

Title: Plant Protection Products: Sustainable Use Regulations 2012 IA No: DEFRA1316 Lead department or agency: Defra Other departments or agencies: HSE & Devolved Administrations	Impact Assessment (IA)					
	Date: 22/12/2011					
	Stage: Final					
	Source of intervention: EU					
	Type of measure: Secondary legislation					
Contact for enquiries: caroline.kennedy@hse.gsi.gov.uk						

Summary: Intervention and Options	RPC Opinion: Amber
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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 One-Out?
£m 15.74	£m 15.74	£m 1.83	No

What is the problem under consideration? Why is government intervention necessary?
 Directive 2009/128/EC establishes a framework for community action to achieve the sustainable use of pesticides. The Directive only applies to pesticides that are plant protection products. Plant protection products (PPPs) are widely used in agriculture and other sectors to control pests, diseases and weeds. Effective crop protection is vital to ensure adequate control measures exist for the diversity of pest diseases and weed challenges faced by UK growers and to control pests and weeds in public spaces. PPPs can present potential hazards to human health and the environment and regulation is necessary to tackle these health and environmental risks.

What are the policy objectives and the intended effects?
 To implement the framework Directive in a way that ensures that UK businesses maintain their competitive edge while meeting our obligations in respect of the harmonisation of rules and practices for the sustainable use of pesticides. These include; making arrangements for training and certification of professional users, advisors and distributors; introducing rules relating to the sale of plant protection products; the establishment of a statutory regime for regular inspection of application equipment; introducing a permit system for aerial spraying and making rules for using pesticides in certain situations and places and storage and handling of these chemicals .

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)
 Option 1, to rely wholly on existing measures and not introduce any new regulations; this does not represent a full and proper transposition of the Directive and would therefore be very likely to trigger infraction proceedings.
 Option 2a, to rely on existing measures where these are necessary for the transposition of the Directive, introduce those necessary additional measures to achieve compliance and to replace the UK's existing arrangements for training and certification of PPP users with a copy out of those in the Directive. All available derogations will be taken up.
 The preferred option, 2b, is as for option 2a but additionally maintains the UK's existing training and certification requirements for pesticides users. This approach introduces no new additional costs in addition to those for option 2a. It is the preferred option given industry and other views, and the need to maintain public confidence in the use of PPPs.

Will the policy be reviewed? It will be reviewed. If applicable, set review date: 07/2017					
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
What is the CO ₂ equivalent change in greenhouse gas emissions? (Million tonnes CO ₂ equivalent)				Traded: n.a	Non-traded: n.a.

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

Signed by the responsible Minister: _____ **Richard Benyon** _____ Date: **20 June 2012** _____

Summary: Analysis & Evidence

Policy Option 1

Description:

FULL ECONOMIC ASSESSMENT

Price Base Year	PV Base Year	Time Period Years	Net Benefit (Present Value (PV)) (£m)		
			Low: Optional	High: Optional	Best Estimate: 0

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			

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

As this represents a failure to transpose all the provisions of the Directive, there is a risk that the UK Government will be subject to infraction proceedings and consequent fines. Under the Lisbon Treaty the fixed penalty fine for the UK would be a minimum lump sum of €9.6 million or a daily penalty rate for late transposition of €384,501 per day. Six months' fines for non-transposition could amount to €69 m., but the total figure cannot be determined at the outset.

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

The businesses and organisations involved in the pesticides including training providers, user groups and distributors have been gearing up and adapting their practices for some time in order to be ready for the requirements of the Directive. A failure to transpose the additional necessary measures would introduce a significant degree of uncertainty for business and lead to the loss of certain anticipated business opportunities.

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			

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

This option represents continuation of the status quo and is therefore treated as the baseline against which other options are compared.

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

None.

Key assumptions/sensitivities/risks

Discount rate (%)

The risk of fines is predicated upon the assumption that the European Commission would decide to proceed with the infractions process.

BUSINESS Assessment (Option 1)

Direct impact on business (Equivalent Annual) £m:			In scope of OIOO?	Measure qualifies as
Costs: 0	Benefits: 0	Net: 0	N.A.	N. A.

Summary: Analysis & Evidence

Policy Option 2a

Description:

FULL ECONOMIC ASSESSMENT

Price Base Year 2011	PV Base Year 2011	Time Period Years 10	Net Benefit (Present Value (PV)) (£m) - £15.74		
			Low: Optional	High: Optional	Best Estimate: - £15.74m

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	0.0945	1.66	15.74

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

Costs for previously exempt grandfather rights holders having to become certificated in order to buy professional products after 26 November 2015 (£2.6 - 4m). Costs for owners of plant protection product application equipment to have the equipment inspected at regular intervals (£12.2m over ten years). Cost to certificate staff of distributors of non-professional products - £2.4m by 2015. Small scale costs on amenity sector in respect of producing, and familiarisation with, new guidance on pesticide use in certain situations

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

There are no key non-monetised costs in this IA.

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			

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

No monetised benefits have been identified.

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

Any potential reduction in the health, wildlife and environmental risks associated with the use of plant protection products could promote public confidence in their use. The equipment inspection regime will provide business opportunities for equipment inspectors and repairers and may result in new jobs in areas which are currently not served by the existing arrangements or where demand is high. More efficient use of equipment will result in less waste of expensive products; less problems with crop residues and less risk to the health of users and others. These may translate into monetary benefits but there is no reasonable basis on which to quantify them.

Key assumptions/sensitivities/risks	Discount rate (%)	3.5
The assumptions in the modelling of costs are set out in the relevant sections.		

BUSINESS ASSESSMENT (Option 2)

Direct impact on business (Equivalent Annual) £m:			In scope of OIOO?	Measure qualifies as
Costs: 1.83	Benefits:	Net: - 1.83	No	N.A.

Summary: Analysis & Evidence

Policy Option 2b

Description:

FULL ECONOMIC ASSESSMENT

Price Base Year 2011	PV Base Year 2011	Time Period Years 10	Net Benefit (Present Value (PV)) (£m) - £15.74		
			Low: Optional	High: Optional	Best Estimate: - £15.74m

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	0.0945	1.66	15.74

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

Costs for previously exempt grandfather rights holders having to become certificated in order to buy professional products after 26 November 2015 (£2.6 - £4m). Costs for owners of plant protection product application equipment to have the equipment inspected at regular intervals (£12.2m over ten years). Costs of certificate staff of distributors of non-professional products - £2.4m by 2015. Small scale costs on amenity sector in respect of producing, and familiarisation with, new guidance on pesticide use in certain situations

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

There are no key non-monetised costs in this IA.

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			

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

No monetised benefits have been identified.

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

A potential reduction in the health, wildlife and environmental risks associated with the use of plant protection products could promote public confidence in their use. This option includes a cost neutral proposal in respect of the maintenance of a general obligation on users of professional PPPs to be trained and certificated. It is the option of the three that will have greatest buy-in by the range of businesses involved with pesticide production, distribution and use.

The equipment inspection regime will provide business opportunities for equipment inspectors and repairers and may result in new jobs in areas which are currently not served by the existing arrangements or where demand is high. More efficient use of equipment will result in less waste of expensive products; less problems with crop residues and less risk to the health of users and others. These may translate into monetary benefits but there is no reasonable basis on which to quantify them.

Key assumptions/sensitivities/risks	Discount rate (%)	3.5
The assumptions in the modelling of costs are set out in the relevant sections.		

BUSINESS ASSESSMENT (Option 3)

Direct impact on business (Equivalent Annual) £m:			In scope of OIOO?	Measure qualifies as
Costs: 1.83	Benefits:	Net: - 1.83	No	N.A..

Introduction

Problem under Consideration

1. Directive 2009/128/EC¹ of 21 October 2009 establishing a framework for Community action to achieve the sustainable use of pesticides (the Directive) applies to pesticides that are plant protection products (PPPs), although it is intended to apply to other types of pesticides, such as biocides, in future.

2. The Directive is intended to bring a degree of harmonisation to rules and practices around the use of pesticides. It includes requirements for: training and certification; regular inspection of application equipment; and specific obligations relating to use in certain areas, aimed at protecting human health and water. It is a 'framework Directive' which, generally, sets out what needs to be achieved but does not refer to value limits. Article 4 states that the Member States' National Action Plans shall describe how they will implement the measures necessary to implement the Directive's requirements/aims. During the negotiations to develop the Directive it was envisaged that Member States should use an appropriate range of measures (statutory, voluntary and fiscal) to achieve the desired aims. The UK has had a stringent regulatory regime governing pesticide use in place since 1987 and the past decade or so has seen an increasing number of effective industry-led non-statutory arrangements. This extensive and mature regime helps to ensure PPPs are used in ways required by the Directive. This includes not only pesticide laws but also: worker protection, water protection, nature conservation, transport and waste legislation; government and industry advice and training programmes; use of incentives (principally via farm subsidy schemes); and industry stewardship programmes. The success of the UK's voluntary and non-statutory measures in improving best practice and reducing risk is reflected in the commitment in the Government's National Pesticides Strategy to appropriate use of voluntary approaches. The UK is therefore well placed to provide for non-regulatory solutions in meeting the aims of the Directive. Only where non-statutory measures are judged to be legally insufficient, are statutory solutions employed.

3. Careful consideration has, therefore, been given to the approach to transposition; in particular the degree to which 'copy-out' should be used. The Government's aim is to; properly and fully transpose the Directive; deliver a proportionate and enforceable regime to protect human health and the environment; recognise and avoid disruption to the existing effective controls; avoid duplication of existing requirements/powers; and minimise burdens on, and provide legal clarity for the regulated community. In some cases a direct copy out approach could have increased the direct costs to business. We concluded that a "common sense" approach – copying out, or clarifying, some elements of the Directive and carrying forward some existing legislative requirements - best achieves the Government's aims.

¹ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:309:0071:0086:EN:PDF>

Rationale for intervention

4. The Directive has been agreed by all Member States and should have been transposed into domestic law by 26 November 2011. Although this date has passed we are committed to putting into place the measures required for transposition as soon as possible.

Policy Objective

5. Article 1 of the Directive explains that the Directive's objective is to establish: "a framework to achieve a sustainable use of PPPs by reducing the risks and impacts of pesticide use on human health and the environment and promoting the use of Integrated Pest Management and of alternative approaches or techniques such as non-chemical alternatives to PPPs". The intended effect is the reduction of risks and adverse impacts on human health and the environment associated with the use of PPPs.

6. Implementation of the Directive will therefore establish a framework to underpin good practice in the storage, use and disposal of PPPs, with the aim of bringing greater harmonisation of standards across the EU. Key features include: the establishment of National Action Plans (NAPs); compulsory inspection of application equipment and arrangements governing access to training and certification for users, distributors and advisors; a ban (subject to derogations) on aerial spraying; special measures to protect the aquatic environment and drinking water, public spaces and special conservation areas; minimising risks to human health and the environment through handling, storage and disposal of PPPs and their packaging; and the promotion of low input pest management regimes (including Integrated Pest Management (IPM)), with progress on all these features measured through the use of 'risk indicators.

7. The UK's policy objective is to incorporate the minimum necessary additional measures required by the Directive with the minimum necessary elements of the UK's existing legislative requirements governing for the use of PPPs, in order to provide a seamless transition to a regime under European legislation with equivalent standards for the protection of human health and the environment as currently provided for. In most areas, what businesses are already doing to meet these existing requirements will be enough to ensure continued compliance under the European regime.

8. There is one element of the overall approach, in which we propose to continue certain existing arrangements; concerning the training and certification of pesticide users, in order to support the implementation of the Directive. This proposal is the difference between options 2a and 2b. It has been adopted with the support of stakeholders including the crop protection industry and user groups, who believe that maintaining a general obligation on **users** of potentially hazardous PPPs (whether involved in purchases or not) to be trained and certificated is an essential legal backstop to support the integrity of the regulatory regime. As the existing UK requirements apply those obligations set out in the Directive at this additional control point, they could be perceived, technically, as gold plating. However since the certificates that people already hold will continue to be valid under the Directive, this approach will add no new costs to business except by comparison to a situation in which a loophole developed that would progressively undermine the implementation of the Directive and previous UK law. The industry itself does not consider the approach to be gold plating.

Main affected Groups

9. The previous consultation identified the following groups as primarily affected by the proposals;

- Those involved in agricultural and horticultural crop production, and forestry; amenity users: the amenity use of PPPs includes all professional use outside of agricultural, forestry and horticultural activities, such as that by local authorities (road verges, pavements, parks etc) the Highways Agency, Network Rail, British Waterways, airport management, the Ministry of Defence, utility companies, and other private users (car parks, retail parks, camp sites, golf courses, bowling greens, sports grounds, etc). The use of PPPs by these organisations is not necessarily limited to amenity applications. For example, local authorities may also use these chemicals for horticultural applications and conservation organisations may also use them for agricultural, forestry and horticultural applications;
- Manufacturers of plant protection products (approval holders or, more correctly, authorisation holders)
- Agronomists, advisors, contractors, including commercial enterprises which carry out spraying including aerial spraying;
- All those involved in the sale and supply of plant protection products including; distributors of plant protection products to both amateur and professional users; producers of plant protection products;
- Trade and industry representative groups and unions; agricultural and crop protection industries and associated training, advisory and supply industries;
- The public;
- Government: Competent and Enforcement Authorities; Health and Safety Executive, Defra, Local Authorities; environmental regulators; statutory nature conservation organisations; and Devolved Administrations; and
- Environmental non-governmental organisations, charities, campaign groups.

OPTIONS

Option 1: Maintain the existing regulatory landscape for PPPs in the UK (do nothing new)

10. The UK's longstanding national rules for the regulation of PPPs were made under the Food and Environment Protection Act (FEPA) 1985². In addition to the product-specific conditions arising from the regulatory evaluation, there were general rules applying to all PPPs. In the UK, the Control of Pesticides Regulations (COPR) 1986³ (as amended) set general rules for the advertisement, sale, supply, storage and use of pesticides. The requirements for storage, sale, supply and use include requirements for training and, in most circumstances, a requirement to hold a certificate. There are certain rules on the mixing of PPPs and particularly conditions applying to the aerial application of PPPs including notification of various people and bodies that might be affected by the spraying operation. Over time the UK's domestic arrangements were overtaken by a European system for the approval of PPPs under Directive 91/414/EC⁴ and the Plant Protection Products (Basic Conditions) Regulations 1997⁵ (BCRs) were introduced to apply the same conditions set out in COPR to the European regime. The UK's domestic pesticides legislation can be found <http://www.legislation.gov.uk/>.

11. Directive 91/414/EEC was replaced by Regulation EC No.1107/2009⁶ in June 2011 and domestic regulations which set out powers of enforcement, offences and penalties came into force in the UK on 24 September 2011. Regulation 1107/2009 governs the authorisations regime for PPPs, and is a key element of the EU Thematic Strategy for Pesticides⁷, along with the Directive on the Sustainable Use of Pesticides (2009/128EC) which sets a framework for the sustainable use of pesticides. The Directive came into effect on 26 November 2011. The BCR's will be revoked when the regulations to transpose the Directive come into force.

12. The current European and the UK systems were therefore similar and could be summarised as ensuring that PPPs can be used without harmful effects on human health or unacceptable effects on the environment and are effective in dealing with pests, weeds or diseases.

13. The UK's domestic regulatory system therefore sets a stringent baseline of controls for PPPs and is intended to ensure that there are no unacceptable risks. The Government also encourages pesticide users to find ways to minimise their use of PPPs and particularly to reduce further the risk of adverse effect of pesticides on human health or the environment. Vehicles for this work include research and user information concerning best practice and the work is supported by the Pesticides Forum⁸, a stakeholder body which advises Ministers generally on the use of PPPs.

