Title: Biofuel (Labelling) (Amendment) Regulations IA No: DfT00098 Lead department or agency: Department for Transport (DfT) Other departments or agencies: Local Authorities	Impact Assessment (IA) Date: 01/01/2011 Stage: Final Source of intervention: EU Type of measure: Secondary legislation Contact for enquiries: Marina Skrinar, 020 7944 6186

Summary: Intervention and Options

RPC: Not required

Cost of Preferred (or more likely) Option				
Total Net Present Value	**Business Net Present Value**	**Net cost to business per year** (EANCB on 2009 prices)	**In scope of One-In, One-Out?**	**Measure qualifies as**
£0m	£0m	£0m	No	Zero Net Cost

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

Use of biofuels in fossil fuel blends by fuel suppliers is likely to increase to meet mandatory targets for use of renewable energy. It is important to advise vehicle owners of the presence of certain levels of biofuel which may not be suitable for all vehicles and could lead to engine damage. The Renewable Energy Directive (2009/28/EC, "RED") requires that where the percentage of biofuel blended exceeds 10% by volume this must be indicated at the sales point. Existing legislation, industry standards and commercial considerations mean that the RED requirement will be met without regulation. Our preferred option is Option 3 which will achieve our policy objectives and complete transposition of the RED without recourse to further regulation.

What are the policy objectives and the intended effects?

To promote consumer protection and information by ensuring that users are aware of the levels of those biofuels in transport fuels which may not be suitable for all vehicles/engines. This will help avoid unintended consequences such as engine damage or warranty invalidation as a result of EU/Government policy to increase use of biofuels to reduce greenhouse gas emissions from transport. Minimising unnecessary burdens on industry is also a key policy objective.

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

The RED requires labelling for biofuel blends exceeding 10% by volume at the sales point in order to protect consumers from levels of biofuel that are incompatible with their vehicle. The do nothing case and three policy options are considered:1)To apply the labelling requirement to biofuel blends precisely as described in the Directive. 2)To apply the labelling requirement to biofuel blends as described in the Directive and extend it to pure biofuels. 3)Not to put legislation in place and work with industry to develop a non-regulatory solution. We prefer Option 3, the non-regulatory option, as it is best placed to provide the desired consumer protection at no extra cost (best estimate) compared to Options 1 & 2. Options 1 & 2 were consulted on, consultees' comments implied that these options would not be the best method for achieving the policy objectives. Furthermore, we believe that the combination of existing legislation and industry standards provides sufficient basis to properly assert we have implemented article 21(1) of the RED.

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

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** No	**< 20** No	**Small** No	**Medium** No	**Large** No
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 SELECT SIGNATORY: _____ Date: 6/Feb 2011

Summary: Analysis & Evidence

Policy Option 1

Description: Require that, when the percentage of bioethanol or FAME-derived biodiesel (i.e. biofuel) blended in mineral oil derivatives (i.e. in blends containing both biofuel and fossil fuel, rather than 100% FAME-derived biodiesel or bioethanol) exceeds 10% by volume, this is indicated at the sales point. This approach applies the copy out principle.

FULL ECONOMIC ASSESSMENT

Price Base Year 2011	PV Base Year 2011	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low: -£0.006m	**High:** £0m	**Best Estimate: £0m**

COSTS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	£0m		£0m	**£0m**
High	£0m		£0.001m	**£0.006m**
Best Estimate	£0m		£0m	**£0m**

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

Fuel retailers are the affected group. The key monetised cost is that of labelling fuel dispensers where mineral blended fuel containing more than 10% bioethanol or FAME-derived biodiesel is being sold. The high cost demonstrates a maximum scenario in a case where fuel retailers use extra labels to those they would use in the baseline. We consider the required text could be added to the label that would anyway be necessary for any new fuels coming onto the market. Please see paragraph 62 for a summary of the costs.

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

N/A

BENEFITS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	£0m		£0m	**£0m**
High	£0m	N/A	£0m	**£0m**
Best Estimate	NQ		NQ	**NQ**

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

N/A

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

The main affected group would be vehicle users of non-specialist fuels. Increased information on the content of fuels would enable consumers to make more informed decisions and the text on the required labels would be common throughout the UK. Fewer vehicle users may use unsuitably high biofuel blends in their vehicles, resulting in lower damage costs. The financial impact of this is unknown though we have tried to estimate costs through an example at paragraph 39.

Key assumptions/sensitivities/risks **Discount rate (%)** 3.5

It is assumed that retailers would likely label their relevant fuels as containing bioethanol or FAME-derived biodiesel without this regulation on the basis of consumer protection regulations, industry standards and the higher retail cost of bioethanol or FAME-derived biodiesel blends. Costs of this option are sensitive to whether any additional labels need to be produced due to the regulation. In the case where there are extra labels, the costs are sensitive to the number of dispensers at which the regulated fuels are sold, the unit cost per label and the future supply of high blend biofuels. We have assumed supply will begin in 2014.

BUSINESS ASSESSMENT (Option 1)

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

Summary: Analysis & Evidence

Policy Option 2

Description: Require that, when the percentage of bioethanol or FAME-derived biodiesel exceeds 10% by volume this is indicated at the sales point. This approach goes beyond the minimum requirements of the EU law to a modest extent as it would apply to 100% bioethanol or FAME-derived biodiesel also (rather than only fuels blended with fossil fuel).

FULL ECONOMIC ASSESSMENT

Price Base Year 2011	PV Base Year 2011	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low: -£0.007m	**High:** £0m	**Best Estimate: £0m**

COSTS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	£0m	0	£0m	**£0m**
High	£0m		£0.001m	**£0.007m**
Best Estimate	£0m		£0m	**£0m**

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

Fuel retailers are the affected group. The key monetised cost is that of labelling fuel dispensers where there is fuel containing more than 10% bioethanol or FAME-derived biodiesel being sold. The high cost demonstrates a maximum scenario in a case where fuel retailers use extra labels to those they would use in the baseline. We consider the required text could be added to the label that would anyway be necessary for any new fuels coming onto the market. Please see paragraph 62 for a summary of the costs.

