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Zoetis Holdings LLC acquisition of Neogen Genomics Business

Response to the Commerce Commission's Statement of Issues of 27 July 2026

14 August 2026

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Contents

1. Executive Summary

1.1 This submission sets out Zoetis Holdings LLC (**Zoetis**)'s response (**Response**) to the Commerce Commission (**Commission**)'s Statement of Issues dated 27 July 2026 (**SOI**) published in relation to Zoetis' proposed acquisition of the global animal genomic testing business (**Neogen Genomics Business**) of Neogen Corporation (**Neogen**) (the **Proposed Acquisition**).

1.2 Zoetis' proposed acquisition of Neogen is not capable of substantially lessening competition in the supply of genomic testing for any species including beef.

1.3 Zoetis is, and will continue to be, constrained from raising price or decreasing quality post-acquisition by the countervailing power of breed societies, the incentives on Eurofins Genomics/ Weatherbys Scientific (**Weatherbys**) to grow share and respond in the event of any price or quality changes, the low barriers to entry and expansion for supply of genomic testing services, and by technological innovations which continue increase these constraints.

Breed societies are gatekeepers

1.4 Breed societies constrain genomic testing providers from raising price or decreasing quality. They control access to customers, customer data, phenotype data, and have the ability to introduce alternative providers at will. It is not appropriate to characterise them as mere 'intermediaries.' Breed societies are the primary party in the delivery of genomic services to their members and control, market and evaluate data within their genetic evaluations systems. They are Zoetis' and Neogen's primary customers, as they control the pricing of testing services to farmers, and purchase genotyping services at wholesale, on a non-exclusive basis. They are genomic testing gatekeepers.

1.5 Genomic testing providers are effectively switched in and out by breed societies. In this respect, switching is episodic, but a consistent and powerful constraint. Across New Zealand, Australia and the United States, the Angus Society of Australia Limited (**Angus AUS**), New Zealand Angus Association Incorporated (**Angus NZ**), New Zealand Hereford Association (**NZ Herefords**), Simmental, Charolais, South Devon, Shorthorn, Murray Grey, Australian Wagyu Association, Droughtmaster Australia, Santa Gertrudis Breeders Association of Australia and American Hereford Association have all switched or increased their number of genomic testing providers in the past 5 years.

1.6 The ease with which breed societies can switch genomic testing providers or add providers has significantly increased in the past 6 months with software providers, such as Helical, making the use of multiple genomic testing providers, and managing breed association data, simpler and quicker. Large sets of breed society-held phenotype, genotype and other data can now be shifted quickly and at minimal cost. Helical is fully integrated into breed societies' engagement with farmers, for example, it drives the landing page for the Angus NZ "data search" function on the home page of Angus NZ website.[1]

1.7 SNP chips used by genomic testing providers are not 'NZ specific' or uniquely modified for NZ, and do not represent a barrier to new entrants. A genomic testing provider's relationships with breed societies and industry associations to provide services are non-exclusive and designed to drive increased uptake of genomic testing.

No impediments to Weatherbys' expansion

1.8 The sponsorship of Weatherbys' expansion into supply of genomic testing for beef cattle in New Zealand by the key breed societies that own and act through New Zealand Performance Beef Breeders Limited (**PBB**) – and also in Australia - in response to the proposed merger, was designed to, and will constrain Zoetis from raising price or decreasing quality.

[1] https://angusnz.com/ links to https://angusnz.helicalco.com/public/i.

1.9 PBB determines the competitiveness of both Weatherbys and Neogen/Zoetis' offerings. To the extent there is any price differential between the offerings, that is entirely PBB's choice, [REDACTED]. Testing is also seasonal, so it is unsurprising that Weatherbys does not yet have a high market share, but PBB will determine the share it ultimately achieves, not Neogen or Zoetis. There are no other barriers or conditions to Weatherbys achieving the largest share of beef genomic testing services in the market with PBB's support.

1.10 Weatherbys itself is a large, sophisticated global player in genomic testing, recently purchased by Eurofins, another substantial competitor. There can be no doubt that it will continue to have sustainable access to the resources necessary to be a significant competitive force in New Zealand.

More entry is likely

1.11 It is likely that other providers will expand at scale into genomic testing for beef cattle within the next 2-3 years.[2] There are no technological or country-specific impediments to prevent entry or expansion or create switching friction. There is significant supply-side substitutability with other genomic testing products and animal species, and no geographic constraints on supply (with the testing carried out offshore and very limited domestic support required to deliver services to farmers or breed societies). Neogen itself has no local sales force, laboratory, and supplies services at wholesale.

1.12 Demand for genomic testing for beef cattle in New Zealand has grown and remains a growth area. Competitors are likely to enter/ expand into supplying tests for beef cattle going forward, and the likelihood of this will increase in event of a post-merger price increase/ service quality decrease.[3]

[2] See further examples in **Annexures 2** and **3** below, including of Weatherbys, Xytovet and STGenetics expanding in Australia.
[3] See further **Annexure 6** – NERA Report

2. The customer journey

2.1 Genomic testing in beef cattle began in New Zealand in around the early 2010s, following the commercial availability of the BovineSNP50 chip, as an alternative to other methods of herd improvement selection, and building on the introduction of genetic testing in the livestock sector.[4] The Neogen Genomics Business began supplying genomic testing in New Zealand in 2018. In the beef cattle industry, genomic testing uptake remains low as a proportion of herd population, compared to genomic testing uptake in dairy or sheep herds.

2.2 Zoetis has seen global testing growth at more than [REDACTED]% per annum for livestock, and expects this to continue to increase for cattle, as farmers become increasingly aware of the benefits of genomic testing. Genomic testing in New Zealand is currently only carried out on [REDACTED]% of beef cattle. The addressable market for beef cattle genomic testing in New Zealand is [REDACTED]%. PBB notes that: "Genomic testing is becoming increasingly important, even beyond the realm of stud breeding, and in the past five years we've seen average year-on-year growth of 20%."[5]

2.3 By comparison, genomic testing is significantly more widespread for dairy cattle and sheep in New Zealand. In respect of dairy cattle and combined dairy-beef cattle, LIC now tests approximately 0.5 million cattle a year[6], and a large proportion of dairy cattle are likely tested.

2.4 A narrow focus on the beef cattle segment of genomic testing, and on any group of current purchasers within that, does not take account of the significant work being done by beef genomic testing providers and other animal genomic testing providers alike, to grow uptake of these services, the multiple options available for genomic testing for farmers, the scale of testing in similar markets,[7] and, for cattle, the pace at which the product offering is developing.[8]

2.5 Currently, for a New Zealand beef farmer seeking a genomic test for cattle, the main options are:

(a) Order a test on the PBB website, which allows selection of an option to use either Neogen or Weatherbys as provider. PBB determines what options farmers are given, how the providers and services are described and how they are priced, and supported.

(b) For Angus cattle, order a test on the Angus AUS website, which allows a selection of Weatherbys, Zoetis or Neogen as provider. New Zealand breeders may register animals across countries, and Australian breed societies' products are accordingly available in New Zealand.

(c) Order a test on the Zoetis website, for inclusion on the TACE/BREEDPLAN evaluation:

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[4] The use of DNA has evolved over time. DNA was first used in parentage verification (initially with blood typing, then DNA markers– commonly microsatellites). SNP marker technology evolved through the 1990s and mid 2000s to major gene / defect testing for relevant breed-specific conditions. Later some production/colour/horn-status related tests developed. The transition from "DNA = parentage" to "DNA = prediction + parentage" began in the late 2000s, with dairy well ahead of beef. See further: https://www.sciencedirect.com/science/article/pii/S266691022200014X?viewFullText=true and An overview of recent technological developments in bovine genomics , Navid Ghavi Hossein-Zadeh, 2024.

[5] https://pbbnz.com/about/news/performance-beef-breeders-expands-offering-in-new-zealand-with-weatherbysnew-blog-post/

[6] LIC 2026 annual report records a genotype base of 2 million cattle, up from 1.5 million in its 2025 annual report. https://d1r5hvvxe7dolz.cloudfront.net/media/documents/07166_LIC_Annual_Report_FY26.pdf. Dairy NZ estimates approximately 4.68 million dairy cows in 2024/25.

[7] Weatherbys has previously worked with Eurofins in Ireland to increase the scale of genomic testing in that country. It genomically tested over two million cattle between 2016-2020. Weatherbys was acquired by Eurofins Genomics in June 2026, bringing together Weatherbys Scientific's local market expertise in Ireland and Australia with the capabilities of Eurofins Genomics' international laboratory network, and its advanced array capabilities and broad portfolio in sequencing and genotyping to enhance its genomic testing offering to customers. See Eurofins acquisition of Weatherbys.

[8] Further details are shown by Beef + Lamb NZ and the MLA's R&D programmes: https://beeflambnz.com/science-genetics/genetics/genetics-programmes, and https://www.mla.com.au/globalassets/mla-corporate/about-mla/documents/mla-2030-strategic-plan-web.pdf.

(i) HD50K for Angus or HD50K for Hereford which is incorporated in the respective BREEDPLAN evaluation which includes the Angus NZ or NZ Herefords breed society pedigree and performance data.

(ii) for INHERIT Select, the genotype is entered into the INHERIT [REDACTED].

(d) Order a dairy – beef cattle test from LIC. These tests are carried out in LIC's lab and matched against the phenotype records held by LIC (in partnership with Holstein NZ).

2.6 In this respect, when the SOI describes breed societies an 'intermediary'[9] in supply of genomic testing, it is failing to accurately characterise the breed societies' control over the competitive landscape for genomic testing. Breed Societies (including Angus NZ) are the primary service provider in the delivery of genomic services to their members. Genotype service providers do not have the ability to interact with the TACE/BREEDPLAN evaluation in their own right. As noted in the SOI, the breed societies hold years' worth of data, including the pedigree and performance (phenotype) data that is analysed within TACE/ BREEDPLAN evaluation system. Genomic service providers' role is in the supply of genotype data directly to breed societies to create the EBVs which are provided to farmers. Breed societies can move their data holdings, and direct farmers to particular genomic testing providers. See for example the recent NZ Herefords switch from using the ABRI to Helical.[10] Ultimately, breed societies' marketing of the benefits of breeds, and the conditions they place on their members, drive (or can limit) market demand for testing services, which the breed societies then facilitate the delivery of, or in PBB's case, sell, to their members.

2.7 The SOI notes that some breed societies are considering making genomic testing registration mandatory. This would be for the small proportion of stud cattle registered with those societies. [REDACTED]

2.8 The SOI therefore risks relying on a static view of a narrow input to define a market. More important for the competitive market dynamics are ownership of the data necessary to provide the results, the power of the breed societies' end-customer relationships and the role of breed societies in enabling (or sponsoring) testing providers to participate. The focal point for competition in the supply of genomic testing in NZ is not on individual farmers at all, but on breed society member requirements, marketing of breed benefits, and their control of both price and choice of testing providers to support those wider activities.

2.9 The SOI did recognise that one important feature of future competition will be the extent of the addressable market for provision of genomic testing. This is large, and growing at an estimated [REDACTED] at least per annum.[11] As the segments of livestock that are not currently tested in New Zealand shift to testing (in some cases compulsorily, or due a focus on driving productivity and profitability from improved genetics), there are a large range of providers who can, and will, enter or expand at speed and scale to meet that demand. There are simply no barriers to providers expanding, and no loyalty, or other issues preventing this.

2.10 Further details of the elements in the end-to-end process for beef genomic testing are set out at **Annexure 1**. This shows the variety of options open to farmers, and the lack of barriers to entrants expanding or to customers switching.

2.11 Details of breed societies which have switched testing providers are set out at **Annexure 2**. A key example in New Zealand arose when a large proportion of Angus NZ registered farmers switched to Angus AUS in 2021. This involved a switch from ordering of genomic tests either from PBB or

[9] SOI at [33.2].
[10] NZ Herefords breed society, for example, encourages use of Neogen as follows: *What Service Providers are available to NZ Herefords Breeders? Choosing which test best suits your farming operations, dictates which service provider to choose and thus what form your sample needs to be. NZ Herefords strongly recommend you use Neogen, located in Australia, as your service provider. PBB hold a contract with Neogen and Neogen very early on verified their SNP DNA test for NZ Herefords genetic defects and provide a DNA profile.* See: https://www.herefords.co.nz/genomics-information.html.
[11] [REDACTED].

Zoetis to ordering genomic testing services from Angus Australia where services from Neogen and Zoetis are marketed at a different price point.[12]

2.12 In summary, because of the way that breed societies control the presentation of options, pricing, and benefits of and requirement for genomic testing, competition dynamics in the market for supply of genomic testing are orientated to that context.

[12] See further https://www.farmersweekly.co.nz/news/angus-nz-sees-silver-lining-in-breeders-aus-switch/ for farmers' rationale for this switch.

3. Competitive dynamics

3.1 In the event of a price rise or quality decrease for genomic testing for beef cattle by Zoetis, the following is likely to occur:

(a) Breed societies will substitute Zoetis for other genomic testing providers onto their panels and/or add to their panels.[13] Angus AUS and PBB (which includes Angus NZ) have already added Weatherbys to their panel[14], and can manage the genomic testing services offer to members to increase or reduce uptake of services of providers on their panel, as they see fit;

(b) Weatherbys is likely to be incentivised to put pressure on PBB and Angus AUS to keep prices for its services low to win more customers. There are no barriers to it increasing its supply of tests; and

(c) Farmers may choose to buy less of the direct services on offer, test less frequently, or to substitute other herd improvement approaches instead of genomic testing or not test at all.

3.2 **Annexure 2** sets out detailed examples of switching which has occurred in genomic testing providers, including at scale, and explains why a SSNIP would neither occur (due to the constraints Zoetis already faces and will continue to face) or be profitable.

3.3 From Zoetis' perspective, this presents no change to the current competitive dynamic. The control of the necessary competitive inputs, and of market demand, exercised by the breed societies have historically limited its ability to raise prices, and will continue to do so post-acquisition.

3.4 There are no commercial or technical barriers to prevent customers substituting one provider for another, at scale. This is shown by the move on mass by certain Angus NZ farmers to Angus AUS (providing alternate genomic testing services and price points). While switching tranches of herd genomic information historically involved some delay (although not enough to materially impede switching) that issue has now been resolved with technology such as Helical, used by Angus NZ and NZ Herefords, which provides software specifically designed to facilitate comparability and portability of such data.[15]

3.5 Substitution of providers is typically cyclical and lumpy. It can be prompted by a new requirement from a breed society or a breed society switching event as occurred with Angus NZ. It can also be prompted by external events. [REDACTED].

[13] In this respect the countervailing power of breed societies is similar to the buyer power of the large government purchasers recognised by the Commission in its 2015 clearance of Staples/Office Max (*Staples, Inc and Office Depot, Inc [2015] NZCC Determination* at [128] – [130]); and the choice of the DHBs as to how to contract for diagnostic services in Diagnostic Medlab (*Valley Diagnostic Laboratories Limited and Wellington Pathology Limited [2005] NZCC Determination* at [237] – [243]).

[14] See further Angus Australia Chief Executive Officer, Scott Wright, said the partnership reflected a deliberate move to broaden capability and bring fresh innovation to the genomics space. "We believe competition is a great thing and we are always looking for ways to strengthen the tools and services available to our members," Mr Wright said -https://www.angusaustralia.com.au/news/new-partnership-spawns-three-innovative-genomics-tools-for-angus-breed and https://issuu.com/angusaustralia/docs/2026_autumn_angus_bulletin.

