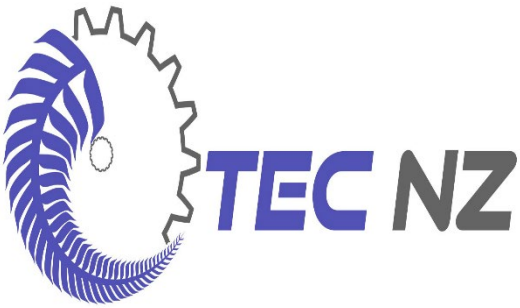
Economic analysis to compare the operational costs of running a raw wool scouring plant in the Merriwa district of NSW with that of those currently operating costs in China.

Report prepared by Woolconsult Int Pty Ltd/TEC-NZ for the Merriwa District Progress Association (MDPA)



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(1) Preface

The Merriwa District located in the northern region of the Hunters valley in NSW, Australia has a long and proud history of growing fine quality wool dating back nearly 200 years.

Like many rural towns across Australia, Merriwa has experienced a decline in job opportunities particularly for young people over the past few decades.

A key objective of the Merriwa District Progress Association (MDPA) is to explore ways to rejuvenate the district in terms of job creation.

Based not only on a long and proud tradition of wool growing in the Merriwa district, but a significant amount of fine wool is also still grown today in and around Merriwa and particular to the west of it.

Because of this, it was decided to explore the possibilities of setting up wool processing facilities in the Merriwa region, which if proved to be commercially viable would create (a) Jobs and (b) Add value to the wool grown in the district.

However, it is one thing to set up wool processing facilities, but to be able to be commercially viable one has to compete primarily on price in the International markets unless there is a big point of difference in the product, service, or brand equity.

When it comes to the International market today, in early-stage wool processing which includes raw wool scouring, top-making, shrink proofing, and spinning, China over the past two decades through investment and acquisition of knowledge, and lower operating costs have almost gained a Monopoly, as a result of today China purchases around 90% of Australia's annual wool clip of apparel wools, which has grown from around 10% in the 1990s.

As far as further downstream wool processing is concerned, which included knitting or weaving and garment making, although these stages are still carried out in other countries but often based on part processed wool products i.e wool tops, yarns, etc from China, China still has the "lion share" of manufacturing when it comes to these.

Although costs in China have risen significantly in recent times, to assess the commercial viability of setting up wool processing in the Merriwa district, one has to assess whether it could compete today with China.

Therefore, it was agreed between MDPA & Woolconsult Int/TEC-NZ that the latter would carry out a small study by conducting an economic analysis would be made to compare Merriwa Vis China.

We could have looked at every manufacturing stage in the wool apparel manufacturing pipeline which would include raw wool scouring, top making, shrink proofing, dyeing, spinning, knitting, or weaving, garment making, testing & QC, etc. Also, we could have come up with details on capital investment land, building & design, & processing machinery, etc, and operational & processing manuals for staff training. But of course, such an approach would take a lot of time and effort and would be significantly much more expensive.

Therefore, it was an initially agreed on a study based on purely comparing the operational costs of running and operating a raw wool scouring plant (The very first stage in the wool manufacturing chain) of a processing plant in the Merriwa district with that of the current operating costs of such in China.

It's perhaps noteworthy to say that less labour is needed in early-stage wool processing and increases throughout the manufacturing stages with garment making being much more labour intensive.

(2) Background

Wool fibre takes a long route from the back of the sheep to the back of a discerning end customer i.e., the consumer. Without exception wool of any fibre has the longest supply chain.

Indeed, true high-quality wools begin their life with careful wool producers who make special efforts to look after their wool while it is grown, shorn, and shipped to market.

It is natural for a business owner/wool producer to want to market their product to generate added value and demand. It is easy to note a woollen suit for example at retail costs AUS $1,000, in some cases significantly more using a kg of wool than the farmer receives say around AUS $ 20 per Kilo.

This obvious price disparity has in the past tempted wool producers or grower groups to establish their downstream processing to generate added value in the market. To date, none of the farmer group initiatives has been successful. So why is this the case ?.