14. The UK therefore has existing legal requirements governing;

- Training and certification of operators, those involved in sale and supply of PPPs and storekeepers
- Aerial spraying, although these arrangements are framed differently to those set out in the Directive

² <http://www.legislation.gov.uk/ukpga/1985/48>

³ <http://www.legislation.gov.uk/ukksi/1986/1510/made>

⁴ [http://eur-](http://eur-lex.europa.eu/smartapi/cgi/sga_doc?smartapi!celexapi!prod!CELEXnumdoc&lg=EN&numdoc=31991L0414&model=guichett)

[lex.europa.eu/smartapi/cgi/sga_doc?smartapi!celexapi!prod!CELEXnumdoc&lg=EN&numdoc=31991L0414&model=guichett](http://eur-lex.europa.eu/smartapi/cgi/sga_doc?smartapi!celexapi!prod!CELEXnumdoc&lg=EN&numdoc=31991L0414&model=guichett)

⁵ <http://www.legislation.gov.uk/ukksi/1997/189/contents/made>

⁶ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:309:0001:0050:EN:PDF>

⁷ <http://ec.europa.eu/environment/ppps/home.htm>

⁸ <http://www.pesticides.gov.uk/guidance/industries/pesticides/advisory-groups/pesticides-forum>

- The protection of human health and the environment (including creatures and water) in the use, storage and handling of PPPs.

15. There is also a non-statutory scheme for the regular inspection of pesticide application equipment scheme and a number of industry-led (non-regulatory) cross-cutting initiatives aimed at encouraging best practice.

Voluntary Arrangements

16. In addition to the regulatory risk assessment and user standards such as those detailed in the Code of practice for using plant protection products⁹, industry bodies have been active in developing a number of 'best practice' measures. These are designed to minimise the risks arising from the use of PPPs. The most prominent of these industry bodies has been the Voluntary Initiative¹⁰ (VI) which was established in 2001, initially to demonstrate that voluntary measures could deliver equivalent or better benefits than a possible pesticides tax. The VI is composed of a broad range of industry and other stakeholders and has developed a range of measures to encourage best practice in the use of PPPs. Amongst the schemes are a National Register of Sprayer Operators¹¹ (NRoSO) which provides continuing professional development for pesticide users and the National Sprayer Testing Scheme¹² NSTS run by the Agricultural Engineers Association¹³ (AEA) which effectively acts as an MOT for spray equipment. The Amenity Forum¹⁴ (Amenity Landscaping Environmental Stewardship Forum) was established in 2003 to support the work of the VI. It brings together professional organisations with an involvement in the amenity horticulture sector to develop and promote best practice measures.

17. Key VI measures have been adopted by another industry initiative, the farm assurance schemes. These are voluntary schemes which establish production standards covering food safety, environmental protection, animal welfare issues and other characteristics seen to be important by consumers. They include regular, independent checks on the producers that belong to the schemes. The schemes are designed to assure consumers that farmers and growers are producing food in accordance with all legal requirements and an agreed set of standards relating to good agricultural practice.

18. In addition to these initiatives pesticide manufacturers and organisations which represent key stakeholder groups have developed a range of initiatives and advice to help users minimise risks. Examples include the, HGCA¹⁵, Forestry Commission¹⁶, Crop Protection Association¹⁷, LEAF¹⁸ Pesticides Action Network¹⁹ (PAN-UK) and the RSPB²⁰ and various pesticide manufacturers product stewardship groups.

19. In many areas, therefore, the UK could be said to already have measures that meet the objectives set out in the recitals of the Directive, however there are significant gaps such as the lack of a mandatory inspection regime for application equipment and, in other areas, such as the rules for aerial spraying, the UK's arrangements are different to those set out in the Directive. Legal advice is that an approach of simply relying on the UK's existing measures

⁹ <http://www.pesticides.gov.uk/guidance/industries/pesticides/topics/using-pesticides/codes-of-practice/code-of-practice-for-using-plant-protection-products.htm>

¹⁰ <http://www.voluntaryinitiative.org.uk/>

¹¹ <http://www.nroso.org.uk/>

¹² <http://www.nsts.org.uk/>

¹³ <http://www.aea.uk.com/>

¹⁴ <http://www.amenityforum.co.uk/>

¹⁵ HCGA is the cereals and oilseeds division of the Agriculture and Horticulture Development Board:

<http://www.hgca.com/content.template/4/0/About%20HGCA/About%20HGCA/About%20HGCA%20Home%20Page.msp>

¹⁶ <http://www.forestry.gov.uk/>

¹⁷ <http://www.cropprotection.org.uk/>

¹⁸ Linking environment and Farming: <http://www.leafuk.org/leaf/home.eb>

¹⁹ <http://www.pan-uk.org/>

²⁰ <http://www.rspb.org.uk/>

would not constitute a full and proper transposition of the Directive and would therefore present a realistic prospect of infraction proceedings for non-compliance, with consequent fines.

Option 2a: Adopt measures to formally transpose the Directive, including a revocation of the UK's existing general obligation on users to be trained and certificated and replacing this with a copy out of the provisions relating to training in the Directive.

20. Option 2a would broadly maintain the status quo, carrying over those existing UK regulations that will enable us to meet our obligations under the Directive, while making those additional measures necessary to ensure the UK completes a full and proper transposition of the Directive. As described under Option 1, the UK's longstanding and rigorous regulatory regime for PPPs (including plant protection products) and other existing statutory and voluntary controls place it in a good position with respect to many of the areas covered by the Directive. In a number of areas the UK can comply with the requirements of the Directive by means of existing legal, voluntary and other arrangements; most significantly by relying on the training regime to deliver the necessary behavioural changes.

21. However additional or different controls will be necessary in some areas (such as equipment inspection). We are transposing on the basis of making those changes necessary for the UK approach to be consistent with the requirements of the Directive. Under option 2a the transposing legislation would include arrangements for:

- developing and maintaining a National Action Plan;
- a new legal requirement prohibiting those purchasing, or causing or requiring another person to purchase, a professional plant protection product from doing so unless the user holds an appropriate training certificate (this will be the same training certificate as is currently required for use of the product);
- a new statutory regime requiring the inspection of plant protection product application equipment (PPPAE) at regular intervals, and;
- permitting aerial spraying in limited circumstances (new statutory arrangements);
- reframing the UK existing legal obligations in relation to the responsibility of users and others who work with PPPs to take reasonable precautions to protect human health and the environment with some additional specific measures in relation to the protection of the aquatic environment and drinking water and the use of PPPs in specific areas
- the use, handling and storage of products (based on existing requirements).

Training and Certification

22. Option 2a would also revoke the UK's existing general obligation in respect of the training and certification of users, relying, instead, solely on the related provision in the Directive which requires that government places a restriction on the sale of professional products to those who hold a certificate of training. The relevant provision will be drafted in such a way as to prevent proxy purchasing on behalf of un-certificated users and also to prevent a situation where a purchaser who will not be the end user (a farm secretary, for example) will not have to get a certificate in order to just purchase the product for someone else to use. This option is not supported by the majority of stakeholders (including the range of industry and user groups to which it directly relates), as described in the evidence base.

Option 2b: Adopt measures to formally transpose the Directive and, in the transposing legislation, carry across the UK's existing general obligation on users to be trained and certificated.

23. Option 2b is the same as option 2a except; instead of revoking the UK's existing general obligation on users to be trained and certificated we would carry this across in the legislation transposing the SUD. This would ensure the continuation of existing safety standards by preventing any gaps in the requirement for users to be trained (such as when users acquire, and consequently use, products by any means other than through a direct sale) and would help underpin the behavioural changes required under the Directive as a whole and avoid the need for specific legislative requirements elsewhere. This option is the approach strongly favoured by the range of industry organisations and other stakeholders that have expressed a view.

Preferred Option

24. In order to meet our Treaty obligations and avoid the prospect of infraction proceedings against the UK, with consequential reputational damage and fines, option 1 was discounted.

25. Careful consideration has been given to the approach to transposition; in particular the degree to which 'copy-out' should be used. The Government's aim is to implement the Directive in a way which: ensures it is properly transposed; delivers a proportionate and enforceable regime to protect human health and the environment; recognises and avoids disruption to the existing effective controls; avoids duplication of existing requirements/powers; and minimises burdens on, and provides legal clarity for, the regulated community. In some cases a copy out approach would have increased the direct costs to business. We concluded that a "common sense" approach – copying out, or clarifying, some elements of the Directive and carrying forward some existing legislative requirements - best achieves the Government's aims.

26. With respect to the choice between option 2a and option 2b, the considerations included the protection of human health and the environment, costs to business and the views of the regulated industry. Across all sectors of affected industry, from the crop protection manufacturers, to the agriculture industry and the contracting sector, there was a strong consensus that a literal transposition of the Directives provisions relating to training and certification (as provided for under Option 2a) with a corresponding revocation of the UK's existing certification arrangements would have significant adverse implications.

27. Option 2b is the preferred option, given the need to protect the integrity of the regulatory regime, stakeholder views and the fact that it incurs no additional costs to business over and above those set out in option 2a (as described in the evidence base).

APPROACH TO ANALYSIS OF COSTS AND BENEFITS

28. This final IA presents a quantitative assessment of the potential costs and benefits to the UK of the changes that will result from the implementation of the Directive. The costs have been estimated on a UK wide basis and are assessed relative to the "do nothing" option.

29. Impacts have been assessed over a timescale of approximately ten years. The decision to use this timeframe was based on various factors; different provisions in the Directive come into effect over the next 5 years but the most significant cost arises out of the requirement for owners to have their plant protection product application equipment (PPPAE) inspected at regular intervals. The majority of equipment that must be inspected should have gone through two inspection cycles within 10 years from the coming into force of this SI.

30. The costs and benefits are subject to some uncertainty. The main causes for this uncertainty are that:

- it is difficult to predict how benefits will differ between alternative transposition options; there is currently very little evidence which can be used to monetise values for environmental, societal or other benefits and attribute these to relatively small changes in regulatory regime;
- The number of users relying on an exemption from a legal obligation to hold a training certificate is unknown
- The number of pieces of application equipment (PPPAE) in use in the UK is unknown and the benefits that will result from regular inspection and consequent correction of faults with the equipment cannot be quantified.

31. The cost of inspection varies according to the service provider and the cost of correcting faulty equipment is not predictable.

32. We have therefore used a variety of information sources to arrive at reasonable estimates and to seek further information from specific stakeholders that responded to the public consultation.

Costs of Option 1

33. The direct costs to business of option 1 are baseline zero as since it represents a continuation of current arrangements. However there would be a cost to Government. A recent communication from the Commission²¹ has highlighted the new powers arising from the Lisbon Treaty which are specifically required to give stronger incentives to member states to transpose Directives within the deadlines laid down. If imposed the fixed penalty fine for the UK would be a minimum lump sum of Euros 9.6 million or a daily penalty rate for late transposition of Euros 384,501 per day. Six months late transposition could amount to Euros 69 million. The likelihood is that the necessary arrangements would have to be put in place in any case, once the UK had been found in breach.

Costs of Option 2a and 2b

34. The costs of the necessary provisions, which have been developed so as to minimise their impact on business, are set out in the table below and in the following evidence base. The policy alternatives for training and certification which give rise to the difference between options 2a and 2b are set out in the relevant section (Article 5, training and certification of users, distributors and advisors) but the evidence base applies to both equally, since there is no difference in costs between the two options.

Table 1: Direct costs to business and Government arising out of the Directive

Provision	Option 1	Options 2a and 2b		Affected Sector
		Total one off cost £ (total direct accounting i.e. undiscounted cost)	Year in which costs arise	
Article 6 requirement for distributors to employ certificated		2.4m	Between 2012 and 2020	Distributors of non-professional

²¹ Communication from the Commission- Implementation Article 260(3) of the Treaty 2011/C 12/01- OJ 15.1.2011

	Option 1	Options 2a and 2b		
staff (<i>cost relates to distributors of non-professional products that are not micro-distributors</i>)				PPPs
Article 6 requirement for purchasers of PPPs to hold a certificate <i>Grandfather rights holders</i>		2.6 – 4.0m	Between 2012 and 2015	Users (who don't already have a certificate)
Article 8 requirement for inspection of application equipment <i>(derogation for handheld and knapsack sprayers)</i>		£12,281,310	Between 2012 and 2021	Agriculture, Horticulture Amenity contractors
Article 11 additional guidance for amenity sector on protection of water and Article 12 additional guidance for amenity industry on reduction of risk in public spaces		93,000	2012	Amenity contractors
Article 15 generation of harmonised EU indicators.		1500	2012-13	Government
Infraction fines for non-notification of SUD SI	Euros 69 million +			Government

Evidence base

ARTICLE 4: NATIONAL ACTION PLANS

35. The Directive requires member states to adopt National Action Plans (NAP) to set up quantitative objectives, targets, measures and timetables to reduce risks and impacts of pesticide use on human health and the environment and to encourage the development and introduction of integrated pest management and of alternative approaches and techniques.

Existing UK arrangements

36. Following a recommendation from the Efra (Environment Food and Rural Affairs) Select Committee in 2005 the UK Government developed a National Pesticides Strategy. The aims and content of the Strategy and involvement of stakeholders in shaping and developing it means that this document is similar to the NAP envisaged by the Directive. It aims to achieve high standards of human and environmental protection against the risks posed by pesticides whilst maintaining the economic viability of crop production and effective control of pests, weeds and diseases. The Strategy largely draws together existing legislative, statutory and voluntary measures which contributes towards its aims. It also provides a mechanism for co-ordinating and directing on-going activities, identifying gaps in the control regime or areas for improvement and overseeing the development of necessary activities.

Necessary Measures

37. The transposing legislation will require the Ministers to develop and maintain a NAP. An administrative exercise will be undertaken to review and recast the existing National Pesticides Strategy to ensure it fits more closely with the NAP envisaged in the Directive. This is not expected to alter the fundamental nature of the existing approach.

Costs

38. The NAP describes how the Government will implement the measures in the Directive, so the bulk of the costs associated with the Plan are attributable to the measures detailed elsewhere in this Impact Assessment.

39. There are relatively minor costs to industry, government and other stakeholders associated with participation in development and maintenance of the NAP. Currently the National Strategy 'Action Plan Groups' are charged with overseeing/taking forward activity relating to: human health, environment (water and biodiversity); amenity use, amateur use; and availability of, and alternatives to, PPPs. The Government has outlined plans to, reducing the number of groups and making greater use of short-life working groups to address specific issues. This will reduce costs to all involved in the process. By way of an illustration the costs associated with time and travel costs spent by Non-Government Organisations of participating in the Action Plan Groups is estimated at £13000 per annum [62 non-govt members spending 2 days each year on meetings (124 x 7.5hr x 7.27 hr/rate + travel expenses of 124 x £50 per meeting)].

ARTICLE 5; TRAINING AND CERTIFICATION OF USERS, DISTRIBUTORS AND ADVISORS

40. The Directive requires that Member States set up systems to ensure access to initial and ongoing training, and establish systems for certification, for distributors, advisors and professional users of PPPs so they are fully aware of the potential risks to human health and the environment and of the appropriate measures to reduce those risks as much as possible.

The current UK training and certification regime

41. The UK already has in place a mandatory training and certification regime similar to that envisaged by the Directive. Under these arrangements persons who use, sell, supply or otherwise market agricultural pesticides (which broadly equate to the Directive's professional products) must hold a certificate of competence or work under the direct supervision of a person who holds such a certificate. Although not explicit, the certificate referred to in the current regulations for sale and supply is the appropriate qualification for advisors.

42. Only those born before 31 December 1964 who use an agricultural product on their own or their employer's land are exempt from the certification requirement. For all other types of PPP use there is a general requirement for users to be competent. It also requires that those who store pesticides (in quantities greater than 200 litres/200 kg) for the purpose of sale and supply must hold a certificate (a storekeeper's certificate) or work under the supervision of someone who holds one. Thus, currently;

- distributors (sale and supply) of professional (agricultural) products are required to employ those certificated for sale and supply (the advisor certificate) and storekeepers;
- aside from a small subset of exempt groups, users and those who sell and supply (advisors) are currently required to be certificated
- additional ongoing training currently takes place on a voluntary basis.

