Submission on DairyNZ Consultation "A better BW for the New Zealand Dairy Sector"

Livestock Improvement Corporation Limited

20 June 2023

EXECUTIVE SUMMARY

1. Livestock Improvement Corporation Limited (**LIC**) provides its response to the DairyNZ and NZAEL public consultation on "A Better BW for the New Zealand Dairy Sector" (the **Proposal**).

2. LIC does not support the Proposal. Broadly, LIC is of the view that the Proposal will not benefit the industry or New Zealand dairy farmers. A summary of our concerns follows.

(a) **It is not clear who the Proposal really benefits.**

While the Proposal aims to facilitate more competition in the AB market, local competition in the AB market already exists today in New Zealand with opportunities available for new players to enter the market. This is to the benefit of New Zealand farmers, and the existing competition helps to drive investment in R&D. The Proposal would risk disincentivising investment in R&D, without clear benefits for increasing the choice of AB providers for farmers.

(b) **It will increase costs to farmers and the industry.**

The Proposal contains an unclear and confusing fee model, with a lack of clarity on how exactly it would be funded - ultimately all costs are borne by the industry one way or another. For example, there is reference to straw levies and levies for cow enrolment via herd record providers as optional charges depending on what other fees are included. But it is unclear how DairyNZ intends to enforce collection of these levies.

(c) **It is unclear how the model would operate without the participation of LIC and other existing AB companies.**

The Proposal fails to address how the model would operate and how it would be funded should existing companies, including LIC, choose not to participate.

(d) **The 'size of the prize' is based off flawed assumptions and is not accurate.**

It is unclear what problem the Proposal is trying to solve. It claims there is an opportunity for a $1.36 Billion return on farm over the next 10 years by increasing BW year-on-year through genomics. There is no independent modelling or evidence to support this.

(e) **Year-on-year, LIC farmers are already achieving above and beyond the rates of genetic gain the Proposal aims to achieve.**

LIC is already achieving rates of genetic gain above those the Proposal aims to deliver, and contests the claim that the rate of genetic gain in New Zealand is as poor as the Proposal presents. Long-term users of LIC genetics have almost doubled the rate of

genetic gain in their herds over the last 10 years – now at 18gBW per annum. This surpasses the industry average of 10BW stated in the Proposal.

(f) **There are no real issues with the current model, which provides competition, choice for farmers and incentivises investment in R&D.**

We contend that the current model is fit for purpose, and any change would need to be modelled off clearly defined costs and benefits to all players in the sector. Today there is competition in the market and choice for farmers, and this incentivises investment in R&D. The Proposal will put this at risk.

(g) **It will lead to a reduction in R&D and innovation across the industry.**

One of LIC's biggest concerns with the Proposal is the negative impact on innovation and investment in R&D. The Proposal throws doubt on the ability of participants to deliver superior R&D.

(h) **It is uncertain whether DairyNZ has the technical and financial ability to deliver the complex technology project alongside its other priorities on behalf of levy payers.**

The Proposal will place an additional burden on DairyNZ, which already has a number of industry interests and issues to manage on behalf of its levy payers. Without a viable long-term model for managing a genomic index, we are concerned that the Proposal will not be able to be sustained by DairyNZ without placing further burden on levy payers.

(i) **It is focused on phenotypic data over and beyond genotypic data.**

The Proposal appears to have a large focus on data quality, particularly quality phenotypic data. LIC supports the need for quality data and is actively participating in the industry initiative (Industry Data standards review) to encourage better herd recording and more accurate capture of data. This work is currently being undertaken and is independent of the outcome of this review.

These points are outlined further in this submission.

3. In summary, while LIC supports the concept of a single national animal evaluation index with genomics in theory, this would be on the basis that it does not disincentivise investment in R&D, erode genetic gain and allow free-riding on investments made by companies like LIC and CRV that have invested heavily in this field. The Proposal does not do this, nor does it offer fair recognition of LIC's previous investment and the value of existing genomic assets.

4. LIC's view is that this Proposal could impact the rates of genetic gain through reduced incentives for existing participants to invest in research and development in the sector and has the potential to extinguish existing intellectual property rights held by companies who have already invested in herd improvement technologies.

