

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)	<h2 style="margin: 0;">Impact Assessment (IA)</h2>
	Date: 23 May 2013
	Stage: Consultation
	Source of intervention: Domestic
	Type of measure: Secondary legislation
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Summary: Intervention and Options	RPC Opinion: RPC Opinion Status
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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?
£1.678m	£1.678m	£ - 0.195m	Yes Zero Net Cost

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

EU law mandates that all sheep are individually electronically identified to aid traceability (typically with a tag in each ear). In England derogation permits slaughter lambs to be identified with a single non - electronic tag so long as the mix of flock marks (unique to each farm and printed on the tag) in each batch of lambs is recorded in the keeper's holding register. This rule is very difficult for markets/abattoirs/store lamb 'finishers' to follow as every year they handle thousands of batches containing millions of lambs originating from more than one farm.

Permitting the voluntary use of electronic (EID) slaughter tags was intended to help these premises automatically record the mix of flock marks for their holding register records. Farmers were expected to make informed choices about the type of tag they use, based on the needs of their high throughput customers. However, the structure of the industry prevents those facing higher costs of compliance from paying more for EID tagged sheep, or passing those costs on to the producers who make decisions about tagging (see paragraphs 8 – 15).

A change to our domestic legislation which implements EU law in this area is therefore required to prevent the use of non-EID slaughter tags to enable all involved in the sheep production chain to comply with EU recording requirements.

What are the policy objectives and the intended effects?

To enable UK sheep industry compliance with EU legislation on sheep identification by simplifying the rules and addressing a commercial inefficiency. This in turn should enable more effective tracing of sheep in the event of a disease outbreak. To do so in a way that is least burdensome to industry as a whole.

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: (i) Option 0: Do nothing; maintain current choice of slaughter tags; (ii) Option 1 (preferred option): Allow the EID batch tag only for slaughter lambs, (iii) Option 2: Restrict the derogation to use the non EID batch tag *only* for lambs moving direct to slaughter from the birth holding (with EID batch tagging for all other slaughter lamb moves). Whilst the monetised net benefits of Option 2 are greater, the non-monetised benefits of Option1 and non-monetised costs of Option 2 are expected to outweigh this difference.

Will the policy be reviewed? It will be reviewed. If applicable, set review date: April 2018					
Does implementation go beyond minimum EU requirements?				N/A	
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
What is the CO ₂ equivalent change in greenhouse gas emissions? (Million tonnes CO ₂ equivalent)				Traded:	
				Non-traded:	

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible SELECT SIGNATORY: _____ Susan Warner _____ Date: 23 May 2013 _____

Summary: Analysis & Evidence

Policy Option 1

Description: Permit use of EID slaughter tags as the official identification for slaughter lambs

FULL ECONOMIC ASSESSMENT

Price Base Year 2012	PV Base Year 2014	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low: -19.796	High: 16.644	Best Estimate: 1.678

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low		0.957	8.241
High		4.087	35.176
Best Estimate	0	1.712	14.741

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

The monetised cost of the proposal is the increased cost to farmers with breeding ewes, who will need to tag each lamb with an EID batch tag before it can leave the holding of birth. The total increase, above the current system, is estimated to be **£1.712m** annually.

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

- Reduces opportunities for keepers to use different colours of tags (for flock management purposes), as all EID tags must be yellow by law. This is mitigated by available EID tag designs with a small portion in a second colour, or if two tags are used.
- Increases the rate of replacement for some flock's mark (but only over a very long time period)

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low		1.787	15.381
High		2.891	24.886
Best Estimate	0	1.907	16.418

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

There are annual benefits to markets and abattoirs due to the reduced cost of reading arriving animals, totalling **£678k** and **£495k** respectively. There is an annual benefit to keepers purchasing store lambs, due to reductions in reading times and retagging with EID, totalling **£735k**.

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

Industry

- Simpler tagging rules = more accurate holding register recording of mixed batches by markets, store lamb finishers and abattoirs.
- Easier for keepers to 'upgrade' slaughter lambs (retain for breeding).
- Simpler EID only system will generate improved data (read rates and tag quality) which will underpin future EU negotiations e.g. for a record keeping tolerance for keepers and
- improve ability to trace individual movements in a disease outbreak.
- Abattoirs can feed back performance data to producers.

Key assumptions/sensitivities/risks

Discount rate (%) 3.5%

We assume that

- National volumes of the lamb crop / tag sales will remain relatively unchanged over the period analysed
- Keeper behaviour will not change without Government intervention.

BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £m:			In scope of OIOO?	Measure qualifies as
Costs: 1.712	Benefits: 1.907	Net: 0.194	Yes	OUT

Summary: Analysis & Evidence

Policy Option 2

Description: Restricted derogation, non-electronic batch tags permitted only for moves direct to slaughter

FULL ECONOMIC ASSESSMENT

Price Base Year 2012	PV Base Year 2014	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low: 13.074	High: 24.227	Best Estimate: 15.386

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low		0.077	0.659
High		0.268	2.307
Best Estimate	0	0.120	1.033

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

The only monetised cost of the proposal is the increased cost to farmers with breeding ewes, who will need to tag each lamb which is not moving directly to slaughter with an EID batch tag before it can leave the holding of birth. The total increase, above the current system, is estimated to be **£0.120m** annually.

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

This measure would impose the same non-monetary costs as Option 1, although the size of these costs would be much smaller. In addition there is the:

- Potential that keepers continue to apply incorrect tags and consignments at markets would need to be rejected resulting in increased market handling costs, increased enforcement costs, and an impact on animal welfare.
- Potential that livestock auction markets would lose some of their trade through direct to slaughter moves, undermining long-run efficiency and the competitive prices they provide for producers.

Abattoirs would have to operate two different (inefficient) processes for handling/recording non-EID & EID lambs, as opposed to the current mixed system. See pages 12/13 in the evidence base.

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low		1.787	15.381
High		2.891	24.886
Best Estimate	0	1.907	16.418

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

There are annual benefits to markets and abattoirs due to the reduced cost of reading arriving animals, totalling **£678k** and **£495k** respectively. There is an annual benefit to keepers purchasing store lambs, due to reductions in reading times and retagging with EID, totalling **£735k**.

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

Similar to option 1 but likely to be on a lesser scale. While more slaughter lamb producers would have to use the EID batch tag than now- any wanting to send lamb direct to slaughter could opt to choose the non EID batch tag for that purpose.

Key assumptions/sensitivities/risks

Discount rate (%) 3.5

We assume that:

Volumes of the lamb crop/tag sales will remain relatively unchanged over the period analysed
Keeper behaviour will not change without Government intervention.