Training and certification under the Directive

43. As explained above, Article 5 of the Directive requires that Member States establish training and certification systems; it does not oblige anyone to undertake the training or hold a certificate²². However other Articles do include explicit requirements in this regard;

- Article 6 of the Directive requires distributors to employ certificated staff (to provide information or advice on products to customers) and seeks to ensure that all users are certificated by restricting sales of professional products to those persons holding a certificate.
- Article 8 requires that professional users are trained in the proper use of PPPAE in order to be able to conduct calibrations and technical checks (in accordance with the training received, as provided for in Article 5)
- Article 9 of the Directive requires that users carrying out aerial spraying are trained and certificated.

44. Due to the complexities of the supply and use chain in the UK (co-operative buying is common, as is the contracting out of pesticide application work) a restriction on sales of professional products would not be sufficient to ensure that all, or even most, users are trained and certificated. The sales restriction would only achieve the desired effect if the person

²² The reason the Directive does not include such an obligation is because the Commission legal services advised against doing so, in light of the fact that this might have the effect of making these roles into professions with implications under various European employment laws. However, these jobs have been professions in the UK for a number of years.

purchasing the product was always the intended end –user, which, in the UK, is often not the case.

45. A literal transposition of the Directive therefore would not result in a level playing field, in that only those users that purchase products would have to be trained and certificated by law. Some elaboration is necessary to ensure that it is the intended end-user that is required to hold the certificate rather than, necessarily, the purchaser who might never intend to use it. There are also practices, such as those relating to Integrated Pest Management, and the need to calibrate and check application equipment that can only realistically only be understood by having undergone the necessary training. It would also result in gaps in the regulatory regime allowing, for example, that a non –professional user who acquired professional product other than by direct sale, could use it in their home or garden without being guilty of an offence and would provide no protection where a person legitimately purchased, and later sold on, a product. Such activity could have significantly adverse consequences, including for human health.

Since the UK's existing regulatory framework for PPPs must be replaced by that imposed by the Directive, a decision was required in terms of whether and how training and certification is addressed in the new regime. We could either; a) revoke the UK's existing training and certification requirements and rely solely on those provisions set out in the Directive, or b) carry over and merge them with the requirements in the legislation transposing the Directive, in order to maintain the current position.

Industry views

46. Across all sectors of affected industry, from the crop protection manufacturers, to the agriculture industry and the contracting sector, there is a very strong consensus that a literal transposition of the Directive, with a corresponding revocation of the UK's existing certification arrangements, would have significant adverse implications. It is one of the few areas where industry unanimously agree that the current arrangements should be maintained and even strengthened by regulation where permitted by the Directive. Industry, including user groups, is opposed to the replacement of the UK's existing certification scheme with what are viewed as less comprehensive obligations a set out in the Directive. The full range of industry bodies have made repeated representations to the Government, expressing the view that this presents significant risks to public health, environmental protection and public confidence in the use of PPPs in the longer term.

47. The use of pesticides has long been a contentious and emotive subject in the UK and the industry has expended considerable effort over the years in voluntary schemes to raise standards and improve public confidence in this area. Industry stakeholders would not support measures that they believe would undermine the considerable progress that has been made. In this particular case, the deregulation agenda finds itself somewhat at cross purposes with other Government policies.

Other stakeholder views

48. The focus of pesticide campaigns or environmental organisations has tended toward other areas of the Directive with the view that the Government should be introducing stronger regulations across the board. That they have not made particular emphasis on the training and certification issue may be partly due to the fact that the option of revoking existing requirements was not included in the first consultation carried out on the Directive in 2010. However the views of those groups that have made specific representations on the subject since that time have been strongly in line with those of industry set out above.

The Independent Farming Regulation Task Force report

49. Among the main principles and recommendations outlined in the MacDonald report²³ are that Government should put the end-user at the centre of policy-making and agree, in partnership with industry, the problem, the desired outcome, the science and the solution. The proposal to retain existing UK certification requirements is industry-led, reflecting the need for a regulatory intervention that has been determined on the basis of risk. Macdonald recommends that Government involves industry in the development of non-regulatory and regulatory solutions, and sets the framework for industry to take responsibility. In this case, the clear industry consensus is that a regulatory solution is required, this being an essential legal backstop to the considerable voluntary approaches that exist to promote good practice in the use of PPPs and prevent harm to human health and the environment.

Options for training and certification

50. Options 2a and 2b are identical except in respect of the provisions relating to training and certification of professional pesticide users;

- **Option 2a:** Adopt a “copy out” approach to Article 6(2) of the Directive; revoke the UK’s existing statutory training and certification arrangements and impose training and certification for distributors and those users who purchase professional products. In light of stakeholder views, and the need for mandatory operator training to underpin the UK’s approach to implementing the Directive, this option was discounted
- **Option 2b:** Maintain existing UK requirements for operator certification when transposing the Directive. As users in the UK are already required to hold a certificate, and those certificates are adequate to provide evidence of knowledge of the training subjects out in the Directive, this proposal is cost neutral.

Benefits of option 2a

51. There are no benefits of cost savings in respect of Option 2a. The question of potential benefits or cost savings in respect of option 2a would arise if new entrants to the market (new spray operators or contractors) were not going to be subject to the minimum EU requirements for operator certification. However, under the restriction on sales required by Article 6 of the Directive the purchaser/ intended end –user of a professional product must hold a certificate (and there therefore should be no difference in costs between options 2a and 2b except by comparison to a situation in which a loophole developed that would progressively undermine the legal requirements of the Directive.

Benefits of option 2b

52. There are clear benefits in maintaining the current requirements for user certification and these will be manifested in terms of the continuation of the high standards of practice associated with the use of PPPs in the UK; including continued production of high quality produce and protection of human health and the environment. Currently the UK enjoys a high level of training for users and this minimises the risks of adverse impacts arising out of the misuse of products and their associated costs.

53. Therefore the benefits can probably best be described in terms of what might happen if the existing requirements were to be revoked. If, in future, there was no offence relating to un-certificated operators using products authorised for professional use, anyone who acquired a product outside of a direct purchasing arrangement (someone who was given leftover product for example, or who used a product that had originally been purchased for someone else to use), may not be in breach of a specific law in using that product. It is possible that a loophole

²³ <http://www.defra.gov.uk/publications/files/pb13527-farm-reg-task-report.pdf>

could develop whereby the original purchaser had met their legal obligations at the time of purchase, but it is difficult to identify who is responsible for the correct use of that product at a later stage. There would be significant risks to human health and the environment posed by the activities of untrained operators using products authorised for professional use. The resulting social and other potential costs are unpredictable, and therefore unquantifiable, but could more than offset any savings.

54. These impacts quickly become evident, for example, in considering the potential costs in respect of water abstraction and treatment. A single incident in 2009 involving bad practice on one farm resulted in contamination of the watercourse running through and under the property which gave rise to costs of £200,000 to Wessex Water²⁴, in terms of immediate treatment of the problem and a follow-up management plan. This incident, resulting from a single farm not adhering to good practice, put at risk the catchment management approach that Wessex Water had adopted for dealing with the threat of PPPs in the raw water at that particular source. If either the company or the Drinking Water Inspectorate had decided that, as a result of this incident, this approach was no longer tenable, the costs involved in providing a treatment alternative could have been in the millions of pounds in terms of capital expenditure and tens of thousands of pounds per year in increased operating costs {information provided by Wessex water}. Some or all of these costs may be passed on to customers. Given that one capful of product is enough to contaminate a water body the water industry is particularly concerned about the cost implications of any increase in the number of untrained users.

55. Related to this, there are unquantifiable benefits to industry in terms of maintaining a certain level of public confidence in the safety of PPPs and the continuation of the level playing field in terms of business costs associated with training users.

Costs

56. The proposal to maintain existing requirement is cost neutral. The UK has had a statutory certification requirement for professional users in place for 25 years and 230,000 individuals have been assessed for competence in that time. It has been judged that the training received under this system is adequate to meet the standards set out in the Directive and that new training/ certification will not have to be undertaken for those already qualified under that system. Therefore these individuals will already hold the necessary certificate and will not incur any additional costs or be put at any competitive disadvantage. It could be suggested that removing this obligation will result in a cost saving to those who enter the market in future in that they would not be obliged to be certificated in order to use professional products. However, this is not necessarily the case, since the Directive requires that those who purchase these products will hold a certificate in any case. Thus there is no material difference between the approaches in terms of costs but option 2b provides a more comprehensive legal backstop.

Costs to Government

57. Irrespective of the option chosen, there will be some changes to the existing training and certification regime to ensure the UK is compliant with the Directive, and these will need to be carefully communicated to the relevant sectors of industry. These communication activities will incur a one-off cost to Government to be met during the 2011/2012 financial year. This has been estimated at £20,000 and will be met by an addition to the PPPs charge arising under the Directive as set out in the final impact assessment for the Plant Protection Products: Enforcement Regulations and Fees Regulations (DEFRA 1315) Annex 2, page 21.

²⁴ Correspondence with Wessex Water

Option 2b is the chosen option. Industry strongly supports continued mandatory training and certification for users and the proposal is cost neutral.

Risks and assumptions;

58. The assertion that this proposal is cost neutral is based upon the assumption that the content of existing training courses and certificates of competence meet the requirements of the Directive in providing, and demonstrating evidence of, “sufficient knowledge of the subjects listed in Annex 1” and that no certificated person will need to undertake further training in this respect. A review of existing training courses has established that these contain the majority of elements set out in Annex, to the extent that the contention outlined above is judged to be sufficiently robust.

Users relying the Grandfather Rights Exemption

59. A minority of users are currently exempt from the requirement under existing UK law; those born before 31 December 1964 and who apply PPPs only on their own or their employer’s land. This is known as having “grandfather rights”. Those individuals, although currently exempt from the requirement to hold a certificate of competence, are, under existing law, obliged to have received sufficient guidance and training to be competent at their job. The certification scheme will include arrangements to provide for the certification of these individuals based on the training they have already received.

60. Anyone who is a member of a Crop Assurance Scheme will not be able to rely on this exemption as the Schemes require certification. Under the legal requirement in Article 6 restricting the purchase of professional products to appropriately certificated individuals and those users that currently rely on grandfather rights will have to become certificated in order to be able to buy the products that they use.

ARTICLE 6: REQUIREMENTS FOR SALES OF PESTICIDES

61. The Directive requires:

- distributors to have sufficient staff in their employment holding a recognised certificate available to provide information at the time of sale to customers.

There is an option to exempt “micro-distributors” (see paragraph 62 below) from this requirement if they are selling products for non-professional use which are not classified as toxic, very toxic, carcinogenic, mutagenic or toxic for reproduction.

- Distributors selling PPPs for amateur users are to provide “general information” as specified in the Directive. At the discretion of the Member States, pesticide producers may be required to provide this information.
- Member States must take “necessary measures” to restrict the sale of products authorised for professional use to those users who hold a recognised certificate.

Micro-distributors

62. Micro-distributors are not defined in the Directive, but the European Commission has advised Member States that it should relate to the definitions set out in Commission Recommendation 2003/361/EC²⁵ which defines a micro-enterprise as one employing less than 10 employees (annual work units) and with a turnover of less than 2m euro p.a. This means that only larger scale businesses (and smaller ones selling products that are classified as toxic, very toxic, carcinogenic, mutagenic or toxic for reproduction) will be required to comply with the requirement for certificated staff.

Current UK situation:

63. Existing UK legal requirements in respect of certification of those involved in Sale and Supply (of professional products), and labelling and packaging of non-professional use products are adequate to achieve the objectives of the Directive. There are currently no restrictions on the purchase of professional products, and, while those who work for distributors of non-professional products are required to be trained and competent, they are not required to hold certificates evidencing this training.

Necessary measures

64. The Directive’s requirements for distributors to employ certificated staff can be interpreted as having the same effect as corresponding requirements imposed by existing UK legislation in respect of the sale of agricultural (professional) products. Although new legal requirements will need to be included in the transposing legislation, these should have no material effect. For sales of professional products, the obligations placed upon the distributor in the Directive should have the same effect as current legal obligations upon those involved with sale and supply; leaving it to the discretion of the individual business to decide what sufficient certificated staff means. There will have to be a new legal obligation for sellers of non-professional products (except micro-distributors selling certain limited products) to employ sufficient staff holding an appropriate certificate. These staff must be available at the time of sale, rather than at the point of sale, so there is no impediment to the larger distributor (with more than one outlet) making use of a helpline arrangement to ensure that someone is always available to provide this information to customers.

65. For distributors of non –professional products there will have to be a new requirement upon the employer to ensure all staff have received such training instruction or guidance as is necessary to enable them to comply with the law by 26 November 2015.

66. It will be necessary to introduce a restriction relating to the purchase of professional products which comes into effect by 26 November 2015.

²⁵ http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/sme-definition/index_en.htm

Direct costs to business:

67. There will be no change for distributors of professional products since the current rules have the same effect as those under the Directive. Costs will fall to those sellers of non-professional products that do not currently employ certificated staff and who are not exempted under the derogation for micro-distributors. These distributors will be required to ensure that sufficient certificated employees are available at the time of sale to provide information to customers. As the Directive does not require that these employees are available at the point of sale (i.e. physically present) we can allow these businesses the maximum flexibility in making their own arrangements to fulfil this requirement; including using existing telephone advice lines to allow a relatively small number of staff to cover a number of outlets.

Existing training courses

68. The garden chemical companies committee of the Crop Protection Association²⁶ have created two broadly based training courses for the retail industry²⁷.

69. These were developed because the industry considers that well trained staff capable of advising customers confidently on the appropriate products for their needs, will give a competitive advantage to the retailer who can offer this level of customer service and in order to assist retailers and their staff to understand their responsibilities under the law.

70. Both courses are designed to give retail staff detailed information on the use of fertilisers, compost, Garden Care Chemicals and all of the technical issues related to the use of these products in the garden. These include integrated garden care, environmental impact, disposal and water contamination issues.

The Garden Care Certificate of Competence (GCCC)

71. The Garden Care Certificate of Competence (GCCC) is a one day entry level course with a simple exam and certificate from Warwickshire College formerly Pershore College. It is designed for all staff and gives a very broad introduction to all the key technical issues surrounding the use of garden sundry products. There are modules in insect, fungal and weed problems, lawn care, fertilisers, soil and growing media, relevant legislation and integrated garden care. This course has been running for more than 10 years and is recognised by the industry as a cornerstone basic course.

The BASIS Guardian training and Certificate in Garden Care

72. The BASIS Guardian Certificate in Garden Care is a two day training course for managerial and senior technical garden centre staff, designed to give the most up to date advice on growing media and plant nutrition, how to control weeds, pests and diseases in the garden, the legislation and safety requirements for using and selling garden chemical products, the promotion of wildlife and protection of the garden environment. It is designed to enable the holder to provide advice for all home and garden use (non-professional) products and is generally taken up by the staff of;

- DIY Stores
- Garden Centres
- Hardware Stores
- Garden Design Centres
- Supermarkets that sell home/garden PPPs

²⁶ <http://www.cropprotection.org.uk/>

²⁷ http://www.garden-care.org.uk/content/r_training.aspx

- General Stores with home/garden departments
- Landscape and Garden service businesses
- Other retail outlets of home Garden Products

Future training options

73. We are continuing to work with the relevant industry bodies to agree what may constitute a minimum level of knowledge appropriate for these staff to meet the requirement, and what arrangements can be developed for providing public access to those staff by 2015, in order to minimise the burden on businesses. We agree with the industry proposition that this training must be proportionate to the level of knowledge required to do the job and that the above two courses may exceed the requirements. Therefore, a basic training course can be developed to provide for the minimum level of necessary training.

74. It is possible that this training can be made available via on-line training platforms which could be delivered more cost effectively than the more traditional course delivery at a training facility, especially if there is a relatively high volume of candidates. It could involve on-line delivery with regular self-assessment and a final online assessment at the end of the accredited course.