The reason for these historical commercial failures can be put to a single cause, being that of a lack of understanding of how the wool processing chain works.

Unfortunately for the wool producer, the true marketing of the fibre starts by creating demand at a retail level for the consumer that, in today's world sits in the discretionary spend category.

looking at the players in the supply chain, it is retailers or brands who are the decision-makers. They decide what to put in their stores, and not unlike a woolgrower who may assess the success or otherwise based on the profit per bale of wool, one of the key measures is the profit they make based on a unit of floor space i.e., per sq metre, in their stores.

Thus, It is where the market demand 'PULL' is generated. It is NOT generated at the producer level where the potential volume of wool is available from producers to be processed, which we refer to as market 'PUSH.'

To use the old saying "You can't push a piece of string, but you can pull it" the same applies to the wool market. You cannot push wool into the market.

The most important assumption in a wool processing feasibility study is accurately estimating the volume of wool that can be processed per annum allocating the correct capital expenditure, with correct fixed/variable operating costs.

In the 1990s there were quite a number of large wool raw wool scouring and wool combing plants in Australia some of them established more than 100 years ago. In fact, at that time the leading NZ-based textile machinery manufacturer of early-stage wool processing equipment Andar Ltd employed Melbourne 14 full-time engineers to service these plants. Then suddenly over a relatively short period i.e. In about 3 years, they all closed, and most were dismantled and ended up in China.

The next question is why?

The primary reason was they were unable to compete, It was not only due to cheaper Chinese operational and processing costs at that time as often perceived as the only reason. But an additional factor played a major part.

At that time, the then Chinese government imposed a tax or tariff on Chinese wool manufacturers who imported any part-processed wool products such as scoured loose wool, wool tops, yarns, etc. The exception was that of the base raw material, in this case, greasy raw wool, which was not taxed or carried any tariff.

The net result of this tariff meant that it was cheaper to import greasy wool from Australia, scour it and comb it in China.

At that time, the imposition of this tariff was a major contributor to the loss of more than 6000 jobs in rural areas of Australia. Unfortunately, this tariff still exists, and it remains the major obstacle to this day for part processed wool going into China.

When assessing the potential volume of wool available to be processed one should concentrate on the customer base that wants the products and not the amount of wool grown in a specific area or region that could be processed.

This document goes into some detail on the fixed/variable operational costs of early-stage wool processing and must assume the production volume has been correctly estimated.

By-product harvesting is the next most crucial factor in the economic viability of early-stage wool processing.

With wool production worldwide in decline, the positive upside is the increased demand for wool grease. In the past few years, this has ranged between US$ 4-8 kg.

A few years ago, when the price of wool grease reach more than the US $ 8 per kilo, it was reported that Chinese early-stage wool processors were offering their customers spinners to scour their wool free of charge.

Lanolin is extracted from wool grease and then refined before being sold into the pharmaceutical & cosmetic industry.

A few years ago, the CEO of a major European early-stage wool processor when asked at a press conference by a reporter “who are your company’s best and biggest customers.” The press was expecting him to reply by saying someone like Marks and Spencers or H & M, but his reply was Nivea and L’Oréal.

It is interesting to note that about 8 years ago the world’s largest refiner of lanolin and buyer of wool grease Singapore-based NK Chemicals ltd, invested in a wool scouring and top-making plant in Johor, on the Malaysian peninsular just across the Singaporean border. The plant was called Compass Wool Processing ltd. The reason for the investment was to secure supplies of wool grease, at a time when sheep numbers across the world, not just in Australia had been declining, hence the amount of wool grease. In this case, wool grease was the primary product and wool secondary.

On paper, everything looked great i.e., Cheap land and building costs, cheap labour, close to a new deepwater container port, and the wool processing equipment was refurbished second hand machinery procured from Europe as mills closed there.

Australian wool exporters were invited to send raw wool there to be scoured and made into tops on route to spinners most of which are Chinese. However, they soon found that the economics did not add up due to the Chinese tariffs imposed on part processed wool. The result was that the mill hardly got going, and NK Chemicals did not get the wool grease they expected and ended up closing and offloading the facility i.e., Building, land, Machinery etc.