INTRODUCTION TO LIC

5. LIC is a New Zealand herd improvement and agri-technology co-operative that provides a range of products and services across the country for the benefit of our 9,000+ dairy farmer owners, representing over 90% of the dairy industry. LIC has been improving the lives of our New Zealand farmers and the quality of their herds for more than 100 years, and as such has extensive insight into herd management and farming practices in New Zealand.

6. Any changes to the animal evaluation system will have a great effect on farmers and their herd management practices. As a farmer owned dairy co-operative, LIC is committed to increasing genetic gain year-on-year and investing in cutting edge technologies such as genomics on behalf of our shareholders and we've proven that we can.

LIC's Investment in Genomics and BW

7. LIC has invested more than $80 million into genomics over the last 30 years to pioneer the application of genomics on New Zealand farms and build a genomic asset for our shareholders. The industry is now seeing the positive results from LIC's ongoing investment with higher levels of genetic gain year on year.

8. This asset includes:

(a) Bespoke technology - a genomic model which simultaneously analyses genomic and phenotypic information, alongside ancestry, to deliver accurate genomic evaluations.

(b) Large, unique dataset – an extensive library of animal genotypes (300,000+ cows and bulls) to provide a reference population which is representative of our unique (largely cross-bred and pasture-based) New Zealand dairy herd.

9. This has been a long journey for LIC, having first introduced the tool to evaluate young sires in 2008 and making them available to farmers earlier. Genomics was included in national animal evaluation operated by NZAEL in 2009-2010. As with any new technology, the

learning curve was steep and initial genomic predictions did not meet expectations. Regrettably, NZAEL later removed genomics from the national animal evaluation.

10. LIC made the hard decision to stay the course, doubling down on research and development efforts and investment, because we knew if we didn't crack genomics for New Zealand cows, no overseas company would do it for us. Despite DairyNZ not working with us in these efforts, LIC continued on as it was for the benefit of the NZ Dairy industry and our farmers that we need to push ahead. We are reaping the rewards of our commitment today.

11. Nearly a decade after removing genomics from national animal evaluation, DairyNZ asked if we were open to sharing the genomic asset for national animal evaluation again to share with other genetics companies. These are companies who have made little to no investment or commitment to New Zealand dairy in the past. Despite acknowledging the performance and capabilities of the LIC genomic asset, DairyNZ does not recognise the true value of this asset and provide a workable solution for our participation. Discussions have been productive and professional, but ultimately unsuccessful.

KEY ISSUES WITH THE PROPOSAL

It is not clear who the Proposal benefits

12. While the Proposal aims to facilitate more competition in the AB market, we note that competition in the AB market already exists today in New Zealand with opportunities already available for new players to enter the market. This is to the benefit of New Zealand farmers, and the existing competition helps to drive investment in R&D. But the Proposal would risk disincentivising investment in R&D without clear benefits for increasing the choice of AB providers for farmers.

13. LIC as a farmer owned co-operative has embraced increased competition in the New Zealand market over the last decade. New entrants have entered and performed on merit and has helped further improve LIC's performance and offering. However, LIC only supports increased competition on the basis of fair entry. The Proposal allows for non-contributing genetics companies to free-ride into New Zealand on the back of investment made by those currently in the industry.

14. There is no incentive for new entrants to invest in New Zealand and the Proposal does not work for New Zealand co-operatives and companies who have made years of investment in genomics and breeding the best animals for farmers.

15. The Proposal requires all parties to be involved, including LIC. However, the current model does not encourage participation by current industry participants. It is unclear who the model truly benefits and how it will operate should existing companies such as LIC and CRV not participate.

Increased Cost to farmers

16. While the Proposal is intended to make genomics more widely available for New Zealand farmers, the majority of farmers have ample access through LIC and are receiving value on-farm. DairyNZ is proposing to use farmer-levy money to re-create a genotype database which already exists.

17. The Proposal contains an unclear and confusing fee model, with a lack of clarity on how exactly the model would be funded. For example, there is reference to straw levies and levies for cow enrolment via herd record providers as optional charges depending on what other fees are included. Although it is unclear in the Proposal how the collection of these levies will occur, ultimately all costs are borne by the industry one way or another.

18. Therefore claims that farmers would not be paying more are incorrect. The alternative option of these costs not being passed on to farmers will see herd recording and animal breeding companies, such as LIC, incurring the cost. This could lead to less investment in research and development by LIC, which would be a disadvantage to the industry and the farmer.

