cent respectively.

Figure 4.8 shows that the Upper Hunter would still be the largest thoroughbred region in Australia and New Zealand if Coolmore and Darley moved to one of the two next biggest thoroughbred breeding regions in Australasia, after taking into account the likely expansion by other stud farms.<sup>199</sup> There is no reason that the equine CIC would collapse, given that it would still be larger than other successful thoroughbred breeding regions.

Figure 4.8: Number of covers in the Upper Hunter and other regions



Source: [The Impact of Stud Farm Relocation on Thoroughbred Breeding in Australia and New Zealand](#); the number of covers in the Upper Hunter without Coolmore and Darley, and the number of covers in the expanded Hunter are derived from the ASB. In 2014 there were approximately 2,365 and 2,671 covers in the two biggest thoroughbred breeding areas of Victoria and New Zealand. See footnote 167 for a description of how these values were calculated.

<sup>199</sup> I assume there is no change to the number of covers they undertook. In my opinion, it is more likely that the number of covers that Coolmore and Darley would undertake outside of the Hunter would be much lower than their current number because there would be a lack of broodmares outside the Upper Hunter.

## 5. Declaration

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I confirm that, in the course of preparing this report, I have been provided with a copy of and read, understood and agree to be bound by terms of the code of conduct.



Greg Houston

29 March 2016

## A1. Expansion analysis

In this appendix, I set out how I calculated the number of covers that would be lost by the exit of Coolmore and its stallions from the Hunter Valley, which I described in section 4.1.2 and figure 4.3. I use the same method to calculate the number of covers that would be lost by the exit of Darley, and the exit of both Darley and Coolmore, which is set out in sections 4.4 and 4.5 respectively. I also set out how I estimated the potential increase in Darley's revenue if it chooses to stay in the Upper Hunter following Coolmore's exit.

In figure 4.3, I show that stallions with cover fees below \$50,000 standing at Upper Hunter stud farms excluding Coolmore have sufficient capacity to absorb the exit of Coolmore's stallions that charge a cover fee below \$50,000. I also show that for stallions with a cover fee greater than \$50,000, there would remain a deficit of about 500 covers following Coolmore's exit, even after expansion of non-Coolmore stallions standing in the Upper Hunter to their available capacity.

I estimated the maximum number of covers that could be reasonably undertaken by non-Coolmore stallions standing in the Upper Hunter (ie, their capacity), by:

- calculating the 90<sup>th</sup> percentile of the number of covers undertaken in 2014 by stallions who were aged between two and 15, using data on covers by Upper Hunter stallions from the ASB, which was 179 covers;
- estimating the 90<sup>th</sup> percentile of the number of covers undertaken in a year by stallions over 15 years of age in two-year age bands (eg, 16 to 17) by:
  - > calculating the 90<sup>th</sup> percentile of the number of covers undertaken in a year by stallions aged two to 15 years, and in the two-year age bands from 16 to 25 years, using data on covers by Upper Hunter stallions from the ASB from 2005 to 2014;
  - > expressing the 90<sup>th</sup> percentile of the number of covers for the two-year age bands from 16 to 25 years as a percentage of the 90<sup>th</sup> percentile of the number of covers for stallions aged two to 15 years;
  - > multiplying the 90<sup>th</sup> percentile of the number of covers undertaken in 2014 by stallions who were aged between two and 15 by the percentages for the two-year age bands set out above, to give an estimate of the 90<sup>th</sup> percentile for those age bands; and
- calculating how many additional covers each stallion standing in the Upper Hunter could do (apart from those standing at Coolmore) in a year by taking the difference between the maximum number of covers for its age band as set out above, and the number of covers it actually undertook in 2014 (if this is a positive number).<sup>200</sup>

I estimated the capacity for non-Coolmore stallions in this manner because the data show that stallions older than 15 undertake fewer covers with each additional year of age.

I then calculated the lost covers following Coolmore's exit from the Upper Hunter by:

- summing the number of covers undertaken by Coolmore stallions standing in the Upper Hunter in 2014 for each price band – this is approximately the reduction in the number of covers as a result of those stallions leaving the Upper Hunter, before taking into account the potential for entry and expansion;
- summing the additional covers that could be undertaken by stallions that are standing at studs in the Upper Hunter other than Coolmore in 2014 for each price band – I undertake the analysis for each price band because I assume that stallions within a price band are reasonably close substitutes for one another, whilst those in different price bands are less close substitutes; and

<sup>200</sup> I assume that a horse that undertook more than my estimate of the maximum number of covers in 2014 will do the same number of covers in my analysis.

- taking the difference between the number of covers undertaken by Coolmore and the additional covers that could be undertaken by other stallions standing in the Upper Hunter for each price to give the net number of covers lost.

Table A 1.1 shows that the number of covers lost would be about 500 per year, which is equivalent to around three stallions in the two year to 15 year age band undertaking covers near to their capacity.

Table A 1.1: Potential for non-Coolmore stallions to increase the number of covers they undertake

Stallion fee	Number of Coolmore stallions in price range	Covers undertaken by Coolmore stallions in 2014	Additional covers that could be undertaken by non-Coolmore stallions	Number of covers that could not be made up of non-Coolmore stallions	Number of 2-15 year old stallions required to supply lost covers
\$0-\$5,000	0	0	176	0	0
\$5,000-\$10,000	2	86	2,012	0	0
\$10,000-\$20,000	1	103	2,136	0	0
\$20,000-\$30,000	4	470	854	0	0
\$30,000-\$50,000	1	34	280	0	0
\$50,000-\$100,000	3	528	153	375	2
\$100,000+	1	189	61	128	1
<b>Total</b>	<b>12</b>	<b>1,410</b>		<b>503</b>	<b>3</b>

Source: Analysis of data in the ASB

I estimated the number of additional covers and the revenue that Darley could earn from expansion if Coolmore left the Upper Hunter by:

- summing the additional covers that could be undertaken by stallions that are standing at Darley in the Upper Hunter in 2014 for each price band, based on the analysis set out above;
- calculating the number of additional covers that would be undertaken by stallions at Darley in each price band by taking either
  - > the number of covers undertaken by Coolmore stallions standing in the Upper Hunter in 2014 or, if lesser
  - > the additional covers that could be undertaken by stallions standing at Darley;
- estimating the cover fee for the additional covers that would be undertaken by stallions standing at Darley by taking the average cover fee for those stallions in each price band for 2014; and
- calculating the additional revenue that Darley would make from cover fees by multiplying the additional covers that would be undertaken by stallions standing at Darley in the Upper Hunter by the estimated cover fee.

Table A 1.2 shows that in this scenario, Darley is able to increase its covers by up to 458 per year and its revenue by up to roughly \$18 million. Knowing this, the most attractive option for Darley is for Coolmore to leave the Upper Hunter, whilst Darley stays and expands the operations of its stud farm.

Table A 1.2: Potential for Darley stallions in the Upper Hunter to increase the cover fee revenue they earn

Stallion fee	Covers undertaken by Coolmore in 2014	Number of Darley stallions in price range	Additional covers that could be undertaken by stallions at Darley	Additional covers that Darley could take from Coolmore	Average cover fee for additional covers	Revenue Darley would earn from additional covers
\$0-\$5,000	0	0	176	0		\$0
\$5,000-\$10,000	86	4	468	86	\$6,875	\$591,250
\$10,000-\$20,000	103	2	191	103	\$13,750	\$1,416,250
\$20,000-\$30,000	470	2	73	73	\$27,500	\$2,007,500
\$30,000-\$50,000	34	2	34	34	\$33,000	\$1,122,000
\$50,000-\$100,000	528	3	115	115	\$69,667	\$8,018,550
\$100,000+	189	1	47	47	\$110,000	\$5,170,000
<b>Total</b>	<b>1,410</b>	<b>14</b>	<b>1,104</b>	<b>458</b>		<b>\$18,325,550</b>

Source: Analysis of data in the ASB

I use the same method described above to calculate the number of covers that would be lost by the exit of Darley, and the exit of both Darley and Coolmore. Table A 1.3 shows that, if Darley exited, the number of covers lost would be about 460 per year, which is equivalent to around three stallions in the two year to 15 year age band undertaking covers near to their capacity.

Table A 1.3: Potential for non-Darley stallions to increase the number of covers they undertake

Stallion fee	Number of Darley stallions in price range	Covers undertaken by Darley stallions in 2014	Additional covers that could be undertaken by non-Darley stallions	Number of covers that could not be made up of non-Darley stallions	Number of 2-15 year old stallions required to supply lost covers
\$0-\$5,000	0	3	0	3	0
\$5,000-\$10,000	4	248	1,727	0	0
\$10,000-\$20,000	2	167	2,021	0	0
\$20,000-\$30,000	2	285	1,027	0	0
\$30,000-\$50,000	2	325	302	23	0
\$50,000-\$100,000	3	401	88	313	2
\$100,000+	1	132	14	118	1
<b>Total</b>	<b>14</b>	<b>1,561</b>	<b>5,178</b>	<b>458</b>	<b>3</b>

Source: Analysis of data in the ASB

Table A 1.4 shows that, if both Coolmore and Darley exited, the number of covers lost would be about 1,300 per year, which is equivalent to around eight stallions in the two year to 15 year age band undertaking covers near to their capacity.

