

Title: Removal of Post-Chernobyl Sheep Controls IA No: FOODSA0011 Lead department or agency: Food Standards Agency Other departments or agencies:	Impact Assessment (IA)
	Date: 06/08/2012
	Stage: Final
	Source of intervention: Domestic
	Type of measure: Secondary legislation

Summary: Intervention and Options **RPC:** RPC Opinion Status

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, One-Out?	Measure qualifies as
£3.1m	-£2.24m	£0.26m	No	N/A

What is the problem under consideration? Why is government intervention necessary?
On 26 April 1986, an accident occurred at the Chernobyl nuclear power station in the former USSR (now Ukraine), releasing a plume of radioactivity that travelled across Europe. Contamination, including radiocaesium, was deposited in certain upland areas of the UK and restrictions on the movement of sheep from these areas were imposed due to concerns over the safety to consumers of their meat. The Food Standards Agency has recently conducted an updated risk assessment which shows the risk to consumers is now very low. Therefore, the Agency has proposed removing all remaining controls.

What are the policy objectives and the intended effects?
The overall objective is to ensure that removal of controls is risk based, proportionate and that consumer safety is not compromised.
The aims are to:

- be proportionate to the risk
- maintain consumer confidence
- minimise the burden on businesses and the public sector
- be consistent with current international radiological protection guidance.

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

- Option 1 – Do nothing (Maintain current policy) – Movement restrictions continue under existing FEPA Orders with Mark and Release monitoring controls; previously issued Consents would remain
- Option 2 – FEPA Orders are revoked; Mark and Release controls cease and existing Consents are removed and associated redundant legislation revoked.

The risk assessment demonstrates that the current controls are no longer proportionate to the very low risk, they are unlikely to further minimise the already low doses and thus removing controls will not compromise consumer safety. Therefore, Option 2, removing all post-Chernobyl controls and associated redundant legislation on sheep farming in the UK, is the Agency's preferred option.

Will the policy be reviewed? It will be reviewed. **If applicable, set review date:** 06/2017

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		

Ministerial Sign-off For final proposal stage Impact Assessments:
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) the benefits justify the costs.

Signed by the responsible Minister: *Please sign* X  *Please date* Date: 21-X-2012

Summary: Analysis & Evidence

Policy Option 1

Description: Do nothing (Maintain current policy) – Movement restrictions continue under existing FEPA Orders with Mark and Release monitoring controls; previously issued Consents would remain

FULL ECONOMIC ASSESSMENT

Price Base Year	PV Base Year	Time Period Years	Net Benefit (Present Value (PV)) (£m)		
			Low: Optional	High: Optional	Best Estimate:

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	Optional	Optional	Optional
High	Optional	Optional	Optional
Best Estimate	0	0	0

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

Not applicable - option is baseline for comparison

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

Regulatory burden on farming industry and government would continue indefinitely despite the very low risk to consumers.

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	Optional	Optional	Optional
High	Optional	Optional	Optional
Best Estimate	0	0	0

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

Not applicable - option is baseline for comparison

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

Not applicable - option is baseline for comparison

Key assumptions/sensitivities/risks

Not applicable - option is baseline for comparison

Discount rate (%)

BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £m:			In scope of OIOO?	Measure qualifies as
Costs: 0	Benefits: 0	Net: 0	No	NA

Summary: Analysis & Evidence

Policy Option 2

Description: Remove all post-Chernobyl controls and associated regulation on sheep farming in the UK – FEPA Orders are revoked; Mark and Release controls cease and existing Consents are removed.

FULL ECONOMIC ASSESSMENT

Price Base Year 2011	PV Base Year 2011	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low: Optional	High: Optional	Best Estimate: 3.08

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	Optional	Optional	Optional
High	Optional	Optional	Optional
Best Estimate	0	0.34	2.88

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

Total cost of policy option: £3,350,750 (constant prices) to farmers through loss of headage payments paid to recompense for costs incurred in gathering and holding sheep.

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

Non-monetised costs were not identified (see monetised costs above)

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	Optional	Optional	Optional
High	Optional	Optional	Optional
Best Estimate	0	0.70	5.99

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

Total benefit of policy option: £6,956,533 (constant prices). Government: £6,206,505 through cessation of headage payments to farmers and live sheep monitoring programme. Farmers: £750,027 through saving the time taken to gather sheep and make themselves available during monitoring inspections.

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

Farmers: Reduction in regulatory burden and providing greater freedom in choosing when to move sheep.

Key assumptions/sensitivities/risks	Discount rate (%)	3.5
Estimated that farmers spend 2 hours per 100 sheep monitored and 1.5 hours per 100 sheep not monitored but inspected.		

BUSINESS ASSESSMENT (Option 2)

Direct impact on business (Equivalent Annual) £m:			In scope of OIOO?	Measure qualifies as
Costs: 0.34	Benefits: 0.08	Net: 0.26	No	N/A

Evidence Base (for summary sheets)

Problem under consideration

1. Following the accident at the Chernobyl nuclear power station, radioactivity was deposited on certain upland areas of the UK. Meat from sheep grazing in these areas was identified as a potential food safety concern and so restrictions were put in place on the sale, movement and slaughter of sheep from defined areas using powers under The Food and Environment Protection Act 1985 (known as FEPA Orders).
2. As of the end of 2011, controls remained on a relatively small number of the originally restricted farms in North Wales and Cumbria, England. Restrictions also remained on a small number of farms in Scotland, although all formal controls have ceased. All restrictions in Northern Ireland were removed in 2000.
3. The controls were managed through a system known as the *Mark and Release* scheme. Under this scheme, a farmer wishing to move sheep from within the restricted area was required to have them monitored. Only those sheep that were monitored and assessed to have less than 1,000 becquerels per kilogram (Bq/kg) of radiocaesium contamination were permitted to enter the food chain.
4. An updated risk assessment has shown that the risk to consumers of sheep meat originating in these areas is now very low¹. Therefore, these restrictions are no longer required and removing controls will not compromise consumer safety.
5. The final movement restrictions were lifted on 21 June 2010 in Scotland and 31 May 2012 in England and Wales using existing powers and required no legislative change. The legislation is now redundant and will be revoked. In England, the FSA's intention to revoke the Food Protection (Emergency Prohibitions) (Radioactivity in Sheep) (England) Order 1991 as amended on 1 October 2012 was reported in the FSA's latest Statement of New Regulation, published on 17 July 2012². The FSA also intends to revoke the redundant legislation in Wales, the Food Protection (Emergency Prohibitions) (Radioactivity in Sheep) (Wales) Order 1991 as amended, and in Scotland, the Food Protection (Emergency Prohibitions) (Radioactivity in Sheep) Order 1991 as amended.
6. Concerning England, this policy has been considered as part of Government's the Red Tape Challenge and One in, One Out initiatives. Ministers are aware of the proposals to remove the restrictions (under existing powers) and revoke the related legislation. The revocation of the legislation has no costs to business and is out of the scope of One in One Out.
7. This Impact Assessment considers the impact of lifting the movement restrictions as well as revoking the redundant legislation.

Rationale for intervention

8. New recommendations were published by the International Committee on Radiological Protection (ICRP) in 2007³ and 2010⁴. These recommendations provide clearer guidance on how to protect people from radiation exposure. They support the concept of using the effective dose when determining the risk to consumers from existing exposure situations. In radiological protection, effective dose is a measure of the harmful effect of radiation to an exposed individual

¹ Field, A 2011. An Assessment of Radiocaesium Activity Concentrations in Sheep in Restricted Areas of England and Wales and Potential Consumer Doses

² <http://www.food.gov.uk/enforcement/regulation/betregs/newregstatement/july-december-2012/>

³ The 2007 Recommendations of the International Commission on Radiological Protection, (ICRP Publication 103; 2007)

⁴ Application of the Commission's Recommendations to the Protection of People Living in Long-Term Contaminated Areas after a Nuclear Accident or a Radiation Emergency, (ICRP Publication 111; 2010)

which takes account of the type of radiological contaminant, the age of the individual and the level of exposure (in this case, the quantity consumed as contamination within the food). Where individuals are continually exposed to a source of radioactivity for an extended period, the dose received over the duration of a year is often used as a comparison and so doses are expressed in units of millisieverts per year (mSv/yr).