The price of wool grease has a major economic benefit to the overall process. The profit/loss of a wool washing plant can be based on this point alone. There are global buyers for wool grease which use a global price point based on quality. This means both China and Australia would evenly receive the benefit of higher wool grease prices.

(3) Wool Scouring Operations

Wool scouring operations fall under two types of operations commission scours and integrated mills. As these operations exist equally throughout the world, there is a wide variation in the operating conditions.

However, the wool washing systems will be processing fine wools for top making and worsted spinning, or course wools for woollen spinning. It is common for commission wool washing companies to be processing all types of wool and this places additional demands on the flexibility of the scouring operation.

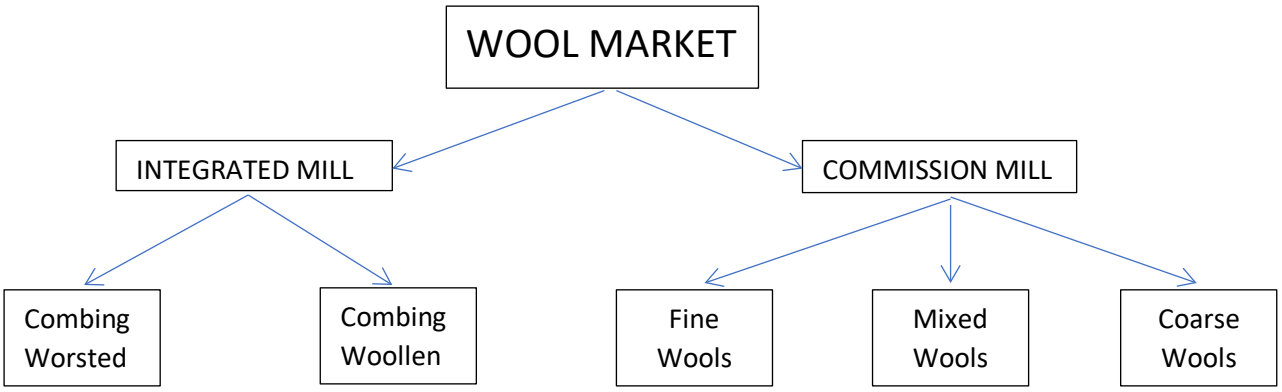

Fig 1: Comparison of an integrated mill vis a mill operating on a commissioned basis.

The next step after the grower is the wool scour to remove the impurities. As shown in the chart below these impurities vary according to the breed of sheep and can vary dramatically within breeds according to the growing location and environment.

Type of wool	Crossbred Wool			Merino Wool		
Impurity	Minimum	Average	Maximum	Minimum	Average	Maximum
Grease %	2	6	9	10	15	20
Suint %	2	8	12	2	6	10
Dirt %	8	15	30	6	15	30

Fig 2: Comparison of the amount of impurities in Crossbred vis Merino greasy wool.

As wool is a natural fibre and very variable in its properties there is no single way in which it should be processed. The wool type/breed of sheep and geographic location of the animals all have a bearing on how the impurities on the fibre it produces should be best and most efficiently removed.

Any configuration of semi-modern machinery that has been manufactured by any of the current wool washing machinery manufacturers in the world is capable of properly adequately removing the impurities on any type of wool fibre put through the machinery, however, the quantity, quality, and

cost of the process along with the yield of the cleaned fibre are highly variable. This document intends to demonstrate to investors how to decide on what configuration best suits their factory.

The modern comprehensive wool washing systems reflect the many changes that have historically been the focus of textile engineers in pursuit of continuous operations while also adopting modern detergents and mechanical developments for increased reliability and in recent years increased efforts to produce a higher quality of cleaned wool with maximum process efficiency. Environmental and green energy pressures and increased value of by-product recovery have also influenced wool washing machinery evolution.

Modern wool washing factories see the washing line as only part of the overall washing operation. How the washing machine (scour line) is integrated into other machinery is vital to the process. Technology for wool grease and heat recovery, heavy solids removal and rinse water treatment is of major importance. The numbers offered in this document assume the supporting services are also installed at the factory.

