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# **PRIMARY INDUSTRIES MINISTERIAL COUNCIL**

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## **AUSTRALIAN ANIMAL WELFARE STANDARDS AND GUIDELINES - LAND TRANSPORT OF LIVESTOCK**

### **PROPOSED AMENDMENT TO THE**

### **LAND TRANSPORT OF LIVESTOCK STANDARDS (SB4.5)**

### **BOBBY CALVES TIME OFF FEED STANDARD**

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**Decision Regulation Impact Statement**

**(As at 6/7/2011)**

**Edition 1.0**

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This regulation impact statement was prepared for Animal Health Australia by Tim Harding & Associates in association with Rivers Economic Consulting. The assistance of the members of the Animal Welfare Committee and Dr Kevin de Witte, Mr David Basham, Ms Helen Dornom, Ms Bridget Peachey, Mr Peter Bath, Mr Christian Mulders, Mr Noel Kelson, Mr Scott Turner and Ms Linda Walker in supplying information and advice is gratefully acknowledged.

## FOREWORD

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Animal Health Australia is a not-for-profit public company established by the Australian, state and territory governments and major national livestock industry organisations. The company is a dynamic partnership of governments and livestock industries that strengthens Australia's animal health status and reinforces confidence in the safety and quality of our livestock products in domestic and overseas markets. The partnership initiates and manages collaborative programs that improve animal and human health, food safety and quality, market access, livestock productivity, national biosecurity and livestock welfare.

The Australian Animal Welfare Strategy (AAWS) is an Australian Government initiative that will guide the development of new, nationally consistent policies and will enhance existing animal welfare arrangements in all Australian states and territories. The Strategy was developed by the Australian Government in consultation with state and territory governments, animal industry organisations, animal welfare groups and the general public.

The Primary Industries Ministerial Council in May 2009 endorsed the *Australian Animal Welfare Standards and Guidelines – Land Transport of Livestock* ('Land Transport Standards' - LTS) and agreed in relation to the management of bobby calves, a science-based standard for maximum allowable time off feed (TOF) will be prepared through Animal Health Australia within 12 months dependent on completion of a Regulation Impact Analysis. Part of the reason for the time taken to issue this report has been the need to undertake the study to provide relevant Australian scientific findings. This research and this Regulation Impact Statement (RIS) is funded by governments and the Dairy Industry.

This RIS solely assesses the proposed standard for the matter of time spent without feed for bobby calves in transport for inclusion in the LTS. The standards are intended to establish a basis for developing and implementing consistent legislation and enforcement across Australia, and provide guidance for all people responsible for livestock during land transport. They are based on scientific knowledge, recommended industry practice and community expectations.

The standards apply to all those responsible for the care and management of transported livestock, including: drivers, transport companies, owners, agents and livestock handlers at farming enterprises, depots, saleyards, feedlots, and livestock processing plants. Consultations and collaborations have been conducted during development under the guidance of a broadly representative Reference Group in 2009 and 2010. A period of public consultation in 2011 has also been conducted which has served to highlight ethical and practical issues and has led to the development of a better package.

Animal Health Australia has considered all stakeholder responses in developing the final standards and guidelines for recommendation to Primary Industry Ministers. On behalf of Reference Group members I would like to thank all those who took the time and effort to provide input into the development of this important livestock welfare policy reform.

Mike Bond  
CEO Animal Health Australia

## SUMMARY

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This regulation impact statement (RIS) assesses a proposed amendment to the *Australian Animal Welfare Standards and Guidelines - Land Transport of Livestock*<sup>1</sup> ('the existing standards').

The existing standards were endorsed by the Primary Industries Ministerial Council (PIMC) at its 15th meeting on the 21 May 2009. As part of this decision, PIMC also agreed that, with regard to the management of bobby calves; a science-based standard for maximum allowable time off feed be prepared through Animal Health Australia (AHA) within 12 months for consideration by PIMC noting that this will require completion of a RIS.

AHA has facilitated the development of a science-based standard for bobby calf time off feed (TOF) during livestock transport that needs to be considered in the context of other existing standards relating to the transport of bobby calves, such as the maximum time off water and maximum time spent in transport, that also address the risk to the welfare of calves.

The problems giving rise to the proposed standard amendment may be summarised as the need for:

- a TOF standard in addition to existing standards regarding the transport of bobby calves, to further minimise risks to animal welfare;
- a national standard as compared to different state and territory standards, to achieve national consistency in regulation;
- a science based, feasible and verifiable standard, that is capable of being incorporated into regulations; and
- certainty for industry by providing clarity in mandatory national requirements for maximum TOF, across state borders.

The feasible alternatives assessed in terms of costs and benefits are:

- **Option A:** no amendment of the Australian standards (i.e. the minimum intervention option, no TOF standard);
- **Option B:** the proposed standard amendment i.e. 30 hours maximum TOF;
- **Option C:** a standard amendment of 24 hours maximum TOF; and
- **Option D:** a standard amendment of 18 hours maximum TOF.

The relevant incremental costs and benefits of the various options relative to the base case are summarised in the following table: (refer to Part 4.3 of the RIS for details).

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<sup>1</sup> Animal Health Australia, 2008

**TABLE 4: COMPARISON OF COSTS AND BENEFITS FOR EACH OPTION (FROM PAGE 30&40)**

<b>Option</b>	<b>Expected incremental economic costs<sup>1</sup>/ 5 years<sup>2</sup></b>	<b>Expected incremental economic benefits/5years</b>
Option A 'Base case'	Nil	Nil
Option B (max. 30 hrs TOF)	\$0.049 million in enforcement costs	Benefits to animal welfare and national consistency as listed in Part 4.3.2
Option C (max. 24 hrs TOF)	\$13.21 million	Similar benefits to animal welfare as Option B but likely to be less national consistency than under the base case or Option B.
Option D (max. 18 hrs TOF)	\$115.68 million	Similar benefits to animal welfare as Option B but likely to be less national consistency than under the base case or Options B and C.

Notes:

1. Economic costs are based on farm gate estimates only.
2. Using a 7% discount rate as recommended by Office of Best Practice Regulation.

On the basis of cost benefit, similar animal welfare benefits demonstrated by the relevant scientific studies and predicted national regulatory consistency, **Option B is recommended**. This conclusion would not alter even if there were significant changes to the assumptions and cost estimates made in this RIS because of the relatively large cost impacts of options C and D.

Whilst the extent of whole-of-chain business activity is known, the extent of the separate value created for the cost/benefit analysis (CBA) is more difficult to estimate and has not been done for this RIS. The post-farm gate downstream business impacts of the options are discussed in this RIS separately from the CBA (refer to Part 4.5 of this RIS & Appendix 1) but are not used in the CBA. A reduction in calf supply would have negative real effects on many businesses through the supply chain that they may not be able to adjust for, particularly in rural regions.

There would be no incremental costs to industry from the preferred option, and costs would be limited to a low volume of additional enforcement activities which are incurred by government, and in some jurisdictions the RSPCA. Benefits by way of reduced risks to animal welfare and national consistency would accrue, reflecting the reduction of risks associated with shifting from the uncertainty of a voluntary guideline to the relative certainty of a regulated standard (refer to Part 1.2.3 of this RIS). Thus the proposed standard amendment as recommended is unlikely to restrict competition. Adopting a shorter TOF standard is likely to have unintended and unpredictable consequences.

The proposed new standard for 30 hours TOF constitutes an enforceable 'outer limit' for maximum TOF and is supported by Australian and New Zealand scientific research. It is complemented by voluntary guidelines and 'best practice' arrangements which encourage lower TOF targets than the legal maximum. In practice, the vast majority of bobby calves are slaughtered at less than 24 hours TOF but flexibility is required to allow for transport and processing circumstances.

The short but effective public consultation confirmed that the welfare of bobby calves is an emotive issue. The larger number of submissions from animal welfare organisations and individuals support a shorter TOF limit. There is good support for a 30 hours TOF limit from some government agriculture departments and all industry respondents, in the context of the other related standards for calf transport. There is no unanimous support for a single, shorter, TOF option instead of the 30 hours.

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## 1.0 BACKGROUND

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### 1.1. INTRODUCTION

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This regulation impact statement (RIS) assesses a proposed amendment to the *Australian Animal Welfare Standards and Guidelines - Land Transport of Livestock* ('the existing standards'). These standards ensure the welfare of livestock during land transport, including both road and rail. The standards establish the basis for developing and implementing consistent legislation and enforcement across Australia, and provide guidance for all those responsible for livestock during land transport.

Under the AAWS National Implementation Plan, Animal Health Australia (AHA) has been appointed as the project manager for the conversion of the existing livestock model codes into standards that can be regulated. The method to develop the proposed standards was defined in the AHA business plan for the project, following extensive stakeholder consultation and consideration of a review of the existing codes of practice in 2005.<sup>2</sup>

The existing standards<sup>3</sup> were endorsed by the Primary Industries Ministerial Council (PIMC) at its 15<sup>th</sup> meeting on the 21 May 2009. As part of this decision, PIMC also resolved as follows:

AGREED that, with regard to the management of bobby calves, a science-based standard for maximum allowable time off feed be prepared through Animal Health Australia (AHA) within 12 months for consideration by Council NOTING that this will require completion of a RIS,<sup>4</sup> and that the preface to the Land Transport Standards be amended to reflect the change from 24 to 12 months;

The Animal Welfare Committee (AWC) which provides expert advice to PIMC has requested that animal welfare standards be: 'clear, essential and verifiable.' To complement these criteria, the four main decision-making principles used for policy analysis in the welfare standards development process are that they are:

- desirable for livestock welfare, and preferably supported by science;
- feasible for industry and government to implement;
- important for the livestock welfare regulatory framework; and
- will achieve a valid, intended outcome for livestock welfare.<sup>5</sup>

In accordance with these decisions, AHA has prepared a science-based standard for bobby calf<sup>6</sup> time off food (TOF) during livestock transport. The proposed standard amendment is for a maximum of 30 hours without a liquid feed from the time of last feeding to the next feed or slaughter of the calf.

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<sup>2</sup> Neumann, 2005

<sup>3</sup> Accompanied by a Regulation Impact Statement (Tim Harding & Associates, 2008)

<sup>4</sup> Even if such a standard would impose no additional costs on industry, it is likely to entail some additional enforcement costs to government. Alternative standards may also impose costs on industry

<sup>5</sup> Adapted from Linstone and Turoff 2002 The Delphi Method: Techniques and Applications III.B.I The Policy Delphi

<sup>6</sup> Defined in the standards as a calf not accompanied by its mother, less than 30 days old, weighing less than 80 kg liveweight, and usually a dairy breed or cross

In the LTS there are several standards applying to the transport of bobby calves. The relevant existing standard to be amended reads as follows:

*SB4.5 Bobby calves between 5 and 30 days old travelling without mothers must:*

- i) be protected from cold and heat*
- ii) be in good health, alert and able to rise from a lying position*
- iii) have been adequately fed milk or milk replacer on the farm within 6 hours of transport*
- iv) be prepared and transported to ensure delivery in less than 18 hours from last feed with no more than 12 hours spent on transports*
- v) have an auditable and accessible record system that identifies the calves were last fed within 6 hours of transport unless the journey is between rearing properties and is less than 6 hours' duration.*

It proposed that this standard be amended by the addition of the following clause:

- vi) be slaughtered or fed within 30 hours from last feed.*

The recommended maximum 30 hour TOF standard is supported by Australian and New Zealand scientific research (refer to Part 1.2.2 of this RIS).

The proposed standard amendment, if endorsed by the Primary Industries Ministerial Council (PIMC), is intended to be adopted or incorporated into regulations by the various jurisdictions, after which compliance with the standard will become mandatory. For assessment purposes, the RIS will need to treat the proposed standard amendment and other options as if they are mandatory;<sup>7</sup> and must use the existing Australian Standards as the base case for comparison of costs and benefits (see Part 5.2 of this RIS).

The RIS is required to comply<sup>8</sup> with the *'Best Practice Regulation - A Guide for Ministerial Councils and National Standard Setting Bodies'* as endorsed by the Council of Australian Governments (COAG) in October 2007. The RIS also complies with the *Victorian Guide to Regulation*.<sup>9</sup>

## 1.2. SETTING THE SCENE

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To set the scene for this RIS, this Part provides some general background information about the Australian dairy, livestock transport and meat processing industries as they relate to bobby calves.

It is important to emphasise that the role of this RIS is strictly to assess the proposed standard amendment, and not to assess existing commonwealth or state legislation, codes of practice, enforcement strategies or other considerations. Nevertheless, relevant background information may be helpful to interested parties in understanding the proposed standard amendment within its legislative, economic, national and international context.

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### 1.2.1 OVERVIEW OF THE AUSTRALIAN BOBBY CALF INDUSTRY

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<sup>7</sup> No costs are imposed if compliance with standards is voluntary

<sup>8</sup> As independently assessed by the Commonwealth Office of Best Practice Regulation (OBPR)

<sup>9</sup> State Government of Victoria (2007) *Victorian Guide to Regulation* – 2nd edition, Department of Treasury and Finance, Melbourne

### 1.2.1.1 THE DAIRY INDUSTRY AND NON-REPLACEMENT CALVES

The following background information has been largely provided by the dairy industry service sector organisation, Dairy Australia.

The dairy industry is Australia's third largest rural industry with direct employment of approximately 40,000 Australians; and annual production values of \$4.0 billion at farm gate, \$12 billion wholesale and \$2.9 billion in exports. The main dairy products are cheese (33%), drinking milk (24%) and milk powders/butter (37%).<sup>10</sup>

Lactation follows the birth of off-spring in all mammalian species including dairy cows, so the regular calving of dairy cows is fundamental to producing milk for collection and subsequent sale. In Australia dairy farmers calve their cows on average every 12-14 months. Calves are kept in suitable pens following their birth and subsequent removal from the cow. Most farmers feed calves daily although some may be initially fed twice daily. This daily feed is usually done straight after the morning milking, usually between 8 and 10am.

Dairy farmers keep most female (heifer) calves to rear as herd replacements. The male (bull) calves and beef cross heifer calves or heifers that are not required as herd replacements are not reared for milk production. In other words, the production and marketing of non-replacement calves is an inevitable and complementary consequence of dairy production.

In most Australian dairy regions there is a well established market for young dairy and dairy cross non-replacement calves, of which around 800,000 are produced annually on average, as shown in Table 1. Most are sold off the farm at between five and seven days old and are transported to an abattoir as 'bobby calves'. A small number of calves are sold to specialist beef rearing operations and/or purchased by beef producers to be reared; although the market for dairy beef is limited and unavailable for expansion. The remaining calves are usually destroyed at or soon after birth, especially in regions that do not have access to abattoirs.

The dairy farmer ensures the calves presented for sale are fed within 6 hours of loading at the dairy farm, and fit for the journey, and provides assurances in a vendor declaration<sup>11</sup> to this effect.

**TABLE 1: APPROXIMATE NUMBERS OF NON-REPLACEMENT DAIRY AND DAIRY CROSS CALVES BY STATE**

State	No. of cows <sup>12</sup>	No. of non-replacement calves <sup>#</sup>	End destination
Victoria	1,020,000	492,000	<b>Commercial slaughter at 5-7 days of age,</b> small/weak calves destroyed on farm, small numbers sold for beef rearing
Tasmania	132,000	63,000	<b>Commercial slaughter at 5-7 days of age,</b> small/weak calves destroyed on farm, small numbers sold for beef

<sup>10</sup> Dairy Australia, 2009

<sup>11</sup> National Vender Declaration Form (Bobby Calves), Livestock Production Assurance (LPA), Meat and Livestock Australia

<sup>12</sup> Australian Dairy Industry In Focus 2009, Dairy Australia. Table 3. No. of dairy cows (2008/9 estimated figures) p.12

State	No. of cows <sup>12</sup>	No. of non-replacement calves <sup>#</sup>	End destination
South Australia	100,000	48,000	<b>Commercial slaughter at 5-7 days of age.</b> In some areas calves are taken to a collection point, fed and then transported for commercial slaughter in Victoria. In other areas humane destruction on farm or limited numbers for beef rearing
New South Wales	185,000	89,000	<b>In Southern NSW calves are transported for commercial slaughter in Victoria.</b> In other areas humane destruction on farm or limited numbers for beef rearing
Queensland	110,000	53,000	Negligible commercial slaughter, humane destruction on farm or limited numbers for beef rearing
Western Australia	53,000	25,000	Negligible commercial slaughter, humane destruction on farm or limited numbers for beef rearing
<b>TOTAL</b>	<b>1,600,000</b>	<b>770,000</b>	

<sup>#</sup> Above estimates of surplus calf numbers are based on cows calving on average every 13 months, 5% losses at/soon after birth, 50% of remaining calves are males, 80% of all heifer calves are kept for rearing.

The average number of calves commercially slaughtered in Australia is estimated from Table 1 to be around 700,000 annually (91% of total non-replacement calves), of which 70% are born in Victoria. The remaining 70,000 (9%) on average are humanely destroyed on farm or sold for dairy beef rearing, mainly in Queensland and Western Australia where there is no commercial slaughter available.

#### 1.2.1.2 CALF TRANSPORT INDUSTRY

Approximately 35% of all non-replacement calves are purchased directly off farms by travelling calf buyers; and the remainder are taken to local calf scales, mobile scales or saleyards for sale. Generally small trucks or trailers are used to transport the calves at this stage. A few calves (<5%) are still transported by farmers to a local livestock market for sale, especially Friesian heifer and Friesian beef cross bull calves (higher value animals that are sought after for rearing). Only five 'calf' markets still exist in Victoria (Warragul, Pakenham, Colac, Warrnambool and Shepparton).

Once all of the calves have been gathered for that day, the calves may be loaded onto larger trucks (semi trailers) and transported direct to the abattoir. Most of the trucks transport the calves through the afternoon, arriving at the abattoir in the late afternoon/evening. At the abattoir the calves are unloaded and kept in pens until slaughtered. They have access to water whilst in lairage and are slaughtered as a high priority at the earliest opportunity.

#### 1.2.1.3 BOBBY CALF PROCESSING INDUSTRY

The red meat sector is Australia's largest agricultural industry and is estimated to contribute A\$15 billion annually to the Australian economy, employing over 55,000 workers directly in meat processing, exporting, wholesaling and retailing.

The majority of dairy calves slaughtered for meat are processed at export certified abattoirs that are regulated for food safety by the Australian Quarantine and Inspection Service (AQIS). The major export certified abattoirs are located in either Victoria (8 abattoirs and 2 domestic) or Tasmania (1 export and 1 domestic abattoir) and calves from SA (1 domestic abattoir) and Southern NSW may also be sent across the border for processing in Victoria for the export market. No significant processing of bobby calves occurs in WA and there is limited processing in northern NSW (1 export abattoir) and QLD. There are also other registered establishments throughout Australia that have the capacity to process calves but may move in and out of the trade according to demand.

Australian abattoirs collectively have facilities to kill a number of different classes of livestock over the year. Many plants are specific single species plants e.g. beef cattle, sheep/lamb/calves, pigs. Some plants are able to process large stock and small stock but they are on different chains in the same establishment. Bobby calves are slaughtered on chains designed for sheep and lambs. The supply of bobby calves is seasonal, with the greatest number being slaughtered in spring. This correlates to the times of lowest supply of sheep and lambs. Calf processing helps to ensure a continuing and sustainable operation for abattoirs and their employees. However, the point at which the viability threshold for a processing enterprise is crossed is difficult to estimate; and has not been carried out in this study.

Although water is supplied for livestock (including bobby calves) during lairage, the abattoirs are not set up or staffed to routinely feed milk to calves whilst awaiting slaughter. Contingency plans are in place at all export abattoirs to feed or otherwise deal with bobby calves in an emergency should the killing schedule be significantly delayed. This is to meet current AQIS Approved Arrangements requirements for calf feeding if slaughter is delayed.

Bobby calves are slaughtered as a priority in the sheep/lamb chain, usually commencing in the first shift of the day.<sup>13</sup> Most plants start the kill at 5-6am and the small animal chain finishes by 3pm. Bobby calves will be included in the day's kill if they arrive at the abattoir by 10am.

Dairy cattle have low value meat which is predominantly exported as ground beef. The offal is also a valuable export commodity. The wholesale value of bobby calves varies depending on the market but is usually around \$4.00 per kg carcase weight which is boosted by the value of the co-product (skin and offal) by up to \$16-24 per carcase.

The farm gate value of the bobby calf trade is in the order of \$40 million annually<sup>14</sup>, with estimated further \$75.75 million<sup>15</sup> annual business being generated following transport and processing for veal and co-products. Meat and products from bobby calves are exported predominantly to Japan and the US, contributing \$87 million in exports.

The export destinations of Australian livestock products are relevant to the later comparison of the proposed standards with equivalent international standards (refer to Parts 1.2.3.2 of the RIS). Australia's main export competitors are New Zealand and US domestic producers (given that the USA is Australia's main export market).

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<sup>13</sup> Confirmed by AMIC

<sup>14</sup> Trade data, Meat and Livestock Australia

<sup>15</sup> See Part A1.1.3 of Appendix 1 of this RIS for source of estimate

The red meat processing sector is largely conducted in rural communities, with almost 50% of facilities located in LGAs with a population of less than 20,000 people and 80% with less than 50,000 people.<sup>16</sup>

AMIC advises that meat processors are generally the largest employer in the manufacturing sector of the economy. For example in the Southern NSW region manufacturing, within the case study region, that is linked to the red meat processing sector is 24.1%. Furthermore, there are often significant local allied businesses that have developed in conjunction with the processing establishment. The businesses studied in the analysis have close links to the community through corporate activities for charities and sporting associations as the workforce represents a large proportion of the urban population. In many cases the businesses have also been at the forefront of the upskilling of migrant workers. Therefore the removal of any establishment is highly likely to impact on the local economy and jobs.

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## 1.2.2 ANIMAL WELFARE ISSUES

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### 1.2.2.1 ANIMAL WELFARE DURING TRANSPORT

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Animal welfare concerns are becoming increasingly important to industry, government, consumers and the general public, both in Australia and internationally. Practices which may have once been deemed acceptable are now being reassessed in light of new knowledge and changing attitudes. The need to continue demonstrating acceptable animal welfare practices is becoming important in both domestic and import/export markets.

‘Animal welfare’ is a difficult term to define and has several dimensions including the mental and physical aspects of the animal’s well-being, as well as people’s subjective ethical preferences.<sup>17</sup>

Notwithstanding the challenges of definition, it is nonetheless important when dealing with animal welfare to separate scientific considerations of welfare (biological facts) from attitudes and moral judgments about what is appropriate (ethics).<sup>18</sup> Two leading UK researchers note:

If people feel that it is important to try to change the laws about the treatment of animals, they must have more to go on than just their intuition. ‘Suffering’ must be recognisable in some objective way. Otherwise the laws which emerge are almost bound to be arbitrary and might even fail to improve the lot of animals much, if at all. (Dawkins, 1980, p. 2)<sup>19</sup>

We should use the word ‘welfare’ in a scientific way so that it is useful when considering animal management or when phrasing legislation. Welfare is a characteristic of an animal, not something given to it, and can be measured using an array of indicators. (Broom 1991, p. 4174)<sup>20</sup>

Barnett and Hemsworth establish that the most credible scientific definition of animal welfare relates to the attempt of an animal to cope with its environment<sup>21</sup> Broom adds to this definition of animal welfare stating:

[The animal’s] state as regards its attempts to cope with its environment and includes both the extent of failure to cope and the ease or difficulty in coping. Health is an important part of welfare whilst feelings – such as pain, fear and various forms of pleasure – components of the

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<sup>16</sup> GHD’s 2010 analysis titled “Study of the Australian Red Meat Processing Sector and its contribution to National and Regional Economies”

<sup>17</sup> Productivity Commission, 1998

<sup>18</sup> Productivity Commission, 1998

<sup>19</sup> Dawkins, 1980 cited in Productivity Commission, (1998), p.22

<sup>20</sup> Broom, 1991 cited in Productivity Commission, (1998), p.22

<sup>21</sup> Barnett, J.L, and Hemsworth, P.H, (October 2003), p.615



mechanisms for attempting to cope and should be evaluated where possible in welfare assessment.<sup>22</sup>

This RIS does not deal with perceived animal welfare benefits of the options; but rather looks strictly at scientific considerations, only utilising existing scientific research which measures physiological and behavioural indicators (as required by the PIMC resolution of 21 May 2009 calling for a science-based standard).

While welfare may be considered to be a subjective experience, it has a biological function that is related to the fitness and survival of the animal, and researchers have suggested that welfare is compromised when the animal's fitness is reduced. Fitness can be reduced when the animal is subject to a stressor, and activities such as physiological and behavioural responses in the attempt to cope, fail, thus subjecting the animal to stress and distress. Where an animal is failing to cope with a problem, it is said to be stressed. Stress is a physiological response exhibited by the animal when it is attempting to cope with a stressor (e.g. handling, transport, aggression and predation). Stress can be objectively measured in animals using indicators such as the level of cortisol in the blood. However, cortisol is not useful in very young calves as the Hypothalamic –Pituitary Axis (HPA) is not very responsive in the days after birth, due to down-regulation induced by the high cortisol levels at parturition.

Transport can be a major stressor to livestock and in some instances can have longer-term deleterious effects on health, well-being, productivity and ultimately, product quality. In extreme circumstances, the failure to cope with a stressor may lead to illness, significant morbidity or even death of the animals affected. On the other hand, if stress is minimised, poor welfare outcomes can be prevented or made less likely.<sup>23</sup>

Animals being transported by road and rail are potentially subject to a number of stress factors throughout the journey, including handling, loading, transporting, mixing with unfamiliar animals, climate, unloading and time without water or food. It is acknowledged that bobby calves are likely to feel hunger during transport (as many animals do between meals), especially toward the end of a transport journey. However, temporary hunger is not in itself seen as a major animal welfare problem. Also, there is as yet there is no known objective method of measuring hunger accurately enough to set an enforceable standard based on this indicator. Time off feed (TOF) is a more accurate and enforceable indicator of animal welfare.

Transport risk factors can be cumulative and apply across all stages of land transport as defined in the standards, from assembly and loading before the journey to unloading at the destination. From an animal welfare perspective, land transport of livestock is a process that begins before the physical journey on either road or rail and only ends some time after this physical journey is complete.

Risks to animal welfare comprise two dimensions – frequency and magnitude (or likelihood and consequence). The presentation of benefits under the options in terms of risk management deals not so much with the estimated frequency of risk as occurring with or without the proposed standard, but rather the magnitude of animal welfare risk *as measured by scientific standards*.

#### 1.2.2.2 BOBBY CALF WELFARE ISSUES

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Bobby calves are physiologically immature with little fat reserves, poorly developed thermo-regulatory mechanisms and a lack of responsiveness to external stimuli. These factors predispose them to difficulties in coping with transport and handling. Excessive time without feed increases the risk of bobby calves becoming hypoglycaemic and even more difficult to handle.