BUSINESS ASSESSMENT (Option 2)

Direct impact on business (Equivalent Annual) £m:			In scope of OIOO?	Measure qualifies as
Costs: 0.120	Benefits: 1.907	Net: 1.787		

Evidence Base (for summary sheets)

Policy context of livestock identification

1. The context is that EU law requires all livestock to carry some form of official identification to enable their movements to be traced quickly and effectively. This is of crucial importance in the control of contagious animal diseases such as foot and mouth. The identification, registration and tracing systems for sheep were introduced following the 2001 UK foot and mouth outbreak. Since that time these systems, for all sheep and goats, have been reviewed to ensure effective traceability and compliance with the changing EU requirements. The aim of this proposal is to simplify the way we implement the EU rules for the identification of lambs intended for slaughter to reduce the total cost of compliance.

Problem under consideration

1. The current options for identifying lambs intended for slaughter under twelve months of age are complex and do not take advantage of current ID technology by not ensuring all sheep have some type of electronic (EID) identification. At present lambs intended for slaughter less than twelve months of age are identified with a single tag which can be a conventional (non-electronic) batch tag **or** an electronic (EID) batch tag. This means they can be presented with either of two types of identification when sold through livestock markets to abattoirs and specialist store¹ lamb finishers. This makes it difficult for those enterprises to read and record accurately each of the flock marks (numbers of) of lambs (a legal requirement) as some can be electronically scanned and others must be visually read (see 'mixed batch' recording at paragraphs 12-14).
2. When the rules to transpose the EU EID requirements were first implemented in 2009 sheep keepers were provided with the option to choose whether to apply a non EID batch tag or an EID batch tag. The advice from industry at the time was that this choice would be commercially driven and keepers selling animals through markets for further finishing would apply electronic identifiers. This is because they believed that purchasers of animals for further finishing would pay a higher price for these animals to enable them to manage their record keeping obligations. However, the structure of the industry prevents those facing higher costs of compliance from paying more for EID tagged sheep, or passing those costs on to the producers who make decisions about tagging (see 'Rationale for intervention' below).
3. Keepers have also complained that the identification rules are far too complicated. This has led to many of them choosing the cheapest identification option rather than the most appropriate one for them/their customers because they do not understand the implications of the option they choose. A large proportion of animals moving through markets are therefore not electronically identified which is resulting in practical issues for markets, finishers and abattoirs. They are unable to manage their recording obligations efficiently and effectively which is causing compliance issues. This is an area that the EU Commission has identified as a weakness in our current arrangements and was raised as a key concern when we were discussing a potential record keeping tolerance with them at the request of the industry.
4. UK Devolved administrations apply the rules differently. In Scotland all sheep are electronically identified. They provide for the use of a batch tag for lambs but it must be electronic. In Wales they operate the same system as in England but plan, as we do for England to recommend moving towards the simpler Scottish system. In Northern Ireland they do not operate the slaughter derogation for trade reasons with the Republic of Ireland and all animals are double tagged, individually recorded using electronic tags. Our proposal would introduce a consistent approach to sheep identification throughout Great Britain which would simplify the rules for keepers receiving and sending animals to different parts of Great Britain.
5. A fact finding mission was held by the EU Food and Veterinary Office (FVO) on EID sheep identification in March - April 2011. The FVO noted in their report that compared to England and Wales, "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". The move to use only the electronic batch tag and remove the option of the non-EID batch tag will improve compliance with EU rules.

¹ Not yet at slaughter weight - bought by another farmer to 'finish' it for sale for slaughter. Store lamb finishers are a significant feature of lamb production.

6. For disease control purposes it is essential to have a robust ID system to enable sheep movements to be promptly and accurately reported on the Government's central movements database (a legal obligation on Defra). In order to maximise the opportunities for efficiency presented by EID, the government intends to move from a paper based movement reporting system for sheep to an electronic one by April 2014. This will provide more timely and accurate movement data to support the control of endemic and exotic diseases e.g. foot and mouth and blue tongue. It would be a massive benefit for all sheep to be electronically identified because high volume premises (such as markets and abattoirs) would be able to capture individual animal identities and upload them to the central database. This would provide more detailed traceability information and would provide a more robust data set to use to persuade the Commission in any future negotiations such as those for a record keeping tolerance. To achieve this aim we propose to only permit the use of the electronic slaughter tag and remove the choice of the non-electronic or conventional batch tag.
7. This is an impact assessment for the consultation stage. A public consultation will follow through which sheep keepers, livestock markets, abattoirs and key industry bodies will be consulted. We intend to include this option in a consultation on electronic movement reporting scheduled for June 2013 (previously the subject of a green pre-consultation opinion from the Committee).

Rationale for intervention

8. When producers choose to use non-electronic tags rather than electronic tags, they impose a cost on high volume premises (markets, finishers and abattoirs) further down the supply chain when these premises record movements (a legal obligation).
9. When the EU requirement for EID was implemented in England, it was suggested that commercial pressures would drive the take up of EID tags for lambs intended for slaughter. This was because the cost to these businesses as a result of producers using non-electronic tags is greater than the difference in costs (to producers) between non-electronic and EID tags. However, this has not happened for the reasons outlined below.
10. Government intervention is therefore necessary to reduce the total costs of compliance with EU recording requirements. This may also improve compliance rates and data quality, reducing the risk of infraction and curtailment of farm subsidies, and aiding the tracing of animals in a disease outbreak. Extensive Government and industry efforts to improve the voluntary take up of EID tags, by stressing these latter benefits, have been unsuccessful.
11. Commercial pressures for the adoption of EID tags might have taken one of two forms:
 - a. High volume premises could have pushed the costs back onto producers: markets, finishers and abattoirs could have refused to accept sheep which were tagged non-electronically. Markets could have taken a greater percentage from sales of non-electronically tagged sheep.
 - b. High volume premises could have paid a premium for EID-tagged sheep (or in the case of markets, offered a discount).
12. The first type of strategy (a. above) cannot be successfully implemented by industry due to competition for trade between sectors. If batches of animals are sent directly to an abattoir from the holding of birth, only a headcount is required to comply with the current regulations (representing a lower cost to abattoirs than with mixed batches). Producers therefore have an 'outside option' to sell sheep directly to abattoirs, circumventing cost-based efforts at markets to encourage the use of EID tags. These producers would benefit from the high price for lambs supported by finishers through auctions at markets, until these businesses left the industry due to lack of trade or (in the case of finishers) changed their business practices to breed sheep themselves. In either case, the production of lamb would become less efficient as land use changed and the quality of lambs going to abattoirs fell.