[15] Benefits of using Helical, and the switch of data from ABRI to Helical are outlined in the most recent edition of Hooked on Herefords, from NZ Herefords: https://www.herefords.co.nz/articles/latest-news/hooked-on-herefords-autumn-2026-edition-available1.html.

4. PBB relationship

4.1 PBB has already reacted to the prospect of this Acquisition by introducing Weatherbys to its panel, alongside Neogen. It can equally expand the list of providers it offers genomic testing through. [REDACTED]

4.2 There are no other steps that need to be taken to limit the potential for the merged entity to exercise market power. If Zoetis' offering post-transaction is not price or quality-competitive, it will simply not be promoted or sold by PBB, and its share of tests will drop away, and Weatherbys' will increase.

4.3 [REDACTED].

4.4 Further details of Neogen's contract with PBB are included at **Annexure 5**.

5. Market definition

5.1 Zoetis remains of the view that the appropriate market definition, given the ease of switching, low barriers to entry, and supply-side substitutability, encompasses the supply of genomic testing services for all livestock, on a global basis.

Product market

Supply side considerations

5.2 On the supply side, the underlying technology, accreditation or reference population requirements do not support a separate product market for genomic testing for beef cattle in New Zealand.

5.3 There is significant supply-side substitutability between genomic testing products and supply is not constrained by geography: testing is carried out offshore and only minimal domestic support is required to deliver services to farmers or breed societies. On the demand-side, farmers are unlikely to substitute genomic testing for beef cattle with genomic testing for dairy cattle or sheep. However, the supply-side dynamics are central to understanding how firms compete to provide genomic testing services, including to breed societies, whereby firms have the ability to switch or add different species to their genotyping service offerings. The New Zealand case law is clear that supply-side considerations are more relevant in defining markets in New Zealand than they tend to be for larger markets.[16] Accordingly, Zoetis considers the market should be defined more broadly than genomic testing for beef cattle in New Zealand.

5.4 The relevant geographic market is global. However, if a narrow market definition is used, the global constraints need to be taken account of in the competitive effects analysis, as a form of import competition.[17]

5.5 Zoetis estimates the time and cost to create an SNP chip which is accepted by BREEDPLAN for genomic testing in Angus beef cattle in Australia or New Zealand, is estimated at [REDACTED][18] [REDACTED]. This includes the time taken to agree commercial arrangements with the relevant breed society.

5.6 The SOI lists a range of potential barriers for further consideration, but there is an extent to which it also duplicates these by listing the same condition of entry multiple times with different nomenclature. There are only three requirements to provide genomic testing:

(a) *a lab:* A lab can be the same lab used for other testing and does not need to be local;[19]

(b) *a SNP chip:* A SNP chip is off-the-shelf. If required, modifications can be made based on public research; the requirements of the local accreditation provider; and any breed-specific requirements sought locally or globally by farmers of that breed (also public); and

(c) *A relationship with a breed society/societies that has/have access to phenotype data and DNA samples:* Information is non-proprietary and held by breed societies and other industry associations. The third-party reference populations are generally accessed on a non-exclusive basis and often from breed societies or industry organisations. Time and cost of obtaining access is de minimis.

Further details of these are set out in **Annexures 1 and 3**.

[16] *Commerce Commission v Air New Zealand Ltd* [2011] NZHC 1285 at [139].
[17] *Hancock Natural Resource Group Inc - Carter Holt Harvey Limited Clearance Determination* [2006] at [274] – [284].
[18] [REDACTED].
[19] For example, Zoetis and Weatherbys supply genomic testing services from labs located overseas, clearly showing that a local laboratory is not required to compete effectively.

5.7 Weatherbys was able to turn 'on a dime' to offer genomic testing for beef cattle having supplied genomic testing for dairy cattle and wagyu beef cattle in Australia. It did so with a product for supply in Australian and New Zealand markets almost immediately once approached by Angus AUS/ PBB following Angus AUS learning of rumours of the Zoetis/Neogen merger, and was up and running in a matter of weeks - before the deal was even announced.

5.8 Similarly, Xytovet has moved from a base in supply of sheep genomic testing, to providing genotypes for dairy cattle in Australia and recently offered to supply genotyping for beef cattle in Australia, marketing itself as the only Australian-owned and operated animal genotyping company, with data that is already validated by AGBU. Shorthorn Beef has announced a collaboration with Xytovet and International Genetic Solutions.[20] [REDACTED].

Geographic market

5.9 The SOI seeks information on the extent to which farmers can obtain comparable and reliable outcomes when switching to overseas providers. As noted above, this question starts with an incorrect premise that the motivation for genomic testing predominantly originates with the farmer. In fact, that motivation is derived from the interrelationship of an understanding of the benefits of genomic testing and the need for it to be undertaken, which are generated and supported predominantly by the activities of the breed societies, and the breed societies also control who has access to the necessary data to provide useful testing outputs [REDACTED].

5.10 The location of the provider makes no difference to that competitive dynamic.[21] Currently, Neogen, Weatherbys and Zoetis supply services from outside New Zealand. Australian and New Zealand breed societies promote tests incorporating genotypes from these providers which the NZ breed societies sell through PBB to farmer members in New Zealand. In addition there is a limited amount of direct sales undertaken by Zoetis, using Australasian and offshore phenotype data.

5.11 In this context, PBB can and does use Neogen, Weatherbys and any other genomic testing provider it chooses, for the genotypes it obtains from NZ farmers. Neogen is an offshore entity with an Australian lab and a domestic contract provider. Some NZ Angus farmers also use Zoetis, which has a very small domestic customer support team, and a US-based lab.

5.12 Customers also switch to utilising offshore breed societies' genomic evaluation systems against which to match their genomic tests.[22]

5.13 There is no specific requirement for domestic genomic testing, or even domestic genetic evaluation results. These are choices for breed societies and farmers, which they can and do exercise. BREEDPLAN requires that all SNP chips used meet the evaluation standards which include a list of specific markers, and it will not accept the genotypes into their system if those markers are not present. Some breed societies may additionally ask for certain markers to be included on panels. Different breed societies set requirements for the testing of certain genetic defect or parentage markers for cattle registered with them.[23] However, once a farmer has chosen which breed society it wants to register with, this is automatic.

5.14 Most farmers will order their tests from, and be invoiced by, the breed society. It is in the breed society's interest to facilitate testing on a range of attributes by a range of providers, so relationships are non-exclusive.

[20] Shorthorn Cattle DNA Testing. Order form provided in Attachment 2.
[21] [REDACTED].
[22] [REDACTED].
[23] More information on this point is contained in **Annexure 4** – Entry and expansion – Technical at paragraph [1.11] – [1.14].

5.15 Helical has made switching between providers even more quick and efficient. Geographic location is irrelevant, and Helical technology is utilised globally to facilitate this.[24]

5.16 In the event of a price increase, or decreasing service quality, breed societies can and do reach out to facilitate genomic testing providers in other geographic markets to enter supply to them, as has occurred with the entry of Weatherbys. There is nothing to prevent this occurring for CRV, Semex, Xytovet, ST Genetics, ABS, Beijing Compass Agricultural, Bio-Genesys, Czech Moravian Breeders Corporation, Feanix Biotechnologies, Gencove, Genetic Visions-ST, IFN Schönow, Labogena, Molbreeding Biotechnology, Peak Genetics, Synergy Wagyu, SEENERGI, Valogene, VIT, and VHLGenetics.

Customer segments

5.17 Pricing does not differ to customers depending on whether they are stud/seedstock or commercial breeders, although different breeders will use different tests for different purposes. The commercial uptake of genomic testing for cattle in New Zealand has been low but is increasing. There are no differences in terms of service. [REDACTED].[25]

5.18 If a breed society were to require stud breeders to undertake genomic testing as a condition of registration or if breed societies were to extend their commercial membership options and relevant tests available to commercial producers, this would simply increase the quantity of testing required in market, increasing the addressable market and likely encouraging further entry. At the moment, in New Zealand the seven breed societies that are owners of PBB can negotiate with Neogen and Weatherbys the product price mix they want, which PBB then offers to farmers. This will not change with the merger.

5.19 Zoetis' INHERIT Select product is sold to commercial farmers rather than stud breeders, as it is a product for commercial female cattle only. Zoetis expects sales of both its genomic testing products to increase as testing in the commercial sector grows, as bulls (seedstock) animals would be tested prior to purchase, and the cows after that.

5.20 See further commentary on the market definition approach set out in the NERA Report at **Annexure 6**.

[24] https://www.helicalco.com/.
[25] [REDACTED].

6. Existing competition

6.1 Zoetis and Neogen do not compete to provide genomic testing services to beef cattle farmers in New Zealand. To the extent that Zoetis provides its limited range of direct sales, it competes with PBB, which sells genomic testing services on its own behalf to farmer members of its owner breed societies. PBB sources testing services from Weatherbys and Neogen, [REDACTED].

6.2 In this respect, the primary driver of competition for genomic testing services occurs at the breed society level.[26]

6.3 Approximately [REDACTED]% of Zoetis' sales of genomic testing for beef in New Zealand comes from [REDACTED].

6.4 [REDACTED[27]

6.5 Zoetis does not hold information on frequency of switching by farmers, because it does not have good visibility as to the motivations and decisions by farmers around testing, which primarily sit with the breed society relationship. Approximately [REDACTED]%[28] of its beef farmer customers do not purchase genomic testing annually, and [REDACTED]. Neither is it able to tell whether this means those customers are moving to another provider, simply testing once every few years, or not purchasing at all and instead relying on other herd improvement practices and services that have the same objective of improving the genetic stock of animals in the herd.

6.6 Neogen's competitor in New Zealand is Weatherbys, which is actively marketed by its primary customer, PBB, as an alternative provider. As noted above, Neogen does not directly market or engage with farmers or the market in New Zealand. It is PBB (with its breed society owners) that is competing with Zoetis (its primary breed society relationship, Angus AUS) to obtain customers.

6.7 Angus AUS and the seven breed societies which own PBB are the primary customers of genomic testing services, and provide feedback on the variety of offerings and can drive farmers to choose particular products, motivate development of additional tests and provide feedback on service/price issues to the genomic test providers.

Weatherbys as a constraint

6.8 Weatherbys imposes a significant competitive constraint, which will continue post-acquisition. There is a strong likelihood that [REDACTED]. This is because:

(a) PBB's public marketing has switched to heavily promote Weatherbys to breeders, including discounted rates (that began prior to acquisition announcement), and its pricing would also suggest it is trying to push breeders toward using Weatherbys over Neogen.[29]

(b) In markets with more developed genomic testing supply, beef cattle breeding societies have switched to Weatherbys with ease. See **Annexure 2**. There is no reason why this cannot occur in New Zealand, as it has in the US and Australia, and this is a significant constraint on supply.

(c) Weatherbys' entry in Australia has increased price competition, [REDACTED].

(d) For the reasons described above, while farmers are aware of the process steps (and the availability of multiple genotyping service provider offerings), trust in the genomic testing provider is an issue considered at the breed society level. If farmers were to become dissatisfied with price or service quality (particularly speed), in the first instance they could

[26] See **Annexure 6** – NERA Report – section 4.
[27] As above at [2.5], the [REDACTED].
[28] [REDACTED].
[29] https://pbbnz.com/about/news/performance-beef-breeders-expands-offering-in-new-zealand-with-weatherbysnew-blog-post/.

select an alternate provider, whilst the breed society would likely substitute the provider or add to its panel. See **Annexure 2** for examples of where this has occurred.

(e) Weatherbys product offer and prices appear to be comparable to the parties'. Neither Zoetis nor Neogen have detailed information about Weatherbys' wholesale prices. However, as a new market entrant, looking to grow share, its incentives are to provide an attractive offer to grow a customer base. There is no reason that should prevent Weatherbys from doing this. PBB's own public comments describe the ease of the transition and strength of the Weatherbys' range.[30]

(f) Weatherbys introduced its beef genomic testing product in Australia in July 2025 through a partnership with the Australian Wagyu Association (followed by Angus Australia in early 2026). Since then, a number of breed societies have switched to using it and/or added it to the group of genomic testing providers they offer. Examples of this already occurring [REDACTED], as well as Angus Australia and the Australian Wagyu Association offering Weatherbys, and [REDACTED]. PBB in New Zealand also offers Weatherbys, alongside Neogen.

6.9 In addition, as described above, the potential addressable market is large and genomic testing is growing so Weatherbys can grow share through acquisition of new farmers. See further **Annexure 3**. There are no constraints preventing it growing quickly, as it has done in other countries where it has expanded its product offering, including in the US where it similarly moved from dairy into beef cattle genomic testing and is now the exclusive supplier to the second largest US breed society (Hereford).

6.10 Further, Weatherbys was the first provider of Angus Australia's direct online order platform, DNA Direct. Since entering the Australian market, Weatherbys has been a price leader.[31] Weatherbys has made available an additional new test for Australian Wagyu Association members in relation to the recently identified recessive Hepatocyte Fibrinogen Storage Disorder.[32] Neither Zoetis or Neogen Genomics Business provide this test, [REDACTED].

6.11 [REDACTED].

6.12 Although uptake in New Zealand has not yet occurred at scale, as described above, this is affected by seasonality of testing and PBB's choice around product pricing [REDACTED].

6.13 Weatherbys has recently been acquired by a global competitor, Eurofins, with that acquisition completing in June 2026. It has previously collaborated to drive genomic testing in cattle in other countries[33] and can be expected to do the same in New Zealand. It will have additional scale and expertise, and can be expected to aggressively compete for share.

[30] As above.

[31] Its published list prices for primary genomic evaluation services to Angus Australia members are A$46.20 per test, which is lower than the published prices of both Zoetis (A$51.45) and the Neogen Genomics Business (A$48.15).

Genomic Tests plus Add ons	Prices include GST		
	Zoetis	Neogen	Weatherbys
Genomic SNP	$51.45	$48.15	$46.20
Parentage Verification	Included	Included	Included

[32] New Recessive Genetic Test Available: HFSD | Australian Wagyu Association.

[33] Eurofins and Weatherbys collaborated in Ireland with the ICBF to genotype over 1m animals in a 2 year timeframe demonstrating clear ability to operate at scale. For reference, NZ has about 3.5 million beef cattle.

7. Ease of entry and expansion

7.1 There are no material barriers to entry or expansion for a global or local genomic testing provider. This is shown by the significant increase in genomic testing over the past decade, the increasing number of providers starting to genomic test for different species and at different scale. Examples of entry from adjacent markets are included in **Annexure 2**.

7.2 If prices were to increase, it is likely that:

(a) Existing competitors, particularly Weatherbys in AUS and NZ, and Xytovet, Semex and STGenetics in AUS, would expand their sales or enter new market segments to compete with Zoetis.

(b) Breed societies would exercise countervailing buyer power to bring on new entrants or encourage switching to other providers (as has occurred in Australia with Australian Wagyu Association, Angus Australia and Holstein Australia, and in NZ with PPB and Weatherbys). This has occurred directly in response to rumours of the merger, which was only publicly announced on 2 March 2026.[34]

(c) Genomic testing providers already operating in NZ in dairy cattle and other species would enter supply of services for beef cattle, such as LIC, CRV or GenomNZ. [REDACTED] [35] and [REDACTED].[36]

(d) It is also possible that some providers of parentage testing would expand into genomic testing.