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<sup>22</sup> Broom D.M., 2005

<sup>23</sup> Broom D.M. and Johnson K.G., 1993



In 2000, the Animal Welfare Science and Bioethics Centre of Massey University in New Zealand conducted scientific research on the effects of food withdrawal and transport for up to 12 hours on 5- to 10-day old calves. The effects were determined by monitoring blood plasma levels of various biochemical stress indicators. The research found that:

Transport and food withdrawal had no obvious effects on calf hydration. The results of this study suggest that **food withdrawal for up to 30 hours and transport for up to 12 hours have no detrimental effect** on the metabolism of healthy and clinically normal calves destined for slaughter at that time.<sup>24</sup>

The findings of a similar but more recent scientific study by the University of Melbourne, in conjunction with the Animal Welfare Science Centre, are in broad agreement with the New Zealand findings:

In this study, transport per se was not a significant additional impost on the animals. The period of feed withdrawal did not adversely affect hydration, behaviour or body temperature, but did induce metabolic effects. Based on our data, and those of the similar New Zealand study, it is our conclusion that **30h with good practice in other aspects of calf management and transport is defensible as an outer 'legal' limit for time off feed for bobby calves.**<sup>25</sup>

The report's conclusions make it clear that only the 30 hour limit can be characterised as a 'science-based standard' (in terms of the PIMC resolution of 21 May 2009). The authors also suggest that 'best practice management of transported calves would involve time off feed not longer than around 24 hrs'. The 24 hour limit is suggested as a voluntary guideline rather than as an enforceable standard (refer to Part 1.2.3.1 of this RIS below). The report concludes that 'we would still advocate the use of science-based standards' (meaning a 30 hour standard rather than a 24 hour guideline); and states:

Animal welfare standards, where incorporated into law, represent the maximal possible limit, beyond which those responsible can be investigated and prosecuted. Accordingly, adopting a more rigorous standard, based on concerns that people may be unable to do things the right way, risks departing from the solid data derived from science to determine the limit, and requiring the process to estimate a more conservative value one that would be the subject of irresolvable argument. Furthermore, those operations and individuals that do conduct animal management to a very high level would be limited, possibly unfairly.<sup>26</sup>

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### 1.2.3 RELEVANT LEGISLATION, STANDARDS AND GUIDELINES

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#### 1.2.3.1 AUSTRALIAN STATE AND TERRITORY STANDARDS OR GUIDELINES

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Under constitutional arrangements, the primary responsibility for animal welfare within Australia rests with individual states and territories, which exercise legislative control through 'prevention of cruelty to animals Acts' and other legislation as outlined in Appendix 2 of this RIS. As yet there is no state or territory standard or guideline dealing directly with TOF for bobby calves, except in the recently endorsed Land Transport Standards and Guidelines ('the existing standards document')<sup>27</sup>; and in Victoria, where there is a relevant voluntary code of practice as discussed below.

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<sup>24</sup> Todd et al, 2000

<sup>25</sup> Fisher et al, 2010

<sup>26</sup> Ibid

<sup>27</sup> Animal Health Australia (AHA) (2008). *Australian Standards and Guidelines for the Welfare of Animals — Land Transport of Livestock*. AHA, Canberra

It is important to note that the existing standards document replaced the relevant Model Codes of Practice (MCOPs) dealing with the transport of livestock. These MCOPs have no current status. For the purposes of this RIS, and especially the cost/benefit assessment in Part 4.0 of the RIS, it is important to clearly distinguish between standards and guidelines. These terms are defined in the existing standards document as follows:

*Standards* — The acceptable animal welfare requirements designated in this document. The requirements that must be met under law for livestock welfare purposes. The standards are intended to be clear, essential and verifiable statements; however, not all issues are able to be well defined by scientific research or are able to be quantified. Standards use the word ‘must’.

*Guidelines* — The recommended practices to achieve desirable animal welfare outcomes. The guidelines complement the standards. They should be used as guidance. Guidelines use the word ‘should’. Noncompliance with one or more guidelines will not in itself constitute an offence under law.

In contrast, the term ‘*best practice*’ is not used in the existing standards document. ‘Best practice’ is a concept used by industry for business benchmarking purposes, rather than as an enforceable standard or a recommended guideline. It is defined in *Oxford Dictionaries Online* as ‘commercial or professional procedures that are accepted or prescribed as being correct or most effective’.

The relevant, existing, specific standards for calf welfare during transport in the existing standards document are:

**SB4.1** *Time off water must not exceed the time periods given below:*

*Class: Calves 5–30 days old travelling without mothers*

*Maximum time off water (hours): 18*

**SB4.5** *Bobby calves between 5 and 30 days old travelling without mothers must:*

- i) be protected from cold and heat*
- ii) be in good health, alert and able to rise from a lying position*
- iii) have been adequately fed milk or milk replacer on the farm within 6 hours of transport*
- iv) have an auditable and accessible record system that identifies the calves were last fed within 6 hours of transport unless the journey is between rearing properties and is less than 6 hours’ duration*
- v) be prepared and transported to ensure delivery in less than 18 hours from last feed with no more than 12 hours spent on transports.*

**SB4.6** *Bobby calves less than 30 days old travelling without mothers must not be consigned across Bass Strait.*

**SB4.7** *Bobby calves born earlier than a normal pregnancy term (including induced calves) must be at an equivalent stage of fitness when transported, compared with normal, full-term calves.*

**SB4.8** *Bobby calves under 30 days old must all have sufficient space in the livestock crate to lie down on their sternums.*

**SB4.9** *Dogs must not be used to move bobby calves less than 30 days old.*

The National Vendor Declaration (NVD) is relevant to TOF standards in that it requires, amongst other things, bobby calves to be fed within 6 hours prior to leaving the farm and records to be kept of same.

The Victoria's *Code of accepted farming practice for the welfare of cattle* (for which compliance is not mandatory) recommends as follows:

**7.3.4** The operation of calf-scales and pick-up points and the transport of calves to saleyards or direct to an abattoir should be coordinated to permit slaughter of bobby calves within 30 hours of leaving the farm.

**7.3.5** Places where bobby calves are held (public sales, pick-up facilities, scales and abattoirs) should have facilities and/or contingency plans to feed calves in the event of delayed removal or slaughter.

**7.3.6** Bobby calves which are not collected from the pickup points by 8.00 am (0800 hrs) on the day following the day of offering, should be fed by the person in possession or custody of the calves at that time. Thereafter be fed at least once a day.

**7.3.7** In any event, calves should be fed at least once every 24 hours. Fresh or stored whole milk or reconstituted milk replacer will provide all the essential nutrients; milk replacers should be reconstituted according to manufacturers' instructions.

Thus the Victorian code recommends slaughter within 30 hours of leaving the farm (potentially 36 hours time off feed including the requirement for feeding within 6 hours of despatch) or strategies to achieve daily feeding.

The *Tasmanian Animal Welfare Guidelines - Trade and Transport of Calves, Including Bobby Calves*, has a number of voluntary guidelines for bobby calf transport consistent with those outlined in the Land Transport Standards document. Importantly in addition it states: '*Calves held in saleyards should be fed after 10 hours and at least 24 hourly thereafter.*' It also states: '*No journey transporting bobby calves shall be undertaken if the first calf collected will take more than 10 hours to reach the final destination.*'

Nevertheless, as the Victorian and Tasmanian codes are guidelines rather than enforceable standards, they are not considered as part of the RIS base case for cost/benefit assessment purposes (refer to Part 4.2 of this RIS).

#### 1.2.3.2 INTERNATIONAL STANDARDS

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Animal welfare considerations during land transport are the subject of increasing international focus. The following policies and position statements are included to provide a brief international context, while acknowledging that Australia's cattle production systems may vary significantly from production systems, cattle breeds and climatic conditions in other countries.

The 2008 OIE - *Terrestrial Animal Health Code* section on transport does not contain any specific reference to feeding calves in transit. In fact most of the material below relates to feeding calves reared on farm and as such only forms a reference point for the discussion of feeding associated with transport.

The New Zealand TOF standard for bobby calves permitting 30 hours TOF is contained across two documents:

*Animal Welfare (Dairy Cattle) Code of Welfare 2010*

*Minimum standard 18 Pre Transport selection.*

*'Every unweaned calf to be transported off the farm must have been fed at least half of that day's ration of colostrum or milk, not more than 2 hours before transportation.'*

*Animal Welfare (Commercial Slaughter) Code of Welfare 2010.*

*Minimum standard 4. Handling of Large animals:*

*'(j) Bobby calves and milk lambs must be slaughtered as soon as possible but within 28 hours of being loaded for transport unless fed (see (l)).'*

The NZ Codes of Welfare are comparable to the Australian Standards and Guidelines, which will operate under enabling Animal Welfare Acts or similar legislation. The minimum standards in codes of welfare can be used to support a prosecution under the Animal Welfare Act, or conversely, can be used as a defence to prosecution. From the preface of the NZ code:

*'The Animal Welfare Act 1999 (NZ) came into force on 1 January 2000. It establishes the fundamental obligations relating to the care of animals. These obligations are written in general terms. The detail is found in codes of welfare. Codes set out minimum standards and recommendations relating to all aspects of the care of animals.'*

There is no other relevant international material that specifies feeding of calves in transport. No international requirements could be found.

European Union welfare in transport regulation (EC) No 1/2005 governs the transport of calves of less than 10 days of age, and they may only travel for a maximum of 100km (approximately 62 miles) if under 10 days old and a maximum of eight hours if 10-14 days old.<sup>28</sup> The regulation regards them as unfit for longer journeys. There are no requirements for TOF in the EU. EU Directive 91/629/EEC (as amended) lays down minimum standards for the welfare of reared calves across the EU and requires once daily feeding. This directive is implemented into national legislation by way of the *Welfare of Farmed Animals (England) Regulations 2007* but there is a variance in TOF within the UK.

The welfare of cattle in the United Kingdom is protected by the **Animal Welfare Act 2006** under which it is an offence to cause unnecessary suffering to any animal. The *Welfare of Farmed Animals (England) Regulations 2007* (SI 2007 No 2078) Schedule six states in part:

*'12.—(1) All calves must be fed at least twice a day.'*

However, it needs to be born in mind that:

- this standard applies to the keeping of calves confined for rearing and fattening; and
- transport distances in the UK are usually much shorter than in Australia.

The Canadian Agri-Food Research Council recommended code of practice for the care and handling of farm animals – Veal Calves 1998 clauses 7.8.1 and 7.8.2 states that young calves in transit should be fed at intervals not exceeding 12 hours.<sup>29</sup> Clause 2.1.3 recommends that *'if not fed ad libitum, calves should be fed two or more times per day following a regular routine.'*

There are no known relevant standards in the USA. It is unlikely that the USA will develop an equivalent national standard on TOF for bobby. Some individual US states may develop such

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<sup>28</sup> <[http://www.defra.gov.uk/foodfarm/animaltrade/bovineexports/pdf/cattle\\_guide.pdf](http://www.defra.gov.uk/foodfarm/animaltrade/bovineexports/pdf/cattle_guide.pdf)>

<sup>29</sup> Canadian Agri-Food Research Council, 1998

standards, but these would be unlikely to affect the export of Australian bobby calf products to the USA.

In summary, whilst it can be accepted that the on-farm maximum TOF standard is 24 hours in the EU and 12 Hours in the UK and this precautionary approach is extrapolated to transport, the only direct international requirement for TOF during transport exists in New Zealand and their regulatory system permits a maximum of 30 hours TOF. (The differences between standards and guidelines discussed in Part 1.2.3.1 of this RIS are also important here).

### 1.2.3.3 INDUSTRY INITIATIVES

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Animal welfare is now recognised as a characteristic of product quality and in some instances is now a requirement for certain markets. There is increasing recognition by livestock industries that animal welfare is an integral part of good animal husbandry. In the past decade, food safety-based quality assurance schemes have been implemented within businesses and/or across industries. These schemes reassure retailers and consumers of the safety and quality of animal products. Some, but not all, of these quality assurance programmes include animal welfare. Quality assurance programs may also be the most appropriate vehicle to include systems to ensure environmental management, occupational health and safety, and animal welfare through a total production chain approach.

Several livestock industries have made significant progress in developing their own quality assurance programs that incorporate animal welfare requirements. These industries generally see such quality assurance programs as a mechanism to demonstrate compliance with legislation, codes of practice, standards or market requirements.

Within the livestock transport industry, animal welfare guidelines have already been developed as recommended good practice for the industry and are reflected in the recently revised quality assurance and accreditation program, TruckCare.

There are also some state-based industry codes of practice, such as the Codes of Practice for the Welfare of Animals prepared by the Livestock Transporters Association of Western Australia (Inc.).<sup>30</sup>

The **Australian Meat Industry Council (AMIC)** has the *National Animal Welfare Standards at Livestock Processing Establishments (2<sup>nd</sup> edition 2010)*.<sup>31</sup> In the performance indicators for Standard One (Management Procedures and Planning), these guidelines state that 'bobby calves must be slaughtered as soon as possible ex-consignment and as a minimum, within 30 hours of their last feed, otherwise fed'.<sup>32</sup>

These industry guidelines are relied upon in the Approved Arrangements mechanism for AQIS-certified meat exports which are responsible for the slaughter of 85% of calves.

As yet there is no other industry standard or guideline dealing directly with TOF for bobby calves.

## 1.3 CONSULTATION PROCESSES

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The preparation of a RIS provides for an informed process of consultation regarding the proposed standards, alternative options and the costs and benefits associated with each option. The publication of the consultation draft RIS is the final step in the consultation process, where the general community

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<sup>30</sup> Livestock Transporters Association of Western Australia, 2002

<sup>31</sup> In effect, these are industry guidelines rather than enforceable standards

<sup>32</sup> Australian Meat Industry Council, 2010

and consumers, as well as interested stakeholders have an opportunity to comment on both the proposed standards and the RIS.

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### 1.3.1 DEVELOPMENT OF PROPOSED STANDARD AMENDMENT

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The proposed standards were developed under the auspices of the Animal Welfare Committee (AWC), which is ultimately responsible to the Primary Industries Ministerial Council (PIMC). AWC membership comprises of representatives from:

- the Australian Government Department of Agriculture, Fisheries and Forestry, and
- each state and territory government, and
- New Zealand Ministry of Agriculture and Forestry (MAF).

Key stakeholder organisations (in alphabetical order) are:

- **Animals Australia Inc. (AA)** is a federation representing some 40 community animal welfare organisation and thousands of individual supporters throughout Australia.<sup>33</sup>
- The **Animal Welfare Science Centre (AWSC)** is a Centre of the University of Melbourne, Monash University, The Ohio State University and the Department of Primary Industries (Victoria).<sup>34</sup>
- **Australian Dairy Farmers Limited (ADF)** is a not-for-profit company representing the interests of Australian dairy farmers.<sup>35</sup>
- **Australian Livestock Transporters Association (ALTA)** is the national body that represents almost 800 road transport companies across rural Australia. The great majority are livestock carriers.<sup>36</sup>
- **Australian Meat Industry Council (AMIC)** is the peak council that represents retailers, processors, exporters and smallgoods manufacturers in the post-farm-gate meat industry.<sup>37</sup>
- **Australian Veterinary Association (AVA)** is the professional organisation that represents veterinarians across Australia.<sup>38</sup>
- **Dairy Australia** is the dairy industry's services provider; owned by the industry, limited by guarantee, whose members are farmers and industry bodies.<sup>39</sup>
- **RSPCA Australia** is the federal body of the eight autonomous state and territory RSPCAs in Australia. RSPCA Australia establishes national policies and positions on animal welfare, and liaises with government and industry on national animal welfare issues.<sup>40</sup>

The **Australian Veterinary Association (AVA)** does not appear to have a publicly stated policy on this issue.

**RSPCA Australia** commented on the TOF issue during public consultation on the existing land transport standards for livestock. The RSPCA wished to see no longer than 12 hours between calf feeds.

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<sup>33</sup> <<http://www.animalsaustralia.org/about/>>

<sup>34</sup> <<http://www.animalwelfare.net.au/>>

<sup>35</sup> <<http://www.australiandairyfarmers.com.au/>>

<sup>36</sup> <<http://www.alta.org.au/directory/site.asp?site=286>>

<sup>37</sup> <<http://www.amic.org.au/>>

<sup>38</sup> <<http://www.ava.com.au/>>

<sup>39</sup> <<http://www.dairyaustralia.com.au/content/view/15/35/>>

<sup>40</sup> <<http://www.rspca.org.au/>>

These key stakeholder organisations have been further consulted during the preparation of the proposed standard amendment. In August 2009, a 'Bobby Calf Welfare Forum Two' was held in Canberra. This forum was attended by members of the AWC together with representatives of AHA, AQIS, ADF/DA, AMIC, RSPCA Australia, Animals Australia, AWSC and the AVA.

All participants other than RSPCA and Animals Australia believed that 30hrs maximum TOF is reasonable and practicable as you cannot guarantee: feed time on farm, collection time, or slaughter time due to unforeseen circumstances. The proposal allows for seasonal peaks in calving and access for dairy farmers who do not have a processing capacity in their region. The processors also face a food safety issue if calves have a full stomach and would like all calves to be held without food for a minimum of 12hrs before slaughter at the plant. A preference for maintaining the time period of six hours in which to feed before transport pick-up was supported by the majority of participants, but not the RSPCA.

It was noted that RSPCA Australia and Animals Australia are opposed to the 30hrs standard and wish to see 24hrs or less as transport conditions are not always ideal. RSPCA pointed out that with some on-farm flexibility for feeding; bobby calves could easily be transported and slaughtered within a 24-hour limit.

New Zealand Ministry of Agriculture and Forestry (MAF) are represented on AWC and are party to discussions at this committee on calf welfare. The New Zealand codes, reports and literature have been examined in depth within this process of review and development of the proposed standard.

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### 1.3.2 PUBLIC CONSULTATION

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The public consultation came after the development of other standards for the welfare of bobby calves in transport (the Australian Animal Welfare Standards and Guidelines – Land Transport of Livestock, Version One, 2008 (LTS)). This consultation was focused on the issue of the enforceable maximum period of Time off Feed for bobby calves during transport and the options presented in the Regulation Impact Statement (RIS). A report prepared by AHA is attached as Appendix 3 and summarises the submissions made and the initial response to the points raised.

The public consultation was held for 30 days from 4 January to 3 February with information hosted on [animalwelfarestandards.net.au](http://animalwelfarestandards.net.au) and advice provided to government animal welfare officers and major animal welfare organisations with a direct link to the relevant pages. Animal Health Australia (AHA) provided the service to manage the consultation.

AHA sought views from interested parties about how well:

1. The proposed standard amendment to SB4.5 in Chapter B4 specific requirements for the land transport of cattle, for a maximum of 30 hours without a liquid feed from the time of last feeding to the next feed or slaughter of the calf, contributes to the necessary specifications for protecting the welfare of calves while being transported.
2. The associated RIS demonstrates the need for the time off feed bobby calf standard (to be brought into regulations) and identifies its costs and benefits.

Assessment of submissions from the consultation process considered:

- The extent to which suggestions strengthen the intent and objectives of the Standards and are based on science;
- The volume and variety of responses making similar suggestions;
- Anticipated adverse impacts or unintended consequences from submitted suggestions; and

- The importance for, and viability of, implementing any suggested change within the regulatory system.

Approximately 6,000 email submissions from individuals were received and 33 more detailed submissions from elected public officials or organisations representing industry or community welfare interests including some government departments. The vast majority of submissions have been a variation to a recognisable form letter. The majority of these have been in opposition to the 30 hours time off feed proposal and were from Australian residents. A list of submissions from organisations and elected public officials and their policy positions are given in Table A3.2 of Appendix 3. Individual responses to submissions will not be undertaken. Major submissions will be hosted on the project website: <http://www.animalwelfarestandards.net.au/>

Examples of the 'form letter' submissions are reproduced in annex A, B and C.

Some suggestions have been deemed to be not entirely relevant to the matter of calf time off feed and will be referred to the Animal Welfare Committee for consideration in the implementation of the LTS, or for future reviews of the LTS.

In summary, the welfare of bobby calves is an emotive issue. The larger number of submissions from animal welfare organisations and individuals support a shorter time off feed and in some cases question the need for transport at all (slaughter on farm and other alternatives were proposed). There is good support for a 30 hours time off feed limit from some government and all industry respondents in the context of the other related standards for calf transport. Some changes have been made to the RIS has occurred in response to the submissions received (refer to Appendix 3); however, the recommended proposal has not changed. Following the public consultation, the 30 hours TOF option is still recommended for government endorsement.



## 2.0 THE PROBLEMS AND POLICY OBJECTIVE

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### 2.1 IDENTIFYING THE PROBLEMS

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According to COAG and Victorian guidelines, the RIS is required to demonstrate the need for the proposed standards. This is best achieved by identifying the problems that the proposed standards are endeavouring to address. These problems may be summarized as the need for:

- a time off feed standard in addition to existing standards regarding the transport of bobby calves, to further minimise risks to animal welfare;
- a national standard as compared to different state and territory standards, to achieve national consistency;
- a science based, feasible and verifiable standard, that is capable of being incorporated into regulations; and
- certainty for industry by providing clarity in mandatory national requirements for maximum TOF.

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#### THE NEED TO MINIMISE RISKS TO LIVESTOCK WELFARE

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As discussed in Part 1.2.2 of this RIS, livestock being transported by road and rail are subject to a number of stress factors throughout the journey, including handling, loading, vehicle design, stocking density, mixing with unfamiliar animals, changes in climate, unloading, journey duration and time without water or food.

These risk factors can be cumulative and apply across all stages of land transport as defined in the standards, from assembly before the journey to unloading at the destination. It is therefore essential that effective management practices are in place to minimise any risks to livestock welfare.

The existing standards have defined appropriate management practices to effectively minimise the major risks to welfare as a result of transport. However, as outlined in the introduction to this RIS, PIMC has specifically identified the lack of a TOF standard for bobby calves in the existing standards; and has called for a science-based standard to be developed.

As discussed in Part 1.2.2.2 of this RIS, the latest Australian scientific research supports the earlier New Zealand research and concludes that 30 hours TOF with good practice in other aspects of calf management and transport is reasonable as an outer 'legal' limit for time off feed for bobby calves. The Australian research findings also note that 'it would appear that any extension of time off feed beyond 30 hours would be decidedly inadvisable, and our results would not support such exemptions'.

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#### THE NEED FOR NATIONAL CONSISTENCY

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Economic studies have shown that the development of standards and technical rules by institutions given authority to do so by both the private and public sectors is an essential element of the technological and economic infrastructure of a nation. Industry-wide standards not only have a positive effect on the economy as a whole, but also provide benefits for individual businesses that use

them as strategic market instruments. Standardisation can lead to lower transaction costs in the economy as a whole, as well to savings for individual businesses.<sup>41</sup>

A key objective of the AAWS is 'to facilitate improved consistency of legislation across states and territories for improved and sustainable animal welfare outcomes.' Australia's animal welfare ministers agreed in April 2006 on the need for a nationally consistent approach for the development, implementation and enforcement of animal welfare standards.

Without a national standard for TOF for bobby calves, it is likely that some states and territories would set their own standard, particularly in view of the clear scientific research findings. However, other jurisdictions might either set no standard or a different standard, leading to distortions in national industries and the 'lack of a level playing field'. This problem would be accentuated during the transport of livestock across state borders.

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## THE NEED FOR CLEAR AND VERIFIABLE STANDARDS

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If compliance with the proposed standard amendment is to be made compulsory, legislation or regulations will be required in each participating state or territory, together with appropriate enforcement regimes. This requires a clear and verifiable standard suitable for incorporation into regulations.

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## THE NEED FOR INDUSTRY CERTAINTY

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By providing clarity in mandatory national requirements for maximum TOF, a national standard would provide greater certainty for industry forward planning and investment. This need was reinforced by submissions from industry during the public consultation process.

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## 2.2 POLICY OBJECTIVE

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In relation to the proposed standards and possible alternatives, the following overarching policy objective is identified:

*To ensure that the conditions under which bobby calves are transported on land are consistent with reasonable animal welfare standards.*

The main criterion for assessing the proposed standards against the practicable alternatives is their relative cost-effectiveness in achieving this policy objective, compared to the benefits of each alternative.

The word 'reasonable' embraces the need for standards to be informed by science, industry knowledge and community expectations, with their overall benefits outweighing their costs. The policy objective is also consistent with the AAWS vision statement:

*'The welfare of all animals in Australia is promoted and protected by the development and adoption of sound animal welfare standards and practices.'*

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<sup>41</sup> TU Dresden and Fraunhofer Institute, 2000

## 2.3 THE CASE FOR INTERVENTION

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Having identified the nature and extent of the problem (that is the need for updated standards) and the identified policy objective, the 'threshold' or preliminary question to be addressed in a RIS is: *Is there a sufficient case for further government intervention to assist in solving the problem?*

The proposed form of government intervention is the adoption of the proposed standard amendment by PIMC with the intent of the standard being implemented by legislation in each participating jurisdiction alongside the existing standards.

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### ECONOMIC GROUNDS FOR INTERVENTION

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There is a clear economic case for government intervention in markets where some form of **market failure** is taking place. Government can justify this by saying that intervention is in the public interest. Market failure occurs when markets fail to allocate society's scarce resources (land, labour and capital) to their best uses - known as '*allocative inefficiency*'. The outcome is *too much or too little (or no)* market activity resulting in a loss of societal economic welfare.

In relation to time off feed (TOF) and bobby calf welfare, there is an inadequate allocation of resources under the 'base case' by the market to risk management strategy (i.e. market failure). The relevant **sources** of this inadequate risk management addressed by the proposed standard amendment<sup>42</sup> are those associated with **externalities** and a **lack of information**, as discussed below. In other words, market forces alone would not be expected to solve the problems identified in Part 2.1 of this RIS; and intervention in the form of a regulated standard is necessary.

**Externalities**, or third party effects, arise where private decision makers do not incur all the costs or receive all the benefits of their decisions. Negative externalities in this RIS are illustrated by risks to bobby calf welfare; and arise because farmers, transporters, and meat processors do not adequately take account of all social costs (be they up-stream or down-stream) in their private business decisions. That is to say, whilst it is in the interest of these businesses to mitigate some risk to bobby calf welfare for their own marketing purposes, the risks to animal welfare (i.e. social costs) fail to be fully internalised. In short, there are no price signals or incentives for calves that are given a shorter TOF in the Australian calf marketing chain for the majority of calves, at any stage. In this regard, the aim of the proposed standard amendment will be to alter incentives so that private decision makers take account of the external effects of their actions.

A **lack of information** regarding the nature of animal products (particularly their origin or method of production) is another reason why market forces alone will not deliver adequate animal welfare outcomes. A consumer of veal products has no way of determining if the bobby calves from which the veal was derived were left without feed for an extended period of time with increased risk to animal welfare. Currently, there is no information or labeling requirement compelling farmers, transporters or meat processors to specify the origin or welfare history of a bobby calf – in terms of treatment from birth to processing. This would be even more difficult in relation to by-products of bobby calves where ingredients used to produce such items such as cheese may be sourced from multiple animals. The proposed standard amendment therefore seeks to address the problem of consumers not being able to reject bobby calf products in the market if there are poor bobby calf TOF practices because they don't know about the source or history of the product. This lack of information about animal welfare for the consumer means that the issue cannot be left to market forces to resolve.

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<sup>42</sup> Assuming compliance with the standard will become mandatory by regulation

Whether market failure arises from externalities or a lack of information; the role of government intervention is to strike the socially optimal balance between economic activity resulting from the production and consumption of products obtained from animals, on one hand, and risks to animal welfare, on the other. In this case both factors contribute to the need to pursue new regulation to set a maximum TOF for calves.

Animal welfare legislation provides a balance between the competing views in the community about the use of animals. The successful pursuit of many industries involving animals is dependent on community confidence in the regulation of animal welfare.<sup>43</sup> This means that there needs to be an acceptable outer limit for TOF to apply to all calves on an undifferentiated basis.

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<sup>43</sup> Bureau of Animal Welfare, 1997

### 3.0 ALTERNATIVES TO PROPOSED STANDARD AMENDMENT

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In accordance with the COAG and Victorian guidelines, a RIS is required to identify feasible alternatives to the proposed standard amendment.

Feasible alternatives to the proposed standard of 30 hours maximum time off feed (TOF) are limited to certain alternative standards for TOF or no standard for TOF. Other alternatives have been considered as part of the RIS process but have been found to be infeasible. These alternatives included feeding bobby calves during transport, developing markets for dairy beef and subsidising mobile slaughter vans and/or the construction of new abattoirs closer to dairy farms.

It is not feasible to feed bobby calves on trucks. Feeding bobby calves during transport would entail offloading from trucks at specially constructed feeding facilities (which do not currently exist); and reloading bobby calves to the trucks after feeding. Loading and unloading is a stressful process for bobby calves and should be kept to an absolute minimum. The extra time involved could risk non-compliance with other standards such as the maximum of 12 hours on transport and driver fatigue regulations.

In response to some of the public submissions commenting on rearing calves for dairy beef and alternative slaughter arrangements, the market for dairy beef is limited by low consumer demand; and cannot feasibly be expanded by government intervention. That is to say, the demand for dairy beef in Australia is constrained by a lack of preference for this type of product. Similarly, it is not feasible for government to intervene in the market for meat processing facilities, including the possible use of mobile slaughter vans, as their locations are determined by more influential factors such as labour availability; and the supply of other species and classes of animals on a year round basis (bobby calves are highly seasonal and available for only a limited period each year). Such processing facilities require a minimum efficient scale of operations, as reflected by their current location, in order to maintain financial viability.