9. An updated risk assessment¹ has been carried out which is consistent with the latest ICRP advice and considers the radiological dose which could be received by a consumer of sheep meat. This provides a more realistic measure of risk instead of relying purely on a fixed control level of contamination within individual sheep.
10. This assessment has shown that the risk to consumers is now very low. Furthermore, the current controls are no longer proportionate to the very low risk, they are unlikely to further minimise the already low doses and thus removing controls will not compromise consumer safety. Furthermore, the very low risk shows that intervention is no longer required to comply with Council Directive 96/29/Euratom⁵ requirements for cases of lasting exposure.
11. A 12-week consultation on the proposal to remove all the remaining post-Chernobyl sheep controls was launched on 17 November 2011 and concluded on 8 February 2012. The responses to the consultation have been considered in finalising this Impact Assessment
12. The lifting of the restrictions does not require any change to legislation. Following the completion of the risk assessment and full public consultation the restrictions in England and Wales were lifted in on 31 May 2012. The now redundant legislation will be revoked on 1 October 2012.

Policy Objective

13. The overall objective is to ensure that the removal of controls is risk based, proportionate and that consumer safety is not compromised.
14. The aims are to:
 - be proportionate to the risk
 - maintain consumer confidence
 - minimise the burden on businesses and the public sector
 - be consistent with current international radiological protection guidance.

Background

UK response to the Chernobyl nuclear accident

15. On 26th April 1986, an accident occurred at a nuclear power station at Chernobyl in the former USSR (now Ukraine), releasing a plume of radioactivity that travelled across Europe. As the plume passed over the UK, radioactivity, including the isotopes Iodine-131, Caesium-134 and Caesium-137, was deposited on certain upland areas of the UK.
16. Iodine-131 has a radioactive half-life of eight days and, therefore, did not present a long-term problem as it disappeared quickly. Caesium-134 and caesium-137 (collectively called 'radiocaesium') have radioactive half-lives of two years and thirty years respectively, so remain in the environment for much longer, although after twenty-six years since the accident it is now only caesium-137 which remains in the environment in any measurable quantity.

⁵ Council Directive 96/29/Euratom of 13 May 1996 laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionizing radiation (OJ L 159, 29.6.1996, p. 1)

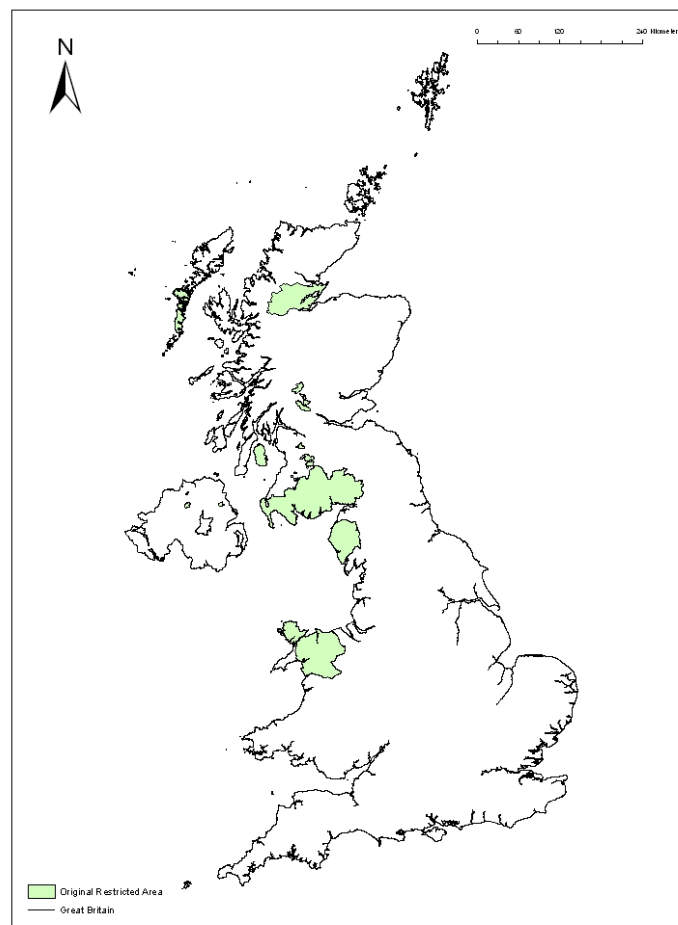
17. Following the accident, a country-wide monitoring programme was initiated. This identified food safety implications from radiocaesium taken up by vegetation and ingested by sheep in the affected areas. On the 20 June 1986, using powers under the Food and Environment Protection Act (FEPA) 1985, the Ministry of Agriculture, Fisheries & Food (MAFF) placed restrictions on the sale, movement and slaughter of sheep from defined areas within parts of North Wales and in Cumbria, England. Similar restrictions were placed by the Scottish Office on sheep in parts of Scotland on the 24 June.
18. In Northern Ireland, the Department of Agriculture for Northern Ireland imposed FEPA restrictions on individual farms in September 1987, with the areas restricted based on the results of live monitoring. Before that date, an alternative control method had been used which involved monitoring of sheep carcasses at slaughter houses to ensure sheep meat was safe.
19. The number of farms and sheep originally under restrictions are given in Table 1 and the areas illustrated in Figure 1.

Table 1: Initial numbers of farms and sheep under restriction in June 1986.

	England	Wales	Scotland	N Ireland	UK
Farms	1,670	5,100	2,900	122	9,792
Sheep	867,000	2,000,000	1,358,000	53,000	4,278,000

Notes: All figures are approximate. Northern Ireland figures refer to September 1987.

Figure 1: Original restricted areas under SI 1986/1027



Permit ID 60081 Based upon the 2006 Ordnance Survey of Northern Ireland 1:50,000 scale map with the permission of the Controller of Her Majesty's Stationery Office, © Crown Copyright 2006 All rights reserved Food Standards Agency GD100036675 2006

20. In order to allow sheep farming to continue in the restricted areas, a management system known as the *Mark and Release* scheme was introduced. Under this scheme, a farmer wishing

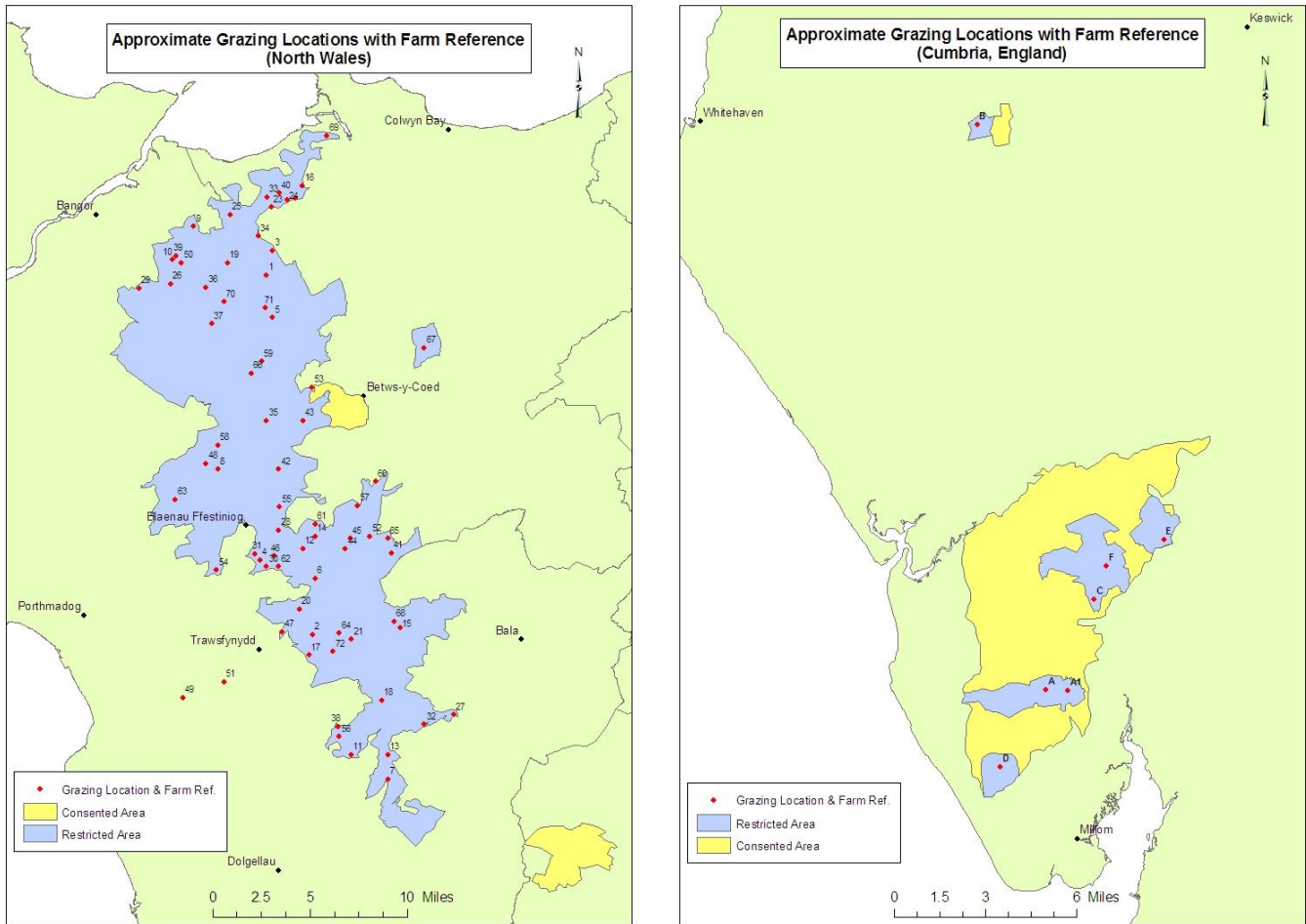
to move sheep from within the restricted area is required to have them monitored to determine the level of radiocaesium contamination. A live monitoring technique is used, where an external monitor is held against the sheep.

