

Regulatory Triage Assessment

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| Title of measure | Directive 2014/94/EU - 'Alternative Fuels Infrastructure Directive' |
| Lead Department/Agency | Department for Transport |
| Expected date of implementation | 18 November 2016 |
| Origin | EU |
| Date | 24/10/2016 |
| Lead Departmental Contact | Chris Gear x4313 |
| Departmental Triage Assessment | Low-cost regulation (fast track) |

Rationale for intervention and intended effects

In order to minimise the dependence on oil, and to mitigate the environmental impact of transport, a number of alternative fuels are in use across the European Union, each with associated infrastructure. However, a lack of common technical standards across the EU prevents the creation of a single market and consequently, the ability to achieve economies of scale for alternative fuels infrastructure. This means it can be difficult for users of alternative fuels to fully utilise the available infrastructure when travelling between Union countries. Government intervention is necessary to address these technical, regulatory and financial barriers across the EU in order to promote infrastructure provision and consumer confidence.

The Directive seeks to establish a common framework of measures for the deployment of alternative fuels infrastructure in order to minimise oil dependence, mitigate the environmental impact of transport and provide long-term stability for private investments. The main output will be an agreed and consistent approach to alternative fuels infrastructure minimum technical standards across EU Member States. This will help ensure physical interoperability of public infrastructure across countries, providing reassurance to vehicle owners and encouraging the uptake of ULEVs. Over time, this will lead to a reduction in harmful vehicle emissions and a reduced reliance on fossil fuels.

Viable policy options (including alternatives to regulation)

We considered a variety of options in order to avoid introducing new regulation where possible. These included updating existing regulations and relevant codes of practice. However, none of the relevant regulations and codes of practice were considered binding and enforceable and would not, therefore, meet the intent of the Directive, which is to ensure the requirements are met. Therefore, mandating compliance with the requirements via a Statutory Instrument will provide the best balance between meeting the intent of the Directive without imposing unnecessary levels of regulation.

Initial assessment of impact on business

The primary impact of the Directive will be on businesses involved in the manufacture and operation of recharging and refuelling infrastructure, although it will be the Infrastructure Operator specifically who will be responsible for meeting the requirements of the Directive.

Calculating the financial impact of these requirements with any degree of accuracy is challenging. The alternative fuels recharging and refuelling infrastructure markets continue to develop rapidly. Information on the costs involved in manufacturing and installing compliant equipment is not freely available, making difficult the accurate calculation of the cost impact of compliance with the measures mandated by the Directive. A purely quantitative appraisal of the Directive's impact is therefore not possible, and so we have taken a combined qualitative and quantitative approach.

The financial impact to Operators is likely to be limited as in the vast majority of cases they already comply with the requirements of the Directive. In instances where they do not comply

it is anticipated that the one or two year compliance deadline (for new and renewed infrastructure respectively) will mean the majority of the infrastructure will be replaced with that which does comply, regardless of the Directive, although some operators may have to amend their business models. These will be one-off costs and the Directive will, in effect, bring forward full compliance with the technical standards and functionality that Infrastructure Operators are likely to adopt anyway.

We have specifically identified two instances where the Directives requirements will have a cost impact on business. In each case the most likely level of impact is minimal, and should the highest impact scenarios transpire the total cost to business will still be below the £1m threshold necessary to qualify for the fast-track process. It is worth noting that Local Authorities own a proportion of the currently non-compliant publicly accessible recharging infrastructure and the cost impact will fall to them rather than private businesses – this proportion is currently unknown.

The cost scenarios for each of the qualifying requirements are as follows. Further detail and explanation is featured in the Supporting Evidence section:

Article 4.4

Low scenario: £ 45,476

Central scenario: £ 97,717

High scenario: £ 144,154

Article 4.9

Low scenario: £ 192,024

Central scenario: £ 503,456

High scenario: £ 786,651

Total Directive costs

Low scenario: £ 237,500

Central scenario: £ 601,174

High scenario: £ 930,805

The benefits of compliance with the Directive will be to recharging and refuelling customers. They will benefit from a degree of certainty around the functionality of recharging infrastructure and knowledge that they will not suffer from compatibility issues relating to the use of this infrastructure.

BIT status/score

As this is transposing an EU Directive and does not exceed the minimum requirements, this will be a Non Qualifying Regulatory Provision, which will not score against the Business Impact Target.

Rationale for Triage rating

Upon analysing and reviewing the predicted costs and impact to business we believe the transposition of this Directive will have an impact on business of less than £1m pa should qualify as a low-cost fast-track measure.