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

N/A

BENEFITS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	£0m	N/A	£0m	**£0m**
High	£0m		£0m	**£0m**
Best Estimate	NQ		NQ	**NQ**

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

N/A

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

Main affected group would be non-specialist consumers of fuel. This option will ensure more information is available to fuel consumers. The information provision will be more consistent than in Option 1 since it will include fuels that are 100% bioethanol or FAME-derived biodiesel in addition to mineral blends. Fewer vehicle users may use unsuitable forms of fuel in their vehicles thereby resulting in lower damage costs as compared to the baseline. The financial impact of this is unknown (see paragraph 53 for more details).

Key assumptions/sensitivities/risks **Discount rate (%)** 3.5

It is assumed that retailers would likely label their relevant fuels as containing bioethanol or FAME-derived biodiesel without this regulation on the basis of consumer protection regulations, industry standards and the higher retail cost of bioethanol or FAME-derived biodiesel. Costs of this option are sensitive to whether any additional labels need to be produced as a result of the regulation. In the case where there are extra labels, the costs are sensitive to the number of dispensers at which the regulated fuels are sold, the unit cost per label and the future supply of high blend biofuels. We have assumed supply will begin in 2014.

BUSINESS ASSESSMENT (Option 2)

Direct impact on business (Equivalent Annual) £m:				In scope of OIOO?	Measure qualifies as
Costs: £0m	**Benefits: £0m**	**Net:**	**£0m**	Yes	Zero net cost

Summary: Analysis & Evidence

Policy Option 3

Description: Do not put any legislation in place. Work with industry to encourage them to develop a labelling standard that indicates the maximum level of bioethanol or FAME-derived biodiesel and is applied consistently to all future fuels through industry standards.

FULL ECONOMIC ASSESSMENT

Price Base Year 2011	PV Base Year 2011	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low: -£0.007m	High: £0m	Best Estimate: £0m

COSTS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	£0m	0	£0m	**£0m**
High	£0m		£0.001m	**£0.007m**
Best Estimate	£0m		£0m	**£0m**

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

Fuel retailers are the affected group. The key monetised cost is that of labelling fuel dispensers. The high cost demonstrates a maximum scenario in a case where fuel retailers use extra labels to those they would use in the baseline. However, we consider the required text could be added to the label that would anyway be necessary for any new fuels coming onto the market. Please see paragraph 62 for a summary of the costs.

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

This option carries with it a small risk of infraction, though we believe this to be mitigated through the combination of existing legislation and industry standards. It is not possible to quantify the possible cost that could occur due to infraction proceedings.

BENEFITS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	£0m	N/A	£0m	**£0m**
High	£0m		£0m	**£0m**
Best Estimate	NQ		NQ	**NQ**

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

N/A

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

Main affected group would be all consumers of fuel. This option will ensure more information is available to fuel consumers and this information would likely be more consistent with the language used by vehicle manufacturers when describing which fuels are safe for vehicles. Therefore fewer vehicle users may use unsuitable forms of fuel in their vehicles thereby resulting in lower damage costs as compared to the baseline and, probably, Options 1 and 2. The financial impact of this is unknown (see paragraph 59).

Key assumptions/sensitivities/risks **Discount rate (%)** 3.5

We assume fuel retailers would likely label their relevant fuels as containing bioethanol or FAME-derived biodiesel without regulation but that, working with industry, we could ensure labelling is consistent across retailers. Costs of this option are sensitive to whether additional labels need to be produced as a result of introducing labelling for fuels not commonly sold. In the case of additional labels, the costs are sensitive to the number of dispensers at which the fuels are sold, the unit cost per label and future supply of relevant fuels which is uncertain. We assume supply will begin in 2014. This option carries a small risk of infraction.

BUSINESS ASSESSMENT (Option 3)

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

Evidence Base (for summary sheets)

Problem under consideration

1. The objective of the EU requirement to label fuels that contain more than 10% biofuel is to protect consumers from damage that can be caused when fuel containing biofuel is used in unsuitable vehicles and engines. In order to transpose this requirement we have considered a number of options. In the UK there are pieces of legislation and industry standards already in place that, we believe, meet the objective of the EU requirement. Therefore, the impact of the options is limited in the UK.

2. The Renewable Energy Directive (RED) sets all Member States the target of ensuring that 10% of energy in transport comes from renewable sources in 2020. The UK intends to meet its RED commitments through the Renewable Transport Fuel Obligation (RTFO) which currently obligates fuel suppliers for road transport (those who supply above a threshold of 450,000 litres per annum) to ensure that a certain proportion of the fuel they supply is sourced from sustainable renewable sources. This proportion is 4.0% for 2011/12 and rises to 5% by 2013/14.

3. The Fuel Quality Directive (FQD) requires that in 2020 these same fuel suppliers along with a number of others must deliver a 6% reduction in life cycle greenhouse gas emissions from their fuels. It is expected that GHG saving biofuels will be used to meet the bulk of this obligation.

4. Fuel suppliers are increasing the proportion of biofuel in road transport fuels in response to such statutory requirements. Since some transport fuels containing higher blends of bioethanol or FAME-derived biodiesel[1] are not compatible with all vehicles, it is necessary to require information on bioethanol or FAME-derived biodiesel content to be provided at sales points such as fuel pumps and by way of information provided with bulk deliveries in order to advise vehicle owners that the level of biofuel present in the fuel may not be suitable for their vehicle and could lead to engine damage.