7.3 While the cost of entry for a full-scale lab set-up may be approximately $1 million, this will never be the actual cost of entry because:

(a) There is no need for competitors to establish a domestic lab or a new lab if they already supply genomic or genetic testing. Zoetis and Weatherbys do not have labs in most countries they service, nor does Neogen;

(b) A number of providers have global labs, some of which could also make available their services on a contract or toll processing basis;

(c) In addition, LIC, GenomNZ and research entities already have laboratory facilities which offer genomic testing in New Zealand. The SOI acknowledges that "*breeders request genomic testing from New Zealand-based sales representative or agents, irrespective of whether the samples are tested in overseas laboratories*,"[37]and that "there does not appear to be a requirement for a laboratory to be based in each country where testing is supplied given that none of the existing genomic testing providers for beef cattle in New Zealand have a lab based in New Zealand.[38]

7.4 The fixed costs of negotiating access to laboratory equipment or purchasing relevant equipment are one-off costs, which can also be reduced via leasing options prevalent in the industry.

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[34] See 2026 Angus Australia Autumn Angus Bulletin, pg 8: "*Another matter of significance for members is the recent announcement that Zoetis will acquire Neogen. I have communicated to both organisations that the Board and management of Angus Australia have some concerns regarding this acquisition, particularly regarding reduced competition in the genomic testing sector and the potential long-term impact on pricing. While these concerns may not materialise, history suggests that reduced competition carries risk. As a risk mitigation strategy, Angus Australia has recently established a relationship with Weatherbys, a long-standing genomic laboratory with an established footprint in Australia. In the coming weeks we will introduce new services through this partnership, with the intention of building a broader relationship over time.*"

[35] [REDACTED].

[36] https://researchers.lincoln.ac.nz/equipment/252589.

[37] SOI at [67].

[38] SOI at [100.2].

7.5 Entry or expansion is likely, will be sufficient in extent and timely, to constrain Zoetis for the following reasons:

Likelihood

(a) In Zoetis' view it is highly likely PBB will increase its purchases of Weatherbys' product in New Zealand and equally Angus AUS and Australian Wagyu in Australia. [REDACTED].

(b) [REDACTED].[39]

(c) [REDACTED.][40]

(d) There is no reason to expect this growth to be lower in New Zealand, and it may be higher as farmers shift to testing more cattle, as has occurred in the dairy industry. For example, in its 2025 Annual Report LIC indicated it had tested 1.5 million cattle, and in its 2026 Annual Report indicated this figure was 2 million cattle. It describes the role of selecting beef semen from its bull catalogue, and use of genetic and genomic data in this on its website.[41]

(e) A firm is likely to be able to recover its entry costs within 1-3 years of entry.[42]

(f) There is evidence of previous entry and expansion, as set out in **Annexure 2 and 3**.

Sufficient scale

(g) If a testing provider is sponsored by a breed society, that society will have effectively created sufficient demand to provide a testing provider with sufficient scale to be competitive.

(h) Suppliers can and do win approved service provider status with few (or no) existing customers in relation to new species,[43] and then grow their offering rapidly with limited incremental investment. It is not necessary for suppliers to maintain significant field staff, given the ready access to distribution channels; and all genomic testing providers in Australia and New Zealand operate at a relatively small scale, including Zoetis and the Neogen Genomics Business.

(i) Accordingly, Zoetis considers that economies of scale and/or scope are not significant, and that scale is not a barrier to entry or expansion.

Timely

(j) Weatherbys' entry shows entry can occur extremely quickly. As set out in **Annexures 2 and 3**, it has won customers in Australian and US markets quickly, constraining other providers. This has occurred within a two year timeframe.

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[39] [REDACTED].
[40] [REDACTED].
[41] https://www.lic.co.nz/products-and-services/artificial-breeding/beef-bulls-and-packs/dairy-beef-solutions/ This notes that: *Our beef sires are highly selected, sourced direct from some of New Zealand's top breeders. And these sires are backed by data. Without exception, every bull has been hand-picked for the combination of traits they deliver. They are the total package of traits that improve profitability for the dairy farmer – but also have the growth and carcase merit to make them attractive to beef finishers and processors. Beef Semen - Our lineup in the latest Beef Genetics Catalogue has breeds and the bulls backed by relevant data to help you produce the right calves, no matter the beef market you are selling to. […] All bulls in our current catalogue are backed by data from a variety of sources, including genetic evaluations, genomics, MINDA, and the Beef + Lamb NZ Dairy Beef Progeny Test (DPBT.)*
See also its specific beef products at: https://www.lic.co.nz/products-and-services/artificial-breeding/beef-bulls-and-packs/beef-breeds/.
[42] [REDACTED].
[43] See **Annexure 2** and **3**.

(k) Services are not purchased from genomic testing providers on an exclusive or long-term basis. There are no regulatory, contractual or import/export barriers preventing entry at speed.

7.6 The costs and risks of entry are low, particularly for entrants from adjacent segments of the market, which will have low start-up costs and relatively little time/effort required to launch a new product. [REDACTED]. Set up costs are not high, and unit costs are small with relatively little support service costs required. As described in **Annexure 1**, data is owned by other parties in the supply chain, technology is developed by large third party manufacturers, and research information is readily available to create the chips (if required) for testing.

7.7 There are no resource management, planning, licensing, government regulation, IPR or other conditions preventing entry at speed. Given the lack of data ownership, incumbent providers are in no position to raise customers' switching costs, and contractual barriers to switching do not exist. This is a global market with ease of distribution, service provision and transport.

7.8 The cost and time to develop the necessary inputs for genomic testing are not, contrary to statements in the SOI, material, for the reasons set out in **Annexures 1, 3** and **4**.

7.9 Weatherbys was able to commence supplying beef cattle genomic testing after commencing with dairy cattle in Australia, with a product for supply in Australian and New Zealand markets quickly once approached by Angus AUS and PBB/Angus NZ following the announcement of the Zoetis/Neogen merger. This product was offered for sale within months.

7.10 In Australia, Xytovet, Semex and ST Genetics (all with low domestic staffing support) have entered quickly and with ease. There are no reasons why they could not also provide services for Angus AUS, and for New Zealand farmers, and the same applies to LIC, CRV and GenomNZ.

7.11 See **Annexure 6** for further discussion of entry and expansion.

8. Breed societies exercise countervailing power

8.1 As set out above, Angus AUS and PBB have exercised their countervailing power to bring in Weatherbys. Other examples of breed societies exercising countervailing power to bring in other genomic testing providers for beef and dairy cattle include the Australian Wagyu Association, [REDACTED], and DataGene, as set out in **Annexure 2**.

8.2 As both Zoetis and Neogen supply services at wholesale to Angus AUS and PBB, respectively, it is for the breed societies/PBB to choose how to [REDACTED] market the relevant services to farmers to drive sales. Given most of the information reaching farmers about these services is via the breed societies in the form of newsletters, updates and marketing materials, PBB and breed societies effectively determine most in farmers' decisions on which genomic testing provider to use.[44]

8.3 The SOI appears to have misconstrued the contractual relationships when it suggests that Zoetis and Neogen are directly negotiating prices or service offerings with farmers for products provided via breed societies. Rather than the genetic evaluation system (incorporating phenotype data) owned/operated by the breeding societies being something that can influence negotiations between Zoetis and farmers, in fact the breed societies [REDACTED].

8.4 Breed societies can and do sponsor/support new entry. New technologies making switching and management of large datasets easier only enhance that countervailing buyer power, as does ongoing increases in the proportion of animals tested, increasing the demand for these services and likelihood of profitable entry.

8.5 Competitors that breed societies may choose to sponsor/support are set out at [7.2(a)] above, and examples of breed societies supporting new entrants are set out at [1.12] of **Annexure 2**.

8.6 In summary, the historical growth of genomic testing and the industry's development (from academic research and laboratories in certain countries to a global, multi-species industry) demonstrate the breadth and pace of expansion. Along with the sponsorship of new entrants and ongoing switching, these factors currently constrain and will continue to constrain Zoetis in its pricing and service offerings for genomic testing products both in New Zealand, and globally.

[44] See for example, https://www.farmersweekly.co.nz/technology/partnership-ramps-up-genomic-testing-in-nz/.

Annexure 1 Customer journey/ role of breed societies

Summary

1.1 Farmers and breeders within the beef industry engage directly with breed societies (and/or their approved genomic service provider or appointed distributor i.e. PBB) to acquire genetic evaluation services, with only limited exceptions.

1.2 Genetic evaluation services require a number of inputs. Genomic service providers are 'back-end' suppliers that provide only one of those inputs - genotype data.

1.3 Genotype data is raw DNA data (i.e. the genotype) that is extracted from animal samples using standardised laboratory processes. Genomic testing service providers generate genotype data from samples and deliver it directly to breed societies in a standardised format required by the relevant breed society.[45]

1.4 On its own, genotype data does not provide any meaningful insights for farmers and breeders. To produce estimates of each animal's genetic merit, breed societies combine genotype data with pedigree and phenotype data (i.e. breed-specific and individual animal-specific data held in databases owned by the relevant breed society) in a genetic evaluation software system. These genetic evaluation software systems are either owned by the breed society/industry association or an industry body.

1.5 Beef breed societies provide their genetic evaluation results to farmers and breeders in the form of Selection Indexes and Estimated Breed Values (EBVs), which provide the insights that farmers and breeders can use to manage and improve their herds.

1.6 Beef cattle breed societies, not genomic service providers, manage and control the genetic evaluation system used to supply genetic evaluation services. They own or control both the key input data and the outputs provided to farmers and breeders. This includes the pedigree and phenotype data, as well as the genetic evaluation results. As a result:

(a) genomic testing service providers do not hold, and are not provided with, any phenotypic data that could prevent, delay or hinder farmers and breeders from switching between providers of the 'back-end' genomic testing service. They do not own the genotypes generated as part of the 'back-end' service they provide to the relevant breed society or industry association;[46] and

(b) breed societies and industry associations have complete control of which genomic testing service providers and laboratories they engage to provide genotyping services as an input into their genetic evaluation. They can at any point change or increase the number of genomic testing service providers, and/or change the genotype data requested or required, and/or the method in which it is provided.

1.7 Almost all genetic evaluation services are acquired via breed societies and industry associations as set out above.

(a) In Australia and New Zealand, Zoetis [REDACTED].[47] [REDACTED].[48] [REDACTED REDACTED].[49]

(b) In New Zealand, Neogen [REDACTED].

[45] See NZ **Annexure 4** for more detail on SNP Chips
[46] [REDACTED].
[47] [REDACTED].
[48] [REDACTED].
[49] [REDACTED].

Farmers acquire genomic testing services from breed societies

1.8 In New Zealand, farmers and breeders engage directly with beef cattle breed societies (e.g. either Angus NZ/PBB or Angus Australia) - or with Zoetis who is authorised to facilitate the provision of services by Angus NZ - to acquire genetic evaluation services and genetics advice.[50] This typically involves the breed society's governed/managed genetic evaluation system supplying Selection Indexes, EBVs and/or pedigree and genetic condition results (or equivalent), to their members.[51] and [52] These results assess the genetic merit of individually tested animals across key production and performance traits (e.g. calving ease, growth, fertility, carcase and efficiency).

1.9 Each breed society offers a range of genetic evaluation products,[53] both at a trait level and at a selection index level customised to the needs of their respective members. For example:

(a) The AngusPRO index ($PRO) is designed for NZ Angus cattle and estimates the genetic differences between animals in net profitability per cow joined in a commercial self replacing herd based in New Zealand that targets the production of grass finished steers for the AngusPure programme;[54]

(b) New Zealand Hereford Selection Indexes have also been developed for Hereford NZ producers aimed at maximising profit in NZ systems including the Hereford Prim Index – Beef Heifer Index and Dairy Beef Index;

(c) the Australian Wagyu Association's genetic evaluation results include a marble fineness EBV. By way of contrast, this trait is not included in Angus NZ/Angus Australia's EBV results;[55] and

(d) Droughtmaster Australia's genetic evaluation results include a shear force EBV,[56] and the Jap Ox Index selection index.[57]

1.10 The genetic evaluations are not affected by which party supplies the breed society with the genomic information. The genetic evaluation system generates both the EBVs and the relevant selection indexes for each respective breed. This can vary on a breed-by-breed basis, but the outputs from genetic evaluation systems occur outside of the contribution by genomic service providers (i.e. Zoetis and Neogen).

Testing providers do not control the two key inputs

1.11 There are two main inputs into the genetic evaluation services provided by breed societies and industry associations – namely, genotype data and pedigree/phenotype data. Breed societies combine these inputs (using their genetic evaluation software system) to produce Selection Indexes and EBVs.

[50] [REDACTED].
[51] For consistency, evaluation result outputs (which are given various names by different breed societies) are referred to in this Annexure as Selection Indexes and EBVs (unless otherwise specified).
[52] The process for obtaining genetic evaluations for dairy cattle is slightly different in New Zealand due to the role of LIC. Genomic testing providers deliver the genotype data to the industry association, LIC. LIC then provides the output from its national dairy evaluation system to the genomic testing provider under contract, and the genomic testing provider provides these genetic evaluation results (i.e. the Selection Indexes and EBVs) directly to the farmer or breeder.
[53] For example, Angus Australia offers UltraSELECT, Angus HeiferSELECT, and AngusSteerSELECT (see Angus Australia, Genetic Evaluations). The Australian Wagyu Association offers Wagyu BREEDPLAN and the Crossbred Wagyu Test (see Genetics | Australian Wagyu Association).
[54] See more detail at AngusPro selection indexes.
[55] See Genetics | Australian Wagyu Association.
[56] Shear force EBVS provides estimates of beef tenderness.
[57] Droughtmaster Australia's genetic evaluation reports include the Jap Ox Index, which is aimed at ranking Droughtmaster cattle according to the export cattle market.

Genotype data

1.12 Genotype data is a set of raw DNA data extracted using standardised laboratory processes from individual animals.[58] Breed societies and industry associations can (and do) obtain genotypes from a range of genomic testing service providers - the genotype data is interchangeable regardless of source.

1.13 An animal's genetic merit cannot be inferred from genotype data alone without incorporation into a genetic evaluation system. Accordingly, the raw genotype on its own provides little practical insight. It must be interpreted within a genomic evaluation system that combines the genotype with a reference phenotype and pedigree dataset and associated data and knowledge, which is owned and managed by the relevant breed society or industry association.

1.14 Genetic evaluation systems can use genotype data from any genomic testing provider, provided it meets the standard requirements. Because the breed society or industry association publishes results in a standard format (e.g. a Selection Index and EBVs), farmers and breeders can directly compare reports - even when the underlying genotypes are from different genomic testing providers.

1.15 All historical genotype results are fully comparable overtime. They are also maintained (and continually re-evaluated with the incorporation of new phenotypes) by the relevant breed societies or industry associations.

Phenotype and pedigree data

1.16 The second input used to generate EBV results and Selection Indexes is phenotype and pedigree data. Phenotype and pedigree data is held in databases owned, managed and operated by each breed society and industry association. It is collected by breed societies and industry associations via their members and/or farmers over many years and may be breed-specific and specific to the individual animal. Breed societies and industry associations may also obtain or license data from industry R&D projects.