In response to other public submissions commenting on alternative feeding requirements, twelve hours maximum TOF is not considered a feasible option under Australian conditions, where only a small proportion of dairy farms would be close enough to meat processing facilities to be able to meet this standard within reasonable feeding regimes. The disposal of large numbers of calf carcasses on farm is impractical, especially on smaller farms with limited land and other resources. Even where sufficient land was available, on-site burial of large numbers of carcasses would carry unacceptable environmental risks in some areas, particularly to ground waters and in some cases surface water quality as well.

On the other hand, alternative standards of 18 and 24 hours maximum TOF would be likely to impose significant costs to industry based on consultation, but cannot be rejected from further consideration on feasibility grounds.

The practicable alternatives together with the proposed standards will from here on be referred to as 'options'. The options to be assessed in terms of costs and benefits are:

- **Option A:** no amendment of the Australian standard<sup>44</sup> (i.e. the minimum intervention option);

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<sup>44</sup> This option is in effect a non-regulatory or self-regulatory option. (Given the scientific findings, 30 hours maximum TOF would be likely to become a guideline under this option)

- **Option B:** the proposed standard i.e. 30 hours maximum TOF;
- **Option C:** a standard amendment of 24 hours maximum TOF; and
- **Option D:** a standard amendment of 18 hours maximum TOF.

## 4.0 ASSESSMENT OF COSTS AND BENEFITS

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### 4.1 INTRODUCTION

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The purpose of this Part of the RIS is to-

- assess the incremental costs and benefits of the proposed standard amendment for the welfare of bobby calves and the community;
- compare and contrast the costs and benefits of the proposed standard amendment with other options identified in Part 3.0 of this RIS; and
- use a weighted decision criteria analysis to select a preferred option based on the optimum combination of costs and benefits.

The assessment of the relative benefits and costs for the proposed standards and the other identified options has been conducted in relation to how well the policy objective identified in Part 2.2 of this RIS is likely to be achieved. Where data exists, quantitative estimates of costs and benefits are made, using stated reasonable assumptions to fill in any essential data gaps. However, where sufficient data is not available (in this case for animal welfare benefits and promotion of national consistency), the assessment is made using qualitative criteria regarding the achievement of the policy objective. All costs and benefits reported are incremental to the base case (refer to Part 4.2 of this RIS).

The three criteria used to assess the options are the same as those that were used in the Land Transport Standards RIS,<sup>45</sup> which are:

- **Criterion I:** Animal welfare benefits;
- **Criterion II:** Net compliance costs to industry and government; and
- **Criterion III:** Promotion of nationally consistent standards.

These criteria are also consistent with the AWC decision-making principles outlined in Part 1.1 of this RIS.

The summary of cost benefit analysis in Part 4.4 compares the relative merits of the various options with each other, using a weighted criteria decision analysis. Options are scored -3 to +3 against the aforementioned criteria and relative to the base case.

### 4.2 THE BASE CASE

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The term 'base case' means the situation that would exist if the proposed standard amendment was not adopted [i.e. the existing Australian standards plus the relevant federal, state and territory legislation (refer to Appendix 2 for details)]. The base case provides the benchmark for measuring the incremental costs and benefits of the proposed standards and the other options.

It is recognised that the Tasmanian and Victorian government codes of practice have various recommendations that include 30 hours TOF and also feeding every 24 hours. Guidelines such as these voluntary codes of practice are technically part of the base case, but because compliance with guidelines is not mandatory, and is not intended to be made mandatory, guidelines cannot be

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<sup>45</sup> Tim Harding & Associates

considered as part of the existing standards for cost/benefit comparisons (refer to Part 1.2.3.1 of this RIS).

Thus, in the absence of the proposed standard amendment the base case (i.e. Option A) would entail no TOF standard for bobby calves. However, because of the clear scientific findings regarding acceptable limits for TOF, it is assumed that the 30 hours TOF would become a voluntary industry and/or government guideline under the base case (as is proposed in the 2<sup>nd</sup> edition of the AMIC guidelines).

#### 4.3 ASSESSMENT OF EACH OF THE OPTIONS AGAINST THE BASE CASE

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This Part discusses the expected costs versus expected benefits with reference to the policy objective identified in Part 2.2 of the RIS. Costs and benefits are analysed in comparison with the base case in terms of economic criteria where relevant, and compared to the relative merits of each of the options. The relevant costs of the various options relative to the base case are summarised in a single table in Part 4.4.

The data used in this analysis and the assumptions and qualifications to the data on which the costs and benefits have been estimated are provided in Appendix 1.

The national consistency criterion III requires a judgement call as to whether each option is more or less likely than the base case to promote national consistency in the setting of TOF standards by jurisdictions; and which option is the most likely to promote national consistency.

The key assumptions used to estimate the impacts of the options in this RIS include the following:

- The modeling of the impacts of each option is based on the proportion of non-replacement bobby calves normally destined for slaughter becoming unavailable due to an inability to comply with each proposed standard. Furthermore, in Option D the impacts of two higher compliance levels of 25% and 50% are estimated as an additional sensitivity analysis to the range of discount rates examined (appendix A1.4.11). The costs of three possible management strategies for feeding that could achieve compliance are estimated for this exercise;
- Under the base case, it is assumed that 99 per cent of bobby calves are currently processed with no more than 30 hours TOF with only 1 per cent subject to emergency feeding;
- Option B assumes full compliance with the proposed standard. Option C assumes 90 per cent compliance while option D assumes 12.5 per cent compliance. Sensitivity analysis conducted in Appendix 1 demonstrates that considerable costs that would still be imposed under Option D (max. 18hrs TOF) even under different scenarios with greater levels of compliance;
- Only 5 per cent of those calves which are unable to comply with the 24hr TOF standard (i.e. 3,460 calves) and 18hr TOF standard (i.e. 30,275 calves) would most likely be designated for rearing for beef in addition to the 64,074 calves already being reared under the 'base case'. That is to say, only larger farms with many calves may be able to exploit scale economies and reduce rearing costs below average levels. The current expected revenue stream (per calf) would fail to provide a sufficient return on investment and in most cases farmers would be better off using land for dairy cows or at the very least leasing out the land for other purposes.
- Further sensitivity analysis with a real discount rate of 3% and 10% was also conducted on estimates in Appendix 1 and demonstrates that considerable costs would still be imposed under Options C and D.



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#### 4.3.1 THE BASE CASE – OPTION A

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For the purpose of this analysis, it is assumed that approximately 99% of all bobby calves are currently processed within a maximum of 30hrs time of feed (TOF). Calves must be fed within a maximum of 6 hours of transport, leaving a maximum of 23 hours TOF from farm gate to arrival at the abattoir (allowing for an industry minimum one hour lairage after transport and before slaughter). The reason for this implicit 23 hour maximum TOF during transport from farm gate to abattoir is that because the exact time of feeding on farm is not declared in the current record keeping system, it must be assumed that the calves may not have been fed for up to 6 hours before loading for transport. Adherence to the 30hrs maximum total TOF would thus be very high; however, there is *no guarantee* under the 'base case' that standards with respect to TOF would be maintained at all times.

The continuation of the 'base case' including existing bobby calf standards regarding transport and guidelines is likely to result in:

- a failure to address the deficiencies or problems as identified in Part 2.1 of the RIS.
- a lack of national consistency regarding the bobby calf welfare standard amendment for TOF; and

Under the 'base case' an estimated 692,000 bobby calves would continue to be commercially processed for meat and co-products each year. The farm gate value is estimated to be \$40 million per annum<sup>46</sup>.

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#### 4.3.2 OPTION B: THE PROPOSED STANDARD AMENDMENT

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In essence, the difference between this Option and the 'base case' is the reduction of risks and minor increase in costs associated with shifting from the uncertainty of a voluntary guideline to the relative certainty of a regulated standard (refer to Part 1.2.2 of this RIS).

With the implementation of a maximum TOF standard of 30 hours it is expected that there would be 100% compliance and all of the 692,000 non-replacement calves will continue to be available for meat processing.

#### EXPECTED BENEFITS (CRITERION I)

The proposed standard amendment is expected to result in the following benefits compared to the base case:

- improved bobby calf welfare outcomes – no animal will be worse off and risks to bobby calf welfare in terms of frequency and magnitude will be minimised;
- greater national consistency in the setting of the standard amendment;
- a clear standard amendment, differentiated from guidelines, that is capable of being incorporated into regulation;
- welfare standards with respect to cattle transported by land will be completed, covering all identified areas of risk during transport;
- an update to existing transport standards for bobby calves, in the light of the latest scientific research (refer to Part 1.2.2);

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<sup>46</sup> Trade data, Meat and Livestock Australia

- the proposed standard amendment has been reviewed to ensure that its benefits justify its costs, and that it meets the expectations of the Australian community, which is likely to improve community confidence and implementation of the proposed standard amendment;
- enhanced international reputation (from providing a clear statement of Australia's bobby calf welfare TOF standard to the international community, especially our trading partners); and
- by providing clarity in mandatory national requirements for maximum TOF, a national standard would provide greater certainty for industry forward planning and investment.

A 30 hour TOF maximum from last feed to slaughter (in practice 24 hours from farm gate to slaughter, allowing for a minimum of one hour in lairage) would allow seasonal peaks in calf supply to livestock processing establishments; and longer journeys from isolated regions that do not have meat processing capacity to be accommodated.

### EXPECTED COSTS (CRITERION II)

AQIS advises that export abattoirs meet 30 hour TOF already, and industry advises that domestic abattoirs can also meet this proposed standard, including by the use of emergency feeding if necessary. A recent survey of major calf processing export establishments in Australia by AQIS over the last year (328,000 calves involved) has revealed that most calves are slaughtered within 24 hours of pick-up from the farm gate and that few problems are likely with a 30 hours maximum TOF requirement. The peak production industry body, Australian Dairy Farmers Ltd (ADF) shares this view.

It is not expected that the 30 hours TOF requirement will necessitate calf feeding at calf processing establishments (they are not setup to routinely do this), but rather cause a reprioritisation (scheduling) of calf lots in the daily kill schedule to ensure calves that have endured a time close to 30 hours TOF are slaughtered promptly. However, in exceptional cases, emergency feeding can be provided if and where necessary to ensure compliance. This is not expected to be a major cost and is achieved within normal establishment practice with no additional infrastructure or operating cost. The new requirement will apply to all calf processing establishments, both export and domestic supply-related categories. The peak processing industry body, the Australian Meat Industry Council (AMIC) supports these statements.

Verification systems will be required to be developed but this is largely being driven by other program requirements such as the need to trace and manage food safety (chemical residues) issues. Major calf export processing establishments are becoming well set-up to report calf transport data electronically but others may need to invest to enable a management and record keeping system to support compliance. Victoria (which is the major calf producing jurisdiction) and South Australia currently require scanning of National Livestock Identification System (NLIS) devices for calves leaving the farm. NSW will be mandating scanning from January. Other jurisdictions may have to impose some change on industry to enable industry to be able to demonstrate verification. Notwithstanding the NLIS requirements, additional compliance and audit costs are expected to be minor and able to be absorbed by the processing sector.

The only identifiable cost under Option B would be the relatively minor additional enforcement costs to government and in some jurisdictions the RSPCA. This cost is estimated at approximately **\$12K**<sup>47</sup> per annum or **\$49.16K**<sup>48</sup> over 5 years in present value dollars.

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<sup>47</sup> See Table A1.1 of Appendix 1 for source of estimate

<sup>48</sup> Calculated using a real discount rate of 7%

### NATIONAL CONSISTENCY (CRITERION III)

Option B is assessed as more likely than the base case to promote national consistency of standards. Under the base case, the scientific findings would be likely to encourage some jurisdictions to adopt a standard of 30 hours TOF. However, more jurisdictions would be likely to adopt such a standard if it was a national standard.

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#### 4.3.3 OPTION C: A STANDARD AMENDMENT OF 24 HOURS MAXIMUM TOF

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Under this Option, the maximum TOF would be 24 hours instead of 30 hours.

### EXPECTED BENEFITS (CRITERION I)

Option C is likely to confer a similar level of animal welfare benefits as identified under Option B – 30hrs TOF. There is no scientific evidence to suggest that 24hrs TOF provides any more additional animal welfare benefits than 30hrs TOF (see Part 1.2.2 of this RIS). The ethical questions and value judgements of hypothetical animal ‘hunger’ and ‘discomfort’ are beyond the scope of the RIS; but may be important considerations in the wider decision making process for the social goal of addressing concern over the potential suffering of calves. Perceived benefits are not included in the RIS analysis.

It is likely that there would be a reduction in the risk to bobby calf welfare, in terms of providing a ‘buffer’ if transport timelines occasionally cannot be met due to some unforeseen circumstance. However, the fact that compliance can still be achieved on these occasions through emergency feeding at abattoirs (as can happen under the base case),<sup>49</sup> means that a lower standard than 30 hours TOF is unnecessary; and would therefore provide no substantial additional reduction of risk to bobby calf welfare. Any such risk reduction is likely to be offset to at least some extent by increased risks to animal welfare, biosecurity and occupational health and safety (OH&S) as a result of the less expert slaughter processes and facilities available on farm compared to abattoirs.

### EXPECTED ECONOMIC COSTS (CRITERION II)

All costs under Option C are shown in Table 2<sup>50</sup>. The annual cost of the standard amendment of 24 hour TOF for the dairy industry and government is estimated to be **\$3.22 million** per annum or **\$13.21 million** over 5 years in present value dollars. These calculations are based on the assumption that under Option C 10% of all non-replacement calves typically sold for slaughter under the ‘base case’ (i.e. an estimated 69,200 calves) per annum would no longer be available for slaughter.

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<sup>49</sup> Whilst abattoirs are not set up to provide emergency feeding on a routine basis, emergency feeding can be provided if and where necessary to ensure compliance

<sup>50</sup> For source of estimates in Table 2 - see Table A1.4 of Appendix 1

**TABLE 2: SUMMARY OF QUANTIFIABLE INCREMENTAL COSTS (LOSS OF COMMUNITY SURPLUS) UNDER OPTION C – 2011-12 TO 2015-16**

Category of quantifiable incremental economic cost	Annual	5 –year (present value) (7% discount rate)	Sensitivity analysis	
			5 –year (present value) (3% discount rate)	5 –year (present value) (10% discount rate)
Loss of farm gate value of bobby calf market	\$3,999,760	\$16,399,806	\$18,317,730	\$15,162,237
Cost of slaughter and disposal on farm	\$1,050,759	\$4,308,318	\$4,812,167	\$3,983,202
Cost of slaughter and disposal at knackery	\$53,814	\$220,647	\$246,452	\$203,997
Loss of wholesale value of reared calf market	-\$192,030	-\$787,361	-\$879,441	-\$727,945
Cost of enforcement	\$12,490	\$51,213	\$57,202	\$47,348
Cost of feed for calves slaughtered on farm and disposed on farm or knackery <sup>51</sup>	-\$1,702,767	-\$6,981,682	-\$7,798,176	-\$6,454,828
<b>Total economic cost</b>	<b>\$3,222,026</b>	<b>\$13,210,941</b>	\$14,755,933	\$12,214,012

### NATIONAL CONSISTENCY (CRITERION III)

Option C is assessed as less likely than options A or B to be adopted by jurisdictions, resulting in less chance of national consistency than under those options. This is because a standard of 24hrs TOF is unsupported by scientific evidence and is therefore less likely to be adopted by jurisdictions than under the base case or Option B where a 30hr TOF standard would be more likely to be adopted.

#### 4.3.4 OPTION D: A STANDARD AMENDMENT OF 18 HOURS MAXIMUM TOF

Under this Option, the maximum TOF would be 18 hours instead of 30 hours. With such a change in standards, it is expected that a significant restriction on the number of calves available for commercial slaughter would arise. Based on discussions with the industry it is estimated that 87.5%<sup>52</sup> of all non-replacement bobby calves normally destined for slaughter would become unavailable due to an inability to comply with the 18hr TOF standard, which in some cases would mean a maximum of only 12 hours to slaughter from farm gate. This would most likely be equivalent to 87.5% of 692,000 (i.e. 605,500 non-replacement calves). Under Option D, the estimated non-replacement calves available for sale and destined for meat processing would most likely be reduced to only 86,500 per annum<sup>53</sup>.

The text box on the following page provides a description of typical calf movement under the 'base case' and 18 hour TOF Option.

### EXPECTED BENEFITS (CRITERION I)

For similar reasons as given under Option C, Option D is likely to confer the same level of animal welfare benefits as identified under Option C – 24hrs TOF.

<sup>51</sup> This is a cost saving drawn to AHA attention via a public submission from Animals Australia.

<sup>52</sup> See sensitivity analysis in Appendix 1

<sup>53</sup> See Chart A.2 in Part A1.4.1 of Appendix 1 for source of estimate

### EXPECTED ECONOMIC COSTS (CRITERION II)

All costs under Option D are shown in Table 3<sup>54</sup>. The annual cost of the standard amendment of 18hrs TOF for the dairy industry and government is estimated to be **\$28.21 million** per annum or **\$115.68 million** over 5 years in present value dollars. These costs would exceed the current wholesale market value of the bobby calf industry (refer to Part 1.2.1.3 of this RIS).

**TABLE 3: SUMMARY OF QUANTIFIABLE INCREMENTAL COSTS FOR OPTION D (2011-12 TO 2015-16)**

Category of quantifiable incremental cost	Annual	5 –year (present value) (7% discount rate)	Sensitivity analysis	
			5 –year (present value) (3% discount rate)	5 –year (present value) (10% discount rate)
Loss of farm gate value of bobby calf market	\$34,997,900	\$143,498,300	\$160,280,134	\$132,669,576
Cost of compliance from feeding strategy on route to meat processors	\$79,456	\$325,787	\$363,887	\$301,202
Cost of slaughter and disposal on farm	\$9,194,139	\$37,697,785	\$42,106,465	\$34,853,021
Cost of slaughter and disposal at knackery	\$470,871	\$1,930,663	\$2,156,451	\$1,784,971
Loss of value of wholesale reared calf market	-\$1,680,263	-\$6,889,408	-\$7,695,110	-\$6,369,517
Cost of enforcement	\$49,413	\$202,604	\$226,298	\$187,315
Cost of feed for calves slaughtered on farm and disposed on farm or knackery <sup>55</sup>	-\$14,899,214	-\$61,089,719	-\$68,234,038	-\$56,479,744
<b>Total cost</b>	<b>\$28,212,303</b>	<b>\$115,676,012</b>	\$129,204,086	\$106,946,825

A sensitivity analysis conducted in Appendix 1 demonstrates the considerable costs that would be imposed under Option D (max. 18hrs TOF) even under different scenarios with greater levels of compliance.

### NATIONAL CONSISTENCY (CRITERION III)

Option D is assessed as less likely than options A, B or C to be adopted by jurisdictions. This is because a standard of 18hrs TOF (as with 24hrs TOF) is unsupported by scientific evidence and is therefore less likely to be adopted by jurisdictions than under the base case or Option B, where a 30hr TOF standard would be more likely to be adopted.

<sup>54</sup> For source of estimates in Table 3 - see Table A1.9 of Appendix 1

<sup>55</sup> This is a cost saving drawn to AHA attention via a public submission from Animals Australia.

### **Description of typical calf movement under 'base case' and 18hr TOF Option**

#### **Base case**

*Under current practices the 'vast' majority of bobby calves (assumed to be 90% in this RIS) would be slaughtered within 22-26hrs of last being fed ('Group A'); and 99% are assumed to be slaughtered within 30 hours (the remaining 1% are given emergency feeding at the abattoir.*

*'Group A' bobby calves are fed within 6 hrs before dispatch from the farm and then transported to public calf scales/saleyard. The 'Group A' bobby calves are then batched up and loaded onto bigger trucks for transport to meat processors. Some calves are transported directly to meat processors from the farms. 12hrs on average expires from the time that the calf leaves the farm and arrives at the meat processor. Therefore, delivery of calves to the meat processor typically occurs within 18hrs of initial feeding. Bobby calves are then placed in lairage for a minimum of one hour and processed for slaughter at the next opportunity. Typically, slaughter does not start until the next first shift which is 3hrs later (i.e. 5am). Hence at least 21 to 22hrs have passed before bobby calves can be processed. Therefore it would not be possible to process the vast majority of bobby calves within 18hrs TOF.*

*A typical delivery of a bobby calf from the farm to the meat processor (non-direct) is that on day 1 the calf is fed between 6am and 10am after the morning milking session. Around 35% of calves are taken directly to the meat processor arriving between 9am and 12 pm in the afternoon. The remaining 65% of calves are delivered to a calf scale/saleyard (i.e. about 2 hours after feed). The calf arrives at scale/saleyard by between 10am and 11am and is then put onto a larger vehicle for transport to the meat processor between 12pm and 4pm. The calf arrives at the meat processor and is then placed in lairage until 5am when slaughter begins. Slaughter usually takes place between 5am and 12pm. Time expired between TOF and slaughter would be anywhere from as little as 23hrs (6am to 5am the following day) to 30hrs (i.e. 6am to 12pm the following day). However it is likely that a bobby calf fed earlier in day 1 and arriving earlier would be scheduled for slaughter at the beginning of the shift in day 2 and not kept right until the end (i.e. 3pm).*

#### **18hr TOF Option**

*'Group B' bobby calves can be defined as a sub group within 'group A' bobby calves (assumed to be 12.5% of all bobby calves sold for slaughter in this RIS) that could be slaughtered within 18hrs of last being fed. 'Group B' bobby calves would be able to meet an 18hr TOF standard given the ability to implement one of the following 3 compliance/feeding strategies:*

- Feeding calves just after morning milking and have them slaughtered that morning or by early afternoon, within 8 hours of leaving the farm (i.e. by 3pm the same day) (a very small number of bobby calves);*
- Feed calves late in the evening and transport bobby calves overnight to be slaughtered by 3pm the next day (only for a very small number of large dairy farms able to support additional staff for night time feeding); or*
- Feed calves in the morning of day 1 and then again during transportation between farm and processor allowing bobby calves to be dispatched by 3pm the next day (which would not be done in bulk but only as part of the typical emergency feeding arrangement that currently exists for 1% of occasions under the 'base case').*

#### 4.4 SELECTION OF THE PREFERRED OPTION

The relevant costs and benefits of the various options relative to the base case are summarised in the following table.

**TABLE 4: COMPARISON OF COSTS AND BENEFITS FOR EACH OPTION**

Option	Expected incremental economic costs <sup>56</sup> / 5 years <sup>57</sup>	Expected incremental economic benefits/5years
Option A 'Base case'	Nil	Nil
Option B (max. 30 hrs TOF)	\$0.049 million in enforcement costs	Benefits to animal welfare and national consistency as listed in Part 4.3.2
Option C (max. 24 hrs TOF)	\$13.21 million	Similar benefits to animal welfare as Option B but likely to be less national consistency than under the base case or Option B.
Option D (max. 18 hrs TOF)	\$115.68 million	Similar benefits to animal welfare as Option B but likely to be less national consistency than under the base case or Options B and C.

A summary of incremental 5-year costs is presented in Table 5 with sensitivity testing for various rates of compliance (under Option D) and discount rates (for all Options).

**TABLE 5: COMPARISON OF INCREMENTAL COSTS/ 5 YEARS<sup>58</sup>**

Option	Discount 7%	Discount 3%	Discount 10%
A (Base case)	\$0	\$0	\$0
B (100% compliance)	\$0.049M	\$0.055M	\$0.045M
C (90% compliance)	\$13M	\$15M	\$12M
D (12.5% compliance)	\$116M	\$129M	\$107M
D(A) (25% compliance)	\$100M	\$111M	\$92M
D (B) (50% compliance)	\$67M	\$75M	\$62M

Comparing the costs and benefits of the various options with the base case and with each other is hindered by the inherent inability to quantify benefits to animal welfare. However, in this particular case, a qualitative ranking of the options can still be made.

It is important to emphasise that this RIS does not deal with ethical perceptions of animal welfare but rather looks strictly at the scientific considerations of actual benefits to animal welfare. Perceived benefits are not included in the RIS analysis.

Whilst there is no science-based evidence of improvements to bobby calf welfare under 24hrs and 18hrs TOF as compared to 30hrs, Options C and D are likely to impose significant additional cost.

<sup>56</sup> Economic costs are based on farm gate estimates only

<sup>57</sup> Using a 7% discount rate

<sup>58</sup> All estimates rounded to whole numbers in millions of dollars



Option C is estimated to result in **\$13.21 million** of additional costs over 5 years in present value terms whereas Option D is estimated to result in **\$115.68 million** over 5 years. Sensitivity tests calculating the costs of 25% and 50% compliance with 18hr TOF (i.e. Option D) resulted in an estimated **\$99.55 million**<sup>59</sup> and **\$67.3 million**<sup>60</sup> over 5 years, respectively. Thus the justification for lower maximum TOF of 24hrs or 18hrs cannot be made on either benefit or cost grounds.

The qualitative comparison of costs and benefits in Table 6 above shows that a standard of either 24 hours or 18 hours TOF would entail substantially higher costs than a standard of 30 hours TOF for a reduction in risk to calf welfare that is insubstantial, given the possibility of emergency feeding at abattoirs. The high costs of an alternative standard of either 24 hours or 18 hours TOF would not be justified in terms of either animal welfare outcomes or national consistency. This conclusion would not alter even if there were significant changes to the assumptions and cost estimates made in this RIS. On this basis, **Option B is recommended as the preferred option for the purposes of this RIS.**

#### 4.5 BUSINESS IMPACT ON TRANSPORTERS, PROCESSORS AND EXPORTERS OF OPTIONS

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The above cost/benefit analysis (CBA) focuses on the farm gate impacts. It is recognised that there is considerable down stream business activity across the production chain. The extent of this business activity is known but the extent of the separate value created for the CBA is more difficult to estimate. It is acknowledged that a reduction in calf supply will have negative real effects on these businesses that they cannot adjust for, particularly in rural regions. For these reasons, post-farm gate downstream business impacts are now discussed in this RIS separately from the CBA

In relation to **Option A** (the base case), the additional business generated by export of bobby calf meat and products is calculated as the gross export value per bobby calf of \$202.78 less the wholesale value per calf of \$167<sup>61</sup> - giving a figure of **\$35.78** from exports per calf. Additional business from export activities is estimated to be **\$15,350,320** per annum.

In relation to the preferred **Option B**, once the existing standards including the proposed amendment are implemented, it is expected there will be very few calf transport consignments that might exceed the TOF limit imposed under normal conditions. The exact number of calves that might be affected after full implementation of the LTS is difficult to identify but the occurrences are likely to be limited to emergency situations such as breakdowns in transportation or in abattoir operations. The greatest possible risk is if an unrealistic TOF is established which would result in the loss of calf processing establishment viability. It is believed that no farms or livestock processing establishments will be significantly disadvantaged by the new requirement that underpins a reasonable expectation for a maximum allowable TOF for bobby calves.

30 hours TOF is an achievable standard, consistent with common once-daily feeding practices in the industry. The standard sets enforceable limits that protect the calves' welfare with an acceptable risk. The 30 hour TOF standard recognises the practicalities of getting the calves from the farm to the abattoir and slaughter during abattoir operating hours. It will therefore provide certainty to industry participants, right along the supply chain.

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<sup>59</sup> See Table A1.5 of Appendix 1 for source of estimate

<sup>60</sup> See Table A1.6 of Appendix 1 for source of estimate

<sup>61</sup> includes farm gate and transport and processing



In relation to **Option C**, AMIC advises that meat processors typically operate high volume low margin, capital and labour intensive businesses that are subject to many variables that potentially impact their viability. In this environment, maximising throughput is a fundamental element in an establishment's ability to remain viable; and any threat to this is a concern for processors. Depending on the circumstances of individual processors and the cumulative impact of other 'market' variables, a sustained 10% reduction in throughput could negatively impact its viability. However, the likelihood would be different for each processor and the circumstances under which it operates.

Table 6<sup>62</sup> summarises the expected distributional impact of Option C, in terms of loss of business, on transporters and processors and exporters estimated to be \$37.28 million over 5 years in 2010 dollars.