Table A 1.4: Potential for non-Coolmore and non-Darley stallions to increase the number of covers they undertake

Stallion fee	Number of Coolmore and Darley stallions in price range	Covers undertaken by Coolmore and Darley stallions in 2014	Additional covers that could be undertaken by non-Coolmore and non-Darley stallions	Number of covers that could not be made up of non-Coolmore and non-Darley stallions	Number of 2-15 year old stallions required to supply lost covers
\$0-\$5,000	0	3	0	3	0
\$5,000-\$10,000	5	334	1,544	0	0
\$10,000-\$20,000	3	270	1,945	0	0
\$20,000-\$30,000	5	755	781	0	0
\$30,000-\$50,000	3	359	246	113	1
\$50,000-\$100,000	5	929	38	891	5
\$100,000+	2	321	14	307	2
<b>Total</b>	<b>26</b>	<b>2,971</b>	<b>4,568</b>	<b>1,314</b>	<b>8</b>

Source: Analysis of data in the ASB

I also estimated the additional revenue that Coolmore could make from cover fees following Darley's exit from the Upper Hunter. I estimated this potential increase in revenue by calculating the additional covers that would be undertaken by stallions standing at Coolmore in the Upper Hunter if they expand to their capacity following Darley's exit before other stallions standing in the Upper Hunter. I estimate these additional covers and the revenue Coolmore could earn from them by undertaking the same process as described above for the scenario in which Coolmore exits the Upper Hunter.

Table A 1.5 shows that in this scenario, Coolmore is able to increase its covers by up to 610 per year and its revenue by up to roughly \$14 million.

Table A 1.5: Potential for Coolmore stallions in the Upper Hunter to increase the over fee revenue they earn

Stallion fee	Covers undertaken by Darley in 2014	Number of Coolmore stallions in price range	Additional covers that could be undertaken by stallions at Coolmore	Additional covers that Coolmore could take from Darley	Average cover fee for additional covers	Revenue Coolmore would earn from additional covers
\$0-\$5,000	3	0	0	0		\$0
\$5,000-\$10,000	248	2	183	183	\$7,150	\$1,305,641
\$10,000-\$20,000	167	1	76	76	\$16,500	\$1,254,000
\$20,000-\$30,000	285	4	246	246	\$25,300	\$6,223,800
\$30,000-\$50,000	325	1	56	56	\$38,500	\$2,140,877
\$50,000-\$100,000	401	3	50	50	\$64,167	\$3,208,333
\$100,000+	132	1	0	0	\$110,000	\$0
<b>Total</b>	<b>1,561</b>	<b>12</b>	<b>610</b>	<b>610</b>		<b>\$14,132,651</b>

Source: Analysis of data in the ASB

## A2. Materials relied upon

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In this appendix I provide those materials upon which I have relied in preparing my report.

### A2.1 News articles

- ABC, Nathan Tinkler's horse stud sale on hold, 17 September 2015
- ABC, Prominent Hunter stud farm up for sale, 4 June 2008
- ABC, Tinkler buys Swettenham Stud, 21 August 2008
- Newcastle Herald, Patinack property fire sales, 7 October 2014
- Newcastle Herald, Rehabilitation headache, 31 July 2012
- Newcastle Herald, Walfertan tannery closes, 23 jobs lost, 30 July 2012
- Sydney Morning Herald, So You Think sold to Coolmore Stud, 3 November 2010
- The Australian, New chapter for Swettenham Stud, 24 August 2015
- The Daily Telegraph, Coolmore secures stake in unbeaten Golden Slipper winner Vancouver for \$40 million, 2 April 2015

### A2.2 Provided documents

- ACCC, Darley Australia Pty Ltd - proposed acquisition of Woodlands Stud, May 2008
- Coolmore, Submission to the Planning Assessment Commission, September 2015
- Darley, Submission to the Planning Assessment Commission, 2 October 2015
- Darryl Guihot, Submission to the Planning Assessment Commission, September 2015
- Dr Bell, The Impact of The Drayton South Coal Mine Project Proposal on the Commercial Viability Of Coolmore Australia, September 10 2015
- Hansen Bailey, Drayton South Coal Project Environmental Impact Statement
- La Terre, Potential Impacts of the Proposed Drayton South Coal Project on Coolmore and Woodlands Studs, November 2013
- Planning Assessment Commission, Drayton South Open Cut Coal Project Review Report, November 2015

### A2.3 Publicly available documents

- Australian Racing Board, 2010/11 Australian Racing Fact Book
- Australian Racing Board, 2011/12 Australian Racing Fact Book
- Australian Racing Board, 2012/13 Australian Racing Fact Book
- Australian Racing Board, 2013/14 Australian Racing Fact Book
- Australian Racing Board, Australian Racing Fact Book 2003-04
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- Australian Racing Board, Australian Racing Fact Book 2005/06

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- BHP Billiton, Mt Arthur Coal: Investor/Analyst Presentation, September 2003
- BHP Billiton, Mt Arthur Coal Mine - Open Cut Modification Project Visual Impacts Management Report Prepared for Hunter Valley Energy Coal, July 2015
- Coolmore, Coolmore Australia 2015
- Darley Australia Pty Ltd v Walfertan Processors Pty Ltd [2012] NSWCA 48
- Department of Planning and Infrastructure, Upper Hunter Strategic Regional Land Use Plan, September 2012
- IER, Size and Scope of the New Zealand Racing Industry, October 2010
- IER, Size and Scope of the Victorian Racing Industry, September 2013
- Marsden Jacob Associates, Economic impact of the proposed Drayton South Open-cut Coal Mine development on the Hunter Valley Thoroughbred Industry, 201
- McHugh v Australian Jockey Club Limited (No 13) [2012] FCA 1441
- NSW Government Department of Primary Industries, Upper Hunter Region Equine Profile, June 2013
- NSW Government, Frequently Asked Questions Critical Industry Clusters Upper Hunter, January 2014
- NSW Mining, Mining and horse breeding coexisting in the Hunter Valley Edinglassie Stud and BHP Billiton Mt Arthur coal mine, April 2012
- R Allen, Drayton South Support Coexistence, PAC Hearing 10th & 11th September 2015
- Racing Australia, 2014/2015 Fact Book
- Racing Australia, Annual Report 2015
- Rules of the Australian Stud Book, 13 April 15
- Thoroughbred Breeders Australia, Submission to the Senate Rural and Regional Affairs and Transport References Committee Inquiry into "Industry structures and systems governing the imposition of and disbursement of marketing and research and development (R&D) levies in the agricultural sector", 20 October 2014
- Walfertan Processors Pty Limited v Upper Hunter Shire Council & Ors [2009] NSWLEC 1260

## A2.4 Subscription data

- ASB, Stallions Standing in Australia, 2015

## A2.5 Websites

- Arrowfield website, <http://www.arrowfield.com.au/about.html>
- BHP website, [www.bhpbilliton.com/businesses/coal](http://www.bhpbilliton.com/businesses/coal)
- Blood-Horse article, Darley purchases Australian property, 19 August 2002, <http://www.bloodhorse.com/horseracing/articles/11008/darley-purchases-australian-property>
- Bloodstock website, <http://www.bloodstock.com.au/news/story.php?id=58#9hUIZQOWaLQrDswC.97>
- Brissy Races website, <http://www.brissyraces.com.au/patinack-service-fees/>,
- Darley website, <http://www.darleyeurope.com/stallions/our-stallions/>
- Darley website, <http://www.darley.co.jp/stallions/>
- Darley website, <http://www.darley.com.au/about-us/introduction>