1.17 Phenotype data includes the animal's unique identifier,[59] birth weights, calving ease, growth weights (e.g. 200 day weight, 400 day weight, 600 day weight), carcass measurements (e.g. rib fat, rump fat, retail beef yield, ribeye area, yield, and marbling), milk production (butterfat, protein) as well as health traits (fertility) among others.

1.18 Zoetis and the Neogen Genomics Business do not have any ability to collect or use phenotype data that is held by breed societies or industry associations in New Zealand.

Breed societies and industry associations use genetic evaluation software systems to generate Selection Indexes and EBV results

1.19 Breed societies and industry associations combine and process the raw genotype data, phenotype data and pedigree data through a genetic evaluation software system to produce estimates of genetic merit (i.e. Selection Indexes and EBV results). Genomic testing providers do not own, operate or have any involvement with these genetic evaluation systems.[60]

1.20 There are several genetic evaluation software systems used in the beef industry:

[58] The way this information is extracted is set out in detail in **Annexure 4**.
[59] The animal's unique identifier may be their ear tag number (including birth date and farm ID), their radio frequency identifier, or the national ID number assigned to the animal by Helical upon registration with a breed society or industry association.
[60] Neither Zoetis nor the Neogen Genomics Business owns or operates a genetic evaluation software system.

(a) BREEDPLAN, a genetic evaluation software program used for beef cattle, is operated by the Agricultural Business Research Institute (**ABRI**).[61] Almost all beef cattle breed societies contract ABRI to deliver genetic predictions using BREEDPLAN;[62]

(b) some breed societies have also created their own genetic evaluation software programs, which they own. For example, in late 2025, Angus Australia announced the launch of its own proprietary evaluation system, Angus GenetiQ.[63 and 64]

1.21 After combining the data in this way, breed societies and industry associations provide the Selection Indexes and breeding value results (i.e. the genetic evaluation with meaningful insights) to their members.

Data and IP are controlled by breed societies

1.22 As set out in Table 1 below, breed societies and industry associations own and manage their genetic evaluation systems. They have full control over the key input data, and genetic evaluation models and systems used to provide the genetic evaluation services to farmers and breeders. This includes:

(a) the outputs produced by these genetic evaluation services (i.e. the genetic evaluation results - Selection Indexes and EBVs/WBVs);

(b) pedigree and phenotype data; and

(c) in some cases, the animal samples and genotype data.

Table 1 – Data and IP ownership in the supply of genetic evaluation services

Type of data or IP	Owned or controlled by genomic testing service providers?
Input data and systems	
Animal samples	**X** – provided by the animal owner, and ownership of the sample is subject to the relevant breed society's or industry association's T&Cs with members
Chips, panels and assays	✓ - genomic testing providers use standardised and publicly available DNA markers supplied by Illumina, with some adjustments
Genotype data	**X** – owned by the breed society or industry association[65 and 66]
Phenotype data	**X** – owned by the breed society or industry association
Genetic evaluation software	**X** – varies by software, but typically owned by the relevant industry body, or breed society/industry association
Output data and reports	
Genetic evaluation results – e.g. Selection Indexes, EBV reports (and similar)	**X** – owned by the breed society, industry association or animal owner, subject to the relevant breed society's or industry association's terms and conditions with members

1.23 As set out above, neither Zoetis nor the Neogen Genomics Business owns or controls the key data inputs involved in this process. This is confirmed by the contractual arrangements Zoetis and Neogen have with their breed society customers:

(a) [REDACTED][67] [REDACTED]; and

[61] ABRi is owned under a controlled entity arrangement by the University of New England.
[62] The underlying BREEDPLAN analytical software technology is jointly owned by MLA, the University of New England, and the NSW Department of Primary Industries.
[63] Angus Australia launches Angus GenetiQ - Angus Australia.
[64] Beef and Lamb are working on an industry multibreed evaluation for comparing bulls of different breeds – see below for more information on this.
[65] See [REDACTED].
[66] See [REDACTED].
[67] See [REDACTED].

(b) [REDACTED][68][REDACTED].

[68] See [REDACTED].

webb henderson

Customer journey for New Zealand farmer

1.24 There are four primary channels in which farmers in New Zealand receive genomic evaluations. Primarily, the route taken for farmers is through a breed society or industry association. The flowchart below sets out a typical process for a New Zealand Angus Australia member. It highlights the level of end-to-end control maintained by the breed societies.

1.25 Set out in Attachment 1.1 below are tables which elaborate on this process and detail the other 3 customer journeys.

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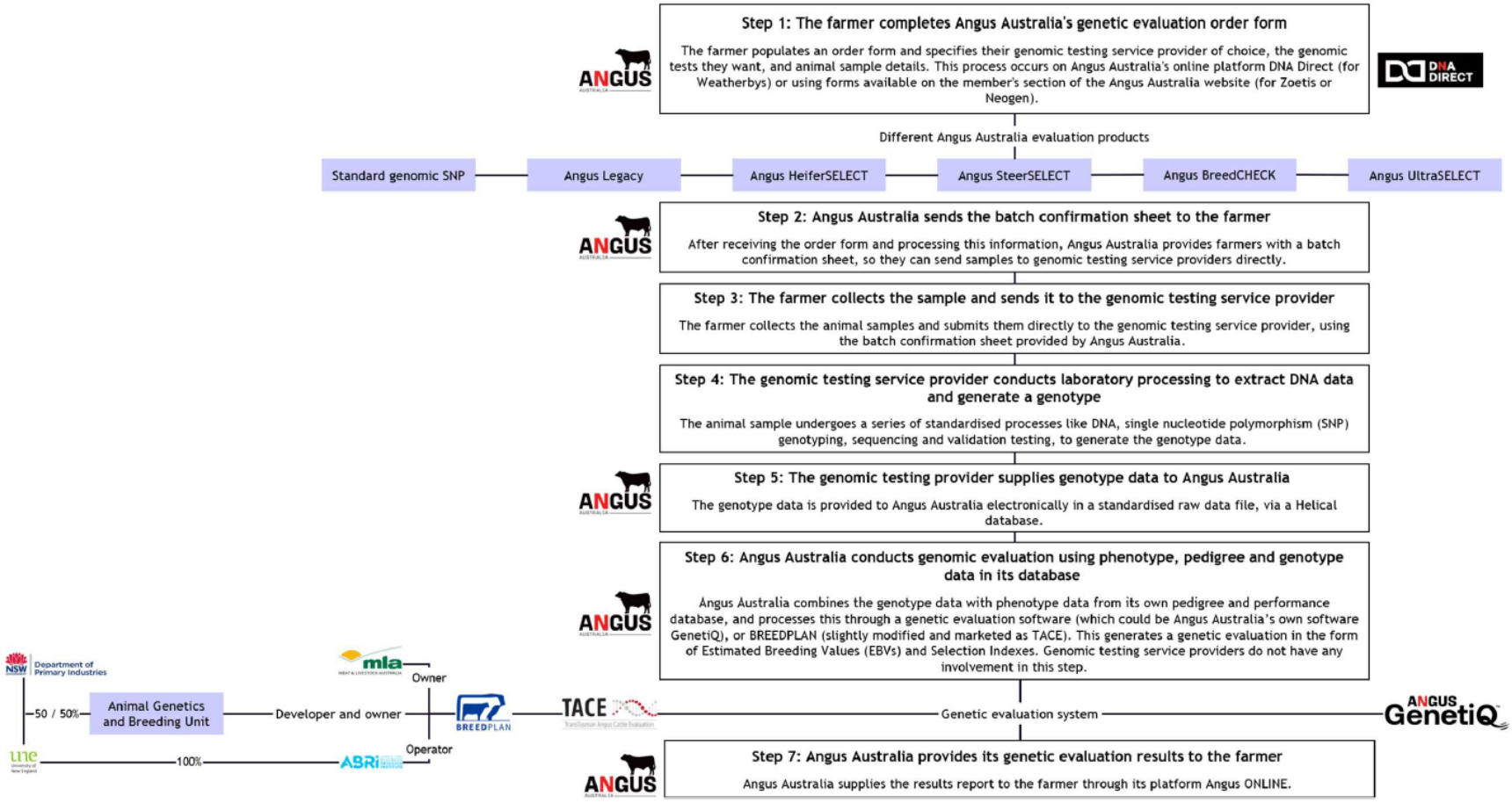
Summary of the customer journey for Angus Australia members

1.26 The flowchart below sets out the typical process for ordering genetic evaluation services from Angus Australia.[69]



1.27 Further details of this process are set below.

[69] Genetic Evaluations - Angus Australia.

Angus Australia owns and controls all key data and IP at each step of the genetic evaluation process

1.28 As set out above, with the exception of the animal samples, Angus Australia owns and controls the key input data and systems required to deliver its genetic evaluation services to members, as well as the outputs. This is further illustrated in Table 2 below.

Table 2 – Angus Australia Case Study

Relevant step	Item	DATA OWNERSHIP AND Intellectual property rights	
Step 3	Animal samples	Farmers retain all intellectual property rights in the animal samples.[70]	
Steps 4/5	Chips, panels and assays	Zoetis uses the standardised and publicly available Illumina chip with some adjustments to the DNA markers on the chip.[71]	
	Genotype data	Angus Australia owns the genotype data.[72] Zoetis and other genomic testing providers cannot use the genotypes they produce from Angus Australia samples to build Zoetis' own proprietary dataset, or for any other purpose unless authorised to do so.	ANGUS AUSTRALIA
Step 6	Phenotype data	Angus Australia holds all intellectual property rights to the phenotype data contained in its pedigree and performance database.[73]	ANGUS AUSTRALIA
	Genetic evaluation software	Angus GenetiQ is a fully Angus Australia-owned proprietary evaluation system.	ANGUS AUSTRALIA
		BREEDPLAN analytical software technology is jointly owned by MLA, UNE, and the NSW Department of Primary Industries (NSW DPI).	ABRI AGRICULTURAL BUSINESS RESEARCH INSTITUTE
Step 7	Genomic evaluation reports – e.g. Selection	Angus Australia retains intellectual property rights in all results and analysis of the animal samples.[74] This includes the genetic evaluation report	ANGUS AUSTRALIA

[70] See cl 6.1 of Angus Australia's DNA Test Member Agreement, at Attachment 1.2.
[71] [REDACTED].
[72] [REDACTED]; and [REDACTED]. See also, Angus Australia DNA Test Member Agreement, clause 6.2, at Attachment 1.2: '*The Member warrants that Angus Australia retains all Intellectual Property in the Created Material*'. Created Material includes all results of the analysis of the samples (see clause 4.1)).
[73] In Angus Australia Regulations, clause 18.1, at Attachment 1.5, members authorise and grant permission for all data provided to be combined with data submitted by other members, stored on databases maintained by Angus Australia for delivery of genetic evaluation (among other activities like registration, certification, R&D, and other uses deemed beneficial to Angus Australia and its members). Per clause 19.1, members 'irrevocably authorise and grant permission' that a copy of any data provided to Angus Australia will be included and maintained on Angus Australia databases. Similarly, see Angus Australia, TACE Membership Agreement clause 6.2, at Attachment 1.6.
[74] See [REDACTED] and [REDACTED]; and Angus Australia's DNA Test Member Agreement, at Attachment 1.2, clause 6. Per clause 6.3, the member customer may request a copy of the evaluation report, and Angus Australia will use its best endeavours to provide a copy in electronic format within 90 days from receipt of the request. See also Angus Australia -

	Indexes and EBVs	(containing Selection Indexes and EBVs) provided to customers.	

Multi-breed evaluations

Breed-specific and multi-breed evaluations

1.29 The process set out in the Angus Australia case study reflects a breed-specific genetic evaluation model. This means that the genetic evaluations provided by Angus Australia use a phenotype reference dataset that exclusively relates to Australian and New Zealand Angus cattle.

1.30 An alternative to a breed-specific genetic evaluation model is a multi-breed genetic evaluation model. The output of a multi-breed genetic evaluation remains the same (i.e. a genetic evaluation in respect of individual animals). However, under this model the phenotype dataset and genetic evaluation model (software) relied upon to carry out the genetic evaluation includes pedigree and phenotype data from multiple breeds as well as crossbred animals. For beef cattle the following evaluation models are in development:

(a) **Beef Cattle**:

(i) Delivery of the NZ multibreed genetic evaluation objective: Informing New Zealand Beef (INZB) has a program running from 2021–2027, and it includes developing a NZ-based genetic evaluation for comparing bulls of different breeds—so the objective is intended to be delivered by the end of the program (2027).[75]

(ii) In Australia the Meat and Livestock Australia (**MLA**) Multi-Breed Evaluation aims to combine performance, pedigree, and genomic information from multiple cattle breeds into a single, comparable genetic evaluation, enabling across-breed EBVs that better reflect Australia's diverse commercial herds. This is the proposed basis for a future BREEDPLAN model.

1.31 The relevant breed societies and industry associations for dairy cattle and sheep have adopted a multi-breed genetic evaluation model:

(a) **Dairy cattle**:

(i) LIC uses a multi-breed dairy genetic evaluation system to assess cattle across New Zealand's large crossbred population. By combining genomic data, pedigree records, and milk traits through advanced models like the Single Step Animal Model, LIC ranks animals accurately for Breeding Worth (BW) and profitability

(ii) In Australia the phenotype datasets relied upon for dairy genetic evaluations are maintained and controlled by DataGene, and reflect multiple breeds of dairy cattle, including Holstein, Jersey and Red Breeds. This phenotype data is incorporated into a single combined genetic evaluation model, including crossbred cattle; and

(b) **Sheep**:

(i) Beef + Lamb New Zealand (B+LNZ) runs an advanced multi-breed sheep genetic evaluation system called the New Zealand Genetic Evaluation

Terms of Use. Per clauses 2.2 and 2.3, all content and databases contained and accessible, including Estimated Breeding Values and Selection Index Values are owned by Angus Australia. See also Angus Australia Regulations at Attachments 1.5. Per clause 19.1, Angus Australia retains all Intellectual Property rights in any outputs from the use of data provided to Angus Australia. See also Angus Australia TACE Membership Agreement at Attachments 1.6. Per clause 6.4, Angus Australia retains all IP rights in any outputs from the use of parentage and phenotypic data, including pedigree, RBVs, selection index values, and genetic benchmarking statistics.

[75] Informing New Zealand Beef.

(NZGE). It uses single-step genomic technology to combine pedigree, performance records, and DNA data. This system lets breeders accurately compare traits across different flocks and breeds via platforms like nProve.

(ii) Sheep Genetics's LAMBPLAN is a multi-breed genetic evaluation product supplied using phenotype data held by the MLA in relation to a number of sheep breeds, including Suffolk, Poll Dorset, Texel, Dorper and Southdown. Merino breed sheep may be assessed through the MERINOSELECT product.

1.32 In these examples of multi-breed genetic evaluations, the farmer or breeder has greater ownership and control rights over the inputs into and outputs of the genetic evaluation (e.g. compared to the rights of a farmer or breeder under Angus Australia's purebred genetic evaluation model). However, in each case, the genomic testing provider has no ownership of, or control over the genetic evaluation genotype, phenotype dataset, evaluation software, or outputs.