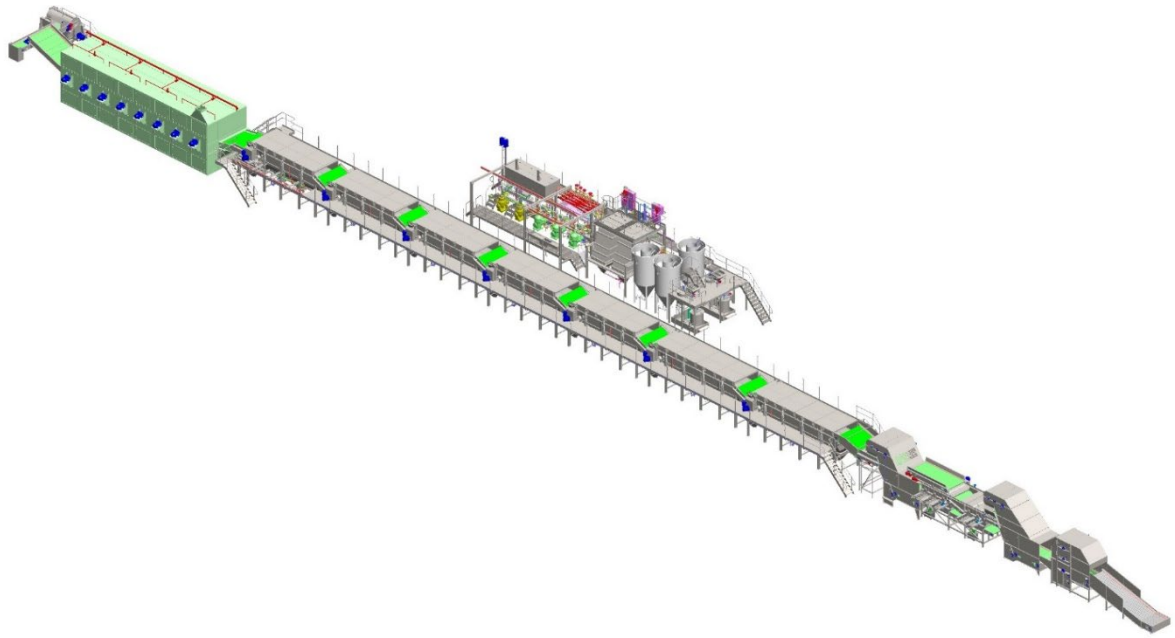

Fig 3: Schematic diagram of a Raw Wool Scouring Plant

(4) Payback Analysis Breakdown

(4.1) Capital investment and return

The initial equation is, how much capital should be invested into a wool washing factory to remove impurities consistently and economically from a given amount of wool over a given period at what cost and expectation of return?

It is essential to the business model that initial assumptions are accurate and well-considered.

The costs of a factory fall into two specific areas

- Fixed Costs: This covers fixed costs that are incurred whether the factory processes any fibre or not such as management salaries, interest, machinery amortization, etc
- Variable Costs: This covers costs that are incurred on a kg processed basis such as water, electricity, detergent, steam, etc

The return of a factory investment is

- Revenue generated by the wool washing process. This can be either directly to a customer as with a commission wool washing business or applied internal revenue generated as with a top-making mill.
- Revenue generated by the sale of by-products, wool grease sales

Contribution

- This is the difference between the variable costs incurred to wash wool and the total revenue generated by the combined washing and by-product sales.

As an example, we provide a graph of a typical ten thousand tons per year wool washing factory. Even at a very early stage, this graph can quickly highlight the breakeven point and viability of a proposed investment. The horizontal line is the wool volume (in thousand tons), and the vertical column is dollars (million) per year. The fixed cost line becomes horizontal across the chart (brown); the contribution is an angled line (blue). The steeper the contribution line and the lower the fixed cost line the more profitable the business will be.

From this graph, it is easy to see the following

- The volumes required for breakeven
- Once over the breakeven point the profitability of the business
- Is the capital invested and management costs in line with the business return?