5. Some biofuels, notably those made from hydrotreated vegetable oil (HVO), known as "drop in" biofuels, are chemically indistinguishable from transport fuels derived from fossil fuels and therefore do not have associated vehicle incompatibility problems. Other biofuels, know as "advanced" biofuels may have fewer compatibility issues with vehicles than existing first generation biofuels but are not currently being supplied to non-specialist consumers outside industry fuel standard criteria. These fuels have been excluded from the labelling options considered here because an overarching objective is to protect consumers from fuels that may be incompatible with their vehicles. We do not wish to legislate speculatively to impose labelling obligations on those biofuels that are identified through industry self regulated standards as posing no significant risk to consumers.[2]

6. Fuel standards have been developed by the European fuels and automotive industries to ensure compatibility of vehicles and fuels. The standards for petrol and diesel are EN 228 and EN 590 respectively. These permit up to 5% bioethanol content by volume in petrol (there are plans to increase this to 10% in future) and up to 7% biodiesel content by volume in diesel. Some cars and a large proportion of trucks are able to run on higher blends. Fuels with greater than 5% ethanol or 7% FAME-derived biodiesel by volume must be labelled "Not suitable for all vehicles: consult vehicle manufacturer before use" by virtue of the Biofuel (Labelling) Regulations 2004 (as amended). This reflects the levels of bioethanol and FAME-derived biodiesel content agreed by the European fuel and automotive industries as being suitable for use in all current vehicles.

7. With the additional stimulus for fuel suppliers to increase the biofuel element in their fuels, provided by the RED, Article 21(1) of the RED also requires that, "when the percentages of biofuels, blended in mineral oil derivatives, exceed 10% by volume, Member States shall require this to be indicated at the sales points". This reflects a perceived need at EU level to heighten awareness amongst consumers of higher levels of biofuel in fuels to which their vehicles may not be suited and/or covered by the manufacturers' warranties. To meet this need and for the reasons set out in paragraph 5, we believe this provision of the RED only has practical relevance to the supply of

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[1] Bioethanol is fuel made from ethanol derived from biomass. FAME-derived biodiesel is fuel made using oils derived from biomass, in this case, vegetable oils.

[2] To note that FAME is a type of biodiesel that can cause damage to vehicles when blended in transport fuels, unlike HVO which is also a type of biodiesel but does not have the same associated compatibility problems. Some other advanced biofuels such as biobutanol are also being developed. The evidence base regarding their compatibility is not conclusive. These advanced and 'drop in' biofuels are excluded from the current biofuels labelling requirements and those proposed here due to the lower compatibility problems associated with them but this will be kept under review as more evidence becomes available.

bioethanol and FAME-derived biodiesel. We are aware that new higher blends of biofuel are being developed and we know that industry is concurrently working on improving fuel standards. Consumers need to receive sufficient information at sales points to enable them to make informed decisions about the fuel they purchase.

8. Blends of diesel containing 30% biodiesel and petrol containing 85% bioethanol were sold through some supermarket outlets in the UK, labelled as B30 and E85 respectively. These blends are no longer sold through dispensers in the UK. The terms B30 and E85 are standard terms used across Europe to indicate that the fuel contains a maximum of 30% FAME-derived biodiesel and 85% ethanol respectively. Very little 100% bioethanol or FAME-derived biodiesel is sold but stakeholders suggest that where 100% FAME-derived biodiesel is, it is labelled as either 'Biodiesel' or 'FAME' (Fatty acid methyl esters). These 100% FAME-derived biodiesels would be sold according to the industry standard BS EN 14214, though a label stating that the fuel conforms to this standard is not legally required to be displayed.
9. Respondents to the consultation stated that no fuels containing more than 10% biofuel are currently being supplied through dispensers to non-specialist fuel consumers. There is uncertainty over how the demand, and therefore supply, of these fuels will develop in the future. For the purposes of this impact assessment we have developed a conservative scenario of supply explained in paragraph 18.

Rationale for intervention

10. Information provision on the FAME-derived biodiesel or bioethanol content of fuels is important to ensure consumers can make an informed choice in their purchase of fuel, especially in terms of whether it is compatible with their vehicle and their vehicle warranty. It is important that the information provided is at a sufficient level of detail to provide the consumers with useful and clear information that is easily understood and consistent across all fuels. The current labelling requirements do not make it clear that biofuel is the reason the fuel may not be suitable for all vehicles while a requirement to simply label fuels that contain more than 10% biofuel to that effect would not be sufficiently informative for the consumer who may need more detail on the actual level of biofuel present.

Policy objective

11. The policy objective is to ensure that users are aware of the presence of higher levels of those biofuels in transport fuels that may not be suitable for all vehicles/engines and to do so in a clear and consistent way. This will help avoid unintended consequences such as engine damage as a result of EU/Government policy to increase use of biofuels, the aim of which is to reduce greenhouse gas emissions from transport. Another objective is to comply with the requirements of the RED.
12. A key objective has also been to minimise the burden placed on UK industry.

Description of options considered (including do nothing)

Do nothing case

13. The do nothing case used as a baseline to this analysis is that the Biofuels (Labelling) Regulations 2004 (as amended) remain unaltered and no new biofuel labelling requirements are introduced.
14. The Biofuels (Labelling) Regulations 2004 (as amended) already require a label stating 'Fuel not suitable for all vehicles: please consult manufacturer before use' on all fuels containing more than 7% FAME-derived biodiesel or 5% bioethanol. This regulation does not apply to bulk delivery notes. This regulation will continue to apply in the do nothing case and Options 1, 2 and 3.
15. During the consultation and through conversations with fuel retailers and other industry stakeholders, we have been assured that suppliers would always only supply industry standard fuels both for quality assurance reasons and because suppliers often share equipment which could be adversely affected if standards were not adhered to.
16. These standards include requirements to mark pumps with the type of fuel being sold. The designation (i.e. the name of the standard) of the fuel must be stated, at specific sizes, on the

dispensing pump or container of the fuel. There are no current industry standards for biofuel blends containing more than 5% ethanol or 7% FAME. In addition, it is often more expensive to supply biofuel than mineral-derived equivalents.

