NERA
ECONOMIC CONSULTING

Public Version

MEMO

TO:	Phil Taylor and Penny Pasley, Bell Gully
DATE:	9 March 2015
FROM:	James Mellsop and Bronwyn McDonald
SUBJECT:	Efficiency Detriment in Wool Grease Market

1.   Introduction

You have asked us to quantify the efficiency detriment if there was a substantial lessening of competition in what we might refer to as the "small domestic customer wool grease market", as a result of the proposed transaction between the wool scouring businesses of Cavalier Wool Holdings Limited and New Zealand Wool Services International Limited. The "small domestic customer wool grease market" consists of just **[REDACTED]** and **[REDACTED]**, on the assumption that **[REDACTED]** would be unaffected by the proposed merger.[1]

We have already estimated the productive and dynamic efficiency detriments that would result from the merger. While these were estimated in the context of consideration of the wool scouring market, we do not think consideration of a substantial lessening of competition in the small domestic customer wool grease market would result in any further productive or dynamic efficiency detriments, because:

- Wool grease is a by-product of the wool scouring process; and

- The quantities in the small domestic customer wool grease market would be a tiny fraction of total wool grease sales by the merged entity. In other words, the merged entity would continue to face the same competitive pressures for the vast bulk of its wool grease output.

To estimate the extent of the allocative inefficiency detriment, we have applied the same model developed in respect of the scouring market, evaluated across the same range of assumed price increases and elasticities.[2]

2.   Model Assumptions and Data

Our model is set out in an accompanying confidential spreadsheet titled "Allocative detriment in lanolin market 2ⁿᵈ auth 5032015.xls".

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[1]   We understand that some wool grease is also sold in jars to individuals for uses such as painting equestrian horses' hooves, but the amounts are understood to be so minor as to be de minimis.

[2]   In the time available, we have not analysed whether these price increase and elasticity assumptions are the most appropriate to use or not.

To calculate the pre-merger price, we used the weighted average price paid by **[REDACTED]** and **[REDACTED]** over the period July 2014 - January 2015, as per the spreadsheet "LanNZ Sales Jul'12-Jan'15.xlsx" provided by CWH.[3]

We have calculated the pre-merger quantities for **[REDACTED]** and **[REDACTED]** using the July 14- Jan15 figures from the spreadsheet "LanNZ Sales Jul'12-Jan'15.xlsx" provided by CWH, and multiplying these by 12/7 to obtain annual figures. Note that this approach is not perfect, but provides a reasonable approximation. In particular, extrapolating out on a straight line basis to achieve an annual 2015 market quantity does not allow for seasonal variation within a year.

We have assumed that variable costs are zero. This is motivated by the fact that wool grease is a by-product of the scouring business, and for simplicity. We note that this assumption results in a conservative estimate for the allocative efficiency detriment, since transport/delivery costs and any other variable costs are ignored, and a low (zero) variable cost increases the size of the deadweight loss.

3. Results

3.1. Present value analysis

The results of our analysis are shown in Table 3.1 below. Our analysis is carried out over a five-year timeframe following the merger, and we discount to obtain present values, using a 10 percent real discount rate.

Table 3.1

	Demand Elasticity		
Price increase	-0.05	-0.5	-1
5%	**[REDACTED]**	**[REDACTED]**	**[REDACTED]**
10%	**[REDACTED]**	**[REDACTED]**	**[REDACTED]**
15%	**[REDACTED]**	**[REDACTED]**	**[REDACTED]**

Source: NERA analysis

3.2. Cross-check

As a sense check, we compared the maximum annual allocative inefficiency in our scouring model (NZD**[REDACTED]**) to annual market revenue (NZD**[REDACTED]**), finding that the allocative

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[3]   Our analysis is based solely on CWH data because it is understood that there have been no direct sales of wool grease to either **[REDACTED]** or **[REDACTED]** by NZWSI.

inefficiency equates to roughly 8.9 percent of market revenue. If we apply this proportion to the small domestic customer wool grease market revenue (NZD**[REDACTED]**), we find that the allocative inefficiency per year is NZD**[REDACTED]**. The corresponding 5-year present value is NZD**[REDACTED]**. We note that this number is approximately consistent with our results if we use an elasticity of -0.5 and a 10 percent price rise.