21. Individual sheep that are monitored and assessed to have less than 1,000 becquerels per kilogram (Bq/kg) of radiocaesium contamination are granted a consent from the FEPA Order permitting them to leave the restricted area and may enter the food chain. Sheep assessed to be above this level are considered to have failed and are marked with indelible paint. Marked sheep may leave the restricted area, but may not be sold to slaughter for a minimum of three-months during which time contamination levels are reduced through clean feeding.
22. Sheep which are to be temporarily moved off a restricted area (for example for overwintering) can be moved without monitoring. Inspectors, under contract with the Food Standards Agency, are required to visit the farm prior to movement to apply a stripe of indelible red paint. Sheep so marked are given a consent from the FEPA Order permitting them to move off the restricted area and later return, but may not be sold without first being monitored. This option is used regularly in Wales and termed *inspections*, as opposed to *monitoring*, but this is rarely applied in England where all sheep movements are monitored.
23. Under the current policy, individual farms may be considered for removal from these controls (de-restricted) where certain criteria are met. The precise criteria varies across the UK, but the minimum is that a full-flock survey, conducted during the summer months when contamination is at the highest, has assessed that no sheep within the flock are above the 1,000 Bq/kg level. In England and Wales, the policy is that this criterion must be met over two consecutive years.
24. Using the current policy, the number of farms under restrictions has reduced substantially with only 8 farms in Cumbria and 299 in North Wales remaining under full restrictions at the end of 2011, although approximately 44 of these farms in North Wales are not currently thought to be active sheep farms.
25. In addition, 28 farms in North Wales and 1 in Scotland have been released from formal controls but issued with *Conditional Consents* or *Directions*. These *Conditional Consents* or *Directions* have been issued on the basis of specific conditions pertaining to individual farms. The conditions are set on a case-by-case basis but in general they require that sheep have been kept on clean pasture or clean feed for a period of time (typically between 1 and 4 weeks) before they are sent for slaughter.
26. Prior to 2011, *Unconditional Consents* had been issued to 41 farms in England, 7 in Wales and 3 in Scotland. These are farms which met the criteria for derestriction and so were removed from all formal controls and conditions. These farms are free to move their sheep without monitoring or inspection, however they technically remain under restriction pending revocation of the FEPA Order or because the legislation does not easily permit their removal from the FEPA Order.
27. The number of farms and sheep remaining under restriction at the end of 2011 are given in Table 2 and the areas illustrated in Figure 2.

Table 2: Numbers of farms and sheep under restriction at the end of 2011.

Country	Farms subject to full restrictions	Farms with Conditional Consent or Direction	Farms with Unconditional Consent	% of original farms still subject to full Mark and Release controls
England	8	0	41	0.5%
Wales	299	28	7	6%
Scotland	0	1	3	0%
UK	307	29	51	1.1%

Figure 2: Restricted areas in place at the end of 2011 showing grazing locations of farms monitored as part of the risk assessment⁶



Legal basis for the current policy

28. European Council Directive 96/29/Euratom lays down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionizing radiation. Article 53 covers intervention in cases of lasting exposure. This states that where the Member States have identified a situation leading to lasting exposure resulting from the after effects of a radiological emergency they shall put measures in place where necessary for the exposure risk involved. This can include monitoring of exposure and implementing any appropriate interventions. However, Article 48 of Directive 96/29 specifies that such intervention shall be undertaken only if the reduction in detriment due to radiation is sufficient to justify the harm and costs, including social costs, of the intervention.
29. The Food and Environment Protection Act 1985 authorises the Secretary of State (or devolved equivalent) to make emergency orders. These specify activities to be prohibited, as a precaution against potential food safety concerns. It also provides for consents to undertake those specific activities, either unconditionally or subject to any condition that the Secretary of State (or devolved equivalent) considers appropriate.
30. The Food Protection (Emergency Prohibitions) Order 1986 (SI 1986/1027) restricted the movement or slaughter of sheep from within the areas as shown in Figure 1. The Order (called 'FEPA Order' for short) has since been amended a number of times and is currently enforced by:

⁶ Field, A 2011. An Assessment of Radiocaesium Activity Concentrations in Sheep in Restricted Areas of England and Wales and Potential Consumer Doses

- In Wales: The Food Protection (Emergency Prohibitions)(Radioactivity in Sheep)(Wales) Order 1991 (SI 1991/5) as amended
 - In England: The Food Protection (Emergency Prohibitions)(Radioactivity in Sheep)(England) Order 1991 (SI 1991/6) as amended
 - In Scotland: The Food Protection (Emergency Prohibitions)(Radioactivity in Sheep) Order 1991 (SI 1991/20) as amended
31. The Orders prohibit the following activities, subject to the issuing of an appropriate consent:
- No person shall in a designated area slaughter sheep for human consumption or for use in the preparation of feeding stuffs from which food could be derived;
 - No person shall move any sheep from any farm, holding or agricultural premises situated in a designated area;
 - No person shall move into a designated area any sheep which has previously been removed from the designated area in accordance with a consent which was subject to the condition that the sheep to which it applied should be marked with a green, blue or apricot paint mark.

Radiocaesium level in sheep meat

32. Following the Chernobyl accident, a maximum concentration of 1,000 Bq/kg for radiocaesium in sheep meat was imposed in the UK. This was based on interim advice from a group of experts set up under Article 31 of the Euratom Treaty⁷. The 1,000 Bq/kg level, which was set before the precise composition of the radionuclides released was known, was deliberately conservative in order to reassure the public and protect UK trade. This level was an administrative measure and not set in UK or EU legislation. It was decided to use this level in the UK as a means to permit movement of sheep from within the restricted area.
33. Sheep ingest the radiocaesium contamination while grazing on upland pasture. Due to the nature of the soil in these areas, plants efficiently take up the radiocaesium which the sheep then consume. The types of soil typically found in lowland pastures have the capacity to bind with the radiocaesium and reduce its uptake by plants. Therefore, once sheep are brought down to lowland pastures, the contamination received from grazing on upland pastures passes through their bodies and the levels of contamination in the meat reduces.
34. The rate at which a contaminant passes through an animal is called the biological half-life. Research conducted following the Chernobyl incident demonstrated that the initial biological half-life for radiocaesium in lambs was approximately 10-12 days and 20 days for ewes⁸. Therefore, if sheep are grazed on clean land, the level of contamination rapidly decreases.
35. The Agency understands, through initial discussions with stakeholders and a small survey of farmers⁹, that sheep destined for slaughter are often taken from the upland pasture and fattened on improved or partially improved pasture for several weeks prior to being taken to market. This has the effect of “clean grazing” the sheep and so reducing the levels of contamination.

Risk assessment

36. During the summers of 2010 and 2011, the FSA carried out a monitoring survey in the restricted areas of Cumbria and North Wales. These surveys were carried out during the summer months when radiocaesium concentrations in sheep meat are expected to be at their highest.

⁷ The Euratom Treaty established the European Atomic Energy Community, whose member states are the same as the European Union, although it remains technically a legally distinct organisation. The Euratom Treaty helps to pool knowledge, infrastructure, and funding of nuclear energy. It ensures the security of atomic energy supply within the framework of a centralised monitoring system.