**TABLE 6: SUMMARY OF INCREMENTAL BUSINESS IMPACT ON TRANSPORTERS, PROCESSORS AND EXPORTERS UNDER OPTION C – 2011-12 TO 2015-16**

Category of incremental business impact	Annual	5 –year (present value) (7% discount rate)	Sensitivity analysis	
			5 –year (present value) (3% discount rate)	5 –year (present value) (10% discount rate)
Loss of business for transport and processing of bobby calves <sup>63</sup>	\$7,556,640	\$30,983,716	\$34,607,199	\$28,645,611
Loss of business in export market for bobby calf meat and products <sup>64</sup>	\$1,535,032	\$6,293,934	\$7,029,997	\$5,818,979
<b>Total loss of business</b>	<b>\$9,091,672</b>	<b>\$37,277,650</b>	\$41,637,196	\$34,464,590

In relation to **Option D**, AMIC advises that maximising throughput is a fundamental element in an establishment's ability to remain viable; and any threat to this is a concern for processors. Those establishments heavily reliant on bobby calves would be more exposed than others and it is likely an (almost) 90% reduction in throughput would negatively impact their business and the long term viability of the whole value chain. However, the likelihood would be different for each processor and the circumstances it operates under.

Table 7<sup>65</sup> summarises the expected distributional impact of Option D, in terms of loss of business, on transporters and processors and exporters estimated to be \$326.18 million over 5 years in 2010 dollars.

**TABLE 7: SUMMARY OF INCREMENTAL BUSINESS IMPACT ON TRANSPORTERS, PROCESSORS AND EXPORTERS UNDER OPTION D – 2011-12 TO 2015-16**

Category of business impact	Annual	5 –year	Sensitivity analysis
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<sup>62</sup> For source of estimates in Table 2 see Table A1.5 of Appendix 1

<sup>63</sup> See Part A1.3.4 for source of estimates

<sup>64</sup> See Part A1.3.5 for source of estimates

<sup>65</sup> For source of estimates in Table 2 see Table A1.11 of Appendix 1

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		(present value) (7% discount rate)	5 –year (present value) (3% discount rate)	5 –year (present value) (10% discount rate)
Loss of business for transport and processing of bobby calves <sup>66</sup>	\$66,120,600	\$271,107,515	\$302,812,987	\$250,649,096
Loss of business for export market for bobby calf meat and products <sup>67</sup>	\$13,431,530	\$55,071,925	\$61,512,474	\$50,916,066
<b>Total loss of business</b>	<b>\$79,552,130</b>	<b>\$326,179,440</b>	\$364,325,461	\$301,565,162

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<sup>66</sup> See Part A1.4.4 for source of estimates

<sup>67</sup> See Part A1.4.5 for source of estimates

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## 5.0 NATURE AND IMPACTS OF PREFERRED OPTION

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Having selected a preferred option (Option B) in Part 4.0 of this RIS, this Part provides a brief overview of the nature and impacts of the preferred option (including any impacts on National Competition Policy), cross-referring to the cost/benefit assessment as necessary. It also discusses how the preferred option would be implemented and enforced.

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### 5.1 LIKELY IMPACTS OF PROPOSED STANDARDS

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An assessment of the expected costs and benefits of the proposed standard amendment of a maximum 30 hours is given in Part 4.3.2 of the RIS.

In summary, there would be no incremental costs to industry, and costs would be limited to additional government enforcement activities estimated at approximately **\$12K**<sup>68</sup> per year. Significant benefits to animal welfare and national consistency would be likely to accrue, as listed in Part 4.3.2. These benefits largely reflect the reduction of risks (in terms of magnitude rather than the frequency of negative welfare outcomes) associated with shifting from the uncertainty of a voluntary guideline to the relative certainty of a regulated standard.

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### 5.2 COMPETITION POLICY ASSESSMENT

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The market affected by the proposed standard amendment is the market for bobby calf products. NCP applies to businesses rather than to individuals engaging in non-business activities. To the extent that they impact on businesses, namely farms, bobby calf buyers and meat processors, such businesses would be equally affected by the same regulatory environment. The only cost identified with the proposed standard amendment relates to enforcement cost (by the way of additional auditing), which is incurred solely by government.<sup>69</sup> Thus the proposed standard amendment is unlikely to restrict competition.

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### 5.3 IMPLEMENTATION AND ENFORCEMENT ISSUES

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If and when endorsed by PIMC, implementation of the proposed standard amendment will be by incorporation of the proposed standard into regulations, as summarised in Appendix 2 of this RIS.

The need for additional enforcement activities (relative to the base case) will vary for various state jurisdictions depending on current auditing arrangements and associated existing enforcement activities. Enforcement strategies may be adjusted in future to reflect community concerns or industry performance. For example, Victoria has in foreshadowed such a targeted approach under the new Victorian **Livestock Management Act 2010**, where it is expected that industry will monitor compliance with the nationally agreed TOF standard through its formal QA arrangements, and will be able to periodically report on compliance levels through approved arrangements endorsed under the new Act.

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<sup>68</sup> Refer to Table A1.1 in Appendix 1

<sup>69</sup> Enforcement is usually a public good funded by taxpayers generally, rather than by industry

At a bare minimum, all relevant jurisdictions have indicated that they will investigate complaints received about breaches of the proposed standard. Some jurisdictions have indicated that they will also conduct spot compliance checks, reflecting the higher risks to bobby calf welfare from possible feed deprivation. Jurisdictions that already conduct audits of abattoirs and calf scales (such as Victoria) have indicated a likely shift of priorities towards checking TOF records, without needing to increase the frequency of audits. (Some audits and other enforcement activities are already conducted for the purposes of NLIS reporting).

Based on information from each of the respective state jurisdictions, the incremental enforcement costs under Option B are estimated to be approximately **\$12K** per annum, as shown in Table A1.1 – of Appendix 1 or **\$49,163** over 5 years in present value dollars.

## 6.0 EVALUATION AND REVIEW STRATEGY

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The effectiveness of the proposed standards in achieving the policy objective (refer Part 2.2) and any unintended consequences will be evaluated over time by using indicators which will include the extent to which the standards have been:

- officially adopted by the various government jurisdictions;
- implemented by the dairy, livestock transport and meat processing industries;
- accepted by the Australian community.

The proposed standards will be considered for review after five years from the agreed implementation date (in accordance with current arrangements for the review of animal welfare standards in general); however, there could be an earlier review if considered necessary within the normal five year period.

## 7.0 CONCLUSIONS AND FINDINGS

The main conclusions and findings of the RIS are as follows:

1. The farm gate value of the bobby calf trade is in the order of \$40 million annually, with an estimated further \$75.75 million of annual business being generated following transport and processing for veal and co-products. Meat and products from bobby calves are exported predominantly to Japan and the US, contributing \$87 million in exports. A reduction in calf supply would have negative real effects on many businesses through the supply chain that they may not be able to adjust for, particularly in rural regions. Whilst the extent of this business activity is known, the extent of the separate value created for the cost/benefit analysis (CBA) is more difficult to estimate and has not been done. Post-farm gate downstream business impacts of the options are discussed in this RIS separately from the CBA (refer to Part 4.5 of this RIS & Appendix One).
2. The relevant costs and benefits of the various options relative to the base case are summarised in the following table:

**TABLE 4: COMPARISON OF COSTS AND BENEFITS FOR EACH OPTION**

Option	Expected incremental costs/5 years	Expected incremental benefits/5years
Option A 'Base case'	Nil	Nil
Option B (max. 30 hrs TOF)	\$0.049 million in enforcement costs	Benefits to animal welfare and national consistency as listed in Part 4.3.2
Option C (max. 24 hrs TOF)	\$13.21 million	Similar benefits to animal welfare as Option B but likely to be less national consistency than under the base case or Option B.
Option D (max. 18 hrs TOF)	\$115.68 million	Similar benefits to animal welfare as Option B but likely to be less national consistency than under the base case or Options B and C.

**Notes:**

1. Economic costs are based on farm gate estimates only.
2. Using a 7% discount rate.

3. The qualitative comparison of costs and benefits in Table 4 above shows that a standard of either 24 hours or 18 hours TOF would entail substantially higher costs even when based only on farm gate value without considering additional costs associated with loss of business for transporters, processors and exporters, than a standard of 30 hours TOF. The reduction in risk to calf welfare with these options is insubstantial, given the possibility of emergency feeding at abattoirs. The high costs of an alternative standard of either 24 hours or 18 hours TOF would not be justified in terms of either animal welfare outcomes or national consistency. This conclusion would not alter even if there were significant changes to the assumptions and cost estimates made in this RIS. On this basis, Option B is recommended as the preferred option for the purposes of this RIS.
4. There would be no incremental costs to industry from the preferred option, and costs would be limited to additional government enforcement activities estimated at approximately \$12K per year. Significant benefits to animal welfare and national consistency would accrue, as listed in Part 4.3.2.
5. To the extent that they impact on businesses, namely farms, bobby calf buyers and meat processors, such businesses would be equally affected by the same regulatory environment. The only cost identified with the proposed standard amendment relates to enforcement cost (by the

way of additional auditing), which is incurred solely by government. Thus the proposed standard amendment is unlikely to restrict competition.

6. The recommended maximum 30 hour TOF standard is supported by Australian and New Zealand scientific research (refer to Part 1.2.2 of this RIS). It addresses the physiological stresses calves are subjected to during transport. It sets an enforceable limit that will adequately manage risks to the calves' welfare. The proposed standard is achievable, consistent with common once-daily feeding practices in the industry. The vast majority of bobby calves are slaughtered at less than 24 hours TOF, but 100% compliance with a 24 hours TOF standard would not be achievable without high additional costs. Similarly, a standard of 18 hours TOF would entail substantially higher costs for no observable reduction in the risk to calf welfare. The proposed 30 hour TOF standard recognises the practicalities of getting the calves from the farm to the abattoir, is more likely to be adopted by most jurisdictions than other options; and is therefore likely to promote national consistency and certainty to industry participant's right along the supply chain.
7. Stakeholders have been adequately consulted during the preparation of the proposed standard amendment and via the public consultation process. The public consultation process confirmed that the welfare of bobby calves is an emotive issue. The larger number of submissions from animal welfare organisations and individuals support a shorter time off feed and in some cases question the need for transport at all (slaughter on farm and other alternatives were proposed). There is no unanimous support for a single, shorter, time-off-feed option instead of the 30 hours. There is good support for a 30 hours time off feed limit from some government and all industry respondents in the context of the other related standards for calf transport.

## GLOSSARY OF TERMS AND ACRONYMS

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<b>ABS</b>	Australian Bureau of Statistics
<b>ABARE</b>	Australian Bureau of Agricultural and Resource Economics
<b>AHA</b>	Animal Health Australia
<b>AQIS</b>	Australian Quarantine and Inspection Service
<b>ALTA</b>	Australian Livestock Transporters Association
<b>AVA</b>	Australian Veterinary Association
<b>AWC:</b>	Animal Welfare Committee
<b>base case</b>	means the situation that would exist if the proposed standards were not adopted
<b>blunt trauma</b>	a single blow to the forehead causing immediate loss of consciousness
<b>bobby calf</b>	A calf not accompanied by its mother, less than 30 days old, weighing less than 80 kg liveweight, and usually a dairy breed or cross
<b>COAG</b>	Council of Australian Governments
<b>DAFF</b>	Department of Agriculture, Fisheries and Forestry
<b>externality</b>	means the cost or benefit related to a good or service that accrues to persons other than the buyer or the seller of that good or service
<b>guidelines</b>	the recommended practices to achieve desirable animal welfare outcomes. The guidelines complement the standards. They should be used as guidance. Guidelines use the word 'should'. Non-compliance with one or more guidelines will not in itself constitute an offence under law Compare with <i>Standards</i>
<b>EU</b>	European Union
<b>humane destruction</b>	the activity that results in immediate loss of consciousness and then death of the animal. The primary consideration is to prevent the animal from suffering further pain or distress
<b>journey</b>	the movement of livestock from loading to unloading at a destination
<b>journey time</b>	The time that animals are loaded in a container or on a vehicle, until they are unloaded
<b>lairage</b>	processing establishment holding yard and facilities
<b>market</b>	means an area of close competition between firms, or the field of rivalry in which firms operate
<b>market failure</b>	means the situation which occurs when freely functioning markets, operating without government intervention, fail to deliver an efficient or optimal allocation of resources
<b>merit goods</b>	underprovided goods/services in a market economy which are determined by government to be good for society whether or



	not consumers desire them
<b>MLA</b>	Meat & Livestock Australia
<b>monopsony</b>	means a market structure where there is only one buyer
<b>monopoly</b>	means a market structure such that only one firm supplies the entire market
<b>NAWAC</b>	National Animal Welfare Advisory Committee (NZ)
<b>NVD</b>	National Vendor Declaration
<b>over the hooks</b>	refers to the marketing of cattle/sheep/lambs directly from the farm to a processing establishment where a producer is paid for the value of the carcase based on a sliding grid
<b>OIE</b>	World Organisation for Animal Health
<b>person in charge</b>	the person who is responsible for the welfare of the livestock at the times they are in charge for each stage of each journey, including before loading and after unloading. Responsibility for duty of care for livestock welfare may extend to the person's employer
<b>PIMC</b>	Primary Industries Ministerial Council
<b>prescribed</b>	specified by regulations made under an Act
<b>public good</b>	a good or service that will not be produced in private markets because there is no way for the producer to keep those who do not pay for the good or service from using it
<b>replacement calf</b>	Female calf kept to replace dairy cow. (A bobby calf is a non-replacement calf)
<b>restriction of competition</b>	means something that prevents firms in a market or potential entrants to a market from undertaking the process of economic rivalry
<b>RIS</b>	regulation impact statement
<b>RSPCA</b>	Royal Society for the Prevention of Cruelty to Animals
<b>saleyard</b>	means premises where livestock are gathered and ownership of livestock is exchanged; livestock are bought and sold
<b>standards</b>	the acceptable animal welfare requirements designated in the proposed standards document. The requirements that must be met under law for livestock welfare purposes. The standards are intended to be clear, essential and verifiable statements; however, not all issues are able to be well defined by scientific research or are able to be quantified. Standards use the word 'must'
<b>stock handler</b>	a person who undertakes the immediate day-to-day husbandry tasks associated with looking after animals
<b>stock handling</b>	putting into practice the skills, knowledge, experience, attributes and empathy necessary to manage stock
<b>stress</b>	means a response by animals that activates their behavioural, physiological or psychological coping mechanisms
<b>supply chain</b>	a group of businesses linked together for mutual benefit to supply products to customers

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## APPENDIX 1 - ESTIMATES OF QUANTIFIABLE COSTS AND BENEFITS

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### A1.1 BASE CASE – OPTION A

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The base case (Option A) is defined as the situation that would apply in the absence of the proposed standard amendment i.e. no TOF standard for bobby calves in the LTS.<sup>70</sup> However, because of the clear scientific findings regarding acceptable limits for TOF, it assumed that the 30 hours TOF would become an industry and/or government guideline under the base case (as already proposed in the 2<sup>nd</sup> edition of the AMIC guidelines), but this has no regulatory impact and is therefore not relevant to these cost estimates.

Unless otherwise stated all figures and estimates provided are generated from data provided by Dairy Australia (DA). In Australia approximately 59% of all Australian dairy calves (i.e. 756,074)<sup>71,72</sup> are sold as non-replacement calves. Of all the 756,074 non-replacement calves sold in Australia each year, 91.53%<sup>73</sup> are sold for meat processing and 8.74%<sup>74</sup> are sold for dairy beef rearing (see Chart A.1). 18.64%<sup>75</sup> of all non-replacement calves sold (i.e. 140,963 calves), are sent directly to meat processors. The remainder of all non-replacement calves are sold at mobile scales, public scales or saleyards (i.e. 576,667 calves per annum or 76.27%) or sold direct to dairy beef rearers (38,444 calves or 5.08%).

Advice from industry and AQIS is that industry can meet a 30 hour maximum TOF standard. For the purpose of this analysis, it is assumed that approximately 99% of all bobby calves are currently processed with no more than 30 hours TOF with only 1% subject to emergency feeding. Adherence to such a standard would thus be very high; however, because such adherence is voluntary, there is no guarantee under the 'base case' that standards with respect to TOF would be maintained at all times.

It is also assumed, after consultation with industry, that the feeding of bobby calves during transport is not feasible due to lack of facilities and therefore impractical in terms of compliance. Such a process would most likely involve the unloading and reloading of calves at a suitable facility, the purchase and maintenance of necessary feeding equipment, feed and the employment of sufficient labour. With driver fatigue management laws, it is likely to be difficult for drivers to do this extra work.

As shown in the Chart A.1 above, veal from 262,960<sup>76</sup> and 429,040<sup>77</sup> bobby calves is destined for the domestic and export markets, respectively.

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<sup>70</sup> Existing legislation is also part of the base case

<sup>71</sup> 692,000 commercially slaughtered divided by the proportion of calves sent for meat processing (i.e. 91.25% of all calves sold see Destinations of dairy calves in Victoria for 2006 (Dairy 2007: Situation & Outlook Report to the Australian Dairy Industry)

<sup>72</sup> Raw numbers unrounded at this stage, to avoid rounding error

<sup>73</sup> 54% of the 59% of all replacement and non-replacement calves

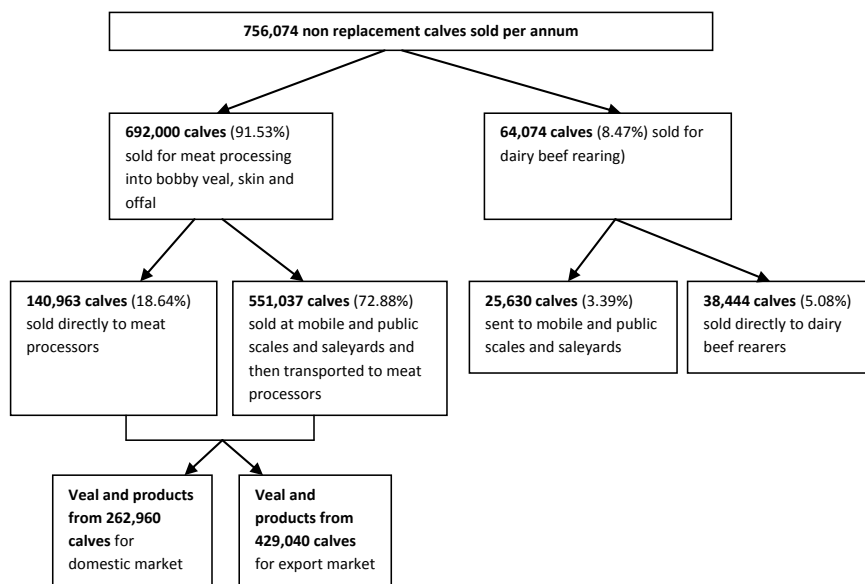
<sup>74</sup> 5% of the 59% of all replacement and non-replacement calves

<sup>75</sup> 11% of the 59% of all replacement and non-replacement calves

<sup>76</sup> 38% of 692,000 see Destinations of dairy calves in Victoria for 2006 (Dairy 2007: Situation & Outlook Report to the Australian Dairy Industry)

<sup>77</sup> 62% of 692,000 see Destinations of dairy calves in Victoria for 2006 (Dairy 2007: Situation & Outlook Report to the Australian Dairy Industry)

**CHART A.1: DESTINATION AND METHOD OF TRANSACTION FOR ALL NON-REPLACEMENT CALVES - 'BASE CASE' OPTION A**



#### A1.1.1 VALUE OF BOBBY CALF WHOLESALE TRADE

The average carcase weight (meat and bone only) of a bobby calf at sale is approximately 35kg with a wholesale value of \$4.20 per kg carcase. The average wholesale value of each bobby calf is therefore estimated to be \$147 plus an average of \$20 per calf for skin and offal - bringing the total average value to approximately **\$167** per calf. Given that there are 692,000 bobby calves commercially processed for meat and co-products each year, the wholesale value is therefore estimated to be **\$115,564,000** per annum. This value includes the value of trade at farm gate, as well as, additional business generated with transport and processing.

#### A1.1.2 VALUE OF BOBBY CALF FARM GATE TRADE

The farm gate value of the bobby calf trade (calves destined for slaughter) is in the order of **\$40 million** annually<sup>78</sup>. Given that there are 692,000 bobby calves destined for slaughter this would generate an average farm gate value of **\$57.80** per calf. *This value is used as an indicator of total surplus to the community assuming efficient and competitive markets.*

#### A1.1.3 ADDITIONAL BUSINESS GENERATED BY THE BOBBY CALF TRANSPORT AND PROCESSING TRADE

The additional business generated by transport and processing is calculated as the difference between the wholesale value of \$167 per calf and the average farm gate value of \$57.80 per calf - giving a transport and processing value of **\$109.20**. Given that there are 692,000 bobby calves being processed, this would generate **\$75,566,400** of business annually.

<sup>78</sup> Trade data, Meat and Livestock Australia

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#### A1.1.4 ADDITIONAL BUSINESS GENERATED BY BOBBY CALF MEAT AND PRODUCT EXPORTS

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As shown in Chart A.1 the amount of calves involved in veal, skin and offal products for export markets is estimated to be 429,040 and represents 62% of all calves sold to slaughter. In 2009 there was approximately 3,693,000kg<sup>79</sup> (bone-out) of veal exported and the value of the bobby calf meat and product export market is given as \$87 million per annum. The aggregate value of bobby calf meat and products (including skin/offal and bones) is therefore given as \$202.78 per calf. The additional business generated by export of bobby calf meat and products is calculated as the gross export value per bobby calf of \$202.78 less the wholesale value per calf of \$167<sup>80</sup> - giving a figure of **\$35.78** from exports per calf. Additional business from export activities is estimated to be **\$15,350,320** per annum.

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#### A1.1.5 VALUE OF REARED CALVES

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If sold over the scales, farmers can *currently* expect a price of around \$1.45/kg liveweight. Given that the average weight of an 18 month live dairy steer is 450kg, the average market value is estimated to be \$652.50 per steer. Under the 'base case' the estimated value to be obtained from the sale of reared calves is expected to be \$652.50 x 64,074 calves = **\$41,808,333** per annum.

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### A1.2 30 HOURS TOF - OPTION B

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#### A1.2.1 BENEFIT OF INCREASED ANIMAL WELFARE FOR BOBBY CALVES

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With a change in standards to a maximum time off feed (TOF) of 30hrs it is expected that there will be 100% compliance and all of the 692,000 non-replacement calves will continue to be available for meat processing. The only difference as compared to the 'base case' is that animal welfare will be guaranteed as the 30hr TOF standard will become mandatory under Option B (refer to Part 1.2.2 of this RIS).

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#### A1.2.3 COST OF ENFORCEMENT FOR GOVERNMENT/RSPCA

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Incremental enforcement costs for government or organisations undertaking enforcement activities on behalf of government (e.g. RSPCA) will vary for various state jurisdictions under Option B (30hrs TOF), depending on current auditing and associated enforcement activities. (Some audits and other enforcement activities are already conducted for the purposes of NLIS reporting). Based on information from each of the respective state jurisdictions, the incremental enforcement costs under Option B are estimated to be approximately **\$12K** per annum, as shown in Table A1.1 - or **\$49,163** over 5 years in present value dollars.

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<sup>79</sup> Figure is for 2009 calendar year (see ABS (Dec, 2009) Livestock Products, Australia, Cat. No. 7215.0)

<sup>80</sup> includes farm gate and transport and processing

**TABLE A1.1: INCREMENTAL ANNUAL ENFORCEMENT COSTS FOR GOVERNMENT/RSPCA (OPTION B - 30HRS TOF)**

Category	Enforcement cost
Queensland	\$9,105.00 <sup>81</sup>
Victoria	\$31.11 <sup>82</sup>
Tasmania	Nil <sup>83</sup>
South Australia	\$1,000.00 <sup>84</sup>
Western Australia	Nil <sup>85</sup>
NSW	\$1,854.17 <sup>86</sup>
<b>Total</b>	<b>\$11,990.28</b>

### A1.3 24 HOURS TOF - OPTION C

#### A1.3.1 INTRODUCTION TO OPTION C

With a change in standards to a maximum time off feed (TOF) of 24hrs it is expected that some restriction on the number of calves available for commercial slaughter will arise. Based on discussions with the industry it is estimated that 10% of all non-replacement bobby calves normally destined for slaughter would become unavailable due to an inability to comply with the 24hr TOF standard. This would most likely be equivalent to 10% of 692,000 (i.e. 69,200 non-replacement calves). Under Option C, the estimated non-replacement calves available for sale and destined for meat processing would most likely be reduced to only *622,800 per annum* (see Chart A.2).

According to Dairy Australia the 'vast majority' of bobby calves are already being delivered for slaughter within the 24hr time frame. As with the 'base case' it is assumed that 1% of the 90% which would comply are subject to emergency feeding and, therefore, there is no additional cost in this regard.

<sup>81</sup> Enforcement cost is based on 0.1 of a full time equivalent staff member with an annual salary of \$91,056 including on costs, car and phone

<sup>82</sup> DPI does not plan to increase resourcing of auditing beyond current audit frequency but within that could move to examining for TOF records within that process. Given that the cost of enforcement is given as \$280 per day per staff and given that examining TOF records is assumed to be 10 minutes, then 5 audits of meat processors per annum is equivalent to \$280/7.5hrs x 10/60 x 5 audits per annum = \$31.11 per annum

<sup>83</sup> Current industry practices are compliant with Option B and so increase in non-compliance is not anticipated. Estimated additional cost is nil

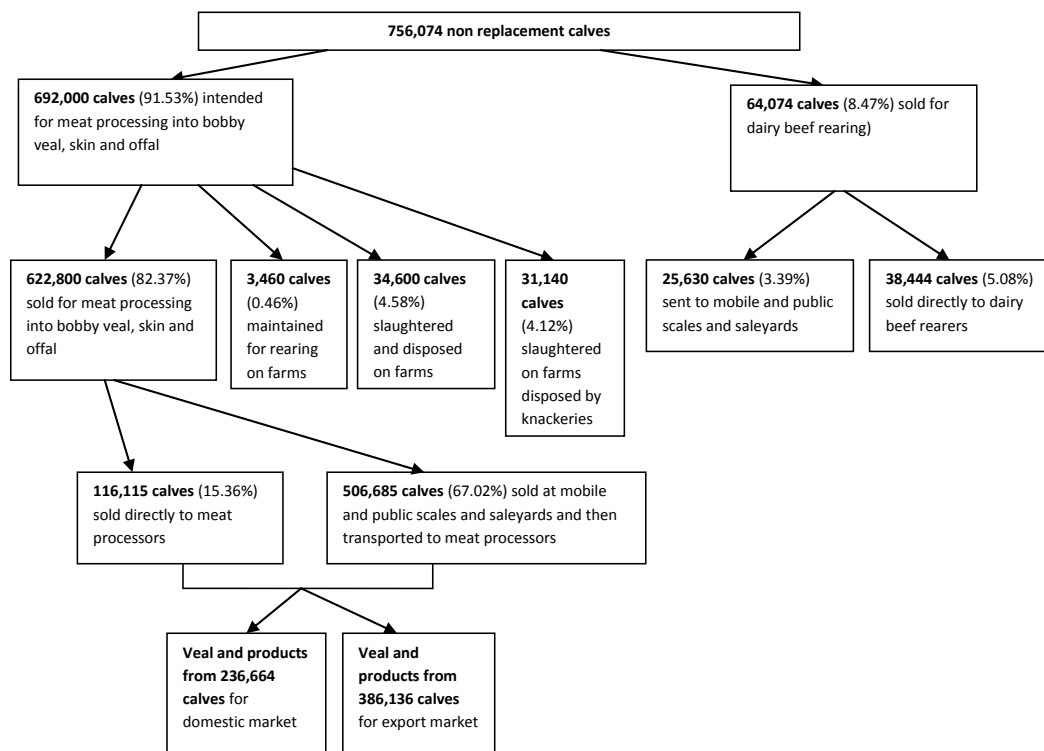
<sup>84</sup> Estimated as 4 compliance actions by RSPCA per year @ 1 day each = \$1,000

<sup>85</sup> There are limited resources and limited scope to carry out auditing activities. With this in mind, it is expected that there will be limited cost impact on the regulators. Given the size and logistics of this industry in WA, it is DAFWA's view that it is unlikely that dedicated resources would be applied to any audits although this is a matter for DLG to determine. An investigative response to an animal welfare complaint may occur - but probably very infrequently

<sup>86</sup> Pro rata estimate based on annual incremental cost of enforcement for South Australia (recommended as suitable for NSW) and the ratio of 89,000 non-replacement calves in NSW to 48,000 non-replacement calves in South Australia = 1.85



**CHART A.2: DESTINATION AND METHOD OF TRANSACTION FOR ALL NON-REPLACEMENT CALVES – OPTION C (TOF 24HRS)**



The number of total non-replacement calves affected under Option C (24hrs TOF) is summarised in Table A1.2.