13. Purchasers (finishers and abattoirs) at markets cannot avoid non-electronically-tagged sheep at markets, or pay price premia (b. above) appropriately, because of information constraints. Purchasers would need to know the mix of tag types within a lot. Currently, in order to improve the efficiency of sales, animals from a holding are divided on arrival at a market into batches based on quality (body shape). Quality can be readily assessed with minimal handling. However, verifying tag types within a batch, subdividing batches by tag type, and recording and publicising the makeup of each lot would cost markets more than the current system, even allowing for increases in the uptake of EID tags. As purchasers could benefit from such a service without paying for it, markets would struggle to pass these costs on. If they charged all purchasers a flat fee, they would reduce attendance, the resulting price for sellers and therefore their market share. The alternative, allowing purchasers to examine every tag within a lot themselves, would raise costs to markets and purchasers even further.
14. Markets do not offer discounts on sales of EID-tagged sheep largely because of the administrative costs of doing so. In order to avoid paying multiple times to motivate the same decision (each time an EID-tagged animal returned to market), markets would have to determine how many EID-tagged sheep in each sale had arrived from the holding of birth and apply a discount appropriately. In addition to the staff costs of doing so, it is reasonable to assume that this would reduce the speed and accuracy of payments made to sellers, and increase the number of disputed payments. These are key areas of competition for trade between markets.
15. Commercial pressures cannot be used to reduce the total cost of compliance with EU identification requirements and improve data quality by driving the take-up of EID tags. This is due to the complex structure of the industry, which has evolved to maximise the efficiency of land use in lamb production. As non-regulatory interventions have failed, we intend to stop permitting the use of non-electronic slaughter tags.

Geographical Location

16. This IA covers the identification of slaughter lambs in England (paragraphs 5 and 6).

Policy Objectives

17. Improved compliance with the requirement for mixed batch recording for slaughter lambs. The existing flexibility for producers to use a non electronic tag on slaughter lambs rather than apply the most appropriate (electronic) tag has led to large scale non compliance by high volume premises with the statutory mixed batch recording requirement.
18. Sheep are the most numerous livestock species in England (14.5 million) with the corresponding highest number of movements (578,000 batches covering 22 million sheep p/a (i.e. some move more than once)). There are strong disease control reasons for all sheep to be electronically identified as this will enhance the efficient and accurate collection and recording of movement data. Implementation of the preferred option will achieve this objective in England and will provide a consistent approach to identification throughout Great Britain. Allied with the move from a paper to an electronic reporting system it will ensure movement data is up to date with a greater level of accuracy.
19. Animal disease outbreaks can have serious and devastating impacts on the rural communities and the economy. This can be measured in both the economic and social costs such as the physiological trauma that those directly involved experience with slaughtering of their animals and in some cases loss of a lifetime's work. Because better movement reporting for all sheep will improve traceability and the management of disease outbreaks it can help reduce the trauma and costs of disease outbreaks as disease control decisions can be made more rapidly and measures put in place to slow down and curtail the spread of diseases.
20. Given the preferred option will provide the technical means for lamb producers to enhance their profitability (e.g. through the receipt of carcass performance data back from abattoirs) it will also contribute towards meeting a number of HMG/Defra priorities including:-
 - Defra's Structural Reform Priority to "support and develop British farming and encourage sustainable food production", as well as
 - Defra's 'major responsibility to "prepare for and manage risk from animal and plant disease"'.
21. Further details regarding Defra's Structural Reform Priorities and other major responsibilities are available in the Defra Business Plan

(<http://www.number10.gov.uk/wp-content/uploads/DEFRA-Business-Plan1.pdf>). (Section B) 1 (1.1)

22. The recommendations also fit well with the Coalition Government's growth strategy which aims to secure a rebalanced and resilient economy that will create the conditions for growth. To maximise the farming industry's contribution towards the growth strategy, livestock keepers require the tools to better deliver the outcomes that we ask of them. By implementing electronic identification for all slaughter lambs all farming businesses (keepers, markets and abattoirs) will be able to take advantage of modern technology to proactively improve their movement data and the collection of performance data as stated at para 22 above.

Options considered

23. The options identified in table 1 below cover the current identification system (Option 0) which is the 'do nothing' baseline and there are two variations on the use of the electronic batch tag (Options 1 and 2).

Table 1: Options

Option	Description
Option 0	Current system, do nothing; retain the current choice of tags for lambs intended for slaughter under 12 months of age, i.e. either the EID batch tag or non-EID batch tag.
Option 1	Only permit use of the EID slaughter tag The choice of the non-EID batch tag is withdrawn. Lambs intended for slaughter can only be identified with the EID batch tag (or 'full EID' if a keeper so wishes). The principal costs are for farmers producing lambs who apply the tags with savings further downstream for markets and store lamb finishers and abattoirs.
Option 2	Restricted derogation This permits the use of the <u>non</u> -electronic batch only for slaughter lambs moving directly to an abattoir from their holding of birth. EID slaughter tag mandated for all other lamb moves. The principle costs are for farmers producing lambs who apply the tags with savings further downstream for markets and store lamb finishers and abattoirs.

24. The alternative to using the EID batch tag for slaughter lambs would be to mandate full EID for all lambs. This would require all sheep to be individually identified (numbered) and double tagged (one of which must be electronically identified). The problem with this option is that it would massively increase the recording burden on keepers as all movements would also have to be individually reported (rather than batch) and recorded. Because of the increased recording burden and associated costs **this option has been discounted and not costed.**

The preferred option

25. Option 1 EID slaughter tag only permitted for all slaughter lambs.

Industry – role and impact of different sectors

26. We have a complex but unique sheep breeding/production system developed that takes maximum advantage of our topography and climate. It results in a lot of moves, many of them facilitated through livestock markets. The scale and frequency of moves allied with the current complicated tagging options results in an onerous recording requirement which the preferred option will reduce. Annex A illustrates the production system and complexity of the moves.

27. The proposal will have different impacts on the key industry sectors, these are:-

a) Keepers who breed lambs

The cost of EID slaughter tags range from around £0.56 to £1.00 with the non-EID batch tag from £0.9 to £0.26p. The higher cost of EID slaughter tags means these keepers would bear the cost of withdrawing the non-EID batch tag, either completely under option 1, or for lambs not moving direct to slaughter under option 2. A benefit would however be gained from simplifying the tagging rules for slaughter lambs.

b) Specialist store lamb keepers

These store finishers provide an essential function for the sheep industry because they provide a vital outlet for keepers in upland and hill areas where the land is less suitable for finishing to sell their animals on for further fattening (called stores) before they are sent to slaughter. Without this outlet hill and upland farmers would be unable to finish lambs as it is not financially viable for them to purchase additional feed to fatten them to appropriate weights for slaughter. The store finishers will therefore purchase lambs at markets which come from many different holdings and can have hundreds of mixed batches with different flock numbers. They would benefit if all the lambs carried

an EID slaughter tag as they could rapidly read the tags electronically to comply with the EU mixed batch recording requirement in the holding register. The current system means that they need to both electronically and manually read the lambs as they can be presented with the two types of tags. In some cases the larger finishers may remove the non-electronic batch tags and replace them with EID slaughter tags to facilitate reading the tags for the various moves (grazing and to market/abattoir) but this increases costs.

c) Markets

Markets match farmers selling sheep to various buyers. The majority of store lambs are sold through markets which enables many of the hill/upland keepers to sell their stock to the finishers. The mixtures of both EID and non-EID batch tags on store lambs creates logistical problems at markets where large volumes of animals are handled at pace. Market staff have to distinguish between batch and electronically identified animals and read the identifiers to create the mixed batch record. This increases the time it takes to read the flock numbers because the level of manual intervention is significant and these costs are passed onto the keeper. Markets would therefore benefit greatly if all slaughter lambs carried an EID identifier.

d) Abattoirs

All commercial 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.

e) Tag manufacturers

They 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 the transponders suppliers together with volume of orders.