⁸ Howard BJ, Beresford NA, Burrow L, Shaw PV and Curtis EJC (1987). A comparison of caesium-137 and 134 activity in sheep remaining on upland areas contaminated by Chernobyl fallout with those removed to less active lowland pasture. *Journal of the Society for Radiological Protection* 7, pp71-73

⁹ Field, A 2011. An Assessment of Radiocaesium Activity Concentrations in Sheep in Restricted Areas of England and Wales and Potential Consumer Doses

37. The data gathered in this survey were used to assess the risk to consumers of sheep meat originating in the restricted areas. The risk assessment calculated the likely dose to the more highly exposed individuals by defining a representative person. This is an individual whose habits are realistic and not outside the range of what people encounter in their day to day life but that the probability is less than approximately 5% that a person drawn at random from the exposed population would receive a greater dose. The representative person is defined as an adult frequent buyer (purchasing their meat in bulk once per fortnight) who sources all their meat from the monitored farm and who consumes a high level (20kg) of sheep meat per year at the 97.5th percentile of the radiocaesium distribution in their sheep meat intake.
38. The risk assessment concluded that:
- The results of the sheep monitoring survey and the consumer dose assessment demonstrate that although low levels of radiocaesium persists in sheep throughout the restricted areas of Cumbria and North Wales, the consumer risks are very low.
 - The doses to the representative person (representing more highly exposed consumers) range from <0.05 to 0.21 mSv per year with an average dose of less than 0.09 mSv per year. This is considerably below the 1mSv per year limit for members of the public exposed to radiation from routine planned exposures, and the 1mSv per year reference level typically used in existing exposure situations¹⁰.
39. The risk assessment also considered a range of potential individuals who have habits more extreme than the representative person (for example a farmer who may freeze one of his sheep for consumption over the course of the year). The most extreme scenario gave a dose of 0.35 mSv per year, which is still considerably below 1mSv per year. It is unlikely that the most extreme consumers would receive doses in excess of this. This is because, for extremely high consumption rates, it would be unlikely that an individual could source all their meat from a single animal and so the dose would reduce.
40. The doses to children and infants were also considered and it was demonstrated that doses for children and infants are always less than those for adults.
41. The approach used in the risk assessment replaces the existing policy which only assessed risk against a fixed level of 1,000 Bq/kg. During the consultation, concerns were raised that by removing controls “higher level” sheep (over 1,000 Bq/kg) could enter the food chain and this could be perceived as a food safety risk. However, the 1,000 Bq/kg level is not a safety limit in the sense that it is unsafe to eat any amount of meat above the level. Rather it represents a way of controlling the maximum radiation dose (or risk) that consumers are exposed to. The maximum radiation dose varies depending on a number of factors including the consumer’s age, the amount of affected sheep meat they consume and even their meat-buying habits. Consuming a small portion of meat from a sheep exceeding the 1,000 Bq/kg level does not have a significant impact on the annual radiation dose a consumer would receive. It does not necessarily follow that people who consume a small proportion of their annual sheep meat intake above 1,000 Bq/kg necessarily receive the highest dose.
42. The risk assessment report did consider the levels of radiocaesium in sheep as a link to the existing policy and found that:
- The maximum observed levels of radiocaesium in sheep do not exceed 1,000Bq/kg of radiocaesium on over 97% of monitored Welsh farms. On farms where sheep exceed the 1,000 Bq/kg level, only a very small percentage are affected. This situation is likely to be representative of all restricted farms.
 - Only two farms monitored in Cumbria had a small number of sheep that exceeded 1,000Bq/kg of radiocaesium.

¹⁰ Assessing Dose of the Representative Person for the Purpose of Radiation Protection of the Public. (ICRP Publication 101:2006) and The 2007 Recommendations of the International Commission on Radiological Protection, (ICRP Publication 103; 2007)

43. Finally, the risk assessment concluded that if no control measures were in place, the consumer risk would be less than the level of risk tolerated by the policy when it was introduced in 1986. As such, the current *Mark and Release* monitoring programme is having a negligible impact on reducing consumer dose.
44. The Agency's risk assessment report, titled *An Assessment of Radiocaesium Activity Concentrations in Sheep in Restricted Areas of England and Wales and Potential Consumer Doses*, has been independently peer reviewed and can be downloaded from the Food Standards Agency's website¹¹.
45. Taking this risk assessment into account, the current controls (including *consents* and *directions*) in England and Wales are no longer proportionate to the very low risk, they are ineffective in further minimising the already low doses and removing controls will not compromise consumer safety. Furthermore, the very low risk shows that intervention is no longer required to comply with Council Directive 96/29/Euratom requirements for cases of lasting exposure.
46. All formal *Mark and Release* controls have been removed in Scotland using the current derestriction criteria, the last of these in 2010. The risk to consumers from the remaining *Consented* farms in Scotland is therefore considered to be very low. Removing the final legislative controls will not compromise consumer safety and is no longer required to meet the requirements of Council Directive 96/29/Euratom.

Optimisation and minimising risk

47. Radiological protection is based on the assumption that health risks are directly proportional to the radiation dose received. Therefore, as doses decrease the health risks approach zero, but there is no minimum dose which can be considered to have no risk. However, as there is a wide range of sources of radioactivity in the environment, both natural and man-made, it is impractical to reduce doses to zero. Thus, doses should be reduced as *low as reasonably achievable* considering social and economic factors (known as the ALARA principle).
48. Article 48 of Directive 96/29/Euratom specifies that in case of lasting exposure, intervention shall be undertaken only if the reduction in detriment due to radiation is sufficient to justify the harm and costs, including social costs, of the intervention.
49. This is also supported in ICRP guidelines¹² which recommend that in existing exposure situations, protection strategies should be implemented which will reduce individual doses to below an established reference level, typically in the range of 1 to 20 mSv per year. While the purpose of this review has not been to establish a reference level, the Agency's risk assessment has shown that dose to the high level consumer from the consumption of sheep meat is significantly below this range of reference levels and limits used in other areas, for example the 1 mSv/yr limit applied to members of the public from routine planned exposures as specified in Directive 96/29/Euratom.
50. The ICRP guidelines further state that exposure below the established reference level should not be ignored. Using the ALARA principle, even low doses should be assessed to ascertain if protection is optimised or whether further protective measures are needed. As part of the Agency's review into the controls, a full range of options have been considered including alternative monitoring protocols and use of clean grazing. However, due to the low doses assessed, these options are not considered to be technically feasible and cannot be clearly shown to further reduce the already low doses and, thus, have not been taken forward to full impact assessment.

¹¹ Field, A 2011. *An Assessment of Radiocaesium Activity Concentrations in Sheep in Restricted Areas of England and Wales and Potential Consumer Doses* – <http://www.food.gov.uk/science/surveillance/radiosurv/chernobyl/>

¹² The 2007 Recommendations of the International Commission on Radiological Protection, (ICRP Publication 103; 2007); and Application of the Commission's Recommendations to the Protection of People Living in Long-Term Contaminated Areas after a Nuclear Accident or a Radiation Emergency, (ICRP Publication 111; 2010)

51. An outline of alternative options previously suggested and reasons why they have not been taken forward are provided in the Annex to this impact assessment.

Options Considered

52. Two options have been considered in this impact assessment:

- **Option 1 – Do Nothing (Maintain the current policy)** – Movement restrictions continue under existing FEPA Orders with *Mark and Release* monitoring controls; previously issued *Consents* would remain
- **Option 2 – Remove all post-Chernobyl controls and associated regulation on sheep farming in the UK** – FEPA Orders are revoked; *Mark and Release* controls cease and existing *Consents* are removed. This is the preferred option.

53. Option 1 represents the status quo and is used as the baseline for comparison. However, the risk assessment demonstrates that these controls are no longer proportionate to the very low risk, they are ineffective in further minimising the already low doses and thus removing controls will not compromise consumer safety. Furthermore, the very low risk shows that intervention is no longer required to comply with Council Directive 96/29/Euratom requirements for cases of lasting exposure. Therefore, it is not considered viable to continue this option, as discussed in paragraphs 53 to 55.

54. Due to the very low risks demonstrated by the risk assessment, Option 2, removing all post-Chernobyl controls and associated regulation on sheep farming in the UK, is the Agency's preferred course of action.

55. A range of alternative options to the current *Mark and Release* controls have previously been considered as part of a review in 1999¹³ and at a workshop meeting held in August 2010. These options were considered as part of the FSA's review but were subsequently discounted due to the very low risk demonstrated by the risk assessment which means they cannot be clearly shown to further reduce the already low doses. Further details can be found at Annex A.