**TABLE A1.2: NUMBER OF NON-REPLACEMENT CALVES AFFECTED WITH COMPLIANCE UNDER 24HR TOF – 2011-12 TO 2015-16**

Category	% of 756,074 non-replacement calves	Number of bobby calves
Kept for beef rearing under the base case	8.47%	64,074
Sold for slaughter	82.37%	622,800
Additionally kept for rearing	0.46%	3,460
Slaughtered and disposed on farm	4.58%	34,600
Slaughtered on farm and disposed by knackery	4.12%	31,140
<b>Total</b>	<b>100.00%</b>	<b>756,074</b>

Under this Option the remaining 69,200 non-replacement calves, as shown in Chart A.2, would have to either be:

- slaughtered and disposed with on the farm (50% of 69,200 calves = **34,600 calves = 4.58% of all non - replacement calves**);

- slaughtered on the farm and disposed at a knackery (45% of 69,200 calves = **31,140 calves = 4.12% of all non-replacement calves**); or
- reared for beef when the former are not possible (5% of 69,200 calves = **3,460 calves = 0.46% of all non-replacement calves**).

Also under Option C it is assumed that there would be no night time feeding or feeding along route required in order to comply with the 24hr TOF standard as according to Dairy Australia the 'vast majority' are already being delivered within this time frame.

Finally, as shown in the Chart A.2 above, veal and other products from 236,664<sup>87</sup> and 386,136<sup>88</sup> bobby calves would most likely be destined for the domestic and export markets, respectively.

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### A1.3.2 BENEFIT OF INCREASED ANIMAL WELFARE FOR BOBBY CALVES UNDER 24HR TOF

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As with Option B – 30hrs TOF. Any small amount of risk reduction is likely to be offset to at least some extent by an increased risk to animal welfare, biosecurity and occupational health and safety (OH&S) as a result of the less expert slaughter processes and facilities available on farm compared to abattoirs.

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### A1.3.3 LOSS OF FARM GATE VALUE OF BOBBY CALVES (LOSS OF SURPLUS TO SOCIETY)

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The farm gate value per bobby calf is given as **\$57.80**<sup>89</sup>. Given a reduction in the supply of bobby calves by 69,200 under Option C (i.e. a reduction in bobby calves for meat processing by 10%) it is expected that there would most likely be an incremental loss in the farm gate value of bobby calves under Option C of approximately **\$3,999,760**<sup>90</sup> per annum, as compared to the 'base case'. Over 5 years the estimate would equal **\$16,399,806** in 2010 dollars<sup>91</sup>.

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### A1.3.4 BUSINESS IMPACT ON TRANSPORT AND PROCESSING OF BOBBY CALVES

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The transport and processing business generated per bobby calf is given as **\$109.20**<sup>92</sup>. Given a reduction in the supply of bobby calves by 69,200 under Option C it is expected that there would most likely be an incremental business impact on the transport and processing of bobby calves under Option C of approximately **\$7,556,640** per annum, as compared to the 'base case'. Over 5 years the estimate would equal **\$30,983,716** in 2010 dollars<sup>93</sup>.

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### A1.3.5 BUSINESS IMPACT ON EXPORTS OF BOBBY CALF MEAT AND PRODUCT

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The business generated from exports per bobby calf is estimated to be **\$35.78**<sup>94</sup>. Given a reduction in the supply of bobby calves associated with exports by 42,904 under Option C, it is expected that there would most likely be an incremental business impact on exports under Option C of approximately

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<sup>87</sup> 38% of 622,800

<sup>88</sup> 62% of 622,800

<sup>89</sup> See Part A1.1.2 for source of estimate

<sup>90</sup> Analysis does not factor in the potential increase in farm gate price arising from a shortage in farm gate supply of bobby calves destined for slaughter however OBPR has recommended that costs can simply be modelled as the changes in calf volume going to each destination multiplied by the unit value of calves for each destination

<sup>91</sup> Estimated using a discount rate of 7%

<sup>92</sup> See Part A1.1.3 for source of estimate

<sup>93</sup> Estimated using a discount rate of 7%

<sup>94</sup> See Part A1.1.4 for source of estimate

**\$1,535,032** per annum, as compared to the 'base case'. Over 5 years the estimate would equal **\$6,293,934** in 2010 dollars<sup>95</sup>.

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#### A1.3.6 COST OF SLAUGHTER AND DISPOSAL ON FARM

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Based on discussion with Dairy Australia, it is noted that slaughter and disposal of carcase on the farm would effectively occur with respect to 4.58% of total non-replacement calves where regions have: sufficient space; no water table issues and no threat of contamination of the water supply; are unable to arrange disposal of slaughtered calves at knackeries due to distance. As shown in Chart A.2 there would most likely be 34,600 calves slaughtered and disposed of on the farm.

Use of blunt force trauma is permitted up to 24 hours old but requires expertise and would be the cheapest option if a decision is made not to market calves. Other killing options are possible such as use of firearms or captive bolt devices but these methods have higher operating costs and would be voluntary under the minimum standard.

The identifiable costs in relation to this scenario include:

- the 'emotional cost'<sup>96</sup> of slaughtering calves (in terms of the scale not just the individual action);
- the time cost of slaughtering the animal and the time cost of preparing a pit. The earth moving equipment necessary for preparing and filling a pit would simply be by attaching a front end loader to an existing tractor and is not considered as an additional cost of Option C; and
- the cost of materials for composting carcasses on the farm which are valued at \$25 per calf.

In order to calculate the 'emotional cost' of slaughtering a calf, a willingness to pay estimate is assumed.<sup>97</sup> A conservative value of \$1 per calf is chosen due to a lack of any published estimates and represents the 'emotional cost' to farmers. This would generate an estimated cost of *\$34,600 per annum*.

The 'time cost' of slaughtering calves is estimated using \$25 per hour plus on costs and overhead costs. The total hourly charge out rate for a suitably trained farm worker to humanely slaughter calves on the farm of \$43.69 is calculated as follows:

$$\text{Hourly cost} = \$25 \text{ per hour} \times 1.165 \times 1.5 = \$43.69 \text{ per hour}$$

Where

- 1.16598 is the on-cost multiplier covering salary related cost such as superannuation, payroll tax and leave entitlements; and
- 1.599 the overhead cost multiplier covering indirect costs such as accommodation, and vehicle expenses.

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<sup>95</sup> Estimated using a discount rate of 7%

<sup>96</sup> A term recognising that many dairy farmers would prefer to avoid the unpleasant task of slaughtering their calves on farm

<sup>97</sup> There is no known published willingness to pay estimate by farmers for the avoidance of bobby calf slaughter activities

<sup>98</sup> Victorian Competition and Efficiency Commission 2006, (Draft) Guidance Note: Suggested default methodology and values for staff time in BIA/RIS analysis, October.

<sup>99</sup> Victorian Competition and Efficiency Commission 2006, (Draft) Guidance Note: Suggested default methodology and values for staff time in BIA/RIS analysis, October

The number of hours involved in disposing of 100 calves is estimated to be 10 hours<sup>100</sup> and therefore the total time cost of slaughtering and disposing calves on farm is estimated to be **\$151,159 per annum**:

$$34,600 \text{ calves} / 100 \text{ calves} \times 10 \text{ hrs} \times \$43.69 / \text{hr} = \$151,159 \text{ per annum}$$

Given an estimated 34,600 required for slaughter on the farm under Option C, the cost of materials for composting are estimated to be  $34,600 \times \$25$  of material per calf = **\$865,000 per annum**.

The total logistical and 'emotional cost' of slaughter and disposal on farm of non-replacement calves is therefore estimated to be **\$1,050,759 per annum** or **\$30.37 per calf**. Over 5 years this would equal **\$4,308,318** in 2010 dollars.

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### A1.3.7 COST OF SLAUGHTER AND DISPOSAL AT KNACKERY

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It is estimated that currently 4.12% of calves are slaughtered on farm and the carcasses are processed through a local knackery (with little or no transport cost).

Under Option C the volume of disposal would increase as there would now be an estimated 31,140 calf carcasses to dispose of every year with a combined carcase weight of 1.09<sup>101</sup> million kilograms.

With respect to the three main knackeries in Victoria, which currently handle just over 100,000 calf carcasses a year between them – the fee for picking up slaughtered calves within relevant distances would be zero<sup>102</sup>. The knackery industry sees this service as part of the value provided to the dairy industry and wishes to continue securing the support of the dairy industry for the foreseeable future. The largest knackeries have more than enough existing capacity to cope with the additional throughput of slaughtered calves under Option C. Based on discussions with the knackery industry, any additional costs of disposal (including pick up) would be most likely absorbed by additional revenues from the larger volume of calf carcasses, leaving profits 'neutral'.

For 4.12% of calves, owners would incur an estimated slaughter cost at \$43.69 per hour with a slaughter time of 1 minute per calf involving a captive bolt and then bleeding out; a willingness to pay to avoid slaughter of \$1 a calf (i.e. the 'emotional cost'); and a cost of pick up by a knackery of \$0 per calf. For 31,140 calves the 'emotional cost' of slaughter is estimated to be \$31,140. The logistical cost of slaughter is estimated to be  $31,140 / 60 \times \$43.69 = \$22,674$ . The cost of pick up by a knackery would most likely be \$0, based on discussions with the two largest knackeries in Victoria. The total cost of slaughter on farm and disposal by knackery for 36.04% of non-replacement calves is therefore estimated **\$53,814 per annum** or **\$1.73 per calf**. Over 5 years this would be equal to **\$220,647** in 2010 dollars.

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### A1.3.8 NET GAIN IN VALUE FOR WHOLESALE TRADE OF REARED BOBBY CALVES

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According to Dairy Australia there is a limited market for weaner dairy beef apart from store sale 'by the head'. Therefore, additional bobby calves kept for rearing under Option C would have to be raised to the age of 12 to 24 months i.e. until they are yearlings. The cost of rearing dairy beef is given as \$135 on average per calf to weaner age plus \$7 per calf per week post weaning (including veterinary, capital and lease *servicing costs* and maintenance costs) – based on information from Dairy Australia.

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<sup>100</sup> Estimate from Dairy Australia

<sup>101</sup> 31,140 calves at a carcase weight of 35kg per calf

<sup>102</sup> Based on telephone interviews with Numurkah Knackery and Maffra District Knackery

Assuming that, on average, calves are reared to the age of 18 months and that the average age of weaning is 4 to 6 weeks then the cost of rearing a calf to the age of 18 months is given as \$597 per calf:

$$\$135 + \$7 \text{ per week} \times 66 \text{ weeks} = \$597$$

This estimate does not include the one-off capital cost associated with the need for additional infrastructure and land required rear young cattle for beef production, as such assets could be used for alternative purposes.

It is assumed that only 5% of those calves which are unable to comply with the 24hr TOF standard (i.e. 3,460 calves) would most likely be designated for rearing for beef in addition to the 64,074 calves already being reared under the 'base case' (see Chart A.1). That is to say, only larger farms with many calves may be able to exploit scale economies and reduce rearing costs below average levels. Without scale economies a smaller size operation would have to secure \$2.38/kg or higher to secure a *positive* return on investment<sup>103</sup>. If sold over the scales, farmers can *currently* expect a price of around only \$1.45/kg<sup>104</sup> live-weight.

For an average live-weight of 450kg, the average market price is estimated to be \$652.50 per steer. However such a revenue stream would fail to provide a sufficient return on investment and in most cases farmers would be better off using land for dairy cows or at the very least leasing out the land for other purposes. For example, based on ABARE statistics, total annual milk receipts for an average herd of 334 cows was \$538,120 in 2007-08<sup>105</sup> or a revenue stream of approximately \$1,611 per cow per annum. Assuming that a dairy cow's *commercial life span* is 5 years, it is estimated that a dairy cow would typically produce a total revenue stream of \$8,055 on average (not including the sale value of a dairy cow itself). This revenue stream is almost five times the revenue that would be generated from the sale of a steer, taking into account an average steer life of two years.

Given that the average market price is estimated to be \$652.50 per steer and the cost of rearing is \$597 - the net value per bobby calf raised for rearing is estimated to be **\$55.50** (not including the opportunity cost of land). As compared to the 'base case', Option C represents a net *gain* in value for the wholesale market for steers, estimated to be **\$192,030** per annum. Over 5 years this would equal **\$787,361** in 2010 dollars.

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### A1.3.9 COST OF ENFORCEMENT FOR GOVERNMENT/RSPCA

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Incremental enforcement costs for government or organisations undertaking duties on behalf of government (i.e. RSPCA) will vary for various state jurisdictions under Option C (24hrs TOF), depending on current auditing and associated enforcement activities. Based on information from each of the respective state jurisdictions, the incremental enforcement costs under Option C are estimated to be approximately **\$12.5K** per annum, as shown in Table A1.3 - or **\$51,213** over 5 years in present value dollars.

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<sup>103</sup> Meat and Livestock Australia (May 2007)

<sup>104</sup> Dairy Australia

<sup>105</sup> Dharma, S and Martin, P 2010, *Australian Dairy 10.1 Financial performance of Australian dairy farms, 2007-08 to 2009-10*, ABARE Report to Dairy Australia, Canberra, June

**TABLE A1.3: INCREMENTAL ANNUAL ENFORCEMENT COSTS FOR GOVERNMENT/RSPCA (OPTION C - 24HRS TOF)**

Category	Enforcement cost
Queensland	\$9,105.00 <sup>106</sup>
Victoria	\$31.11 <sup>107</sup>
Tasmania	\$500.00 <sup>108</sup>
South Australia	\$1,000.00 <sup>109</sup>
Western Australia	Nil <sup>110</sup>
NSW	\$1,854.17 <sup>111</sup>
<b>Total</b>	<b>\$12,490.28</b>

#### A1.3.10 SAVING OF FEED COSTS FOR CALVES SLAUGHTERED ON FARM

Under Option C, 65,740 calves would need to be slaughtered on the farm and disposed of on the farm or by the knackery (4.7% of all non-replacement calves which are not sold for slaughter or not kept for rearing (see Table A1.2)). Calves are usually detected within 12hrs of being born and are sent for slaughter at typically between 5 and 7 days of age. For the purpose of analysis, it is assumed that calves are sent for slaughter on average at 6 days of age; but not typically fed until detected (i.e. after 12 hours). Therefore, the potential savings in feed costs occur for an average of 5.5 days and the cost of feed is given as \$4.71<sup>112</sup> per calf per day. Total annual feed cost savings are therefore given as approximately **\$1.7 million** dollars per annum - or **\$6,981,682** over 5 years in present value dollars:

$$65,740 \text{ calves} \times 5.5 \text{ days} \times \$4.71 \text{ per calf per day} = \$1,702,767.33$$

Finally, a summary of quantifiable net incremental costs (loss of community surplus) under Option C as compared to the 'base case' is illustrated in Table A1.4. The total 5-year net incremental cost of Option C is estimated to be **\$13.21** million in 2010 dollars using a 7% discount rate. Sensitivity tests reveal a slightly higher net cost of approximately \$14.76 million at a 3% discount rate and a lower cost of approximately \$12.21 million at a 10% discount rate.

<sup>106</sup> Enforcement cost is based on 0.1 of a full time equivalent staff member with an annual salary of \$91,056 including on costs, car and phone

<sup>107</sup> DPI does not plan to increase resourcing of auditing beyond current audit frequency but within that could move to examining for TOF records within that process. Given that the cost of enforcement is given as \$280 per day per staff and given that examining TOF records is assumed to be 10 minutes, then 5 audits of meat processors per annum is equivalent to \$280/7.5hrs x 10/60 x 5 audits per annum = \$31.11 per annum

<sup>108</sup> Additional instances of non-compliance as a result of TOF regulation are expected to be low. The associated additional enforcement work is estimated at 2 staff days/year @ \$250 per day = \$500 per annum

<sup>109</sup> Estimated as 4 compliance actions by RSPCA per year @ 1 day each = \$1,000

<sup>110</sup> There are limited resources and limited scope to carry out auditing activities. With this in mind, it is expected that there will be limited cost impact on the regulators. Given the size and logistics of this industry in WA, it is DAFWA's view that it is unlikely that dedicated resources would be applied to any audits although this is a matter for DLG to determine. An investigative response to an animal welfare complaint may occur - but probably very infrequently

<sup>111</sup> Pro rata estimate based on annual incremental cost of enforcement for South Australia (recommended as suitable for NSW) and the ratio of 89,000 non-replacement calves in NSW to 48,000 non-replacement calves in South Australia = 1.85

<sup>112</sup> Based on a March 2008 estimate of \$4.39 (see Tim Harding & Associates (2008)) and adjusted for inflation using a March 2008 CPI index of 162.2 and a December 2010 CPI index of 174.0

**TABLE A1.4: SUMMARY OF QUANTIFIABLE INCREMENTAL ECONOMIC COSTS (LOSS OF COMMUNITY SURPLUS) FOR OPTION C – 2011-12 TO 2015-16**

Category of quantifiable incremental economic cost	Annual	5 –year (present value) (7% discount rate)	Sensitivity analysis	
			5 –year (present value) (3% discount rate)	5 –year (present value) (10% discount rate)
Loss of farm gate value of bobby calf market <sup>113</sup>	\$3,999,760	\$16,399,806	\$18,317,730	\$15,162,237
Cost of slaughter and disposal on farm <sup>114</sup>	\$1,050,759	\$4,308,318	\$4,812,167	\$3,983,202
Cost of slaughter and disposal at knackery <sup>115</sup>	\$53,814	\$220,647	\$246,452	\$203,997
Loss of wholesale value of reared calf market <sup>116</sup>	-\$192,030	-\$787,361	-\$879,441	-\$727,945
Cost of enforcement <sup>117</sup>	\$12,490	\$51,213	\$57,202	\$47,348
Cost of feed for calves slaughtered on farm and disposed on farm or knackery <sup>118</sup>	-\$1,702,767	-\$6,981,682	-\$7,798,176	-\$6,454,828
<b>Total economic cost</b>	<b>\$3,222,026</b>	<b>\$13,210,941</b>	\$14,755,933	\$12,214,012

The distribution of business impacts on the transport and processing industry and export industry are summarised in Table A1.5 below.

**TABLE A1.5: SUMMARY OF INCREMENTAL BUSINESS IMPACT ON TRANSPORTERS, PROCESSORS AND EXPORTERS UNDER OPTION C – 2011-12 TO 2015-16**

Category of incremental business impact	Annual	5 –year (present value) (7% discount rate)	Sensitivity analysis	
			5 –year (present value) (3% discount rate)	5 –year (present value) (10% discount rate)
Loss of business for transport and processing of bobby calves <sup>119</sup>	\$7,556,640	\$30,983,716	\$34,607,199	\$28,645,611
Loss of business in export market for bobby calf meat and products <sup>120</sup>	\$1,535,032	\$6,293,934	\$7,029,997	\$5,818,979
<b>Total loss of business</b>	<b>\$9,091,672</b>	<b>\$37,277,650</b>	\$41,637,196	\$34,464,590

<sup>113</sup> See Part A1.3.3 for source of estimates

<sup>114</sup> See Part A1.3.6 for source of estimates

<sup>115</sup> See Part A1.3.7 for source of estimates

<sup>116</sup> See Part A1.3.8 for source of estimates. The negative sign reflects the gain in value for this particular item which needs to be offset against the other costs rather than treated as a benefit on its own

<sup>117</sup> See Part A1.3.9 for source of estimates

<sup>118</sup> See Part A1.3.10 for source of estimates. The negative sign reflects the cost savings for this particular item which needs to be offset against the other costs rather than treated as a benefit on its own

<sup>119</sup> See Part A1.3.4 for source of estimates

<sup>120</sup> See Part A1.3.5 for source of estimates



## A1.4 18 HOURS TOF - OPTION D

### A1.4.1 INTRODUCTION TO OPTION D

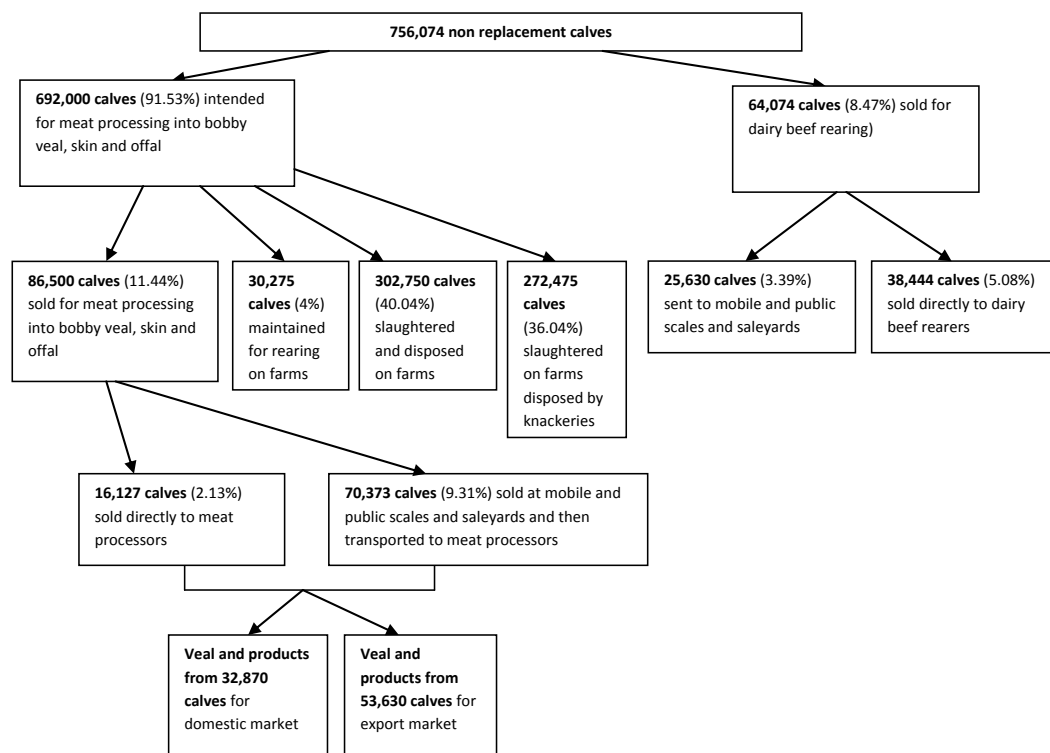
With a change in standards to a maximum time off feed (TOF) of 18hrs it is expected that a significant restriction on the number of calves available for commercial slaughter will arise. Based on discussions with the industry it is estimated that 87.5% of all non-replacement bobby calves normally destined for slaughter would become unavailable due to an inability to comply with the 18hr TOF standard. This would most likely be equivalent to 87.5% of 692,000 (i.e. 605,500 non-replacement calves). Under Option D, the estimated non-replacement calves available for sale and destined for meat processing would most likely be reduced to only *86,500 per annum* (see Chart A.3). The number of total non-replacement calves affected under Option D (18hrs TOF) is summarised in Table A1.6.

**TABLE A1.6: NUMBER OF NON-REPLACEMENT CALVES AFFECTED WITH COMPLIANCE UNDER 18HR TOF – 2011-12 TO 2015-16**

Category	% of 756,074 non-replacement calves	Number of bobby calves
Kept for beef rearing under the base case	8.47%	64,074
Sold for slaughter	11.44%	86,500
Additionally kept for rearing	4.00%	30,275
Slaughtered and disposed on farm	40.04%	302,750
Slaughtered on farm and disposed by knackery	36.04%	272,475
<b>Total</b>	<b>100.00%</b>	<b>756,074</b>



**CHART A.3: DESTINATION AND METHOD OF TRANSACTION FOR ALL NON-REPLACEMENT CALVES – OPTION D (TOF 18HRS)**



Under this Option the remaining 605,500 non-replacement calves, as shown in Chart A.2, would have to either be:

- slaughtered and disposed with on the farm (50% of 605,500 calves = **302,750 calves = 40.4% of all non - replacement calves**);
- slaughtered on the farm and disposed at a knackery (45% of 605,500 calves = **272,475 calves = 36.04% of all non-replacement calves**); or
- reared for beef when the former are not possible (5% of 605,500 calves = **30,275 calves = 4% of all non-replacement calves**).

As shown in the Chart A.3 above, veal and other products from 32,870<sup>121</sup> and 53,630<sup>122</sup> bobby calves would most likely be destined for the domestic and export markets, respectively.

#### A1.4.2 BENEFIT OF INCREASED ANIMAL WELFARE FOR BOBBY CALVES UNDER 18HR TOF

As with Option B – 30hrs TOF.

<sup>121</sup> 38% of 86,500

<sup>122</sup> 62% of 86,500

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#### A1.4.3 LOSS OF FARM GATE VALUE OF BOBBY CALVES

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The farm gate value per bobby calf is given as **\$57.80**<sup>123</sup>. Given a reduction in the supply of bobby calves by 605,500 under Option D (i.e. a reduction in bobby calves for meat processing by 87.5%) it is expected that there would most likely be an incremental loss in the farm gate value of bobby calves under Option D of approximately **\$34,997,900**<sup>124</sup> per annum, as compared to the 'base case'. Over 5 years the estimate would equal **\$143,498,300** in 2010 dollars<sup>125</sup>.

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#### A1.4.4 BUSINESS IMPACT ON TRANSPORT AND PROCESSING OF BOBBY CALVES

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The transport and processing business generated per bobby calf is given as **\$109.20**<sup>126</sup>. Given a reduction in the supply of bobby calves by 605,500 under Option D it is expected that there would most likely be an incremental business impact on the transport and processing of bobby calves under Option D of approximately **\$66,120,600** per annum, as compared to the 'base case'. Over 5 years the estimate would equal **\$271,107,515** in 2010 dollars<sup>127</sup>.

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#### A1.4.5 BUSINESS IMPACT ON EXPORTS OF BOBBY CALF MEAT AND PRODUCT

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The business generated from exports per bobby calf is estimated to be **\$35.78**<sup>128</sup>. Given a reduction in the supply of bobby calves associated with exports by 375,410 under Option D, it is expected that there would most likely be an incremental business impact on exports under Option D of approximately **\$13,431,530** per annum, as compared to the 'base case'. Over 5 years the estimate would equal **\$55,071,925** in 2010 dollars<sup>129</sup>.

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#### A1.4.6 COST OF COMPLIANCE RELATING TO 11.44% OF NON-REPLACEMENT CALVES (I.E. 86,500 CALVES)

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The distribution of non-replacement calves between the states is illustrated in Table A1.7 with Victoria having 63.9%. It is understood that Queensland and Western Australia do not provide non-replacement calves for commercial slaughter and therefore are not included in this analysis. The remaining non-replacement calves for slaughter (i.e. 692,000 calves) are affected by the 18 hr TOF standard.