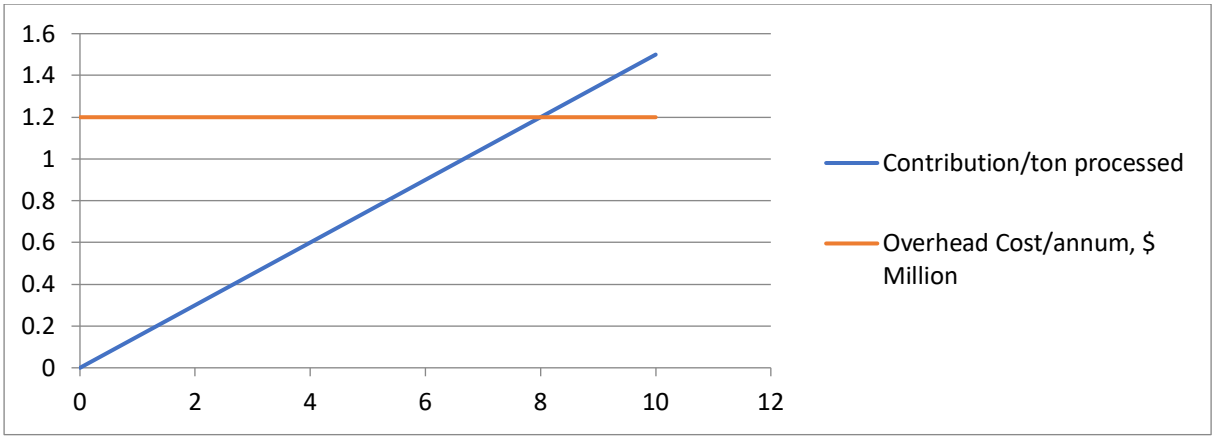

Fig 4: Graph to assist in assessing the breakpoint of profitability of a raw wool scouring plant.

Like all assumptions how to arrive at the correct numbers to apply to the graph is very important. To assist with the accurate input of this data we offer the following guides and formulas in their specific groups

(4.2) Wool Volume and type

The most important assumption is the volume of wool that the company intends to process. As most of the costs for a wool washing factory are fixed costs the correct assumption of wool volumes is extremely important. The company's profitability can only be achieved when target volumes and process margins are achieved. The volume of wool and type will also dictate many of the fixed costs such as the building requirements, working width of the scour, amount of supporting equipment such as openers, pressing machines, and labour requirements. As a guide, the production design capacity for TEC-NZ washing lines is as the chart below. For the Annual tonnage, the Chart assumes 6 days a week 24 hours a day at 95% availability as explained below.

	Fine Wool		Course Wool	
Scour Working Width	Design kg/hour	Tons/Annum	Design kg/hour	Tons/ Annum
3000	2800	19,500	4500	31,000
2500	2000	13,800	3000	20,700
2000	1500	10,250	2500	17,250
1500	1000	6900	1500	10,350

Fig 5: Typical production wool throughput rates depending on the wool type and working width (in cm) of a raw wool scouring line,

(4.3) Hours of Production

Many wool washing operations operate on a six-day week using the seventh day for cleaning and maintenance. Recent developments have improved grease and solids removal as well as improved self-cleaning of the machinery indicating there is the need for only 2-3 hours a week for cleaning and maintenance. This can often be done without shutting down.

For the payback analysis, however, we have chosen to assume 48 weeks a year, 6 days a week, 24 hours a day. We have also assumed the machinery at 95% availability to allow for line changes and unforeseen stoppages. This is a conservative estimate and does allow for some capacity expansion if necessary.

(4.4) Operating Costs

The variable cost calculation is what does it cost to remove the impurities from the wool planned to be processed (operating costs)? The cost of utilities for process operations can vary around the world, however for most countries surveyed by TEC-NZ the average cost fall within a reasonable range.

The chart below shows the average of this range showing both Australian and Chinese operating costs. It should be noted that there is only a very minor variation in costs when translated to cost/kg

Utility & Consumable	Units	Usage/Greasy Ton	AU Costs US$	China Costs US$
Labour	Hours	3.7	$15.00	$ 3.50
Electricity	Kilowatt-hour	150	$ 0.12	$ 0.12
Fresh Water Supply	Cubic meter	12	$ 0.20	$ 0.20
Fuel / Gas	megajoule	3,250	$ 0.006	$ 0.006
Detergent	Litres	12	$ 2.50	$ 2.50

Unfortunately, we were unable to obtain actual accurate costs for utilities based on the Merriwa district, and the values we used for Australia may be conservative?