MLA has a current proposal to introduce a multi-breed genetic evaluation system for beef cattle

1.33 MLA, the owner of BREEDPLAN, has been considering the introduction of a multi-breed genetic evaluation system for beef cattle since 2017, and its 2030 Strategic Plan outlines that one of its ambitions is to establish a national multi-breed genetic evaluation and livestock credentials.[76]

1.34 MLA has stated that it considers the development of multi-breed genetic evaluation will provide a range of benefits to beef cattle farmers and breeders, including by allowing breed differences in animals to be modelled, consequently giving farmers the ability to clearly compare their animals across breeds.[77]

1.35 In response to MLA's 2030 Strategic Plan, Angus Australia developed a survey for its ANZ members and supply chain stakeholders. The survey aims to collect their opinions on a multi-breed genetic evaluation model for Australian (ANZ) beef cattle.[78] The questions set out in the Angus Australia member survey include the following:

(a) "*12. Are you aware that a MLA multibreed genetic evaluation may replace the current TACE "Angus specific" genetic evaluation?*

(b) *13. Are you aware that a MLA multibreed genetic evaluation may present a risk to the future of breed societies such as Angus Australia and their business model?*

(c) *16. How important is it that Angus Australia continues to maintain an Angus-specific genetic evaluation such as TACE or Angus GenetiQ.*

(d) *20. Are you aware that there could be commercialisation of a MLA multibreed genetic evaluation to profit based genomic companies (meaning EBVs could be provided to a wider group of breeders)?*"

1.36 This development further highlights that competitive dynamics within the genetic evaluation 'ecosystem' are controlled by breed societies, industry associations and industry organisations. Genomic testing providers supply only one input, and other parties determine how those inputs are supplied and 'transposed' into meaningful results and insights for farmers and breeders. The Proposed Acquisition will not change this in any way.

[76] MLA 2030 Strategic Plan.
[77] See MLA Development and implementation of multi-breed genetic evaluation systems for the Australian beef industry, final report page 22.
[78] See Angus Breed Survey: The Future of Angus Genetic Evaluation at Attachment 1.7. See also Divergent views over adoption of multi-breed genetic evaluation, as Angus Australia seeks industry feedback - Beef Central.

Genotype data is standardised, portable and owned by the breed society

1.37 The genotype data provided by genomic testing service providers to breed societies and industry associations is standardised and transferable. It is provided in an electronic format as defined in the Illumina file format standards and the quality control requirements as specified by ABGU, and is owned by the relevant breed society/industry association[79] or animal owner. Where end customers do not own their evaluation reports, they hold copies of them.

1.38 All genetic evaluation reports supplied by a breed society or industry association are provided in a standardised format regardless of the supplier of genotype data input. And, farmers and breeders obtain the same genetic evaluation information, regardless of which genomic testing service provider the customer nominates to complete the genomic testing input into this service.

1.39 As a result, farmers and breeders can easily switch between the genomic testing providers on a breed society's or industry association's panel, and still receive an identical genetic evaluation report. This is because in all instances the breed society or industry association produces the end product (the EBV results and Selection Indexes) using the same genetic evaluation software, its own phenotype dataset, and genotype data supplied in a standardised form from a genomic testing service provider.

1.40 This is clearly illustrated by

(a) PBB appointment of Weatherbys as an approved genomic testing service provider. PBB NZ General Manager, Jamie Tait, said the partnership was driven by the demand for high-quality and innovative services." *Genomic testing is becoming increasingly important, even beyond the realm of stud breeding, and in the past five years we've seen average year-on-year growth of 20%*," Ms Tait said. "*It's becoming a sales tool for our breeders. But farmers have preferences which are driven by many things including quality of results, speed, simplicity and a commitment to science*." This is an opportunity to bring more choice into the New Zealand market. "*We also wanted to work with someone who was willing to invest in New Zealand and have an ongoing commitment to work with us on future innovation and testing requirements*." "*Weatherbys has been really collaborative and their commitment to service is a real key*." Weatherbys National Business Development Manager ANZ, Michael-John Barry, said Weatherbys was looking forward to supporting PBB and ensuring New Zealand farmers had access to the cost-effective solutions that drive genetic gains.[80]

(b) the American Hereford Association's (**AHA**) decision to switch its panel provider from Neogen to Weatherbys in June 2025. As part of the transition, AHA reassured its members that past Neogen test results would continue to be maintained by AHA and could be utilised in the future in conjunction with Weatherbys' test results. In particular, AHA explained that "*results from all animals tested through Neogen exist in the AHA genomic pipeline [Helical] and will be utilized for necessary parentage discovery of future animals that will be tested at Weatherbys*."[81] AHA's Executive Vice President Jack Ward also confirmed that historical Neogen data is housed by AHA and can continue to be used going forward, and that AHA had experienced no interruptions and perfect concordance with comparing samples from both Neogen and Weatherbys.[82]

Conclusion

1.41 Based on the information and data set out in this Annexure, it is clear, regardless of which customer journey is adopted, that:

[79] For example, see [REDACTED].
[80] PBB expands offering in New Zealand with Weatherbys.
[81] AHA, New DNA Lab: Questions and Answers, dated 5 June 2025.
[82] American Hereford Association, 1881 Podcast, 'A New Partner in DNA Testing', dated 30 June 2025.

(a) Breed societies and industry associations (including Angus Australia) - not genomic testing providers - control each step of the genetic evaluation system used to supply genetic evaluation services, and own and control all key data and IP (both inputs and outputs) needed to provide those services to their members.

(b) Genomic testing providers like Zoetis, the Neogen Genomics Business, Weatherbys and others provide only one input into the genetic evaluation services provided by breed societies and industry associations – for the most part this involves a highly standardised laboratory process with without significant unique data or IP.

(c) Following the Proposed Acquisition, Zoetis will not have any unique genotype data – breed societies and industry associations (or the farmer or breeder) own the genotype.

(d) An animal's genetic merit cannot, in any event, be estimated from a genotype alone. To provide any practical or meaningful insights, the raw genotype provided needs to be interpreted within a genetic evaluation system that combines it with a reference phenotype dataset (and associated knowledge) - both of these are owned and/or managed by the relevant breed society or industry association.

(e) The genetic evaluation systems employed by breed societies and industry associations can use genotype data from any genomic testing provider. Because the breed society or industry association publishes results in a standard format (e.g. a Selection Index or EBV and Selection Index report), farmers and breeders can directly compare reports - even when the underlying genotypes are from different genomic testing providers.

(f) All historical genotypes are fully comparable, and maintained (and continually re-evaluated with the incorporation of new phenotypes) by the relevant breed societies or industry associations.

(g) As a result, both breed societies/industry associations and end customers can readily switch between genomic testing service providers. They can do this with no loss of data and no change in genetic evaluation outputs (Selection Indexes and EBV reports). This is clearly demonstrated by existing and very recent experience in Australia, New Zealand and the United States.

Angus Australia

Step	Explanation

1 - Farmer completes Angus Australia's genetic evaluation order form	As part of this process, customers must specify which laboratory they want to choose, and which evaluation product they wish to acquire.
	
	The genetic evaluation order form is available:
	• for samples the customer wants to be processed by Weatherbys, online via Angus Australia's own platform DNA Direct;[83] and
	• for samples the customer wants to be processed by Zoetis or Neogen, by printing and submitting an online form available on the member's section of Angus Australia's website.[84] An example form is provided.[85]
	
	In completing the form, the customer selects:
	• the genetic evaluation product(s) they want to acquire. Angus Australia's genetic evaluation products include:
	  • Genomic SNP;[86]
	  • Angus HeiferSELECT;[87]
	  • Angus SteerSELECT;[88]
	  • Angus BreedCHECK;[89]
	  • Angus UltraSELECT;[90]
	  • Angus Legacy (only available using Weatherbys genomic testing services);[91]
	  • Verified Angus Beef (only available using Weatherbys genomic testing services); and
	  • neXtPredict Heifer (only available using Weatherbys genomic testing services, this is a combined genetic evaluation and consultancy service provided by a partnership between Weatherbys and neXtgen Agri).
	• the genomic testing service provider they wish to conduct testing on the sample.

2 - Angus Australia sends the shipping label to the farmer	Angus Australia processes the order form and sends farmers a shipping label to the relevant genomic testing services provider.
3 – The farmer collects the sample and sends it to the genomic testing provider[92]	Farmers collect their samples from the animal, and submit them directly to the genomic testing provider using the supplied shipping label.[93] It arrives as a de-identified sample (that is, Zoetis is unable to confirm which farmer or breeder the sample has come from).

[83] Ordering DNA Services with Angus ONLINE - Angus Australia.
[84] Currently, only Weatherbys has been on-boarded to the new Angus Australia online portal DNA Direct, which is hosted by Helical. Zoetis and Neogen are not yet onboarded on the DNA Direct platform, so samples to be processed by Zoetis or Neogen must be placed by way of a paper form. See 'Weatherbys the first provider for Angus Australia's new DNA Direct platform - Angus Australia' and 'New Online DNA Testing Platform Set to Streamline Member Experience - Angus Australia'. Helical is a cloud-based livestock data platform. When configured for multi-provider intake, Helical makes switching between or adding genomic testing providers easier for breed societies. Helical standardises the ingestion of genomic testing data into one system of record, enables API-based connections to other databases/systems, and reduces the number of manual steps required when onboarding and comparing data. The ease of ingesting and comparing data supports the addition of new genomic testing providers for breed societies. Multiple breed societies, including Angus Australia, Angus New Zealand, Droughtmaster Australia and the Australian Wagyu Association, use Helical as their preferred genetic evaluation data platform.
[85] Angus Australia - Genomic Test Order Form, provided separately, see Attachments 1.8.
[86] This is the standard product, which is called 'Genomic SNP' in Angus Australia's pricing lists to members. In the relevant order form, the product is respectively called 'HD50K' for Zoetis, 'AngusGS' for Neogen, and 'Bovine VERSA 85K' for Weatherbys.
[87] This product has its own order form.
[88] This product has its own order form.
[89] This is an Angus result that is provided alongside other tests, and is not a standalone product.
[90] This product has its own order form.
[91] See 'New partnership spawns three innovative genomics tools for Angus breed - Angus Australia'.
[92] Angus Australia's website has not yet been updated to reflect the updated process of producers and farmers sending samples straight to the laboratory. The website states farmers should send their samples to the Angus Australia office. However, this does not reflect the current, updated process.
[93] Zoetis understands that Angus Australia is reducing this practice, due to administrative burden and inefficiency. This reflects the change in the order of steps in steps 1 and 2 as illustrated in the Zoetis NZCC Clearance Application at Figure 1.

	[REDACTED.][94]
4 – The genomic testing provider conducts processing to extract genotype data[95]	The process undertaken at genomic testing laboratories is as follows: • DNA is extracted from the samples; • DNA is analysed using SNP genotyping assays or advanced sequencing; and • DNA samples undergo quality control validation testing. Failed samples are re-processed where quality issues are detected. These are standard and established laboratory processes. They do not require any unique or proprietary techniques or machines not otherwise available from laboratory suppliers. In particular, Zoetis and other genomic testing service providers typically use 'off-the-shelf' industry-standard SNP chips that are available from a range of suppliers (e.g. Illumina, Thermofisher etc.). As Zoetis uses the Illumina array genotyping system, it uses the Illumina chip.[96] The Zoetis SNP chip is mostly comprised of the standardised Illumina DNA markers.[97] However, Zoetis also uses a small number of additional markers that involve proprietary content,[98] as well as certain additional markers that are required by American Angus.[99]
5 – The genomic testing provider supplies genotype data to Angus Australia	Genomic testing service providers supply the genotype data to Angus Australia directly, through its database.[100] An example of this raw genotype data is provided.[101] [REDACTED][102] And, genomic service providers do not interact with any other processes at Angus Australia in the running of their service.
6 - Angus Australia conducts genomic evaluation using phenotype data in its database	Angus Australia processes the genotype data with phenotype data contained in its pedigree and performance database. This data is processed in a genetic evaluation software system: • Angus Australia uses the BREEDPLAN genetic evaluation software system (which it markets under the name, 'TACE');[103] • Angus Australia also uses its own genetic evaluation software system, Angus GenetiQ, which uses the same phenotype data held in its database, but is analysed with a different proprietary software system. The genetic evaluation software system (TACE or Angus GenetiQ) generates the evaluation results in the form of Selection Indexes and EBVs.
7 - Angus Australia provides its genetic evaluation report to the farmer	Angus Australia provides results to the farmer via Angus ONLINE. These results include the animal's Selection Indexes and EBVs against a range of relevant traits (including calving ease, growth, maternal, fertility, temperature, carcase, feed efficiency, structural features). A de-identified example of an Angus Australia genetic evaluation report is provided.[104]

[94] [REDACTED
[95] This is equivalent to steps 3-5 in the Zoetis Clearance Application at Figure 1. For brevity, all three laboratory processes have been combined.
[96] See **Annexure 4** for more detail on SNP chips.
[97] [REDACTED].
[98] [REDACTED].
[99] [REDACTED].
[100] Zoetis uses a Helical database system to send the genotypes to Angus Australia.
[101] [REDACTED].
[102] [REDACTED].
[103] [REDACTED].
[104] Angus Australia - Genetic Evaluation Results Example, see Attachment 1.9.

PBB

Step	Explanation
1 - Farmer completes PBB's genetic evaluation order form	As part of this process, customers must specify which laboratory they want to choose, and which evaluation product they wish to acquire. The genetic evaluation order form is available on PBB's website.[105] The farmer first selects which genomic testing service provider they wish to use out of Neogen or Weatherbys and download the corresponding form. [106] In completing the form, the customer selects the genetic evaluation product(s) they want to acquire. These includes genetic tests, commercial tests and standalone add-ons. Once the form is complete, the farmer emails the form to PBB.
2 - PBB sends the shipping label to the farmer	PBB processes the order form and sends farmers a shipping label to the relevant genomic testing services provider.
3 – The farmer collects the sample and sends it to PBB, who sends it to the genomic testing provider	Farmers collect their samples from the animal, and submit them back to PBB using the supplied shipping label. It arrives as a de-identified sample (that is, Neogen or Weatherbys is unable to confirm which farmer or breeder the sample has come from). PBB then collates and sends samples to Neogen, [REDACTED]
4 – The genomic testing provider conducts processing to extract genotype data	The process undertaken at genomic testing laboratories is as follows: • DNA is extracted from the samples; • DNA is analysed using SNP genotyping assays or advanced sequencing; and • DNA samples undergo quality control validation testing. Failed samples are re-processed where quality issues are detected. These are standard and established laboratory processes. They do not require any unique or proprietary techniques or machines not otherwise available from laboratory suppliers.
5 – The genomic testing provider supplies genotype data to PBB	Genomic testing service providers supply the genotype data to PBB directly. Genomic service providers do not interact with any other processes at PBB in the running of their service.
6 – PBB conducts genomic evaluation using phenotype data in its database	PBB processes the genotype data with phenotype data contained in its pedigree and performance database. This data is processed in a genetic evaluation software system. PBB uses International Genetic Solutions (IGS) for processing Simmental,[107] and for its other breeds uses BREEDPLAN.
7 - PBB provides its genetic evaluation report to the farmer	PBB provides results to the farmer via Helical.[108] These results include the animal's Selection Indexes and EBV's against a range of relevant traits (including calving ease, growth, maternal, fertility, temperature, carcase, feed efficiency, structural features). Farmers can access this information via their breed societies' websites.[109]

[REDACTED]

[105] https://www.pbbnz.com/services/genetics/faqs/.
[106] Each form is set out in Attachment 1.10 and 1.11.
[107] IGS is the world's largest beef genetic evaluation system. IGS generates the evaluation results in the form of Expected Progeny Difference (EPD) or EBVs. https://www.pbbnz.com/services/registry/igs.
[108] https://www.pbbnz.com/services/registry/angus-nz-helical-support-hub/.
[109] Angus NZ - https://app.helicalco.com/public/angus-nz/.