Legislative implications

28. The requirements in the (EC) Regulation are implemented and enforced in England through the Sheep and Goats (Records, Identification and Movement) (England) Order 2009 called SAGRIMO. To withdraw the provision of the non-EID batch tag and only permit the use of the EID batch tag for slaughter lambs will require an amendment to that Order. Keepers will continue to have the choice of alternatively applying a 'full EID' pair of tags to their lambs.

Timescale

29. Domestic legislation needs to be amended to provide the legal basis for the preferred Option. The proposal is to introduce this change to tie in with the aforementioned introduction of electronic reporting from April 2014.

Key Volumes and impacts of electronic reporting by main industry area

30. The proposal to remove the choice of a non-electronic batch tag will increase costs for farmers who produce sheep as they need to purchase tags to identify their home produced lambs. They should however benefit in the longer term given the overall industry benefits this proposal brings. Further downstream, markets, collection centres, abattoirs and store lambs finishers will benefit from having all lambs identified with an EID tag. The speed of reading would be quicker and more efficient as all slaughter lambs would be presented with an EID tag. It would also solve the problem of mixed batch recording in the holding register and reduce unnecessary handling of lambs as all tags could now be read electronically. The approved tag manufacturers would have more certainty in the number of electronic transponder required to support identification requirement which would make planning more efficient and possibly help reduce costs. In turn, savings could be passed on to farmers with a small decrease in the unit price of a single EID slaughter tag.

31. The volumes which drive the costs and benefits associated with the proposals are described below:-

Table 2: Key volumes and impacts main industry sector in England			
Keepers with holdings with sheep: 47,000			
They purchase the tags in order to identify lambs. Ewe lambs they select for further breeding will be identified by full EID (double tagged, one electronic). Animals selected for slaughter under twelve months of age identified with a single batch tag: non-EID or EID versions the latter containing a micro-chip. Keepers can opt to tag slaughter lambs with full EID (most don't due to higher costs of double tagging).			
Number of lambs intended for slaughter: 6.1m			
The 47,00 holdings have around 6.8m ewes which produce 7.6m lambs annually of which around 20% (1.5m) are ewe lambs retained as flock replacements and 80% (6.1m) are slaughtered. Of the 6.1m slaughter lambs, approximately 3.7m lambs are sent to slaughter (direct or via a market) and 2.4m are stores lambs sold for further fattening by another producer before been sent to slaughter.			
Specialist store keepers: 1700/1800			
Around 1700/1800 producers who purchase 2.4m 'finished' lambs or further fattening from those bred by another keeper.			
83 Markets, and 180 abattoirs & 50 independent meat traders who have a throughput/slaughter of sheep			
Number of tags by actual sales in 2011:			
<u>Full EID set of tags</u>	<u>Slaughter batch tags</u>	<u>EID slaughter tag</u>	<u>Total All Tags</u>
2,340,777	3,892,012	2,039,458	8,272,247
Slaughter tag summary			
Batch slaughter tags:	3,892,012	(66% of slaughter tag total)	
EID slaughter tags:	2,039,458	(34% of slaughter tag total)	
Total slaughter tags:	5,931,470		
Total annual movements for sheep movements in England :			
578,000 movement documents (batches) covering 22 million individual sheep moves			
Of these movements approximately 43% were through markets and 27% to abattoirs. This gives a total of 70% of all movements are through these high sheep volume premises.			

Table 3: 2011 sales of slaughter tags (England) - used for Option 1 calculations		
<u>Tag type</u>	<u>Numbers purchased</u>	<u>Percentage of total sales</u>
EID slaughter tag	2,039,458	34%
Batch (non –electronic slaughter tag)	3,892,012	66%
Total	5,931,470	100%

*Latest available data for full year

Monetised costs and benefits of each option

32. Under the current ID system, farmers producing lambs have a choice of two types of single tags to apply to lambs intended for slaughter (non-electronic batch or EID batch tags). They also have the choice of applying a full EID tag pair but in general just 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](#)
33. Under both options, costs are incurred by keepers as they will no longer have the choice of the cheaper non-EID batch tag to identify their lambs intended for slaughter. The cost of the non electronic batch tag is lower than the EID slaughter tag. The range in prices is between £0.09 to £0.26 for the batch tag and from £0.56 to £1.14 for the EID slaughter tag. The difference between the lowest costs for both types of tags was used as the basis to assess costs for keepers.
34. Benefits predominantly accrue under Option 1 to the store lamb keepers, markets and abattoirs as the introduction of EID slaughter tags for all slaughter lambs would mean all mixed batches of slaughter lambs could be read electronically. This would save a significant amount of time compared to manual intervention to read batch tags to create the mixed flock record. Option 2 does not provide similar benefits for abattoirs as they would continue to manage EID batch tags for animals not moving direct

from the holding of birth and non EID tags for animals moving direct from their holding of birth. This increases the complexity for abattoirs who are trying to streamline their processes.

35. The costs and benefits for options 1 and 2 shown below are measured relative to-option 0 i.e.
- costs greater than or additional to those described in preceding paragraph for option 0 are measured as costs, and
 - costs which are less than option 0 or do not arise under option 1 and 2 are measured as benefits (cost savings).
36. Costs have been assessed over a 10 year period starting from 2014 (Options 1 and 2) and then moving to running costs for all options from 2014.
37. The figures in tables 5 (a) to (c) (option 1) and 6 (a) to (c) (option 2) show best estimates (produced by assuming the mean/average between high/low estimates) presented as both constant prices and present values which are:
- Constant prices: figures do not include general inflation (they are based on 2012 prices although they should include an allowance where relevant for real price changes over or below 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)
38. Besides the best estimates given below, a range of costs for Options 1 and 2 is given in Annex B.

Option 1

The key costs and benefits under Option 1 are listed in table 7 below.