- Darley website, <http://www.darley.com.au/contact-us/australia/studs>
- Darley website, <http://www.darley.com.au/stallions/our-stallions>
- Darley website, <http://www.darleyamerica.com/stallions/our-stallions/>
- Darley, Media release: Darley Australia sets its fees for the 2008 season, 1 June 2008, <http://www.darley.com.au/news/darley-press-release-1-june-2008;>
- Darley, Media release: Darley Australia to relocate its stallions in 2009, 1 January 2009, <http://www.darley.com.au/news/press-release-1-January-2009>
- Darley, Media release: Darley's purchase of Woodlands approved, 13 May 2008, <http://www.darley.com.au/news/darleys-purchasewoodlands-approved>
- Edinglassie website, <http://www.edinglassie.net.au/australian-broodmare-of-the-year-2014-15/>
- Edinglassie website, <http://www.edinglassie.net.au/gods-own/>
- Edinglassie website, <http://www.edinglassie.net.au/sample-page/easter-sale/>
- Edinglassie website, <http://www.edinglassie.net.au/services/>
- Godolphin website, <http://www.godolphin.com/about-us/facilities/crownlodgesosbornepark/>
- Hunter Thoroughbred Breeders Association website, <http://www.htba.com.au/#!our-industry/c17w3>
- Inglis website, <http://inglis.com.au/sales/results/#d3HqvJjHD7brKAX5.97>
- Inglis, 2015 Australian Easter Yearling Sale results, Lot 279, <http://inglis.com.au/sales/info/2015+Australian+Easter+Yearling+Sale/index/1-0?listing=all#mMw1d3S70Kzby70D.97>
- Magic Millions website, [http://www.magicmillions.com.au/calendar/category/sales/list/?tribe\\_paged=1&tribe\\_event\\_display=past](http://www.magicmillions.com.au/calendar/category/sales/list/?tribe_paged=1&tribe_event_display=past)
- Meares website, <http://www.meares.com.au/property/richmond-grove/gallery/richmondgrove.htm>
- MinView, <http://www.dpi.nsw.gov.au/oasfs/resource-planning/cic-minview>
- New Zealand Studs & Stallions data, <http://www.nzthoroughbred.co.nz/studs-stallions/stallions.aspx>.
- New Zealand Thoroughbred Breeders' Association website, <http://www.nzthoroughbred.co.nz/Facts-Figures/Facts-Figures/NZ-Breeding.aspx>
- New Zealand Thoroughbred Breeders' Association website, <http://www.nzthoroughbred.com/Facts-Figures/NZ-Yearling-Sales.aspx>
- Newgate Farm website, <http://www.newgate.com.au/about.html>
- PAC website, <http://www.pac.nsw.gov.au/Projects/tabid/77/ctl/viewreview/mid/462/pac/493/view/readonly/myctl/rev/Default.aspx>.
- Pedigree Dynamics website, <http://www.pedigree-dynamics.com.au/about/>
- Racenet website, <https://www.racenet.com.au/horse/Better-Land>
- Racenet website, <https://www.racenet.com.au/horse/deep-field>
- Racenet website, <https://www.racenet.com.au/horse/knoydart>
- Racenet website, <https://www.racenet.com.au/horse/kumaon>
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- Racenet website, <https://www.racenet.com.au/horse/sebring-sun>
- Racenet website, <https://www.racenet.com.au/horse/shooting-to-win>
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- Rio Tinto media release, Rio Tinto agrees sale of interest in Bengalla Joint Venture for US\$606 million, 30 September 2015, [http://www.riotinto.com/media/media-releases-237\\_15787.aspx](http://www.riotinto.com/media/media-releases-237_15787.aspx)
- Stallions Standing in 2015 by Service Fee – NSW, <http://www.tbaus.com/NSWstallions>
- Stallions Standing in 2015 by Service Fee – Victoria, <http://www.tbaus.com/VICstallions>
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- Toolooganvale Farm website, [http://www.toolooganvale.com/sales\\_preperation.html](http://www.toolooganvale.com/sales_preperation.html)
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# Annexure A. Curriculum Vitae of Greg Houston

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## Greg Houston

### Partner

HoustonKemp  
Level 40, 161 Castlereagh St  
Sydney NSW 2000  
Tel: +61 2 8880 4810  
Mob: +61 417 237 563  
E-mail: [Greg.Houston@houstonkemp.com](mailto:Greg.Houston@houstonkemp.com)  
Web: [HoustonKemp.com](http://HoustonKemp.com)



### Overview

Greg Houston is a founding partner of the firm of expert economists, HoustonKemp. He has twenty five years' experience in the economic analysis of markets and the provision of expert advice in litigation, business strategy, and policy contexts. His career as a consulting economist was preceded by periods working in a financial institution and for government.

Greg has directed a wide range of financial, competition and regulatory economics assignments during this consulting career. His work in the Asia Pacific region principally revolves around the activities of the enforcement and regulatory agencies responsible for these areas, many of whom also number amongst his clients. On competition and antitrust matters he has advised clients on merger clearance processes, competition proceedings involving allegations of anticompetitive conduct ranging from predatory pricing, anti-competitive agreements, anti-competitive bundling and price fixing. Greg also has deep experience of infrastructure access regulation matters, and intellectual property and damages valuation. In his securities and finance work Greg has advised clients on a large number of securities class actions, as well as market manipulation and insider trading proceedings, and on cost of capital estimation.

Greg's industry experience spans the aviation, beverages, building products, cement, e-commerce, electricity and gas, forest products, grains, medical waste, mining, payments networks, office products, petroleum, ports, rail transport, retailing, scrap metal, securities markets, steel, telecommunications, thoroughbred racing, waste processing and water sectors.

Greg has acted as expert witness in valuation, antitrust and regulatory proceedings before the courts, in various arbitration and mediation processes, and before regulatory and judicial bodies in Australia, Fiji, New Zealand, the Philippines, Singapore, the United Kingdom and the United States.

Greg was until April 2014 a Director of the global firm of consulting economists, NERA Economic Consulting, where for twelve years he served on its United States' Board of Directors, for five years on its global Management Committee and for sixteen years as head of its Australian operations.

Greg also serves on the Competition and Consumer Committee of the Law Council of Australia.

### Qualifications

**1982**                      **University Of Canterbury, New Zealand**  
B.Sc. (First Class Honours) in Economics

### Prizes and Scholarships

**1980**                      University Junior Scholarship, New Zealand

## Career Details

2014-	<b>HoustonKemp Economists</b> Partner, Sydney, Australia
1989-2014	<b>NERA Economic Consulting</b> Director (1998-2014) London, United Kingdom (1989-1997) Sydney, Australia (1998-2014)
1987-89	<b>Hambros Bank, Treasury and capital markets</b> Financial Economist, London, United Kingdom
1983-86	<b>The Treasury, Finance sector policy</b> Investigating Officer, Wellington, New Zealand

## Project Experience<sup>1</sup>

### Competition and Mergers

2015	<b>King &amp; Wood Mallesons/Confidential Client</b> <b>Competition analysis</b> Analysis and advice in the context of the ACCC's inquiry into Eastern and Southern Australia wholesale gas prices.
2015	<b>Corrs/Confidential Client</b> <b>Merger clearance</b> Analysis, advice and expert report submitted to the ACCC in the context of a proposed acquisition in the office products sector.
2014-15	<b>Australian Government Solicitor/Commonwealth of Australia</b> <b>Competition and trade analysis</b> Expert report on competition and trade in tobacco products, prepared in the context of the World Trade Organisation dispute settlement proceedings concerning Australia's tobacco plain packaging legislation.
2014-15	<b>King &amp; Wood Mallesons/Confidential Client</b> <b>Competitive effects of agreement</b> Analysis and advice prepared in context of an ACCC investigation of agreements between a supplier and its major customers that are alleged to harm competition.
2014-15	<b>Ashurst/Confidential Client</b> <b>Competitive effects of agreement</b> Analysis and advice prepared in context of an ACCC investigation of agreements between a supplier and its major customers that are alleged to harm competition.
2013-14	<b>Corrs/Australian Competition and Consumer Commission</b> <b>Effect of cartel conduct</b> Expert report on the price effects of an alleged market sharing arrangement in relation to the supply of forklift gas, prepared in the context of Federal Court proceedings brought against Renegade Gas (Supagas).

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<sup>1</sup> Past ten years only.

- 2013-14**                    **Australian Competition and Consumer Commission**  
**Merger clearance**  
Expert report and testimony before the Competition Tribunal in the context of the ACCC's decision to oppose the acquisition of Macquarie Generation by AGL Energy.
- 2013-14**                    **Ashurst/BlueScope**  
**Merger clearance**  
Expert reports submitted to the ACCC in the context of the clearance of three approved transactions in the domestic steel industry.
- 2013-14**                    **Australian Government Solicitor/ACCC**  
**Merger clearance**  
Analysis and advice prepared in the context of the ACCC's review of the proposed acquisition by of petrol retailing sites in South Australia.
- 2012-13**                    **Minter Ellison/Confidential Client**  
**Merger clearance**  
Expert reports submitted to the ACCC in the context of a confidential application for clearance of a proposed acquisition in the industrial gases industry.
- 2011-12**                    **Gilbert + Tobin/Pact Group**  
**Merger clearance**  
Expert reports submitted to the ACCC on the competitive implications of the proposed acquisition of plastic packaging manufacturer Viscount Plastics by Pact Group.
- 2010-12**                    **Mallesons/APA**  
**Merger clearance**  
Expert reports submitted to the ACCC on the competitive implications of the proposed acquisition of the gas pipeline assets of Hastings Diversified Utilities Fund by APA Group.
- 2010-11**                    **Johnson Winter & Slattery/ATC and ARB**  
**Competitive effects of agreement**  
Expert reports and testimony in Federal Court proceedings concerning the competitive effects of restrictions on the use of artificial breeding techniques in the breeding of thoroughbred horses for racing.
- 2010-11**                    **Victorian Government Solicitor/State of Victoria**  
**Competitive effects of agreement**  
Expert report prepared for the State of Victoria on the effects of certain restrictions applying to the trading of water rights on inter-state trade in the context of a constitutional challenge brought against the state of Victoria by the state of South Australia.
- 2009-11**                    **Arnold + Porter/Visa Inc, Mastercard Inc and others**  
**Payment card markets**  
Expert reports and deposition testimony on behalf of defendants in the United States Re Payment Card Interchange Fee and Merchant Discount Antitrust Litigation, on the effects of regulatory interventions in the Australian payment cards sector.

