

Title: Sheep Identification - Electronic slaughter tag IA No: 1398 Lead department or agency: Department For Environment, Food and Rural Affairs Other departments or agencies: Rural Payments Agency (RPA) Animal Health and Veterinary Laboratories Agency (AHVLA)	Impact Assessment (IA)		
	Date: 11/11/2013		
	Stage: Final		
	Source of intervention: Domestic		
	Type of measure: Secondary legislation		
Contact for enquiries: Policy: Patrick Brophy: 0207 238 6583 Economics: Clemens Matt: 0207 238 6191			
Summary: Intervention and Options		RPC Opinion: GREEN	

Cost of Preferred (or more likely) Option			
Total Net Present Value	Business Net Present Value	Net cost to business per year (EANCB on 2009 prices)	In scope of One-In, Measure qualifies as Two-Out?
£1.421m	£1.421m	£-0.130m	Yes
			Zero Net Cost

What is the problem under consideration? Why is government intervention necessary?

For disease control purposes the EU has a system of traceability for sheep movements (responding to negative externalities of disease) which allows in England the use of non-electronic tags for certain types of movement. The result has been a regulatory compliance issue particularly for high throughput premises (markets, abattoirs, store lamb finishers) which find it very impractical and costly to record movements manually rather than electronically. Four years of non-regulatory measures to increase the use of electronic identification (EID) slaughter tags to address this problem have failed. Government intervention is required to change producer behaviour i.e. mandatory use of EID slaughter tags, and electronic reading by markets and abattoirs. This approach also underpins Defra's new e-movement reporting system for sheep being implemented in line with the Government's digital strategy (see IA 1532).

What are the policy objectives and the intended effects?

1. Address the issue of non-compliance with movement record keeping requirements for high volume throughput premises; 2. Improve traceability of sheep for disease control purposes through simplification of the identification rules; 3. Provide opportunities for industry to take advantage of the range of non-monetised benefits (which we believe will significantly outweigh the costs); 4. Provide government with the tools to review current animal disease control policy to deliver further reductions in burdens on industry; and 5. Provide a consistent approach to sheep traceability throughout GB.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)

Three policy options are considered: **Option 0:** Do nothing; maintain use of both EID and non-EID slaughter tag; **Option 1** (preferred): Require the use of EID slaughter tags only because it delivers on the policy objectives listed above. (iii) **Option 2:** Maintain the use of both EID and non-EID slaughter tags but allow the use of non-EID slaughter tags only for direct movements from the holding of birth to abattoirs. Whilst Option 2 shows a higher monetised benefit because fewer (slightly more expensive) EID tags are applied this does not take account of the non-monetised benefits of Option1, which are expected to significantly outweigh costs. They will provide a range of benefits across the industry which will enable them to improve their competitiveness and sustain economic growth.

Will the policy be reviewed? It will be reviewed. If applicable, set review date: 04/2019								
Does implementation go beyond minimum EU requirements?				No				
Are any of these organisations in scope? If Micros not exempted set out reason in Evidence Base.				Micro Yes	< 20 Yes	Small Yes	Medium Yes	Large Yes
What is the CO ₂ equivalent change in greenhouse gas emissions? (Million tonnes CO ₂ equivalent)				Traded: N/a		Non-traded: N/A		

I have read the Impact Assessment and I am satisfied that (a) it represents a fair and reasonable view of the expected costs, benefits and impact of the policy, and (b) that the benefits justify the costs.

Signed by the responsible Minister: GEORGE EUSTICE Date: 13-02-2014

Summary: Analysis & Evidence

Policy Option 1

Description: Require the use of electronic (EID) slaughter tags for lambs and require markets and abattoirs to electronically read all tags.

FULL ECONOMIC ASSESSMENT

Price Base Year 2012	PV Base Year 2015	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low: -19.863	High: 16.737	Best Estimate: 1.421

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	0	1.517	13.055
High	0	4.658	40.094
Best Estimate	0	2.322	19.988

Description and scale of key monetised costs by 'main affected groups'

An increased cost to lamb producers because they will need to electronically tag each lamb before it can leave the holding of birth, estimated to be £1.893m annually.

Markets and abattoirs will electronically read all animals to record their individual numbers, rather than report a simple headcount as now. This is estimated to cost markets £0.168m and abattoirs £0.261m.

Other key non-monetised costs by 'main affected groups'

Nil

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	0	2.350	20.231
High	0	3.461	29.792
Best Estimate	0	2.487	21.408

Description and scale of key monetised benefits by 'main affected groups'

There are annual benefits to markets and abattoirs because all arriving animals can be read electronically instead of visually saving them £0.618m and £0.581m respectively p.a. Abattoirs will also save £0.666m from reduced checks of movement documents. Farmers buying lambs to finish to slaughter weight will similarly have reduced reading times and will not have to retag with EID tags saving them £0.622m p.a.

Other key non-monetised benefits by 'main affected groups'

Increasing the amount of individual animal movement data and the speed that data is made available will improve Government's ability to respond more quickly to a disease outbreak. **This will shorten the duration of an outbreak and lower the outbreak costs to industry (and Government).**

Individual traceability enables the supply chain, especially abattoirs, to respond to public health issues and maintain consumer confidence avoiding a reduction in demand for sheep meat.

This simpler identification system solves the issue of markets and abattoirs EU non compliance with recording requirements - eliminating an EU infraction risk.

It provides the tools (data) for Government to review current animal disease control policy to consider further reductions in burdens on industry.

An all-electronic ID system enables industry to take advantage of technology by using it to improve profits (e.g. by using carcase performance data provided by the abattoir) and sustain economic growth.

Key assumptions/sensitivities/risks	Discount rate (%)	3.5
<ul style="list-style-type: none"> The size of the national lamb crop and tag sales are relatively unchanged over the period analysed Keeper behaviour will not change without Government intervention (evidenced by tag sales 2011-2012). 		

BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £m:			In scope of OITO?	Measure qualifies as
Costs: 1.823	Benefits: 1.952	Net: 0.130	Yes	Zero net cost

Summary: Analysis & Evidence

Policy Option 2

Description: Maintain the use of both EID and non EID slaughter tags but allow the use of non EID tags only for moves direct from the holding of birth to abattoir. Markets and abattoirs read all electronic tags.

FULL ECONOMIC ASSESSMENT

Price Base Year 2012	PV Base Year 2015	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low: 1.346	High: 21.066	Best Estimate: 10.380

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	0	0.640	5.511
High	0	1.820	15.670
Best Estimate	0	0.908	7.814

Description and scale of key monetised costs by 'main affected groups'

An increased cost to lamb producers for those lambs which are not sent direct to slaughter from the holding of birth will need to be electronically tagged, estimated to be £0.740m annually.

Markets and abattoirs electronically read all electronically identified animals, rather than report a simple headcount as now. This is estimated to cost £0.168m.

Other key non-monetised costs by 'main affected groups'

Retaining both non-EID and EID tag types means that there will be an ongoing cost from keepers continuing to apply incorrect tags and consignments at markets would need to be rejected resulting in increased handling and enforcement costs, and an impact on animal welfare.

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	0	1.977	17.016
High	0	3.088	26.578
Best Estimate	0	2.114	18.194

Description and scale of key monetised benefits by 'main affected groups'

Reduced costs to markets and abattoirs due to the reduced cost of visually reading arriving animals as more will be electronically identified saving them annually £0.618m and £0.581m respectively. Abattoirs will also save £0.293m from reduced checks of movement documents. Farmers buying store lambs to finish to slaughter weight have reductions in reading times and retagging with EID saving them £0.622m p.a..

Other key non-monetised benefits by 'main affected groups'

Similar to option 1 but on a lesser scale. There will be a gap in Government data in relation to animals moving direct to slaughter (which won't be electronically tagged under this option) which account for around 60% of the annual lamb production. This therefore reduces the effectiveness of the identification requirements

Key assumptions/sensitivities/risks

Discount rate (%) 3.5

Assumptions are as Option 1.

There is a risk that the lower cost of non EID slaughter tags will artificially encourage increased direct sales to abattoirs, impacting on the level of livestock market trade and potentially making some unviable as businesses. Such an outcome would have an impact on the sheep sector because markets are an essential outlet to match keepers and buyers to achieve a competitive market price.