Option 1 – Do nothing (Maintain the current policy)

56. Movement restrictions continue under existing FEPA Orders with *Mark and Release* monitoring controls and previously issued *Consents* remaining. Restrictions preventing the operation of slaughterhouses in the restricted area would remain.

57. All sheep on farms under full controls are monitored before moving out of the restricted area. Sheep assessed to be over 1,000 Bq/kg are marked (with a coloured paint) and prevented from being sent to slaughter for a minimum of 3-months.

58. Farms would continue to be derestricted using the current criteria based on full-flock surveys conducted during the summer months. Farms could be derestricted if no sheep in a full-flock survey are assessed to be over 1,000 Bq/kg for two consecutive years.

59. *Conditional & Unconditional Consents* and *Directions* previously issued on the basis of the specific conditions pertaining to individual farms would remain in place on those farms.

Risks

60. The risk assessment¹⁴ demonstrates that the dose, and hence the risk, to consumers is very low and that maintaining the controls is not required to maintain food safety.

¹³ Nisbet, AF and Woodman, RFM, 1999. Options for the Management of Chernobyl-restricted Areas in England and Wales, NRPB-R305. National Radiological Protection Board.

¹⁴ Field, A 2011. An Assessment of Radiocaesium Activity Concentrations in Sheep in Restricted Areas of England and Wales and Potential Consumer Doses

61. Maintaining the existing *Mark and Release* criteria of 1,000 Bq/kg is equivalent to permitting a tolerance of 0.26 mSv/yr to a high level consumer (an adult consuming 20 kg of sheep meat per year all of which is contaminated at 1,000 Bq/kg). As our risk assessment demonstrates that the highest potential dose to the high level consumer is lower than this tolerance (a maximum of 0.21 mSv/yr and in the majority of cases far lower), monitoring at this level is no longer an effective or appropriate control measure to minimise the dose to consumers.
62. A secondary impact of compulsory monitoring is that it may encourage farmers to adopt practices (e.g. clean grazing on improved pasture), which acts to reduce the level of contamination in the sheep to increase the chances that they will pass the monitoring. This has the potential to reduce the dose to consumers. It is unclear the degree to which farmers use clean grazing for this purpose, particularly where levels in sheep are now in any case very low and the majority of sheep will pass the monitoring without any clean grazing practices. Farmers who graze sheep on improved pasture are likely to continue this practice, with or without monitoring, as they benefit from increased weight and therefore value of their sheep when sold. Any potential reduction to the already low dose is unquantifiable and in any case likely to be small; consequently, it cannot be justified as a reason to continue compulsory live monitoring.

Wider impacts

63. With current resource levels, full-flock surveys cannot be conducted on every farm in a single year. There is also no legal compulsion for farmers to take part in full-flock surveys and so it may require a change in legislation to make it mandatory or introduce an additional financial incentive to encourage farms to participate. The baseline costs have assumed the level of monitoring in 2009 where 7 farms in North Wales and 3 in Cumbria were surveyed. It would take several years to systematically cover all the farms based on current spending levels and, thus, the majority of farms will remain restricted for many years despite the very low risk to consumers.

Option 2 – Remove all post-Chernobyl controls and associated regulation on sheep farming in the UK

64. All restrictions would be removed from all farms across the UK. Therefore, the current programme of *Mark and Release* monitoring controls would cease. In addition, all *Consents* (both *Conditional* and *Unconditional Consents*) and *Directions* in place on farms would be removed. Farmers would be free to move and sell their sheep without any restrictions or conditions. Slaughterhouses would be permitted to operate in the areas previously under restriction.
65. This option is the Agency's preferred course of action as assessments have shown that the risk to consumers is very low and that removing controls will not compromise consumer safety. It is therefore inappropriate to maintain regulation and the burden this places on farmers where the risk to consumers is very low.
66. This proposal will have no impact in Northern Ireland as the final restrictions were removed there in 2000.
67. All remaining restrictions were lifted on 31 May 2012 and associated legislation, the Food Protection (Emergency Prohibitions) (Radioactivity in Sheep)(England) Order 1991, the Food Protection (Emergency Prohibitions) (Radioactivity in Sheep) (Wales) Order 1991, the Food Protection (Emergency Prohibitions) (Radioactivity in Sheep) Order 1991 (for Scotland) and subsequent amendments will be revoked on 1 October 2012.

Option Appraisal

Option 1 – Do nothing (Maintain the current policy)

68. There are no costs or benefits under option 1; this is the baseline against which all other options are appraised.

Option 2 – Remove all post-Chernobyl controls and associated regulation on sheep farming in the UK

Costs under Option 2

Cost to farmers

69. Under the current *Mark and Release* scheme, farmers receive a headage payment of £1.30 for each sheep monitored; an amount set when the scheme started in 1986 and has remained at this level since. This payment is to recompense the farmers for the costs they incur in gathering and holding sheep for them to be monitored.

These headage payments would cease. This would result in a loss of income across the sheep farms in England and Wales under full restrictions. Approximately 7,750 sheep per year are monitored each year in England and 250,000 are monitored or inspected in Wales, based on the inspection records for 2010. It is estimated that the cessation of headage payments would cost farmers on average approximately £335,075 per year in lost income, which is calculated by multiplying the loss of headage payment per sheep (£1.30) by the total number of sheep monitored per year (257,750) in England (Cumbria) and Wales. This is shown by country in table 3 below.

Table 3: Annual Loss of Headage Payments to Famers

	Headage per sheep	Number of sheep	Total annual cost
England	£1.30	7,750	10,075
Wales	£1.30	250,000	325,000
Total		257,750	335,075

Total Cost of Policy Option 2

70. The total cost of policy option 2 equates to £3.35m over 10 years at an average annual cost of £0.34m. Under Standard HMT Green Book guidance these cost are discounted at a rate of 3.5%¹⁵ over 10 years; where we obtain a present value cost of £2.9m. Broken down by country this equates to £0.1m for England (Cumbria) and £2.8m for Wales. In Scotland, the costs/benefits will be neutral as all controls had already ceased prior to 2011. Total costs associated with option 2 are presented in table 4 below.

Table 4 Annual Profile of the loss of Headage Payments to Famers (England and Wales)

Option 2	Year 0	1	2	3	4	5	6	7	8	9	Total Costs	p.a.	PV
England	£10,075	£10,075	£10,075	£10,075	£10,075	£10,075	£10,075	£10,075	£10,075	£10,075	£100,750	£10,075	£86,722
Wales	£325,000	£325,000	£325,000	£325,000	£325,000	£325,000	£325,000	£325,000	£325,000	£325,000	£3,250,000	£325,000	£2,797,498
Total	£335,075	£335,075	£335,075	£335,075	£335,075	£335,075	£335,075	£335,075	£335,075	£335,075	£3,350,750	£335,075	£2,884,221

Note: Totals may not sum due to rounding

¹⁵ $D_n = 1 / (1 + r)^n$ where r is the discount rate and D_n is the discount factor

Benefits under Option 2

Benefits to Government

Reduction in Inspection Related Costs

71. The live monitor programme of the Mark and Release scheme would cease in England (Cumbria) and Wales. Ceasing the current contracts to provide inspectors to carry out monitoring and inspections would yield on an annual recurring basis a potential cost savings of £232,223 in inspections, which is quantified by multiplying the number of hours (11,349, based on inspection records for 2010) required in a given year to carry inspections by the hourly wage rate of an inspector of £20.46¹⁶.
72. Ceasing the programme would further lead to a cost saving of **£2,039** due to a reduction in administrative activities, which is calculated by multiplying the number of hours (126.8) required in a given year to carry out administrative duties by the hourly wage rate of an Executive Officer (EO) of £16.08¹⁷.
73. In addition, we envisage that closing down the programme would lead to a reduction of **£33,314** in travel cost per annum, which has been estimated by multiplying the cost of travel per mile (£0.43 based on existing contract costs) by the number of miles travelled (77,474 based on inspection records for 2010) in a given year related to monitoring and inspections.
74. Therefore, the total annual cost saving to Government from ceasing the *Mark and Release* scheme in England (Cumbria) and Wales is **£267,576**. A breakdown of the cost by country is shown in table 5 below.