- 2010**                    **Australian Competition and Consumer Commission**  
**NBN Points of Interconnection**  
Report and advice on the competition implications in the markets for both telecommunications backhaul and retail broadband services of different choices as to the number of 'points of interconnection' in the proposed architecture of the national broadband network.
- 2010**                    **JWS, Gilbert & Tobin/Jetset Travelworld, Stella Travel Services**  
**Merger clearance**  
Advice on the competitive implications of the merger between Jetset Travelworld and Stella Travel Services.
- 2009-10**                **Australian Government Solicitor/ACCC**  
**Misuse of market power**  
Expert report and testimony in the context of Federal Court proceedings brought by the ACCC against Cement Australia in relation to conduct alleged to have breached sections 45, 46 and 47 of the Trade Practices Act.
- 2008-10**                **Gilbert & Tobin/Confidential**  
**Merger assessment**  
Advice on the competitive implications of the then proposed merger and then subsequently the proposed iron ore production joint venture between BHP Billiton and Rio Tinto.
- 2008-10**                **Allens Arthur Robinson/Amcor**  
**Cartel damages assessment**  
Advice and preparation of an expert report on the approach to and quantification of economic loss in the context of two separate actions seeking damages arising from alleged cartel conduct.
- 2009**                    **State Solicitor's Office/Forest Products Commission**  
**Alleged breach of s46**  
Expert advice in the context of Federal Court proceedings alleging breaches of section 46 of the Trade Practices Act.
- 2009**                    **Clayton Utz/Confidential Client**  
**Joint venture arrangement**  
Reviewed the competitive implications under s50 of the Trade Practices Act of a proposed joint venture transaction in the rail industry.
- 2009**                    **Blake Dawson Waldron/Airservices**  
**Effect of potential industrial action by Air Traffic Controllers**  
Prepared an expert report in the context of a potential application to the Australian Industrial Relations Commission for termination or suspension of a bargaining period addressing the economic effect that certain forms of industrial action by Air Traffic Controllers would be likely to have on passengers, businesses, and the Australian economy.
- 2005-06, 08-09**        **Phillips Fox/Fortescue Metals Group**  
**Access to bottleneck facilities**  
Expert report and testimony in the Federal Court proceedings concerning whether or not access to the BHP Billiton and Rio Tinto rail lines, serving iron ore export markets in the Pilbara, amounted to use of a production process. Subsequently, prepared expert reports on matters arising in interpreting the criteria for declaration under Part IIIA, and testified before the Competition Tribunal in late 2009.

- 2009**                    **Clayton Utz/Confidential Client**  
**Competitive implications of agreement**  
Advice on the competitive effects of a joint venture arrangement in the port terminal sector, in the context of Federal Court proceedings brought by the ACCC under section 45 of the Trade Practices Act.
- 2009**                    **Australian Competition and Consumer Commission**  
**Competitive effects of buy-sell agreements**  
Advice to the ACCC on the extent to which buy-sell arrangements between the four major refiner-marketers of petroleum products in Australia may be inhibiting competition in a relevant market.
- 2008-09**                **Watson Mangioni/ICS Global**  
**Alleged misuse of market power**  
Expert report prepared in the context of Federal Court proceedings alleging breaches of section 46 of the Trade Practices Act.
- 2008-09**                **Australian Competition and Consumer Commission**  
**Competitive effects of various agreements**  
Expert advice on potential theories of competitive harm arising from agreements between competitors in the oil and gas, and petroleum retailing industry sectors.
- 2008**                    **Johnson Winter & Slattery/Pepsico**  
**Merger analysis**  
Advice on the competitive implications certain potential transactions in the soft drinks sector.
- 2008**                    **Australian Competition and Consumer Commission**  
**Exemption from access undertaking**  
'Peer review' report of the ACCC's draft decision on applications by Telstra for exemption from its standard access obligations (SAOs) for the supply by resale of the local carriage service (LCS) and wholesale line rental (WLR) in 387 exchange service areas in metropolitan Australia.
- 2008**                    **Deacons/eBay**  
**Exclusive dealing notification**  
Expert report submitted to the ACCC analysing the competitive effects of eBay's proposal that users of its online marketplace be required to settle transactions using eBay's associated entity, PayPal
- 2007-08**                **Australian Energy Market Commission**  
**Wholesale market implications for retail competition**  
Retained to provide an overview of the operation and structure of the wholesale gas and electricity markets within the National Electricity Market (NEM) jurisdictions and to identify the issues that the AEMC should consider when assessing the influence of the wholesale markets on competition within the retail gas market in each jurisdiction.
- 2006-07**                **Essential Services Commission of South Australia**  
**Competition assessment**  
Directed the preparation of a comprehensive report analysing the effectiveness of competition in retail electricity and gas markets in South Australia.
- 2006-07**                **Allens Arthur Robinson/Confidential Client**  
**Merger clearance**  
Retained to provide advice on competition issues arising in the context of s50 clearance of a proposed merger in the board packaging industry.

- 2006-07**                    **Johnson Winter & Slattery/Confidential Client**  
**Damages assessment**  
Advice on the quantification of damages arising from alleged cartel conduct in the electricity transformer sector.
- 2006**                        **Minter Ellison/Confidential Client**  
**Misuse of market power**  
Expert economic advice in relation to market definition, market power and taking advantage in the context of an alleged price squeeze between wholesale and retail prices for fixed line telecommunications services, for proceedings brought under section 46 of the Trade Practices Act. The proceedings were withdrawn following regulatory amendments by the ACCC.
- 2006**                        **DLA Phillips Fox/Donhad**  
**Merger clearance**  
Preparation of an expert report on competition issues arising in the context of s50 clearance for the proposed Smorgon/One Steel merger.
- 2006**                        **Johnson Winter & Slattery/Qantas Airways**  
**Competition effects of proposed price fixing agreement**  
Assessed the competition effects of the proposed trans-Tasman networks agreement between Air New Zealand and Qantas Airways.
- 2006**                        **Phillips Fox/ACCC**  
**Vertical foreclosure**  
Advice in the context of proceedings before the Federal Court concerning the acquisition of Patrick Corporation by Toll Holdings. The proceedings were subsequently withdrawn following a S87B undertaking made by Toll.
- 2006**                        **Gilbert + Tobin/AWB**  
**Arbitration, access to bottleneck facilities**  
Expert report and testimony in an arbitration concerning the imposition of throughput fees for grain received at port and so bypassing the grain storage, handling and rail transport network in South Australia.
- 2006**                        **Qantas Airways, Australia/Singapore**  
**Assessment of single economic entity**  
Advice in the context of Qantas' Application for Decision to the Competition Commission of Singapore that the agreement between it and Orangestar did not fall within the ambit of the price-fixing and market sharing provisions of the Singapore Competition Act.
- 2005-06**                    **Qantas Airways, Australia/Singapore**  
**Competition effects of price fixing agreement**  
Expert report submitted to the Competition Commission of Singapore evaluating the net economic benefits of a price fixing/market sharing agreement, in relation to an application for exemption from the section 34 prohibition in the Competition Act of Singapore.
- 2005-06**                    **Australian Competition Consumer Commission**  
**Electricity generation market competition**  
Advice on the competition effects under S50 of the Trade Practices Act of three separate proposed transactions involving the merger of generation plant operating in the national electricity market.