This would have the following advantages:

- Convenience for the employer—courses can be studied when required and not based on a trainer's schedule.
- Flexibility – no set class times so the employer has flexibility to decide when staff undertake the training
- Availability – no maximum course sizes
- Cost – cheaper than traditional course delivery and no meal / travel costs. The cost for the course itself would likely be just a little more than half the current cost using a trainer to deliver it.
- Accessibility – employees can study anywhere as long as they have internet access.

Costs

75. Although we will not set down legal obligations for the numbers of staff that are deemed “sufficient” we must still make some reasonable assumptions as to what this might mean, in order to calculate the potential direct cost to business. In order to do that we need to look at realistic and common sense estimates of the number of staff involved.

76. In the meantime, in order to arrive at an upper estimate of the potential costs involved we have estimated direct costs to distributors by reference to an average of 3 staff, either physically present in the case of a business with a single outlet, or available by telephone or internet in the case of a business with multiple outlets, would be sufficient to meet the obligation to be able to provide this type of information to customers at the time of sale. As described above it may be possible to provide this training more cheaply via an on-line accredited course and employers will have the flexibility and convenience to train as many staff as necessary for their particular circumstances.

For businesses with more than one outlet

77. We assume that the minimum requirement is that each member company must have a person available by telephone to provide information to customers during sale hours allowing the number of staff that to be calculated on the basis of the number of businesses, rather than the number of outlets.

78. We assume it is reasonable that a larger businesses with a number of outlets would need 3 certificated staff in order to be able to have someone available at all times to provide information if requested.

79. For larger businesses (employing 10 or more FTE) with one outlet we assume it is reasonable that three members of staff holding an appropriate certificate would ensure a reasonable level of cover.

80. We assume that only 10% of smaller single outlets would fall under the definition of a micro-distributor.

Number of outlets selling non-professional products

81. Information provided from the crop protection sector suggests that there may be up to 15,000 retail outlets²⁸ selling PPPs. Discussions with the industry also suggest that no more than 10% of retailers will be caught by the micro-distributor derogation, and that approximately 10% of sellers will have one member of staff who holds the Garden Care Certificate of Competence.

82. This gives a potential total of 12,000 outlets that may need to make additional arrangements to ensure they have sufficient certificated staff. Many of these will have more than one outlet which will provide economies of scale, since the certificated staff do not have to be physically present at the point of sale.

83. Industry suggests a total cost of training each member of staff including the cost of the training and the staff time at £100.

84. Each business may need to have 3 certificated staff in order to ensure cover.

85. Of the total 12,000 outlets some will have many outlets (for example B and Q and some will have one (such as an independent garden centre). We do not have any information on how their numbers are represented in the market. To allow for this we have assumed that one third of the total 12,000 outlets will need to get 3 members of staff certificated. This gives; 4000 outlets x £300 = £1.2million in one off costs by 2015.

86. However the turnover of staff in these outlets is high and there will need to be a continuous process of staff training. We have also assumed, therefore, that an equal number of staff will have to be retrained again within a further five years. This gives a total of £2.4m.

Requirement for purchasers of professional products to hold a certificate

87. This will require that those purchasing, or purchasing for someone else to use, will ensure that the end user holds a training certificate. This will only impact on that minority of users who are not currently required to hold a certificate under existing legislation, since existing certificates will continue to be valid under the Directive and those operators entering the market after 2015. Those who are not currently required to hold a recognised certificate include;

Users of vertebrate control products

88. Operators that use vertebrate control products are currently required to be trained but not to hold a certificate of competence. In addition, in some cases, because of the nature of the product used the conditions of the authorisations require that the product only be used by trained operators. Wherever possible if the training they have received meets the standards required for the granting of a certificate we can provide administrative arrangements to grant certificates without the need for additional training. This will mean that a small minority may need to undertake an assessment for a recognised certificate by 2015.

²⁸ Information supplied in discussions with the Crop Protection Association (CPA)

89. Products used for vertebrate control fall into two main types; anti-coagulant rodenticides which are used against rats and mice and metallic phosphides (fumigants).

Anti-coagulant rodenticides²⁹

90. These are almost entirely biocidal products rather than plant protection products and are therefore in scope of the Biocides Directive, following a Commission Decision in 1996. However, there is a very small quantity of this type of product used in areas considered under the scope of the plant protection product legislation. This amounts to significantly less than 5% of the total usage in Europe.

91. These products will be registered in the various Member States for in-field use for the control of voles; primarily for the protection of growing plantations of young trees. As voles are a protected species in the UK, this use will not be applicable. Vertebrate control with anti-coagulants under the new regulations will therefore be negligible and any financial impact correspondingly small.

Metallic Phosphides³⁰

92. The Register of Accredited Metallic Phosphide Schemes UK (RAMPS UK) is an industry body that aims to ensure a future for the metallic phosphides by maintaining a register of accredited stockists and users. Its executive committee consists of representatives from major authorisations holders such as Connaught, Rentokil Initial and Certis Europe. BPCA, while BASIS, Natural England, HSE and the Home Office were also involved in its formation. RAMPS UK is an extension of the unofficial organisation (the Register of Authorised Metallic Phosphide Stockists) which oversaw the distribution of these products for a number of years. This high level of self-regulation exists because the industry wants to ensure the continued availability of these very useful but potentially very dangerous products. Activities have included a number of proactive measures taken in the run up to the coming into force of the Directive, in order to make sure that the industry was fully prepared.

93. RAMPS UK supports the obligation on users to be trained and certified to an appropriate level and has been working towards a position where to be a member of RAMPS UK and to be able to purchase and use metallic phosphide products, an end-user must have completed a City and Guilds level 2 qualification. Under the scheme, this will be compulsory from 2015 onwards. Training, certification and proof of who a person is at the point of sale are all conditions already laid out in the Poisons Act 1972 and on product labels. According to RAMPS UK this should mean that there should be no additional financial impact on the lawful purchasers and end-users of metallic phosphides.

94. For those who are not suitably trained or certificated for storage or use of the product, RAMPS UK estimate that the cost to complete the training and purchase the required breathing protection would be less than £500.00 and that this would have an impact on less than 10% of the sector. RAMPS UK has developed a policy of phased implementation in an attempt to stagger the demand for courses and mitigate any sudden financial impact on the Industry.

95. Out of the total number of trainers who are teaching to their own standard of course in the UK, RAMPS UK estimate that approximately 30% are to the City and Guilds level 2 course. Other courses, including those offered by Lantra³¹, intend to reach this standard before the end of 2012, regardless of any future regulations.

²⁹ Information provided by Global Regulatory manager for rodenticides for BASF

³⁰ Information provided by RAMPS

³¹ <http://www.lantra-awards.co.uk/>

96. The content and accreditation of all courses should be in line with the OFQUAL certified level 2 course. RAMPS UK is negotiating with City and Guilds ensure other training providers such as Lantra can achieve the same standard.

97. The BPCA³² (British Pest Control Association) fumigation certificate / diploma is the current industry standard for invertebrate control for stored commodities. The actual demand for courses is difficult to quantify; however RAMPS UK anticipate approximately 1000 applicants from the Game Keeping community and a lower number from the farming and pest control community (500) who may require upgrade training prior to 2015. Re assessment every 3 years or continued professional development will also be required under the RAMPS scheme.

98. All the above self-regulatory requirements are supported by the pest control industry which wishes to improve the level of professionalism so that rogue traders may be driven away from the sector and that metallic phosphides remain an available option for vertebrate and invertebrate control³³. These requirements also go as far as or further than the minimum that would be required under the Directive and therefore the new regulations will not introduce any additional requirements or impose any additional financial burdens on the industry.

Holders of “grandfather rights”

99. The minority of individuals who currently rely on the exemption from the UK’s certification requirement (grandfather rights holders) will by 26 November 2015 have to become certificated in order to be able to legally purchase products. These include pesticide users relying on grandfather rights, and users who use certain vertebrate-control products that were previously outside of the certification requirements.

100. We understand that some “grandfather rights” holders may feel daunted at the prospect of undergoing what is effectively an examination, particularly if they are approaching retirement age. As an alternative to undertaking an assessment, we are investigating whether other arrangements could be employed to provide for the certification of these individuals. Any such alternative arrangements would have to provide for the demonstration of evidence of competence. A proportion of these exempt individuals will be undertaking ongoing training in the form of Continuous Professional Development (CPD), under schemes such as the National Register of Spray Scheme (NRoSO). One suggestion raised during the public consultation was that those who are voluntarily undertaking such additional training could qualify for a certificate after a qualifying period of three years, in line with the length of NRoSO’s CPD cycle.

Direct Costs to business

Costs for new users

101. The cost of complying with the sales restriction for new operators entering the market after 2015 is baseline neutral, since currently everyone applying pesticides on the basis of a commercial service is required to obtain a certificate. If option 2a was to be taken up, and new operators entering the market were not required to be certificated for use, the same cost would arise in any case in respect of their having to be certificated in order to comply with the sales restriction.

³² <http://www.bpca.org.uk/training.html>

³³ RAMPS UK is of the opinion that the information provided presents a fair representation of the views among the lawful users of metallic phosphides, regardless of whether they are used within agriculture or the pest control industry.

Cost of certification for holders of Grandfather Rights

102. The number of grandfather rights users in the UK: a significant proportion of those eligible will be members of assurance schemes or other voluntary schemes that require them to hold a certificate, others will either be able to rely on an employee or family member, or contractors, or will cease using PPPs altogether and will not need to become certificated but, in order to estimate the maximum costs, we have assumed that 100% will need to become certificated.

Table 2: Cost of requiring grandfather rights users to undergo 1 three-year Continuous Professional Development cycle or an assessment for a training certificate (50% for each)

	Number of users with grandfather rights	Cost (£)	Time away from work (hours)	Wage rate p/h (£)	Total cost by 2015 (£m)
3 year CPD cycle	5,500 – 8,500	140	24	7.27	1.7 – 2.6
Assessment for training certificate	5,500 – 8,500	130	5	7.27	0.9 – 1.4
Total					2.6 – 4.0

Assumptions

- The cost of a 3 year CPD cycle is based on training which must take place in 2 years out of 3, at a cost of £50 p.a. and a yearly registration fee of £20. Total £140.
- Number of grandfather rights holder calculated by figures used in 2006 consultation³⁴ (27,000 – 41,000) and altered to estimate number of users who will have retired left farming between 2006 and 2015. Calculation based on uniform distribution of ages across this period. Number of retirees / deaths based on 27,000 = 4911 and based on 41,000 = 7458. This leaves between 11,000 – 16,750 exempt individuals who will need to get a certificate by 26 November 2015.
- Some of these 11,000 – 16,750 exempt individuals will be
 - a. Members of NROSO (one in five users are estimated to be members) and will already be undertaking Continuous Professional Development, or
 - b. Members of assurance schemes or supermarket protocols (crops grown under these schemes account of 80% of the UK's produce) and will already be required to hold a certificate already. or
 - c. using contractors to do their spraying;
- Consultation with stakeholders with an interest in training suggest that 50% of the 11,000 – 16,750 individuals who qualify for this exemption will not have to undertake any additional activity in order to meet the requirement for purchasers of professional products to hold a training certificate because they engage in one or more of the activities from a to c above. This leaves an approximate range of 5,500 – 8,500 individuals who will.

³⁴ <http://www.pesticides.gov.uk/guidance/industries/pesticides/topics/reducing-environmental-impact/national-pesticides-strategy/phasing-out-of-grandfather-rights-for-pesticide-users.html>

- Under existing legislation all users are already required to be trained³⁵ so those with grandfather rights should not need additional training, the ability to pass an assessment for a certificate of competence will be sufficient.
- Those affected will retire at 65, and not choose to continue working. We accept that this may not always be the case.

³⁵ Schedule 3(3) of the of the Plant Protection Products (Basic Conditions) Regulations 1997 requires that users have received adequate instruction training and guidance on safe use of plant protection products and that they be competent to perform their duties.

ARTICLE 8; INSPECTION OF PESTICIDE APPLICATION EQUIPMENT (PPP/AE)

103. Pesticide application refers to the physical means by which PPPs, (including herbicides, fungicides, insecticides, and biological control agents) are delivered to their biological targets (e.g. pest organism, crop or other plant). The equipment used is termed plant protection product application equipment (PPP/AE). This equipment can range from hand-operated knapsack sprayers suitable for treating small areas to large mechanical sprayers that can provide high pressure sprays to large areas and transport large volumes of spray mix. Properly equipped and operated sprayers can provide uniform coverage on a wide variety of targets.

Boom Sprayers

104. These systems can be self propelled, trailed or mounted on tractors, trucks, trailers, and aircraft. Most distribute PPPs using a boom with spray nozzles spaced at regular intervals. The most common types are wide horizontal booms used to spray field crops. A high degree of spray coverage uniformity is possible with constant spray pressure through uniformly spaced nozzles travelling at constant speeds. The sprayer consists of a tank, a pump, and a boom with multiple nozzles or a lance with a single nozzle. It converts a pesticide formulation, commonly a mixture of 95 – 99% water (or another liquid chemical carrier, such as fertilizer) and 1-5% chemical, into droplets, which can range in size from large rain-type drops to tiny almost-invisible particles. This conversion is accomplished by forcing the spray mixture through a spray nozzle under pressure. The size of droplets can be altered through the use of different nozzle sizes, or by altering the pressure under which it is forced, or a combination of both. Due to static electricity, small droplets are able to maximize contact with the target.

Air-blast Sprayers

105. In field crops good coverage is relatively easy to achieve where the target foliage is small and close to the nozzles. In tree fruits, especially with large trees, good coverage with conventional sprayers is more difficult to achieve. Air-blast sprayers direct the spray mixture from the nozzles into an air stream which transports the spray droplets to the target. Air-blast sprayers have a powered fan which forces air through an opening to generate high air speeds. Often the opening or manifold can be adjusted to ensure that the air stream is directed at the target. These sprayers are also used in bush and tree crops such as grapes, blueberries and nursery crops among others.

106. In conventional air-blast sprayers most of the air movement is upward into the trees or target. Tower air manifolds are also available for air-blast sprayers which direct the air horizontally or even downwards towards the target. The horizontal or downwards air movement minimizes drift from air blast sprayers.

Non-spray applicators

107. Some pesticide application equipment does not operate like the hydraulic sprayers described above; either the pesticide is dispensed in the form of granules rather than a liquid solution, or it is a liquid applied in an enclosed area, rather than sprayed out in the open. Granular applicators are used to apply granular PPPs to soil. Granules must be incorporated (mixed in with the soil) during or immediately following applications. Incorporation in the soil prevents birds from eating the granules; also, contact with soil moisture activates the pesticide. There are several types of equipment for granular application. Some granular applicators can be hand operated and may use gravity to deliver the granules while others are powered such as the pneumatic applicators which use a stream of air to carry granules through the delivery tubes.

108. There are many other types of specialized applicators that are not widely used in the UK, including high pressure sprayers, foggers and misters that are used in the greenhouse sector to apply very fine droplets within an enclosed building.

The UK's National Sprayer Testing Scheme (NSTS)

109. The Agricultural Engineers Association (AEA)³⁶, which promotes the interests of British manufacturers and suppliers of agricultural machinery, set up a sprayer testing (inspection) scheme in 1997 to meet various requirements, including assurance schemes, processor/retailer production protocols as well as satisfying the desire of users to verify the accuracy and overall fitness of their application equipment. Under the Voluntary Initiative for Pesticides³⁷, a commitment was made by the agricultural, horticultural and amenity industries to extend sprayer testing to cover the majority of sprayers operating in the UK. As a consequence the AEA and the farming unions, together with other key stakeholders, developed and introduced the National Sprayer Testing Scheme (NSTS) in 2003, as an independently validated annual testing scheme.

110. The scheme is aimed at all pesticide application equipment used in agriculture and horticulture as well as amenity, grounds care and the local authority sector and covers all new sprayers, second hand sprayers and those already in use.