Table 4: Option 1 – main monetised costs above Option 0

Change from current system	Nature of cost	Nature of benefit	Comment
Purchase of EID slaughter tags instead of non –EID batch tags for keepers breeding lambs.	An n annual cost of £1,712,485 based on the difference of between the price of lowest batch (9p each) and EID slaughter tag (56p less a 3p reduction).	n/a	Based on the number of non electronic batch tags purchased in 2011 of 3,892,012 which would now need be purchased as EID slaughter tags at an additional cost of 44p per tag.
Reading time for store lamb finishers	n/a	An annual saving of £409,151 based estimates of time used and wages	Store lamb finishers could read all 2.4m store lambs electronically instead of both an electronic manual read as under the current system.
Re-tagging time for store lamb keepers	n/a	An annual saving of £197,783 . This is based on assumption that a % of batch tags are replaced with EID slaughter tags and estimates of time used and wages.	Assumes that of the 2.44m stores, around 1.17m move to the largest finishers of which 66% (0.77m) have batch 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.
Gathering time for store lamb keepers	n/a	An annual savings of £124,101 based on time used and wages.	Assumes that store keepers no longer need an additional gathering time for manual read of non-electronic batch tags.

Change from current system	Nature of cost	Nature of benefit	Comment
Recording time in the holding register for store lamb keepers	n/a	An annual saving of £3,561 based on estimates of time used and wages.	This covers time no longer required under the current system to manually adjust the holding register for stores read with batch tags.
Recording and recording for markets	n/a	An annual saving of £677,710 based on estimates of time used and wages.	This covers the estimated 2.44m mixed batches (with different flock numbers) of store lambs moving through markets which no longer need both an electronic and manual read.
Recording and reporting for abattoirs	n/a	An annual saving of £495,105 based on estimates of time used and wages.	This covers the estimated 2m store lambs moving through the largest abattoirs, with high weekly throughputs which no longer require both an electronic and manual read.
TOTAL	£1,712,485	£1,907,411	

Table 5a: Option 1 - best estimate over 10 years: Costs (£) (1)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
Farmers - tags	1712485	1712485	1712485	1712485	1712485	1712485	1712485	1712485	1712485	1712485	17124853

Table 5b: Option 1 - best estimate over 10 years: Benefits (£) (1)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
Markets - reading	677710	677710	677710	677710	677710	677710	677710	677710	677710	677710	6777095
Abattoirs - reading	495105	495105	495105	495105	495105	495105	495105	495105	495105	495105	4951052
Stores - reading	409151	409151	409151	409151	409151	409151	409151	409151	409151	409151	4091513
Stores - retagging	197783	197783	197783	197783	197783	197783	197783	197783	197783	197783	1977827
Stores - gathering	124101	124101	124101	124101	124101	124101	124101	124101	124101	124101	1241013
Stores - recording	3561	3561	3561	3561	3561	3561	3561	3561	3561	3561	35612
Total	1907411	1907411	1907411	1907411	1907411	1907411	1907411	1907411	1907411	1907411	19074112

Table 5c: Option 1 - best estimate over 10 years: Net Values and NPVs (£)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
Net benefit	194926	194926	194926	194926	194926	194926	194926	194926	194926	194926	1949259
NPV	194926	188334	181965	175812	169867	164122	158572	153210	148029	143023	1677861

Option 2

The key costs and benefits under Option 2 are listed in table 9 below.

Table 6: Option 2 – main monetised costs above Option 0

Change from current system	Nature of cost	Nature of benefit	Comment
Purchase of EID slaughter tags instead of non –EID batch tags for keepers breeding lambs.	A n annual cost of £112,311 based on the difference of between the price of lowest batch (9p each) and EID slaughter tag (56p)		Based on 255,252 slaughter lambs not moving direct to slaughter which are identified with a batch tag under the current system , would now need an electronic slaughter tag at an additional cost of 47p per tag.
As Option 1 (table 7) for store lamb finishers, markets and abattoirs.		An annual saving of £1,907,411 based estimates of time used and wages	As for Option1 (note abattoirs may have reduced benefits but not able to quantify – dependant on systems used at different abattoirs).

Table 6a: Option 2 - best estimate over 10 years: Costs (£) (1)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total
Farmers - tags	119968	119968	119968	119968	119968	119968	119968	119968	119968	119968	1199684

Table 6b: Option 2 - best estimate over 10 years: Benefits (£) (1)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
Markets - reading	677710	677710	677710	677710	677710	677710	677710	677710	677710	677710	6777095
Abattoirs - reading	495105	495105	495105	495105	495105	495105	495105	495105	495105	495105	4951052
Stores - reading	409151	409151	409151	409151	409151	409151	409151	409151	409151	409151	4091513
Stores - retagging	197783	197783	197783	197783	197783	197783	197783	197783	197783	197783	1977827
Stores - gathering	124101	124101	124101	124101	124101	124101	124101	124101	124101	124101	1241013
Stores - recording	3561	3561	3561	3561	3561	3561	3561	3561	3561	3561	35612
Total	1907411	1907411	1907411	1907411	1907411	1907411	1907411	1907411	1907411	1907411	19074112

Table 6c: Option 2 - best estimate over 10 years: Net Values and NPVs (£)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total
Net benefit	1787443	1787443	1787443	1787443	1787443	1787443	1787443	1787443	1787443	1787443	17874428
NPV	1787443	1726998	1668597	1612171	1557653	1504979	1454086	1404914	1357405	1311502	15385747

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

39. The monetised costs all accrue to industry. However, the estimated costs used to calculate these figures contain a degree of uncertainty and ranges have been estimated: the overall figures range from a net cost of £19.796m to a net benefit of £16.644m. 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) number of batch tags removed and replaced by store lamb keepers (see Annex B for more details).

Non monetised cost and benefits

40. These are covered in the section below:-

a) Non-monetised benefits of both options

The following benefits cannot be easily monetised. However, in each instance we would expect the benefit from Option 1 to be greater than that from Option 2.

- Simpler tagging rules for keepers which has the potential to result in fewer accidental compliance breaches, and reduce administrative costs of compliance. Keepers have complained frequently about the current complexity.
- Data from markets and farmers used to trace individual movements in a disease outbreak will be improved, potentially reducing the impact.
- EID tagging will make it easier for keepers to 'upgrade' slaughter lambs (from batch ID to individual ID - to retain for breeding).
- Animal welfare will be improved through reduced handling (not needing to visually read non-electronic tags)
- More robust EID recording data will support future EU negotiations on the necessity of an EID record keeping tolerance for UK keepers holding registers (partly to allow for malfunctioning tags). This is a highly contentious issue for keepers² as even minor holding register inaccuracies risk a reduction to their SPS subsidy).

b) Additional non-monetised benefits, Option 1

- Records from abattoirs will be more detailed and accurate, improving traceability further.
- Abattoirs will be better able to feed back kill/performance data to lamb producers – using EID tags.
- A harmonised approach to lamb tagging across GB will reduce complexity in the significant trade across internal borders.

c) Non-monetised costs of both Options

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

- 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.