- 2005**                    **Gilbert + Tobin/Hong Kong Government, Hong Kong**  
**Petrol market competition**  
Directed a NERA team working with Gilbert + Tobin that investigated the effectiveness of competition in the auto-fuel retailing market in Hong Kong.
- 2005**                    **Phillips Fox/National Competition Council**  
**Access and competition in gas production and retail markets**  
Retained as expert witness in the appeal before the WA Gas Review Board of the decision to revoke coverage under the gas code of the Goldfields pipeline. Proceedings brought by the pipeline operator were subsequently withdrawn.
- 2004-05**                **Gilbert + Tobin/APCA**  
**Competition and access to Eftpos system**  
Economic advisor to the Australian Payments Clearing Association in connection with the development of an access regime for the debit card/Eftpos system, so as to address a range of competition concerns expressed by the Reserve Bank of Australia and the ACCC. This work included an expert report examining barriers to entry to Eftpos and the extent to which these could be overcome by an access regime.
- 2003-05**                **Phillips Fox/Austrac**  
**Misuse of market power**  
Retained to assist with all economic aspects of a potential Federal Court action under s46 of the Trade Practices Act alleging misuse of market power in the rail freight market.

## Regulatory Analysis

- 2015**                    **Government of New South Wales**  
**Economic regulation for privatisation**  
Advisor to government of New South Wales on all economic regulatory aspects of the proposed partial lease the electricity transmission and distribution entities, TransGrid, AusGrid and Endeavour Energy.
- 2015**                    **ActewAGL**  
**Regulatory price review**  
Expert report on the economic interpretation of provisions in the national electricity law and rules in relation to the application of the national electricity objective to the entire price determination of the Australian Energy Regulator.
- 2014-15**                **Atco Gas**  
**Access price review**  
Expert reports on the economic interpretation of provisions in the national gas law and rules in relation to depreciation and the application of the national gas objective to the entire draft decision, submitted to the Economic Regulation Authority of WA.
- 2014-15**                **Government of Victoria**  
**Economic regulation for privatisation**  
Advisor to government of Victoria on the economic regulation of the Port of Melbourne Corporation in the context of the proposed privatization of the port by way of long term lease.

- 2013**                    **Actew Corporation**  
**Interpretation of economic terms**  
Advice on economic aspects of the draft and final decisions of the Independent Competition and Regulatory Commission in relation to the price controls applying to Actew.
- 2012-13**                **Gilbert + Tobin/Rio Tinto Coal Australia**  
**Price review arbitration**  
Analysis and expert reports prepared in the context of an arbitration concerning the price to be charged for use of the coal loading facilities at Abbott Point Coal Terminal.
- 2012-13**                **Ashurst/Brisbane Airport Corporation**  
**Draft access undertaking**  
Advice, analysis and expert reports in the context of the preparation of a draft access undertaking specifying the basis for determining a ten year price path for landing charges necessary to finance a new parallel runway at Brisbane airport.
- 2012**                    **King & Wood Mallesons/Origin Energy**  
**Interpretation of economic terms**  
Expert reports and testimony in the context of judicial review proceedings before the Supreme Court of Queensland on the electricity retail price determination of the Queensland Competition Authority.
- 2012**                    **Contact Energy, New Zealand**  
**Transmission pricing methodology**  
Advice on reforms to the Transmission Pricing Methodology proposed by Electricity Authority.
- 2011-12**                **Energy Networks Association**  
**Network pricing rules**  
Advice and expert reports submitted to the Australian Energy Market Commission on wide-ranging reforms to the network pricing rules applying to electricity and gas transmission and distribution businesses, as proposed by the Australian Energy Regulator.
- 2010-12**                **QR National**  
**Regulatory and competition matters**  
Advisor on the competition and regulatory matters, including: a range of potential structural options arising in the context of the privatisation of QR National's coal and freight haulage businesses, particularly those arising in the context of a 'club ownership model' proposed by a group of major coal mine owners; and an assessment of competitive implications of proposed reforms to access charges for use of the electrified network.
- 2002-12**                **Orion New Zealand Ltd, New Zealand**  
**Electricity lines regulation**  
Advisor on regulatory and economic aspects of the implementation by the Commerce Commission of the evolving regimes for the regulation of New Zealand electricity lines businesses. This role has included assistance with the drafting submissions, the provision of expert reports, and the giving of expert evidence before the Commerce Commission.

- 2011**                    **Meridian Energy, New Zealand**  
**Undesirable trading situation**  
Advice to Meridian Energy on the economic interpretation and implications of the New Zealand electricity rule provisions that define an 'undesirable trading situation' in the wholesale electricity market.
- 2011**                    **Ausgrid**  
**Demand side management**  
Prepared a report on incentives, constraints and options for reform of the regulatory arrangements governing the role of demand side management in electricity markets.
- 2010-11**                **Transnet Corporation, South Africa**  
**Regulatory and competition policy**  
Retained to advise on the preparation of a white paper on future policy and institutional reforms to the competitive and regulatory environment applying to the ports, rail and oil and gas pipeline sectors of South Africa.
- 2010-11**                **Minter Ellison/UNELCO, Vanuatu**  
**Arbital review of decision by the Vanuatu regulator**  
Expert report and evidence before arbitrators on a range of matters arising from the Vanuatu regulator's decision on the base price to apply under four electricity concession contracts entered into by UNELCO and the Vanuatu government. These included the estimation of the allowed rate of return including its country risk component, and the decision retrospectively to bring to account events from the prior regulatory period.
- 2007-11**                **Powerco/CitiPower**  
**Regulatory advice**  
Wide ranging advice on matters arising under the national electricity law and rules, such as the framework for reviewing electricity distribution price caps, the treatment of related party outsourcing arrangements, an expert report on application of the AER's efficiency benefit sharing scheme, the potential application of total factor productivity measures in CPI-X regulation, and arrangements for the state-wide roll out of advanced metering infrastructure.
- 1999-2004,**  
**2010-11**                **Sydney Airports Corporation**  
**Aeronautical pricing notification**  
Wide ranging advice on regulatory matters. This includes advice and expert reports in relation to SACL's notification to the ACCC of substantial reforms to aeronautical charges at Sydney Airport in 2001. This involved the analysis and presentation of pricing principles and their detailed application, through to discussion of such matters at SACL's board, with the ACCC, and in public consultation forums. Subsequent advice on two Productivity Commission reviews of airport charging, and notifications to the ACCC on revised charges for regional airlines.
- 2010**                    **Industry Funds Management/Queensland Investment Corporation**  
**Due diligence, Port of Brisbane**  
Retained to advise on regulatory and competition matters likely to affect the future financial and business performance of the Port of Brisbane, in the context of its sale by the Queensland government.
- 2009-10**                **New Zealand Electricity Industry Working Group, New Zealand**  
**Transmission pricing project**  
Advice to a working group comprising representatives from lines companies, generators, major users and Transpower on potential improvements to the efficiency of New Zealand's electricity transmission pricing arrangements.

- 2007-09**                    **GDSE, Macau**  
**Electricity tariff reform**  
Advice to the regulator of electricity tariffs in Macau on a series of potential reforms to the structure of electricity supply tariffs.
- 2001-09**                    **Auckland International Airport Limited, New Zealand**  
**Aeronautical price regulation**  
Advice and various expert reports in relation to: the review by the Commerce Commission of the case for introducing price control at Auckland airport; a fundamental review of airport charges implemented in 2007; and the modified provisions of Part IV of the Commerce Act concerning the economic regulation of airports and other infrastructure service providers.
- 2008**                        **Western Power**  
**Optimal treatment and application of capital contributions**  
Advice on the optimal regulatory treatment of capital contributions, taking into account the effect of alternative approaches on tariffs, regulatory asset values, and network connection by new customers.
- 2000-08**                    **TransGrid**  
**National electricity market and revenue cap reset**  
Regulatory advisor to TransGrid on a range of issues arising in the context of the national electricity market (NEM), including: the economics of transmission pricing and investment and its integration with the wholesale energy market, regulatory asset valuation, the cost of capital and TransGrid's 2004 revenue cap reset by the ACCC.
- 2007**                        **Johnson Winter & Slattery/Multinet**  
**Review of outsourced asset management contracts**  
Expert report developing a framework for assessing the prudence of outsourcing contracts in the context of the Gas Code, and evaluating the arrangements between Multinet and Alinta Asset Management by reference to that framework.
- 2007**                        **Ministerial Council on Energy**  
**Review of Chapter 5 of the National Electricity Rules**  
Advice on the development of a national framework for connection applications and capital contributions in the context of the National Electricity Rules.
- 2006-07**                    **Ministerial Council on Energy**  
**Demand side response and distributed generation incentives**  
Conducted a review of the MCE's proposed initial national electricity distribution network revenue and pricing rules to identify the implications for the efficient use of demand side response and distributed generation by electricity network owners and customers.
- 2006**                        **Ministerial Council on Energy**  
**Electricity network pricing rules**  
Advice on the framework for the development of the initial national electricity distribution network pricing rules, in the context of the transition to a single, national economic regulator.
- 2005-06**                    **Minister for Industry**  
**Expert Panel**  
Appointment by Hon Ian Macfarlane, Minister for Industry, Tourism and Resources, to an Expert Panel to advise the Ministerial Council on Energy on achieving harmonisation of the approach to regulation of electricity and gas transmission and distribution infrastructure.