Zoetis' direct sales to Angus NZ farmers*

Step	Explanation
1- Farmer orders DNA Collector Kits	Farmers order DNA Collector Kits from Zoetis[110] or from an agriculture retail outlet.
2 – Farmer collects samples, completes Zoetis genetic evaluation order form and sends to Zoetis	Farmer collects samples and sends back to Zoetis alongside the genetic evaluation order form.[111] In completing the form, the customer selects the genetic evaluation product(s) they want to acquire. These includes genetic tests, commercial tests and standalone add-ons.
3 – Zoetis conducts processing to extract genotype data at USA Lab	The process undertaken at genomic testing laboratories is as follows: • DNA is extracted from the samples; • DNA is analysed using SNP genotyping assays or advanced sequencing; and • DNA samples undergo quality control validation testing. Failed samples are re processed where quality issues are detected. These are standard and established laboratory processes. They do not require any unique or proprietary techniques or machines not otherwise available from laboratory suppliers.
4 – Zoetis supplies genotype data to Angus NZ	Zoetis supply the genotype data to Angus NZ directly. Zoetis does not interact with any other processes at Angus NZ in the running of their service. *See above for more detail*
5 – Angus NZ conducts genomic evaluation using phenotype data in its database	Angus NZ provides genotype data with pedigree and phenotype data contained in its pedigree and performance database to the TACE/BREEDPLAN genetic evaluation system. This data is processed in the TACE/BREEDPLAN genetic evaluation software system.
6 – Angus NZ provides its genetic evaluation report to the farmer	Angus NZ provides results to the farmer. These results include the animal's Selection Indexes and EBVs against a range of relevant traits (including calving ease, growth, maternal, fertility, temperature, carcase, feed efficiency, structural features).

*** As authorised by Angus NZ**

[110] Cattle DNA Test Kit - Zoetis Genetics New Zealand.
[111] A copy of the form is provided in Attachment 1.12.

Commercial farmers – non breed society members

Step	Explanation
1- Farmer orders DNA Collector Kits	Farmers order DNA Collector Kits from Zoetis[112]
2 – Farmer collects samples, completes Zoetis genetic evaluation order form and sends to Zoetis	Farmer collects samples and sends back to Zoetis alongside the genetic evaluation order form.[113 and 114] In completing the form, the customer selects the genetic evaluation product(s) they want to acquire. These includes genetic tests, commercial tests and standalone add-ons.
3 – Zoetis provider conducts processing to extract genotype data	The process undertaken at genomic testing laboratories is as follows: • DNA is extracted from the samples; • DNA is analysed using SNP genotyping assays or advanced sequencing; and • DNA samples undergo quality control validation testing. Failed samples are re-processed where quality issues are detected. These are standard and established laboratory processes. They do not require any unique or proprietary techniques or machines not otherwise available from laboratory suppliers.
4 – Zoetis conducts genomic evaluation using phenotype data licensed to it	Zoetis uses multibreed and cross-breed pedigree and phenotype data licensed to it from a range of American producers.[115] [REDACTED].[116]
5 – Zoetis provides its genetic evaluation report to the farmer	Zoetis provides results to the farmer. These results include the animal's Selection Indexes and EBV's against a range of relevant traits (including calving ease, growth, maternal, fertility, temperature, carcase, feed efficiency, structural features).

[112] https://www2.zoetis.co.nz/products-solutions/cattle-dna-test-kit.
[113] https://www2.zoetis.co.nz/products-solutions/genetics/beef/inherit-select.
[114] A copy of the form is provided at Attachment 1.13.
[115] [REDACTED].
[116] [REDACTED].

Annexure 2 Switching

1.1 This Annexure sets out examples of switching which has occurred, including at scale, in genomic testing, and explains why a SSNIP would neither occur (due to the constraints Zoetis already faces) or be profitable.

1.2 There are no technical barriers to prevent customers switching at scale, as shown previously by the move of Angus NZ farmers to Angus AUS (with a corresponding switching of back-end genomic testing providers). While switching tranches of herd genomic information has taken time in the past, the entry of Helical as an intermediary software provider in the past year has significantly reduced this issue from the industry.

Other herd improvement alternatives

1.3 Genomic testing is not a 'must have' product for beef cattle farmers. Supply of genomic testing services, in particular price increases, are constrained by alternatives available to farmers, most frequently, simply not testing.

1.4 Zoetis' [REDACTED] experience is that when farmers are under financial pressure, genomic testing is one of the first items to be cut.

1.5 [REDACTED].

Zoetis/Neogen estimated annual churn[117]

Party	Customer Churn 2023	Customer Churn 2024	Customer Churn 2025
Zoetis	[REDACTED]	[REDACTED]	[REDACTED]
Neogen	[REDACTED]	[REDACTED]	[REDACTED]

1.6 Based on this data, it is highly unlikely that breed societies or farmers would stick with a particular "back-end" supplier to the genetic evaluations they acquire from their breed society or industry association because of brand loyalty, even if there is not an increase in price or decrease in service quality.

1.7 Other forms of herd improvement have met the needs of many, with customers switching products if prices rise. The table below sets out a list of alternative selection methods and considerations.

Herd Improvement practices and services used by beef producers	
Pedigree Breeding (Recording Ancestry)	Artificial Insemination (spreading top genes)
Elite Bulls/Cows (Buying best genetics)	Visual Assessment (Selecting by looks)
Single sire mating	Phenotype recording (on-farm records)
Advisory Services (Professional Analysis)	Digital technology such as collars or AI-cameras
Selective Mating (Deliberate pairings)	Genetic Evaluations (such as A2 or single gene testing)

[117] These figures are calculated by Neogen on the following basis: [REDACTED].
These figures are calculated by Zoetis on the following basis: [REDACTED].

1.8 Examples of farmers responding to changes in the relative value proposition of genomic testing by reducing or ceasing their use of genomic testing and relying on alternative herd improvement methods include:

(a) [REDACTED]

(b) [REDACTED]

1.9 This evidence illustrates that customer switching and substitution to other herd-improvement services are a significant competitive constraint on the merged entity.

1.10 The degree of that constraint is especially strong given that beef genomic testing is a relatively new concept, and it is estimated that less than [REDACTED] of eligible cattle are tested.[118]

1.11 Producers see benefits like better productivity and profits, but face challenges such as limited knowledge and the difficulty of collecting data in remote areas. Tools like polled gene testing are popular, while others, like estimated breeding values, are less understood.

Other genomic testing providers – switching and examples

Switching between genomics testing suppliers

1.12 Switching has occurred for genomic testing for beef cattle in Australia and New Zealand as follows:

(a) In 2021, [REDACTED] New Zealand Angus Breeders shifted breed society allegiance from Angus NZ to Angus AUS.[119] [REDACTED]. For producers there are no differences between the tests as they are offered through the breed associations (however there are pricing differences). The decision from the producer is to become a member of a breed association and gain access to the technology or do not become a member and not have access to the technology;

(b) Weatherbys has been introduced as a provider of beef genomic testing in AUS and NZ and [REDACTED];

(c) [REDACTED];

(d) [REDACTED];

(e) [REDACTED];

(f) [REDACTED];

(g) [REDACTED];

(h) [REDACTED];

1.13 Customers are willing to move purchases to another supplier or product when faced with a price increase or quality decrease in genomic testing in New Zealand. The same switching behaviour is also observed overseas in customers of beef genomic testing suppliers. For example:

(a) On 5 June 2025, American Hereford Association (**AHA**), the second largest beef cattle breed association in the United States, substituted Neogen out in preference for Weatherbys as its official DNA service provider. In the AHA letter announcing this change, AHA indicated that its reasons for switching to Weatherbys included "*more cost-effective DNA testing*" and "*data management and flow of results from*

[118] Zoetis/Neogen NZCC Clearance application at [11.3].
[119] AngusPRO are a group of New Zealand Angus studs who are united, and take a progressive and scientific approach to breeding.

testing lab to AHA member."[120] AHA described its decision to switch to Weatherbys as wanting "*high quality results*" "cheaply."[121] In particular, Weatherbys was able to add additional tests to a single panel, which resulted in lower cost for AHA members;[122]

(b) [REDACTED];

(c) [REDACTED];

(d) [REDACTED];

(e) [REDACTED];

(f) [REDACTED];

(g) [REDACTED];

(h) [REDACTED];

(i) [REDACTED];

(j) [REDACTED];

(k) [REDACTED];

(l) [REDACTED; and

(m) [REDACTED].

Switching is not only observed but easy

1.14 The ability of breed society customers to switch, and thus the strength of the competitive constraint, is increased by the fact that the genotype data provided by genomic testing service providers to breed societies and industry associations is standardised and transferable. It is provided in an electronic format as defined in the Illumina file format standards and is owned by the relevant breed society/industry association or animal owner. Where end customers do not own their evaluation reports, they hold copies of them.

1.15 All genetic evaluation reports supplied by a breed society or industry association are provided in a standardised format regardless of the supplier of genotype data input. Farmers and breeders obtain the same genetic evaluation information from their supplier, regardless of which genomic testing service provider the customer nominates to complete the genomic testing input into this service.

1.16 It has typically taken about 3 months for a breed society to get IT systems aligned for data exchanges with a new genomic service provider. New technologies such as Helical software are making it easier for breed associations to bring on new labs/suppliers and switch between suppliers.

1.17 As a result, farmers and breeders can easily switch between the genomic testing providers on a breed society's or industry association's panel and still receive the same genetic evaluation results. This is because in all instances the breed society or industry association produces the end product (the EBV results and Selection Indexes) using the same genetic evaluation software, its own phenotype dataset, and genotype data supplied in a standardised form from a range of genomic testing service provider.

1.18 For example, if a farmer elects a Weatherbys' test instead of Zoetis through Angus Australia, that switch could happen for each order without any differences to the farmer.

[120] AHA, Letter to Membership, dated May 19, 2025.
[121] https://americanherf.podbean.com/e/episode-38-a-new-partner-in-dna-testing/
[122] Further details of this switch are set out below.

1.19 As set out above in **Annexure 1**, for the most part the "customer journey" for each farmer and breeder is controlled end-to-end by the breed society. It starts with filling out an online order form that is available on the relevant breed society's/industry association's website. The websites contain details of the tests offered by the breed society, using each provider and enable farmers and breeders to make decisions on an order-by-order basis. Accordingly, each time they decide to order further genetic evaluations from the breed society, they are able to select which laboratory they would like to supply genotype data.

1.20 If a breeder currently using PBB/Neogen in New Zealand wishes to use a Weatherbys' test then this is as easy as ticking a different box on their submission form. If they are testing with PBB/Neogen already then they will have access to the required Sire and Dam profiles and to maintain continuity of service and compatibility of historical data and results.

1.21 For dairy cattle in Australia and sheep in both Aus and NZ, the supply of genetic evaluations is offered on an open system and facilitated by an industry association (Beef and Lamb Genetics for sheep in New Zealand or DataGene for dairy in Australia). If a genomic service provider meets publicly available data and quality standards, they will be accepted as a genomic service provider by the industry associations.

1.22 Customers have also switched sheep genomic parentage testing suppliers for sheep, quickly and with ease:

(a) [REDACTED];

(b) [REDACTED];

(c) [REDACTED]; and

(d) [REDACTED]

Customers will switch to Weatherbys

1.23 [REDACTED].

1.24 As noted above at [1.12] since Weatherbys introduced its beef genomic testing product in Australia in July 2025, a number of breed societies have switched to using it and/or added it to the group of genomic testing providers they offer. Examples of this already occurring include the [REDACTED] Australian Wagyu, Angus AUS [REDACTED].

1.25 In America, the American Hereford Association (AHA) switched to Weatherbys in 2025. The scale and speed of this switch are set out below.

<u>Weatherbys' entry and rapid expansion in the United States</u>

1.26 On 5 June 2025, the American Hereford Association's (AHA), the second largest beef cattle breed association in the United States, transitioned from Neogen to Weatherbys as its official DNA service provider.

1.27 In the AHA letter announcing this change, AHA indicated that its reasons for switching to Weatherbys included "*more cost-effective DNA testing*" and "d*ata management and flow of results from testing lab to AHA member.*" AHA described its decision to switch to Weatherbys as wanting "*high quality results*" "*cheaply*." In particular, Weatherbys was able to add additional tests to a single panel, which resulted in lower cost for AHA members.

1.28 AHA was confident in Weatherbys' ability to deliver the genomic testing AHA needed. First, AHA already knew Weatherbys as "*one of the most renowned laboratories in the world.*" *Second, AHA had conducted three different "proof-of-concept trials*" to "*evaluate the accuracy of identifying the genetic abnormalities, horn/poll results and the SNP-based markers used in the genetic evaluation*." This data "*was compared to existing data from the genomic pipeline and all animals had 100% concordance*."

1.29 As part of the transition, AHA reassured its members that past Neogen test results would continue to be maintained by AHA and could be utilised in the future in conjunction with Weatherbys' test results. In particular, AHA explained that "*results from all animals tested through Neogen exist in the AHA genomic pipeline [Helical] and will be utilized for necessary parentage discovery of future animals that will be tested at Weatherbys*." AHA's Executive Vice President Jack Ward also confirmed that historical Neogen data is housed by AHA and can continue to be used going forward, and that AHA had experienced no interruptions and perfect concordance with comparing samples from both Neogen and Weatherbys.

Weatherbys' entry and expansion has been highly successful

1.30 By the end of June 2025, less than a month after the switch, AHA and its farmer members indicated that they were already very satisfied with the switch and what they believed to be a higher level of value and service being provided to members. For example, an AHA member who needed to test 100 samples had a much more efficient experience with Weatherbys. Results were also coming in a more efficient manner. AHA described the transition process as having been simple. The only change AHA members experienced was changing the address to send the sample. Because more tests were included in the same panel, the results were also arriving in a more uniform timing, which reduced membership frustration. And, the turnaround times had been the same as Neogen, if not better.

(a) AHA anticipated the transition to be completed within 7 months as the Neogen contract had only been in effect until December 2025. After six months and more than 15,000 samples processed, AHA members reported being very satisfied with Weatherbys' service quality and pricing. For example, Wiese & Sons stated in June 2026 as follows:

(b) "What really sped things up for us in expanding our testing program was the AHA's move to Weatherbys as its provider."

(c) "We're very budget conscious in our business and Weatherbys offered a producer-friendly price structure."

(d) "We did have reservations about the time it would take to obtain results from a company that's not from the US, but if anything, the turnaround times have been quicker with Weatherbys and far fewer red flags pop up in terms of bad samples or analysis failures."

(e) "We are such big fans of Weatherbys."

(f) "We get twice the amount of information than what we received before because we're able to test double the number of animals thanks to their producer-friendly packages."

Weatherbys' entry and expansion have resulted in significant price competition

1.31 In addition to the success of AHA's transition to Weatherbys, Weatherbys' expansion in the United States has led to decreases in pricing more generally.