111. The test is carried out by a person qualified by the City and Guilds NPTC³⁸ to a level 3 Certificate of Competence in Sprayer Examining and can either be carried out on the farm or at a service centre. The NSTS inspects about 15,000 of the most frequently used pieces of application equipment in the UK, covering over 80% of the total sprayed area.

Requirement for Inspection of PPPAE under the Directive

112. The Directive requires that Plant Protection Product Application Equipment (PPPAE) is subject to mandatory inspection at regular intervals in order to minimise the adverse impacts of PPPs on human health and the environment. The purpose of the inspections is to check that the equipment functions reliably for its intended purpose, ensuring that PPPs can be applied accurately and on target.

113. The Directive allows that inspection intervals may depend on the type of equipment, which can be divided into three broad headings:

➤ **Knapsack and handheld sprayers.**

114. Hand-operated sprayers, such as knapsack and mist-blowers, that are designed to be carried and operated manually by one person, are widely used in the horticulture and amenity sectors. They are suitable for treating small areas such as nurseries, greenhouses and vegetable gardens, and are effective in restricted areas e.g. slopes and close plantings. Knapsack sprayers have a tank of up to 20 litres capacity – usually carried on the operator's back, a pressurising system and a hand lance with a pressure gauge and one or more nozzles. The lance or wand usually has a simple on-off valve.

115. The Directive allows knapsack sprayers and handheld equipment to be exempt from the inspection regime; in line with Government policy this derogation will be used, therefore no new costs will be imposed in respect of having this equipment type inspected.

³⁶ <http://www.aea.uk.com/>

³⁷ <http://www.voluntaryinitiative.org.uk/>

³⁸ <http://www.nptc.org.uk/>

- Equipment not used for spraying PPPs or that represents a very low scale of use.

116. The Directive allows equipment that is not used for spraying PPPs (the “non-spray” applicators described above), or that represents a very low scale of use, to be subject to different timetables and inspection intervals following an assessment of risk to human health and the environment that includes an assessment of the scale of use of the equipment. These equipment types will be required to be inspected once before 2016 and within 6 year intervals thereafter. Inspection will incur a new cost to equipment owners that don't currently have their PPPAE inspected.

- All other types

117. Spraying equipment that does not constitute a very low scale falls under this heading. The Directive requires that certain types of equipment shall never be considered very low scale of use including; spraying equipment mounted on trains or aircraft, boom sprayers that are larger than 3m (including those mounted on sowing equipment). Our risk assessment added vehicle mounted or drawn air broadcast sprayers to this list. Equipment under this heading must be inspected once before 2016, again within an interval of no more than 5 years until 2020 and at intervals of no more than 3 years thereafter. Inspection will incur a new cost for those equipment owners that do not currently have their PPPAE inspected.

Very low Scale of Use

118. The Directive does not define “very low scale of use” or provide any indication as to how scale of use should be determined; it is therefore, left to the discretion of the Member State to make this assessment in deciding which inspection interval is appropriate for certain types of PPPAE. In the agricultural context we have characterised “very low scale of use equipment” as that which may be not in common usage, is usually of a specialist nature, or that is used to treat a very low percentage of the total basic agricultural area treated in the UK, or equivalent.

119. Information on application methods used in the amenity sector is not collected, however a significant proportion of the equipment used in this sector will be of the handheld type which is exempted from the inspection requirement. There will also be significant numbers of small boom sprayers, of 3-6 metres in width, used on golf courses and other professional turf care situations and these must be included in the main inspection category as required by the Directive.

Scale of use in Agriculture/Horticulture

120. There are two sources of information that are helpful in providing a basis for an assessment of relative scales of use of different types of PPPAE in agriculture;

- The annual Pesticides Usage Survey³⁹ (PUS) carried out by the Government's Food and Environment Research Agency (FERA) provides information on the total area in hectares of land treated using different application methods. Thus, the percentage of the total area treated using the different types of equipment gives a comparative picture of their relative scale of use.
- The cumulative number of individuals that have gained certificates of competence across all the different equipment types since the certification scheme began 25 years ago is 230,000.

³⁹ <http://www.fera.defra.gov.uk/scienceResearch/science/lus/pesticideUsage.cfm>

The comparative proportion of individuals who have been trained in the use of each the different types of equipment may be useful as an indicator of relative scale of use of each type.

121. It is important to be clear that the number of trained users of a particular type of equipment will not correlate directly to the number of units of PPPAE in use. Some users will not be certificated, some will not still be working as pesticide users and staff turnover may occur at different rates in different sectors, but it is reasonable to assume that the greater the number of individuals that have been trained to use a particular equipment type the more commonly used that equipment is likely to be, relative to other types.

Types and numbers of PPPAE in use in the UK

122. There is a very wide range of different types of equipment in use in the UK but the number of pieces of application equipment is unknown. In order to identify all of equipment types, and to arrive at estimates of their numbers in use, we have used the categories employed by the system for training and certificating users of professional plant protection products. Currently in the UK, users of agricultural pesticides (broadly analogous to professional products) are required to hold a certificate of competence; the training provided, and the practical assessments for certificates of competence are divided 12 broad categories, depending on the type of equipment that the operator will be using in their work.

123. The basis of these training and assessment modules therefore provide a convenient way to ensure that all types of PPPAE are captured in this IA, dividing, as they do, all equipment types into one of the following “PA”⁴⁰ categories;

PA2 ground crop sprayer – mounted or trailed (includes spray trains and highways sprayers)

PA3 broadcast or variable geometry boom sprayer, mounted or trailed, with or without Air assistance

PA4 pesticide granule applicator, mounted or trailed

PA5 boat mounted applicator

PA6 handheld applicator

PA7 aerial application equipment

PA9 fogging, misting and smoke application equipment

PA10 batch dipping equipment

PA11 seed treating equipment

PA12 application of pesticides to material as a continuous process via conveyor, roller table or other moving equipment

PA13 sub- surface liquid applicator

PA SC special category equipment {new category in 2010; previously this equipment was included in one of the other categories}

Estimating numbers for equipment used in the agricultural/horticultural sectors

124. In order to determine the direct costs associated with equipment inspection it is necessary to determine how many pieces of equipment are in use. As stated previously. The numbers are unknown but there are sources of information that can be used to provide reasonable estimates for equipment numbers, and relative scale of use, under each of these 12 types above. These include:

- Statistics from the (NSTS which tests equipment covering 86% of the sprayed area in the UK on a yearly voluntary basis. NSTS figures are split into agriculture/horticulture/amenity and are further split into “application type” categories for agriculture

⁴⁰ PA1 is a foundation module and PA8 is for users who mix and load pesticide so are not relevant here.

under broad headings.

- Results from a survey of current farm sprayer practices in the United Kingdom carried out in 2004 by the Pesticide Usage Survey Group, available at; <http://www.fera.defra.gov.uk/plants/pesticideUsage/documents/cpa2004FinalReport.pdf>

- Results from the Pesticide Practices Survey September carried out by ADAS in 2009; http://www.pesticides.gov.uk/uploadedfiles/Web_Assets/PSD/UKPesticidePracticesReport.pdf.

Table 38 (p.43) which shows numbers of each type of equipment owned by the farm using figures for tractor mounted sprayers (which would include 'self-propelled, demount, trailed and mounted sprayers which would be greater than 3 metres in width and All Terrain Vehicle (ATV) mounted sprayers the majority of which would be less than 3metres (covers agricultural sector only).

125. The figures used here are estimates based on survey results and have been confirmed by ADAS, however there is some uncertainty as to the reliability of the information collected and presented in this report, for example it was considered likely that some of the information provided by survey respondents may have been inaccurate; some may have provided boom measurements in feet rather than metres. The survey results are therefore considered indicative rather than definitive.

PPPAE use in the amenity sector

126. Pesticide use in the amenity sector can be described as any use that does not concern crop protection. It is very different to pesticide use in agriculture, covering use in public parks and gardens, playing fields, sports grounds, pavements, roads, railways, waterways and forestry. The use of PPPs in the amenity sector is diverse, involving a wide range of techniques and equipment, ranging from pedestrian or vehicle mounted application to bowling greens, tennis courts, golf courses, highways and water courses to specialist applications to trunk roads, motorways and railway lines. However, unlike for the agriculture sector, statistics for usage are not generally available.

127. The vast majority of PPPs applied in the amenity sector (as in agriculture) are applied as liquids, generally through standard hydraulic pressure nozzle application equipment. For vehicle mounted application equipment, boom widths tend to be smaller than in agriculture (between two and six metres - usually in three sections) with equipment often also fitted with one or two hand lances. In recent years shrouds for booms used on managed amenity turf have become popular.

128. Hand held and pedestrian operated application equipment is widely used, and ranges from standard knapsacks/spot guns/trolley sprayers with hand lances and small multi nozzle booms (up to two metres in width) for herbicide application to knapsack mist blowers and trolley mounted high pressure or air blast units for insecticide/fungicide application. Hand held Controlled Droplet Application (CDA) sprayers and weed wipers are used in some specific situations. Granular applicators (mostly hand-held units) are used for the application of granular herbicides to shrub borders and also in non-crop situations e.g. semi-loose path surfaces, fence-lines and other smaller non-crop situations.

⁴¹ http://www.pesticides.gov.uk/Resources/CRD/Migrated-Resources/J729_Amenity_Pesticide_Report_Final.pdf

Estimating numbers for equipment used in the amenity sector

129. The number of individual units of PPPAE in use in the amenity sector is also unknown and there are fewer sources of information on which to base reliable estimates. Information from a report of a survey “Determining the usage and usage patterns of amenity pesticides across the UK, 2011”⁴¹ where possible, but the relatively low number of responses to this survey meant that insufficient information was provided to determine reliable estimates of numbers of PPAE in the sector.

130. Due to the lack of existing information it was necessary to make assumptions based on information sought from a range of organisations that operate in the amenity sector, such as the Highways Agency, the Sports Turf Research Institute, contractors and a number of Local Authorities. We also made contact with a number of organisations that had featured as case studies contacts in the Amenity Survey described above to seek further detail, but only one responded.

Benefits of Sprayer Inspection

131. It is only possible to provide a qualitative analysis of the benefits of equipment testing since there is no reasonable basis on which to monetise them. The following are the main benefits:

- Ensures sprayer efficiency: The cost of replacing worn or damaged nozzles that deliver only a few percent above the recommended rate is readily recovered in chemical savings and improved chemical efficiency with better and consistent spray quality.
- Reduces costly downtime: A sprayer that has passed inspection is less likely to break down in the spraying season thereby avoiding the operator having to take a costly break from spraying.
- Satisfies crop assurance and supermarket protocols; Annual sprayer testing is usually a pre-requisite for membership of these schemes.
- Aids accurate application: Spray nozzles are carefully-engineered instruments that erode over time and may suffer damage during normal use. If these are not in optimum condition the spray rate can be excessive resulting in wastage of expensive chemicals.
- Adds residual value; Equipment that has been regularly serviced will achieve a higher resale value.
- Helps ensure public confidence;
- Improves environmental and operator safety: Leaks and drips are the most common problems associated with spray equipment and these can lead to increased risk of exposure to the chemicals for users and the local environment.

Direct cost associated with inspection

132. The direct cost to business arising out of the inspection regime is calculated here on the basis of the existing costs associated with adhering to the NSTS adjusted for the different inspection intervals required by the Directive, Apart from the required frequency of inspection, there is likely to be no significant difference between the two regimes.

NSTS test costs

133. The NSTS testing system is similar to an MOT in that it is undertaken by independent NSTS registered workshops/stations. Increasingly the annual inspection is treated by the equipment owner as a service which has the effect of offsetting the related servicing costs. The cost to the equipment owner derives from the cost of a test certificate which is £23.50⁴² for each piece of equipment, plus the cost of the inspection. The £23.50 covers all costs associated administering the scheme, printing of test reports and machine decals, postage of same to machine examiners, machine test results entered to database, maintenance and updating of database, website maintenance with access to crop assurance verification bodies, scheme management by Manager and Administrator and promotion at events and shows.

134. The cost of the inspection differs depending on which test station is doing the inspection, the type of equipment and the related costs associated with travel to the equipment owner's premises. The NSTS was designed to be carried out on farm or on the premises of the owner, rather than requiring the owner to transport the often large and unwieldy equipment on-road to a test centre; the NSTS estimates that at least 80% of equipment is inspected on site. This means that there are no additional costs to those equipment owners in terms of transport and time away from work.

135. In situations where the owner does take their equipment to a test station the additional cost of doing so will be offset by the lower cost of the inspection, since inspectors who travel to the owner's premises will factor in cost of their travel. Therefore we have estimated the same overall cost whether the equipment is inspected at the owner's premises or not; all figures are based on on-site inspection.

Average costs of inspection

136. Information from the NSTS database and from a canvass of inspectors⁴³ would suggest that average inspection costs are in the region of:

Equipment type	Inspection Cost
Self Propelled	£190
Trailed	£175
Mounted	£150
ATV	£75
Air blast	£150
Granular App	£155
Amenity SP	£150
Amenity T	£150
Amenity Mo	£125
Amistar	£120
Foggers	£125
Knapsack	£65
Others	£115

⁴² http://www.nsts.org.uk/nsts_scheme.asp

⁴³ Personal communication with the NSTS administrators

Estimates of numbers, scale of use and direct costs of inspection

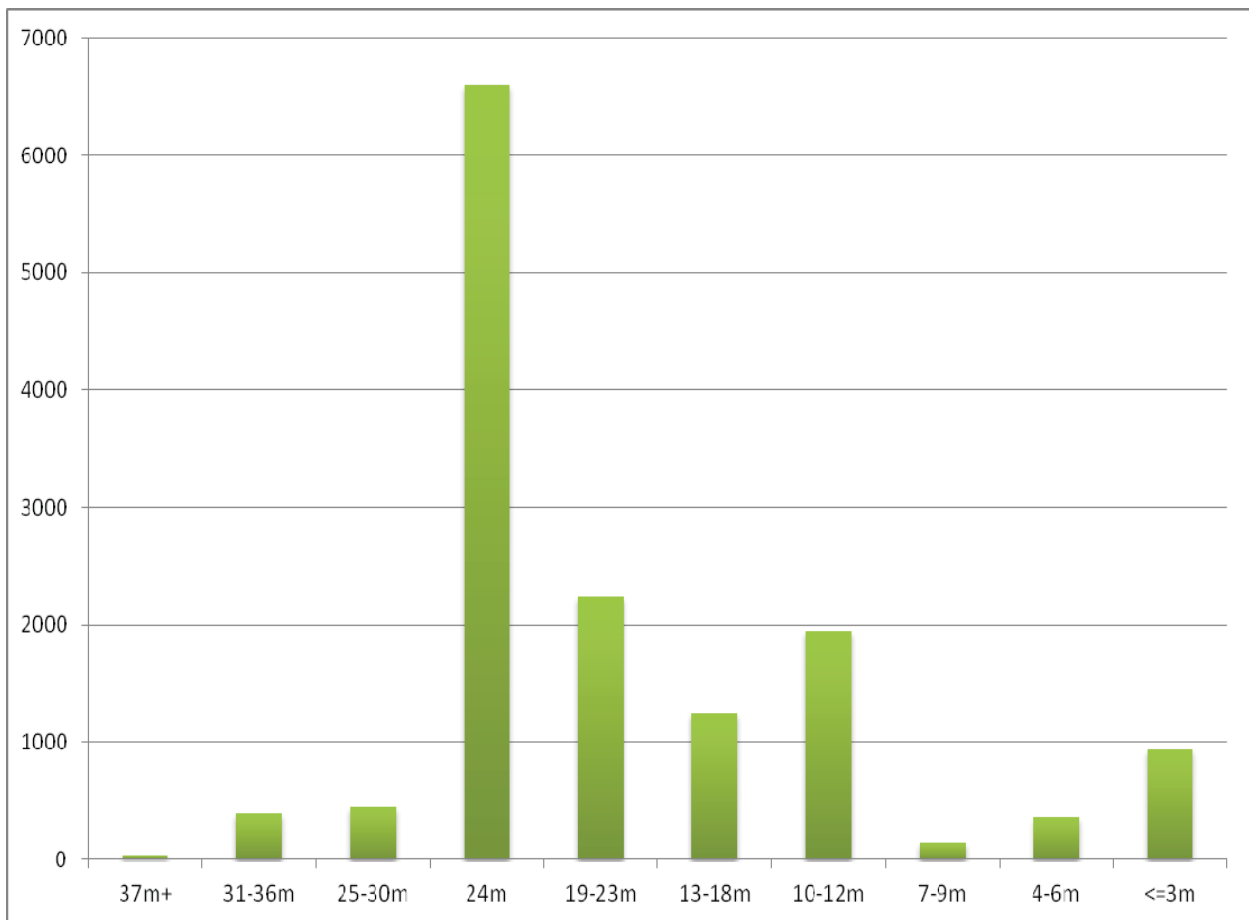


Fig. 1

NSTS figures for numbers inspected for a range of boom widths⁴⁴

Note: The $\leq 3\text{m}$ figure above includes 650 pieces of equipment that are classed as “zero” boom width; these are not boom sprayers and therefore the true total is 284 (2% of the total).

