

Title: Alternative Fuel Labelling Regulations IA No: DFTDMA086 RPC Reference No: Lead department or agency: Department for Transport Other departments or agencies:	Impact Assessment (IA)			
	Date: 12/02/2019			
	Stage: Final stage			
	Source of intervention: EU			
	Type of measure: Secondary legislation			
Contact for enquiries: tim.simon@dft.gov.uk				
Summary: Intervention and Options				RPC Opinion: n/a

Cost of Preferred (or more likely) Option				
Total Net Present Value	Business Net Present Value	Net cost to business per year	One-In, Three-Out	Business Impact Target Status
£132.2m	-£11.3m	£1.4m	N/A	N/A

What is the problem under consideration? Why is government intervention necessary?
 The EU's Alternative Fuels Infrastructure Directive (AFID) requires member states to adopt standard labelling that clearly sets out the type and biofuel content of road transport fuels. The labels need to be prominently placed both at filling stations and on new vehicles sold in the EU. The increase in range of alternative fuels means consistent labelling will be important for consumers to navigate this market.

What are the policy objectives and the intended effects?
 Introduce standardised fuel labelling to ensure consumers can identify and select different fuels accurately. As the range of different fuels available at filling stations increases, and the chance of different biofuel blends of petrol and diesel coming onto the market, it is becoming increasingly important that consumers can identify different fuels easily, regardless of brand. The new fuel labels will for the first time require fuel retailers to use standard labelling while the owners of new vehicles will be able to match labels on their vehicle, to the same labels on fuel dispensers reducing the risk of mis-fueling.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)
 The legislation is being introduced as part of the process to transpose the requirements of the EU's AFID . As a result there is limited flexibility in how to meet these requirements. The Directive requires the UK to introduce the fuel labelling standard developed at EU level. The standard was adopted by the UK's standards body, the BSI. In meeting our transposition obligations under the AFID, there is limited flexibility in how the labels can be introduced. In order to ensure the labels are mandatory to the relevant obligated parties, regulations with enforcement provisions are required. The alternatives considered in this IA are
 - Option 1 'do nothing'
 - Option 2, introduce the required EU labelling scheme
 'Do nothing' could result in infraction proceedings issued by the European Commission as the UK would be seen to have not transposed required elements of a Directive. Regardless of the requirement, we see significant value in the introduction of fuel labelling as an important part of a transition to alternative fuels. In addition, we also expect to see a benefit in the reduction of misfuelling (petrol/diesel). Therefore, option 2 is the preferred policy option.

Will the policy be reviewed? Yes. If applicable, set review date: 2024, and each 5 years thereafter.				
Does implementation go beyond minimum EU requirements?			No	
Are any of these organisations in scope?			Micro No	Small Yes
			Medium Yes	Large Yes
What is the CO ₂ equivalent change in greenhouse gas emissions? (Million tonnes CO ₂ equivalent)			Traded: 0	Non-traded: 0

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

Signed by the responsible Jesse Norman Date: 25.02.19

Summary: Analysis & Evidence

Policy Option 1

Description: New fuel labels required on nozzles and fuel caps, and additional information in car manuals.

FULL ECONOMIC ASSESSMENT

Price Base Year 2017	PV Base Year 2019	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low: -22.0	High: 329.6	Best Estimate: 132.2

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	0.1	0.3	2.9
High	0.2	2.5	22.1
Best Estimate	0.1	1.4	12.4

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

All nozzles in the UK (estimated around 200,000) will need new, compliant labels. All fuel caps on new cars in the UK will require accompanying labels, and additional information on engine compatibility will be needed in user manuals on new car models. Costs include the labour required to label the nozzles and to the understand information to help answer fuel pump customers' queries. Familiarisation costs include the time spent by car manufacturers understanding and disseminating information on the change in legislation to identify what actions need to be taken.

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	0	0	0
High	0	38.6	332.5
Best Estimate	0	16.8	144.6

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

We anticipate that with improved labelling under this legislation, a portion of drivers will not make the mistake of filling their car with the wrong fuel ('misfuelling'). If 15,000 drivers (10% of the average per year) avoid misfuelling, repair cost savings of £16.8m could be realised per year. This assumes that after misfuelling, only 20% of drivers would start their engine and incur a larger repair cost. If 50% start their engine, the cost savings could be higher at £38.6m per year.