1.32 When Weatherbys was first added to the AHA panel, it introduced competitive pricing of US $28 per core genotype plus 2 mandatory genetic conditions test. Due to market feedback, [REDACTED].

1.33 Weatherbys' experience in the United States highlights the ongoing competitive constraints in New Zealand – these constraints are not limited to Weatherbys.

1.34 The experience in the United States clearly highlights:

(a) the ease with which farmers and breeders can switch between the genomic testing providers on a breed society's or industry association's panel – genomic testing providers do not own or control any data that would hinder this;

(b) the ability of breed societies and industry associations to sponsor new entry and expansion by genomic testing providers in order to ensure the ongoing availability of competitively priced and innovative products for members - this is demonstrably the case in both the United States and Australia;

(c) the significant competitive constraint posed by Weatherbys. Weatherbys' only entered the United States in June 2025 and, since then, there has been an immediate impact on prices, which has benefited not only AHA members. The same is true in New Zealand; and

(d) prices recently published by Weatherbys for the two largest beef breed societies in Australia - Angus Australia and the Australian Wagyu Association - are materially lower than the current prices published by both Zoetis and the Neogen Genomics Business.

1.35 Since then, Weatherbys reputation and capability has grown further, with its acquisition by Eurofins Scientific, a large multi-national life sciences company with over $8 billion in annual revenues.

1.36 The competitive constraints in the United States and Australia are not limited to Weatherbys. More fundamentally, the experience in the United States highlights the threat of potential new entry and expansion by a range of genomic testing providers (e.g. XytoVet, ST Genetics, Semex, Total Livestock Genetics, Black Box Co, GenomzNZ, InfogeneNZ, Totogen, Labogena, Gencove, Valogene, VIT, VHLGenetics and others) that will continue to operate as a significant competitive constraint following the Proposed Acquisition.

Annexure 3 Entry and expansion

Introduction

1.1 Entry and expansion are not hypothetical but an evidenced commercial behaviour as shown by recent examples in Australia and New Zealand. These examples are recent, [REDACTED].

1.2 There are numerous genomic testing providers active in adjacent livestock genomic testing segments in New Zealand that possess the technical capability and access to the key inputs required to enter and expand into the supply of beef genomic testing. Global suppliers of beef genomic testing are also numerous and could also readily enter and expand into New Zealand.

1.3 The addressable market for beef cattle genomic testing in New Zealand is sufficiently sizeable that providers can enter and expand without needing to win customers from Zoetis or Neogen.

Low barriers to entry and expansion – recent actual examples

1.4 Genomic testing suppliers are willing to enter and/or expand into a new geographic market and/or adjacent supply area.

1.5 The entry of Weatherbys has been discussed at length in **Annexure 2**. In Australia, there are three other examples of entry and expansion into beef genomics testing:

(a) The entry of Black Box Co. to provide data analysis for beef cattle, and subsequent launch of its Base Pair Genomics in genomic testing for beef cattle. Black Box Co., an Australian technology company, commenced operations in 2020, and provides a cloud platform that integrates data from the beef supply chain to provide farmers with analysis and insights for breeding, management and profitability. In March 2025, Black Box Co. launched its genomic testing business Base Pair Genomics, which since its entry has provided genomic testing services for beef cattle. Base Pair Genomics allows beef cattle farmers direct access to DNA sampling information as well as advanced genomic prediction and genomic test results.[123]

(b) [REDACTED][124][REDACTED].[125]

[REDACTED][126]

(c) The entry of XytoVet to service sheep and subsequent expansion to service beef and dairy cattle. XytoVet, an Australian supplier, commenced operations in 2017, and now provides genomic testing as well as DNA testing for parentage verification, genetic condition screening, and genetic trait analysis for sheep (which later expanded to beef and dairy cattle).[127]

Other suppliers with the ability to enter and expand

Genomic testing providers in New Zealand

1.6 In New Zealand, there are domestic innovators that are already present in the supply of genomic services in adjacent supply areas, including:

(a) Livestock Improvement Corporation (LIC) a New Zealand co-operative company, owned by New Zealand dairy farmers, that is primarily involved in the development, production and marketing of artificial breeding, genetics, farm software, diagnostic,

[123] BlackBox Co - Our Story
[124] [REDACTED.
[125] [REDACTED].
[126] [REDACTED].
[127] LinkedIn, XytoVet Pty Ltd and XytoVet Contact Us.

animal health and herd testing services in the New Zealand dairy sector, as well as research relating to dairy herd improvement. LIC provides genomic testing services using its laboratory in New Zealand;[128] and

(b) GenomNZ, a prominent supplier of genomic testing services particularly for sheep in New Zealand, that has announced additional investment, and that it will begin offering a genomic testing service product for beef cattle shortly;[129] and

(c) [REDACTED].

1.7 There are also other global providers present including:

(a) CRV/Ambreed NZ, a herd improvement cooperative based in the Netherlands, which supplies genomic testing services for dairy cattle in New Zealand and Australia, supported by DairyNZ;[130]

(b) ST Genetics, a US-based supplier with global operations, including in Australia, New Zealand, Canada, Brazil, the UK, France, India and China. ST Genetics specialises in livestock reproductive services, focusing on dairy and beef cattle. Its offering includes sex-sorted semen, embryo production, and genomic testing, aimed at improving herd profitability, sustainability, and genetic quality;[131] and

(c) XytoVet, an Australian-based company which supplies genomic testing services in respect of sheep and dairy cattle in Australia and New Zealand. XytoVet is listed as a genomic service provider for both dairy and sheep, and has historically also been a genomic service provider for the Australian Wagyu Association. XytoVet's laboratory is located in Perth, Australia.[132]

1.8 As these examples show, Zoetis, Neogen and Weatherbys are not the only genomics testing suppliers operating in New Zealand.

Beef and cattle genomics testing suppliers globally that could enter the New Zealand market

1.9 In addition to the suppliers mentioned above, there are a range of suppliers that could provide genomic testing services in New Zealand from their existing laboratories, including:

(a) Total Livestock Genetics (TLG), which is owned by Genetics Australia Co-operative which, in turn, has entered into a joint venture with the URUS Group (a US-based global leader dedicated to serving dairy and beef cattle producers around the world). TLG provides genomic testing services for cattle in Australia, as well as other reproductive services and activities for dairy and beef cattle, including semen collection, storage and distribution, embryo transfer and in-vitro fertilisation. TLG distributes a broad range of genomic testing products offered by animal genomic testing suppliers. TLG operates a semen collection centre and sexing technologies laboratory in Victoria, Australia, which supports its international operations;[133]

(b) ABS Global, a global provider in many parts of the world (Europe, South America and North America) of genomic testing, bovine genetics, reproductions services, technologies, and udder care products serving more than 40,000 customers globally, including some of the world's leading beef producers;[134]

(c) VHL Genetics, a market leader in the field of non-human genotyping service laboratories. VHLGenetics has the availability of state-of-the-art equipment, including capillary electrophoresis, rtPCR, KASP, Illumina BeadChip genotyping

[128] LIC Consolidated Annual Report 2024/25, Corporate Governance Report, page 27.
[129] https://www.nbr.co.nz/tech/the-science-provider-behind-1-1b-net-benefit-from-sheep-genetics/.
[130] CRV home page.
[131] ST Genetics NZ webpage.
[132] XytoVet homepage.
[133] TLG webpage.
[134] https://www.absglobal.com/au/abs-blog/.

and Genotyping by Sequiencing using ApliSeq Technology, and has four laboratories located in the Netherlands, Belgium, Germany, and Norway; [135]

(d) Labogena, a French industrial genotyping and sequencing site for animal and plant species, including cattle, with a high-throughput genotyping laboratory located near Paris;[136]

(e) Gencove, a genomics company with significant scale in the USA, offering beef genomic products specialising in high-throughput, low-pas whole genome sequencing and bioinformatics for both human and animal genomics;[137] and

(f) Vereinigte Informationssysteme Tierhaltung w.V. (VIT), a German company that provides services in performance recording, artificial insemination and breeding for cattle, horse, sheep, goats and pigs. VIT operates a data processing system including integrated specialised applications and a standardised data inventory on behalf of its customers. VIT also runs the genomic cattle database "Rind-Genom-DB" with SNP-marker information of ~200,000 genotyped cattle.[138]

Entry and expansion into beef genomic testing has been and will continue to be characterised by low barriers to entry

The underlying technology is not species specific

1.10 The SOI raises the issues that the specificity and cost of SNP chips for beef cattle may be a barrier to entry. As set out in **Annexure 4**, the SNP chips are not costly, unique or a barrier to entry. Customisation to a standard Illumina cattle chip to provide beef cattle genomic testing is typically free with a minimum purchase order.

1.11 The genotyping process for a dog, human, cow, pig is the same across species. Labogena started in plants and expanded into animals. Ancestry.com started in humans and is now offering dog genotyping. Eurofins tests across species including humans and plants. Weatherbys started with genotyping horses before expanding to cattle.[139]

1.12 Beef genomic testing providers typically use off-the-shelf SNP chips that are available from a range of suppliers and are designed for Bos taurus and Bos indicus cattle species globally. If the SNP chip is compatible with the relevant format, quality and content standards, the content from the SNP chip will then be normalised by the genomic evaluation system (i.e. BREEDPLAN), with the common reference marker panel used for genomic evaluation. For further information refer to **Annexure 4**.

Nature of costs are facilitative, not prohibitive, of entry and expansion

1.13 Economies of scale and scope are not a significant feature of supplying animal genomic testing services, either globally or in New Zealand. The significant majority of costs associated with the supply of genomic testing services are variable costs, such that increased scale does not materially reduce average costs or create any meaningful scale or incumbency advantages. By way of example, Zoetis estimates that [REDACTED]. Suppliers do not need to have their own laboratory. They can readily obtain access to laboratories operated by third parties. [REDACTED].

1.14 Further, it is not necessary for any entrant to have a large field sales team in order to successfully gain market share in genomics testing. Both Zoetis [REDACTED] have modest-sized sales forces to support the supply of genomic testing services in New Zealand. With only 2 salespeople in Australia, Weatherbys has been able to secure appointments as an approved service provider to DataGene, Sheep Genetics and the two largest beef breed societies in Australia, the Australian Wagyu Association and Angus Australia.

[135] VHL Genetics.
[136] Labogena webpage.
[137] Gencove website.
[138] VIT website.
[139] Technology company Illumina outlines a variety of species utilising the same base technology.

Access to the necessary data is controlled by breed associations and evaluation bodies

1.15 The data and reference information required to support genomic testing is not controlled by incumbent genomic testing providers. For example, in New Zealand access to historical data is in the control of MLA, Angus AUS, Angus NZ and/or BLG Multibreed evaluation research. Genomic service providers have no (little) influence.

1.16 The evidence weakens the concern that data access would act as a barrier or deterrent to supply-side entry in New Zealand, as the key inputs necessary to support expansion can be accessed in a timely manner and will not be controlled by the merged party.

Opportunity to capture an expanding addressable market

1.17 The global animal genetics market is on a clear growth trajectory, and independent industry commentary confirms this is expected to continue. The global animal genetics market size was valued at USD 7.8 billion in 2025 and is projected to grow from USD 8.3 billion in 2026 to USD 13.4 billion by 2033, at a CAGR of 7.1% from 2026 to 2033. This expansion is driven by an intensifying focus on animal productivity, disease resistance and breeding efficiency across both livestock and companion animals. Precision breeding technologies, including genomic selection, artificial insemination, embryo transfer and gene-editing tools, are being adopted at pace by breeders, as producers invest in superior genetic traits to improve milk yield, meat quality, reproductive performance and overall herd health. Cattle represent the largest segment of this market, with a 40.84% revenue share in 2025, reflecting sustained global demand for beef and dairy products. [140]

1.18 This global trend is mirrored in New Zealand's own beef sector. New Zealand's total meat exports reached a record USD $10 billion for the year ended October 2025 (the first time this threshold has been exceeded). As shown in the graph below, beef exports have trended upward over the past 20 years.

Graph 1 – Stats NZ graph showing beef and sheep meat exports in New Zealand

1.19 This trajectory is confirmed by [REDACTED].

1.20 [REDACTED][141] [REDACTED][142]

1.21 Taken together, these data points show a market, both globally and in New Zealand specifically, that is expanding, ahead of projections. [REDACTED] reinforcing that the New Zealand beef and animal genetics market remains an attractive and growing opportunity for new entrants.

[140] Animal Genetics Market (2026 - 2033) – Market Analysis Report by Grand View Research.
[141] [REDACTED].
[142] [REDACTED].

Annexure 4 Entry and Expansion - Technical

Availability and compatibility of standard off-the-shelf SNP chip.

1.1 The SOI states that "*beef cattle genomic testing requires access to SNP chips or market panels that are specific to beef cattle*,"[143] and that to "*develop beef cattle-specific chips or market panels, there are potentially high upfront SNP chip development costs ranging from $35,000 to $75,000 to add to or modify existing cattle SNP chip, to $1m (to develop a SNP chip from scratch).*"[144] It indicates that "*development costs could be reduced by the use of off-the-shelf standard chips, but these may be less optimised for the relevant population than bespoke chips.*"[145]

1.2 This Annexure sets out further information on "*the extent to which existing off-the-shelf SNP chips can be used to supply beef cattle genomic testing services, compared with bespoke SNP chips, including differences in functionality, customer acceptance and compatibility with breed societies or evaluation systems*,"[146] and answers the question of whether market participants require "*access to a New Zealand-based reference population to develop the most accurate and tailored SNP chips, and to calculate the best EBVs*."[147]

1.3 Market entry is materially easier than the SOI suggests. This is a function of the nature of the SNP chips actually used in practice: they are off-the-shelf products, suitable for use across a wide range of cattle breeds, and they yield materially the same end product for breed societies regardless of which provider supplies them. A company wanting to enter or expand into genomic testing for beef cattle will need to:

(a) Identify which markers to add to the chip to meet local breed society and genetic evaluation system requirements. This is relatively standardised across geographies, but will differ between dairy and beef cattle, and may include additional local disease markers for particular breeds; and

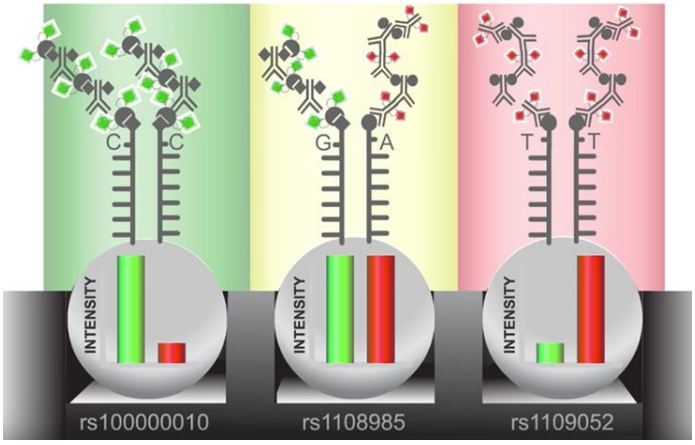
(b) Check with BREEDPLAN that the chip meets its testing requirements.[148]

Current industry practice

<u>SNP Chip background</u>

1.4 A "SNP chip" (single nucleotide polymorphism chip) is a genotyping microarray: a solid surface (chip) studded with thousands to millions of short DNA probes, each designed to detect one specific known SNP location in the genome. This is a single base-pair position where individuals commonly differ (A/C/G/T variants). The DNA is transferred onto the chip, which contains microscopic beads. As DNA fragments pass over the beads, each probe binds to a complementary sequence in the sample DNA. Allele (variant) specificity is conferred by a single base extension that incorporates one of four labelled nucleotides. When excited by a laser, the nucleotide label emits a signal. The light reflected reports which allele is present at each of those pre-selected positions, giving a genetic "fingerprint" across the genome without needing to sequence the whole thing.[149]

[143] SOI at [59].
[144] SOI at [59.1].
[145] SOI at [59.2].
[146] SOI at [62.1].
[147] SOI at [68.2].
[148] This process is described in detail below.
[149] https://sapac.illumina.com/science/technology/microarray.html.