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<sup>123</sup> See Part A1.1.2 for source of estimate

<sup>124</sup> Analysis does not factor in the potential increase in farm gate price arising from a shortage in farm gate supply of bobby calves destined for slaughter however OBPR has recommended that costs can simply be modelled as the changes in calf volume going to each destination multiplied by the unit value of calves for each destination

<sup>125</sup> Estimated using a discount rate of 7%

<sup>126</sup> See Part A1.1.3 for source of estimate

<sup>127</sup> Estimated using a discount rate of 7%

<sup>128</sup> See Part A1.1.4 for source of estimate

<sup>129</sup> Estimated using a discount rate of 7%

**TABLE A1.7: DISTRIBUTION OF NUMBER OF FARMS AND NON-REPLACEMENT OF CALVES BY STATE 2008-09**

State	No. Farms*	No. of Non Replacement Calves**	% of total calves
NSW	1,016	89,000	11.56%
Victoria	4,939	492,000	63.90%
Queensland	735	53,000	6.88%
Western Australia	117	25,000	3.25%
South Australia	380	48,000	6.23%
Tasmania	502	63,000	8.18%
<b>Total</b>	<b>7,749</b>	<b>770,000</b>	<b>100.00%</b>

Source: \*ABS Agricultural Commodities, Australia, 2008-09, Cat no. 71210 and \*\*Australia Dairy Industry in Focus 2009, Dairy Australia. Table 3. No. of dairy cows (2008/9 estimated figures) page 12.

On advice from Dairy Australia, and for the purpose of analysis, three possible compliance/feeding strategies would be adopted by industry in order to comply with the 18hr TOF standard:

- Strategy 1:** Feed calves late in the evening, transported to the meat processor overnight and slaughtered by 3pm the next afternoon;
- Strategy 2:** Feed calves early in the morning, where calves would have 4 to 5 hours to get from the farm to the meat processor; and
- Strategy 3:** Feed calves in the morning prior to dispatch and feed again in the evening prior to arriving at the meat processor.

#### PROPORTION OF BOBBY CALVES AFFECTED BY COMPLIANCE/FEEDING STRATEGY 1

Under Option 2, 11.44% of all non-replacement calves (i.e. 86,500 calves) would most likely continue to be sent to meat processors, as shown in Chart A.3. The proportion of 86,500 calves subject to each of the aforementioned compliance/feeding strategies would depend in part on the size of the farm (as measured by hectares) and the corresponding size of the dairy herd. The ability of farms to utilise existing labour resources to assist with night time feeding would depend on the scale of current operations. The distribution of dairy farms by hectare size is given by Table A1.8.

**TABLE A1.8: DISTRIBUTION OF DAIRY FARMS BY HECTARE SIZE 2008-09**

Hectares	Number of farms	% of total Farms
<15	87	1.12%
15<50	443	5.72%
50<100	1,227	15.83%
100<500	5,361	69.18%
500<1,000	478	6.17%
1,000<2,500	116	1.50%
2,500<25,000	36	0.46%
25,000<100,000	1	0.01%
<b>Total</b>	<b>7,749</b>	<b>100.00%</b>

Source: ABS Agricultural Commodities, Australia, 2008-09, Cat no. 71210

Given the distribution of dairy farms above, the majority of farms are shown to be between 100 and 500 hectares. However, according to ABARE<sup>130</sup>, the average dairy herd size of farms in Australia is 334 cows with an average size of 252 hectares. Given that the average size of *all farms* is 252 hectares, it is taken that farms in the range 100 to 500 hectares, as shown in Table A1.8, would in fact have a mean size of less than 252 hectares.

Therefore, for the purpose of analysis, it is assumed that farms in the range of between 500 and 100,000 hectares are considered to be large enough to have staff necessary to feed calves in the evening (compliance/feeding strategy 1). Furthermore, given that 8.14% of farms are considered to be *large*, it is estimated that 8.14% of the 86,500 non-replacement calves sold for slaughter (i.e. 7,044 calves) would be subject to night time feeding. There would be no additional cost with regards to this compliance/feeding strategy for this proportion of non-replacement calves sold for slaughter.

### **COST OF COMPLIANCE/FEEDING STRATEGY 3**

Under Option 2, 79,456<sup>131</sup> non-replacement calves sold for slaughter would most likely be subject to feeding strategies 2 and 3. Of these calves, Dairy Australia notes that 25% would need to be transported for more than 4 to 5 hours and would therefore need to be fed during transport, most likely at saleyards under compliance/feeding strategy 3. The cost of feed is estimated to be \$4<sup>132</sup> per calf (including calf feeders, management costs and milk replacement) and would involve either the use of containers with teats or the use of back packs. The annual cost is estimated to be **\$79,456**:

$$\$4 \times 25\% \times 79,456 \text{ calves} = \mathbf{\$79,456}.$$

Over 5 years this estimate would equal **\$325,787** in 2010 dollars<sup>133</sup>.

<sup>130</sup> Dharma, S and Martin, P 2010, *Australian Dairy 10.1 Financial performance of Australian dairy farms, 2007-08 to 2009-10*, ABARE Report to Dairy Australia, Canberra, June

<sup>131</sup> 86,500 calves (under strategy 1) less 7,044 calves

<sup>132</sup> Estimate from Dairy Australia

<sup>133</sup> Estimated using a discount rate of 7%

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#### A1.4.7 COST OF SLAUGHTER AND DISPOSAL ON FARM

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Based on discussion with Dairy Australia, it is noted that slaughter and disposal of carcass on the farm could only occur with respect to 40.04% of total non-replacement calves where regions have: sufficient space; no water table issues and no threat of contamination of the water supply; are unable to arrange disposal of slaughtered calves at knackeries due to distance. As shown in Chart A.3 there would most likely be 302,750 calves slaughtered and disposed of on the farm. The cost of slaughter and disposal on farm was estimated to be **\$30.37**<sup>134</sup> per calf.

Under Option D, the total logistical and 'emotional cost' of slaughter and disposal on farm of non-replacement calves is estimated to be **\$9,194,139** per annum. Over 5 years this would equal **\$37,697,785** in 2010 dollars<sup>135</sup>.

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#### A1.4.8 COST OF SLAUGHTER AND DISPOSAL AT KNACKERY

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With respect 36.04% of calves, farmers would most likely slaughter calves on the farm but have a knackery dispose of the carcass. Knackerries currently typically organise bins for farmers to dispose of carcasses or organise direct pick up at the farm.

Under Option D the volume of disposal would increase as there would now be an estimated 272,475 calf carcasses to dispose of every year with a combined carcass weight of 9.54<sup>136</sup> million kilograms.

The total cost of slaughter on farm and disposal by knackery for 36.04% of non-replacement calves is therefore estimated **\$470,861** per annum. Over 5 years this would be equal to **\$1,930,663** in 2010 dollars<sup>137</sup>.

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#### A1.4.9 NET GAIN IN VALUE FOR WHOLESALE TRADE OF REARED BOBBY CALVES

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The net value per bobby calf raised for rearing is estimated to be **\$55.50**<sup>138</sup> (less the opportunity cost of land)

As discussed under Option C<sup>139</sup>, given that there is a very limited market for weaner beef<sup>140</sup> (apart from by the head store sales), additional bobby calves kept for rearing under Option D would have to be raised to the age of 12 to 24 months i.e. until they are yearlings. As with the reasons stated under Option C<sup>141</sup>, it is assumed that only 5% of those calves which are unable to comply with the 18hr TOF standard (i.e. 30,275 calves) would most likely be designated for beef rearing in addition to the 64,074 calves already being reared under the 'base case' (see Chart A.3). That is to say, larger farms with many calves may be able to exploit scale economies and reduce rearing costs below average levels.

Therefore, Option D represents a **gain** in the value for the wholesale market for steers, estimated to be **\$1,680,263** per annum. Over 5 years this would equal **\$6,889,408** in 2010 dollars<sup>142</sup>.

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<sup>134</sup> See Part A1.3.6 of this RIS for estimate

<sup>135</sup> Estimated using a discount rate of 7%

<sup>136</sup> 272,475 calves at a carcass weight of 35kg per calf

<sup>137</sup> Estimated using a discount rate of 7%

<sup>138</sup> See Part A1.3.8 for source of estimate

<sup>139</sup> See Part A1.3.8

<sup>140</sup> Victorian cattle code of practice

<sup>141</sup> See Part A1.3.8

<sup>142</sup> Estimated using a discount rate of 7%

#### A1.4.10 COST OF ENFORCEMENT FOR GOVERNMENT/RSPCA

Incremental enforcement costs for government or agencies undertaking duties on behalf of government (i.e. RSPCA) will vary for various state jurisdictions under Option D (18hrs TOF), depending on current auditing and associated enforcement activities. Based on information from each of the respective state jurisdictions, the incremental enforcement costs under Option D are estimated to be approximately **\$49.4K** per annum, as shown in Table A1.9 - or **\$0.2 million** over 5 years in present value dollars<sup>143</sup>.

**TABLE A1.9: INCREMENTAL ANNUAL ENFORCEMENT COSTS FOR GOVERNMENT/RSPCA (OPTION D - 18HRS TOF)**

Category	Enforcement cost
Queensland	\$45,528.00 <sup>144</sup>
Victoria	\$31.11 <sup>145</sup>
Tasmania	\$1,000.00 <sup>146</sup>
South Australia	\$1,000.00 <sup>147</sup>
Western Australia	Nil <sup>148</sup>
NSW	\$1,854.17 <sup>149</sup>
<b>Total</b>	<b>\$49,413.28</b>

#### A1.4.11 SAVING OF FEED COSTS FOR CALVES SLAUGHTERED ON FARM

Under Option D, 575,225 calves would need to be slaughtered on the farm and disposed of on the farm or by the knackery (76.44% of all non-replacement calves which are not sold for slaughter or not kept for rearing (see Table A1.6)). Under this option, the potential savings in feed costs occur for an average of 5.5 days and the cost of feed is given as \$4.71<sup>150</sup> per calf per day. Total annual feed cost savings are therefore given as approximately **\$14.9 million** dollars per annum - or **\$61,089,719** over 5 years in present value dollars:

$$575,225 \text{ calves} \times 5.5 \text{ days} \times \$4.71 \text{ per calf per day} = \$14,899,214.10$$

<sup>143</sup> Estimated using a discount rate of 7%

<sup>144</sup> Enforcement cost is based on 0.5 of a full time equivalent staff member with an annual salary of \$91,056 including on costs, car and phone

<sup>145</sup> DPI does not plan to increase resourcing of auditing beyond current audit frequency but within that could move to examining for TOF records within that process. Given that the cost of enforcement is given as \$280 per day per staff and given that examining TOF records is assumed to be 10 minutes, then 5 audits of meat processors per annum is equivalent to \$280/7.5hrs x 10/60 x 5 audits per annum = \$31.11 per annum

<sup>146</sup> Additional instances of non-compliance as a result of TOF regulation are expected to be low. The associated additional enforcement work is estimated at 4 staff days/year @ \$250 per day = \$1,000 per annum

<sup>147</sup> Estimated as 4 compliance actions by RSPCA per year @ 1 day each = \$1,000

<sup>148</sup> There are limited resources and limited scope to carry out auditing activities. With this in mind, it is expected that there will be limited cost impact on the regulators. Given the size and logistics of this industry in WA, it is DAFWA's view that it is unlikely that dedicated resources would be applied to any audits although this is a matter for DLG to determine. An investigative response to an animal welfare complaint may occur - but probably very infrequently

<sup>149</sup> Pro rata estimate based on annual incremental cost of enforcement for South Australia (recommended as suitable for NSW) and the ratio of 89,000 non-replacement calves in NSW to 48,000 non-replacement calves in South Australia = 1.85

<sup>150</sup> Based on a March 2008 estimate of \$4.39 (see Tim Harding & Associates (2008)) and adjusted for inflation using a March 2008 CPI index of 162.2 and a December 2010 CPI index of 174.0

Finally, a summary of quantifiable incremental costs (loss of community surplus) under Option D as compared to the 'base case' is illustrated in Table A1.10. The total 5-year net incremental cost of Option D is estimated to be **\$115.68** million in 2010 dollars using a 7% discount rate. Sensitivity tests reveal a higher net cost of approximately \$197.44 million at a 3% discount rate and a lower cost of approximately \$106.95 million at a 10% discount rate.

**TABLE A1.10: SUMMARY OF QUANTIFIABLE INCREMENTAL ECONOMIC COSTS (LOSS OF COMMUNITY SURPLUS) UNDER OPTION D – 2011-12 TO 2015-16**

Category of quantifiable incremental economic cost	Annual	5 –year (present value) (7% discount rate)	Sensitivity analysis	
			5 –year (present value) (3% discount rate)	5 –year (present value) (10% discount rate)
Loss of farm gate value of bobby calf market <sup>151</sup>	\$34,997,900	\$143,498,300	\$160,280,134	\$132,669,576
Cost of compliance from feeding strategy on route to meat processors <sup>152</sup>	\$79,456	\$325,787	\$363,887	\$301,202
Cost of slaughter and disposal on farm <sup>153</sup>	\$9,194,139	\$37,697,785	\$42,106,465	\$34,853,021
Cost of slaughter and disposal at knackery <sup>154</sup>	\$470,871	\$1,930,663	\$2,156,451	\$1,784,971
Loss of value of wholesale reared calf market <sup>155</sup>	-\$1,680,263	-\$6,889,408	-\$7,695,110	-\$6,369,517
Cost of enforcement <sup>156</sup>	\$49,413	\$202,604	\$226,298	\$187,315
Cost of feed for calves slaughtered on farm and disposed on farm or knackery <sup>157</sup>	-\$14,899,214	-\$61,089,719	-\$68,234,038	-\$56,479,744
<b>Total economic cost</b>	<b>\$28,212,303</b>	<b>\$115,676,012</b>	\$129,204,086	\$106,946,825

The distribution of business impacts on the transport and processing industry and export industry are summarised in Table A1.11 below:

<sup>151</sup> See Part A1.4.3 for source of estimates

<sup>152</sup> See Part A1.4.6 for source of estimates

<sup>153</sup> See Part A1.4.7 for source of estimates

<sup>154</sup> See Part A1.4.8 for source of estimates

<sup>155</sup> See Part A1.4.9 for source of estimates. The negative sign reflects the gain in value for this particular item which needs to be offset against the other costs rather than treated as a benefit on its own

<sup>156</sup> See Part A1.4.10 for source of estimates

<sup>157</sup> See Part A1.4.11 for source of estimates. The negative sign reflects the cost savings for this particular item which needs to be offset against the other costs rather than treated as a benefit on its own

**TABLE A1.11: SUMMARY OF INCREMENTAL BUSINESS IMPACT ON TRANSPORTERS, PROCESSORS AND EXPORTERS UNDER OPTION D – 2011-12 TO 2015-16**

Category of business impact	Annual	5 -year (present value) (7% discount rate)	Sensitivity analysis	
			5 -year (present value) (3% discount rate)	5 -year (present value) (10% discount rate)
Loss of business for transport and processing of bobby calves <sup>158</sup>	\$66,120,600	\$271,107,515	\$302,812,987	\$250,649,096
Loss of business for export market for bobby calf meat and products <sup>159</sup>	\$13,431,530	\$55,071,925	\$61,512,474	\$50,916,066
<b>Total loss of business</b>	<b>\$79,552,130</b>	<b>\$326,179,440</b>	\$364,325,461	\$301,565,162

#### A1.4.12 SENSITIVITY ANALYSIS FOR 18HRS TOF

Under this section of Appendix a sensitivity analysis is undertaken for the possibility of 25% and 50% ability to comply under 18hrs TOF (which represent double and quadruple respectively the expected level of compliance under this option of 12.5%). This means that a higher number of calves are assumed to be able to comply and reach markets and expected cost impacts will come down despite the higher cost of getting to destinations. Whilst such a degree of compliance ability is unlikely, the sensitivity test nonetheless demonstrates the considerable costs imposed under 18hrs TOF even under scenarios with greater levels of compliance. The number of total non-replacement calves affected under both scenarios of compliance is summarised in Table A1.12.

**TABLE A1.12: SUMMARY OF NO. OF NON-REPLACEMENT CALVES AFFECTED WITH 25% (SCENARIO A) AND 50% (SCENARIO B) COMPLIANCE UNDER 18HR TOF – 2011-12 TO 2015-16**

Scenario A - 25% compliance under 18hr TOF		
Category	% of 756,074 non-replacement calves	Number of bobby calves
Kept for beef rearing under the base case	8.47%	64,074
Sold for slaughter	22.88%	173,000
Additionally kept for rearing	3.43%	25,950
Slaughtered and disposed on farm	34.32%	259,500
Slaughtered on farm and disposed by knackery	30.89%	233,550
<b>Total</b>	<b>100.00%</b>	<b>756,074</b>

<sup>158</sup> See Part A1.4.4 for source of estimates

<sup>159</sup> See Part A1.4.5 for source of estimates



<b>Scenario B - 50% compliance under 18hr TOF</b>		
<b>Category</b>	<b>% of 756,074 total non-replacement calves</b>	<b>Number of bobby calves</b>
Kept for beef rearing under the base case	8.47%	64,074
Sold for slaughter	45.76%	346,000
Additionally kept for rearing	2.29%	17,300
Slaughtered and disposed on farm	22.88%	173,000
Slaughtered on farm and disposed by knackery	20.59%	155,700
<b>Total</b>	<b>100.00%</b>	<b>756,074</b>

A summary of quantifiable incremental costs based on modeling results under Scenario A (25% compliance) for 18hr TOF as compared to the 'base case' is illustrated in Table A1.13. The total 5-year net incremental cost of Option D is estimated to be **\$99.55** million in 2010 dollars using a 7% discount rate. Sensitivity tests reveal a higher net cost of approximately \$119.19 million at a 3% discount rate and a lower cost of approximately \$92.04 million at a 10% discount rate.

**TABLE A1.13: SUMMARY OF NET QUANTIFIABLE INCREMENTAL ECONOMIC COSTS (LOSS OF COMMUNITY SURPLUS) UNDER SCENARIO A (25% COMPLIANCE) – 2011-12 TO 2015-16**

<b>Category of quantifiable incremental economic cost</b>	<b>Annual</b>	<b>5 –year (present value) (7% discount rate)</b>	<b>Sensitivity analysis</b>	
			<b>5 –year (present value) (3% discount rate)</b>	<b>5 –year (present value) (10% discount rate)</b>
Loss of farm gate value of bobby calf market	\$29,998,200	\$122,998,543	\$137,382,972	\$113,716,780
Cost of compliance from feeding strategy on route to meat processors	\$158,913	\$651,573	\$727,773	\$602,404
Cost of slaughter and disposal on farm	\$7,880,691	\$32,312,387	\$36,091,255	\$29,874,018
Cost of slaughter and disposal at knackery	\$403,604	\$1,654,854	\$1,848,386	\$1,529,975
Loss of value of wholesale reared calf market <sup>160</sup>	-\$1,440,225	-\$5,905,207	-\$6,595,809	-\$5,459,586
Cost of enforcement	\$49,413	\$202,604	\$226,298	\$187,315
Cost of feed for calves slaughtered on farm and disposed on farm or knackery <sup>161</sup>	-\$12,770,755	-\$52,362,617	-\$58,486,318	-\$48,411,209
<b>Total economic cost</b>	<b>\$24,279,840</b>	<b>\$99,552,138</b>	\$111,194,559	\$92,039,697

<sup>160</sup> The negative sign reflects the gain in value for this particular item which needs to be offset against the other costs rather than treated as a benefit on its own

<sup>161</sup> The negative sign reflects the cost savings for this particular item which needs to be offset against the other costs rather than treated as a benefit on its own

The distribution of business impacts on the transport and processing industry and export industry are summarised in Table A1.14 below:

**TABLE A1.14: SUMMARY OF INCREMENTAL BUSINESS IMPACT ON TRANSPORTERS, PROCESSORS AND EXPORTERS UNDER SCENARIO A (25% COMPLIANCE) – 2011-12 TO 2015-16**

Category of business impact	Annual	5 –year (present value) (7% discount rate)	Sensitivity analysis	
			5 –year (present value) (3% discount rate)	5 –year (present value) (10% discount rate)
Loss of business for transport and processing of bobby calves	\$56,674,800	\$232,377,870	\$259,553,989	\$214,842,082
Loss of business for export market for bobby calf meat and products	\$11,512,740	\$47,204,507	\$52,724,978	\$43,642,342
<b>Total loss of business</b>	<b>\$68,187,540</b>	<b>\$279,582,377</b>	<b>\$312,278,967</b>	<b>\$258,484,424</b>

A summary of quantifiable incremental costs based on modeling results under Scenario B (50% compliance) for 18hr TOF as compared to the 'base case' is illustrated in Table A1.15. The total 5-year net incremental cost of Option D is estimated to be **\$67.3** million in 2010 dollars using a 7% discount rate. Sensitivity tests reveal a higher net cost of approximately \$75.18 million at a 3% discount rate and a lower cost of approximately \$62.22 million at a 10% discount rate.

**TABLE A1.15: SUMMARY OF NET QUANTIFIABLE INCREMENTAL COSTS (LOSS OF COMMUNITY SURPLUS) UNDER SCENARIO B (50% COMPLIANCE) – 2011-12 TO 2015-16**

Category of quantifiable incremental economic cost	Annual	5 –year (present value) (7% discount rate)	Sensitivity analysis	
			5 –year (present value) (3% discount rate)	5 –year (present value) (10% discount rate)
Loss of farm gate value of bobby calf market	\$19,998,800	\$81,999,028	\$91,588,648	\$75,811,186
Cost of compliance from feeding strategy on route to meat processors	\$317,825	\$1,303,146	\$1,455,547	\$1,204,808
Cost of slaughter and disposal on farm	\$5,253,794	\$21,541,592	\$24,060,837	\$19,916,012
Cost of slaughter and disposal at knackery	\$269,069	\$1,103,236	\$1,232,258	\$1,019,983
Loss of value of wholesale reared calf market <sup>162</sup>	-\$960,150	-\$3,936,805	-\$4,397,206	-\$3,639,724
Cost of enforcement	\$49,413	\$202,604	\$226,298	\$187,315
Cost of feed for calves slaughtered on farm and disposed on farm or knackery <sup>163</sup>	-\$8,513,837	-\$34,908,411	-\$38,990,879	-\$32,274,139
<b>Total economic cost</b>	<b>\$16,414,915</b>	<b>\$67,304,391</b>	<b>\$75,175,503</b>	<b>\$62,225,442</b>

<sup>162</sup> The negative sign reflects the gain in value for this particular item which needs to be offset against the other costs rather than treated as a benefit on its own.

<sup>163</sup> The negative sign reflects the cost savings for this particular item which needs to be offset against the other costs rather than treated as a benefit on its own.

The distribution of business impacts on the transport and processing industry and export industry are summarised in Table A1.16 below:

**TABLE A1.16:** SUMMARY OF NET QUANTIFIABLE INCREMENTAL COSTS (LOSS OF COMMUNITY SURPLUS) UNDER SCENARIO B (50% COMPLIANCE) – 2011-12 TO 2015-16

Category of quantifiable incremental economic cost	Annual	5 -year (present value) (7% discount rate)	Sensitivity analysis	
			5 -year (present value) (3% discount rate)	5 -year (present value) (10% discount rate)
Loss of value of transport and processing of bobby calves	\$37,783,200	\$154,918,580	\$173,035,993	\$143,228,055
Loss of value added from export market for bobby calf meat and products	\$7,675,160	\$31,469,671	\$35,149,985	\$29,094,895
<b>Total loss of business</b>	<b>\$45,458,360</b>	<b>\$186,388,251</b>	<b>\$208,185,978</b>	<b>\$172,322,950</b>

## APPENDIX 2 - DETAILS OF RELEVANT FEDERAL, STATE AND TERRITORY LEGISLATION

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### A2.1 STATES AND TERRITORIES

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Under constitutional arrangements, the primary responsibility for animal welfare within Australia rests with individual states and territories, which exercise legislative control through 'prevention of cruelty to animals Acts' and other legislation (refer to Table A2.1).

Each state or territory has a bureau or office that deals with animal welfare. In many cases designated officers of the Royal Society for the Prevention of Cruelty to Animals (RSPCA) also have authority under state or territory legislation to prosecute offenders for cruelty offences. Animal welfare concerns arising in particular industries are often addressed in codes of practice developed jointly by government and the industry. Each State and Territory government except WA has an Animal Welfare Advisory Committee (AWAC) that provides advice on animal welfare issues and on associated legislation and codes of practice.<sup>164</sup>

As shown in Table A2.1 below, all jurisdictions can make regulations to require compliance with the proposed standards, and all regulations except those in New South Wales and the Northern Territory can adopt the standards by reference. (New South Wales and the Northern Territory would have to make regulations using similar wordings as the standards). The Australian Capital Territory, South Australia, Victoria<sup>165</sup> and Western Australia can adopt standards as amended from time to time, whereas Queensland and Tasmania can only adopt standards as at a particular date (that is, if the standards are amended, the regulations would have to be amended accordingly).

### A2.2 FEDERAL AND NATIONAL GOVERNMENT

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The Federal Government has limited animal welfare responsibility in the livestock sector, covering export processing establishments and the live animal export trade.

The main method of dealing with animal welfare issues at the national level to date has been through the development of model codes of practice (now standards) in consultation with industry and other stakeholders, for endorsement by the Primary Industries Ministerial Council. The model codes have been used as a guide by the various state and territory governments in the development of their own legislation and codes of practice. As these model codes or standards are developed primarily for government purposes, they are separate to the various voluntary codes of practice and quality assurance programs that may be developed from time to time by industry associations.

The Primary Industries Ministerial Council (PIMC) consists of the Australian/State/Territory and New Zealand government ministers responsible for agriculture, food, fibre, forestry, fisheries and aquaculture and rural adjustment policy. The Council is the peak government forum for consultation, coordination and, where appropriate, integration of action by governments on primary industries issues, including animal health and welfare.

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<sup>164</sup> In Western Australia, specialist animal welfare advisory committees are established from time to time as the need arises.

<sup>165</sup> Under the **Livestock Management Act 2010**.

**TABLE A2.1: SUMMARY OF RELEVANT STATE AND TERRITORY LEGISLATION**

<b>State or Territory</b>	<b>Act</b>	<b>Existing regulations</b>	<b>Adoption of standards by reference?</b>	<b>Compulsory compliance with adopted standards?</b>
<b>ACT</b>	<b>Animal Welfare Act 1992 .</b>	<i>Animal Welfare Regulation 2001</i>	Yes. Under s.112 (4) of the Act, the regulations may incorporate (with or without modification) an approved code of practice as in force from time to time.	Yes, if adopted by regulations.
<b>NSW</b>	<b>Prevention of Cruelty to Animals Act 1979</b>	<i>Prevention of Cruelty to Animals Regulation, 2006</i>	Yes, but regulations can adopt the standards as guidelines only. NSW can also adopt industry codes of practice.	Yes, but the wording of the standards would have to be reflected in the regulations themselves.
<b>NT</b>	<b>Animal Welfare Act</b>	<i>Animal Welfare Regulations<sup>166</sup></i>	Yes. Under s.24 of Act, Minister may by notice in gazette adopt codes of practice, but compliance with such codes cannot be made mandatory.	Yes, but the wording of the standards would have to be reflected in the regulations themselves.
<b>QLD</b>	<b>Animal Care and Protection Act 2001</b>	<i>Animal Care and Protection Regulation 2002</i>	Yes. Under s.15 (1) of Act, a regulation may require a person to comply with the whole or a stated part of a code of practice.	Yes, if adopted by regulations. but the wording of the standards would have to be reflected in the regulations themselves
<b>SA</b>	<b>Prevention of Cruelty to Animals Act 1985</b>	<i>Prevention of Cruelty to Animals Regulations 2000</i>	Yes. Under s.44(3) of Act, regulations can prescribe codes of practice with or without modification) or operate by reference to any code of practice relating to animals as in force at a particular time or as amended from time to time.	Yes, if adopted by regulations. but the wording of the standards would have to be reflected in the regulations themselves
<b>TAS</b>	<b>Animal Welfare Act 1993</b>	<i>Animal Welfare Regulations 2008</i>	Yes. Under s.54 (4) of Act regulations can adopt standards as in force at a particular date.	Yes, if adopted by regulations. but the wording of the standards would have to be reflected in the regulations themselves

<sup>166</sup> Regulations are not needed in NT to adopt standards. This can be done by the Minister by notice in the gazette.