BUSINESS ASSESSMENT (Option 2)

Direct impact on business (Equivalent Annual) £m:			In scope of OIOO?	Measure qualifies as
Costs: 0.713	Benefits: 1.659	Net: 0.947	Yes	Zero net cost

Evidence Base (for summary sheets)

Contents:

(1-8)	Summary and preferred option
(9-10)	Rationale for intervention
(11-12)	Policy objectives
(Tab 2)	Options considered
(13)	Industry - role and impact of different sectors
(14 -17)	Responses to the public consultation on the options
(18-19)	Legislative implications / timing
(20-28)	Monetised costs and benefits of each option
(Table 3)	Comparison of annual benefits for both options
(Table 4)	Comparison of annual costs for both options
(Table 5)	Option 1, best estimate of costs and benefits
(Table 6)	Option 2, best estimate of costs and benefits
(Table 7)	Summary of estimates at 2012 prices, in present value terms and converted to the EANCB
(29)	Overall monetised costs and benefits for the preferred Option 1 – EID only slaughter tags
(30)	Non monetised cost and benefits
(31)	Additional non-monetised benefits, Option 1
(32-34)	Non-monetised costs of both Options
(35-36)	Additional non-monetised costs of Option 2
(37)	The preferred option
(38-39)	Rationale and evidence that justify the level of analysis used in the IA
(40-45)	Risks
(46-55)	Wider impacts
(56-61)	Summary and preferred option
Annex A	Industry structure, sector volumes, and impacts of options 1 & 2
Annex B	Calculations of benefits
Annex C	Calculation of costs of Option 1 and 2
Annex D	Estimate of the ranges for high and low net benefit/net present values for Options 1 and 2
Annex E	High and Low costs of Options 1 and 2

Summary and preferred option

1. This IA is concerned with a regulatory measure to address a problem with the identification of slaughter lambs which is adversely affecting keepers statutory recording and reporting of their movements. This is leading to non-compliance, is an infraction risk, compromises our ability to trace disease and causes unnecessary costs for markets and abattoirs.
2. In 2010 electronic identification (**EID**) was mandated by EU law to facilitate individual recording/movement reporting for adult breeding sheep. They have an individual ID number on their tags in each ear and in an EID chip in one of them. **Slaughter lambs** however have a single ear tag only displaying a flock mark (the same 6-digit number for all lambs from the same holding).
3. As well as recording the number of lambs moved in a batch keepers must record how many of each different flock marks there are in it – ‘mixed batch recording’. The only way to do this is to manually handle lambs to visually read each tag, or if it has an EID tag to scan its flock mark from its chip.
4. To enable that ‘mixed batch recording’ requirement - for lambs - Defra allowed keepers to choose an EID version of the single slaughter tag. Industry’s preference was for a *voluntary* EID slaughter tag. They insisted uptake of that tag would be commercially driven with keepers choosing it because of the wider supply chain benefits it brings, whilst choosing the cheaper non-EID tag for movements from the

holding of birth direct to slaughter (where there are no mixed origin flock marks to record). On that basis we permitted non-EID as well as EID slaughter tags.

5. However, as most producers are using non-EID tags there is widespread non-compliance with the mixed batch recording requirement. This is particularly evident when lambs are sold through livestock markets for fattening and sold back through markets or direct to abattoirs. As they come from many different holdings the only way they can be mixed batch recorded is if they are identified with the EID slaughter tag.
6. The marketplace has not driven compliance with the mixed batch recording requirement - by requiring keepers to use the EID slaughter tag. Because of competition for trade and fear that producers would divert sales direct to abattoirs away from livestock markets. They (markets and finishers) have accepted non-EID tagged animals. For the same reasons, and due to administrative costs it would impose on them, they have not offered discounts or paid a premium for EID tagged sheep.
7. This IA considers 2 options to address this issue. (i) mandate the use of the EID only slaughter tag, or (ii) only allow the non-EID tag to be used for lambs moving directly from their holding of birth to slaughter (as they will have only 1 flock mark in the batch). Table 1 below summarises of cost and benefits post consultation

Table 1 – Summary of costs and benefits

Costs & Benefits (2012 prices)	Industry (£M)	
	Option 1 EID slaughter tag	Option 2 Non-EID tag for slaughter moves
Costs Annual	2.322	0.908
Total costs (10yrs)	23.221	9.077
Benefits Annual	2.487	2.114
Total benefits (10yrs)	24.872	21.137
Net Benefit (10yrs)	1.650	12.059
Total NPV benefit (10 yrs, 2015 base year)	1.421	10.380

8. **Option 1 is preferred.** Although its overall saving to industry is less than option 2 it has very significant non-monetised benefits

Rationale for intervention

9. The spread of infectious disease is a negative externality which can impose costs on unwitting parties (like other sheep keepers, and depending on the disease, keepers of other species). Having a system of sheep traceability is an EU requirement designed to improve disease control in the event of an outbreak. The current system (option 0) allows some sheep (ie lambs destined for slaughter) to be tagged on farm with a cheaper non-electronic tag. This is imposing costs on abattoirs and markets as they are required to record lambs passing through their premises and the costs of counting and recording manually is higher than electronically. It is also leading to non-compliance as the non-electronic tag prevents those who buy sheep, including markets, and abattoirs from accurately recording certain required information when the sheep are moved. Inaccurate recording jeopardises traceability during disease outbreaks and food scares and is an EU infraction risk.
10. There are some commercial benefits of EID tagging (eg individual carcase identification at abattoirs with feedback to their producers on conformation etc). It was originally thought that the recording needs of customers and these commercial incentives would drive producers use of EID tags without further regulation. This has not been the case even after four years – indeed the reverse has happened and use of non-electronic tags is increasing. Furthermore markets and abattoirs have not been able to pass back to keepers higher costs of manual recording of non-electronic tags in order to incentivise uptake of EID tags owing mainly to the administrative and transaction costs associated with undertaking this. Therefore government intervention is necessary to stop the use of non-electronic tags, to reduce movement recording costs, to improve compliance (and eliminate EU infraction risk) and to generate

the disease control benefits that would flow from a much more complete and accurate record of sheep movements.

Policy Objectives

11. The policy pursues the following objectives:

- (i) Address the issue of non-compliance with the rules for batch recording lamb movements.
- (ii) Simplify sheep ID rules to improve the traceability of sheep movements and underpin the move to an electronic movement reporting system next year rules (IA 1532).
- (iii) Provide technical means for keepers to take advantage of a range of non-monetised benefits, (in particular lamb producers to get carcass feedback data from abattoirs reading EID tags).
- (iv) Align the lamb ID requirements in England with those in Scotland and planned for in Wales (14(v)) as having a single consistent approach to ID in GB will significantly simplify trade.
- (v) Provide Government with a platform to review disease control policies e.g. on a record keeping tolerance, and on 'standstill' rules (14 (xii-iii)) as pressed for by industry in responses to the Red Tape Challenge review - but which need an all-electronic ID system.

Objectives ii and iii above support two of the four priorities in Defra's Ten Point Growth Plan¹:

(i) grow the rural economy	Includes implementing recommendations of the report of the independent Farming Regulation Task Force review of farming regulations to reduce industry burdens ² (<i>they recommended e-reporting</i>)
(ii) safeguard animal health	Defra will minimise risks and increase preparedness for animal disease outbreaks, <u>driving growth and competitiveness</u> through improving standards of animal health ³ - which this measure supports.

12. The considerations underlying the objectives are:

- (i) Markets, store lamb finishers, and abattoirs are failing their legal obligation to record mixed origins (flock/herd marks) in batches as most lambs aren't being identified with the EID tag. (para 5)
- (ii) Avoiding producers choosing tags based on cost rather than the needs of the wider supply chain. (paras. 4-5). Despite on-going advice from Defra over the last 4 years for lamb producers (who identify lambs) to consider the recording needs of their customers, their behaviour has not changed. More than two thirds of all slaughter tags purchased in 2012 were non-EID. *We therefore intend to withdraw the use of the non-electronic slaughter tag in England.*
- (iii) Maximising the opportunities for efficiency from sheep EID. We are moving from a paper movement reporting system to an electronic one (IA 1532). This will provide significantly faster and more accurate movement data. Using EID only tags for slaughter lambs underpins this system as it enables their ID details to be captured electronically.
- (iv) Mandating EID tags to allow markets and abattoirs to easily capture movement IDs of slaughter sheep. Without this we will undermine the effectiveness of the new e-movement reporting system because of significant gaps in the individual animal data it captures. That will compromise our ability to: better manage disease outbreaks, to review disease controls, and further reduce industry burdens.
- (v) Harmonisation EID use throughout GB will avoid problems with cross border trade resulting from different ID rules being applicable in different GB regions. That is difficult for industry to

¹ <https://www.gov.uk/government/organisations/department-for-environment-food-rural-affairs/about>

² <http://transparency.number10.gov.uk/business-plan/10/33> (point 1.7)

³ <http://transparency.number10.gov.uk/business-plan/10/35>

understand and manage. EID tagging of lambs is consistent with the approach taken in Scotland and being proposed by Wales.