19. The Proposal requests that the farmer decide on the high/low fees model although the model requires funding by farmers and bull breeders of $7m-$10m which would mean that the fees model should have already been well progressed. Regardless of the bull screen fee being high or low, the model requires an already determined amount to be successful.

20. The Proposal does not incentivise companies with existing genotypes to put these in upfront as the royalty payments for Qualifying Foundational genotypes will be capped and will be

distributed to contributors including DairyNZ. This means that it will be impossible to fairly compensate for the provision of foundational genotypes.

21. Non-participation of commercial parties, including LIC, has not been factored into the model. The financial viability of the proposal without the participation of commercial parties will need to be revised.

22. Bull enrolment fees under the model are problematic with lack of clarity around the amount to be charged for each bull annually. There is reference to higher fees for high screen bulls although it is not clear what the threshold is for a high screen bull.

23. Suggested fees such as the straw levy just introduce further direct cost to farmers for AB products and potentially increase the cost of artificial insemination (AI) straws over time.

The Proposal doesn't address non-participation by LIC (and others)

24. The Proposal requires all parties to be involved, including LIC. However, the current model does not encourage participation by current industry participants.

25. The Proposal fails to address how the model would operate and how it would be funded should existing companies, including LIC, choose not to participate.

Problems with the 'size of the prize'

26. The Proposal claims that the there is an opportunity of $1.36 Billion return on farm over the next 10 years by increasing BW year on year through genomics. There is no independent modelling or evidence to support this opportunity. In fact, the modelling associated with the Proposal is retrospective and only looks at data up to 2020.

27. The Proposal does not clearly articulate the problem it is trying to solve. There is no evidence of market failure with the current industry practices and, as detailed in the next section LIC contests the claims and data in the Proposal regarding the rate of genetic gain in New Zealand.

High Rates of Genetic Gain already being achieved in New Zealand

28. LIC disputes the data and figures in the Proposal regarding the rates of genetic gain in New Zealand and the comparison of genetic gain in other countries.

29. LIC is already achieving rates of genetic gain above the rates the proposal aims to deliver and contests the claim that the rate of genetic gain in New Zealand is as poor as the Proposal presents. Long-term users of LIC genetics have almost doubled the rate of genetic gain in their herds over the last 10 years – now at 18gBW per annum (graph below). This surpasses the industry average of 10BW as stated by DairyNZ, and the target rate of gain the Proposal aims to achieve of 15BW.

30. LIC is not convinced that the data presented by DairyNZ is telling the full picture regarding rates of genetic gain in New Zealand. The Proposal:

(a) suggests that the uptake of use of genomics and widespread use of young sires will be the main contributor in increasing the rates of genetic gain.

(b) fails to mention the use of other technologies used for genetic gain such as Embryo Transfer, in vitro fertilization and embryo transfer (JIVET) and nucleus herds (some of which are not widely used or appropriate for New Zealand dairy systems).

(c) does not highlight other technologies used overseas when comparing genetic gain in other countries. For example other reproductive technologies are widely used in overseas markets such as the USA and it is misleading to present graphs showing other countries' genetic improvement and imply that this is all solely due to genomics.

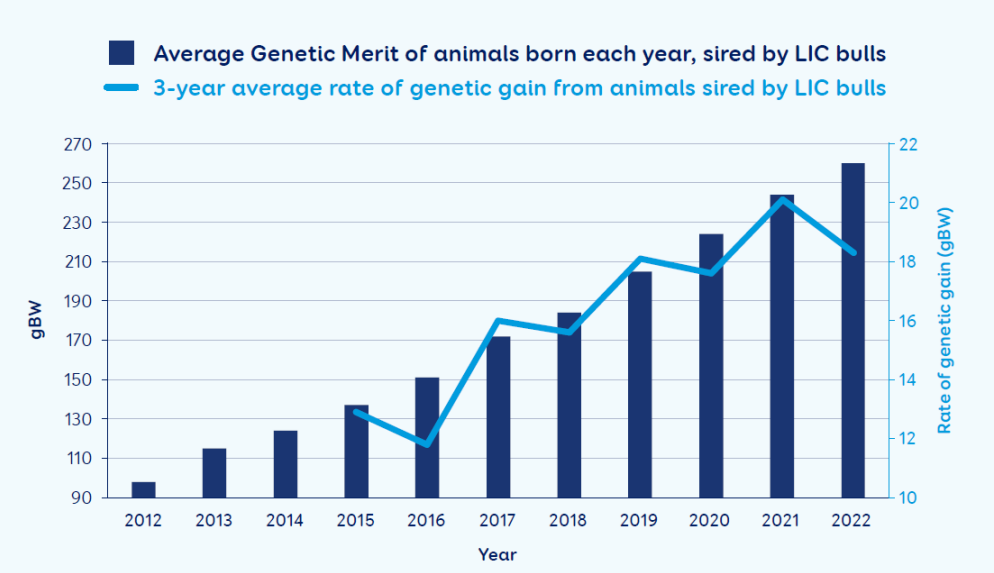
(d) Doesn't accurately explain the starting point for genomics in each country compared, nor does it explain how genetic gain can be influenced by changes in breeding objectives across the years.