Fig 6: Utility & Consumable cost comparison with China: Raw Wool Scouring.

(4.5) Capital, Fixed Costs

This analysis assumes that existing land and buildings are available and existing administration organization manages the operations around the scour. It is assumed that the costs of this will be known and be able to be inserted into the payback model.

The main fixed cost associated with the investment in new wool washing equipment is the amortization of the capital cost. In this analysis we have set this at 5% per year, representing the economic life for cost accounting purposes

The annual cost of repairs and maintenance has also been included as a fixed cost in the analysis. Although not strictly correct it needs to be included in the overall operating costs. Based on a history of companies using a preventive maintenance program we have included this number at 5% of capital cost.

(4.6) Environmental Considerations

In this document, we have taken the assumption that all the necessary environmental consents and regulations have been agreed with the government authorities. In today's world, environmental regulations will certainly influence the selection of machinery, constrain the amount of water able to

be economically used and force water treatment plants to reduce the COD of the water being discharged from the factory. The management must have a proper and complete understanding of these regulations and the machinery requirements and the commercial restraints they may bring. We have provided the average costs of the environmental costs in the chart below

The effluent treatment costs can vary from US$ 0.50 to US$ 5.00 a cubic meter. As most of the processing is now in China a conservative average of US$ 1.50 a cubic meter has been used.

Sludge disposal is also a significant cost for this reason it is included separately. The amount of sludge produced can change due to the yield of the wool and the type of effluent treatment system used. The sludge produced in the table below assumes the wool being washed has an average yield of 68%. Using a physical/chemical method to separate the sludge from wastewater the average solids content is 30%

Utility & Consumable	Units	Usage/Greasy Ton	AU Costs	China Costs
Combined Effluent@5000ppm BOD	m^3 of effluent	5	$ 1.50	$ 1.50
Rinse Water Treatment	m^3 of effluent	7	$ 0.20	$ 0.20
Sludge Disposal 30% solids	Ton	0.4	$ 50	$ 50

Fig 7: Utility & Consumable cost comparison with China: Effluent Disposal.

The environmental restrictions may well have a serious impact on the amount of money invested and the expected return over a given period.

(4.7) Wool Grease Recovery

As wool grease is a high-value by-product there is now a lot of focus on recovery rates. Unfortunately, there is also a lot of misrepresentation from different companies (especially in China) about the amount of wool grease recovered.

It is very important when talking about wool grease recoveries on wool that calculation is made on clean wool NOT greasy wool. There are two simple reasons for this, firstly the amount of grease on the wool is relative to the micron and weight of the wool produced by the sheep, and secondly, the yield has little effect on the amount of grease in the wool but a large effect on the overall weight of the wool. In summary, it is impossible to maintain an accurate weight of grease on greasy wool without additional calculations.

Commission Scours washing 100% Australian wool has the advantage of receiving a wool quality report from AWTA that has an accurate calculation of the amount of recoverable wool grease it contains.

In China or Europe, wool is sourced from many different countries many of which do not provide test certificates with accurate reports of wool grease quantities, so an educated guess is necessary based on experience.

The recovery % expected on clean weight at corrected 16 % regain

Micron	V M Content	Yield	Grease Recovery
18 and below	FNF	75%	9.8+%
19	FNF	72%	9.5%

20	FNF	72%	9.5%
21	FNF	75%	9.3%
22	1%	72%	9.2%
23	1%	70%	8.9%
24	1.5%	68%	8.5%
25	2%	68%	7.5%
26	2%	68%	6.9%
Lamb's Wool			12-14%
Crossbreed Wool			2-4%

Fig 8: Table of recoveries: averaged over ten years by Australian Top makers

Other influences on the grease recovered on clean wool is

(a) If the average yield is typically Australian at 65% then take off 1% recovery.
(b) If the VM on the finer microns that are listed FNF is 1.5% or higher take of 1% recovery.