- (vi) Mitigation of an EU infraction risk by improving compliance with EU mixed batch recording rules at high volume throughput premises (markets, abattoirs etc) by mandating EID slaughter tags. We are vulnerable during future EU FVO compliance audits. In 2011, the EU Food and Veterinary Office (FVO) undertook a fact finding mission and criticised England (and Wales) for ineffective operation of the slaughter lamb derogation. They noted 'the situation in Scotland and Northern Ireland is far more advanced and the systems in place are better suited to ensure accurate and rapid traceability of animal movements' - because - they already mandate that all sheep are electronically identified.
- (vii) Considerably more accurate data is produced when reading individual ID numbers from EID tags compared to visually reading and recording flock numbers from non-electronic tags.
- (viii) Managing new emerging diseases (e.g. Blue Tongue) may require a vaccination/testing regime which will rely on sheep being individually identified. *Mandating EID tags/recording will mean all sheep can be individually recorded and traced.* Currently individual data on sheep moves is only captured for breeding animals as they are individually identified. That is optional for slaughter lambs. Some diseases can be managed using batch level data (eg FMD) but others can't (eg scrapie).
- (ix) Farm to fork traceability without EID is not possible. Collecting individual sheep movement data allows them to be tracked if public health concerns are raised about the provenance of meat during food scares, to maintain consumer confidence and avoid a dip in sales.
- (x) Reducing the current cost of compliance with reporting requirements for high volume businesses, is possible with EID only tagging because they will only have to use one method (electronic) of recording. Costs of reading EID tags are lower than visually reading non-EID tags. When a producer chooses to use a non-EID tag on slaughter lambs he effectively imposes an additional reading cost on high volume throughput premises (markets, finishers and abattoirs) further down the supply chain.
- (xi) Lamb producers can take advantage of technological benefits. Many want *individual carcass performance information* to be fed back by abattoirs to enable them to improve animal performance and profits. Abattoirs cannot do so unless animals are individually identified i.e. with an EID tag. A major supermarket is mandating this for their suppliers. Others are known to be considering it.
- (xii) The potential to revisit discussions with the Commission on a record keeping tolerance for keepers farm records. With visual and electronic reading and non-EID and EID tags it is very difficult for industry to deliver 100% accurate recording of every batch of sheep moved (para.1). Markets read batches and provide tag information to keepers needed to complete farm records. Inaccuracies in a farmer's records risks a reduction to their SPS subsidy payment. The Commission has made it clear that without evidence on the level of unavoidable electronic misreads, particularly at markets, they are unable to re-consider a record tolerance of inaccuracies. We cannot provide this evidence without enabling markets to read all animals electronically because we do not know whether 'misreads' are as a result of non-EID tags in mixed origin batches or faulty/lost tags.
- (xiii) The potential to consider in future individual animal 'standstills'. This is desired by industry who consider current whole farm standstill rules to be too stringent. When livestock move onto a holding no resident livestock can move off within a 6 day 'standstill' period. They cannot trade their livestock during that period. We cannot review standstill policy unless EID enabled individual animal recording is in place to monitor/enforce individual movements on and off a holding.

Options considered

Table 2:

Option	Description
0	Current system - Do nothing. Retain 2 types of single tag to ID slaughter lambs (EID or non-EID).
1	Only permit use of the <u>EID</u> slaughter tag (preferred) - Withdraw the non-EID tag.
2	'Restricted' slaughter tag derogation Permit the use of the <u>non-EID</u> tag <u>only</u> for lambs moving to an abattoir from their birth holding. All other lambs need to be tagged with EID

Industry – role and impact of different sectors

13. EU law requires livestock to be identified so their moves can be accurately reported (by keepers) and recorded (by Governments) on a central movements database. This is crucial to control endemic and exotic contagious diseases such as Foot and Mouth Disease (FMD). Sheep are by far the most numerous livestock in England with the corresponding highest number of moves. We have a unique/complex sheep production system highly adapted to topography and climate where specific categories of breeding sheep are crossed (mated) and they and their progeny move from hills and uplands down to the lowlands (often through sales at markets) at different stages of their productive life. This system results in a lot of moves and thus movement recording. The industry complexity and the key metrics are illustrated in the diagram and table at Annex A.

Responses to the public consultation on the options

14. All sectors of industry, other stakeholders, and the general public were consulted on the options at table 2 above during a public consultation held from 29 July to 20 September 2013. The responses from livestock market and abattoir sectors overwhelmingly favoured EID only tags (Option 1) as the only way they can record mixed batch slaughter lambs. It was also identified as the enabler for some abattoirs to begin supplying carcass performance data which their customers are increasingly demanding. The livestock market sector said Option 2 (allowing non-EID slaughter tags for moves to slaughter from the holding of birth) was too complicated. They suggested it would divert moves direct to slaughter risking lower prices for producers.
15. Farmer representatives preferred Option 2 which retained the status quo of lower tagging costs for some keepers. Most indicated that EID only tags would be acceptable if actions were taken to provide additional benefits to farmers to offset increased costs for tags (paras 14(xii – xiii) & 31(iv) + 32(viii)).
16. Local Authorities who are tasked with enforcing Livestock ID legislation preferred Option 1 for a variety of reasons: providing greater traceability, making it easier for slaughter animals to be retagged for retention for breeding, and simplifying the system making enforcement more transparent. They suggested a transition for stocks of slaughter tags to be used up.
17. Calculations were updated in light of comments on estimates of future tag prices and numbers of batches to be gathered for reading and recording, and administration costs.

Legislative implications & timing

18. EU sheep ID rules are implemented in England through the Sheep and Goats (Records, Identification and Movement) (England) Order 2009: 'SAGRIMO'. To withdraw the provision of the non-EID slaughter tag and only permit EID slaughter tags for slaughter lambs will require an amendment to that Order.
19. We wish to amend the Order early next year to update the permitted tagging options (with effect from 1st January 2015 – to give industry notice and time to transition) and to provide for the associated electronic movement reporting system which will go live from 1st April 2015. (13 (ii) & 14 (iii) - ref IA 1532)

Monetised costs and benefits of each option

20. Under the current ID system, farmers producing lambs have a choice of non-EID slaughter tag or EID slaughter tags, or applying a full EID tag pair. In general a single tag is used for slaughter lambs. Keepers buy their tags from manufacturers approved to supply official tags with a list on the Rural Payments Agency (RPA) website at : Defra approved sheep tags

While non-EID slaughter tags only show a printed flock mark (number), electronic tags whilst also only having a flock mark printed on them identify each lamb with an individual number – encoded in their microchip. This therefore allows a reader to pick up both the flock and individual number which can then be reported to the electronic database and enable each lamb to be tracked individually.

21. Under both options, costs are incurred by keepers as they will no longer have the choice of the cheaper non-EID slaughter tag to identify slaughter lambs unless they are moving sheep direct to slaughter (option 2). The cost of the non-EID slaughter tag is lower than the EID slaughter tag. The difference between the lowest costs for both types of tags was used to assess costs for keepers.
22. To comply with recording regulations, store lamb keepers, markets, and abattoirs need to record the number of sheep and their flock number in any batch of lamb. This can be achieved by a simple headcount for batches with only a single flock number, as is the case when lambs go directly from the holding of birth to the abattoir. Under Option 1, the introduction of EID slaughter tags requires abattoirs to read these sheep electronically and causes an additional cost. Under Option 2, the practice is not changed and no additional costs are incurred.
23. To record mixed batches (i.e. where more than one flock mark is present) store lamb keepers, markets, and abattoirs need to verify the flock number of each lamb visually. Under both options, the introduction of EID slaughter tags for all lambs going through other holdings or markets before slaughtering means that mixed batches can be read and recorded electronically. This would save a significant amount of time compared to visually reading batch tags to create the mixed flock record and generates benefits for store lamb keepers, markets, abattoirs.
24. Abattoirs currently check and query the movement documents of the incoming sheep, which would not be necessary with electronic movement data. The reduction in these costs is a benefit and is realised by both options to a different degree. Under Option 1, electronic movement data can be used for all lambs arriving at the abattoir and accordingly the cost reduces to zero. Under Option 2, abattoirs continue to receive non EID tags for animals moving direct from their holding of birth and the costs are reduced only to a lower extent.
25. Some store lamb keepers currently re-tag lambs with EID tags to ease their operation and reduce reading and recording time of mixed batches. Under both options, all lambs going to a store lamb keeper would have an EID tag already and re-tagging would become redundant. This saves the cost of the EID tag and time to gather and re-tag the animals.
26. The figures in tables 3 and 4 (show best estimates presented as both constant prices.
 - Constant prices: cost figures are based on 2012 prices and assumed to increase with general inflation.
 - Present values: constant price figures have been discounted over time at 3.5%. Discounting is standard practice in cost benefit analysis and follows Treasury guidance. It is designed to reflect the fact that, even with no inflation, people value costs and benefits which occur in the future less than they value the same costs and benefits today (£10 next year is not as good as £10 today)

Table 3: Comparison of annual benefits for both options

Annual benefits (2012 prices)	Option 1	Option 2
	£m	
Markets: Electronic recording and reporting for all store lambs	0.618	0.618
Abattoirs: Using electronic records of store lambs from markets and electronic recording of non-market store lambs	0.581	0.581
Abattoirs: Increased accuracy in movement data allows reduced checks of movement documents	0.666	0.293
Store lamb finisher: Reduction in time by reading electronically instead of part electronically, part manually	0.405	0.405
Store lamb finisher: Reduction in time and cost of tags by not re-tagging some store lambs with EID slaughter tags.	0.196	0.196
Store lamb finisher: Reduction in gathering time associated with re-tagging of store lambs	0.018	0.018

Store lamb finisher: Reduction in manual updating of the holding register	0.004	0.004
Total	2.487	2.114

(Calculations at Annex B)

Table 4 – Comparison of annual costs for both options

Annual costs	Option 1	Option 2
	£m	
Keepers: Purchase of EID slaughter tags instead of non-EID slaughter tags for keepers breeding lambs.	1.893	0.740
Markets: Electronically reading lambs from holding of birth instead of a headcount	0.168	0.168
Abattoirs: Electronically reading lambs from holding of birth instead of a headcount	0.261	
Total	2.322	0.908

(Calculations at Annex C)

27. The monetised costs and benefits in this analysis (shown in tables 5 and 6 and which relate entirely to business costs) are expressed in 2012 real terms and also at present values. The base year for present values is 2015⁴ i.e. future monetary sums are discounted back to 2015 at 3.5% a year⁵. Table 7 summarises the total cost and benefits in 2012 prices, in present value terms and converted to the equivalent annual net cost to business (EANCB)⁶.