Departmental signoff (SCS): Bob Moran

Date: 10/10/2016

Economist signoff (*senior analyst*): Claire Worsdall

Date: 10/10/2016

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Date: 10/10/2016

Supporting evidence

1. The policy issue and rationale for Government intervention

The negative impact that burning fossil fuels can have on greenhouse gas emissions and air quality is well documented. To help improve this situation there is an increasing move towards replacing conventional fuels for road vehicles and ships with cleaner alternative fuels such as electricity, hydrogen and natural gas, and the corresponding refuelling infrastructure plays a crucial role in this. Across Europe, the markets for these fuels are at differing stages of development, both in terms of the quantity of infrastructure available in each Member State and the specific technology in use in each Member State. Should government leave these markets to develop naturally it is likely there would continue to be a misalignment between the provision of alternative fuels infrastructure, as well as a lack of consistency in the technical standards used. In turn, this would prevent the free movement of alternatively fuelled vehicles across and between Member States and would act as a disincentive to those who may want to purchase an alternatively fuelled vehicle.

The Alternative Fuels Infrastructure Directive seeks to address these issues in two ways. Firstly, by introducing a requirement for each Member State to prepare a National Policy Framework (NPF) to promote market development of alternative fuels in the transport sector. The NPF must include an assessment of current and future developments of alternative fuels in the transport sector; propose national targets and objectives for the relevant infrastructure - which may be revised (up or down) by individual Member States - on the basis of national, regional or Union-wide demand; identify measures necessary to ensure that national targets and objectives are reached; and identify measures that can promote the deployment of alternative fuels infrastructure in public transport services. NPFs shall designate areas and networks that will (subject to market needs) be equipped with electricity recharging points and CNG refuelling points and shall designate the maritime and inland ports that shall provide access to LNG refuelling points.

The second element of the Directive focuses on specific technical standards and functionality relating to refuelling and recharging points, and seeks to mandate compliance with these across all member states. A harmonised approach to the technical standards with which alternative fuels infrastructure must comply will help to generate confidence amongst vehicle owners that they can use refuelling facilities in any Member State and that they will not be adversely affected by compatibility issues. For example, there are a number of competing connector standards for electric recharging points. A standardised approach will mean electric vehicle (EV) owners will be able to recharge their vehicles at any recharging point across Member States, in turn removing a significant potential barrier to EV uptake.

The UK is supportive of government intervention in this area. Transposition of the Directive affords an opportunity to pursue a unified approach to the development of alternative fuels infrastructure across Member States.

Government intervention at this relatively early stage in the development of alternative fuels infrastructure is intended to set the direction for its development over the coming decades and help to prevent a divergence both in the geographical penetration of alternative fuels infrastructure, and the technical standards used. Although the UK does not intend to go beyond the minimum requirements when transposing the Directive, government intervention at this stage provides an ideal opportunity to steer development of the market away from a more organic model, which could result in cross-EU compatibility issues in the future, and toward a more coordinated approach.

2. Policy objectives and intended effects

In transposing the Directive our objectives have been two-fold. Firstly, to support the primary purpose of the Directive, which is to encourage the uptake and free movement of alternatively fuelled vehicles across Member States by ensuring adoption of common design and functionality standards.

In transposing the Directive in the UK we aim to:

- support work under way to transition the UK road vehicles to zero emission;
- position the UK as a global leader in the use of ultra low emission vehicles; and
- support work under way to reduce sulphur emissions from ships.

The second objective in transposing the Directive is to ensure that we do not place an unnecessary and unfair regulatory burden on members of the alternative fuels infrastructure industry.

The industry is relatively new and is at an emerging, or developing, stage. The industry employs a variety of commercial models, and the fuel types themselves are to a certain degree competing with one another to find their relative levels of market adoption. There exists a risk that excessive regulation at this early stage could unintentionally result in their further development being restricted.

Throughout the transposition process our main consideration has been to try and ensure that where possible existing regulation is referred to in order to meet the requirements of the Directive, as opposed to introducing new regulation or legislation. Special attention has therefore been given to trying to identify either existing legislation that references compliance with technical standards similar to those in the Directive, or to existing regulation directly relevant to the refuelling infrastructure referred to in the Directive, with a view to amending these to meet the Directive's requirements.

3. Policy options considered, including alternatives to regulation

Through OLEV, the UK government is fully supportive of the Directive, and the objectives it seeks to achieve, and took a leading role in negotiating its

content. As such, and also due to the legally binding requirement as members of the European Union, the 'Do Nothing' option has not been considered. Transposition of the Directive, to varying degrees, was the only option subjected to detailed consideration.

Partial Transposition of the Directive

The UK government was actively involved in the negotiation of the Directive and agreeing the individual requirements it would include. Although the UK was successful overall in achieving all its negotiating objectives there remained the opportunity to go further towards meeting some additional policy objectives. Therefore, an option existed to go beyond the minimum required of those requirements which did not fully meet the UK's policy objectives ('gold plating'). However, strict transposition guidelines issued by the Cabinet Office preclude 'gold plating' unless under special circumstances. Alternatively, not fully transposing the Directive to avoid transposing those requirements where the UK was not fully in support would result in infraction proceedings being initiated against the UK by the European Commission.