(e) Cites a report from Dorian Garrick which only uses data up to 2020. The past two years have seen farmers increase their use of genomic sires and achieve great genetic gain. LIC is unsure why the Proposal would not present the most up to date data.

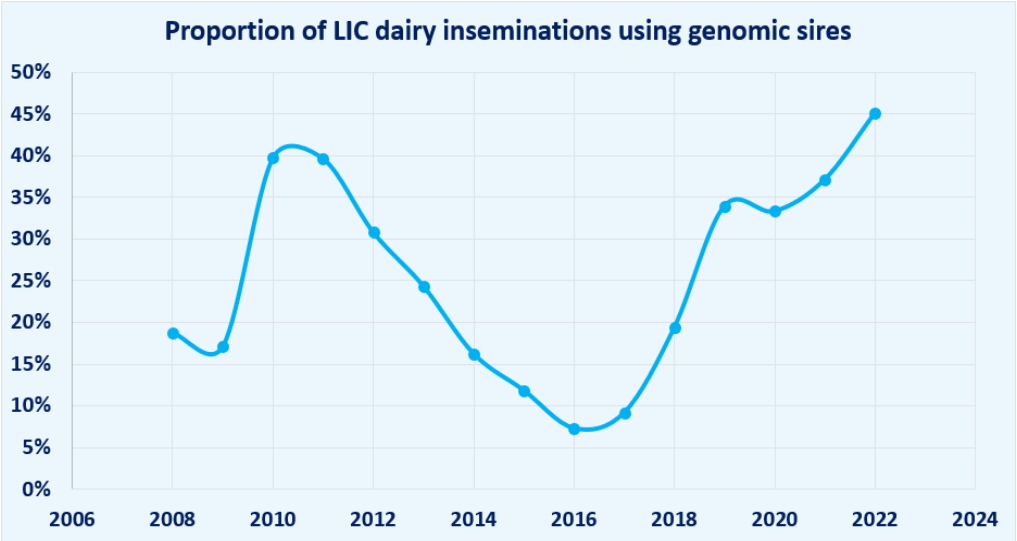
(f) Assumes a high uptake of young genomic sires by farmers. As a farmer owned co-operative LIC's position is that farmers should choose what reproductive solutions they use.

31. Further, the Proposal relies heavily on the Abacus Bio 'Benchmarking Genetic Progress across Dairy Industries in the Era's Before and During Genomics' which contains a number of disclaimers and cautionary comments regarding the data and conclusions. In fact the authors explicitly state " … that extreme care must be taken when comparing the overall

performance of breeding programs in different countries." Some countries requested their data to be anonymised due to the circumstantial nature of the comparison. These cautionary statements should be included in the Proposal and the context explained in order for the reader to have the full context of the situation. We are concerned that the Proposal introduces unnecessary concern with regard to New Zealand's animal evaluation system which could inadvertently further hamper genetic gain New Zealand by dampening farmer confidence in the animal evaluation system.



Genomics has been a key contributor to this success. The technology is widely available to LIC's 9,000+ farmers and it is delivering significant value on-farm which will benefit New Zealand herds for years to come.



The use of genomic sires decreased in 2010 when genomics was removed from the national animal evaluation index. LIC has continued to invest heavily in this space for our farmers, dialling up the use of genomic science throughout our elite bull breeding programme, which has been met with an increased farmer uptake of young, genomic bulls LIC data shows that confidence has grown significantly in the past five years with now 45% of LIC farmers are now using young genomic sires.