Present Value and Equivalent Annual Net Cost to Business (EANCB)

Table 5: Option 1, best estimate of costs and benefits

2012 prices, £m	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Total
Costs											
Farmers - tags	1.893	1.893	1.893	1.893	1.893	1.893	1.893	1.893	1.893	1.893	18.928
Markets - reading from holding of birth	0.168	0.168	0.168	0.168	0.168	0.168	0.168	0.168	0.168	0.168	1.681
Abattoirs - reading from holding of birth	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	2.612
Total Costs	2.322	2.322	2.322	2.322	2.322	2.322	2.322	2.322	2.322	2.322	23.221
Benefits											
Markets - reading mixed batches	0.618	0.618	0.618	0.618	0.618	0.618	0.618	0.618	0.618	0.618	6.176
Abattoirs - reading mixed batches	0.581	0.581	0.581	0.581	0.581	0.581	0.581	0.581	0.581	0.581	5.808
Abattoirs - reduced checks of transport doc	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	6.664
Stores - reading mixed batches	0.405	0.405	0.405	0.405	0.405	0.405	0.405	0.405	0.405	0.405	4.051
Stores - retagging	0.196	0.196	0.196	0.196	0.196	0.196	0.196	0.196	0.196	0.196	1.958
Stores - gathering	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.179
Stores - recording	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.035
Total benefits	2.487	2.487	2.487	2.487	2.487	2.487	2.487	2.487	2.487	2.487	24.872
Net benefit	0.165	0.165	0.165	0.165	0.165	0.165	0.165	0.165	0.165	0.165	1.650
NPV (2015 base year)	0.165	0.159	0.154	0.149	0.144	0.139	0.134	0.130	0.125	0.121	1.421

Table 6: Option 2, best estimate of costs and benefits

2012 prices, £m	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Total
Costs											
Farmers - tags	0.740	0.740	0.740	0.740	0.740	0.740	0.740	0.740	0.740	0.740	7.396
Markets - reading from holding of birth	0.168	0.168	0.168	0.168	0.168	0.168	0.168	0.168	0.168	0.168	1.681
Total Costs	0.908	0.908	0.908	0.908	0.908	0.908	0.908	0.908	0.908	0.908	9.077
Benefits											
Markets - reading mixed batches	0.618	0.618	0.618	0.618	0.618	0.618	0.618	0.618	0.618	0.618	6.176
Abattoirs - reading mixed batches	0.581	0.581	0.581	0.581	0.581	0.581	0.581	0.581	0.581	0.581	5.808
Abattoirs - reduced checks of transport doc	0.293	0.293	0.293	0.293	0.293	0.293	0.293	0.293	0.293	0.293	2.929
Stores - reading mixed batches	0.405	0.405	0.405	0.405	0.405	0.405	0.405	0.405	0.405	0.405	4.051
Stores - retagging	0.196	0.196	0.196	0.196	0.196	0.196	0.196	0.196	0.196	0.196	1.958

⁴ In line with the date the policy comes into effect i.e. on 1 January 2015.

⁵ This is the standard discount rate for policy appraisal, as set out in the HMT Green Book

⁶ The EANCB is defined as the constant annual sum that when discounted equates to the present value. It is often used to compare between measures or projects with different lifetimes.

Stores - gathering	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.179
Stores - recording	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.035
Total benefits	2.114	2.114	2.114	2.114	2.114	2.114	2.114	2.114	2.114	2.114	2.114	21.137
Net benefit	1.206	1.206	1.206	1.206	1.206	1.206	1.206	1.206	1.206	1.206	1.206	12.059
NPV (2015 base year)	1.206	1.165	1.126	1.088	1.051	1.015	0.981	0.948	0.916	0.885		10.380

Table 7: Summary of estimates at 2012 prices, in present value terms and converted to the EANCB

Option 1 (preferred)	Total from 2015 to 2025 (2012 prices)		Present Value (2012 prices, 2015 base year)		EANCB (2009 prices and 2010 PV base year)	
Benefits	£m	24.872	£m	21.409	£m	1.952
- Costs	£m	23.221	£m	19.988	£m	1.823
Net benefit	£m	1.650	£m	1.421	£m	0.130
Option 2	Total from 2015 to 2025 (real 2012 prices)		Present Value (2012 prices, 2015 base year)		EANCB (2009 prices and 2010 PV base year)	
Benefits	£m	21.137	£m	18.194	£m	1.659
- Costs	£m	9.077	£m	7.814	£m	0.713
Net benefit	£m	12.059	£m	10.380	£m	0.947

28. Besides the best estimates given above, a range of costs for Options 1 and 2 is given in Annex E.

Overall monetised costs and benefits for the preferred Option 1 – EID only slaughter tags

29. The monetised costs all accrue to industry. However, the estimated cost used to calculate these figures contain a degree of uncertainty and ranges have been estimated; the overall figures range from a net present cost of £19.863m to a net present benefit of £16.737m, with the best estimate being a net present benefit of £1.421m shown in table 5 above. The numbers of tags purchased within these ranges were constant with the variation in costs deriving from a) price differential between costs of batch and EID slaughter tags and b) the number of batch tags removed and replaced by store lamb keepers. See Annex D for details.

Non monetised cost and benefits

Non-monetised benefits of both options

30. The following benefits are generated by both Options and aren't easily monetised.

- i. In a disease outbreak it is essential we know where animals have moved from and to. If movement data is inaccurate, then lambs that have been in contact with an infected animal could be infected and pass unnoticed. This could cause further spreads and the disease outbreak to escalate. Livestock markets are places where many sheep are in contact with each other and could potentially spread infection. They experience difficulties recording mixed batches⁷ with non-EID tags and can therefore create a critical gap in the movement data. Electronic recording is more accurate than visual reading⁸ and as such will improve the Government's ability to react quickly and efficiently to disease outbreaks. Option 1 delivers better traceability than option 2. Even a small reduction in the scale of the outbreak could produce cost savings of significance.
- ii. Similarly in the case of a food scare or food security issues, the ability to trace meat 'from fork to farm' is important to re-establish consumer confidence and limit the impact both on consumers and producers.
- iii. Animal welfare will be improved through less handling (which stresses the animals) as that is minimised by not needing to manipulate animals to visually read non-EID tags)
- iv. More robust EID recording data will support future EU negotiations on the necessity of an EID record keeping tolerance for UK keepers registers a highly contentious issue for keepers. More data will be gathered under option 1

⁷ Feedback from market representatives, confirmed in their response to the public consultation.

⁸ ADAS 2006

Additional non-monetised benefits, Option 1

31. In addition to the non-monetised benefits, Option 1 also generates following benefits:

- i. While both options will improve traceability through greater EID reading, Option 1 will deliver better traceability than option 2.
- ii. Simpler tagging rules for keepers with the potential to result in fewer compliance breaches, and reduce compliance costs. Keepers complain frequently about the current complexity.
- iii. EID tagging makes it easier for keepers to 'upgrade' lambs (to individual ID/double tags - to retain for breeding).
- iv. Abattoirs will have the capability to feedback kill/performance data to lamb producers using the unique identifying numbers in EID tags. Currently the cost of reading mixed batches means there is insufficient commercial incentive to do so. Farmers can use performance data to improve their productivity and to minimise resources used in the upbringing of sheep, both of which can lead to reduced pollution
- v. Collecting individual movement data via EID tags is necessary before relaxation of standstill rules.
- vi. Increased purchases of EID slaughter tags may reduce the price, as producers of the tags are able to make larger orders and negotiate more forcibly with their suppliers. This would counteract part of the costs identified above. This possibility was confirmed in consultation by the manufacturer of the cheapest EID tag currently available (which we assume will be the most popular).
- vii. Sheep breeding in GB has a strong element of cross border trade between Wales (uphill breeding), England (lowland finishing), and Scotland (sheep sold through English markets and to English abattoirs). Each devolved administration has its own lamb tagging requirement and harmonised GB lamb tagging will simplify cross border trade.
- viii. Collecting accurate movement data for all sheep (facilitated by electronic tagging) is a necessary preliminary step to considering reductions in the length of time for which new sheep must be kept isolated from the rest of the flock following a movement onto a farm (regulation on standstills). It also enables Government to review other parts of disease control policy e.g. record keeping tolerance.

Non-monetised costs of both Options

32. In each instance we would expect the costs of Option 1 to be greater than those of Option 2.

33. EID tags must be coloured yellow so that they can be visually identified. Mandating EID tags will therefore reduce opportunities for keepers to use a range of tag colours for flock management purposes. The current extent of this practice is unknown. This cost is mitigated by some EID designs, which incorporate a small portion of a different colour. Alternatively, keepers can use a second, non-electronic tag on each animal.

34. As each EID tag is individually numbered, and each flock mark is limited to 99,999 individual numbers, producers will need to replace their flock marks more frequently. This is not likely to have an impact within the appraisal period (c.10 years from implementation for exceptionally large flocks and much longer for others). The associated cost is small.

Additional non-monetised costs of Option 2

35. If non-EID tags remain on sale, there will be potential for keepers to apply them to sheep destined for markets (i.e. not going direct to slaughter). Consignments at markets would need to be rejected resulting in increased market handling costs, increased transport costs for the keeper to return the animals to his holding, observance of the 6 day standstill rules which would be triggered by animals arriving from a market, increased enforcement costs for Local Authorities and an impact on animal welfare.

36. In the baseline (current system), abattoirs will frequently use the incoming movement document accompanying each batch to record in their own holding register (a legal requirement) how many animals are in a batch and not bother to scan tags or to check those that don't scan. Having two separate systems or procedures in place to read the non-electronic tags and electronic tags permitted under this option would represent a different/additional cost, compared to the current system for recording mixed flock mark batches.