² <http://archive.defra.gov.uk/foodfarm/farmanimal/movements/sheep/documents/eid-cross-compliance.pdf>

- 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.

d) Additional non-monetised costs of Option 2

- If non-electronic tags remained on sale, there would be some potential for keepers to apply incorrect tags deliberately. Consignments at markets would need to be rejected resulting in increased market handling costs, increased enforcement costs and an impact on animal welfare.
- This option could adversely impact livestock markets by encouraging movements of lambs direct to slaughter. In the longer-term, this might have implications for the efficiency of lamb production (if lambs are not finished in lowlands) and the price paid to producers.
- 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 scan tags or 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.

Impact on farm types (lowland and less favoured area)

41. The projected financial impact on keepers who breed lambs has been considered for farm types in two distinct regions: Less Favoured Areas (mainly hill and upland holdings) and lowland regions. These are not case studies but are based on average data from the Farm Business Survey and as such represent the average income for these farm types rearing sheep.
42. The average farm incomes for 2009/10 and 2010/11 are shown in table 7 below:-

Table 7: 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 batch tag*	Cost difference - batch and EID slaughter tag (£/tag)*	Total extra cost to apply EID sl. tags (£/tags)	Extra Cost as % of farm income
2009/10	Lowland	28,935	207	137	0.44	60.28	0.21%
	LFA area	25,910	401	264	0.44	116.16	0.44%
2010/11	Lowland	21,410	214	142	0.44	62.48	0.29%
	LFA area	21,279	416	275	0.44	121.00	0.57%

Source: Farm Business Survey

*Note: Based on batch (non-EID) tag @ 66% of total slaughter tag sales

43. The affect on purchasing EID slaughter tags instead of batch tags is therefore less than 1% of the total income in both years. Although it is greater for the less favoured areas than the lowland farms, this is to be expected given that the majority of animals are born on hill/upland areas and will be first identified there. Some keepers that purchase lambs (as opposed to them being born on their holding) will benefit from the proposed arrangements as their ability to record mixed batches will be significantly improved and they will no longer have to re-identify animals to achieve mixed batch recording resulting in a saving of up to £735k pa.
44. The figures for 2011/12 show an increase in farm income (details on slaughter lambs by sales pending). The Farm Business Income provisional results are now available for 2012/13 shows falls of around c50% for grazing livestock farms which would approximately double the percentage devoted to spending on the new tags. Once the 2012/13 results are released, these paragraphs will be updated to include the latest figures for the final impact assessment.
45. Increasing the costs of sheep production would, other things being equal tend to lead to a reduction in the supply of lamb. However, the relationship between production costs and supply is not simple or well understood (see Para 24 above). Sheep production is a traditional long-term occupation and for many producers it is very much a way of life where 'narrow' commercial considerations are not pre-eminent especially in the hills and uplands where alternative livelihoods are limited.

46. The increase in costs as a result of mandating EID only slaughter tags is very small and the consequential impact on income (described in Para 41) is modest. Sheep farms income can be volatile from year to year reflecting movements in the lamb price and changes in production which can be affected by the weather during the lambing season and the impact of disease. Very small one-off changes to costs are not expected to affect supply in a discernible way

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

47. The purpose of this impact assessment is to provide robust evidence upon which to base decisions on the policy of how to identify lambs intended for slaughter in England. This impact assessment will underpin a public consultation.
48. The data used to 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 2011 for England (British Cattle Movement Service); throughput of lambs at markets and abattoirs (movement data from Defra’s Animal Movement Licence System and discussions with industry representatives) and cost of tags from prices in October 2012 as advertised (or by discussion) by tag manufacturers approved to supply official tags in the UK.
49. This impact assessment has also been subject to stringent assurance including the following:
- Regular input from economist colleagues to ensure it presents as accurate picture of anticipated costs and benefits arising from this work based on available evidence;
 - Input from the Defra Better Regulation Unit, to ensure it is fit for purpose, and in line with BIS guidelines;
 - Ongoing engagement with relevant policy teams across Defra, to ensure that all impacts are considered and accurately represented, and that risks and assumptions are validated;

Assumptions

50. The headline assumption in this IA is that there will be an overall benefit for the sheep industry by only allowing the use of the EID slaughter tag for either 1) all slaughter lambs or 2) for any slaughter lambs (termed a ‘store lamb’ who will be ‘finished’ (fattened) elsewhere) not moving direct to slaughter from their holding of birth. The *cost* is incurred by farmers breeding those lambs who would switch from buying the less expensive non EID batch tag to the EID batch tag. The *benefits* would be gleaned further downstream by the store lamb finishers, markets and abattoirs who would save significant time by being able to read all store lambs tags electronically. This means they would no longer have to double read (stick or race read - then visual read any defective tags) the flock numbers on the tags in order to cover mixed batch recording in the holding register.
51. Other assumptions used to calculate costs were:-

Table 8 – assumptions on costs and times (taken from EID ADAS RIA)³

Description	Unit Figure	Source/Comment
Labour rates (per hour)		
For farmers	£12.71	Farm rate – based on 2012 BIS standard cost model (SCM) code 5111 (farmers) of £9.78 x 1.3 factor for overheads giving an hourly rate of £12.71.
For markets	£11.82	Market rate – based on 2012 BIS standard cost model (SCM) code 5119 (agricultural and fishing trades) of £9.09 x 1.3 factor for overheads giving an hourly rate of £11.82
For abattoirs	£10.18	Abattoir rate – based on 2012 BIS standard cost model (SCM) code 8111 (food, drink and tobacco operators) of £8.61 x 1.3 factor for overheads giving an hourly rate of £10.18.

³ The report can be found at:
<http://archive.defra.gov.uk/foodfarm/farmanimal/movements/sheep/documents/adas-final-report.pdf>

Description	Unit Figure	Source/Comment
Reading times (staff hours/100 sheep)		
<u>Store Finishers</u>		
Manual	0.67	
Stick read	0.07	
<u>Markets</u>		
Manual	0.88	To examine animal individually and read flock number with 66% batch tags and 34% EID slaughter tags All slaughter lambs identified with an EID tag with 66% batch tags and 34% EID slaughter tags All slaughter lambs identified with an EID tag
Stick read: mixed batches (EID & non EID tags)	1.47	
Stick read: 100% EID slaughter tags	0.75	
Race read: mixed batches (EID & non EID tags)	2.61	
Race read: 100% EID slaughter tags	0.28	
<u>Abattoirs</u>		
Manual	0.88	To examine animal individually and read flock number with 66% batch tags and 34% EID slaughter tags All slaughter lambs identified with an EID tag No specific additional labour input.
Stick read: mixed batches (EID & non EID tags)	1.47	
Stick read: 100% EID slaughter tags	0.19	
Panel: where 100% tags are EID	-	
Tagging times (seconds per sheep):		
Remove tag	22	Times for store lamb keepers to remove batch tag and replace with EID slaughter tag to facilitate 100% electronic reading (current system)
Replace tag	60	
Cross ref in holding register	17	
Gather times (hours per 100 sheep)	0.40	Additional gather time for store keepers under current system for manual check for stores with different types of slaughter tags (EID and non EID).