The 10% figure is a conservative estimate of the drivers that may be prevented from mis-fueling via the improved consistent labelling. As the number of new vehicles with fuel cap labelling increases, the new direct link between vehicle label and fuel dispenser label should help drive improvements in driver behaviour.

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

It is likely in the coming years that the range of petrol and diesel fuel options will increase. Petrol and diesel can both be blended into differing levels of biofuel. The new labels make clear the biofuel content of petrol and diesel, and provide a consistent means to inform consumers as to any vehicle compatibility issues. As a result, the introduction of the labels will help ensure the roll out of new greener grades of traditional road fuels is as smooth as possible.

Key assumptions/sensitivities/risks	Discount rate %	3.5
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Key assumptions are labour hours and cost involved with familiarisation of the legislation, implementing the changes to fuel nozzle labels, car fuel cap labels, car manual information, the proportion of people starting their engine after mis-fueling.

BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £m:			Score for Business Impact Target (qualifying provisions only) £m:
Costs: 1.4	Benefits: 0	Net: 1.4	N/A

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Evidence Base

Problem under consideration;

1. The labelling of alternative transport fuels, including those already on the market, those soon to be launched and those that may be launched in the coming years, will create a more complicated environment in which consumers need to select the correct fuel for their vehicle. As a result, standardised fuel labelling was identified at EU level as an important tool in ensuring consumer confidence in this area. The possible roll out of E10 petrol creates an added incentive to ensure fuel pump labelling is introduced as owners of older vehicles cannot use petrol with a higher ethanol blend.
2. Mis-fueling of petrol and diesel vehicles is already a recognised issue, particularly putting petrol into diesel engines (the design of nozzle and vehicles help prevent putting diesel into petrol vehicles). As diesel is intended to lubricate the engine, and petrol acts as a solvent, removing any lubrication, mis-fueling can be costly. If the engine is not started, the tank can be drained, but if the vehicle is started serious damage can be caused and may need to be repaired or replaced.

Rationale for intervention;

3. Reducing mis-fueling and aiding the uptake of alternative fuels will be beneficial to both motorists in general and towards the UK's progress to the widespread use of greener alternative road fuels.
4. In addition, the requirement to display standardised labels at fuel filling stations and on new vehicles must be transposed into UK law in order to meet the requirements of the Alternative Fuels Infrastructure Directive (AFID).

Policy objective;

5. Reduced incidences of mis-fueling and increase driver awareness of biofuels and alternative fuels.

Description of options considered (including status-quo);

6. Our options are limited by the requirements of the AFID and the already developed labelling standard that we are required to implement. We are satisfied that the solution proposed in Option 2 is the minimum required to meet the requirements of the AFID and represents the correct level of intervention to achieve the policy goals, without placing undue burden on industry. **Option 1**, the 'no policy' option, could result in an increasingly confusing consumer environment in terms of transport fuels. As a result there is agreement that some form of label allowing the identification of different fuels is required. With an EU wide solution developed, there is limited benefit in developing a UK specific label. The labelling standard has already been adopted and published by the British Standards Institute (BSI, BS EN 16942). Developing a separate standard would not meet our obligations under the AFID. It is also unlikely that fuel retailers or vehicle manufacturers would voluntarily adopt the new labelling as there is little direct benefit to these parties. It would also give government no power to ensure the labelling standard is upheld and the labels deliver on their purpose, or providing a consistent and clear system that consumers can rely on. The fuel suppliers and vehicle manufacturers are preparing to comply on a UK and EU wide basis and as result, the legislation mandating the use of standard fuel labelling, **Option 2**, is the preferred option for this area.

Monetised and non-monetised costs

Option 1 (no policy)

7. In the counterfactual scenario where fuel labelling is not transposed into UK law, we do not anticipate any additional monetised costs. Fuel will continue to be available and there should be no change in consumer behaviour towards filling up their car. However if E10 is rolled out without labelling on engine compatibility, there may be increased confusion for drivers of petrol cars on whether they can use E10. The total costs from this are uncertain. If a driver makes a one-off mistake of filling their E10-incompatible car with E10, they can fill up with compatible petrol the next time and not incur any repair costs. However, prolonged use of an incompatible fuel, could lead to fuel system issues and repair costs could be significant. It is not possible to accurately model what this behavioural change, and thus cost, would be under an E10 roll-out with an absence of fuel labels.