17. This means that in practice only standard blends containing these limited amounts of FAME or bioethanol will be supplied in the short to medium term on consumer forecourts though some other fuels are supplied to specialist consumers. Respondents stated that it was unlikely that this would change until 2016 at least.

18. Having considered comments given during the consultation we have set out the following conservative demand scenario to test our options against (in the consultation respondents thought it unlikely that non-standard blends would be available before 2016 but we have assumed they could be available in 2014). The scenario is that fuels containing more than 10% bioethanol and FAME-derived biodiesel will become available through dispensers in 2014 and by 2020 10% of multi-fuel pumps at fuel stations will have a dispenser dispensing fuel containing more than 10% bioethanol or FAME-derived biodiesel, with a linear increase 2014 - 2020.

19. During consultation it was confirmed that only a very small amount of fuel containing more than 10% biofuel is currently sold and that, if it was, fuel retailers would label it as such due to the considerations above. Therefore, it is confidently anticipated that fuel retailers would label high blend FAME-derived biodiesels or bioethanols as such without further regulation.

20. Not providing information on the biofuel content of fuel (except where the content is at such a low level that it stays within the composition rules for standard fuels) would likely also contravene consumer protection regulations. These prohibit misleading omissions in product information. Since FAME-derived biodiesel and bioethanol have a different energy content per litre and different compatibility with vehicles as compared to fossil fuel, failing to inform consumers of its presence would be in breach of existing law.

21. However, without regulation or consistent industry standards, the wording used and how much information is given on labels could vary across retailers, and would not necessarily comply with the RED.

Option 1

22. Option 1 is to require that mineral (petroleum) blends containing greater than 10% bioethanol or FAME-derived biodiesel content by volume are labelled as such at the sales point i.e. implementing Article 21 (1) of the RED in a literal fashion (subject to considerations in paragraph 7). This would involve relevant dispensers at filling stations being labelled to reflect this and bulk delivery notes including this information while maintaining the requirements currently in the Biofuels (Labelling) Regulations 2004 (as amended). The exact text that would be required has been consulted on and it is agreed that the wording is clear to consumers though, in some cases, more technical wording was requested. The extra wording requested by stakeholders would go beyond the scope of the RED however and, as such, has not been considered for this regulation. Under this option, the text would therefore be: "This fuel contains more than 10% biofuel." This would be supplementary to the existing bioethanol and FAME-derived biodiesel labelling regulations and in the case of bulk fuel delivery it would be a new requirement to have warning of biofuel content. This option would guarantee the labelling of mineral blend fuels exceeding 10% FAME-derived biodiesel or bioethanol, thus mitigating the misfuelling risk present in the do nothing case (please see paragraph 39). The text would be consistent across fuel retailers in the UK which could provide extra clarity to consumers and this option would fully transpose the requirements of the RED thereby avoiding risk of infraction (subject to considerations in paragraph 7).

Option 2

23. Option 2 is to require that all fuels containing greater than 10% bioethanol or FAME-derived biodiesel content by volume are labelled as such at the sales point, while maintaining the requirements currently in the Biofuels (Labelling) Regulations 2004 (as amended).

24. This would be implemented as in Option 1, but would also include fuels that are entirely bioethanol or FAME-derived biodiesel i.e. 100% FAME-derived biodiesel (B100) and 100% bioethanol (E100). As all blended fuels with greater than 10% bioethanol or FAME-derived biodiesel would be required to be labelled as containing more than 10% biofuel, it would be inconsistent not to do the same for pure FAME-derived biodiesel or pure bioethanol as the incompatibility problems remain. This option would widen the coverage of the regulations beyond what is strictly required by the RED and

thereby constitute modest 'gold-plating' (i.e. going beyond the requirements of the Directive). Consultation respondents confirmed that this modest gold-plating seemed sensible in this case. As for Option 1, this option would fully transpose the requirements of the RED thereby avoiding risk of infraction (subject to considerations in paragraph 7).

Option 3

25. Option 3 is an extension of the 'do nothing' baseline case. Under Option 3 the Department for Transport (DfT) would work with industry in the EU and UK to ensure that a labelling standard is incorporated within industry standards that would apply across Europe. This standard would ensure that a label giving sufficiently detailed information is clearly and consistently used across Europe. Looking at consultation responses and from discussion with fuel retailers and vehicle manufacturers DfT will be asking that a standard for labelling is set which would ensure labels stated the maximum biofuel content (for example, E10 for petrol containing up to 10% bioethanol, B30 for diesel containing up to 30% FAME-derived biodiesel etc) for each fuel sold. This wording would be more likely to reflect the wording used in vehicle warranty documentation provided by vehicle manufacturers. This wording follows the system that has already been used (see paragraph 8) and is being used in some other European countries (for example fuel containing 10% ethanol is being sold as E10 in France, Germany and Sweden) providing consistency. Furthermore, this system has the advantage of being able to extend to new biofuels that could come onto the market in the future.
26. The cost and benefit differential between this option and Options 1 and 2 is marginal. This option does carry a small risk of infraction though we believe this risk is manageable due to the combination of existing legislation and the proven effectiveness of industry standards.