Example 19 micron of 65% yield and 2.4 % VM would only yield 7.5% wool grease on clean weight.

So, the type of wool being fed to the scouring has a considerable influence on what you can recover.

Going by the chart and calculations above the average recovery of wool grease is around 8.5% on clean weight of wool. The average price of wool grease over the past couple of years is US$ 5.00 so these numbers have been used in our analysis of the payback

(4.8) Equipment Considerations

Wool Washing Factory requirements

For a company to be able to wash wool efficiently and cost-effectively requires planning machinery that optimizes the usage of detergent, water, steam, gas, compressed air, and electricity. There is also a by-product recovery of wool grease and systems to remove the heavy dirt from the washbowl liquor.

To achieve this TEC-NZ offers a comprehensive wool scouring process. The washbowls are only a small part of the overall process. To be able to achieve the low operating costs offered in the payback models the wool washing operation must optimize the labour, energy, and water resources

The layout and area allocated for the different processes within the factory such as raw wool handling systems, drainage, and product flow through the factory are often not considered at the early planning stage of a factory. There are often building restraints and by-laws to consider along with the financial cost of a building. All too often the result is a building that is undersized and incurs an additional cost daily throughout the life of the company. For this reason, we have listed the requirements of a wool washing factory and the area/location on how to layout properly to optimize the operational cost.

(4.8.1) Machinery Selection

With both integrated and commission mills the total wool planned to be washed is the major deciding factor in any wool washing factory payback. The calculations on payback are influenced by the machinery capacity (working width), along with the configuration and efficiency of the machines

selected. To be able to accurately configure a wool washing machine to best suit a particular factory we need to do this in three stages

(a) Machine capacity (working width)

To be accurate with this we need to know the anticipated tonnage of wool to be processed on a monthly and yearly basis. It is also important to know the average batch size of each lot. For example, if there are many small lots sizes to be cleaned maybe two smaller machines would be more efficient than one large machine. Remember the overall capacity of a machine is vital to the profitability of a raw wool scouring line.

When selecting a plant, the calculation of a process line should be 20% greater than the proposed volume to be processed of a machine should plan 80% total efficiency. This is based on 95% plant availability (5% downtime for mechanical breakage). Wash down and line change should be around 5-7% of the total time. Around 8-10% allowance for annual shutdown and company holidays.

(b) Machinery configuration

The selection of opening, blending equipment, the number of washbowls, and the type of dryer are very dependent on the type of wool to be washed. This selection and the flexibility of the configuration are especially important to the overall efficiency of the factory. There are several standard selections offered based on the average micron and yield of wool proposed to be processed. It is recommended that these standard configurations are used as a starting point for the company's initial selection. The TEC-NZ machinery is nearly all interchangeable for example 6m long washbowl (3 hoppers) or an 8m long washbowl (4 hoppers).
There are often constraints facing a customer with the initial configuration such as the size and length of an existing building or capital they can invest.

TEC-NZ understands this and is willing to work closely with the customer during this important initial selection process to ensure the best outcome for the customer.

When selecting the correct machine for a given factory there are three major separate drivers

(a) Savings on variable costs such as energy, water, and labour (directly calculable on the financial model)

(b) Improved efficiencies around the factory such as improved throughput (again directly accountable to the financial model)

(c) Improved quality of the fibre being processed such as reduced ash levels or improved colour of the final product. These are always more difficult to quantify but are every bit as important as the more obvious returns of items 1 & 2. TEC-NZ has often observed

conservative expenditure in this area. For this reason, we provide a series of base models from which calculations can be made.

(5) Summary (key Points)

- The potential main customer s early stage processed wool i.e., Scoured or Combed top would be primarily Chinese companies i.e., Chinese top makers or Chinese spinners, respectively.

- The tariff the Chinese government puts on part-processed wool goods is the most crucial factor in this economic analysis. They simply want our base material i.e., greasy wool, so they can add value at each stage and create or maintain jobs. It is perhaps the same with our iron ore, they do not want our steel but just the base material.

- Having a plant that processes more than 8 million kilos of greasy wool (fine) per annum, would appear to be the "break out" point in terms of capital investment. i.e., The point of profitability.