⁴⁴ Reproduced with the permission of NSTS

137. The following costs are intended to represent a refinement of those presented in the Impact Assessment for the 2010 consultation. This assessment of costs builds upon the same evidential basis (figures provided by the NSTS). It also draws on other sources of information in endeavouring to arrive at a robust estimate of costs, including a further refinement of equipment numbers for the purpose of determining where the derogation can be used. The AEA/NSTS has indicated that the following is a reasonable approach to developing estimates of the costs and benefits of this proposal.

138. For each type of equipment the additional costs to equipment owners of complying with the Directive is calculated on the basis that those who are participating in the NSTS scheme are already more than meeting the requirements of the Directive and will not have to do anything more. The costs for each equipment type are set out in Table 5 page 46, with a breakdown of how they were arrived at set out in paragraphs 139 to 175, below.

PA2 GROUND CROP SPRAYER – MOUNTED OR TRAILED

139. For the purposes of the Directive, PA2⁴⁵ ground crop sprayers (or boom sprayers) need to be split into those having boom lengths less than, and greater than, 3m (which can ever be considered very low scale of use).

140. There is limited information available on the scale of use of boom sprayers that are less than 3m in width. The Pesticide Practices Survey September 2009⁴⁶ figures for the agricultural sector shows that:

- Standard boom sprayer; 1% are less than 3m,
- ATV mounted sprayers ; 57% less than 3m,
- Air assisted sprayers; 3% less than 3m.

141. The NSTS collects information on the boom widths for the equipment that is tested under that scheme, see figure 1 and, since these figures account for over 80% of the sprayed area in the UK, these figures can reasonably be extrapolated to cover all equipment in use.

PA2 Boom length less than 3m;

142. Estimated at 2% of the total (see fig 1), the PA2 category includes PA2F frame or boom type wick applicators which are very low scale of use and not a spray application method and PA2AR small vehicle mounted kerb sprayers – hydraulic nozzle type/rotary atomiser type which are not used with booms. These types of equipment will be required to be inspected once by 2016 and at intervals of no greater than six years thereafter.

PA2 Boom length greater than 3m;

⁴⁵ The PA2 category equipment includes

- Equipment mounted on ATVs (All terrain vehicles);
- PA2A Hydraulic nozzle type / Rotary atomiser type – boom (excluding pedestrian controlled machines);
- PA2C Twin fluid nozzle type – boom (excluding pedestrian controlled machines);
- PA2D Electro-statically charged type;

PA2E Horizontal boom sprayers fitted with downward air assistance;

⁴⁶ HSE Chemicals Regulation Directorate - Pesticide Practices Survey September 2009 – Table 41 How many metres wide is the boom that you normally use? (p.50) (covers agricultural sector only)

143. These are estimated at 98% of the total. These include boom sprayers used in agriculture and amenity, and equipment mounted on trains and larger vehicles such lorries (for highway spraying). As set out in the Directive these must be inspected once by November 2016, once more within a period of no more than five years before 2020, and every three years thereafter.

Estimated total number of PA2 equipment units in use

144. The total number of pieces of PA2 equipment in use is estimated at 47,500.

Sources:

Agriculture Sector

145. Pesticide Practices Survey September 2009 estimates 43,300⁴⁷; (of which 14,348 (=32%) within this broad heading tested by NSTS⁴⁸ .

Amenity sector

146. Based on information provided by Sports Turf Research Institute (golf clubs/football/cricket) = 3,100. This total will omit an unquantified number of units of equipment used in the amenity sector; such as on roads and motorways; the available information suggests that this number is relatively low.

- Sub-total; (1+2) =46,400 pieces of equipment.

147. We have rounded the subtotal above to 48,000 to account for the un-quantified remainder that may be used in the amenity sector (including on highways/councils etc)

Cost of PA2 Equipment Inspection;

148. The total direct cost has been estimated at £10,944,450 by 2021.

Breakdown of costs:

14,500 will not attract any new inspection costs – this is the number of units inspected annually under the NSTS.

New inspection costs will therefore arise in respect of; the total 48,000 units minus 14,000⁴⁹ units tested by NSTS already = 33,500 units.

Inspection intervals depend on boom length: therefore

- Boom sprayers <3m (2% of total) will need to pass inspection once by 2021.
- Boom sprayers >3m (98% of total) will need to pass inspection twice by 2021 (once by 2016 and once again within 5 years).

⁴⁷ Table 38: Numbers of each type of equipment owned by the farm (p.43) using figures for tractor mounted sprayers and quad-bike mounted sprayer (covers agricultural sector only). These figures confirmed by ADAS but are only estimates based on survey results.

⁴⁸ NSTS Annual report 2010

⁴⁹ NSTS Annual report 2010

PA2ST Spray trains

149. Spray train application, which includes hydraulic nozzle and rotary atomiser types, must, under the Directive, be inspected at the intervals specified since it shall never be considered to be very low scale of use. These must be inspected once by November 2016, once more within a period of no more than five years before 2020, and every three years thereafter.

Estimates for number of equipment units in use

150. Since no information on this type of spraying activity is readily available we attempted to canvass those contractors who carry it out for information.

- JSD Rail is probably the largest rail spraying contractor in the UK. It runs 8 spray trains⁵⁰ for Network Rail, UK wide, covering 28,000 miles of track. These are inspected by NSTS annually @ £150 per test (plus complete strip-down after each spray season).
- London Underground and Docklands (15 miles of sprayable track) have 1 spray train each.
- Private railways are unaccounted for; no information is available.
- We did identify other contractors who provide spray train vegetation management but these declined to provide information on their activities.

Breakdown of costs:

151. Baseline neutral: Existing arrangements much more rigorous than those imposed by the Directive – JSD Rail equipment undergoes annual inspection under the NSTS. The cost of running a spray train is approximately £3,000 per night⁵¹ it is therefore very important that these are working correctly and the necessary regular maintenance will continue regardless of (less frequent) inspection requirements under the Directive . Therefore it is expected that the Directive will impose no additional inspection requirements.

Highway Sprayers

152. A wide range of equipment types are used in vegetation management on the UK's road network. These range from lightweight personal knapsack sprayers, to spray-train type equipment mounted on an HGV and spraying vehicles, such as tankers, that can be licensed to operate on the UK's Motorway Network. The work is carried out by contractors who own the machinery, and no equipment that is used for this purpose is currently inspected under the NSTS. We contacted a number of these contractors who were unwilling to provide information on their activities.

153. Consequently there is no information available on equipment numbers in this area or on the servicing and inspection arrangements that are in place for them. This equipment has been counted as included under the 1000 pieces of equipment used on highways, motorways and by local authorities. The additional cost of inspection is included in the total above.

⁵⁰ Information provided by JSD Rail

⁵¹ Information provided by JSD Rail

PA3 BROADCAST OR VARIABLE GEOMETRY BOOM SPRAYER (MOUNTED OR TRAILED) WITH OR WITHOUT AIR ASSISTANCE

154. This type of equipment, which is used in fruit spraying, could be considered very low scale of use in terms of equipment numbers in use and the area of agricultural land treated, however they include booms over 3m and, in terms of potential for human and environmental exposure, are of similar scale to the >3m boom sprayers. They must be inspected at the intervals set out in the Directive for equipment that must never be designated very low scale of use.

This category includes:

- PA3A Broadcast sprayer with air assistance
- PA3B Variable geometry boom sprayer with air assistance; boom can be upright or horizontal
- PA3C Variable geometry boom sprayer without air assistance; boom can be upright or horizontal

Estimated number of pieces of equipment

155. In the absence of any other information, taking into account applications by PA3 equipment to bush and tree crops including soft fruit and hops, and with the assumption that some holdings may have more than one piece of equipment, a factor of 1.5x the number of UK holdings would seem appropriate, giving an estimated number of 2,500 pieces of PA3 equipment.

Commercial orchard holdings in the UK = 1698.

England orchard holdings⁵² = 1300

Northern Ireland orchard holdings⁵³ = 231

Wales orchard holdings⁵⁴ = 56

Scotland orchard holdings⁵⁵ = 111

Total number: 1698 x 1.5 = 2,500 (approximately)

Total Cost: ££650,430

Breakdown of costs:

(2,500 units minus 529⁵⁶ units tested by NSTS already
= 1,971 units x 2 test events x £165 over ten years)

⁵² Defra statistics England commercial orchard holdings

⁵³ Information provided by DARDNI; 231 commercial apple holdings (mainly bramley) (1516ha)

⁵⁴ Information provided by WAG; commercial orchard holdings (295ha) data from 2009

⁵⁵ Information provided by Scottish Executive; Scotland commercial orchard and soft fruit area 48.9ha

⁵⁶ NSTS figures showed a total for all tests of 13,518. This was not split into sprayer type categories. Further advice from NSTS showed that 12,066 could be considered on the agricultural side (and mostly fitted into PA2 category). So the remaining 1,452 NSTS tests undertaken has been divided by 9,600 (the combined number of PA3, PA4 and PA9 being the likely remaining categories tested). This figure of 0.15125 has then been multiplied by the individual PA 3, PA4 and PA9 categories giving the remaining "untested" number of units.

PA4 PESTICIDE GRANULE APPLICATOR MOUNTED OR TRAILED

156. This equipment type presents a lower risk of exposure to humans and the environment because is not a spray application method. Although there are some issues with granular pesticides and water pollution these problems arise a result of the manner of the application of the product rather than any problems with the reliability of the equipment. They will be required to be inspected at intervals of no greater than six years after 2016.

157. This category includes PA4G Pesticide granule applicator mounted or trailed and PA 4S slug pellet applicator, mounted or trailed (excluding pedestrian controlled machines or hand held equipment).

Estimated number of equipment units

Pesticide Practices Survey September 2009: 6,300⁵⁷

Total number: 6,300

Total Cost: £641,640

Breakdown of costs:

6,300 units minus 953⁵⁸ units tested by NSTS already
= 5,347 units x 1 test event (by 2016) x £120

PA5 BOAT MOUNTED APPLICATORS

158. PA5A Boom type – hydraulic nozzle or rotary atomiser can have boom widths larger than 3m or less than 3m: Those larger than 3m must be inspected at the intervals set out in the Directive, while those less than 3m, and PA5B granule applicators which are not a spray application method, can be inspected once every six years.

Estimated number of equipment units

159. From information provided by relevant organisations it appears there are very few of these applicators in use (1 at Witham IDB, equipment checked and calibrated by own workshop) with most pesticide applied to water by hand-held methods. This seems to be due to a decreasing number of products being approved for use on/near water.

160. The Environment Agency confirmed it is unlikely to use boat applicators due to the loss of various pesticides approved for use on water (approved pesticides may still be applied by hand-held uses from a boat).

⁵⁷ Table 38 Numbers of each type of equipment owned by farm (p.43) using figures for granular applicator (covers agricultural sector only). These figures confirmed by ADAS but are only estimates based on survey results.

⁵⁸ NSTS figures showed a total for all tests of 13,518. This was not split into sprayer type categories. Further advice from NSTS suggests that 12,066 units could be considered on the agricultural side falling into PA2 category. So for the remaining 1,452 NSTS tests undertaken, this has been divided by 9,600 (the combined number of PA3, PA4 and PA9 being the likely remaining categories tested). This figure of 0.15125 has then been multiplied by the individual PA 3, PA4 and PA9 categories giving the remaining “untested” number of units.

Total number: 6 Estimate based on responses received.

Total Costs: £990

Breakdown of costs:

(6 boats x 1 test event (by 2016) x £165)

PA6 HANDHELD APPLICATORS

161. The Directive provides for an exemption from the inspection regime for handheld equipment and knapsack sprayers. This category includes pedestrian controlled machines, but excludes misters and foggers.

Includes:

PA6A hydraulic nozzle or rotary atomiser type

PA6AW hydraulic nozzle or rotary atomiser type sprayers including application in or near water

PA6C granule applicator

PA6CW granule applicators including application in or near water

PA6D other hand held applicators requiring minimal calibration

Breakdown of costs:

162. Baseline neutral; no inspection requirement.

PA7 AERIAL APPLICATION

163. According to the Directive this equipment type must never be considered very low scale of use and must therefore be inspected at the intervals set out in the Directive. FERA's PUS figures for aerial spraying indicate that there are 5 contractors across the country and that in 2009 and 2011 aerial spraying was only used for bracken control.

164. The current testing regime⁵⁹ is not done under the NSTS but is undertaken in-house, not to a formal annual timetable but done following the requirements of the Civil Aviation Authority (CAA)⁶⁰ by qualified engineers approved by the CAA for maintaining and fitting spray equipment. Closed systems are used and it is immediately apparent on the electronic flow meters if problems (broken seals etc) occur. At each flight "the end of flight report" will conclude that the aircraft has been left in airworthy condition, or it will detail if there have been problems and these will be rectified prior to next flight.

Estimated number of equipment units

Total number: 8-11

Breakdown of costs:

165. Baseline neutral; existing arrangements go further than those required by the Directive⁶¹.

⁵⁹ Information provided by Roderick Robinson Landward Consultancy

⁶⁰ There is a specific CAA certificate for aerial pesticide application - CAP 414 (<http://www.caa.co.uk/docs/33/CAP414.PDF>)

⁶¹ Testing is currently done to CAA requirements which are over and above any timetable that would be required by the new Directive therefore there should be no additional cost burden associated with implementing the Directive.

PA9 FOGGING, MISTING AND SMOKES (INCLUDING FORMALDEHYDE)

166. This is not a spray application method. This equipment type constitutes very low scale of use and is not a spray application method. They will be required to be inspected at intervals of no greater than six years after 2016.

Estimated number of equipment units

167. There is no information available on equipment numbers for these types. Under the NSTS approximately 22 pieces of this type of equipment are inspected annually. If we assume that NSTS tests account for the same proportion of the total as for the PA2 sprayers (approximately 30%) this would suggest a total in the region of 80 pieces of equipment.

Total number: 80
Total Cost: £6,000

Breakdown of costs:

75 units minus 25 units tested by NSTS already
= 50 units x 1 test event (by 2016) x £120

A10 BATCH DIPPING

168. This application method is not a pesticide spray method and is very low scale of use; inspection not necessary for this type of application equipment - in most cases there are little or no working components to test.

Breakdown of costs:

Baseline neutral (nothing to test)

PA11 SEED TREATING EQUIPMENT

169. Although the pesticide is applied as a spray it is contained within an enclosed system. The majority of seed treatment is conducted by contractors on an industrial basis. For this reason the European Commission has indicated that it did not envisage this type of equipment as coming under the scope of the Directive.