Costs and benefits of Option 1

Costs

Fuel dispenser labelling costs (at filling stations)

27. Any fuel dispensers at filling stations that are dispensing fuel containing greater than 10% bioethanol or FAME-derived biodiesel and wouldn't be labelled in such a way under the do nothing case would create an extra cost of labelling for fuel retailers. For example, if a retailer was currently selling fuel containing up to 30% FAME-derived biodiesel the labelling required under Option 1 would be additional to any labelling currently used.
28. However, since there are no retailers known to be selling mineral blends with greater than 10% bioethanol or FAME-derived biodiesel content through a dispenser rather than in bulk at present, any such fuels coming onto the market would require new labels irrespective of this policy option. The required text could be added onto a label being designed at no extra cost. Therefore, the low estimate of labelling costs is that there would be no additional cost over the period to end-2020.
29. A high estimate is presented for the purposes of sensitivity analysis showing the highest costs that could be expected under the following scenario. This scenario assumes that fuel retailers would produce extra labels containing the required text rather than add the information to labels that they would use anyway under the do nothing case. This would be a more costly way of providing the same information, so the low estimate is anticipated to be a more likely choice by business and is used as the best estimate.
30. One respondent to the consultation thought the estimated cost of labelling too low as they considered more new labels would have to be ordered. However the same respondent also thought that no high blends are currently supplied (nor, therefore labelled) and so the low scenario is still anticipated to be the more likely choice by business. This approach has been confirmed with the respondent in question.
31. The costs of labels vary according to the bulk in which they are ordered. An estimate from a labelling company suggests around £1 per label if a quantity of 24 is ordered (this is the minimum quantity that can be ordered). The cost per label could be considerably less for chain retailers buying labels for a number of filling stations e.g. £0.10 per label. A unit cost of £1 per label has been used to give the highest costs that could be expected. These costs have been tested and confirmed during the consultation.
32. The total costs of labelling that could result from this option in the high scenario depend on how many retailers sell fuels containing greater than 10% bioethanol or FAME-derived biodiesel over the

period to 2020 and from how many dispensers. The following scenario has been constructed after consultation with a fuel retailer association: it is assumed that fuels containing greater than 10% bioethanol or FAME-derived biodiesel became available by 2014 and that by 2020 10% of multi-fuel pumps at fuel stations have a dispenser dispensing fuel with greater than 10% bioethanol or FAME-derived biodiesel content (with a linear increase in years in between). It is also assumed that dispenser labels are replaced every two years and that one label is used on each dispenser as currently occurs.

33. On the basis of these assumptions, the present value of this cost has been estimated at around £6,400 over the period to 2020 under the high scenario. Of course the availability of bioethanol or FAME-derived biodiesel blends above 10% might be quite different to what is described above and, as such, these are estimates.

34. During the consultation, we sought evidence on which fuels are currently available. No firm evidence was provided, though (from consultation responses) it is thought that only a small number of suppliers are supplying any blends with greater than 10% bioethanol or FAME-derived biodiesel. The respondents also thought that available high blends are only sold in bulk to specialist consumers and not through dispensers. Therefore, if there are any fuel retailers currently supplying blends with greater than 10% bioethanol or FAME-derived biodiesel content through dispensers, the additional costs would be expected to fall between the low scenario (where no new labels are required) and high scenario (where new labelling is required for dispensers).

Bulk delivery note labelling costs

35. Bulk delivery notes would need to have the specified text added where the delivery note relates to mineral blended fuel with greater than 10% bioethanol or FAME-derived biodiesel content. There is not expected to be a cost to fuel producers for doing this as the text can be added to the delivery note before printing. This assumption has been confirmed with fuel retail associations.

Benefits

Increased consumer information

36. Increased information on the content of fuels would enable consumers to make more informed decisions. The text on the required labels would be common throughout the UK, therefore fuel labelling would be more consistent and consumers would not need to try to understand different sets of information at different fuel retailers.

Misfuelling damage costs saved

37. If the proposed labelling requirements reduce occurrences of unsuitably high bioethanol or FAME-derived biodiesel blends being used in vehicles as compared to what would have happened in the do nothing case then there would be a benefit of reduced damage to vehicles. This would be a benefit to vehicle owners and to fuel retailers in the case where the repair costs would have been recouped by vehicle owners from fuel retailers.

38. Since in the do nothing case, there are already warnings on the use of bioethanol or FAME-derived biodiesel blends exceeding 5% for petrol and 7% for diesel at fuel stations and there are expected to be labels provided by retailers to highlight bioethanol or FAME-derived biodiesel content, the impact of this option on misfuelling damage costs is expected to be small. However, it is not compulsory to provide such a warning on bulk delivery notes in the baseline, so the option could reduce risks in that area.

39. Table 1 shows an illustrative indication of repair costs that could be saved from an avoided misfuel with bioethanol. The cost estimates for replacing vehicle parts are based on research carried out by QinetiQ for the Department for Transport[3]. Three cases are presented below, where Case 1 represents a situation where the damage is relatively small so fewer parts need replacing and Case 3 presents a more costly situation where the damage is more major. The severity of the damage and therefore repair work needed is expected to depend on the strength of the blend being used, how quickly the fuel is removed from the vehicle and the type of vehicle. QinetiQ note that some older vehicles may be beyond economic repair after use of bioethanol.

[3] QinetiQ "Assessing compatibility of fuel systems with bio-ethanol and the risk of carburettor icing." http://www.dft.gov.uk/pgr/roads/environment/research/assessingfuelsystemcompatability/

40. The costs in the QinetiQ report do not include labour costs. Therefore, where a range is given in the report, the highest figure has been used below to counteract this. For Case 3, the vehicle is assumed to have 4 fuel injectors, although vehicles can have 3, 5 or 6 injectors instead.

Table 1: Illustrative costs of repairing a vehicle that has been damaged using bio-ethanol[4]

	Case 1	Case 2	Case 3
Parts replaced	Fuel hose: £50 Fuel filter: £50	Fuel hose: £50 Fuel filter: £50 Pump: £300	Fuel hose: £50 Fuel filter: £50 Pump: £300 Injectors x 4: £100 each Fuel tank: £300
Total cost	£100	£400	£1100