Table 5: Annual Mark and Release Cost Savings to Government

Mark & Release	England	Wales	Annual Cost Saving
Annual Inspection Cost Savings			
Inspectors time (Annual hours)	746	10,603	11,349
Inspectors hourly rate (EHO)	20.46	20.46	20.46
Total	15,265	216,958	232,223
Annual Admin Cost Savings			
Administrative time (Annual hours)	12	114.8	126.8
Admin staff hourly rate (EO)	16.08	16.08	16.08
Total	193	1,846	2,039
Travel cost savings			
Mileage	7,291	70,183	77,474
Cost per mile	0.43	0.43	0.43
Total	3,135	30,179	33,314
Total Annual Government Benefits			
Total Annual Government Benefits	18,593	248,983	267,576

¹⁶ Wage rate obtained from *The Annual Survey of Household Earnings*, 2011) (see: <http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=15313>). Median hourly wage of 'Environmental Health Officers (EHO)' (£15.74 + 30% to cover overheads = £20.46);

¹⁷ Wage rate obtained from *The Annual Survey of Household Earnings*, 2011) (see: <http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=15313>). Median hourly wage of 'Civil Service Executive Officers' (£12.37 + 30% to cover overheads = £16.08)

Reduction in Other Related Monitoring Related Costs

75. It is estimated that ceasing to maintain the monitors and carrying out other related activities would represent an approximate annual saving of £18,000 based on a single contract covering both England and Wales. Using the ratio of monitors based in each country; we assume that one sixth of this potential cost saving would be borne by England (£3,000) with the remaining 5/6 allocated to Wales (£15,000). The total cost savings associated with these activities is comprised of £9,500 for monitor repair and maintenance, £5,000 for equipment replacement parts, £2,000 in courier costs and £1,500 for radiological protection advice, based on actual contracted expenditure during 2010/11 financial year. A breakdown of these costs by country is also shown in table 6 below.

Table 6: Other Related Annual Monitoring Cost Savings to Government

Monitoring & Inspections	England	Wales	Annual Cost Saving
Monitor repair, maintenance & upgrades	1,583	7,917	9,500
Replacement parts (probes/cables)	833	4,167	5,000
Couriers costs	333	1,667	2,000
Radiological protection advice	250	1,250	1,500
Total Other Monitoring Cost Savings Benefits	3,000	15,000	18,000

Headage Payments

76. There would also be a cost saving to government by ceasing headage payments to farmers. The benefits associated with ceasing payments would equate to an annual benefit of **£335,075**, i.e. the same amount that farmers lose as a result of the closure of the programme (see table 3).

77. In total, therefore, the cessation of contracts associated with the *Mark and Release* scheme, monitoring activities and ceasing headage payments to farmers is estimated to generate a potential total annual cost saving to government of approximately **£620,651**¹⁸.

Total Benefit to Government

78. The total benefit to government is estimated at approximately £6.21m over 10 years. Broken down by country this equates to £0.32m in England and £5.9m in Wales. Once these benefits are discounted at a rate of 3.5% over 10 years we obtain a present value benefit of £5.34m. The annual profile of benefits accrued by government over a 10 year period is presented in table 7 below.

¹⁸The sum of total Mark & Release cost savings, total other monitoring cost savings and the ceasing of headage payments: £267,576 + £18,000 + £335,075

Table 7: Annual profile of savings to government

Option 2 - Benefits to Government	Year 0	1	2	3	4	5	6	7	8	9	Total Benefits	p.a.	PV
ENGLAND													
Mark & Release	£18,593	£18,593	£18,593	£18,593	£18,593	£18,593	£18,593	£18,593	£18,593	£18,593	£185,928	£18,593	£160,041
Other Monitoring	£3,000	£3,000	£3,000	£3,000	£3,000	£3,000	£3,000	£3,000	£3,000	£3,000	£30,000	£3,000	£25,823
Headage Payments	£10,075	£10,075	£10,075	£10,075	£10,075	£10,075	£10,075	£10,075	£10,075	£10,075	£100,750	£10,075	£86,722
Total England	£31,668	£31,668	£31,668	£31,668	£31,668	£31,668	£31,668	£31,668	£31,668	£31,668	£316,678	£31,668	£272,586
WALES													
Mark & Release	£248,983	£248,983	£248,983	£248,983	£248,983	£248,983	£248,983	£248,983	£248,983	£248,983	£2,489,828	£248,983	£2,143,166
Other Monitoring	£15,000	£15,000	£15,000	£15,000	£15,000	£15,000	£15,000	£15,000	£15,000	£15,000	£150,000	£15,000	£129,115
Headage Payments	£325,000	£325,000	£325,000	£325,000	£325,000	£325,000	£325,000	£325,000	£325,000	£325,000	£3,250,000	£325,000	£2,797,498
Total Wales	£588,983	£588,983	£588,983	£588,983	£588,983	£588,983	£588,983	£588,983	£588,983	£588,983	£5,889,828	£588,983	£5,069,779
ENGLAND AND WALES													
Total	£620,651	£620,651	£620,651	£620,651	£620,651	£620,651	£620,651	£620,651	£620,651	£620,651	£6,206,505	£620,651	£5,342,365

Note: Totals may not sum due to rounding

Benefits to Farmers

79. Farmers would no longer have to make themselves available for *Mark and Release* inspections and de-restriction surveys.
80. It is estimated that in England (Cumbria), farmers had to make themselves available for 2 hours for every 100 sheep monitored. The responses received in the consultation were in general agreement with this estimate. Approximately 7,750 sheep are monitored in total per year which represents 155 hours per year of farmers' time across the region.
81. In North Wales, approximately 75,000 sheep were monitored per year. Using the same estimates as above, this equates to a total of 1,500 hours per year (see table 7). In addition, around 175,000 sheep were not monitored but inspected and marked for temporary movement out of the restricted area. Sheep still have to be gathered for inspection, but the inspections are quicker than if sheep are monitored. It is therefore estimated that farmers needed to be available for 1 hour 30 minutes for every 100 sheep inspected, which equates to 2,625 hours per year. The responses received in the consultation were in general agreement with this estimate. Therefore, including both monitoring and inspections, this represents a total of 4,125 hours per year of farmers' time across the region.

To quantify the annual saving to farmers we multiply the number of hours farmers will save from no longer observing inspections by the hourly wage rate of a farmer of £17.52¹⁹; representing an annual saving of £2,716²⁰ in England and £72,287²¹ in Wales. This is presented in table 8 below.

Table 8: Annual Savings to Farmers

	Monitoring		Inspection
	England	Wales	Wales
Number of sheep	£7,750	£75,000	£175,000
Hours per 100 sheep	2	2	1.5
Total hours required	155	1,500	2,625
Farm wage inc OH 30%	£17.52	£17.52	£17.52
Total savings	£2,716	£26,286	£46,001

Note: Totals may not sum due to rounding

¹⁹ Wage rate obtained from *The Annual Survey of Household Earnings*, 2010(see: <http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=15313>). Median hourly wage of 'Managers In Farming, Horticulture, Forestry And Fishing (£13.48 + 30% to cover overheads = £17.52).

²⁰ 155 hours * £17.52 = £2,716

²¹ 4,125 (1,500 + 2,625) hours * 17.52 = £72,287

82. Total savings over 10 years to farmers total £750,027. Broken down by country this equates to £27,162 in England and £722,865 in Wales. Once these benefits are discounted at a rate of 3.5% over 10 years we obtain a present value benefit of £645,600. Table 9 displays the annual profile of the potential cost savings to farmers.

Table 9: Annual profile of savings to farmers

Option 2 - Benefits to Farmers	Year 0	1	2	3	4	5	6	7	8	9	Total Benefits	p.a.	PV
England	£2,716	£2,716	£2,716	£2,716	£2,716	£2,716	£2,716	£2,716	£2,716	£2,716	£27,162	£2,716	£23,380
Wales	£72,287	£72,287	£72,287	£72,287	£72,287	£72,287	£72,287	£72,287	£72,287	£72,287	£722,865	£72,287	£622,220
Total	£75,003	£75,003	£75,003	£75,003	£75,003	£75,003	£75,003	£75,003	£75,003	£75,003	£750,027	£75,003	£645,600

Note: Totals may not sum due to rounding

Non-monetised Benefits

83. The consultation showed that farmers believed that the non-monetised benefits of removing controls outweighed any financial loss. There would be a reduction in regulatory burden and in the disruption to farmers. Farmers would have greater freedom to move their sheep without waiting up to 5 days for an inspection. This could mean that farmers may be able to take better advantage of short-term price fluctuations. As prices may fluctuate down as well as up, this benefit cannot be quantified although the responses from the consultation did confirm that this was likely to be a net benefit.