Current model is fit for purpose

32. While we are always looking for improvements in the way herd improvement is delivered in New Zealand, we contend that the current model is fit for purpose, and any change would need to be modelled off very clearly defined costs and benefits to all players in the sector. The current operating model provides for competition, choice for farmers and incentivises investment in R&D, but the Proposal will put all of these at risk.

33. The Proposal implies that there is a real issue with the current system of multiple indices. They have not effectively proven that this system does not work and that farmers are incapable of understanding more than one index.

34. Farmers are competent at understanding a range of indices and companies should not be prevented from offering breeding indices. Further, many international markets and animal breeding companies overseas also use multiple indices and sections for specialised traits when marketing bulls e.g. in the United States where many animal breeding companies use their own index(s) as well as a central industry index.

Reduced incentives and ability to invest in R&D and innovation

35. One of LIC's biggest concerns with the Proposal is the negative impact on innovation and investment in research and development.

36. The Proposal highlights this concern stating "The changes proposed by NZAEL could potentially shift the incentives for the commercial sector to invest in research. There is a risk that this might create a situation where important research doesn't get done …"

37. The Proposal attempts to mitigate this concern by stating that solving this issue is DairyNZ's role and that they will undertake continued investment into genetics and genomics research,

without specifying the economic model for funding this research. It is LIC's view that this is short sighted because the likes of LIC and CRV are investing heavily in this area already. The Proposal stands to sacrifice current expert research and development projects solely for the contribution of genotypes.

38. In addition, the Proposal is short sighted as DairyNZ and NZAEL are only committing to future research and development in genomics, whereas individual companies have a research focus that is much broader than just this. The Proposal is effectively reducing companies' ability to self-fund their own innovation and research and development in order for them to deliver a model that is suboptimal and will fall short in making a significant impact on the industry.

Can DairyNZ deliver this model long term?

39. We are concerned that the Proposal is not viable long term. The model in the Proposal has a short-term focus and limited funding capability. As highlighted in the Proposal's accompanying documentation, there is a lack of clarity on the appropriate fees to charge, and there is an entire section highlighting that the financial viability of the model is weak and could change.

40. Furthermore, we are concerned that this will place an additional burden on DairyNZ, which has a number of industry interests and issues to manage already on behalf of levy payers. Without a viable long-term model for managing a genomic index, the Proposal will not be able to be sustained by DairyNZ without placing further burden on levy payers.

Phenotypic data and InfoHerds

41. The Proposal appears to have a large focus on data quality, particularly quality phenotypic data. LIC supports the need for quality data and is actively participating in the industry initiative (Industry Data standards review) to encourage better herd recording and more accurate capture of data. This work is currently being undertaken and is independent of the outcome of this review.

42. The InfoHerds concept does not recognise the 62 year-old Sire Proving Scheme (SPS) that LIC has operated. This scheme collects herd test data, TOP data, liveweight and body condition score data and all of the animals in the scheme are parentage tested and the majority are genomically evaluated. There are approximately 15,000 animals in the SPS and probably a

similar number in the CRV progeny test system. The DairyNZ Proposal is silent on the contribution of the LIC and CRV Sire Proving Schemes. Furthermore, it is not clear if the 100,000 animals are in addition to the LIC and CRV progeny test schemes. Quality data is paramount, regardless of a national genomic index.

CONCLUSION

43. While we have been engaged with DairyNZ in the lead-up to the consultation to work out a model that would include genomics in animal evaluation, we cannot support this Proposal as it stands.

44. LIC agrees in principle to a single index but only if it achieves a significant genetic gain against the current trajectory and if it provides fair entry into the market. We have outlined in this submission why we do not support the DairyNZ and NZAEL Proposal to achieve a single index.

45. The Proposal that has been put to the industry contains flawed assumptions and modelling, and does not outline how it would create an outcome that is better than the status quo for the industry. The size of the prize is based off outdated modelling and the rates of genetic gain currently being achieved by LIC already surpass what the proposal is aiming to achieve. The model being suggested will increase cost to the industry and reduce incentives and the ability for entities to invest in innovation and R&D.

46. In conclusion, LIC does not support the consultation on “A Better BW for the New Zealand Dairy Sector”.