41. The misuse of bioethanol is more relevant for cars, since a large proportion run on petrol. FAME-derived biodiesel misuse could be an issue for light goods vehicles and heavy goods vehicles which run on diesel, plus some cars. While we do not have as much evidence of the potential costs of FAME-derived biodiesel as bioethanol, it is expected that replacing parts in goods vehicles would be more expensive since the parts are larger.
42. It has not been possible to estimate the total repair costs that could be saved by introducing the proposed labelling. To estimate the total repair costs saved over the period to 2020, the volumes of bioethanol or FAME-derived biodiesel supplied each year would need to be forecast, the types of blend strengths available would need to be forecast and an assumption would need to be made as to the likelihood of misfuelling without the additional labelling. The latter could depend on whether changes are made, in the future, to vehicle warranties in respect of the bioethanol or FAME-derived biodiesel blends allowed to be used while remaining under warranty. Currently, a portion of heavy goods vehicles are able to take B100 (100% FAME-derived biodiesel) and some other blends, but there are fewer cars able to take high blend bioethanol[5]. The matter is compounded by the fact that some vehicles that are capable of using B100 are not necessarily capable of using say B30 (a fuel containing 30% FAME-derived biodiesel).
43. Nonetheless, since all fuel sold at fuel stations that has greater than 7% FAME-derived biodiesel or 5% bioethanol content must already be labelled "Not suitable for all vehicles: consult vehicle manufacturer before use", the option is expected to have only a small impact on damage costs from misfuelling with high blend bioethanol or FAME-derived biodiesel.

Costs and benefits of Option 2

Costs

Fuel dispenser labelling costs (at filling stations)

44. Fuel retailers would need to ensure the specific text, 'This fuel contains more than 10% biofuel' was on each fuel dispenser with bioethanol or FAME-derived biodiesel content in excess of 10%. The same cost assumptions are employed as those used in Option 1. The labelling costs are estimated as those of Option 1 plus the costs of labelling pure bioethanol or FAME-derived biodiesel dispensed at fuel stations.
45. As was the case for Option 1, we confirmed during consultation that no retailers are known to be selling mineral blends with greater than 10% bioethanol or FAME-derived biodiesel content, nor 100% bioethanol and FAME-derived biodiesel, through dispensers rather than in bulk (and only to specialist fuel consumers) at present and so any such fuels coming onto the market would require

[4] This table displays the costs of misfuelling for illustrative purposes only, these have not been included in the costed benefits.

[5] Ricardo "RD08/099701.3 – Investigantion into compatibility of vehicles operating on biofuels" http://dft.gov.uk/pgr/roads/environment/research/biofuelvehiclecompatibility/

new labels irrespective of this policy option. The required text could be added onto a label being designed at no extra cost.

46. The low scenario is that there would be no additional cost, since any new supply will require new labels anyway and those labels can be designed to include the required text at no cost. To our knowledge (confirmed during consultation) pure FAME-derived biodiesel or bioethanol are only currently available from specialist suppliers in bulk rather than at filling stations through dispensers. As there is no additional cost for labelling when on delivery notes (used when supplying fuel in bulk, please see paragraph 50 below) rather than through dispensers, the low estimate has been selected as the best estimate.

47. A high estimate of these costs is presented for the purposes of sensitivity analysis. This is based on a scenario which assumes that, in addition to the fuels containing more than 10% bioethanol or FAME-derived biodiesel being sold under the example given in Option 1 (paragraph 32) 100% bioethanol or FAME-derived biodiesel would become available through dispensers at filling stations from 2014 and that there would be 100 dispensers dispensing 100% bioethanol or FAME-derived biodiesel by 2020 (and a linear increase in years between).

48. With a high label cost of £1 per label assumed (please see paragraph 31 above) and the assumption that labels are replaced every two years due to wear and tear, the modest gold plating (i.e. going beyond the strict requirements of the RED) is estimated to lead to an additional cost relative to Option 1 of £180 for this scenario, over the period to 2020. This means that Option 2 has an estimated high cost of £6,600 over the period to 2020 compared to the estimated high cost of £6,400 in Option 1.

49. If there are any fuel retailers currently selling fuels with greater than 10% bioethanol or FAME-derived biodiesel content then the additional costs would fall between the low and high scenarios. During the consultation we sought evidence on which fuels are currently available as part of the consultation. No firm evidence was provided though it was thought that the supply, through fuel dispensers, of 100% bioethanol (E100) was extremely unlikely both now and in the future and the supply of 100% FAME-derived biodiesel (B100) would be a rare occurrence. The extension to 100% bioethanol or FAME-derived biodiesel or bioethanol was not thought to lead to any additional costs.

Bulk delivery note labelling costs

50. 100% bioethanol and FAME-derived biodiesel are currently only sold by small retailers rather than at filling stations. Bulk delivery notes would need to have the specified text added where the delivery note relates to fuel with greater than 10% bioethanol or FAME-derived biodiesel content. There is not expected to be a cost to fuel producers in doing this as the text can be added to the delivery note before printing. This assumption has been confirmed with industry stakeholders.

Benefits

Increased consumer information

51. As with Option 1, there would be increased information available to consumers as compared to the do nothing case. This may help them to make a more informed choice of which fuel to purchase. Option 2 would provide information on a slightly wider set of fuels thereby ensuring the provision of more information and more consistency due to the label 'this fuel contains more than 10% biofuel' also being applied to 100% bioethanol and FAME-derived biodiesel.

52. It is anticipated that pure bioethanol and FAME-derived biodiesel would probably be labelled as such by virtue of consumer protection regulations, so adding the required text may yield few information benefits in fact. During the consultation, respondents stated that Option 2 would provide useful extra information to consumers compared to Option 1.

Misfuelling damage costs saved

53. Any damage costs saved by Option 1 against the do nothing case would also apply here in addition to the damage costs saved by the labelling of the wider range of fuels (i.e. including 100% bioethanol and FAME-derived biodiesel). It is expected that 100% bioethanol or FAME-derived biodiesel would be labelled as such in the do nothing case by virtue of the consumer protection regulations. Such fuels would also need to carry the warning as stated in the Biofuel (Labelling) Regulations 2004 (as amended) on dispensers (paragraph 6). The warning does not apply to bulk

delivered fuels, but it is expected that they would be sold as "biofuel". Therefore, the reduction in damage costs relative to Option 1 is expected to be minimal. Option 2 is preferred to Option 1 for the extra information provided and consistency of labelling across fuels.