Total Benefit of Policy Option 2

84. The total benefit to England and Wales of policy option 2 equates to £6,956,533; an average annual benefit of £695,653. Once these benefits are discounted at a rate of 3.5% over 10 years we obtain a present value benefit of £5,987,965, as shown in Table 10 below. In Scotland, the cost/benefit will be neutral as all controls have already ceased prior to 2011.

Table 10: Total Benefit of Policy Option 2

Option 2 - Total Benefits	Year 0	1	2	3	4	5	6	7	8	9	Total Benefits	p.a.	PV
ENGLAND													
Government	£31,668	£31,668	£31,668	£31,668	£31,668	£31,668	£31,668	£31,668	£31,668	£31,668	£316,678	£31,668	£272,586
Farmers	£2,716	£2,716	£2,716	£2,716	£2,716	£2,716	£2,716	£2,716	£2,716	£2,716	£27,162	£2,716	£23,380
Total England	£34,384	£34,384	£34,384	£34,384	£34,384	£34,384	£34,384	£34,384	£34,384	£34,384	£343,840	£34,384	£295,966
WALES													
Government	£588,983	£588,983	£588,983	£588,983	£588,983	£588,983	£588,983	£588,983	£588,983	£588,983	£5,889,828	£588,983	£5,069,779
Farmers	£72,287	£72,287	£72,287	£72,287	£72,287	£72,287	£72,287	£72,287	£72,287	£72,287	£722,865	£72,287	£622,220
Total Wales	£661,269	£661,269	£661,269	£661,269	£661,269	£661,269	£661,269	£661,269	£661,269	£661,269	£6,612,693	£661,269	£5,691,999
ENGLAND AND WALES													
Total Benefits	£695,653	£695,653	£695,653	£695,653	£695,653	£695,653	£695,653	£695,653	£695,653	£695,653	£6,956,533	£695,653	£5,987,965

Note: Totals may not sum due to rounding

Net Benefit of Policy Option 2

85. Total benefits outweigh the total cost of preferred policy option 2, generating a positive net present benefit of £3.1m. This is shown in table 11 below.

Table 11: Total net benefit of Policy Option 2

Option 2 - Net Cost/Benefit	Year 0	1	2	3	4	5	6	7	8	9	Total	p.a.	PV
ENGLAND													
Government	€31,668	€31,668	€31,668	€31,668	€31,668	€31,668	€31,668	€31,668	€31,668	€31,668	€316,678	€57,578	€272,586
Farmers	-€7,359	-€7,359	-€7,359	-€7,359	-€7,359	-€7,359	-€7,359	-€7,359	-€7,359	-€7,359	-€73,588	-€13,380	-€63,342
Total England	€24,309	€24,309	€24,309	€24,309	€24,309	€24,309	€24,309	€24,309	€24,309	€24,309	€243,090	€44,198	€209,244
WALES													
Government	€588,983	€588,983	€588,983	€588,983	€588,983	€588,983	€588,983	€588,983	€588,983	€588,983	€5,889,828	€1,070,878	€5,069,779
Farmers	-€252,714	-€252,714	-€252,714	-€252,714	-€252,714	-€252,714	-€252,714	-€252,714	-€252,714	-€252,714	-€2,527,135	-€459,479	-€2,175,279
Total Wales	€336,269	€336,269	€336,269	€336,269	€336,269	€336,269	€336,269	€336,269	€336,269	€336,269	€3,362,693	€611,399	€2,894,501
ENGLAND AND WALES													
Net Benefit	€360,578	€360,578	€360,578	€360,578	€360,578	€360,578	€360,578	€360,578	€360,578	€360,578	€3,605,783	€655,597	€3,103,745

Note: Totals may not sum due to rounding

86. Table 11 shows a net cost to farmers of preferred policy option 2 due to the loss of headage payments. However, those who commented on this during the consultation agreed that the increased freedom to farmers from lifting controls (included as non-monetised benefits in this Impact Assessment) is likely to outweigh any costs due to the loss of headage payments, provided there was no consequential impact on the price of the end product due to loss of consumer confidence.

Business Assessment Option 2 (Preferred Option)

87. The direct impact on business associated with preferred Option 2 is shown by country in equivalent annual terms in table 12 below.

Table 12 Direct Impact on Business (Equivalent Annual) by Country

Country	Costs (£m)	Benefits (£m)	Net (£m)	Net (£m) 2009 prices
England	£0.01	£0.003	£0.007	£0.007
Wales	£0.33	£0.072	£0.258	£0.24
Scotland	£0	£0	£0	£0
Northern Ireland	£0	£0	£0	£0
UK	£0.34	£0.075	£0.265	£0.247

Note: Totals may not sum due to rounding

Risks

88. The Agency considers that this should be the preferred course of action as the risk to consumers is low. Thus, no further controls or regulation is required to maintain food safety or to comply with the requirements of Council Directive 96/29/Euratom on lasting exposure situations. Our assumptions are consistent with national and international guidance and are explained in full in the risk assessment report²².

89. There may be the perception that controls are being removed because of government cost savings. This may raise public concern that food safety is no longer being given the highest priority and result in a loss of consumer confidence in lamb from the affected areas. This was the key issue raised by stakeholders during the public consultation. However, the public consultation received coverage in both the local and national media, including prime time national TV. In responding to this coverage, the FSA has reinforced the message that our scientific assessment has shown the risk to consumers is very low and removing controls will not compromise consumer safety. This message has been welcomed by the media. In implementing the policy, the FSA will aim to work with the farming unions and meat industry and continue to reinforce this message.

²² Field, A 2011. An Assessment of Radiocaesium Activity Concentrations in Sheep in Restricted Areas of England and Wales and Potential Consumer Doses

Wider impacts

90. While farms have been gradually removed from restrictions over the last 26 years, this has been done on a small scale with a few farms each time. Removing all remaining restrictions would be the largest single derestriction since 1990 (at which time restrictions had been in place for less than 4 years). A large scale removal of restrictions on farms which have had these controls in place for 26 years may unduly impact on some farms due to the loss of income from headage payments. However, the Agency's position is that it is inappropriate to maintain regulation where the risk to consumers is considered to be very low.

Consultation

91. A 12-week consultation on the proposal to remove all the remaining post-Chernobyl sheep controls was launched on 17 November 2011 and concluded on 8 February 2012. The consultation documents can be found on the FSA website²³.
92. Officials from the FSA attended meetings with farming union officials and their members in North Wales both before and during the consultation period.
93. The following questions were asked as part of the public consultation in order to confirm the assumptions in this Impact Assessment:

Our Key Proposal

- **Q1:** Do you have any evidence that would alter the assessment that the risk to consumers is very low and that removing controls will not compromise consumer safety? Please provide evidence to support your response.

Further evidence to ensure our impact assessment is robust

- **Q2:** Do you agree with the estimates for the time farmers have to make themselves available during Mark and Release inspections, 2 hours per 100 sheep monitored and 1.5 hours for every 100 sheep inspected but not monitored (see paragraphs 68 to 71 of consultation draft impact assessment, equivalent to paragraphs 74 to 77 of this version)? If you disagree please provide evidence to support your response.
 - **Q3:** Please provide evidence of any financial implications that the removal of controls, and hence ceasing of headage payments, will have on farmers currently under restriction?
 - **Q4:** Do you consider that there are any further costs, benefits or other implications to the farming, meat processing and retail industry that would result from the proposal to remove all remaining controls which have not been considered in the Impact Assessment? If so, please provide evidence to support your response.
 - **Q5:** Do you agree with the assessment of costs and benefits outlined in the Impact Assessment? If you disagree, please provide evidence to support your response.
94. The FSA received 15 formal responses from a variety of organisations including the farming unions, meat industry, the Health Protection Agency and Cumbria County Council. We also received a response from the Shadow Minister for Rural Affairs of the Welsh Assembly and four of the restricted farmers.
95. The consultation showed that farmers believed the non-monetised benefits of removing controls outweighed any financial loss from the monitoring headage payments. Ceasing controls was seen as a reduction in burden by removing the disruption to normal farming activity. The responses received were generally supportive of the risk assessment work carried out by the FSA and agreed with the conclusions that there was a very low risk to consumers.