- 2005-06**                    **Australian Energy Markets Commission**  
**Transmission pricing regime**  
Advice to the AEMC on its review of the transmission revenue and pricing rules as required by the new National Electricity Law.
- 1998-2006**                **Essential Services Commission of Victoria**  
**Price cap reviews**  
Wide ranging advice to the Essential Services Commission (formerly the Office of the Regulator-General), on regulatory, financial and strategic issues arising in the context of five separate reviews of price controls/access arrangements applying in the electricity, gas distribution, ports, rail and water sectors in Victoria. This work encompassed advice on the development of the Commission's work program and public consultation strategy for each review, direct assistance with the drafting of papers for public consultation, the provision of internal papers and analysis on specific aspects of the review, drafting of decision documents, and acting as expert witness in hearings before the Appeal Panel and Victorian Supreme Court.
- 2004-05**                    **Ministerial Council of Energy**  
**Reform of the National Electricity Law**  
Retained in two separate advisory roles in relation to the reform of the institutions and legal framework underpinning the national energy markets. These roles include the appropriate specification of the objectives and rule making test for the national electricity market, and the development of a harmonised framework for distribution and retail regulation.
- 2004-05**                    **Johnson Winter Slattery, ETSA Utilities**  
**Price determination**  
Advice on a wide range of economic and financial issues in the context of ETSA Utilities' application for review of ESCOSA's determination of a five year electricity distribution price cap.

## Securities and Finance

- 2015**                        **O'Donnell Legal/Representative proceeding**  
**Misleading and deceptive conduct**  
Expert report submitted to the Federal Court assessing the effect of alleged misstatements in relation to the annual accounts and associated going concern assumption in relation to Tamaya Resources Ltd (in liquidation).
- 2013-15**                    **Sydney Water Corporation**  
**Cost of capital estimation**  
Preparation of three expert reports for submission to the Independent Pricing and Regulatory Tribunal (IPART) on the framework for determining the weighted average cost of capital for infrastructure service providers, and on estimation of an appropriate equity beta.
- 2012-15**                    **HWL Ebsworth/Confidential client**  
**Insider trading**  
Expert advice and analysis in the context of criminal proceedings alleging insider trading in certain ASX-listed securities (2012-13). Subsequent expert report filed in Supreme Court of Tasmania estimating price effects of inside information in context of subsequent 'proceeds of crime' proceedings.

- 2014**                    **Wotton Kearney/Genesys Wealth Advisors**  
**Misleading and deceptive conduct**  
Expert report submitted to the Supreme Court of Victoria assessing the accuracy of product disclosure statements and other information in relation to two fixed interest investment funds offered by Basis Capital.
- 2014**                    **TransGrid**  
**Cost of capital estimation**  
Preparation of an expert report for submission to the Australian Energy Regulator (AER) estimating the weighted average cost of capital for electricity network service providers.
- 2011-13**                **Slater & Gordon/Modtech**  
**Shareholder damages assessment**  
Expert reports and testimony in representative proceedings before the Federal Court alleging misstatement and/or breach of the continuous disclosure obligations of the ASX-listed entity, GPT.
- 2011-12**                **Freehills/National Australia Bank**  
**Shareholder damages assessment**  
Expert advice in connection with representative proceedings before the Federal Court alleging misstatement and/or breach of the continuous disclosure obligations of an ASX-listed entity.
- 2012**                    **Johnson Winter & Slattery/Victorian gas distributors**  
**Cost of equity estimation**  
Expert report submitted to the AER on the appropriate methodology for estimating the cost of equity under the Capital Asset Pricing Model.
- 2009-13**                **Minter Ellison/Confidential client**  
**Misleading and deceptive conduct**  
Expert report and related advice in light of investor claims and pending litigation following the freezing of withdrawals from a fixed interest investment trust that primarily held US-denominated collateralised debt obligations (CDOs), as offered by a major Australian financial institution. Analysis undertaken includes the extent to which the investment risks were adequately described in the fund documents, and the quantum of any potential damages arising.
- 2011**                    **Barringer Leather/Confidential client**  
**Market manipulation**  
Expert report prepared in the context of criminal proceedings brought in the Supreme Court of NSW alleging market manipulation in the trading of certain ASX-listed securities.
- 2010-11**                **Wotton Kearney/Confidential client**  
**Misleading and deceptive conduct**  
Expert report and analysis in light of investor claims and pending litigation following the freezing of withdrawals from two fixed interest investment trusts that primarily held US-denominated collateralised debt obligations (CDOs).
- 2010-11**                **Maurice Blackburn/Confidential client**  
**Shareholder damages assessment**  
Analysis prepare for use in connection with representative proceedings before the Federal Court alleging misstatement and/or breach of the continuous disclosure obligations of an ASX-listed entity.

- 2010-11**                    **Mallesons/ActewAGL**  
**Judicial review of rate of return determination**  
Expert report and testimony in Federal Court proceedings seeking judicial review of a decision by the Australian Energy Regulator of its determination of the risk free rate of interest in its price setting determination for electricity distribution services.
- 2009-11**                    **William Roberts/Clime Capital**  
**Shareholder damages assessment**  
Preparation of two expert reports in representative proceedings before the Federal Court alleging misstatement and/or breach of the continuous disclosure obligations of ASX-listed entity, Credit Corp.
- 2009**                        **Jemena Limited**  
**Cost of equity estimation**  
Co-authored an expert report on the application of a domestic Fama-French three-factor model to estimate the cost of equity for regulated gas distribution businesses.
- 2008-09**                    **Clayton Utz/Fortescue Metals Group**  
**Materiality of share price response**  
Preparation of expert report and testimony before the Federal Court addressing alleged breaches of the ASX continuous disclosure obligations and the associated effect on the price of FMG securities arising from statements made by it in 2004.
- 2008-09**                    **Energy Trade Associations – APIA, ENA and Grid Australia**  
**Value of tax imputation credits**  
Preparation of expert report on the value to investors in Australian equities of tax imputation credits, for submission to the Australian Energy Regulator.
- 2008-09**                    **Freehills/Centro Properties**  
**Shareholder damages assessment**  
Assistance in the estimation of potential damages arising in representative proceedings concerning accounting misstatements and/or breach of the continuous disclosure obligations of an ASX-listed entity.
- 2008**                        **Slater & Gordon/Boyd**  
**Shareholder damages assessment**  
Preparation of an expert report for submission to a mediation on the damages arising in representative proceedings before the Federal Court alleging accounting misstatements and/or breach of the continuous disclosure obligations of EDI Downer.
- 2007-08**                    **Maurice Blackburn/Watson**  
**Shareholder damages assessment**  
Preparation of advice estimating the damages arising in representative proceedings before the Federal Court alleging accounting misstatements and/or breach of the continuous disclosure obligation by the ASX-listed entity, AWB Limited.
- 2007**                        **Freehills/Telstra Corporation**  
**Shareholder damages assessment**  
Advice and assistance in the preparation of the expert report of Dr Fred Dunbar submitted to the Federal Court in the context of proceedings alleging breaches of the continuous disclosure obligations by Telstra. The principal subject of this work was the assessment of the extent to which of material alleged not to have been disclosed was already known and incorporated in Telstra's stock price.

- 2006-07**                    **Maurice Blackburn/Dorajay**  
**Shareholder damages assessment**  
Advice and assistance in the preparation of the expert report of Dr Fred Dunbar submitted to the Federal Court in the context of proceedings between Dorajay and Aristocrat Leisure. The principal subject of this work was the assessment of the extent and duration of share price inflation arising from various accounting misstatements and alleged breaches of the continuous disclosure obligations.