Option 2

8. Data on the number of fuel nozzles in the UK was provided by associations from the automotive and fuel industry. Given the range provided of the estimates, these were taken as a lower and upper bound with a best estimate as an average. These estimates include major oil retailers, supermarkets filling stations and all other retailers.

Table 1- Estimated number of UK fuel nozzles

Source	Estimate	Category
<i>Downstream Fuel Association</i>	275,000	High
<i>Retail Motor fuel Association</i>	203,424	Low
<i>Average</i>	239,212	Central

9. Under this policy option, each fuel nozzle would require a new label. Estimates on the unit costs of this vary; in an impact assessment from 2011, a labelling company quoted £1¹ per label if a quantity of 24 is ordered. Additionally, an impact assessment from 2009² quoted £0.10 as an estimated unit cost per label. As such, £0.1 and £1 have been used as the lower and upper cost bounds respectively, with a middle estimate of £0.55. These have been uplifted to 2017 prices in table 2.
10. The costs of new fuel nozzle labels are expected to be one off and occur in 2019, the first year of the policy. Following initial labelling, replacement labels would be factored into branding maintenance schedules with marginal additional costs. Given the uncertainty around the exact cost to fuel suppliers of producing the labels and the number of nozzles in the UK, a range has been constructed by using the low, high and central estimate assumptions seen in the table below. No growth in the number of pumps has been assumed.

Table 2: Cost of fuel labels (2017 prices)

Category	Number of fuel nozzles	Cost per label	Cost of label replacement (£m)
<i>High</i>	275,000	£1.09	0.30
<i>Low</i>	203,424	£0.11	0.02
<i>Central</i>	239,212	£0.60	0.14

11. Responses to the consultation suggest there would also be costs associated with labelling infrastructure and associated training of fuel station staff on the information required to assist customers with labelling.

¹ https://www.legislation.gov.uk/ukia/2011/224/pdfs/ukia_20110224_en.pdf

² http://www.legislation.gov.uk/ukxi/2009/3277/pdfs/ukxiem_20093277_en.pdf

12. Some fuel filling station companies have suggested the costs of the labelling and associated branding would be around £300 per station. However, these costs are for a larger branded filling stations and costs related to incorporating the labels into existing branding. These are not directly associated with the regulation but are a marketing decision by fuel station companies. Many smaller filling stations will spend significantly less in complying and will likely choose not to incorporate the new labels into existing branding. Decisions on how the labels are integrated in existing point of sale branding are down to individual fuel retailers.
13. Therefore, a central estimate of £100 per fuelling station was chosen to account for smaller stations and to exclude costs of additional optional branding choices. Applying these costs to the estimated total number of fuelling stations (8,453³) gives a total central estimate for the labelling labour cost of £1,058,350.
14. The second cost identified from the consultation was the one-off costs of training fuel station staff. A 30% wage uplift is chosen to account for non-wage costs to employers for staff e.g. National insurance contributions, pensions, etc. No estimates were available for staff training time. Assumptions have been made around the training time and costs that it takes to make the required changes, shown in Table 3. The time taken for training legal and accounting staff was used as an estimate for the time taken to also train sales and customer service occupations as no other data was available.
- 15.

<i>Name</i>	<i>Figure</i>	<i>Source</i>
Hourly wage (Sales and customer service occupations)	£10.33	ONS earnings and working hours ⁴
Wage uplift	1.3	Government Greenbook guidance ⁵
	0.5	Low estimate
	2	High estimate
	1	Central estimate
Central estimate unit cost	£13.43	

16. Applying these figures to the estimated 8,453 fuelling station gives a central estimated cost of £113,824, with a low and high range of £56,912 - £227,648.
17. It is important to consider that fuel suppliers are already aware that these regulations are on the horizon in EU legislation. This policy is to transfer the legislation into UK law. As such, fuel suppliers may have already taken steps to implement these changes in the most cost-effective manner and the impact to business may be lower than stated here.
18. The legislation will require additional labels, matching those on the fuel nozzles, to be present on the inside of fuel caps on all new cars from 2019. Again, car manufacturers are likely aware of this upcoming requirement in EU legislation, however cost estimates are provided here on the impact to car manufacturers across the 10 year policy period. Forecasts from the DFT Fleet Fuel Efficiency Model (accessed October 2017) provide estimates on the number of new vehicle registrations to 2028.