Post - Public Consultation Decision RIS

State or Territory	Act	Existing regulations	Adoption of standards by reference?	Compulsory compliance with adopted standards?
VIC	<b>Prevention of Cruelty to Animals Act 1986</b>	<i>Prevention of Cruelty to Animals Regulations 1997</i> <i>None as yet.</i>	Yes. Under s.42(2)(d) of Act, regulations can adopt standards with or without modification as published at the time the regulations are made, or at any time before then.	Yes, if adopted by regulations.
	<b>Livestock Management Act 2010</b>		Yes. Under s.63(2)(e) of Act, regulations can adopt or incorporate by reference any document either (i) as formulated, issued, prescribed or published at the time the regulation is made or any time before the regulation is made; or (ii) as published or amended from time to time;	Yes, if adopted by regulations.
WA	<b>Animal Welfare Act 2002</b>	<i>Animal Welfare (General) Regulations 2003</i>	Yes. Under s.94 (2) (d) of the Act, the regulations can adopt codes of practice with or without modification, as they exist at a particular date; or as they are amended from time to time.	Yes, if adopted by regulations.

## **APPENDIX 3 - BOBBY CALF TIME OFF FEED - PUBLIC CONSULTATION REPORT**

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This consultation comes after the development of other standards for the welfare of bobby calves in transport (the *Australian Animal Welfare Standards and Guidelines – Land Transport of Livestock, Version One, 2008* (LTS)). This consultation was focused on the issue of the enforceable maximum period of Time off Feed for bobby calves during transport and the options presented in the Regulation Impact Statement (RIS). This report summarises the submissions made and will be the initial response to the points raised.

The public consultation was held for 30 days from 4 January to 3 February with information hosted on [animalwelfarestandards.net.au](http://animalwelfarestandards.net.au) and advice provided to government animal welfare officers and major animal welfare organisations with a direct link to the relevant pages. Animal Health Australia (AHA) provided the service to manage the consultation.

AHA sought views from interested parties about how well:

1. The proposed standard amendment to SB4.5 in Chapter B4 specific requirements for the land transport of cattle, for a maximum of 30 hours without a liquid feed from the time of last feeding to the next feed or slaughter of the calf, contributes to the necessary specifications for protecting the welfare of calves while being transported.
2. The associated RIS demonstrates the need for the time off feed bobby calf standard (to be brought into regulations) and identifies its costs and benefits.

Assessment of submissions from the consultation process considered:

- The extent to which suggestions strengthen the intent and objectives of the Standards and are based on science;
- The volume and variety of responses making similar suggestions;
- Anticipated adverse impacts or unintended consequences from submitted suggestions; and
- The importance for, and viability of, implementing any suggested change within the regulatory system.

Approximately 6,000 email submissions from individuals were received and 33 more detailed submissions from elected public officials or organisations representing industry or community welfare interests including some government departments. The vast majority of submissions have been a variation to a recognisable form letter. The majority of these have been in opposition to the 30 hours time off feed proposal and were from Australian residents. A list of submissions from organisations and elected public officials and their policy positions are given in Table A3.2. Individual responses to

submissions will not be undertaken. Major submissions will be hosted on the project website: <http://www.animalwelfarestandards.net.au/>

Examples of the 'form letter' submissions are reproduced in annex A, B and C.

Some suggestions have been deemed to be not entirely relevant to the matter of calf time off feed and will be referred to the Animal Welfare Committee for consideration in the implementation of the LTS, or for future reviews of the LTS (table 2).

The major arguments for and against the proposed maximum TOF standard are based on three broad areas of: the animal welfare system, the time off feed options for calf transport and the RIS. These ideas are contained within organisation submissions and are discussed under the headings below with a short response:

1. Consultation process aspects
2. Roles of Standards, Guidelines and Best Practice
3. Risk management
4. Enforcement
5. Bobby calf handling
6. Animal welfare science
7. Support for 30 hours time off feed
8. Opposition to 30 hours time off feed
9. 24 hours time off feed
10. 18 hours time off feed
11. Killing of bobby calves on farm and/or a short time off feed
12. The case for market intervention
13. Alternative options in the RIS
14. Cost Benefit Analysis
15. Community expectations
16. International standards/laws

**IN SUMMARY:** The welfare of bobby calves is an emotive issue. The larger number of submissions from animal welfare organisations and individuals support a shorter time off feed and in some cases question the need for transport at all (slaughter on farm and other alternatives were proposed). There is no unanimous support for a single, shorter, time-off-feed option instead of the 30 hours. There is good support for a 30 hours time off feed limit from some government and all industry respondents in the context of the other related standards for calf transport. Revision of the RIS has occurred in response to the submissions received and these changes are listed below in table A3.1. Following the public consultation, the 30 hours TOF option is recommended for government endorsement.



**TABLE A3.1: LIST OF CHANGES MADE TO RIS IN RESPONSE TO PUBLIC SUBMISSIONS**

<b>Part of RIS</b>	<b>Nature of change</b>
Summary and Part 1.2.3.1	Include a brief explanation of the base case in the RIS summary. In particular, explain that there is no TOF standard for bobby calves at present. Also that the MCOPs were not implemented by law and that those for the land transport of livestock have been superseded by the Land Transport Standards and Guidelines
Summary	Emphasise that the proposed standard amendment needs to be read in the context of other relevant existing standards
Summary	Explain that the 30 TOF feed standard is a 'whole of chain' standard, an outer enforceable limit
Summary	Point out in the RIS summary that the 30hour TOF 'outer limit' does not reflect the actual time that the majority of bobby calves are without feed or water
Summary and Part 1.2.1.3	Include a little more background information about the meat processing industry
Part 1.2.2.1	Acknowledge that bobby calves are likely to be hungry during transport but that as yet there is no known objective method of measuring this accurately enough to set a standard based on hunger.
Part 1.2.3.1	Explain the difference between industry best practice vs standards and guidelines
Part 1.2.3.2 and 5.2	Update the information on relevant international standards
Part 1.3.2 and Appendix 3	Summarise public consultation process, submissions received and AHA responses
Part 3.0	Provide more information on why feeding bobby calves on trucks would be impractical
Part 3.0	Discuss the infeasibility of other alternatives that have been suggested in the submissions, such as developing a market for dairy steer beef, mobile slaughter vans selling carcasses for pet food and government support to establish more small abattoirs around the country
Parts 4.3.3, 4.3.4 and Appendix 1	Deduct the cost savings from not feeding calves from costing of Options C and D
Part 4.3.3	Explain that the benefits of Options C and D are likely to be offset to some extent by the increased risks to animal welfare, biosecurity and OH&S as a result of increased slaughter on farm compared to expert slaughter in abattoirs
Part 5.4	Explain how Vic DPI intends to enforce the proposed standard amendment under the new Livestock Management Act 2010

## 1. CONSULTATION PROCESS ASPECTS

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Many submitters criticised the lack of formal advertising, the brevity (30 days) and the timing (post New Year). In spite of all this community, government and industry networks have functioned well to deliver an impressive volume of submissions. The project has had a long lead time (since mid 2009) and all organisations were able to be well prepared. The strategy to not invest in media advertisements and to rely upon communicating the consultation process through networking was advised to project stakeholders in 2010. This process of notification was supplemented by Animals Australia advertisements in each capital city newspaper on 27 January, noting that this could have occurred earlier in January. AHA, Dairy Australia, RSPCA Australia and Animals Australia websites contained accurate information that directed attention to the project website. A Google search on the term 'bobby calves' yields these sites in the first page list and the consultation site which is an indication of the popularity and accessibility of these pages.

Given the approach to the public consultation it was decided not to proceed with a set of structured questions for respondents. The project discussion paper used in development was also not used in consultation as the essential components were in the RIS or on the consultation web site.

AHA accepts that the AHA front page of the website did not have a 'hot button' to the consultation site. However in the January 2011 'AHA Update' the following information was made available.

### **"Livestock welfare**

Consultation for the proposed 30 hours time off feed standard for bobby calf transport is under way and will conclude on 3 February. Largely in response to a media campaign initiated by welfare organisations, we have been inundated by submissions from the public – mostly expressing opposition to the proposed standard. See [www.animalwelfarestandards.net.au](http://www.animalwelfarestandards.net.au) for details of the consultation and for further information."

All information made available to the public has directed interested parties to [animalwelfarestandards.net](http://animalwelfarestandards.net), and not AHA. Criticism of the architecture of [animalwelfarestandards.net](http://animalwelfarestandards.net), where the bobby calf pages are listed under 'Land transport standards', is accepted. The bobby calf time off feed issue is part of the land transport arrangements. Due to the archival (and expanding) nature of the website, consideration will be given to redesigning the home page to make navigation by the public easier.

Animals Australia has expressed dissatisfaction with the standards development process and has the belief that it did not develop 'reasonable' animal welfare standards.

## 2. ROLES OF STANDARDS, GUIDELINES AND BEST PRACTICE

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Many submitters do not distinguish between what is or will become law and the recommendations for better practice and 'best practice'. The RIS has to take a rigorous approach to this distinction. Many submitters feel that the model codes are legal requirements but the reality is that their application in the law has been at best as guidance or a defence to a prosecution. This issue extends to a false appreciation by many submitters of the legal 'base case' (what exists in law) in relation to statements in the model codes of practice that have been, or are being replaced by the standards and guidelines. As a consequence, many statements from the model codes are omitted from the RIS as they are not part of the regulations or the 'base case' for the RIS (refer to Part 4.2 of the RIS). Animals Australia recognises that the model codes are not enforceable and have not been implemented by law in the past. The model codes dealing with the transport of livestock have been superseded and replaced by the Land Transport Standards and Guidelines.

The legal standard is intended to be the acceptable welfare standard and all other guidelines or statements of 'best practice' are intended to achieve a better welfare outcome by voluntary action. Therefore the statement in the Fisher study that *"Best practice management of transported calves would involve time off feed not longer than around 24 hours"* is not inconsistent with the recommendation for a 30 hours time off feed standard. Other standards in the LTS set requirements for calves in transport and the guidelines make recommendations for better welfare management of calves in transport. Further description of the relationships between such statements is contained in the introduction to the LTS on the website and in Part 1.2.3 of the RIS. (Standards use the word 'must' and guidelines use the word 'should').

As guidelines are recommendations and are not to be regulated, they have not been included in the RIS. The following existing LTS guideline GB4.8 in effect recommends a time off feed interval of 18 to 24 hours, taking into account the fact that calves must be fed within 6 hours of transport and this time needs would be added to the calculation (24 hours TOF) unless a specific TOF has been documented and the calves have then spent less than 6 hours on the property before pick up.

*"GB4.8 Calves between 5 and 30 days old travelling without mothers should be given a liquid feed as soon as possible after unloading, unless they are slaughtered within 18 hours of commencing transport."*

## 3. RISK MANAGEMENT

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RSPCA Australia claim:

*"Firstly, the appropriateness of the outer legal limit is qualified by the requirement for "good practice in other aspects of calf management and transport". Accordingly it can be surmised that if good practice in other aspects of calf management and*

*transport is not present, the 30 hour limit may be inappropriate for bobby calf welfare. As conditions will not always be ideal a 30 hour limit may predispose calves to greater welfare risks. This in turn may predispose producers, transporters and processors to a greater chance of enforcement action including possible prosecution.'*

The Queensland Department of Employment, Economic Development and Innovation (DEEDI) and others feel that there is *"no margin of safety to allow for biological variation within groups, variation in management prior to transport, and unforeseen circumstances"*. It is up to the persons responsible within the calf transport chain to manage the calves according to environmental and calf health parameters.

The whole point about the animal welfare standards and guidelines for livestock transport, including the proposed amendment, is that they be taken as a 'set'. There are other standards (including LTS SA4.1, 4.2, 4.3 and 4.4 relating to fitness to travel) and guidelines which deal with the 'good practice in other aspects of calf management and transport'. All persons handling calves have a duty of care towards the calves.

The relevant, existing, specific standards for calf welfare during transport in the LTS are:

***"SB4.1*** *Time off water must not exceed the time periods given below:*

*Class: Calves 5–30 days old travelling without mothers*

*Maximum time off water (hours): 18*

***SB4.5*** *Bobby calves between 5 and 30 days old travelling without mothers must:*

- vi) be protected from cold and heat*
- vii) be in good health, alert and able to rise from a lying position*
- viii) have been adequately fed milk or milk replacer on the farm within 6 hours of transport*
- ix) have an auditable and accessible record system that identifies the calves were last fed within 6 hours of transport unless the journey is between rearing properties and is less than 6 hours' duration*
- x) be prepared and transported to ensure delivery in less than 18 hours from last feed with no more than 12 hours spent on transports.*

***SB4.6*** *Bobby calves less than 30 days old travelling without mothers must not be consigned across Bass Strait.*

***SB4.7*** *Bobby calves born earlier than a normal pregnancy term (including induced calves) must be at an equivalent stage of fitness when transported, compared with normal, full-term calves.*

**SB4.8** *Bobby calves under 30 days old must all have sufficient space in the livestock crate to lie down on their sternums.*

**SB4.9** *Dogs must not be used to move bobby calves less than 30 days old."*

The fact that there will be enforcement action including possible prosecution is the purpose of moving from a voluntary guideline to a regulated standard in the case of time off feed. If producers, transporters and processors adhere to the standards including the 30hr time off feed limit then there is less chance of prosecution due to a lower likelihood of poor calf welfare outcomes. The standard amendment is designed to provide reasonable animal welfare outcomes with an upper limit, noting that conditions may not always be perfect and that persons who are responsible have a duty of care to manage the calves according to the circumstances and reasonable welfare expectations.

The claim by Animals Australia that many calves are less than five days old (as stated in an Animal Welfare Science Centre report from 2001) is a matter to be addressed by enforcement of the existing minimum age requirement in the LTS. This situation further demonstrates the need for enforceable standards and that the creation of these regulations will facilitate considerable improvements for the welfare of calves.

#### 4. ENFORCEMENT

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RSPCA Australia says:

*"Secondly, the justification for the "outer legal limit" tends to imply a lack of confidence in the ability of regulators to exercise appropriate discretion in determining whether enforcement action is required in a given situation. The 30 hour limit is in part justified on the basis that it "allows for seasonal peaks in calving and access for dairy farmers who do not have a processing capacity in their region." (RIS, page 13). These are matters which regulators take into account when determining whether enforcement action is required for a breach of a time off feed limit. If bona fide extenuating circumstances are present it is very unlikely that any enforcement action will be pursued."*

This comment is based on a misconception. Regulators do not have such a wide discretion in law enforcement. They have a legal duty to uphold the law. Establishing an enforceable limit will assist the regulators and provides clear direction for industry. Where poor calf welfare outcomes become apparent (compromised calves), it is likely that other standards will be enforced in addition to and before the need to enforce the time off feed requirement.

Animals Australia, Animals Angels and others have concerns about the level of resources for enforcement not being available. Monitoring and compliance will be an important part of a regulatory strategy to protect calf welfare but it is beyond the scope of this standards development project to further develop requirements for this implementation aspect. Compliance and enforcement policy is the domain of the jurisdictional governments. Extension (awareness),

education and training is a shared role between government and industry that is likely to be more important for achieving compliance than a regulatory approach per se.

Animals Australia, Animals Angels and the Australian Livestock Transporters Association (ALTA) recommend that there is a mandatory paper record of time off feed and pick up time. This is an implementation matter that will be dealt with at the appropriate time including any potential revision of the National Vendor Declaration (NVD) by industry. The NVD matter has been referred. The current standard (SB 4.5) requires an 'auditable and accessible' record. Where an exact feeding time is not declared, it is reasonable to assume that six hours will be accounted to the time off feed calculation, unless it can be proven otherwise. This will provide impetus for farmers to accurately declare the feed time and the current record system with individual calf identification (NLIS) does make that possible.

ALTA is also concerned that the LTS standards should be amended to require a written declaration of calf age. ALTA wishes to participate in a process with government to develop a harmonised compliance and enforcement policy. No further action for revision of the standards will be taken at the present time.

Where submitters have observed what they believe to be unreasonable practice or outcomes for calves including non-compliance with the LTS, these instances should be reported in a timely manner to the local authority. Cases of suspected ill-treatment reported to AHA in submissions will not be referred, and in some instances are from a long time ago.

## 5. BOBBY CALF HANDLING

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RSPCA Australia has stated:

*"A 18-hour time off feed limit will see efficiencies in transportation of bobby calves by encouraging industry to transport bobby calves directly to the nearest abattoir rather than through calf scales, saleyards or markets. Repeated handling as well as loading, transport and unloading into unfamiliar environments is widely acknowledged to be stressful to livestock and should be avoided or minimised."*

*'Journeys can be planned and coordinated to ensure that on-farm pick-up(s), delivery to the abattoir and slaughter occur well within the time off feed limit. Journeys should be coordinated to ensure that bobby calves are slaughtered soon after arrival at the abattoir – overnight lairage should be avoided as it causes unnecessary distress.'*

A large number of respondents felt there was a need to reduce handling of calves. In general, the proportion of bobby calves going via saleyards is declining. The low value nature of these calves encourages efficiency in transport and handling. It is not clear where these suggested efficiencies may arise from particularly when small consignments are being delivered in a suggested 'drip feed' system to

meat processors. This may generate delays further down the supply chain if meat processors are waiting for stock to arrive in patchy small deliveries.

Many submitters stated that calf handling was poor. This is not directly related to the time off feed question but where submitters have observed what they believe to be unreasonable practice or outcomes for calves, these instances should be reported in a timely manner to the local authority.

## 6. ANIMAL WELFARE SCIENCE

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The relevant scientific evidence is derived from the research data in Australia and New Zealand that is currently available (two similar studies). Claims were made that neither study tested real life conditions in relation to expected weather conditions. The Australian study was conducted in late August to mid September during the traditional peak calving period in Victoria with typical spring conditions for Gippsland (temperature range was -0.1 °C through to 23.9 °C). It is acknowledged that these studies were of healthy and clinically normal calves. The studies do provide important data for calf management. It is not the role of a RIS to either conduct new scientific research or to audit previous scientific research. Few additional references of relevance have been provided. There are even difficulties with the establishment of 'normal ranges' for calf biochemical parameters, including blood glucose.

Much criticism has been made of the draft report of the Australian (Fisher) Study, particularly how the lack of measurement of potential indicators (cortisol, hunger, vocalisation, preference tests), or under appreciation of established welfare indicators (glucose, lactate) has biased the welfare ratings of the options in the RIS. This claim is rejected whilst it is acknowledged that there is an increase in the risk to calf welfare with lengthening time off feed. It is unavoidable that a full reviewed paper has not been able to be published at this time but the study has been subjected to an independent review by an international expert and members of the inter-jurisdictional Animal Welfare Committee. Further delays to the standard development process prior to publication are considered unacceptable to calf welfare as the scientific journal publication process can be lengthy.

A stricter interpretation has been applied by some submission authors to the results obtained and much said in submissions about the failure to assess behavioural effects, particularly hunger and vocalisation, which is not possible to do with precision or predictive value. There is no reliable method of measuring the animal welfare implications of hunger in animals. The significance of vocalisation is open to debate. Not-with-standing that this consultation process has been conducted prior to full publication of the study, it is not intended to further counter the claims of particular inadequacies made by various authors. The scientific publication process will achieve this in the fullness of time.

Feed deprivation up to 30 hours was tested as industry experience suggested that this is a possible limit. The establishment of this final point for the study does not imply any form of endorsement of this position and a decision on



national endorsement and implementation remains to be made by Ministers. Similarly criticism of the word change in the study summary from 'defensible' to 'reasonable' or 'suitable' is not meant to imply any change in the intention of the recommendation. The original study recommendation is quoted verbatim in the RIS (see Part 1.2.2.2). The word 'reasonable' is used in Part 1.1 of the RIS, but this is in reference to both the Australian and New Zealand studies, and is an interpretation rather than a direct quote.

Claims were made by many that the study involved specially selected calves. This suggestion is partly countered by the fact that 22 percent of calves had some evidence of insufficient colostrum absorption but this may be less than average. Evidence from New Zealand indicates that insufficient colostrum absorption may be a common occurrence in dairy calves.

Claims were made that the study did not test the real life situations and that for example many calves transported are less than five days old as quoted by Animals Australia from a 2001 Animal Welfare Science Centre workshop report (unsubstantiated). Clearly any approved study must be within established regulatory requirements and subject to Animal Ethics Committee approval and cannot study under age calves. The LTS requires calves going to abattoirs to be five days old (SB4.5). The Standard SB4.4 requires a higher level of care for calves less than five days old going a short distance to a rearing facility and this standard takes into account the risks stated below.

Compassion In World Farming (CIWF), and others, raise the issue of the difficulty in assessing sub-clinical and latent effects of transport on calf welfare in a short study focussing on delivery to slaughter. RSPCA Australia also notes that these effects may impact at a later stage after transport. This is not relevant for bobby calves going to abattoirs under the transport standards due to their limited time in lairage.

Criticism has been applied that the Dairy Industry funded the research and therefore the findings are not 'independent' or trustworthy. The research was commissioned in response to the request from PIMC to develop a 'science-based' standard, acknowledging the lack of relevant Australian studies. Detailed research is expensive and it is fortunate that the Dairy Industry is able to devote substantial resources to this scientific study of calves. The numbers of animals and circumstances tested in this study was based on a statistically significant sample and also generally consistent with similar studies conducted on this topic. CIWF and others, support the need for further research.

International research has been assessed and found to be not relevant because of differences to Australia including; industry practices, research methodology, climate, production systems and cattle breeds.

It has been submitted many times: *'Dairy Australia commissioned research requires further scrutiny.'* Once again, this is not the role of a RIS and additional scientific peer review will happen in due course with full publication of the results in the future.



## 7. SUPPORT FOR 30 HOURS TIME OFF FEED

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Industry submissions from the Australian Dairy Farmers (ADF) and its related state bodies, Dairy Australia (DA), the Australian Meat Industry Council (AMIC) and individual abattoirs, the Australian Livestock Transporters Association (ALTA) and individual transporters and calf buyers have all been supportive of the proposed 30 hours TOF as an enforceable limit. In the main, the few submissions from individual dairy farmers have also been supportive.

These submissions have noted that the 30 hours proposal does not reflect the amount of time for the majority of calves between last feed and slaughter and the enforceable limit will not cause a reduction in industry costs or welfare practice.

These submissions were of the view that Option B (30 hours time off feed):

- Is supported by Australian and International science
- Is practically achievable by industry and is consistent with the common once-daily feeding practices
- Is consistent with existing processing industry animal welfare standards
- Sets a maximum enforceable limit to manage risks to the calves' welfare which will be regulated
- Is most likely to deliver national consistency across jurisdictions
- Continues to contribute to the economic sustainability of processing establishments and rural Australian communities.

AMIC further point out that abattoir processing means less environmental, biosecurity and OH&S issues than on-farm killing. They also predicted that 30 hours may mean less calf handling as consignments can be more efficiently processed as a batch without redrafting of animals for slaughter or feeding.

The Victorian Department of Primary Industries also wrote in support noting that the proposal is a 'whole of chain' standard, there will be a six month implementation phase under the Livestock Management Act 2010 with negotiation of compliance monitoring and reporting through QA arrangements to be determined.

The Australian Veterinary Association and its special interest group, the Australian Cattle Veterinarians support 30 hours time off feed as an outer limit for extenuating circumstances, conditional to other standards being in compliance. Their preferred target TOF for the bulk of the calves is for 24 hours time off feed as described in the guidelines.

## 8. OPPOSITION TO 30 HOURS TOF

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*'30 hours is cruel'*

This statement based on respondent's ethical beliefs was the most common objection made. It must be noted, that as stated in the RIS (section 4.3.1) only a

very small percentage of calves might experience up to a 30 hour time off feed. Furthermore, assessing and quantifying hunger is extremely difficult. It is even more difficult to objectively determine the welfare impact on the animal so that a standard can be set for which people can be prosecuted if they breach. There is no doubt that calves not fed for 24 or 30 hours will seek feed and may be considered to be hungry. However calves also show behavioural indications of strongly wanting to be fed 12 hours or sooner after feeding. It is also apparent that some members of the dairy farming community observed that calves may not suckle every 12 hours and events longer than 30 hours time off feed have been observed to occur naturally on farms on occasion without lasting detriment to the calf.

Whilst mortality rates have not been quoted in the RIS, Animals Australia feel that the 30 hours option will result in a mortality rate of calves delivered of about 0.64% as quoted by Cave, Callinan and Woonton in 2005 for the 1998 to 2000 period to Albury abattoir. The circumstances that led to 'gluts' of calves in the spring with long distance transport at that time have somewhat abated. There is no other evidence to suggest that this calf mortality rate currently prevails across the industry.

*'30 Hours TOF has no impact.'*

As reported: *"The proposed standard amendment will result in zero cost to industry (RIS, page v)".*

The objective of the regulations is not to impose a cost to industry but rather *"To ensure that the conditions under which bobby calves are transported on land are consistent with reasonable animal welfare standards."*

Strictly speaking, there would be no compliance costs to industry compared to the base case. Penalties may be incurred for non-compliance, but these are outside the scope of the RIS.

RSPCA Australia, QLD DEEDI and others believe that it *'and does nothing to improve the welfare of bobby calves before, during and after transport.'*

This statement is incorrect. As stated on page vii of the summary of the RIS (and in the body of the RIS):

*"Benefits by way of reduced risks to animal welfare and national consistency would accrue, as listed in Part 4.3.2. These benefits reflect the reduction of risks associated with shifting from the uncertainty of a voluntary guideline to the relative certainty of a regulated standard (refer to Part 1.2.3 of this RIS) (our emphasis). Importantly, the benefits of reduced risk are considered not just in terms of the frequency of occurrence (i.e. probability of risk), keeping in mind that the change in the rate of compliance is only 1% - but also the extent of harm to the animals themselves (i.e. magnitude of risk) for feed deprivations beyond 30 hours. In this sense the benefits under Option B are considered to be significant."*

In other words, the proposed standard amendment is aimed at reducing risk to bobby calf welfare, but not in terms of likelihood (as it is noted in the RIS that

99% of the time feed occurs within 30 hours). Instead the proposed standard amendment focuses on the magnitude of welfare harm to the bobby calf itself when the maximum time of feed exceeds 30 hours. Also, it is important to note that this proposed standard amendment operates with other existing standards (including LTS SA4.1, 4.2, 4.3 and 4.4) relating to animal transport (not in isolation).

*“RSPCA Australia sees the development of animal welfare standards and guidelines as unique opportunity to improve the welfare of livestock production animals on a large scale rather than maintaining the status quo (the proposed bobby calf standard being a case in point). The fact that these standards are intended to be incorporated into legislation is a chance to encourage best practice in the livestock industries and should not be seen as a means of justifying the continuation of poor practices that are detrimental to animal welfare. The very use of the term “outer legal limit” (RIS, page iii) implies that the standard will cover those in this latter category. This is a most deplorable situation.”*

The assessment of what is reasonable in this RIS is based on objective scientific evidence and cost/benefit analysis - not subjective perceptions about possible community preferences. It is incorrect to assume that science-based animal welfare standards will always result in stricter standards than the status quo, regardless of the costs and benefits.

The market already provides substantial animal welfare benefits, in that it is commonplace in the industry for calves to be fed within 24 hours as discussed in the RIS. The 30 hours maximum time off feed will set a compulsory upper limit which is scientifically based and which allows for emergencies. Again the proposed standard is not so much about the likelihood of risks to animal welfare but rather the magnitude of harm.

RSPCA Australia has also suggested that:

*“To set a high “outer legal limit” to accommodate atypical operational difficulties experienced by some producers to the potential expense of those bobby calves transported without otherwise good calf management and transport practices is unnecessary and inappropriate.”*

There is no scientific evidence to suggest that accommodating a typical operational difficulties experienced by some producers by setting an upper limit of 30 hours would be at the expense of ‘actual’ welfare outcomes.

## 9. 24 HOURS TOF

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QLD DEEDI, Biosecurity Queensland, Voiceless and three other organisations support a 24 hours time off feed. QLD DEEDI feel that the evidence of hypoglycaemia or declining energy balance in 12% of calves at 30 hours time off feed in the Fisher study constitutes too great a risk for the majority of calves. This belief embodies the view of many that the circumstances of normal calf transport are not undertaken following best practice or under ideal

circumstances and that a greater safety margin is required to be enforced by regulation for a shorter time off feed limit. Implementation of the 24 hours time off feed option will have an impact on the supply chain and is opposed by those that support the 30 hours proposal on the basis that the RIS under-estimates the likely impacts.