- To have sufficient production capacity to process 8 million kilos a scouring line having a working width of 2000 cm (2 metres) would be required, and allowing for growth it may be worthwhile considering a 2.5 metre or possibly 3-metre-wide plant? Or for flexibility maybe two smaller machines may be worth considering?

- Most plants in China operate on a 6 day round the clock working week, with the seventh day i.e., Sunday used for cleaning and maintenance. In making a comparison we assumed that a plant in Merriwa would "run on the same lines"?

- Labour costs in China are still somewhat cheaper than in regional Australia, but because early-stage processing of wool does not require that much labour, then it has less of an economic effect than one perhaps could expect. It would be different if we were looking at late-stage wool manufacturing e.g., making-up (Tailoring) of a man's suit, where the operation is much more labour intensive.

- Today utilities & chemicals costs are similar between China and Australia, so the net result is that there is not much difference.

- Regarding capital and fixed cost, it was difficult to assess and make a comparison because we have no information as to the land and building costs in the Merriwa district. We can only say at this stage that a 2-metre width "turn-key" plant (Minimum

width required) would cost in the order of 4 & ½ million Australian $, Plus, commissioning and training would be in the order of 1/2 million Australian $.

- Regarding liquid effluent and solid effluent (sludge) it was difficult to assess and compare because we did not have any local cost information.

- Wool grease recovery i.e., amount, efficiency, and yield. Appears to be the second most principal factor in the equation.

(6) Conclusion

- It seems that the Chinese over the past two decades have "sewn up" or depending on how you look at it or "stitch us up" concerning wool processing, particularly when it comes to early-stage processing. This has been cemented by the imposition of the tariff they put on the import of part processed wool goods.

- In addition, other factors which further "cement" their position which was not looked at as part of this study include.

    - Over the past two decades, the Chinese wool processors and manufacturers have acquired vast knowledge and experience by inviting foreign experts in many aspects of the business i.e., technicians, designers etc
    - In more recent times most Chinese wool processing companies have invested in the latest and state of the art processing equipment.
    - Since the Chinese government introduced new environmental laws in 2015 as part of their "clean up China" campaign. Chinese companies including wool processing ones have invested heavily in water usage reduction, water recycling, the adaption of low-temperature processing methods, effluent treatment and disposal, and reduction in carbon emissions i.e., "Solar panels are everywhere" etc
    - Chinese companies and local governments have invested in wool processing and product development R & D centres, examples include XINAO's Knitwear Development Centre (KDC) located in Zhejiang province and Nanshan Wool Development Centre located in Shandong. Also, one of their leading universities i.e., Dongguan in shanghai has a wool development section.

- So overall it looks like the figures do not add up for setting up a wool processing operation in Merriwa or perhaps anywhere else in Australia. So where does that leave the Australian wool industry with such a reliance on China?

- There is a fear that the Chinese may impose large unworkable tariffs on the import of Australian grown wool in greasy form. Comparably, they did to the Australian wine industry and to a lesser extent on beef. I think the saving grace is unlike with wine, China cannot source sufficient fine wool in the large volumes they need from any other

country. It is fine wool they need for making apparel (clothing) in the area they specialise in. Most of New Zealand wool is course and goes into carpets and rugs and is not suitable in the main for clothing. South Africa & South America produces some apparel wools but only a fraction of the amount Australia does i.e., about 10%. The other factor is that Chinese companies have invested heavily in state-of-the-art equipment, and as far as early-stage processing is concerned the machinery is wool processing specific. The wool processing industry today in China employs thousands of workers located in regional towns. Some of the wool processing factories are "mega" and some of the companies are listed on the Shanghai stock exchange.

(7) Footnote

- In working on this study and putting this report together, in some cases we did not have access to some information about local costs. In addition, some of the local values we have worked on maybe way off the mark. We have attached a spreadsheet in PDF form which we used to make the cost comparison. If there are any aspects, e.g., utility costs, labour costs etc, etc that you feel we should re-work, we are more than open to doing so if you can feed us with local cost information that you feel would be more accurate.
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Payback spreadsheet (Attached)