Table 4: UK new car registration projections (millions)

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
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³ Based on data provided from industry and <http://www.ukpia.com/docs/default-source/default-document-library/statistical-review-2017---final-website.pdf?sfvrsn=0>

⁴ <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/datasets/industry2digitsicshetable4>

⁵ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/220541/green_book_complete.pdf

Petrol, Diesel and Hybrid vehicles	2.4	2.3	2.2	2.1	2.0	1.9	1.9	1.9	1.9	2.0
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19. If we assume that each new car produced requires a fuel cap label and the unit cost of doing this is the same as for fuel suppliers (£0.11, £0.60 and £1.09 for the low, central and high estimate respectively), then the cost to business over the 10 year period is as follows.

Table 5: Fuel cap label cost estimate (£m, 2017 prices)

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
High	2.6	2.5	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.1
Low	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Central	1.5	1.4	1.3	1.3	1.2	1.2	1.1	1.1	1.1	1.1

20. In addition, the user manuals on all new car models produced from 2019 will require information on engine compatibility with different fuel types. DFT published statistics indicate that in 2016, there were 9220 unique models of car sold in the UK⁶. Of this total, 9112 are estimated as being petrol, hybrid or diesel (using the equivalent splits on new vehicle registrations). If we assume that this figure decreases in line with the forecasted number of new petrol, hybrid, and diesel registrations then the number of unique car models each year to 2028 is as follows.

Table 6- Forecasted number of new UK car models

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Change in new vehicle registrations		-3%	-2%	-3%	-5%	-6%	-2%	-3%	-4%	-2%	-2%	2%	1%
Unique car models	9112	8851	8664	8376	7921	7432	7259	7017	6734	6597	6491	6610	6686

21. We therefore estimate that there will be 8376 unique car models in 2019 that require additional information in their manuals. Assumptions have been made around the administrative time that it takes to make the required changes, shown in Table 8. These assumptions were tested with industry at the time of consultation

Table 7- Hourly wage rates and labour time assumptions

	Name	Figure	Source
Hourly wage (Office administrative, office support and other business support activities)		£15.76	ONS earnings and working hours ⁷
Wage uplift		1.3	Government Greenbook guidance ⁸

⁶ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/644470/veh0160.ods

⁷ <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/datasets/industry2digitsicshetable4>

⁸ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/220541/green_book_complete.pdf

Administrative hours spent adding new information to car manuals	0.25 estimate
<i>Additional printing cost</i>	£0 estimate
Unit cost of making amendment	£5.12

22. The assumption of no additional printing cost was considered reasonable as car manuals need to be printed in the no policy scenario (or option 1), and the additional text is expected to take up less than half a page. Under these conditions, we estimate a cost to business of £42,904 in 2019, decreasing each year to £34,243 in 2028. It is likely that in practice, once the first year amendments are made, the additional fuel information becomes a standard requirement in producing the manual and therefore unit costs may be lower than stated here. However, including the costs over each of the 10 years gives a more conservative estimate.
23. We anticipate that there will be familiarisation costs involved for car manufacturers to understand and administer the new legislation across their organisation. This is expected to occur once in 2019, although since these requirements are currently present in EU Directive, familiarisation may have already taken place. Given the uncertainty around the additional time required by each car manufacturer, a range of estimates have been generated based on the assumptions below.

Table 8- Familiarisation cost assumptions

<i>Name</i>	<i>Figure</i>	<i>Source</i>
Hourly wage (legal and accounting activities)	£23.03	ONS earnings and working hours
Wage uplift	1.3	Government Greenbook guidance
Hours spent reading and disseminating implications of new legislation	0.5	Low estimate
	2	High estimate
	1	Central estimate
<i>Central estimate unit cost</i>	£30	

24. Applying these figures to the 168 car manufacturers in the UK in 2016⁹, gives a one-off cost of £5,030 under the central estimate with a range of £2,515 - £10,059 under the low-high scenarios.