Risks

52. Markets, abattoirs and store lamb finishers would continue to struggle to comply with the mixed batch recording requirements in their holding registers if the status quo was maintained i.e. not bringing in the EID slaughter tag for all lambs intended for slaughter.
53. The current system is complicated for keepers who may be unsure or not appreciate the type of tag to apply to help reduce the burden of reading/recording mixed batches further down the buying/selling cycle.
54. The accuracy and timeliness of data on movements and recording could not be improved which would limit our ability to use authoritative data on the efficacy of EID reading to negotiate improvements in various areas to the existing rules on sheep identification and recording.

Wider impacts

Specific Impact Tests

Businesses to be affected:

55. The proposals outlined in this IA will apply to 'micro businesses', principally because approximately 98% of farming businesses are classified as such given that they have less than 10 employees⁴.
56. Moratorium on micro business regulation
The moratorium on regulation affecting micro businesses is due to end in March 2014. This proposal would take effect for the 2014 lamb crop and so would be outside the scope of the moratorium.

One in, Two out (OITO)

57. This measure to stop permitting the use of non-electronic tags for slaughter lambs is in scope of "one-in, two-out". It is a regulatory measure for which the benefits to business are greater than the cost and therefore takes "Zero Net Cost" status. We currently estimate the equivalent annual net benefit to business to be about £195k (in 2009 prices) but will confirm the magnitude during the consultation.

⁴ <http://www.bis.gov.uk/policies/bre/small-businesses>

Competition assessment

58. Markets also consider that option 2 would significantly impact on their business. They consider it would encourage [significantly] more direct movements of lambs to slaughter by keepers who may benefit from the marginally cheaper tag price. This is however unlikely to happen in any significant numbers because the use of markets to facilitate sales is so very popular with keepers because 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 stratified⁵ nature of the sheep industry markets are used by upland keepers to sell on their animals that require further finishing. This category of animal could not be sold direct to an abattoir as they would not be of the desired slaughter weight.

Small firms impact test

59. The proposal to allow the EID batch tag as the only single identifier for slaughter lambs will mean that farmers who breed slaughter lambs will incur additional cost but those keepers (finishers) who buy lambs to fatten (stores) will gain a benefit. The overall impact for the industry as whole provides a benefit and so should be viewed in the context of simplifying rules and ensuring that the reading and recording burden further downstream in the buying/selling cycle of the lambs is considerably lessened.

Discussions with representatives of small businesses

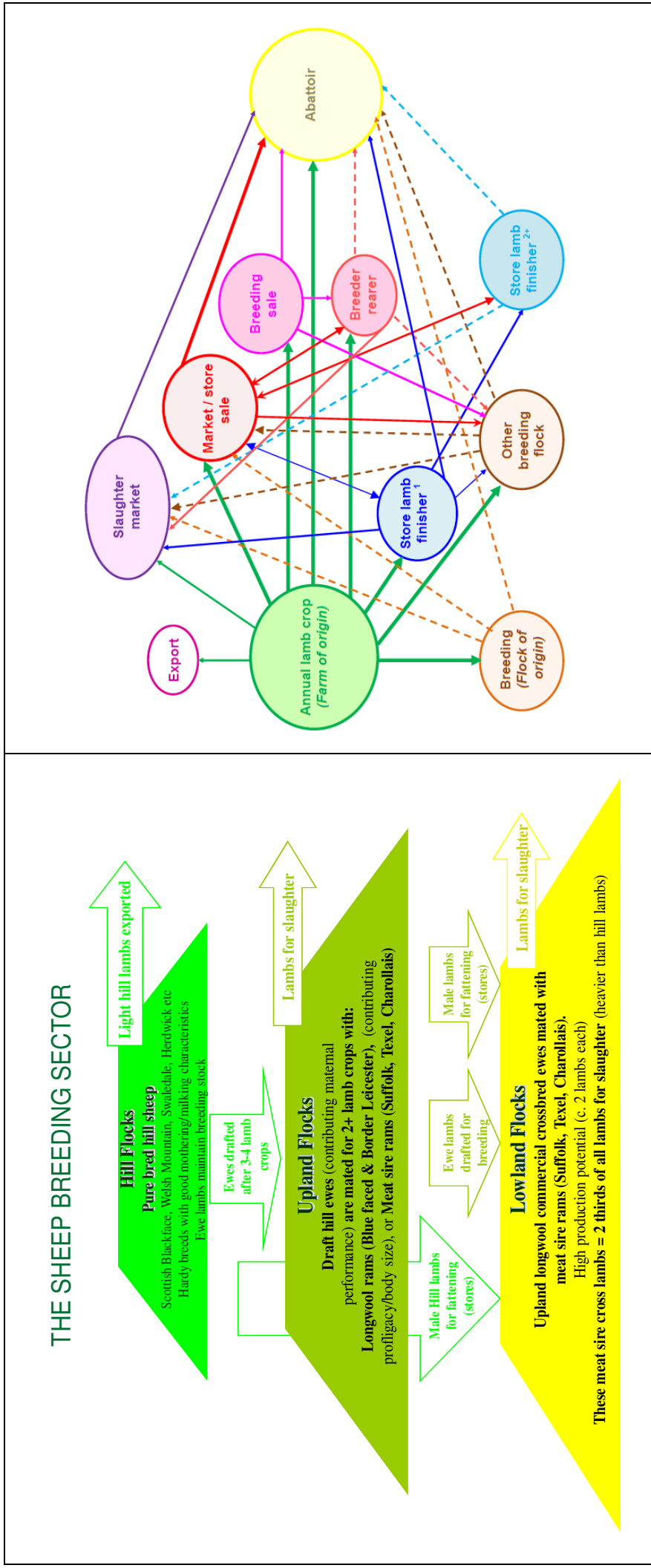
60. This proposal has been discussed with livestock industry bodies representing keepers, markets and abattoirs at various meetings over the last year. It was also raised throughout the day with producers at the National Sheep Associations Winter Fair at Bakewell livestock market in January (one of the largest in England). There are varying views on this proposal (some lamb producers being unclear on the benefits versus finishers and others trading through markets and abattoirs feeling strongly that EID tags would reduce their record keeping burden). The consultation scheduled for later this year will give all relevant sectors and interested individuals the opportunity comment through a formal process and will help draw out and crystallise these views.