The preferred option

37. We consider that the higher non-monetised benefits of Option 1 identified above, taken together with the higher non-monetised costs of Option 2, outweigh the difference in the monetised impacts shown in tables 4 and 6. Therefore Option 1 EID slaughter tag only permitted for all slaughter lambs is the preferred option.

Rationale and evidence that justify the level of analysis used in the IA

38. The data on which the costs and benefits were calculated has come from a number of sources including: June 2012 Defra agricultural survey; number of official tags purchased in 2010-12 for England (RPA); throughput of lambs at markets and abattoirs (Defra's Animal Movement Licence System and discussions with industry representatives), time taken to complete gathering, reading and recording (ADAS⁹), and cost of tags from advertised prices in October 2012 (or by discussion) with approved tag manufacturers.

39. This IA has also been subject to stringent assurance including input from:

- economist colleagues to ensure it presents an accurate picture of anticipated costs and benefits arising from this work based on available evidence;
- Defra's Better Regulation Unit, to ensure it is fit for purpose, and in line with BIS guidelines;
- relevant policy teams across Defra, to ensure impacts are considered and accurately represented, and that risks and assumptions are validated; and
- the Sheep industry who have fed in comments on the IA through our consultation exercise and which have been incorporated in this IA.

Risks

40. Under Option 2, markets, abattoirs and store lamb finishers face continuing difficulties with their compliance with the mixed batch recording requirement. This risk is effectively removed in Option 1 as only EID tags will be available for official use

41. As the EU FVO identified a weakness in our recording of mixed batches (paragraph 10), any future FVO compliance audit is likely to raise this issue and require the UK to resolve it or face infraction. Both Options would mitigate this risk, but option 1 would eliminate it completely.

42. Industry feedback confirms that farmers find the current system too complicated and would prefer a simple regulation mandating a single type of tag. Allowing both electronic and non-electronic tags, as in Option 2, would exacerbate the complications of the current system and keepers may find it hard to understand and comply with tagging regulations.

43. Government will be unable to take full advantage of improved accuracy and timeliness of data on movements and recording which will be delivered by the new sheep database (IA 1532). This could compromise our ability to effectively manage a disease outbreak and not provide the platform we need to deliver further deregulatory benefits for the industry.

44. Markets enable producers to get a competitive price for their lambs. Option 2, if implemented, may see more farmers sending animals direct to slaughter from the holding of birth (using a non-EID tag) rather than through a market (requiring an EID tag). A decrease in trade for markets may reduce the viability of some markets and store finishers. This risk was highlighted in the consultation by the livestock markets' trade body - addressed in the competition assessment (paragraph 50 below).

45. It may also result in lesser prices for producers selling direct to abattoirs under option 2.

⁹ Taken from the ADAS report for Defra, "ADAS field trials in support of producing a Regulatory Impact Assessment for sheep identification in England" (2006), The report can be found here: <http://archive.defra.gov.uk/foodfarm/farmanimal/movements/sheep/documents/adas-final-report.pdf>. Assumed reductions for market and abattoir time are rejected as unrealistic.

Wider impacts

Specific Impact Tests

One in, Two Out (OITO)

46. This measure to withdraw the use of non-EID tags for slaughter lambs is in scope of OITO. It is a regulatory measure for which the monetised benefits to business are greater than the monetised costs and therefore takes ZERO NET COST status. We estimate that the preferred Option 1 generates an annual net benefit to business of £130k (in 2009 prices, discounted to 2010).

Competition assessment

47. Markets consider Option 2 would significantly impact on their business as it could encourage many more direct movements of lambs to slaughter by keepers using the marginally cheaper non-EID tag. A reduction in trade may make some smaller markets no longer viable which would have a long term impact on the sustainability of the sheep industry. Farming representatives do not think this will happen because selling via markets is popular with keepers as it provides them with the ability to obtain a competitive price whereas direct movements to slaughter would be subject to a fixed price. Additionally, because of the stratified¹⁰ nature of the sheep industry markets are used by upland/hill keepers to sell store lambs for finishing. Stores cannot be sold direct to an abattoir as they are not of the desired slaughter weight.

Small and Micro Business Assessment

48. Virtually all lamb producers¹¹ and store lamb finishers¹² are micro businesses with less than 10 employees¹³. Based on industry estimates¹⁴, we think that 162 abattoirs (93 % of all sheep abattoirs) fall within the small (less than 50 employees) and micro business category, with 114 abattoirs (65% of all sheep abattoirs) considered to be micro businesses. Industry estimates¹⁵ are that all sheep livestock markets are small and micro businesses, with roughly half of the sheep markets employing less than 10 employees.

49. The high volume sectors (store lamb finishers, abattoirs, and markets) benefit from this regulation. As we assume smaller markets and abattoirs manually read flock numbers, they will benefit disproportionately from a move to EID tags (less reading time). All three high-volume sectors experience a net benefit as a result of the changes.

50. The financial impact on lamb producers is considered for two distinct regions: Less Favoured Areas (LFAs - mainly hill and upland holdings) and lowlands. In 2006¹⁶ ADAS estimated there were 8,490 full time farms in LFAs, and 20,883 in lowlands. Data from Defra's Farm Business Survey represents average income for these farm types rearing sheep. The average incomes for 2009/10-11/12 are:-

Table 8: Grazing Livestock Farm Incomes 2009/10 and 2010/11

Year	Farm Type	Av. Farm Income (£/farm)	Slaughter lamb sales (no)	Estimate of lambs with a non-EID slaughter tag*	Cost difference – non EID slaughter tag and EID slaughter tag (£/tag) *	Total extra cost to apply EID sl. tags (£/tags)	Extra Cost as % of farm income
2009/10	Lowland	28,900	208	135	0.47	63.45	0.11%
	LFA area	25,900	420	273	0.47	128.31	0.44%
2010/11	Lowland	21,400	214	139	0.47	65.33	0.31%
	LFA area	21,300	421	274	0.47	128.78	0.60%
2011/12	Lowland	32,200	226	147	0.47	69.09	0.21%
	LFA area	29,200	397	258	0.47	121.26	0.42%

Source: Farm Business Survey *Note: Based on non -ID slaughter tags @ 65% of total slaughter tag sales

¹⁰ <http://archive.defra.gov.uk/evidence/economics/foodfarm/reports/documents/pollott2003.pdf> (page 27)

¹¹ There are no detailed data explicitly on the size of lamb producers. Instead we use statistics on Grazing Livestock Farms in Less Favoured Areas (LFA). Defra's 2011/12 Farm Accounts in England show that even large Grazing (LFA) Farms only employ 2.4 full time equivalents (FTE) on average, which suggests that virtually all lamb producers fall within the micro business category

¹² There are no detailed data explicitly on the size of store lamb finishers. Instead we use statistics on Lowland Grazing Farms (LGF) as a proxy. Defra's Farm Accounts in England show that even large LGF only employ 2.5 FTE on average, which suggests that virtually all store lamb finishers fall within the micro business category

¹³ In terms of full time equivalents (FTE); see [BIS Better regulation framework](#)

¹⁴ Email communication with the Agricultural and Horticultural Development Board (AHDB)

¹⁵ Personal communication with AHDB.

¹⁶ Despite their age we expect these are still a reasonable estimate, as the number of businesses is relatively stable over time. These figures exclude part-time farmers and mixed holdings, but do capture those dealing with the majority of sheep.

51. Mandating EID only tags should cost <0.5% of their keepers income. It is greater in LFA than lowland farms as most sheep are born/tagged on hill/upland farms. Keepers purchasing store lambs will benefit from Option 1 as their ability to record mixed batches will be significantly improved. They will no longer have to re-tag animals resulting in a saving of up to £21k pa.
52. The relationship between sheep production costs and supply is not simple or well understood. It is a traditional long-term livelihood for many producers and a way of life where commercial issues are not pre-eminent especially in LFAs where alternative livelihoods are limited.
53. Sheep farm incomes can be volatile reflecting lamb price changes and impacts on production from factors such as the weather during the lambing season and disease. Small one-off cost changes are unlikely to have a discernible effect on supply. This is evidenced by the fact that the cost of introducing EID for breeding sheep in 2009 (significantly more than costs associated with this measure), had no negative impact on the supply of lamb. This was noted in the consultation and not challenged by industry.
54. It has not been possible to mitigate or reduce negative impacts on all small and micro businesses from this measure, as its success depends upon changing the behaviour of lamb producers - which are predominantly micro businesses. However, it should be highlighted that there are non-monetised benefits (notably improved targeting of disease and performance measures) which accrue to these businesses. The preferred Option 1 will maximise these benefits.