## Valuation and Contract Analysis

- 2014-15**                    **Minter Ellison/Foxtel Management Pty Ltd**  
**Assessment of reasonable licence fee**  
Expert reports prepared in the context of proceedings before the Copyright Tribunal concerning the appropriate valuation of the rights to be paid by Foxtel for the broadcast and communication of commercial recordings licensed by the Phonographic Performance Company of Australia.
- 2014-15**                    **Rahmat Lim & Partners/Port Dickson Power Berhad**  
**Power purchase agreement arbitration**  
Expert reports submitted in the context of an international arbitration held in Kuala Lumpur concerning the interpretation of the price indexation provisions in a power purchase contract between Port Dickson Power Berhad and Tenaga Nasional Berhad.
- 2013**                        **Johnson Winter & Slattery/Origin**  
**Gas supply agreement price review**  
Analysis and advice on the implications of certain contract terms for the price of gas, to be determined in a potential arbitration concerning the terms of a substantial long term gas supply agreement.
- 2013**                        **Herbert Smith Freehills/Santos**  
**Gas supply agreement price review**  
Analysis and advice on factors influencing the market price of gas in eastern Australia, to be determined in a potential arbitration concerning the terms of a substantial long term gas supply agreement.
- 2012-13**                    **Herbert Smith Freehills/North West Shelf Gas**  
**Gas supply agreement arbitration**  
Expert reports on the implications of certain contract terms for the price of gas under a substantial long term gas supply agreement.
- 2012-13**                    **Allens/BHP Billiton-Esso**  
**Gas supply agreement arbitration**  
Analysis, advice and expert report on the implications of certain contract terms for the price of gas under a substantial long term gas supply agreement.
- 2012**                        **King & Wood Mallesons/Ausgrid**  
**Power purchase agreement arbitration**  
Expert report prepared and filed in an arbitration on the in relation to the effect of the government's newly introduced carbon pricing mechanism on the price to be paid under a long term power purchase and hedge agreement between an electricity generator and retailer.

- 2011**                    **Kelly & Co/Cooper Basin Producers**  
**Wharfage dues agreement arbitration**  
Expert report and testimony in arbitration proceedings to determine the 'normal wharfage dues' to be paid for use of a facility that assists the transfer of petroleum products to tanker ships from a processing terminal in South Australia.
- 2010**                    **Barclays Capital/Confidential Client**  
**Due diligence, Alinta Energy**  
Retained to advise on the key industry related risks and issues facing Alinta Energy's gas and electricity assets during the due diligence process associated with its recapitalisation and sale.
- 2009**                    **Freehills/Santos**  
**Gas supply agreement price review**  
Analysis and advice on factors influencing the market price of gas in eastern Australia, to be determined in a potential arbitration concerning the terms of a substantial long term gas supply agreement.
- 2008-09**                **Clayton Utz/Origin Energy**  
**Gas supply agreement arbitration**  
Expert reports and testimony in an arbitration concerning the market price of gas, which was determined and applied in a substantial long term gas supply agreement.
- 2008-09**                **Minter Ellison/Confidential client**  
**Treatment of past capital contributions**  
Expert report and evidence given in arbitration proceedings on the extent to which a discount should apply under a long term water supply contract, in recognition of a capital contribution made at the outset of the agreement.
- 2008**                    **Freehills/Tenix Toll**  
**Logistics contract arbitration**  
Advice on the appropriate methodology for adjusting prices under a long term logistics contract in light of changing fuel costs.
- 2008**                    **BG plc**  
**Market analysis**  
Advise on economic aspects of the operation of the east Australian wholesale gas market in the context of the potential development of coal seam gas for use in LNG production and export.
- 2008**                    **Gilbert + Tobin/Waste Services NSW**  
**Damages estimation**  
Damages assessment in the context of a Federal Court finding of misleading and deceptive conduct in relation to the extent of environmental compliance in the provision of waste services.
- 2007**                    **Meerkin & Apel/SteriCorp**  
**Damages assessment**  
Expert report and testimony in the context of an international arbitration on commercial damages arising from alleged non-performance of a medical waste processing plant.

- 2006-07**                    **Middletons/Confidential Client**  
**Damages assessment**  
Retained to provide an expert report on the methodological framework for assessing alleged damages arising from contractual non-performance and associated forecast for demand and supply conditions and prices for natural gas and ethane prices and over a ten year period.
- 2006**                        **Confidential Client/Australia**  
**Valuation of digital copyright**  
Advice in relation to the negotiation for a licence for digital copyright. This included the discussion of the matters that should be considered in determining fees for a digital copyright licence, including the extent to which digital material should be valued differently from print material and whether the charging mechanism for print is appropriate for digital copyright.
- 2006**                        **Minter Ellison/Australian Hotels Association**  
**Valuation of copyright material**  
Expert report in the context of proceedings before the Copyright Tribunal concerning the appropriate valuation of the rights to play recorded music in nightclubs and other late night venues.
- 2005-06**                    **Minter Ellison and Freehills/Santos**  
**Gas supply agreement arbitrations**  
Principal economic expert in two separate arbitrations of the price to apply following review of two substantial gas supply agreements between the South West Queensland gas producers and, respectively, a large industrial customer and major gas retailer.

## **Institutional and Regulatory Reform**

- 2008-11**                    **Department of Sustainability and Environment**  
**Management of bulk water supply**  
Various advice on the concept and merits of establishing market based arrangements to guide both the day-to-day operation of the bulk water supply system in metropolitan Melbourne, as well as the trading of rights to water between the metropolitan water supply system and those throughout the state of Victoria.
- 2008**                        **Department of Treasury and Finance**  
**Access regime for water networks**  
Prepared a report on the principles that should be applied in developing a state-wide third party access regime for water supply networks.
- 2007**                        **Economic Regulatory Authority**  
**Options for competitive supply bulk water**  
Prepared a report on institutional and structural reforms necessary to encourage the development of options for the procurement of alternative water supplies from third parties.
- 2006**                        **Bulk Entitlement Management Committee**  
**Development of urban water market**  
Prepared a report for the four Melbourne water businesses on options for devolution of the management of water entitlements from collective to individual responsibility, including the development of associated arrangements for oversight and co-ordination of the decentralised management and trading of water rights.

**2003-05****Goldman Sachs/Airport Authority, Hong Kong  
Framework for economic regulation**

Lead a team advising on the options and detailed design of the economic regulatory arrangements needed to support the forthcoming privatisation of Hong Kong Airport.

## Sworn Testimony, Transcribed Evidence<sup>2</sup>

- 2015**                    **Expert evidence before an arbitral tribunal on behalf of Port Dickson Power Berhad (PDP), in the matter of PDP v Tenaga Nasional Berhad (TNB)**  
Expert reports, sworn evidence, Kuala Lumpur, 28 January 2015
- 2014**                    **Expert evidence before a UNCITRAL arbitral tribunal on behalf of Maynilad Water Corporation Inc (MWCI), in the matter of MWCI v Metropolitan Waterworks and Sewerage System (MWSS)**  
Expert reports, sworn evidence, Sydney (by videolink to Manila), 31 August 2014
- Expert evidence before the Australian Competition Tribunal on behalf of the ACCC, in the matter of AGL Energy v ACCC**  
Expert reports, sworn evidence, Sydney, 10-11 June 2014
- 2013**                    **Expert evidence before the Supreme Court of Victoria on behalf of Maddingley Brown Coal in the matter of Maddingley Brown Coal v Environment Protection Agency of Victoria**  
Expert reports, sworn evidence, Melbourne, 12 August 2013
- Expert evidence before the Federal Court on behalf of Modtech v GPT Management and Others**  
Expert reports, sworn evidence, Melbourne, 27 March 2013
- 2012**                    **Expert evidence before the Supreme Court of Queensland on behalf of Origin Energy Electricity Ltd and Others v Queensland Competition Authority and Others**  
Expert reports, sworn evidence, Brisbane, 3 December 2012
- 2011**                    **Expert evidence before the Federal Court on behalf of the Australian Turf Club and Australian Racing Board in the matter of Bruce McHugh v ATC and Others**  
Expert report, transcribed evidence, Sydney, 12 and 14 October 2011
- Expert evidence in arbitration proceedings before J von Doussa, QC, on behalf of Santos in the matter of Santos and Others v Government of South Australia**  
Expert report, transcribed evidence, Adelaide, 13-15 September 2011
- Expert evidence before a panel of arbitrators on behalf of UNELCO in the matter of UNELCO v Government of Vanuatu**  
Expert report, transcribed evidence, Melbourne, 23 March and 21 April 2011
- Expert evidence before the Federal Court on behalf of ActewAGL in the matter of ActewAGL v Australian Energy Regulator**  
Expert report, sworn evidence, Sydney, 17 March 2011
- Deposition Testimony in Re Payment Care Interchange and Merchant Discount Litigation, in the United States District Court for the Eastern District of New York**  
Deposition testimony, District of Columbia, 18 January 2011

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<sup>2</sup> Past ten years only.