## 10. 18 HOURS TIME OFF FEED

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RSPCA Australia submitted:

*“The RIS (page vii) points out that the vast majority of journeys (from last feed to slaughter) are carried out within a 24-hour period. We suggest that there is an opportunity for improvement here and that where circumstances may result in an 18-hour period being exceeded, that some flexibility is exercised on farm in terms of the time bobby calves are fed to ensure that maximum time off feed is not exceeded. In other words, bobby calves destined for transport on a particular day could be fed nearer to the time of loading in order to remain within an 18-hour time off feed limit.”*

Animals Australia, Compassion in World Farming (CIWF) and three other organisations also support the 18 hours time off feed option. The majority of email submissions from individuals supported RSPCA Australia or Animals Australia submissions on calf transport and in addition to opposition to 30 hours time off feed, support for 18 hours time off feed was mostly indicated if a position was stated. An 18 hours time off feed requirement in effect would cause either same day slaughter or feeding in transit or at abattoirs due to the single processing shifts in operation.

The ‘improvement’ suggested moving to an 18-hour time off feed limit is not scientifically based (no actual substantiated change in the welfare of bobby calves themselves). In any case, the high costs of this option are not justified by the benefits, as explained in the RIS. In the context of rearing, the scientific studies have not been able to demonstrate a benefit from twice daily feeding (12 hour’s time off feed).

Importantly it was established in the RIS that only 12.5% of bobby calves could be slaughtered within 18 hours time off feed and that the remainder would have to be killed on the farm (see page 25 of the RIS).

Furthermore, any delay in on-farm feeding where once daily feeding occurs (as is common), to bring this meal closer to the time of transport, will not achieve a time off feed of less than 24 hours in the day prior to transport.

Suggested regulations to deny overnight lairage would lead to even greater numbers of calves being killed on farm.

It is accepted that shorter time off feed can be achieved by various strategies, but the critical issue is to arrive at an abattoir in time to make the daily kill shift (usually completed before 3 pm). All abattoirs that kill calves are now operating

only a single shift due to economic conditions. Late arrival means that these calves will be processed early the next day. Recommendations to feed closer to pick up, avoid aggregation delays, travel direct routes, etcetera are made in the guidelines.

## 11. KILLING OF BOBBY CALVES ON FARM AND/OR A SHORT TIME OFF FEED

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*“RSPCA Australia advocates the euthanasia of bobby calves on farm or, where transport is considered necessary, direct consignment to the abattoir and slaughter as soon as possible upon arrival with a maximum time off feed of 18 hours as the “outer legal limit””.*

The cost of killing bobby calves on farm with the 18 hours maximum time off feed option is estimated to be approximately \$9.2m per annum with a total annual economic cost of this option at around \$28.2m per annum (see Table A1.10 of Appendix 1). Importantly, there is no measureable, scientific evidence to suggest that 18 hours maximum time off feed provides substantiated better animal welfare outcomes than 30 hours maximum time off feed. The 18 hours maximum time off feed preference is largely based on perceived animal welfare outcomes and non-scientifically based animal welfare outcomes. The relevant PIMC resolution requires any proposed standard amendment to be ‘science-based’.

Given that penalties will be incurred for non-compliance, it is appropriate that regulated standards (‘must’ statements) be set on the basis of an “outer legal limit”, where compliance is able to be achieved. The RIS predicts problems with industry compliance at 18 hours. Stricter non-science limits are more appropriate as voluntary guidelines (‘should’ statements).

There was some support in submissions for a 6-9-10-12 hour’s time off feed limit which was not examined in the RIS as these limits are too restrictive in the context of Australian infra-structure and will most likely result in most calves being killed on farm. Whilst there is support for killing on farm from RSPCA Australia, Animals Australia, Animals Angels, Voiceless and others, the ethical view of government and industry has not supported these options. It is noted that the three elected officials that made a submission come from Western Australia where the relatively confined geographical spread of the industry and limited processing for veal mitigates against long time off feed for calves going to slaughter in that jurisdiction.

AMIC, ALTA and others have pointed out that ‘on farm’ killing may not be as effective as that done in abattoirs and that it may be a better welfare outcome to slaughter calves by experienced operators under controlled conditions within abattoirs.

Animals Australia has identified a revision that needs to occur to remove the savings from less feeding associated with options C and D, this will make these options less expensive but will not alter the relativity between the options.

## 12. THE CASE FOR MARKET INTERVENTION

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RSPCA Australia, Voiceless and other submitters made the following criticism:

*"This submission outlines our concerns regarding the justifications for the proposed amendment and identifies what we believe are serious deficiencies in the RIS including the failure of the proposed amendment to address the case for market intervention, "*

The aim of government intervention in markets is to ensure that market failure is corrected; but not replaced by government failure (i.e. over-regulation beyond that which is necessary). In this case the time off feed limit needs to be consistent with reasonable animal welfare standards and no more. The assessment of what is reasonable in this RIS is based on objective scientific evidence and cost/benefit analysis - not subjective perceptions about possible community preferences.

RSCPA further criticise the RIS:

*"The RIS was developed on the basis "that 99 per cent of bobby calves are currently processed with no more than 30 hours time off feed" (RIS, page vi). As such, the proposed standard amendment of 30 hours time off feed does not in fact intervene in the market; rather, it simply reflects what is already occurring in the market.*

*Consequently, all of the legitimate justifications for intervening in the market identified in the RIS (at pages 16 and 17) are not addressed. Those justifications relate to the following:*

*a) The presence of negative externalities such as the failure of farmers, transporters and meat processors to adequately take account of risks to bobby calf welfare (i.e. social costs) in their private business decisions."*

This statement is incorrect, there is a market intervention. Please see the response to the '30 hours time off feed' section above.

RSPCA Australia believes that the proposed standard amendment must intervene in the market to a greater extent if the above matters are to be addressed. RSPCA Australia believe that a standard amendment of 18 hours time off feed would present a stronger case for giving effect to the above objectives as it would be a more definitive indication to consumers that time off feed limits will not create calf welfare risks. Animals Angels have similar concerns over a lack of impact on market failure.

In the context of market intervention strategies, some comment was also made that there is a lack of a labeling scheme to allow differentiation between products on production system and welfare status. CIWF feel that an absence of welfare related labeling constitutes ongoing market failure and further reinforces the need for a shorter time off feed standard. CIWF and many others feel that the increased cost from a higher welfare standard should be passed on in the retail milk price and that the current milk price competition between retailers is not conducive to appropriate calf welfare standards being met.

Several submitters said that they would pay a premium for milk produced under a more humanely system. The period of time to slaughter of calves is not within the control of dairy farmers and is unrelated to the cost of milk production.

Furthermore it was suggested that a fair (to farmers) retail dairy price should be guaranteed by legislation to remove the price pressure from farmers and allow them to invest in welfare friendly practices. However, these issues are outside of the scope of the RIS.

### 13. ALTERNATIVE OPTIONS IN THE RIS

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RSPCA Australia submitted that:

*“The RIS has further failed to comply with regulatory guidelines in that it has failed to give any consideration to feasible alternatives concerning the time off feed limits before transport (6 hours), during transport (12 hours), or after delivery before slaughter (12 hours).”*

The purpose of this RIS is to assess the proposed standard amendment, not other standards. However, by assessing the options for 18 and 24 hours we have taken into account the opportunities for reducing time off feed in different phases of movement to abattoirs and prior to slaughter.

And RSPCA Australia further stated:

*“The option of feeding bobby calves during transportation was simply dismissed as impractical without any real consideration of the issue or referral to evidence supporting such conclusion (page vi). Similarly, the option of reducing the 12 hour time off feed limit after delivery before slaughter was dismissed on the basis of “food safety” without referral to any evidence.*

*These justifications may be legitimate but without evidence the RIS is lacking as these options may on face value be considered “feasible alternatives”. This is especially so in light of the purported high costs of options C and D.”*

Industry was consulted on these issues and both were confirmed as legitimate problems (i.e. the lack of feasibility of feeding during transport, at saleyards, at abattoirs (risk to food safety), and changing of abattoir shift times). Whilst there is a contention that these strategies should be tried, industry have indicated that there are practical considerations operating against them and that they should not be included in the options as they are not feasible (a RIS is required to consider only feasible options). Voiceless has questioned the validity of these assertions and with others has suggested that industry is unwilling to change. Animals Angels and others raise further ameliorative possibilities such as: a mobile on-farm slaughter plant or increasing the dairy beef sector. Scenarios C and D incorporate increases in dairy beef to the extent though possible in Australia. For the mobile on-farm slaughter plant, government and industry sources have indicated that there are practical considerations operating against this strategy. The infeasibility of these alternatives is now discussed in Part 3.0 of the revised RIS.



## 14. COST BENEFIT ANALYSIS

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Whilst the assumptions used in the scenarios have been criticised by Animals Australia and others, no new data or figures for the scenarios have been provided. Animals Australia has put forward figures that demonstrate the cost of an additional calf feed is less than one percent of the value of the calf trade or less than \$0.00031 per litre of milk. However, the ability of industry and/or consumers to pay more is not a valid argument for increasing costs, especially when costs increases are not justified by the benefits.

DA/ADF and AMIC point out that the study does not include impacts beyond the farm gate and that the economic consequences for options C and D is likely to cause the collapse of the calf processing industry and severe flow-on business impacts. This will result in a more severe outcome than predicted in the RIS including a loss of viability of small stock (sheep) abattoirs. There are also biosecurity and environmental implications in these options that have not been costed. Project budgetary constraints prevent a more in-depth analysis being carried out.

QLD DEEDI and others feel that the allocation of equal welfare scores to all options has made the whole RIS invalid. However sensitivity testing in the RIS has demonstrated that this would have very little effect if there was a justification for altering the welfare scores. The decision analysis matrix demonstrated in this study has not been used as the decision tool in the RIS but is used to illustrate an approach to decision making used previously in the LTS and that leads to the same conclusions in this case. In any case, the decision analysis matrix has been removed from this final version of the RIS submitted for decision.

Animals Australia has identified a revision that needs to occur to remove the savings from less feeding required in options C and D, this has made these options less expensive but has not altered the relativity between the options. Updated feeding costs based on the LTS RIS 2008 have been used in the revised RIS. Feeding costs are based on once per day feeding as this is said to be the commonest practice.

Animals Angels strongly suggests that the social cost and the cost of harm to calves must be more fully recognised. This ethical consideration would be a very subjective exercise open to challenge. A nominal figure of \$1 per head has been used as the emotional cost of on-farm slaughter by owners as a superficial recognition of the stress to farmers directly involved in the scenario. Animals Angels suggest that this should also apply elsewhere along the transport chain to all those who handle calves.

## 15. COMMUNITY EXPECTATIONS

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RSPCA Australia submitted that:



*“The RIS states that it is important that community expectations are to be taken into account (see RIS, page 15 for example), and acknowledges that “the successful pursuit of many industries involving animals is dependent on community confidence in the regulation of animal welfare.” (RIS, page 17). Yet the RIS fails to make any reference to studies on community expectations in relation to animal welfare, and has not provided details on any research into such conducted by the authors. Despite its acknowledgement of the importance of community expectations, the RIS appears to disregard issues that may be of significant importance to community expectations regarding the welfare of bobby calves during transport and processing.”*

In response, the relevant statement on Page 15 of the RIS is:

*“The word ‘reasonable’ embraces the need for standards to be informed by science, industry knowledge and community expectations, with their overall benefits outweighing their costs”.*

Once again, it is not the role of a RIS to conduct new research into community attitudes or values. This is more properly the role of government and industry. No new studies relevant to calf time off feed have been submitted.

Another relevant statement on Page 17 of the RIS is:

*“Animal welfare legislation provides a balance between the competing views in the community about the use of animals. The successful pursuit of many industries involving animals is dependent on community confidence in the regulation of animal welfare”.<sup>167</sup>*

Community values in the regulation of animal welfare is interpreted as ensuring that welfare standards are science-based, that costs are justified by benefits and that market failure is not replaced by government failure (over regulation). Ultimately the balance is a matter for politicians to decide.

*“The authors of the RIS may disregard issues of calf ‘hunger’ and ‘discomfort’ as being ‘hypothetical’ in nature, but it should be acknowledged by the authors that to the general community, these issues are perceived to be very real.”*

The RIS is not concerned with “hypothetical animal hunger and discomfort” – as may be perceived by some members of the community but rather “real animal hunger and discomfort” as able to be reliably measured and compared. Existing and previous codes may be taken to represent community expectations, but the reality is that these recommendations were never implemented by law, and in many cases have now been superseded. The ethical concerns of many submitters in relation to aspects of calf transport is acknowledged but this must be balanced against the costs of implementing new regulation for calf welfare as

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<sup>167</sup> Bureau of Animal Welfare, 1997

demonstrated by this RIS. The decision on the level of regulation for calf welfare rests with the political process as indicated in the RIS section 4.3.3.

## 16. INTERNATIONAL STANDARDS/LAWS

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International regulatory arrangements have been assessed and found to be not entirely relevant because of differences to Australia including; shorter time permitted on transport, production systems, geography and climate. None-the-less many submitters have decried the apparent inconsistency with the EU and UK requirements, stating that Australia should be seen to be an international leader in animal welfare law.

The relevant section in the RIS is 1.2.3.2 and 5.22 and revisions have been made. These policies and position statements are included to provide a brief international context, while acknowledging that Australia's cattle production systems may vary significantly from production systems, cattle breeds and climatic conditions in other countries. The *2008 OIE - Terrestrial Animal Health Code* section on transport does not contain any specific reference to feeding calves in transit. In fact most of the material below relates to feeding calves reared on farm and as such only forms a reference point for the discussion of feeding associated with transport.

The New Zealand time off feed standards for bobby calves permitting 30 hours time off feed is contained in two documents:

*Animal Welfare (Dairy Cattle) Code of Welfare 2010*

*Minimum standard 18: Pre Transport selection*

*"Every unweaned calf to be transported off the farm must have been fed at least half of that day's ration of colostrum or milk, not more than 2 hours before transportation."*

*Animal Welfare (Commercial Slaughter) Code of Welfare 2010*

*Minimum standard 4: Handling of Large animals:*

*"(j) Bobby calves and milk lambs must be slaughtered as soon as possible but within 28 hours of being loaded for transport unless fed (see (l))."*

The New Zealand Codes of Welfare are comparable to the Australian Standards and Guidelines which will operate under enabling Animal Welfare Acts or similar legislation. The minimum standards in codes of welfare can be used to support a prosecution under the Animal Welfare Act, or conversely, can be used as a defence to prosecution. From the preface of the New Zealand code:

*"The Animal Welfare Act 1999 (NZ) came into force on 1 January 2000. It establishes the fundamental obligations relating to the care of animals. These obligations are written in general terms. The detail is found in codes of welfare. Codes set out minimum standards and recommendations relating to all aspects of the care of animals."*

There is no other relevant international material that specifies feeding of calves in transport. No international requirements could be found.

European Union welfare in transport regulation (EC) No 1/2005 governs the transport of calves of less than 10 days of age, and they may only travel for a maximum of 100km (approximately 62 miles) and a maximum of eight hours. The regulation regards them as unfit for longer journeys. Hence time off feed is not likely to be an issue and is not mandated. EU Directive 91/629/EEC (as amended) lays down minimum standards for the welfare of reared calves across the EU and requires once daily feeding. There is a variance in time off feed within the UK.

The welfare of cattle in the United Kingdom is implemented through the *Animal Welfare Act 2006* under which it is an offence to cause unnecessary suffering to any animal. The *Welfare of Farmed Animals (England) Regulations, 2007, (SI 2007 No 2078)*. Schedule six states in part:

*“12.—(1) All calves must be fed at least twice a day.”*

The Canadian Agri-Food Research Council *Recommended code of practice for the care and handling of farm animals – Veal Calves 1998* clause 2.1.3 recommends that *“if not fed ad libitum, calves should be fed two or more times per day following a regular routine.”*

In summary, whilst it can be accepted that the on-farm maximum time off feed standard is 24 hours in the EU and 12 hours in the UK and this precautionary approach is extrapolated to transport, the only direct international requirement for time off feed during transport exists in New Zealand and their regulatory system permits a maximum of 30 hours time off feed.

**IN SUMMARY:** The welfare of bobby calves is an emotive issue and many criticisms have been raised. There is clear demarcation of views with the larger number of submissions from animal welfare organisations and individuals supporting a shorter time off feed and in some cases question the need for transport at all (killing on farm and other alternatives were proposed). There is no unanimous support for a single, shorter, time-off-feed option instead of the 30 hours. There is some support for a variety of shorter options. There is good support for a 30 hours time off feed limit in the context of the other related standards for calf transport from some government departments (not Queensland) and all industry respondents. Revision of the RIS has occurred and the current proposal for a 30 hours time off feed standard will be recommended for government endorsement.

**TABLE A3.2: SUMMARY OF MAIN POSITIONS IN SUBMISSIONS FROM ORGANISATIONS AND ELECTED REPRESENTATIVES**

<b>Organisation</b>	<b>Time off feed</b>	<b>Other positions</b>
Against Animal Cruelty Tasmania	nil	Killing on farm

<b>Organisation</b>	<b>Time off feed</b>	<b>Other positions</b>
Animal Liberation Inc (SA)	24 hours	
Animal Welfare League of Qld Inc.	regularly, 12 hours?	Increase regional abattoirs, feed at abattoirs
Animals Angels	9 hours	Killing on farm, mobile abattoirs, dairy beef, minimise time at congregation points, 10 day old minimum for transport, bedding, mandatory paper record of time off feed
Animals Australia (AA)	18 hours	Twice daily feeding, killing on farm, direct consignment, same day slaughter, mandatory paper record of time off feed
Australian Dairy Farmers (ADF) Dairy Australia (DA)	30 hours	Also supported by: WA Farmers, Queensland Dairy Farmers Organisation, Victorian Farmers Federation (UDV), SA Dairyfarmers Association and Tasmanian Farmers and Graziers Association
Australian Livestock Transporters Association (ALTA)	30 hours	Mandatory paper record of time off feed and pick up, clarifications of LTS
Australian Meat Industry Council (AMIC)	30 hours	
Australian Veterinary Association (AVA) Australian Cattle Veterinarians (ACV)	30 hours	Conditional to compliance with other standards, prefer 24 hours time off feed target
Baker (Lisa) MLA Maylands WA	10 hours	Mandatory paper record of time off feed, fitness and pick up, Killing on farm, mobile abattoirs, minimum 14 days old for transport, 8 hour transport limit
Compassion in World Farming (CIWF)	18 hours	Travel <100km, bedding, same day slaughter
Department of Primary Industries Victoria	30 hours	

<b>Organisation</b>	<b>Time off feed</b>	<b>Other positions</b>
Humane Choice	18 hours	
Humane Society International (HSI)	18 hours	
Hunter Animal Watch	6 hours	Killing on farm
Law Society of SA	18 hours	Killing on farm, same day slaughter
Law Society of NSW Young Lawyers	10 hours?	
MacLaren (Lyn) MLC South Metropolitan Region WA	10 hours?	
Northern Rivers Community Legal Centre	24 hours	
Parke (Melissa) MP WA Fremantle	10 hours	10 day old minimum for transport
People for the Ethical Treatment of Animals (PETA)	12 hours?	Food in transit
Queensland Dairyfarmers Organisation	30 Hours	
The Queensland Department of Employment, Economic Development and Innovation QLD (DEEDI)	24 hours	feed immediately before pick up, minimise time at congregation points, same day slaughter
RSPCA Australia	18 hours	Killing on farm, direct consignment and immediate slaughter, colostrum management, bedding
SA Dairyfarmers Association	30 Hours	
Southern Cross University Animal Law Club (SCUALC)	24 hours	
Stop Live Exports	12 hours	Emergency liquid feed capacity on trucks and at abattoirs, immediate slaughter and same day slaughter
Tasmanian Farmers and Graziers Association	30 Hours	

<b>Organisation</b>	<b>Time off feed</b>	<b>Other positions</b>
Victorian Farmers Federation (UDV)	30 Hours	
Voiceless	24 hours	Killing on farm, mandatory paper record of time off feed
WA Farmers Federation	30 Hours	

**TABLE A3.3: ADDITIONAL SUGGESTIONS RELATED TO THE TIME OFF FEED ISSUE**

<b>Issue</b>	<b>Comment</b>
Slaughter on farm	Does not have to be mandated as will occur if no market
Direct consignment	If mandated will cause disruption to market
Immediate slaughter	If mandated will cause disruption to market
Twice daily feeding	Suitable as a guideline
Feed immediately before pick up	Suitable as a guideline
Feed in transit or at abattoirs	If mandated will cause disruption to market.
Minimise time at congregation points	If mandated will cause disruption to market.
Same day slaughter	If mandated will cause disruption to market.
Poor calf handling	Will be covered by enforcement of LTS and industry programs
Mobile abattoirs, Increase regional abattoirs	Require government subsidy
Dairy beef	Production system constrained by economics?
Negative ethical implications of poor calf treatment	Difficult to cost and address
Mandatory paper record of time off feed and pick up	Discussed in LTS. Revise NVD
Remove term 'delivery' from LTS	May achieve clarification
Travel <100km	Impractical
Bedding	Impractical
Improve colostrum management	Dairy guidelines in place

Animal Health Australia  
4 February 2011

## ANNEX A: EXAMPLE OF A SUPPORTIVE SUBMISSION (INDUSTRY AND PRIVATE)

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I write to provide comment on the proposed bobby calf time off feed standard.

I am aware of the joint submission prepared by Australian Dairy Farmers and Dairy Australia on behalf of the Australian dairy industry and strongly support the position presented within this submission.

In particular we would like to emphasise our support for the recommended standard, Option B, outlined in the Regulation Impact Statement that bobby calves between 5 and 30 days old travelling without mothers must:

*“be slaughtered or fed within 30 hours from last feed.”*

We note that this proposed standard (Option B) addresses the issues that gave rise to its development, in that it:

- is science-based and addresses the physiological stresses calves are subjected to during transport;
- sets an enforceable limit that will adequately manage risks to the calves' welfare;
- is achievable and is consistent with the common once-daily feeding practices of bobby calves in the industry; and
- is likely to promote national consistency and certainty to industry participant's right along the supply chain.

As a key participant in the bobby calf supply chain we recognise that the welfare of bobby calves is of paramount importance and we work within the supply chain to promote proper handling and efficient transport that maximises the welfare outcomes for bobby calves.

I would also like to take this opportunity to further emphasise a bobby calf supply chain concern that the cost/benefit analysis excludes impacts beyond the farm gate and to strongly support the dairy industry position that the economic implications of the alternative standards to the bobby calf supply chain need to be given greater prominence in the Regulation Impact Assessment.

The recommended standard of 30 hours time off feed is consistent with normal industry practice of once a day feeding for both sale and replacement calves and it has been shown by research there are no adverse outcomes on calf health and performance when comparing once and twice a day feeding. It is important that a realistic and feasible standard is endorsed so that calves that are not required for herd replacement purposes can be handled with care through viable meat processing enterprises and avoid the necessity for large scale slaughter and disposal of calves on farm.

A key priority for the bobby calf supply chain is to ensure that all calves are managed across the supply chain according to agreed industry practices and



standards. As a key player we recognise that the welfare of bobby calves is important and work with other members of the bobby calf supply chain to improve the handling of calves and efficiency of transport from farm to slaughter in order to consistently meet current and proposed transport recommendations. It is important that the proposed Standard is achievable and realistic to enable industry to fulfil its legal and ethical obligations while still remaining economically viable.

I strongly urge the Primary Industries Ministerial Council (PIMC) to adopt and incorporate a 30 hour maximum time off feed standard for bobby calves into the Australian Animal Welfare Standards and Guidelines for Land Transport.

## ANNEX B: EXAMPLE OF AN UNSUPPORTIVE SUBMISSION (PRIVATE)

I am writing to express my strong objection to the proposed Standard for Time Off Feed for bobby calves. I am appalled at the lack of consultation with the public and the lack of transparency in the development of the Standard.

The Primary Industry Ministerial Council (PIMC) is making decisions based on advice from self interested industry groups who are more concerned with their profits than the welfare of animals. Decisions should be based on well researched, independent expert opinion.

The research used to justify the 30 hour 'time off feed' standard was commissioned by Dairy Australia. This is obviously not an independent study! The outcomes of the study have not been reviewed by independent experts and the study was not representative of bobby calves in commercial practice. Many calves are currently not well prepared for transport and therefore could not cope with 30 hours off feed. The study indicators demonstrate that the calves experienced hunger from around 9 hours after their last feed; the transportation prevented adequate lying; and muscle strain was evident through transportation.

I strongly object to the standard for the following reasons:

- It is unacceptable to withhold food from young vulnerable animals for up to 30 hours, when young calves would normally suckle 5 times a day. Compounded with the handling, transport and holding of these calves in abattoirs without bedding or temperature controls, the withholding of food is an especially cruel practice.
- The existing Code of Practice states:
  - (5.11.1) Young calves are very susceptible to stress and disease and should not be exposed to management procedures which aggravate this situation.
  - (5.11.2) ...Bobby calves being transported or awaiting sale or slaughter should not be deprived of appropriate liquid feed or water for more than 10 hours.

This Code of Practice is currently not enforceable.

- The proposal, which would be enforceable, seriously undermines the existing code and in so doing, animal welfare is reduced. The proposed Standard is designed to allow the continuation of unethical and cruel industry practices. It is not a Standard designed to protect the welfare of these baby animals and any suggestion that this Standard is about 'animal welfare' is a lie to the Australian public. To deny baby animals, only a few days old of food cannot be justified by any economic gain.

The proposed Standard must be rejected, as it has not been designed to improve the welfare of bobby calves and marks a decay in our treatment of animals within Australia. The Standard does not have the support of any peer reviewed or respected scientific study. The Australian community, if given adequate opportunity to comment, would not support the legalisation of cruel dairy industry practices at the insistence of the dairy industry solely for the economic benefit to dairy industry producers. I object vehemently to the proposal.

## ANNEX C: OBJECTION TO THE PROPOSED STANDARD FOR TIME OFF FEED FOR BOBBY CALVES

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As an Australian citizen, I strongly object to the proposed Standard for Time Off feed for bobby calves that is currently under consideration by the Government. To deny calves of only a few days old of food for up to 30 hours is abhorrent and unethical and cannot be justified by any economic gain. It is shameful that these animals are treated by the dairy industry as by products in the first place, but the Government, at the very least is morally obliged to enact Standards that will minimize their discomfort and suffering for their short lives. I urge you not to pass this Standard and instead implement Standards to ensure that the bobby calves obvious needs are addressed and that they are treated as humanely as possible.

Followed by a final sentence for example:

- I am writing this Submission as a response to the outrage and heartache that I felt, and believe that many Australians would feel, if they were aware of the very unethical practice of bringing bobby calves into this world in the first place.
- We are not asking for the Australian Dairy Industry to stop milk production. Clearly, that would be a ridiculous request. All we are asking is that these calves are treated as humanely as possible for the short time that they are alive.

## APPENDIX 4 - BOBBY CALF TIME OFF FEED –FINAL POST-CONSULTATION REVISIONS SUGGESTED BY OFFICE OF BEST PRACTICE REGULATION

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**TABLE A4.1:** LIST OF CHANGES MADE TO CONSULTATION RIS IN RESPONSE TO OBPR REQUEST.

<b>Current Part of RIS</b>	<b>Nature of change</b>
Tables	Renumbering as appropriate following deletions
Summary	Simplify, remove repetition but include public consultation summary.
Part 1.1,	Deletions of low value text to simplify report
Part 1.3.2	List of changes to the RIS made in response to public submissions changed to Table A3.1
Part 2.3	Deletions of low value text in relation to ‘public good’
Part 3	Deletions of low value text to simplify report. Reference to public consultation submissions as appropriate
Part 4.3.	Delete duplication on lack of feasibility of feeding during transport
Part 4.3.1	Explanation of TOF calculation clarified
Part 4.4.2	Multi-criteria analysis section deleted as no longer used in this RIS
Part 5.2	Deleted original 5.2 as covered by Part 1.2.3.2. Deletions of low value text in remainder of text to simplify report
Conclusion (Part 7)	Include public consultation summary. Deletions of low value text to simplify report