Discussions with representatives of small businesses

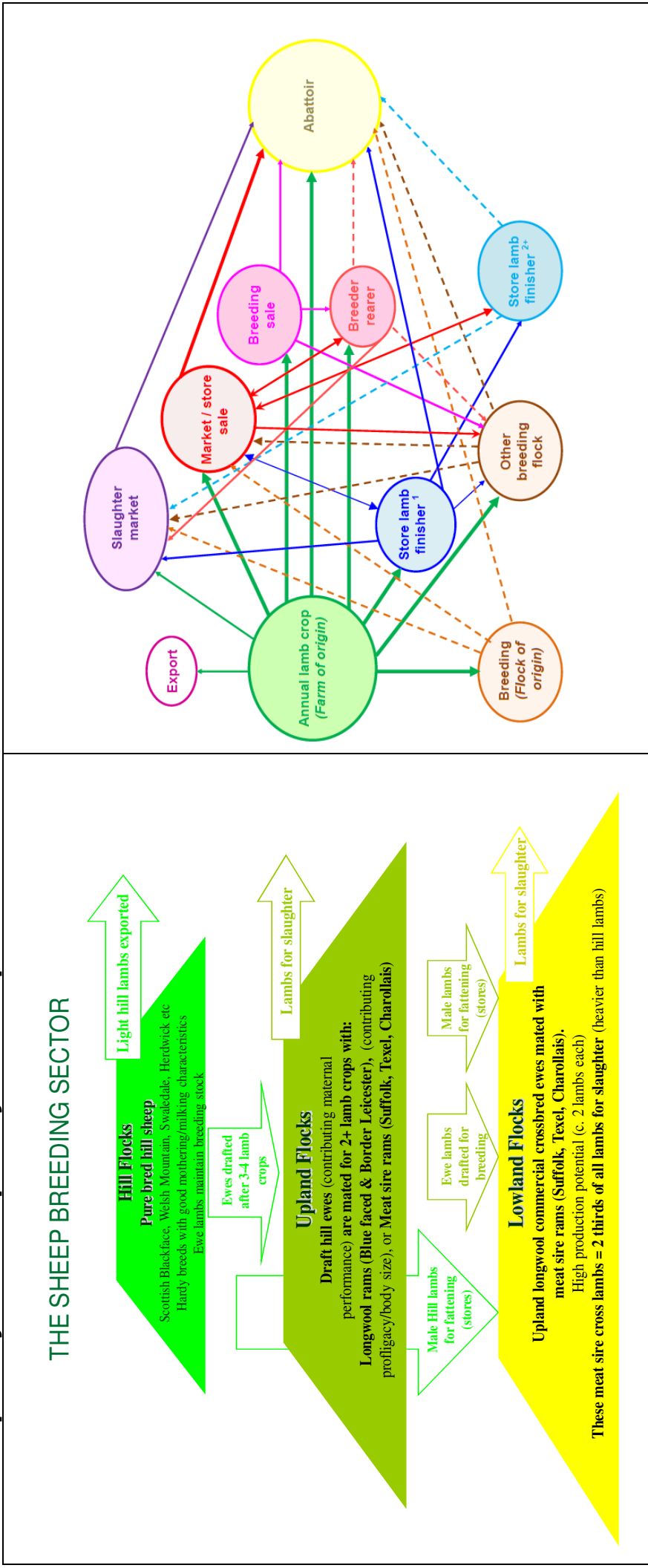
55. This preferred option has been discussed with bodies representing keepers, markets and abattoirs at many meetings over the last year. It was raised with producers at the National Sheep Associations Winter Fair in January and their Sheep South West event in June. There were varying views on this proposal (a few some producers were unclear on the benefits versus finishers and others trading through markets and abattoirs who were adamant that EID tags will reduce their recording burden).

Summary and preferred option

56. Option 1 is preferred.
57. Whilst Option 2 shows a higher monetised net benefit than Option 1, the non-monetised benefits of Option 1 and non-monetised costs/risks of Option 2 outweigh this.
58. In parallel with the implementation of a new sheep movement database and electronic movement reporting service, Option 1 will deliver improved tracing data and disease control capability, including more accurate and timely data.
59. It puts in place the platform from which Government can consider further deregulatory burdens for the sheep industry e.g. individual animal standstill and record keeping tolerance.
60. It will deliver a simpler approach to sheep identification and harmonise lamb ID rules with rules elsewhere in GB.
61. The net present value of the preferred option is c.£1.421m, with an EANCB of £-0.130m.

Industry Structure

The complexity and frequency of sheep moves



For disease control purposes each time sheep move there is a statutory requirement to record their move including the animals' ID details - in the keeper's holding register. In law a keeper is anyone responsible for day-to-day care of the sheep even on a temporary basis. Therefore as well lamb producers / finishers this record keeping requirement applies also to, markets, abattoirs etc who must keep their own holding registers.

Sector volumes including use of electronic tagging

The number of animals, keepers, markets, abattoirs and sales of slaughter tags which are affected by this proposal or underpin the calculations are listed in table 3 below:

Table 9:	England																
Keepers with holdings with sheep:	48,000																
Number of lambs intended for slaughter:	6.1m																
Specialist store keepers:	1,700-1,800																
83 Markets, and 175 abattoirs that trade in sheep																	
583,000 batch movements of 22 million sheep (av. 2010-12) - 70% via markets and abattoirs.																	
Slaughter tag sales :																	
	<table border="1"> <thead> <tr> <th></th> <th>2010</th> <th>2011</th> <th>2012</th> </tr> </thead> <tbody> <tr> <td>Non-EID tags</td> <td>3,687,933 (61%)</td> <td>3,892,012 (66%)</td> <td>4,501,914 (69%)</td> </tr> <tr> <td>EID tags:</td> <td>2,316,233 (39%)</td> <td>2,039,458 (34%)</td> <td>2,025,877 (31%)</td> </tr> <tr> <td>Total slaughter tags</td> <td>6,004,166</td> <td>5,931,470</td> <td>6,527,791</td> </tr> </tbody> </table>		2010	2011	2012	Non-EID tags	3,687,933 (61%)	3,892,012 (66%)	4,501,914 (69%)	EID tags:	2,316,233 (39%)	2,039,458 (34%)	2,025,877 (31%)	Total slaughter tags	6,004,166	5,931,470	6,527,791
	2010	2011	2012														
Non-EID tags	3,687,933 (61%)	3,892,012 (66%)	4,501,914 (69%)														
EID tags:	2,316,233 (39%)	2,039,458 (34%)	2,025,877 (31%)														
Total slaughter tags	6,004,166	5,931,470	6,527,791														
<p><i>The sales figures support the concerns about keeper behaviour (para 14 (ii)).</i></p> <p><i>The % of non-EID tags is on an upward trend: 61% (3.7m) in 2010 to 69% (4.5m) in 2012.</i></p>																	

Industry sectors and impacts of the options

Keepers who breed lambs

EID slaughter tags cost c.£0.56 to £1.14. Non-EID version c.£0.09 to £0.26p (2012 prices). Breeders will bear the increased costs of using EID instead of non-EID tags, either for all lambs under option 1, or for lambs not moving directly to slaughter under option 2. They will benefit from much simpler tagging rules.

Specialist store lamb finishers

Essential for upland and hill producers. Finishers buy their batches of 'store' lambs to fatten and sell at dedicated slaughter markets. Some finishers replace non-EID tags with EID tags to do this but this increases their costs. EID only lambs mean they can rapidly scan them to 'mixed batch record' instead of having to both electronically and manually read tags.

Livestock Auction Markets

Match producers to buyers. Approximately 6.5m sheep go through markets each year¹⁷. The lambs are matched to different buyers, who typically purchase lambs from different flocks of origin. For such mixed batches, the market must record how of each different flock marks there are in each batch and staff must distinguish between non-EID and EID tags to read and create that mixed batch record. This takes much longer in the current system which allows non-EID and EID slaughter tags. Markets will benefit from EID only tags.

Abattoirs

All sheep will at some point be sent to the abattoirs. Abattoirs also have problems with the current requirement to record the number of slaughter lambs with the same flock numbers. As with the store finishers and markets they would again benefit if all slaughter lambs carried an EID device.

Tag manufacturers

Provide official tags for all keepers and offer them in a range of designs and prices. The tag manufacturers would benefit if only the EID slaughter tags were permitted as they would be in a position to predict the amount of transponders they would require as all slaughter tags would be supplied in electronic form. In return (for Option 1 only) they may be in a position to offer a small reduction in the price of the EID slaughter tag due to consequent economies of scale. This would vary from each manufacturer and be dependent on negotiations with suppliers of transponders together with volume of orders

¹⁷¹⁷ Based on AMLS data, three year average from 2010 to 2012

Calculations of benefits

Sums in tables may differ slightly due to rounding.

Markets: Electronic recording and reporting for all store lambs at market

There are 83 markets, of which 75 use stick readers (accounting for 58 % of store lambs) and 8 use race readers (accounting for 42% of store lambs). In the current system markets need to read both electronically and manually to record and check mixed batches. Table 10 gives details on the lamb numbers and labour requirement for the current recording system. The labour rate for markets is costed at £11.82 per hour¹⁸.

Table 10: Calculation of reading cost under the current system

2012 prices	Race reading	Stick read and stick read check for race read	Manual read	Grand total
Number of store lambs (thousands per year)	884	1,526	1,377	
Hours per thousand lamb to read	25.81	14.82	13.39	
Hourly wage rate		£11.82		
Reading cost under current system	£m 0.270	£m 0.267	£m 0.218	£m 0.755

Under both Option 1 and Option 2 the markets can read all store lambs electronically. It takes less time to read if all lambs are electronically tagged and manual reading is no longer required. The costs under the proposed systems are detailed in table 11:

Table 11: Calculation of reading cost under the current system

2012 prices	Race reading	Stick read and stick read check for race read	Manual read	Grand total
Number of store lambs (thousands per year)	884	1,220		
Hours per thousand lamb to read	2.78	7.50	Not applicable	
Hourly wage rate	£11.82			
Reading cost under Option 1 and Option 2	£m 0.029	£m 0.108		£m 0.137

The difference between the total cost of the current system and the system under Option 1 and 2 gives an annual benefit of roughly £618k.