Estimated number of equipment units

170. No accurate statistics collected/available. Seed treatment machines are present in fixed locations in seed merchant premises, on farms and on mobile equipment. The amount of seed treatment applied is also not known (it varies considerably from machine to machine).

Breakdown of costs:

PA11 Equipment Inspection: Cost neutral.

PA12 APPLICATION OF PESTICIDES TO MATERIAL AS A CONTINUOUS PROCESS VIA CONVEYOR, ROLLER TABLE OR OTHER MOVING EQUIPMENT

171. These can involve open, semi (PVC shield/curtain) or fully shielded hydraulic or rotary discs producing downward sprays. e.g. potato post-harvest treatment prior to storage. Currently on-farm basis – but this may change in the future to use by contractors if new products are approved.

Estimated number of equipment units

172. This type of application equipment is not currently inspected under the NSTS because it is not obviously a pesticide application type. There is no available information on the number of these in use. According to City and Guilds NTPC approximately 560 people have been trained to use this type of equipment in the UK which indicates that they are of a very low scale of use. In the absence of any other information, we have assumed that there is one piece of equipment in use for every two people who have been trained to use it this would give an estimate of 300 pieces of equipment of this type.

Total Cost: £36,000

Breakdown of costs:

(300 units x 1 test event (by 2016) x £120)

PA13 SUB SURFACE LIQUID APPLICATOR

173. This is specialist equipment which can be used to apply substances which have high toxicity such as soil sterilants. Equipment is not a spray application method and it represents a very low scale of use in the UK. The cumulative number of users that have been trained to use this equipment type is 35 and it is estimated to account for approximately 0.0001% of the treated area in the UK.

Estimated number of equipment units

174. There is no information available on the number of pieces of this type of equipment that are in use. Again, this type of application equipment is not tested under the NSTS because it is not as obvious a pesticide application type as say, a boom sprayer. In the absence of any other information, we have again assumed that there is one piece of equipment in use for every two people who have been trained to use it, giving an estimate of approximately 15 pieces of equipment. This is a rather arbitrary figure given that the NPTC certificates span since 1988 and not all users will be certificated however it is the best estimate we are able to arrive at.

Total number: 15

Total Costs: £1,800

Breakdown of costs:

(15 units x 1 test event by 2016 x £120)

PA SC SPECIAL CATEGORY EQUIPMENT⁶²

175. This is a new category, introduced in 2010, for novel types of application equipment or that for which there is no suitable category in the existing suite of training schedules (PA2 – PA13) for example; automated glasshouse sprayers, multi-modal applicators on potato planters or rail-track bank-side spraying modules. The estimated scale of use is very low; 0.001% of total area treated (ha) treated in agriculture. Only one operator has so far been trained under this new category because this type of equipment would have previously been considered under one of the other PA categories. Since these types of equipment will have been included in one of the preceding categories (PA6) we have not counted them again here.

Total number: 0

Breakdown of costs:

Baseline neutral

Scale of Use

Area treated using different equipment types

176. As explained in paragraph 120, page 30, the annual Pesticides Usage Survey provides information on the total area in hectares of land treated using different application methods (which can be classified under one of the PA equipment types) The percentage of the total basic treated area using the different types of equipment can therefore be used to provide a comparative picture of their relative scale of use in agriculture.

Estimated total basic treated area for agriculture in the UK⁶³ (ha):

Arable (survey carried out in 2008)	21,952,755
Orchards: (survey carried out in 2008)	237,298
Vegetables; (survey carried out in 2007)	641,130
Glass house: (survey carried out in 2007)	45,604
Soft Fruit: (survey carried out in 2006)	94,843
Fodder and Forage (survey carried out in 2009)	<u>11,364,483</u>
Total basic treated area	34, 336,113 (excluding seed treatment)

Cumulative number of users trained to use each equipment type

177. The cumulative number of individuals that have gained certificates across all the different equipment types since the certification scheme began 25 years ago is 230,000. The number of trained users of a particular type of equipment will not correlate directly to the number of units of PPPAE in use; there is no way of knowing how many trained individuals are still employed in

⁶² This PA module has only been in use since 2010.

⁶³ The Pesticides Usage Group surveys different agricultural sectors each year – the entire agricultural/horticultural sector was covered between the years 2006 - 2009. The total basic treated area arrived at above is the sum of the treated areas for each sector (excluding seed treatments) surveyed across that four year period. This total is inherently inexact because it assumes that all usage figures remain constant over the four years, however it is a reasonable figure to use as a basis for indications of scale of use.

this work and a minority of users will not be certificated. However, it is reasonable to assume that the greater the number of individuals that have been trained to use a particular equipment type the more commonly used it is likely to be, relative to other types.

178. It must be noted that even if a comparative relationship does exist between the number of people who have been trained to use different types of equipment and its relative scale of use this relationship would not be consistent across the sectors. There is a higher turnover of staff with local authorities and contractors than in agriculture.

Table 3 Indicators of scale of use of different equipment types, based on relative area treated in agriculture and numbers of trained users

Equipment type	Area treated agri. ⁶⁴ (ha)	Scale of use as a % of total basic treated agri. area in UK	Number of trained users ⁶⁵
PA2 ground crop sprayer – mounted or trailed includes PA2ST (spray trains)	32,215,535	93.8% (split 98/ for booms >3m and <3m respectively)	60,809
		Not very low scale of use.	
PA3 broadcast or variable geometry boom sprayer (mounted or trailed) with/ without air assistance	253,805	0.7	2,231
		Very low scale of use	
PA4 pesticide granule applicator mounted or trailed	110,225	0.3	9801
		Very low scale of use	
PA5 boat mounted applicators	n.a.	n.a. Other information indicates very low scale of use	558
PA6 handheld applicators (including pedestrian controlled machines but excluding misters and foggers)	44,235	0.1	n.a.
		Very low scale of use	
PA7 Aerial	n.a.	Not very low scale of use.	n.a.
PA9 fogging, misting and smokes (including formaldehyde)	1461	0.004	2674
		Very low scale of use	
PA10 batch dipping	1421	0.004	338
		Very low scale of use	
PA11 seed treating equipment	n.a.	19.8	2437
PA 12 conveyor, roller table/ other moving equipment	n.a.		567
		Very low scale of use	

⁶⁴ The Pesticides Usage Group data

⁶⁵ City & Guilds Land Based Services (NPTC) cumulative certificate holder numbers from inception in 2008 to 31 December 2010:

PA 13 Sub surface liquid applicator	547	0.001 Very low scale of use	35
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Table: 4 Equipment types, method of application and relative scale of use, whether derogation applicable.

Equipment Type	Application by spraying	Very low scale of use	Inspection interval
PA2 ground crop sprayer – mounted/ trailed. (Includes all boom lengths)			
Boom <3m:	Yes	Yes	Derogation will be applied
Boom >3m	Yes	No	Interval set out in Directive
PA2ST Spray trains	Yes	No	Interval set out in Directive
PA3 broadcast or variable geometry boom sprayer	Yes	No	Low scale of use but risk assessment requires interval set out in Directive
PA4 granule applicator mounted or trailed	No	Yes	Derogation will be applied;
PA5 boat mounted applicators			
Boom <3m	Yes	Yes	Derogation will be applied.
Granule applicators.	No	Yes	Derogation will be applied:
PA6 Handheld applicators	Yes	n.a.	Directive allows full exemption
PA7 aerial application	Yes	No	Interval set out in Directive.
PA9 fogging, misting and smokes	No	Yes	Derogation will be applied.
PA10 batch dipping	No	Yes	Derogation will be applied.
PA11 seed treating equipment	No	No	Derogation will be applied. Enclosed application method -not a spray – generally takes place at industrial facilities.
PA 12 conveyor, roller table/ other moving equipment	No	Yes	Derogation will be applied.
PA13 sub surface liquid applicator	No	Yes	Derogation will be applied.

Table 5; Inspection of equipment; direct costs to business (2011 – 2021)

Plant Protection Product Application Equipment Type	Number of pieces of equipment:	Additional Inspection costs:
Ground crop sprayer, mounted or trailed <i>Inspection intervals as in Directive</i>	50,000	£10,944,450
Spray trains – hydraulic nozzle and rotary atomiser types <i>Inspection intervals as in Directive</i>	n.a.	£0
Broadcast or variable geometry boom sprayer (mounted or trailed) with or without air assistance <i>Inspection intervals as in Directive</i>	2,500	£650,430
Pesticide granule applicator, mounted or trailed <i>Not used for spraying</i>	6,300	£641,640
Boat mounted applicators <i>Very low scale of use</i>	6	£990
Handheld applicators <i>Exempt from inspection</i>	50,000	£0 derogation
Aerial application <i>Inspection intervals as in Directive</i>	8-11	Cost neutral.
Fogging, misting and smokes (including formaldehyde) <i>Not used for spraying</i>	80	£6,000
Batch dipping <i>Not used for spraying</i>	100	£0 (nothing to test)
Seed treating equipment <i>Not used for spraying</i>	350	£0
Application of pesticides to material as a continuous process via conveyor, roller table or other moving equipment <i>Not used for spraying</i>	300	£36,000
Sub surface liquid applicator <i>Not used for spraying</i>	15	£1,800
Special category equipment	n.a.	n.a.

TOTAL: £ 12,281,310

ARTICLE 9: AERIAL SPRAYING

179. The Directive requires that aerial spraying should generally be prohibited with derogations possible where it can be demonstrated that:

- (a) the aerial application is the only viable alternative or offers clear advantages in terms of reduced impacts on human health or the environment;
- (b) risks arising from the lack of a proper assessment of the chemicals, trained users, badly maintained or out-of-date equipment and exposure of bystanders have been identified and/or addressed.
- (c) a competent authority has approved an Application Plan submitted by a person intending to carry out aerial spraying. Spraying cannot take place in 'close proximity' to residential areas and measures must be put in place to warn residents and bystanders to protect the environment in the vicinity of the area to be sprayed.

Current UK situation:

180. Aerial spraying takes place on a relatively limited basis with applications largely confined to upland areas for the control of bracken. The existing legislative control regime contains a number of measures specifically applicable to aerial applications. These include requirements that:

- a. products be subjected to a specific regulatory risk assessment;
- b. individuals or companies;
 - hold appropriate aviation certification;
 - consult/notify conservation authorities, environmental regulators, beekeepers, environmental health officers, residents and those in charge of properties adjacent to areas to be sprayed;
 - avoiding spraying: within specified distances of occupied buildings, playgrounds, sports grounds, buildings containing livestock or open public highways (the law requires that ground markers be used to help comply with this requirement); where wind speed exceeds 10 knots; and where markers have not been put in place to warn pedestrians and drivers of intended applications.

181. This control regime which has been developed to implement this legislative framework provides a basis for meeting the requirements of the Directive and can be adapted to ensure the continuation of properly regulated aerial applications, through a consent-based approach.

Necessary Measures:

182. The transposing legislation will:

- provide that aerial spraying may only lawfully be carried out by those holding a permit issued by the competent authority (CRD).
- require those intending to carry out an aerial application to submit an Application Plan for approval to the competent authority;
- provide that the authority may not permit the spray operation unless all the conditions which enable the derogation to be enacted are met. In situations such as emergencies the competent authority may be able to apply an accelerated procedure to ensure treatment of a pest, weed or disease takes place at an appropriate time;
- require the permit to include measures necessary for warning residents and bystanders in due time and to protect the environment in the vicinity to be sprayed. The competent authority will, in certain limited circumstances be able to amend the conditions of, or revoke, permits;

183. The new legislation will not include any requirements apart from that relating to CAA certification. It should be noted, however, that:

- it is established UK Government practice to subject all products approved for aerial spraying to a specific risk assessment;
- the legislation to which this Impact Assessment relates will require users to be trained and that equipment be tested and calibrated on a regular basis and require those who use, handle, or store pesticides to take 'reasonable precautions' to protect or avoid endangering human health and the environment;
- under the proposed new administrative arrangements the industry will assume greater responsibility for determining and mitigating risk arising from specific spray operations (thereby putting them on, as far as in practicable, an even footing with other pesticide users). The industry representative body, the Aerial Application Association, is developing guidance for those submitting an Application Plan which includes good practice measures on: liaising with conservation authorities, environmental regulators, beekeepers, environmental health officers, residents and those in charge of properties adjacent to areas to be sprayed; avoiding spraying close to inhabited areas; taking account of weather conditions and; and warning pedestrians and drivers of intended applications. The Government (CRD) will include relevant measures in a 'permit', to be issued if an Application Plan is approved.
- those responsible for aerial applications and public bodies are subject to the requirements of the Wildlife and Countryside Act 1981 and the Conservation of Habitats and Species Regulations 2010 when aerial spraying takes place in or adjacent to conservation areas (this legislation requires that an assessment of the impact of the pesticide application is undertaken and appropriate mitigation measures put in place).

Costs:

184. An operator who believes they are responsible for approximately 80% of aerial spraying operations in the UK estimated the total costs of administration associated with the current regulatory framework at approximately £15000 per annum. They assessed that although additional time may be incurred undertaking risk assessments and completing Application Plans this would be offset by simplified administrative arrangements. The cost of the proposed regime was estimated at £7500. This would suggest that nationally the current regulatory framework costs industry £18750 and that of the proposed new regime would be approximately £9400. They also commented that the proposed administrative arrangements lessened the risk that a lack of paperwork prevented aircraft from flying (the operator estimated this cost at approximately £20000 per day).

ARTICLE 11: PROTECTION OF WATER

185. The Directive requires that Member States shall ensure that appropriate measures are adopted to protect the aquatic environment and drinking water supplies from the adverse impact of pesticides. These measures shall support and be compatible with the Water Framework Directive and the relevant provisions of the new authorisation regulation. The measures shall include: giving preference to particular products and the most efficient application techniques; using mitigation measures (including buffer and safeguard zones) to minimise the risk of off-site pollution caused by spray drift, drain-flow and run-off; and prohibiting or minimising use on man-made surfaces (roads, railway lines, very permeable surfaces or other infrastructure close to surface or groundwater, or sealed surfaces with a high risk of run-off) into surface water or sewage systems.

Current UK situation:

186. The UK has extensive existing measures to control the use of pesticides and to protect and improve water quality, including:

- the pesticide regulatory risk assessment process which considers the routes by which pesticides might contaminate non-target areas and imposes appropriate mitigation measures. Changes are planned to this process which will further strengthen links with the Water Framework Directive. Mitigation measures include the use of buffer zones, restrictions on the timing and quantity of application, etc;
- legislation on controlling pesticide use including the need for users: to be trained, take reasonable precautions to protect water and confine applications to target area;
- water protection legislation which makes it an offence to pollute waters, controls discharges of potentially polluting material and allowing for the establishment of safeguard and water protection zones to control polluting activities in areas where particular pollutants are compromising water quality aims;
- government and industry guidance (which can be general or pesticide/situation specific);
- payments through mechanisms such as subsidy schemes (Single Farm Payments, Environmental Stewardship, etc) or Capital Grants (Catchment Sensitive Farming Initiative) which require/promote the adoption of desired behaviours/practices or assist with the investment in pollution-containing farm infrastructures;
- government policies driving industry assurance/standards schemes requiring the adoption of desired behaviours/practices.

Necessary measures:

187. The NAP will describe how the existing measures outlined above help achieve virtually all of the outcomes required by the Directive. The existing legal requirements relating to controlling use detailed above will be carried forward to the transposing legislation. The Government has, however, identified that in order to demonstrate proper transposition of the Directive it is necessary to include specific new statutory obligations for users to pesticide products requiring them to:

- give preference, so far as is reasonably practicable, to pesticides classified as not dangerous for the aquatic environment or containing priority hazardous substances; and
- ensure that the use is minimised on man-made surfaces which pose a particular risk to water quality.

It will also require the competent authority for regulating the use of pesticides to use buffer zones as a mitigation measure in pesticide authorisations to protect non-target aquatic organisms where it is appropriate to do so.