Costs and benefits of Option 3

Costs

54. Option 3 has no additional costs associated with it above the baseline 'do nothing' case apart from the possible costs of infraction. This is because there are no retailers known to be selling fuels with greater than 10% bioethanol or FAME-derived biodiesel through dispensers currently. When retailers do start selling these fuels, industry has stated they will be labelled anyway according to industry standards. Furthermore, according to consultation respondents those retailers that do supply these fuels do so in bulk (therefore not requiring new labels) and only supply to specialist fuel consumers.

55. Option 3 does carry with it a small risk of infraction and its associated potential cost that is not present in Options 1 and 2. It is not possible to quantify this cost, please see the 'Risks' section below for more details. This potential cost of infraction is the main differential between Option 3 and Options 1 and 2 as the other costs and benefits remain largely the same across all the options.

Benefits

Increased consumer information

56. Increased information on the content of fuels would enable consumers to make more informed decisions. The text on the required labels would be common throughout the EU and UK, therefore fuel labelling would be more consistent and consumers would not need to try to understand different sets of information at different fuel retailers in Europe.

57. As vehicle manufacturers are part of the bodies that set the industry standards there is a greater chance that the labels would reflect the wording used in vehicle warranties thereby lessening the chance of confusion for consumers. These standards are not legally mandatory so there is a chance that they would not be adhered to but we consider that very unlikely (please see paragraph 15).

58. This option is also more flexible. Labelling would be more able to respond to the introduction of new fuels in the future which is important in a continuously developing industry such as biofuels. The labelling would also be more able to change in response to any changes in consumer needs or preferences.

Misfuelling damage costs saved

59. If the proposed labelling industry standard reduces occurrences of unsuitably high bioethanol or FAME-derived biodiesel blends being used in vehicles (due to the wording better reflecting the wording used in vehicle warranties) as compared to what would have happened in the do nothing case then there would be a benefit of reduced damage to vehicles. This would be a benefit to vehicle owners and to fuel retailers in the case where the repair costs would have been recouped by vehicle owners from fuel retailers. The costs saved would be the same as those stated in Option 2 (paragraph 53).

60. Since in the do nothing case, there are already warnings on the use of bioethanol or FAME-derived biodiesel blends exceeding 5% for petrol and 7% for diesel at fuel stations and there are expected to be labels provided by retailers to highlight bioethanol or FAME-derived biodiesel content, the impact of this option on misfuelling damage costs is expected to be small.

Summary of costs and benefits

61. Table 2 summarises the estimated costs and benefits of each option against the do nothing case over the period to 2020. The best estimate for each option is a cost of £0m, a non quantified benefit and a net benefit of £0m. The best estimates are the same for Option 1, Option 2 and Option 3 since the costs and benefits of each are expected to be negligible.

Table 2:

	Cost	Benefit	Net benefit
Option 1	£0m (£0m to £0.006m)	NQ	£0m (-£0.006 to £0m)
Option 2	£0m (£0m to £0.007m)	NQ	£0m (-£0.007m to £0m)
Option 3	£0m (£0m to £0.007m)	NQ	£0m (-£0.007m to £0m)

62. Tables 3 and 4 summarise the detail behind the cost of labelling in each option for the period 2011 – 2020 using the scenario outlined in paragraph 18 that that fuels containing more than 10% bioethanol and FAME-derived biodiesel will become available through dispensers (hoses) in 2014 and by 2020 10% of multi-fuel pumps at fuel stations will have a dispenser dispensing fuel containing more than 10% bioethanol or FAME-derived biodiesel, with a linear increase 2014 - 2020. Labels for new fuels will need to be bought (we used the high cost of £1 per label) and these labels will then have to be replaced every two years due to wear and tear.

Table 3: ***Option 1***

	2011	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	
No. hoses	0	0	0	506	1,012	1,518	2,024	2,530	3,036	3,542	
No. labels	0	0	0	506	1,012	2,024	3,036	4,553	6,071	8,095	
No. new labels per year	0	0	0	506	506	1,012	1,012	1,518	1,518	2,024	Average = 1,156
PV label costs per year	0	0	0	456	441	852	823	1,193	1,153	1,485	Total = 6,403

Table 4: ***Options 2 and 3*** *(i.e. where pure bioethanol and FAME-derived biodiesels would also be labelled)*

	2011	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	
No. hoses	0	0	0	520	1,040	1,561	2,081	2,601	3,121	3,642	
No. labels	0	0	0	520	1,040	2,081	3,121	4,682	6,243	8,342	
No. new labels per year	0	0	0	520	520	1,040	1,040	1,561	1,561	2,081	Average = 1,189
PV label costs per year	0	0	0	469	453	876	846	1,227	1,185	1,527	Total = 6,584

Risks and assumptions

Risks

63. There is a risk of vehicle users misfuelling their vehicles principally due to no warning being provided on bulk delivery notes.

64. There is also a risk of infraction under Option 3. We believe, however, that the risk of infraction is manageable as the combination of pre-existing EU and national legislation, industry standards and the operation of the biofuels market should prevent fuel being sold with biofuel content greater than that for which vehicles are warranted.

65. Infraction can result in substantial fines, amounting potentially to many millions of pounds. However, the size of fines in any given case will continue to depend on the Court of Justice's (CJEU) assessment of the seriousness of the breach, its duration and the ability of the Member State to pay, and any breach that might be identified on the point at issue here is unlikely to be perceived to be particularly serious.

66. It should be noted that the UK would of course seek to avoid infraction.

67. Furthermore, the extent to which the labelling rules in the RED are fully implemented will be kept under ongoing review due to the obligation in article 4A(1) of the RTFO Order 2007 (as amended). This requires the Secretary of State to keep under review whether further steps need to be taken in order to meet the requirements of the directive (RED) in respect of transport.