Summary and preferred option

61. Option 1 is the preferred option. Whilst the monetised net benefits of Option 2 are greater, the non-monetised benefits of Option 1 and non-monetised costs of Option 2 are expected to outweigh this difference. In parallel with the implementation of the new sheep database and electronic movement service it will deliver more robust movement data which will have longer term benefits for the industry and deliver improved traceability data and disease control capability for Government. It will also deliver a more harmonised and less complex approach to sheep identification throughout Great Britain. Identification costs for keepers producing lambs will increase by £1,712,000 under this option but this is offset by the range of overall industry benefits of £1,907,000 giving a net total quantifiable benefit of £195,000.

⁵ <http://archive.defra.gov.uk/evidence/economics/foodfarm/reports/documents/pollott2003.pdf> (page 27)

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 as lamb producers / finishers this record keeping requirement applies also to, markets, abattoirs etc who must keep their own holding registers.

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 after the text in this Annex.

1) Ranges for costs

- The costs relate to farmers producing slaughter lambs and buying 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 ~ 5p per tag).
- Table 9 shows how tag price differences for H/M/L ranges was estimated for each option:-

Table 9 – Price difference between batch and EID slaughter tags

Ranges	Option 1	Option 2
High	Batch tag @ £0.09; EID sl. Tag @ £1.14 giving price difference of £1.05	Batch tag @ £0.09; EID sl. Tag @ £1.14 giving price difference of £1.05
Low	Batch tag @ £0.26; EID sl. Tag @ £0.56 with 5p reduction per tag giving price difference of £0.25	Batch tag @ £0.26; EID sl. Tag @ £0.56 giving price difference of £0.30
Best	Batch tag @ £0.09; EID sl. Tag @ £0.56 with 3p reduction per tag giving price difference of £0.44	Batch tag @ £0.09; EID sl. Tag @ £0.56 giving price difference of £0.47

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.
- **Low range:** Store lamb keepers do not remove any tags and continue to undertake a mixture of manual and electronic reads.

Table 10a High estimate of net present value for Option 1

The table below shows the estimated upper band for the net benefits (benefits minus cost) of Option 1 using the lowest estimate of costs and the highest estimate of benefits.

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total
Farmers - tags	957435	957435	957435	957435	957435	957435	957435	957435	957435	957435	9574350
Markets - reading	677710	677710	677710	677710	677710	677710	677710	677710	677710	677710	6777095
Abattoirs - reading	495105	495105	495105	495105	495105	495105	495105	495105	495105	495105	4951052
Stores - reading	0	0	0	0	0	0	0	0	0	0	0
Stores - retagging	1594195	1594195	1594195	1594195	1594195	1594195	1594195	1594195	1594195	1594195	15941946
Stores - gathering	124101	124101	124101	124101	124101	124101	124101	124101	124101	124101	1241013
Stores - recording	0	0	0	0	0	0	0	0	0	0	0
Total benefits	2891111	2891111	2891111	2891111	2891111	2891111	2891111	2891111	2891111	2891111	28911105
Net benefit	1933676	1933676	1933676	1933676	1933676	1933676	1933676	1933676	1933676	1933676	19336756
NPV	1933676	1868286	1805107	1744065	1685087	1628103	1573046	1519852	1468456	1418798	16644473

Table 10b Low estimate of net present value for Option 1

The table below shows the estimated lower band for the net benefit of Option 1, using the highest estimate of costs and the lowest estimate of benefits

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total
Farmers - tags	4086613	4086613	4086613	4086613	4086613	4086613	4086613	4086613	4086613	4086613	40866126
Markets - reading	677710	677710	677710	677710	677710	677710	677710	677710	677710	677710	6777095
Abattoirs - reading	495105	495105	495105	495105	495105	495105	495105	495105	495105	495105	4951052
Stores - reading	485056	485056	485056	485056	485056	485056	485056	485056	485056	485056	4850564
Stores - retagging	0	0	0	0	0	0	0	0	0	0	0
Stores - gathering	124101	124101	124101	124101	124101	124101	124101	124101	124101	124101	1241013
Stores - recording	4878	4878	4878	4878	4878	4878	4878	4878	4878	4878	48782
Total benefits	1786851	1786851	1786851	1786851	1786851	1786851	1786851	1786851	1786851	1786851	17868506
Net benefit	2299762	2299762	2299762	2299762	2299762	2299762	2299762	2299762	2299762	2299762	22997620
NPV	2299762	2221992	2146852	2074254	2004110	1936338	1870858	1807592	1746466	1687407	19795631

Table 11a High estimate of net present value for Option 2

The table below shows the estimated upper band for the net benefits (benefits minus cost) of Option 2 using the lowest estimate of costs and the highest estimate of benefits.

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total
Farmers - tags	76576	76576	76576	76576	76576	76576	76576	76576	76576	76576	765756
Markets - reading	677710	677710	677710	677710	677710	677710	677710	677710	677710	677710	6777095
Abattoirs - reading	495105	495105	495105	495105	495105	495105	495105	495105	495105	495105	4951052
Stores - reading	0	0	0	0	0	0	0	0	0	0	0
Stores - retagging	1594195	1594195	1594195	1594195	1594195	1594195	1594195	1594195	1594195	1594195	15941946
Stores - gathering	124101	124101	124101	124101	124101	124101	124101	124101	124101	124101	1241013
Stores - recording	0	0	0	0	0	0	0	0	0	0	0
Total benefits	2891111	2891111	2891111	2891111	2891111	2891111	2891111	2891111	2891111	2891111	28911105
Net benefit	2814535	2814535	2814535	2814535	2814535	2814535	2814535	2814535	2814535	2814535	28145349
NPV	2814535	2719357	2627398	2538549	2452705	2369763	2289626	2212199	2137390	2065111	24226634

Table 11b Low estimate of NPV for Option 2

The table below shows the estimated lower band for the net benefit of Option 2, using the highest estimate of costs and the lowest estimate of benefits

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total
Farmers - tags	268015	268015	268015	268015	268015	268015	268015	268015	268015	268015	2680146
Markets - reading	677710	677710	677710	677710	677710	677710	677710	677710	677710	677710	6777095
Abattoirs - reading	495105	495105	495105	495105	495105	495105	495105	495105	495105	495105	4951052
Stores - reading	485056	485056	485056	485056	485056	485056	485056	485056	485056	485056	4850564
Stores - retagging	0	0	0	0	0	0	0	0	0	0	0
Stores - gathering	124101	124101	124101	124101	124101	124101	124101	124101	124101	124101	1241013
Stores - recording	4878	4878	4878	4878	4878	4878	4878	4878	4878	4878	48782
Total benefits	1786851	1786851	1786851	1786851	1786851	1786851	1786851	1786851	1786851	1786851	17868506
Net benefit	1518836	1518836	1518836	1518836	1518836	1518836	1518836	1518836	1518836	1518836	15188360
NPV	1518836	1467474	1417850	1369903	1323578	1278819	1235574	1193791	1153422	1114417	13073664