Costs:

188. The new legal requirements put established responsible user (and competent authority) practice in the agricultural sector on a legislative basis and consequently are not anticipated to impose additional costs.

189. New guidance will be required for users in the amenity sector and the industry representative body is developing this. Industry has advised that the costs associated with developing and acquainting itself with this guidance will be £93,000. Based on industry experience in producing similar guidance at a cost of £5500 for an 8 page A5 guidance booklet + (8000 contractors (80% of professional contractors) taking 1 and a half hours* to acquaint themselves with the necessary guidance at cost of £7.27/hr =) £92, 740.

* There is scope for limiting costs here by combining this work with that described as necessary under Article 12, below. The one and a half hours familiarisation time and the cost of producing the guidance are intended, therefore, to cover the costs in relation to the need for additional guidance as a result of the necessary measures in required the following section.

ARTICLE 12: REDUCTION OF PESTICIDE USE OR RISKS IN SPECIFIC AREAS

190. The Directive requires that Member States shall ensure that, having due regard for the necessary hygiene and public health requirements and biodiversity or the results of relevant risk assessments, the use of pesticides is minimised or prohibited in certain specific areas (these are defined as areas used by the general public or 'vulnerable groups', the close vicinity of healthcare facilities, conservation areas and recently treated areas used by or accessible to agricultural workers). Appropriate risk management measures should be taken and the use of low-risk plant protection products and biological control measures shall be considered in the first place.

Current UK situation:

191. The UK has extensive existing measures to control the use of pesticides and to protect specific areas, including:

- the pesticide regulatory risk assessment process which identifies risks and imposes appropriate risk mitigation measures (this includes making specific assessments for certain vulnerable groups where pesticides are used in situations in which such populations are present or imposition of statutory re-entry intervals to treated areas to control the exposure of agricultural workers to pesticide applications);
- legislation on controlling pesticide use including the need for users: to be trained, take reasonable precautions to protect human health and the environment and confine applications to target area;
- conservation legislation that requires landowners or other authorities to consult nature conservation bodies before applying pesticides;
- government and industry guidance (which can be general or product/situation specific);
- training programmes reinforcing the necessary messages and equipping users to consider and choose appropriate products and use them in a 'correct' fashion;
- incentives such as subsidies requiring/promoting the adoption of desired behaviours;
- government policies driving industry assurance/standards schemes requiring the adoption of desired behaviours.

Necessary measures:

192. The NAP will describe how the existing measures outlined above help achieve most of the outcomes required by the Directive. The existing legal requirements relating to controlling use detailed above will be carried forward to the transposing legislation. In order to demonstrate proper transposition of the Directive it is necessary to include specific new statutory obligations for users of pesticide products requiring them to minimise use in the specific areas.

Costs:

193. Industry has advised that the new legal requirements put established responsible user practice in the agricultural sector on a legislative basis and consequently are not anticipated to impose additional costs.

194. New guidance will be required for users in the amenity sector and the industry representative body is developing this. Industry has advised that the costs associated with developing and acquainting itself with this guidance will be included in the £93,000 provided for in the previous section.

ARTICLE 13: STORAGE, HANDLING AND WASTE

195. Member States are required to adopt necessary measures to ensure that certain handling and storage operations relating to professional products do not endanger human health or the environment. The operations listed in the Directive are: storage, handling, diluting and mixing the pesticides before application; handling of packaging and remnants; disposal of tank mixtures remaining after application; cleaning of pesticide application equipment after use, and recovery and disposal of remnants and packaging in accordance with EU waste legislation). They are also required to ensure that storage areas for professional products are constructed in such a way as to prevent unwanted releases. Member States should also take all necessary measures to avoid dangerous handling operations for products authorised for non-professional use.

Current UK situation:

196. The UK has extensive existing measures to control risks from the handling, storage and disposal of pesticides, including:

- the pesticide regulatory risk assessment process identifies risks and imposes appropriate mitigation measures (for example, containers must be constructed to prevent 'glugging' during pouring, products must be stable in storage for a period of 2 years with no significant loss of active substance or reaction with the packaging, products must not 'adhere' to the packaging, primary closures and seals must be designed for removal by a gloved hand, etc);
- legislation on controlling pesticide storage and use including the need for storekeepers and users to be trained, and to take reasonable precautions to protect human health and the environment and measures to prevent inappropriate mixing of pesticide products;
- waste legislation ensures pesticide remnants and packaging are required to be handled in accordance with EU waste legislation;
- control of hazards and buildings legislation requires stores to be constructed and managed in ways that reduce the risk of unwanted releases;
- government and industry guidance (which can be general or product/situation specific);
- training programmes reinforcing the necessary messages and equipping those storing, transporting, using and/or disposing of products;
- government policies driving industry assurance/standards schemes requiring the adoption of desired behaviours.

197. For non-professional products existing controls have helped minimise the risk of dangerous handling operations by: using risk assessment techniques which promote authorisation of products of low toxicity and ready to use formulations; and limiting the sizes of containers or packaging.

Necessary measures:

198. The NAP will describe how the existing measures outlined above help achieve the outcomes required by the Directive. Existing legal requirements relating to: training of users; taking reasonable precautions when storing or using pesticides; and measures to prevent inappropriate mixing of products will be replicated in the transposing legislation.

199. The transposing legislation will define the handling and storage operations covered in accordance with those detailed in the Directive and in order to demonstrate proper transposition of the Directive: include provisions requiring persons storing pesticides for professional use to store products in areas constructed in such a way as to prevent unwanted releases; and provide that only those pesticides authorised for storage may be lawfully held by storekeepers.

Costs:

200. Industry has advised that the new legal requirements put established responsible user practice on a legislative basis and consequently are not anticipated to impose additional costs.

ARTICLE 15: INDICATORS, REPORTING AND INFORMATION EXCHANGE

201. Member States are required to: calculate harmonised risk indicators; identify trends in the use of certain active substances; identify priority items; communicate the results of these evaluations to the Commission and make information available to the public. They may use existing national indicators or adopt other appropriate indicators in addition to the harmonised ones.

Current UK situation:

202. Harmonised EU risk indicators have yet to be developed by the Commission. In all other respects the UK is already complying with the requirements of the Directive. The UK Pesticides Forum (a stakeholder body which monitors development of the National Pesticide Strategy) currently identifies a number of indicators of responsible pesticide use and publishes details of its findings in an annual report. The Forum's work draws upon information from a number of sources including the Pesticide Usage Survey (to establish trends in the use of active substances of concern); and stakeholders (via for example the National Pesticide Strategy's Action Plan Groups to identify priority items).

Necessary Measures:

203. The Government has not identified a need to develop additional measures to meet the requirements of the Directive. Once the harmonised EU risk indicators are agreed the Government will need to determine whether existing national indicators need be maintained or other appropriate indicators are developed.

Costs:

204. The estimated costs associated with this Article are judged to be relatively minor. Though there is a considerable degree of uncertainty on their accuracy we are reasonably confident on the scale of costs being quoted.

205. The Government will incur new costs in calculating the harmonised EU indicators. These will be associated with time incurred in putting data into the models which will generate the indicator. For illustrative purposes the full economic costs of a member of staff at an appropriate grade carrying out this work for one week would be approximately £1500.

206. This could be offset by savings if the Government concludes it does not wish to maintain reporting arrangements for national risk indicators and adopt a streamlined reporting system or there may be additional costs associated with a need for enhanced reporting to put the results into an appropriate context.

Costs to Government

207. Enforcement of new obligations will be cost neutral as they for the most part replace or replicate existing legal obligations.

208. There will be some cost to Government in communicating the changes to a wide range of stakeholders. These costs were included in the cost recovery provisions set out in the Impact Assessment for the Fees Regulations ⁶⁶There may also be a cost to Government in updating the existing Guidance for users of Plant Protection Products. This has also been factored into the costs in that Impact Assessment.

⁶⁶ http://www.legislation.gov.uk/uksi/2011/2131/pdfs/uksifia_20112131_en.pdf

WIDER IMPACTS

Economic / Financial

209. These proposals have been developed to minimum new burdens on business, given the majority are thought to be already doing enough to meet most of the requirements of the Directive. This should, accordingly, result in little or no knock-on effect for consumers. The Directive is aimed at farmers, growers and other users of pesticides, many of which would qualify as micro-distributors - it is not possible to exempt these enterprises from the majority of the legislation since it is those enterprises it particularly applies to. However, exemptions for micro businesses (in this case micro-distributors) have been used where such derogations are available, and we have used a simplified interpretation of micro-distributors to provide maximum flexibility and enable the inclusion of as many enterprises as possible.

210. The main costs arise in respect of the inspection of plant protection product application equipment; this will impose a cost on those farms, growers and contractors that do not already participate in the voluntary scheme. It will provide new business opportunities for those involved with the inspection of the equipment and possibly new jobs and business opportunities in some areas. This will also benefit the training providers who train the inspectors.

211. There are no anticipated impacts on the labour market or on competition. The Directive represents a significant step toward ensuring that everyone is properly trained and uses pesticides in line with the legal obligations to protect human health and the environment. It will thus help remove existing disparities between standards operating in the different Member States which could put UK farmers at a commercial disadvantage, given the already high standards operating here.

212. There are no additional financial or resource impacts on other Departments such as the Justice system. This proposal should provide a relatively seamless transition from one regulatory regime to another, since existing arrangements are being continued wherever possible.

Social, Health

213. These proposals are aimed at continuing to protect human health and the environment minimise the risk of incidents of harm occurring.

214. There is also a public health interest in maintaining the current high safety standards for pesticide use, since misuse and abuse of these hazardous chemicals by untrained operatives could result in incidents which adversely affect the health of individuals or animals or damage neighbouring crops or the environment.

215. There is a view among a sub-section of the rural population, particularly among those who have moved into rural settings from elsewhere, that there are unacceptable risks to human health and the environment arising out of the use of pesticides, particularly in agriculture. A number of individuals believe that they have suffered ill-health as a result of exposure to agricultural pesticides. Although a direct link has not been proven, there is a clear issue of well-being associated with public confidence in the use of these chemicals.

216. The proposals will remove, by 2015, an existing legal provision which is discriminatory under the Equality Act 2010 in that it exempts individuals of a certain age from a requirement to hold a training certificate.

Environmental

217. No change in the emission of Greenhouse Gases or implications for the predicted effects of climate change.

218. The proposal will support the aims of the Water Framework Directive.

SUMMARY; PREFERRED OPTION AND IMPLEMENTATION PLAN

219. The table below sets out the planned approach in respect of transposing the Directive. This Impact Assessment covers the implementation costs and benefits for those Articles that will require new regulation if the UK is to meet its obligations under the Directive. It also covers one area (Article 5) where the preferred option reflects an industry-led policy of maintaining existing UK controls, rather than relying solely on the controls in the Directive. All but one part of Article 6 and Article 8 are baseline neutral in terms of costs.

Article /provision	Necessary Measures	Selected Option and whether costs arise
Article 4 National Action Plan (NAP)	Member states must adopt NAPs to set quantitative objectives, targets, measures, indicators and timetables to reduce risks and impacts of pesticide use on human health and the environment...encourage the development and introduction of Integrated Pest Management (IPM) and alternative approaches or techniques to reduce dependency on the use of pesticides.	Use alternatives to regulation. The UK's NAP will be based on its existing National Strategy and we will continue the existing policy of minimising the potential impacts of pesticides by seeking to reduce risks, rather than introducing new regulation. Minimal costs
Article 5 Training and Certification	Member States must set up systems to ensure access to initial and ongoing training, and to establish systems for certification, for distributors, advisors and professional users of pesticides.	Maintain existing UK regulation for user certification. Existing domestic legal requirements will be copied across to the transposing legislation to maintain the current position. No new costs
Article 6 Requirements for Sales of Pesticides	Measures must provide for specific advice on safety instructions for protecting human health and the environment to be given to the end user at the point of sale of pesticide products. Advice to be given at the point of sale to non-professional users on safe handling and storage of pesticides and disposal of packaging. Restrict sales of pesticides authorised for professional use to persons holding a certificate.	Introduce new regulation where unavoidable and rely on existing business practice to meet new obligations. There will be a new obligation in respect of purchasing a professional product – requiring the purchaser to ensure the intended end-user holds a certificate for use. Distributors of non-professional products will need to employ sufficient certificated staff to provide information to customers. The remaining provisions in this Article can be met by means of existing practice. New costs
Article 7 Information and Awareness Raising	Member States are required to <ul style="list-style-type: none"> take measures to inform the general public and to promote and facilitate information and awareness raising programmes relating to pesticides for the general public, regarding the risks and potential effects for human health, non-target organisms and the environment. put in place systems for gathering information on pesticide acute poisoning incidents, as well as chronic poisoning developments where available, among groups that may be exposed regularly to pesticides 	No new regulation No new Costs
Article 8 Inspection of Equipment	Member States will be required to ensure that plant protection product application equipment (PPPPE) in professional use is subject to inspections at regular intervals. The interval between inspections is not to exceed five years until 2020 and three	New regulation unavoidable New regulations will require that PPPPE is inspected at regular intervals. A derogation, to exempt handheld and

Article /provision	Necessary Measures	Selected Option and whether costs arise
	years thereafter.	knapsack equipment from the inspection regime, will be taken up. New costs
Article 9 Aerial Spraying	The Directive requires that aerial spraying should generally be prohibited with derogations possible where it represents clear advantages in terms of reduced impacts on human health and the environment in comparison with other spraying methods, or where there are no viable alternatives, provided that the best available technology to reduce drift is used.	Simplify existing regulatory requirements The derogation will be used, enabling the continuation of aerial spraying in the UK. The existing domestic control regime will be adapted to meet the requirements of the Directive and to ensure the continuation of properly regulated aerial applications through a consent base approach. Cost Reduction
Article 10 Information to the Public	Member States may include in their NAPs provisions on informing persons who could be exposed to the spray drift	Use alternatives to regulation. No new measure planned – continue to promote voluntary approaches. No new costs
Article 11 Protection of Water	Member states shall ensure that appropriate measures to protect the aquatic environment and drinking water supplies from the adverse impact of pesticides are adopted. These measures shall support and be compatible with the Water Framework Directive. The measures shall include: giving preference to particular products and application techniques; using mitigation measures (including buffer and safeguard zones) to minimise the risk of off-site pollution caused by spray drift, drain-flow and run-off; and prohibiting or minimising use in certain amenity situations (very permeable surfaces, infrastructure close to water, or hard surfaces with a high risk of run-off)	New regulation unavoidable but does not impose obligations that go further than existing regulatory and other frameworks. No new costs
Article 12	Member States shall ensure that the use of pesticides is minimised or prohibited in certain specific areas (these are defined as areas used by the general public or ‘vulnerable groups’, the close vicinity of healthcare facilities, conservation areas and recently treated areas used by or accessible to agricultural workers). Appropriate risk management measures should be taken and the use of low-risk plant protection products as defined by the Authorisation Regulation and biological control measures shall be considered in the first place. Account should also be taken of the necessary hygiene and public health requirements and biodiversity.	New regulation unavoidable but does not impose obligations that go further than existing regulatory and other frameworks. No new costs
Article 13	Member States must adopt specific measures addressing the risks associated with the handling of pesticides, including storage, diluting and mixing the pesticides and cleaning of pesticide application equipment after use, and recovery and disposal of tank mixtures, empty packaging and remnants of pesticides.	New regulation unavoidable but does not impose obligations that go further than existing regulatory and other frameworks. No new costs

Article /provision	Necessary Measures	Selected Option and whether costs arise
Article 14	Member States are required to take all necessary measures to promote low pesticide-input pest management, in particular IPM, and provide the necessary conditions and measures for its implementation in their NAPs	Use alternatives to regulation; support and facilitate the development of existing voluntary approaches. No new costs
Article 15	In order to measure progress in achieving the aims of the Directive harmonised risk indicators will be established at EU level. Member States will be required to use these and any national indicators to identify practices, areas and substances for action.	Regulation not necessary Existing measures are sufficient. No new costs