Monetised Benefits

Option 2

25. An estimated 150,000 drivers per year fill up with the wrong fuel in the UK¹⁰. There could be monetised benefits realised if the improved labelling on fuel caps and nozzles reduces the number of incidents and repairs required. For the purpose of this IA, a conservative 10% per year of drivers (15,000) has been used. This is to provide an illustrative example of the potential benefits of the policy. No better data source was available at the time of producing this analysis but were tested with industry at consultation.
26. Mechanical costs vary depending on whether the engine is started after filling up with the wrong fuel. If it isn't started, the average cost of a breakdown call out to empty a tank is between £150 and £200. If the engine is started then repair costs can be higher, from £3000 to £5000. We have therefore assumed a lower cost bound of £150, and an upper cost bound of £5000.
27. As there are two types of cost involved we have generated different proportions of behaviour between them to give a central and high benefit estimate. For the best estimate we assume 80% do not start their engine after fuelling, and for the high estimate we have assumed 50% do. Once

⁹ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/644470/veh0160.ods

¹⁰ <https://www.osv.ltd.uk/what-happens-if-you-put-the-wrong-fuel-in-your-car/>

again these are illustrative examples and were shared with industry at consultation. No further data was provided so we have continued to use these illustrative percentages.

Table 9: Cost savings associated with reduced mis-fuelling

<i>Scenario</i>	<i>Number of drivers</i>	<i>Ratio of 'did not start engine': 'started engine'</i>	<i>Cost savings per year (£m)</i>
<i>Best</i>	15,000	80:20	£16.8
<i>High</i>	15,000	50:50	£38.6

28. Combining the three scenarios of annual costs, the one off familiarisation costs and potential benefits gives the Net Present Values seen in the table below for the first and final year of the 10 year policy period.

Table 10: Net Present Values (2017 prices¹¹.)

	Scenario	2019	2028
Net Present Costs	High	-2.5	-2.1
	Low	-0.3	-0.3
	Central	-1.4	-1.2
Net Present Benefits	High	38.6	38.6
	Low	0	0
	Central	16.8	16.8
Net Present Value	High	36.1	36.5
	Low	-0.3	-0.3
	Central	15.4	15.6

Rationale and evidence that justify the level of analysis used in the IA (proportionality approach);

29. Car manufacturers and fuel suppliers are aware of the upcoming changes to fuel labelling requirements as per the EU Directive. As such, it is highly likely that the affected businesses have had time to make the necessary changes to ensure compliance in a least cost manner. A proportionality approach to the analysis has therefore been taken.
30. We have drawn on sources available at the time of the analysis, given the lack of available data, and have provided a range of estimates. This means the level of analysis possible has been limited and we gathered more information on costs and benefits during consultation.

Risks and assumptions;

31. We have assumed that all new cars produced from 2019 to 2028 will incur the same cost of producing and applying a fuel cap label. However, over time as this requirement becomes the new standard, the actual cost may move towards zero as producers look to minimise costs. For example by amending orders from current car label suppliers to include the fuel cap, or ordering in bulk, the unit cost may be closer to £0.10 than £1. Therefore this range has been used.
32. The cost of amending car manuals may follow a similar downward trajectory. In the first year of the policy, we would expect car manufacturers to incur administrative costs when adding in the new information. However new cars models produced after this point may use car manual templates previously updated and used in similar models. We do not know exactly what these

¹¹ <https://www.gov.uk/government/statistics/gdp-deflators-at-market-prices-and-money-gdp-march-2017-spring-budget-2017>

cost changes would look like, therefore we have conservatively assumed that all new car models incur the same cost.

33. The labour cost of familiarisation and making changes to new car manuals are also an area of uncertainty. We have generated best estimate assumptions on the labour hours involved and consider our figures conservative, however we welcome estimates from industry.

Small and Micro Business Assessment

34. The costs under Option 2 would apply to petrol stations and car producers. Many fuel retailers are large companies. However for independent forecourts, depending on the contractual arrangement with their fuel suppliers the cost of new fuel labels would be incurred either by the fuel supplier or the independent fuelling station. In the latter scenario, where there could be a cost impact on small business, this is anticipated to be small and for a firm with only a few dispensers this would be very small.

Impact on equalities

35. At present, we have no evidence to suggest that transposition of this legislation will have a differential impact on people with protected characteristics. The legislation is 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 equipment that visually impaired people are unlikely to operate unaided.