²³ <http://www.food.gov.uk/consultations/ukwideconsults/2011/removalpostchernobylsheepcontrol>

96. The responses from Wales highlighted concerns over potential adverse media coverage and the impact this might have on consumer confidence. To date, there has been no adverse media coverage.
97. The consultation responses have been considered and no substantial changes were required to the Impact Assessment or preferred option in response to the comments received.
98. A summary of the consultation responses are available on the FSA website:
<http://www.food.gov.uk/consultations/ukwideconsults/2011/removalpostchernobylsheepcontrol>

Statutory Equality Duties Impact Test

99. Under the statutory equality duties test the Food Standards Agency does not foresee any additional impact in terms of equality.

Small Firms Impact Test

100. This policy has a direct impact on upland sheep farms which are generally family run and would be classified as micro-businesses. The aim of this policy is to remove burden on farmers where there are no longer food safety concerns.
101. An initial meeting was held with representatives of the farming unions in August 2010. During the consultation, officials from the FSA attended meetings with farming union officials and their members in North Wales. The FSA will continue to engage with the affected farmers during and subsequent to the removal of controls.

Rural Proofing Impact Test

102. The impact to rural communities has been considered. Communications in rural communities will be managed by direct communication with affected farmers. The policy will impact on the agricultural industry in the affected areas, but this should not have any knock-on effects on the environment. There may be an impact on people in seasonal employment as temporary workers are employed to monitor during the peak movement periods. This should have a minimal impact in Cumbria and affect around 6 full time staff and 13 temporary workers in North Wales.
103. The impact on rural businesses has been considered as part of the Small Firms Impact test above.

Sustainable Development

104. There may be an impact on people in seasonal employment as temporary workers are employed to monitor during the peak movement periods. This should have a minimal impact in Cumbria and affect around 6 full time staff and 13 temporary workers in North Wales.
105. Our assessments suggest that consumers would not receive a dose at or above 0.26 mSv per year, the constraint of our current policy. Therefore, the risk to consumers is considered to be very low and removal of restrictions will not compromise food safety.
106. Impacts under the 3 pillars of sustainable development (environmental, economic and social) have been, and continue to be, considered in the preparation of the IA. Option 2 is the preferred option because it minimises the costs of industry and the public sector by removing regulation which is no longer required to maintain food safety. There are no notable benefits, including no reduction in food safety risk, associated with any alternative options considered.

Annex 1: Options considered but not taken forward to full impact assessment

107. A range of alternative options to the current *Mark and Release* controls have previously been considered as part of a review in 1999²⁴ and at a workshop meeting held in August 2010. These options were considered as part of the Agency's review but were subsequently discounted due to the very low risk demonstrated by the risk assessment which means they cannot be clearly shown to further reduce the already low doses.
108. An outline of the options considered and reasons why they have not been taken forward are set out below.

Alternative monitoring protocols

109. A range of alternative monitoring protocols were discussed at a stakeholder meeting in August 2010. These were:
- Monitoring at the market place or slaughterhouse
 - Monitoring sheep for sale or slaughter only
 - Monitoring a representative sample of sheep (e.g. 10% of each movement)
110. All alternative monitoring protocols are considered to be unsuitable due to the very low risk to consumers. They would be ineffective methods of improving food safety for the same reasons as the current monitoring protocol, as given under the Risk section of Option 1 in the main Impact Assessment (paragraphs 53 to 55).
111. In addition, the following specific concerns are relevant.

Monitoring at the market place or slaughterhouse

112. This option would cease on-farm monitoring and instead replace it with a programme of monitoring at market place or slaughterhouse, thereby only targeting animals that are likely to enter the food chain.
113. This would require establishing new monitoring protocols and either ensuring all markets and slaughterhouses have provision to carry out monitoring or restricting where farmers are permitted to send their sheep.
114. The view of stakeholders was that, if there were any concerns over food safety, this moved the monitoring away from source which reduced the level of control and removed the opportunity to remedy the situation (e.g. by allowing the sheep a further period of clean grazing).

Monitoring sheep for sale or slaughter only.

115. In this option, monitoring would still take place on farm, but only those destined for sale or slaughter would be monitored, thereby only targeting animals that are likely to enter the food chain. Farmers would be allowed to move sheep for other purposes without monitoring provided they declared they would not go for sale or slaughter for a specified period.
116. This option is already partly available at present for temporary movements out of the restricted area and regularly applied in North Wales (see paragraph 17) but the definition of eligible movements could be extended.
117. The view of stakeholders was that this may prove difficult to enforce and requires farmers to establish in advance the purpose of the movement which is not always possible. Any cost savings over the current scheme may be minimal as farmers may decide to monitor their sheep in all movements just in case they later decide to send them to slaughter.

²⁴ Nisbet, AF and Woodman, RFM, 1999. Options for the Management of Chernobyl-restricted Areas in England and Wales, NRPB-R305. National Radiological Protection Board.

Monitoring a representative sample of sheep (e.g. 10% of each movement)

118. This would provide savings to government but minimal savings to industry as farmers would still have to gather their sheep and make them available for monitoring.

Use of improved pasture and/or clean feed for clean grazing

119. Sheep would be required to spend a period of 2 to 4 weeks on improved pasture to allow time for the radiocaesium contamination to pass through the sheep. Where improved pasture is not available, sheep could be housed and fed clean commercial feed prior to slaughter.

120. This could either be made mandatory under a regulatory framework or provided as recommended guidance to farmers.

121. While this option has previously been used on a small number of farms in the form of *Conditional Consents*, these have been on the basis of specific conditions pertaining to individual farms. It is difficult to identify a definition of clean pasture which could be universally applied to all farms.

122. The risk assessment demonstrates that the risk to consumers is in any case very low, even before any clean grazing period²⁵. In many cases, the levels assessed in the risk assessment are below that which can be reasonably measured using the live monitoring technique. This makes it difficult to establish the potential reduction in dose that clean grazing may be able to provide.

123. Farmers who have access to improved pasture are likely to use this for grazing their sheep prior to slaughter in any case as they benefit from increased weight and therefore value of their sheep when sold.

124. Considering that the assessed dose to consumers is in any case very low, it is inappropriate to impose changes to the farming practices to those farms without suitable improved pasture where it will have an uncertain and probably minimal affect on reducing dose.

²⁵ Field, A 2011. An Assessment of Radiocaesium Activity Concentrations in Sheep in Restricted Areas of England and Wales and Potential Consumer Doses

Annex 2: Post Implementation Review (PIR) Plan

A PIR should be undertaken, usually three to five years after implementation of the policy, but exceptionally a longer period may be more appropriate. If the policy is subject to a sunset clause, the review should be carried out sufficiently early that any renewal or amendment to legislation can be enacted before the expiry date. A PIR should examine the extent to which the implemented regulations have achieved their objectives, assess their costs and benefits and identify whether they are having any unintended consequences. Please set out the PIR Plan as detailed below. If there is no plan to do a PIR please provide reasons below.

Basis of the review:

General duty to review policy decisions.

Review objective:

To review whether the objectives of the review (that removal of controls is risk based, proportionate and that consumer safety is not compromised) are still relevant and valid.

To review any new evidence and the latest radiological guidance to assess whether this may have altered our approach to removing controls.

To assess whether the removal of controls had any unintended consequences, for example loss of trade or additional burden on business or the public sector.

Review approach and rationale:

Approach: Desktop review of the latest available evidence and updates to radiological protection guidance.

Review of media coverage and any related consumer reaction.

Direct request for information from interested parties (in particular those who responded to the consultation) on any evidence of unintended consequences following removal of controls (e.g. evidence of adverse consumer reaction or loss of trade).

Rationale: Our assessment has demonstrated that the risk to consumers is very low. This risk will continue to decrease over time due to decay of the radiocaesium contamination. Therefore, it would not be proportionate to carry out a new systematic monitoring exercise for a revised risk assessment. However, a desktop review of the available evidence and any new guidance will inform a view as to whether the conclusions of the original assessment remain valid.

It is appropriate to review any unintended consequences from the removal of controls. If there are any widespread impacts, these are likely to be obvious and brought to the FSA's attention through media coverage and unsolicited correspondence from interested parties. However, smaller and localised impacts may be less obvious but can be ascertained through requests for information from interested parties such as the farming unions who have direct links to the farmers most likely to be affected.

Baseline:

Baseline is as laid out in the Impact Assessment.

Success criteria:

Success will be that removal of controls continues to be viewed as risk based and proportionate and led to no, or minimal, unintended consequences.

Monitoring information arrangements:

There is no intention to carry out systematic monitoring of sheep meat from the previously restricted area as the risks to consumers have been demonstrated to be very low. However, evidence from the FSA's general radiological monitoring programme will be considered as part of the review.

Reasons for not planning a review:

N/A