Cost of current system (2012 prices)	£m 0.755
Cost of proposed system under Option 1 and 2 (2012 prices)	£m 0.137
Annual benefit to markets under Option 1 and 2 (2012 prices)	£m 0.618

Abattoirs: Using electronic records of store lambs from markets and electronic recording of non-market store lambs

There are 175 abattoirs, of which 105 read manually (accounting for 3 % slaughtered store lambs), 66 use stick readers (accounting for 82 % of slaughtered store lambs) and 4 use panel readers (accounting for 15% of slaughtered store lambs). In the current system abattoirs need to read both electronically and manually to record mixed batches. Table 12 gives details on sheep numbers and labour requirement for the current recording system. Some sheep need to be checked manually after electronic reading and the total number of readings exceeds the number of slaughtered store lambs. The labour rate for markets is costed at £11.19 per hour¹⁹.

¹⁸ The Annual Survey of Hours and Earnings code 5119 (agricultural and fishing trades) gives £9.09 per hour. This has been increased by 30% to cover non-wage costs of labour (leave, employer NI contributions, etc.). The figure above has been rounded.

¹⁹ The Annual Survey of Hours and Earnings code 8111 (food, drink and tobacco operators) gives £8.61 per hour. This has been increased by 30% to cover non-wage costs of labour (leave, employer NI contributions, etc.). The figure above has been rounded.

Table 12: Calculation of reading costs under current system

2012 prices	Panel read	Stick read	Manual read and manual check read for electronic reading	Grand total
Number of store lambs (thousands per year)		374	1,998	1,618
Hours per thousand lamb to read		25.81	14.82	8.84
Hourly wage rate		£11.19		
Reading cost under current system	£m 0.108	£m 0.331	£m 0.160	£m 0.599

Under both Option 1 and Option 2 the abattoirs can use the electronic records provided by the markets and only need to electronically read store lambs arriving directly from farms (assumed to be 10 % of all store lambs). As for the markets, it takes less time to read if all lambs are electronically tagged and manual reading is no longer required. Table 13 shows the calculations of reading costs under the proposed systems:

Table 13: Calculation of reading costs under Option 1 and Option 2

2012 prices	Panel read	Stick read and stick read check for race read	Manual read	Grand total
Number of store lambs (thousands per year)		37	206	
Hours per thousand lamb to read		2.78	7.54	Not applicable
Hourly wage rate		£11.19		
Reading cost under Option 1 and Option 2	£m 0.001	£m 0.017		£m 0.019

The difference between the total cost of the current system and the system under Option 1 and 2 gives an annual benefit of roughly £581k.

Cost of current system (£m, 2012 prices)	£0.599
Cost of proposed system under Option 1 and 2 (£m, 2012 prices)	£0.019
Annual benefit to abattoirs under Option 1 and 2 (£m, 2012 prices)	£0.581

Abattoirs: Increased accuracy in movement data allows reduced checks of movement documents. Abattoirs check and query movement documents to ensure accurate records, which would not be necessary for electronic records. A large industry stakeholder suggested that two administrators are employed for this purpose with an annual labour rate of £20,075²⁰. Based on 2011/12 throughput data provided by the Food Standards Agency, we pro-rate this cost across English abattoirs. This gives us a cost of approx. £120.66 per thousand slaughtered lambs.

Table 14: Cost calculations for checking and querying movement documents at abattoirs

2012 prices	Store lambs	Lambs directly from holding of birth
Number of lambs (thousands per year)		2,438
Labour cost per thousand lambs		£120.66
Costs for checking and querying movement documents	£m 0.293	£m 0.373

Under Option 1, all lambs will be tagged electronically and the benefit is accordingly £666k. Option 2, will not generate the savings for lambs arriving directly from the holding of birth and therefore shows a reduced benefit of £293k.

Store lamb finisher: Reduction in time by reading electronically instead of part electronically, part manually

Store lamb finishers could read all store lambs moving on or off farm electronically, rather than carrying out both electronic and manual reading as under the current system. The labour cost of manually reading an estimated 3.223m tags (on each movement to or from another keeper, and each move for

²⁰ Annual Survey of Hours and Earnings code 415 (other administrative occupation) gives £15,442 per year. This has been increased by 30% to cover non-wage costs of labour (leave, employer NI contributions, etc.). The figure above has been rounded

grazing to another holding) is saved (taking 9.88h²¹ per thousand tags at £12.71²² per hour). This gives a reduction of £405k.

Store lamb finisher: Reduction in time and cost of tags by not re-tagging some store lambs with EID slaughter tags.

Assumes that currently, of the 2.44m stores, around 1.17m move to the largest finishers of which 65% (0.77m) have non EID slaughter tags and of these 30% (0.23m) are replaced with EID slaughter tags at a cost of 56p per tag to aid electronic reading for mixed batch recording in the holding register, taking 22.78h²³ per thousand animals at £12.71 per hour²⁶. This retagging is included in other estimates of store keeper costs, and would be unnecessary if only EID tags are used on the holding of birth. The reduction is valued at £196k.

Store lamb finisher: Reduction in gathering time associated with re-tagging of store lambs

Assumes that store keepers no longer need to gather animals specifically for retagging. Based on the assumption that 230k animals are retagged, and that these represent 65% of the animals gathered, we estimate that 352k animals are gathered, taking 4 hours²⁴ per thousand animals at £12.71 per hour²⁶. This generates a saving of £18k

Store lamb finisher: Reduction in manual updating of the holding register

This covers time no longer required under the current system to manually adjust the holding register for stores read with non-EID slaughter tags, for 2.689m animals (movements to and from store keepers to markets or abattoirs, estimated from AMLS data), taking 0.10h²⁵ per thousand animals (to alter one line in the registry, relating to a single flock number) at £12.71 per hour²⁶. The reduced staff costs for manually updating the holding register is roughly 4k.

²¹ Taken from the ADAS report for Defra, "ADAS field trials in support of producing a Regulatory Impact Assessment for sheep identification in England" (2006), pg 66-68. The original figure is 35.60s per sheep and has been converted for ease of calculation. The report can be found here: <http://archive.defra.gov.uk/foodfarm/farmanimal/movements/sheep/documents/adas-final-report.pdf>. Assumed reductions for market and abattoir time are rejected as unrealistic,

²² The Annual Survey of Hours and Earnings code 5111 (farmers) gives £9.78 per hour. This has been increased by 30% to cover non-wage costs of labour (leave, employer NI contributions, etc.). The figure above has been rounded.

²³ ADAS 2006, tables 8 and 49

²⁴ ADAS 2006, table 18, pg 51

²⁵ Using ADAS 206 table 19, assuming that 50 animals within a batch have the same flock number on average.

Calculation of costs of Option 1

Keepers: Purchase of EID slaughter tags instead of non-EID slaughter tags for keepers breeding lambs.

Based on the average number of non-EID slaughter tags purchased 2010-2012 of c.4.027m (as reported by the licensed manufacturers). EID tags will now need to be purchased instead. We assume an increase in the cost per tag from 9p (the cheapest non-EID tag available) to 56p (the cheapest EID tag available, giving an additional cost of 47p per tag). This results in increased annual costs of £1.893m.

Markets: Electronically reading lambs from holding of birth instead of a headcount

Markets will be required to electronically read the animals electronically, where currently they verify the paper movement document with a headcount. The labour rate at markets is estimated at £11.82²². We assume 1.496m animals will be read with a stick reader at 7.54h²⁵ per thousand animals and 1.083m animals will be read in a race reader at 2.78h²⁵ per thousand animals, based on movement figures and breakdowns by type of animal provided by the Livestock Auctioneers Association. This results in increased annual costs of £0.168m

Abattoirs: Electronically reading lambs from holding of birth instead of a headcount

As above, however the labour rate is estimated at £11.19²³ per hour. We assume that 60%²⁶ of all lambs slaughtered are sold directly from the holding of birth to the abattoir and 3.672m²⁷ will need to be read electronically. Only 4 abattoirs (accounting for 15 % of slaughtered) use panel reader, which do not require any labour input and accordingly do not impose any additional cost on the abattoir. The remaining 85%, i.e. 3.095m are read with a stick reader at 7.54h²⁵ per thousand animals. This results in increased annual costs of £0.261m.

Calculation of costs of Option 2

Keepers: Purchase of EID slaughter tags instead of non-EID slaughter tags for keepers breeding lambs.

Based on approximately 1.574m slaughter lambs not moving direct to slaughter which are identified with a non-EID slaughter tag under the current system, would now need an EID slaughter tag at an additional cost of 47p per tag (as above). This cost is lower than in Option 1, because lambs going directly from the holding of birth to the abattoir are not required to be EID tagged. This results in increased annual costs of £0.740m.

Markets: Electronically reading lambs from holding of birth instead of a headcount

Markets will be required to electronically read these the animals electronically, where currently they verify the paper movement document with a headcount. The costs are estimated using an estimate of reading time at 7.54h per thousand animals²⁵, and a labour rate at markets is £11.82²². We assume 1.496m animals will be read with a stick reader at 7.54h²⁵ per thousand animals and 1.083m animals will be read in a race reader at 2.78h⁴ per thousand animals, based on movement figures and breakdowns by type of animal provided by the Livestock Auctioneers Association. This results in increased annual costs of £0.168.