1.5 The chip is designed to detect the genetic variant (allele) present at each of a large number of pre-selected positions (SNPs) across the genome. During processing, a fluorescent label is incorporated at each position and detected by an optical scanner, allowing the resulting genotype to be read.

1.6 Genomic testing differs from genetic condition/defect testing and parentage testing. Genetic condition/defect testing looks at a single marker (or small set of markers) for targeted mutations, and is sometimes referred to as DNA testing. For example, Zoetis (and other providers) use this method to test for the coat colour, genetic defects and/or poll gene in beef cattle. Parentage testing, by contrast, links calves accurately back to their sires and dams to help inform breeding decisions. Conversely, genomic testing evaluates a large number of genetic markers across an animal's genome and, when combined with phenotype and pedigree information, provides deeper analysis than either genetic condition/defect or parentage testing alone. Most providers could offer all of the above testing types, as SNP arrays are used to produce the output. Parentage testing can be achieved with a lower number of SNPs; however, in practice, most providers use a 50K+ panel regardless, and simply select the markers needed for the given job (i.e. these do not need to be incorporated with phenotype information).

How the chips are used in the industry

1.7 [REDACTED].

1.8 Illumina markets these chips publicly, describing them on its website as containing "highly informative SNPs uniformly distributed across the entire genome of major cattle breed types, empowering applications such as genome-wide association studies, identification of quantitative trait loci, evaluation of genetic merit of individuals, and comparative genetic studies."[150] These chips are used worldwide and across a variety of breeds. The content is designed for Bos taurus and Bos indicus cattle species represented globally. There is not a specific 'chip' or 'content' for a country or region, content is organised by breed type, and applicable minor allele frequency (MAF) is assessed within genetic evaluations by breed.

1.9 Chips that are used across the industry include:

(a) Illumina - Bovine SNP50K[151]

(b) Illumina - Bovine HD[152]

(c) Thermofisher - Bovine 10K map[153]

[150] https://www.illumina.com/products/by-type/microarray-kits/bovine-snp50.html.
[151] https://www.illumina.com/products/by-type/microarray-kits/bovine-snp50.html.
[152] https://www.illumina.com/products/by-type/microarray-kits/bovinehd.html.
[153] https://tools.thermofisher.com/content/sfs/brochures/bovine10k_snp_datasheet.pdf.

(d) Axiom™ - Bovine Genotyping 100K Array, 384HT format[154]

(e) LASO - Bovine SNP 50K.[155]

1.10 [REDACTED].

Customisation

1.11 [REDACTED][156]. As discussed above, every chip must meet certain common standards, and results are ultimately imputed to the same common outcome regardless of the underlying chip configuration.

1.12 [REDACTED]. Each chip has additional capacity (or customisability) permitting modification, but this does not give rise to any material difference in outcome. [REDACTED].

1.13 Most of the customisation involved is based on information that already exists in the public domain. R&D companies publish research in academic literature identifying new SNPs of interest, indicating that a given marker (or markers) explains a certain percentage of variation in a population. A new entrant therefore only needs to understand the relevant subject matter and then work with Illumina (or another chip provider) to add those SNPs to a chip (if they are not already present). Illumina updates its chips regularly, so even where a company temporarily holds proprietary knowledge, that knowledge may become publicly available, and accessible to any competitor wishing to add it to their chip, within a short period.

1.14 In certain cases, some SNPs may be held as proprietary information by breed societies. In these cases, a breed society may seek their genotype service provider, such as Zoetis or Neogen, to add the relevant SNP to its chip so their members can obtain results for the update (ie. A new genetic defect or R&D markers of interest to new or upcoming traits. [REDACTED].

Time and Cost

1.15 As discussed above, new entrants can purchase off-the-shelf chips. However, if they wanted to customise these chips, the SNP-selection and development process takes approximately 6 - 8 months,[157] which includes the pre-design collation of all materials (i.e. considering what genetic markers are wanted). Following delivery of the chip there is a period of testing all the markers on the chips are working and giving the same result as other sources. Illumina will conduct these validations for labs that do not have the capability, but most labs run their own.

1.16 Costs vary depending on the extent of causative-mutation and genetic-defect validation required, but current customer quotes for a custom build start at USD 60,000.[158]

1.17 The SOI states that "*accurate genomic testing requires access to a New Zealand-based reference population to develop the most accurate and tailored SNP chips, and to calculate the best EBVs.*" This conflates two distinct steps that should be separated:

(a) Chip manufacture does not require an NZ-based reference population. The SNP content underlying commercial chips such as the BovineSNP50 v3 was developed using international discovery and validation populations (including US research collaborations).[159] This is inherent to how these chips are built and is not a barrier specific to New Zealand entrants. A New Zealand entrant is in the same position as any other user of an internationally-designed, off-the-shelf chip.

[154] https://www.thermofisher.com/order/catalog/product/551325?SID=srch-srp-551325.
[155] https://lasobiotech.com/en/chip/solidphase/bovine.
[156] [REDACTED].
[157] [REDACTED].
[158] [REDACTED].
[159] https://www.illumina.com/Documents/products/datasheets/datasheet_bovine_snp50.pdf.

(i) [REDACTED].

(b) Even at the genetic evaluation stage (i.e., calculating EBVs), a population-specific reference dataset is not required. While there are some exceptions, populations are generally connected across the globe.[160] Nevertheless there is a distinction between acquiring a chip (no reference population required) from building a bespoke evaluation (reference population required).

(i) Genomic service providers do not run the main genetic evaluation system BREEDPLAN that is used for Angus cattle in both from New Zealand and Australia. This is the role of the societies with the BREEDPLAN evaluation system against using phenotypes from both NZ and AUS cattle.

(i) [REDACTED].

1.18 A reference population is used in the process of developing a genetic evaluation system (ie, BREEPLAN) and run by national genetic evaluation organisation (Angus Australia, Beef and Lamb Genetics etc). It is not required to build a chip or assay, as the SNP content needed for a chip is already publicly available via peer-reviewed literature. Research institutions and universities continue to investigate SNPs of interest especially for new traits such as environmental traits.

1.19 The cost and difficulty of building a genetic evaluation depends heavily on the phenotypic traits being evaluated, their heritability, and the availability of existing data. Traits that are highly heritable and already commonly measured by producers, such as milk production or growth, are comparatively cheap and straightforward to acquire data for. Other traits, such as methane intensity, are materially harder and more expensive to capture.

1.20 Further, switching chip provider does not create a data-comparability problem for the genetic evaluation itself. This follows from the chip-agnostic, imputation-based pipeline design, which is discussed below. The only practical burden on a breed society switching provider is the time and effort of configuring its systems to accept the new provider's data manifest.

1.21 However, new software like Helical has effectively eliminated this problem. Helical is a cloud-native breed registry platform that represents a significant advance in livestock genetic management. Purpose-built for genomics, it offers a centralised one-stop-shop that integrates phenotype data, pedigree records, and DNA information into a single analytical environment, enabling breeders, farmers, and commercial organisations to work from real-time, fully current data. Helical differentiates itself from competing systems in its marketing based on its capacity to manage and analyse genomic data at scale. A single large beef cattle breed association may hold DNA profiles across 100,000 animals, each carrying approximately 95,000 data points, producing in excess of 9.5 billion discrete pieces of information. Helical processes that volume in real-time, feeding it directly into analytical tools that generate insights previously out of reach for everyday breeding and selection decisions.

How a new entrant would acquire and use the chip

1.22 To start supplying genomic testing for beef cattle, the provider needs to be able to provide SNP panels approved as fit for use.

1.23 The requirements are publicly available and set out in Genotype Panel Requirements for Inclusion into BREEDPLAN Single Step Evaluations (the **Paper**), which states:[161]

> *"it is necessary to ensure that SNP panels offered to breeders/breed societies are compatible with the genomic pipeline quality control (QC) requirements used for building the relationship matrix for BREEDPLAN single-step evaluations. These QC checks can only be performed if the genotypes are compatible and as such, new*

[160] [REDACTED].
[161] See Attachments 4.1.

genotypes and new panels require analysis prior to inclusion into the BREEDPLAN genomic pipeline. The Animal Genetics and Breeding Unit (AGBU) has developed a set of industry standards for genotype panels, along with a process of analysing new SNP panel products and validating their compatibility for the BREEDPLAN genomic pipeline."

1.24 The paper sets out AGBU's requirements for determining whether new SNP genotyping panels are compatible with the BREEDPLAN genomic pipeline. This is not a country (or region specific requirement), and BREEDPLAN does not require a particular manufacturer's chip. Instead, a genetic evaluation is built around a fixed set of SNPs that the evaluation model needs, and is chip agnostic. It does not matter which physical chip generated the data, provided the required SNPs (or content from which they can be derived) are present in the genotype filed submitted. Compatibility instead turns on three things: consistent file format, SNP quality, and informativity for the breed in question.

1.25 Genotype and map files must follow AGBU-specified formatting (derived from Illumina Genotyping Exports) to enable automated processing and quality control, and each panel's map file is compared against AGBU's consensus panels. A panel's SNPs must also carry adequate minor allele frequency (MAF) within the relevant breed population. Panels with insufficient overlap with these consensus sets are incompatible with BREEDPLAN.

1.26 Following analysis of more than 50 panels, AGBU has developed a three-tier assessment framework governing BREEDPLAN inclusion. Level 1 (format, quality and content) is currently enforced, and non-compliant panels are excluded until requirements are met.[162] Levels 2 and 3, and the establishment of reference populations, are proposed but not yet enforced, pending negotiation of funding and accountability with industry. Level 2 (heterozygosity) would require 200 purebred individuals per breed assessed against defined thresholds, with any SNP requiring at least 1,000 genotyped individuals before use in single-step evaluations. Level 3 (imputation accuracy) would require 2,000 high-density genotypes per breed to test imputation between panels. Implementation of both levels, and of dynamic, annually updated reference populations, depends on resolving funding and governance arrangements currently under negotiation.

1.27 As discussed, the Level 1 requirements have been derived from Illumina Genotyping Exports, and the off-the-shelf Illumina chip is accordingly compatible with these requirements.

1.28 The final step facing a new entrant is to establish a relationship with a breed society or PBB (this may also include international Genetic Evaluation Systems such as IGS). SNP Genotypes are of limited value without the incorporation of this data into a genomic evaluation system, which is governed and managed by the breed society (and PBB). Neither PBB nor breed societies have exclusive contracts in relation to the supply of genotypes into their genomic evaluation system, so this is not a barrier to entry.

1.29 BREEDPLAN's evaluation pipeline normalises content from varying SNP chips via an imputation process. All genotypes provided to the evaluation are standardised to the consensus panel (~150K markers), which are statistically inferred through imputation (rather than needing to be physically present) - a technique used by genetic evaluation

[162] *Level 1 assessment – Panel format, quality and content. New panel inclusion requirements are as follows: Provide AGBU with the aim and/or target breed/s of a newly developed panel; Genotypes and map files must be formatted as per specified guidelines (as supplied by AGBU); The genome assembly used for the panel map file must be provided; Panel must contain at least 90 percent of SNPs in the AGBU 6k consensus panel; Panel must have at least 10000 SNPs in common with the autosomal region of the AGBU 150k consensus panel; There must be at least 200 SNPs on the non-autosomal region of the X chromosome; Confidential or patented SNPs and any restrictions regarding their use must be provided; The raw genotypes are to be supplied in Illumina AB format (guidelines as supplied by AGBU) and must not be imputed or manipulated (e.g. removal of chromosome X, Y or mitochondrial SNPs); Genotypes must possess GenCall (GC) scores. If GC scores are not provided, a statement of quality assurance is required. AGBU will not accept any responsibility of quality regarding issues related to SNPs without GC scores; Companies which do not use GC as quality control (e.g. Affymetrix) must provide AGBU with the formula to convert their QC to GC. Additionally, they should provide a statement regarding the concordance of their panels with Illumina panels; SNP names should not contain a prefix or suffix. If prefixes or suffixes are present, specific recommendations to AGBU must be included on the SNPs involved; There must be no SNP duplication in the map file; i.e. SNPs with same position and chromosome but different name, or same SNP name and different positions. If important SNPs must be tested on the panel more than once, they must have a suffix 'dup' and the reason for duplication must be provided.*

units worldwide, and expressly contemplated as part of AGBU's proposed Level 3 testing. As a result, the reports breed societies receive from BREEDPLAN are materially identical regardless of which genotyping laboratory provides the genotype. Providers' outputs are converted to a Common Marker Set before use in the evaluation, and for an animal to enter the evaluation model, it must have a result (whether directly genotyped or imputed) for every marker in that Common Marker Set.

Annexure 5 PBB Contract

1.1 [REDACTED].

Annexure 6 NERA Report

[Attached separately].

Schedule 1 Index of attachments

Attachment Reference	Document Name	Location
Main submission		
Attachment 1	[REDACTED]	REDACTED]
Attachment 2	Order form Shorthorn-beef	Provided separately
Attachment 3	[REDACTED]	[REDACTED]
Annexure 1		
Attachment 1.1	Detailed summary of genetic evaluation customer journey	Included in this document
Attachment 1.2	Angus Australia – DNA TMA	Provided separately
Attachment 1.3.1	[REDACTED]	[REDACTED]
Attachment 1.3.2	[REDACTED]	[REDACTED]
Attachment 1.3.3	[REDACTED]	[REDACTED]
Attachment 1.4	[REDACTED]	[REDACTED]
Attachment 1.5	Angus Australia – Regulations	Provided separately
Attachment 1.6	Angus Australia – TACE Membership Agreement	Provided separately
Attachment 1.7	Angus Breed Survey	Provided separately
Attachment 1.8	Angus Australia – Genomic Test Order Form	Provided separately
Attachment 1.9	Angus Australia – Genetic Evaluation Results	Provided separately
Attachment 1.10	Neogen application form 2025	Provided separately
Attachment 1.11	PBB-WBYS-Submission form	Provided separately
Attachment 1.12	Zoetis NZBeef order form	Provided separately
Attachment 1.13	Zoetis Inherit order form	Provided separately
Attachment 1.14	[REDACTED]	[REDACTED]
Attachment 1.15	[REDACTED]	[REDACTED]
Annexure 4		
Attachment 4.1	Genotype panel requirement	Provided separately
Annexure 5		
Attachment 5.1	[REDACTED]	[REDACTED]
Attachment 5.2	[REDACTED]	[REDACTED]
Attachment 5.3	[REDACTED]	[REDACTED]