Assumptions

68. A key assumption for estimating labelling costs is that as there are no known suppliers selling high blend bioethanol or FAME-derived biodiesel through dispensers at the moment; the required text could be added to labels that are yet to be made at no additional cost. This is used as the low scenario cost which is also the best estimate.

69. In estimating labelling costs for the high scenario, unit label costs are based on quotes from a labelling company. Data on the number of filling stations and the number of multi-fuel pumps each has was obtained from a report carried out by AEA for the Department for Transport. This report uses the Experian database[6].

70. Adding the required text to bulk delivery notes is assumed to have no additional cost. This assumption has been confirmed by fuel retail associations.

71. Another key assumption in estimating damage cost savings is that fuel retailers are likely to label high blend FAME-derived biodiesels and bioethanols in the baseline (i.e. without further regulation). This assumption is made on the basis that not providing such information would contravene consumer protection regulations. Also, biofuel can be more expensive to provide than pure mineral derived fuel, so there would be little gain in fuel retailers selling the more expensive fuel without telling consumers it is more "green". While it is likely high blend fuels will be labelled as different to petrol or diesel without further regulation, it could not be guaranteed that standard text would be used so it would be clear across all fuel retailers.

72. Evidence on the costs of repairing vehicles damaged by using unsuitably high bioethanol blends is based on a report carried out by QinetiQ for the Department for Transport: "Assessing compatibility of fuel systems with bio-ethanol and the risk of carburettor icing". The Ricardo report accessed from the internet link provided on page 10[7] has since been updated. The updated report has been used but unfortunately we have not been able to publish it on the DfT website yet due to technical difficulties though we are working to do so as soon as possible.

Wider impacts

73. The policy would be enforced by local authorities. Local authorities already carry out regular visits to fuel stations to check signage and weights and measures. It is expected that the new labelling requirements could be checked on the same visits and will not need any more enforcement effort, so they will not create any extra enforcement cost.

74. The policy options presented only require labelling at the point of sale, but to enable fuel retailers to do this robustly, information on bioethanol or FAME-derived biodiesel content will need to be

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[6] This report is part of the Modes Research Program and will be published in due course. Please contact Marina Skrinar (details on page 1) for more details.

[7] Ricardo "RD08/099701.3 – Investigantion into compatibility of vehicles operating on biofuels" http://dft.gov.uk/pgr/roads/environment/research/biofuelvehiclecompatibility/

provided by suppliers distributing fuel to retailers. This is an issue that the fuel industry is already aware of and working to address.

Impact on business and One In One Out (OIOO)

75. All three options are expected to have negligible impact on business, as explained above. Option 1 is outside of the scope of OIOO, as it is driven by EU legislation. As Option 2 goes beyond the EU legislation, the modest extension of the requirement beyond that envisaged in the EU legislation is in scope for OIOO. However, the best estimate is that it would not impose any extra costs on business as compared to Option 1. Consultees were asked to consider the assumptions which lead to the best estimate of no additional costs of widening the scope of the regulations to include pure biofuels as compared to including only mineral blends. The comments received confirmed that Option 2 would not lead to additional costs above that of Option 1. The 'in' of no additional cost associated with Option 2 therefore would only need an 'out' of no additional cost to compensate. Option 3 is non-regulatory and therefore outside the scope of OIOO.

Statutory equalities duties impact test

76. At present, we have no evidence to suggest that transposition of the RED will have a differential impact on people with protected characteristics.

77. The legislation or industry standards are intended to apply uniformly and indiscriminately across different race, age, gender, disability, belief and sexual orientation groups. In terms of disability the labelling may not be accessible to those with visual impairments. However, this legislation only applies to vehicles and machinery that visually impaired people are unlikely to operate unaided. The labelling in Options 1 and 2 will be written English and therefore may be less accessible to those who have English as a second language or those with learning difficulties. However, given the size of fuel dispensers and delivery notes we do not consider that other means of communicating this message would be practicable. We have been careful to keep the language as clear as possible to avoid misunderstanding within the parameters set by the RED. Option 3 would be more consistent with the labelling used in other countries and therefore be more easily understood by those who have English as a second language.

78. Respondents to the consultation had no evidence that there would be a differential impact on people with protected characteristics nor that there would be any discrimination across different race, age, gender, disability, belief and sexual orientation groups.

Small firms impact test

79. Many fuel retailers are large companies. However, high blend biofuel producers and retailers can be specialist small suppliers. Specialist suppliers usually sell their fuel in bulk rather than at filling stations; this was confirmed in responses to the consultation. As there is no expected additional cost of adding the required text in Options 1 and 2 to bulk delivery notes, small specialist suppliers selling only in bulk would not be disadvantaged by the regulations. In any case, the costs involved are small and for a firm with few dispensers selling the relevant fuel they would be very small.

Competition impact

80. Our best estimate is that there would be no additional costs to business as a result of the proposed option. There is therefore not expected to be an impact on competition.

Summary and preferred option

81. The preferred option is for the Department for Transport to work with industry in the EU and UK to ensure that by the time it is in fact required a labelling standard is incorporated within industry standards that would apply across Europe. This standard would ensure that a label giving sufficiently detailed information to meet the consumer protection objective of Article 21(1) of the RED is clearly and consistently used across Europe. Looking at consultation responses and from discussion with fuel retailers and vehicle manufacturers DfT will be asking that a standard for labelling is set which would ensure labels state the maximum biofuel content (for example, E10 for petrol containing up to 10% bioethanol, B30 for diesel containing up to 30% FAME-derived biodiesel etc) for each fuel sold. This wording would be more likely to reflect the wording used in vehicle warranty documentation provided by vehicle manufacturers. This wording follows the system that has already been used (see paragraph 8) and is being used in some other European countries (for example fuel containing 10% ethanol is being sold as E10 in France, Germany and Sweden)

providing consistency. Furthermore, this system has the advantage of being able to extend to new biofuels that could come onto the market in the future.