²⁶ ADAS assumption confirmed in previous impact assessments.

²⁷ Average animal and tag numbers are used throughout as 2012 tag sales data in particular show outliers, Sheep and lamb numbers are taken from AMLS reports.

Estimate of the ranges for high and low net benefit/net present values for Options 1 and 2

The costs and benefits were calculated to give estimates in three ranges - best, high and low. The medium range was used for the monetised costs/benefits in the IA tables for both options. The highest and lowest ranges are presented in Annex E.

1) Ranges for costs

- The majority of costs relate to farmers producing slaughter lambs who buy tags to identify them.
- The current law permits the choice of a single tag for these animals (EID or non-EID tag).
- The microchip in the EID tag is the more expensive.
- It is the difference between the two tag types prices multiplied by the additional EID tags which would be purchased above the current system that gives the overall cost to producers.
- Slaughter tags are purchased through approved suppliers in many designs and prices: -
 - (i) EID tag: £0.56 ~ £1.14 per tag
 - (ii) non-EID tag: £0.09 ~ £0.26 per tag
- Discussions with tag manufacturers and industry representatives indicate that
 - Many farmers choose cheaper tags – without thinking of their customers' needs.
 - Option 1 would result in a modest reduction in prices (est. 3p per tag).
- Table 15 shows how tag price differences for H/M/L ranges was estimated for each option:-

Table 15 – Price difference between non EID and EID slaughter tags		
Ranges	Option 1	Option 2
High	non EID slaughter tag @ £0.09; EID sl. Tag @ £1.14 giving price difference of £1.05	Non EID slaughter tag @ £0.09; EID sl. Tag @ £1.14 giving price difference of £1.05
Low	Non EID slaughter tag @ £0.26; EID sl. Tag @ £0.56, with considering a 3p reduction per tag giving price difference of £0.27	Non EID slaughter tag @ £0.26; EID sl. Tag @ £0.56 giving price difference of £0.30
Best	Non EID slaughter tag @ £.0.09; EID sl. Tag @ £0.56 giving price difference of £0.44	Non EID slaughter tag @ £.0.09; EID sl. Tag @ £0.56 giving price difference of £0.47

- There are costs for markets and abattoirs reading non-mixed batches from holding of birth, a range is not shown for these costs

2) Ranges for benefits

The benefits for options 1 and 2 accrue to store lamb finishers, markets and abattoirs.

Ranges in benefits were not assessed for markets and abattoirs as the number of lambs coming through their premises with both types of slaughter tag is fairly static. Their savings derive from time saved as all slaughter lambs with mixed flock numbers would be read electronically

The ranges in benefits therefore relate to the store lamb finishers and are dependent on an assumption as to how many non-EID tags they would remove and replace with EID tags to facilitate electronic reading.

The baseline number of store lambs – i.e. purchased for further fattening was 2.4m with an assumption that c.66% (in line with tag sales) would be identified with the non-EID tag.

Three ranges were calculated for store lamb finishers, these were:

- **Best range:** The largest stores lamb finishers will remove non-EID tags on 30% of their animals (232,000) and replace with EID tags at £0.56. (Tables in the “Monetised and non-monetised costs and benefit” section in the main body of the IA refer).
- **High range:** All store lamb finishers would remove the non-EID tags on all their animals (1.61m) and replace with EID tags at £0.64. In addition to the cost of the tag itself, the labour requirement for tagging and gathering is 26.78h for thousand animals @£12.71²⁶ per hour.
- **Low range:** Store lamb keepers do not remove any tags and continue to undertake a mixture of manual and electronic reads.

Table 16: Option 1: high scenario

2012 prices, £m	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Total
Farmers - tags	1.087	1.087	1.087	1.087	1.087	1.087	1.087	1.087	1.087	1.087	10.874
Markets - reading from holding of birth	0.168	0.168	0.168	0.168	0.168	0.168	0.168	0.168	0.168	0.168	1.681
Abattoirs - reading from holding of birth	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	2.612
Total costs	1.517	1.517	1.517	1.517	1.517	1.517	1.517	1.517	1.517	1.517	15.167
Markets - reading mixed batches	0.618	0.618	0.618	0.618	0.618	0.618	0.618	0.618	0.618	0.618	6.176
Abattoirs - reading mixed batches	0.581	0.581	0.581	0.581	0.581	0.581	0.581	0.581	0.581	0.581	5.808
Abattoirs - reduced checks of transport doc	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	6.664
Stores - reading mixed batches	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Stores - relagging	1.578	1.578	1.578	1.578	1.578	1.578	1.578	1.578	1.578	1.578	15.785
Stores - gathering	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.179
Stores - recording	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total benefits	3.461	3.461	3.461	3.461	3.461	3.461	3.461	3.461	3.461	3.461	34.611
Net benefit	1.944	1.944	1.944	1.944	1.944	1.944	1.944	1.944	1.944	1.944	19.445
NPV (2015 base year)	1.944	1.879	1.815	1.754	1.694	1.637	1.582	1.528	1.477	1.427	16.737

Table 17: Option 1: low scenario

2012 prices, £m	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Total
Farmers - tags	4.229	4.229	4.229	4.229	4.229	4.229	4.229	4.229	4.229	4.229	42.287
Markets - reading from holding of birth	0.168	0.168	0.168	0.168	0.168	0.168	0.168	0.168	0.168	0.168	1.681
Abattoirs - reading from holding of birth	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	2.612
Total costs	4.658	4.658	4.658	4.658	4.658	4.658	4.658	4.658	4.658	4.658	46.580
Markets - reading mixed batches	0.618	0.618	0.618	0.618	0.618	0.618	0.618	0.618	0.618	0.618	6.176
Abattoirs - reading mixed batches	0.581	0.581	0.581	0.581	0.581	0.581	0.581	0.581	0.581	0.581	5.808
Abattoirs - reduced checks of transport doc	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	6.664
Stores - reading mixed batches	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	4.807
Stores - relagging	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Stores - gathering	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Stores - recording	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.048
Total benefits	2.350	2.350	2.350	2.350	2.350	2.350	2.350	2.350	2.350	2.350	23.503
Net benefit	-2.308	-2.308	-2.308	-2.308	-2.308	-2.308	-2.308	-2.308	-2.308	-2.308	-23.076
NPV (2015 base year)	-2.308	-2.230	-2.154	-2.081	-2.011	-1.943	-1.877	-1.814	-1.752	-1.693	-19.863

Table 18: Option 2 high

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Total
2012 prices, £m											
Farmers - tags	0.472	0.472	0.472	0.472	0.472	0.472	0.472	0.472	0.472	0.472	4.721
Markets - reading from holding of birth	0.168	0.168	0.168	0.168	0.168	0.168	0.168	0.168	0.168	0.168	1.681
Total costs	0.640	0.640	0.640	0.640	0.640	0.640	0.640	0.640	0.640	0.640	6.402
Markets - reading mixed batches	0.618	0.618	0.618	0.618	0.618	0.618	0.618	0.618	0.618	0.618	6.176
Abattoirs - reading mixed batches	0.581	0.581	0.581	0.581	0.581	0.581	0.581	0.581	0.581	0.581	5.808
Abattoirs - reduced checks of transport doc	0.293	0.293	0.293	0.293	0.293	0.293	0.293	0.293	0.293	0.293	2.929
Stores - reading mixed batches	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Stores - re-tagging	1.578	1.578	1.578	1.578	1.578	1.578	1.578	1.578	1.578	1.578	15.785
Stores - gathering	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.179
Stores - recording	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total benefits	3.088	3.088	3.088	3.088	3.088	3.088	3.088	3.088	3.088	3.088	30.877
Net benefit	2.447	2.447	2.447	2.447	2.447	2.447	2.447	2.447	2.447	2.447	24.474
NPV (2015 base year)	2.447	2.365	2.285	2.207	2.133	2.061	1.991	1.924	1.859	1.796	21.067

Table 19: Option 2 low

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Total
2012 prices, £m											
Farmers - tags	1.652	1.652	1.652	1.652	1.652	1.652	1.652	1.652	1.652	1.652	16.523
Markets - reading from holding of birth	0.168	0.168	0.168	0.168	0.168	0.168	0.168	0.168	0.168	0.168	1.681
Total costs	1.820	1.820	1.820	1.820	1.820	1.820	1.820	1.820	1.820	1.820	18.205
Markets - reading mixed batches	0.618	0.618	0.618	0.618	0.618	0.618	0.618	0.618	0.618	0.618	6.176
Abattoirs - reading mixed batches	0.581	0.581	0.581	0.581	0.581	0.581	0.581	0.581	0.581	0.581	5.808
Abattoirs - reduced checks of transport doc	0.293	0.293	0.293	0.293	0.293	0.293	0.293	0.293	0.293	0.293	2.929
Stores - reading mixed batches	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	4.807
Stores - re-tagging	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Stores - gathering	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Stores - recording	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.048
Total benefits	1.977	1.977	1.977	1.977	1.977	1.977	1.977	1.977	1.977	1.977	19.769
Net benefit	0.156	0.156	0.156	0.156	0.156	0.156	0.156	0.156	0.156	0.156	1.564
NPV (2015 base year)	0.156	0.151	0.146	0.141	0.136	0.132	0.127	0.123	0.119	0.115	1.346