- 2010**
- Expert evidence before the Federal Court in behalf of the Australia Competition and Consumer Commission in the matter of ACCC v Cement Australia and others**  
Expert report, sworn evidence, Brisbane, 19-21 October 2010
- Expert evidence on behalf of Orion NZ, at the Commerce Commission's Conference on its Input Methodologies Emerging View Paper**  
Transcribed evidence, public hearings, Wellington, 24 February 2010
- Deposition Testimony in *Re Payment Card Interchange and Merchant Discount Antitrust Litigation*, in the United States District Court for the Eastern District of New York**  
Deposition Testimony, District of Columbia, 18 February 2010
- 2009**
- Expert evidence before the Australian Competition Tribunal on behalf of Fortescue Metals Group Ltd, in the matter of Application for Review of Decision in Relation to Declaration of Services Provided by the Robe, Hamersley, Mt Newman and Goldsworthy Railways**  
Expert report, sworn evidence, Melbourne, 12-13 October and 5-6 November 2009
- Expert evidence on behalf of Orion NZ, at the Commerce Commission's Conference on its Input Methodologies Discussion Paper**  
Transcribed evidence, public hearings, Wellington, 16 September 2009
- Expert evidence before the Federal Court on behalf of Fortescue Metals Group Ltd, in the matter of ASIC v Fortescue Metals Group and Andrew Forrest**  
Expert report, sworn evidence, Perth, 29 April–1 May 2009
- Expert report and evidence in arbitration proceedings before Hon Michael McHugh, AC QC, and Roger Gyles, QC, between Origin Energy and AGL**  
Expert report, sworn evidence, Sydney, 19-24 March 2009
- 2008**
- Expert evidence on behalf of Orion NZ, at the Commerce Commission's Conference on its Draft Decision on Authorisation for the Control of Natural Gas Pipeline Services**  
Transcribed evidence, public hearings, Wellington, 21 February 2008
- 2007**
- Expert report and evidence in arbitration proceedings before Sir Daryl Dawson between SteriCorp and Stericycle Inc.**  
Expert report, sworn evidence, 11 July 2007
- 2006**
- Expert report and evidence in arbitration proceedings before Sir Daryl Dawson and David Jackson, QC, between Santos and others, and AGL**  
Expert report, sworn evidence, November 2006
- Expert report and evidence before the Federal Court on behalf of Fortescue Metals Group in the matter of BHP Billiton v National Competition Council and Others**  
Expert report, sworn evidence, November 2006
- Expert report and evidence in arbitration proceedings before Sir Daryl Dawson and David Jackson, QC, between Santos and Others, and Xstrata Queensland**  
Expert report, sworn evidence, September 2006

**Expert report and evidence before the Copyright Tribunal on behalf of the Australian Hotels Association and others in the matter of PPCA v AHA and Others**

Expert report, sworn evidence, May 2006

**Expert report and evidence in arbitration proceedings before Hon Michael McHugh, AC QC, on the matter of AWB Limited v ABB Grain Limited**

Expert report, sworn evidence, 24 May 2006

**Expert report and evidence to Victorian Appeal Panel, in the matter of the appeal by United Energy Distribution of the Electricity Price Determination of the Essential Services Commission**

Expert report, sworn evidence, 10 February 2006

2005

**Expert evidence on behalf of Orion NZ, at the Commerce Commission's Conference on its Notice of Intention to Declare Control of Unison Networks**

Transcribed evidence, public hearings, Wellington, 17 November 2005

**Expert evidence on behalf of Orion NZ, at the Commerce Commission's Conference on Asset Valuation choice and the electricity industry disclosure regime**

Transcribed evidence, public hearings, Wellington, 11 April 2005

2004

**Expert report and evidence to the Australian Competition Tribunal, in the matter of Virgin Blue Airlines v Sydney Airport Corporation**

Expert reports, sworn evidence, 19-20 October 2004

**Expert evidence on behalf of Orion NZ, at the Commerce Commission's Conference on the ODV Handbook for electricity lines businesses**

Transcribed evidence, public hearings, Wellington, 26 April 2004

## Speeches and Publications<sup>3</sup>

2015

**Electricity Networks Association Regulation Seminar, Brisbane**

Participant in Expert Plenary Panel

Speech, Brisbane, 5 August 2015

**NZ Commerce Commission Input Methodologies Review, Wellington**

'Allocation of Risk' and 'New Technologies'

Panel Discussant, Wellington, 29 July 2015

**Competition Matters Conference, Wellington**

Disruptive Technologies

Chair, Discussion Panel, Sydney, 24 July 2015

**Singapore Aviation Academy, Singapore**

Private Financing of Airport Infrastructure Expansions

Speech, Singapore, 5 March 2015

**GCR 4th Annual Law Leaders Forum Asia-Pacific**

Differences in using economics in EU and Asia Pacific

Speech, Singapore, 5 March 2015

**AEMC Public Forum**

East Coast Gas Market Review

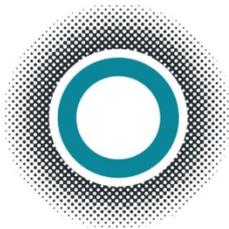
Speech, Sydney, 25 February 2015

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<sup>3</sup> Past seven years

- 2014**
- Competition and Consumer Workshop, Law Council of Australia**  
An Economist's Take on Taking Advantage  
Paper and Speech, Brisbane, 14 September 2014
- Energy Networks 2014**  
Innovation and Economic Regulation  
Speech, Melbourne, 1 May 2014
- The Network Industries Quarterly, *Consumer Advocacy in Australian Regulatory Decision Making – 'Hard Choices Await'*, Vol. 16, No 1, 2014**  
Ecole Polytechnique Federale de Lausanne, 31 March 2014
- GCR 3rd Annual Law Leaders Asia Pacific**  
Role of Economists in Competition Law Enforcement in Asia-Pacific  
Speech, Singapore, 6 March 2014
- 2013**
- University of South Australia – Competition and Consumer Workshop**  
Empirical test and collusive behaviour  
Speech and participation game, Adelaide, 16 November 2013
- Energy in WA Conference**  
Capacity Payments in the WEM – Time to Switch?  
Panel Discussion, Perth, 21 August 2013
- ACCC/AER Regulatory Conference**  
Designing Customer Engagement  
Speech, Brisbane, 25 July 2013
- Victorian Reinsurance Discussion Group**  
Australian Mining – When Opportunities and Risk Collide  
Speech, Melbourne, 1 March 2013
- NZ Downstream Conference**  
Investment and Regulation  
Panel Discussion, Auckland, 25 July 2013
- 2012**
- Rising Stars Competition Law Workshop**  
Expert Evidence in Competition Cases  
Speech, Sydney, 24 November 2012
- KPPU – Workshop on the Economics of Merger Analysis**  
Theories and Methods for Measuring the Competitive Effects of Mergers  
Speech, Bali, 19-21 November 2012
- University of South Australia – Competition and Consumer Workshop**  
Reflections on Part IIIA of the Competition Act  
Speech, Adelaide, 12 October 2012
- NZ Downstream Conference**  
Lines company consolidation – what are the benefits and risks?  
Panel discussion, Auckland, 6-7 March 2012
- 2011**
- Law Council of Australia - Competition Workshop**  
Coordinated effects in merger assessments  
Speech, Gold Coast, 27 August 2011

- ACCC Regulatory Conference**  
Adapting Energy Markets to a Low Carbon Future  
Speech, Brisbane, 28 July 2011
- 2010**
- IPART Efficiency and Competition in Infrastructure**  
Improving Performance Incentives for GTE's  
Speech, Sydney, 7 May 2010
- Law and Economics Association of New Zealand**  
Shareholder Class Actions – A Rising Trend in Australia  
Speeches, Auckland and Wellington, 15-16 November 2010
- 2009**
- ACCC Regulatory Conference**  
Substitutes and Complements for Traditional Regulation  
Speech, Gold Coast, 30 July 2009
- Minter Ellison Shareholder Class Action Seminar**  
Investor Class Actions – Economic Evidence  
Speech, Sydney, 18 March 2009
- Competition Law and Regulation Conference**  
Commerce Amendment Act: Impact on Electricity Lines Businesses  
Speech, Wellington, 27 February 2009
- 2008**
- Non-Executive Directors**  
Shareholder Class Actions in Australia  
Speech, Sydney, 28 July 2008
- Mergers & Acquisitions: Strategies 2008**  
Competition Law Implications for Mergers & Acquisitions  
Speech, Sydney, 27 May 2008
- Institute for Study of Competition and Regulation**  
Role of Merits Review under Part 4 and Part 4A of the Commerce Act  
Speech, Wellington, 20 February 2008
- 2007**
- Law Council of Australia - Trade Practices Workshop**  
Hypothetical breach of s46  
Economic expert in mock trial, 20 October 2007
- Assessing the Merits of Early Termination Fees, *Economics of Antitrust: Complex Issues in a Dynamic Economy*, Wu, Lawrence (Ed)**  
NERA Economic Consulting 2007
- Assessing the Impact of Competition Policy Reforms on Infrastructure Performance**  
**ACCC Regulation Conference**  
Speech, Gold Coast, 27 July 2007



# HOUSTONKEMP

Economists

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## Sydney

Level 40  
161 Castlereagh Street  
Sydney NSW 2000

Phone: +61 2 8880 4800

## Singapore

12 Marina View  
#21-08 Asia Square Tower 2  
Singapore 018961

Phone: +65 6653 3420