In relation to the transposition of the Directive it was not felt there was sufficient need to pursue the 'gold plating' option, and as such full transposition up to the minimum requirements of the Directive was the preferred approach.

Full Transposition of the Directive

Full transposition of the Directive would avoid the legal penalties of partial transposition and would demonstrate the UK's commitment to a coordinated stance across Member States towards alternative fuels infrastructure. In negotiating the Directive and transposing it, one particular area of focus was ensuring the future development of the alternative fuels infrastructure market was not hampered and there was still the opportunity for technical innovation. When identifying transposition options one of the main limiting factors was for the chosen action to be enforceable in some way. We therefore sought to identify existing legislation or legally binding regulations into which the requirements of the Directive could be included. Further investigation found that no existing regulation was legally enforceable, and no suitable primary legislation existed. We therefore decided to pursue secondary legislation as the preferred option as this would provide the legally binding mandate required. All requirements will be 'copied-out' into a Statutory Instrument under the European Communities Act 1972 and will not go further than the minimum specified in the Directive.

4. Expected level of business impact

The transposition of the Directive will have an adverse regulatory impact on in the sense that it will be creating a new layer of regulation. The preferred transposition option will mandate compliance with the requirements set out in the Directive but will go no further, thereby keeping the regulatory burden to a minimum. Responsibility for compliance will be placed with the Infrastructure

Operator. They will need to ensure that they only operate infrastructure that complies with the requirements set out in the Directive.

The regulatory requirements themselves are spread across four main areas; electricity supply for transport, hydrogen supply for road transport, natural gas supply for transport, and user information. In agreement with the European Commission a number of these are not yet in a position to be transposed (whilst new technical standards are developed, or a common approach is agreed), and a further proportion it has been identified are already complied with. This leaves two requirements where we have identified there will be a cost implication to industry. These two requirements cover the provision of chargers and ad-hoc charging for some of the UK charging network.

Despite the introduction of this new layer of regulation, we believe the cost impact overall is likely to be relatively light.

Article 4.4 – Chargepoint connectors

In the case of electric refuelling infrastructure for road vehicles, chargepoint operators and the chargepoints themselves already meet the majority of the requirements set out in the Directive. Type 2 and Combo 2 connectors, with which the Directive requires publicly accessible chargepoints must be fitted (Article 4.4), are already fitted as standard on the majority of chargepoints. Available data (taken from the National Chargepoint Registry <http://www.national-charge-point-registry.uk/>) suggests that there are no publicly accessible chargepoints, matching the definition of 'normal power' that do not include a Type 2 connector. However, the same data suggests there are 32 publicly accessible 'high power' chargepoints which feature the CHAdeMO connector standard, but not the Combo 2 standard. This therefore represents a cost to the industry to upgrade these chargepoints.

However, the operators are likely to renew these chargepoints anyway in response to consumer demand and as the existing units reach the end of their effective lifespan. We therefore anticipate that within 5 years operators would renew all 32 publically accessible 'high power' charge points with the Combo 2 connector regardless of the Directive. Effectively, what the directive will do in the case of these 32 chargepoints is accelerate an already scheduled change and therefore due to discounting, the cost of naturally upgrading a charger in 5 years' time is less than incurring the cost of upgrading a charger by 18 November 2017.

The price of a high powered chargepoint varies, but on average they cost around £20,000 each. In order to meet the requirements of the Directive we have assumed that all 32 chargepoints would need to be completely replaced by the 18th November 2017.

The total cost incurred to business in mandating upgrades today rather than in the scheduled 5 years' time is £97,717. This would be a one-off cost, please see Annex A for a list of assumptions and scenario testing. The fact these are replacing existing chargepoints means there would be no need to strengthen

the electricity grid connection and therefore the costs involved would be kept to a minimum.

In the case of intelligent metering systems, as defined by Directive 2012/27/EU, the functionality required is already present in publicly accessible chargepoints. This provides information on time and duration of charge, and provides the final consumer with sufficient information to compare costs on a like-for-like basis.

Article 4.9 – ‘Ad-hoc access’

In regards to Article 4.9, OLEV has required all publicly accessible chargepoints to have an ad hoc/“pay as you go” access method since 2013, and most UK network operators offer an ad hoc access method, meaning users do not need to be part of a membership scheme to access their chargepoints. This may be via mobile application, telephoning a back office to start a remote charge, SMS or contactless card payment, for example.

Existing data is incomplete on this issue, but we estimate that around 25% of existing chargepoints do not currently allow the user to access these chargepoints on an ad hoc basis. Based on around 11,000 publicly accessible chargepoints nationwide this equates to around 2,750 chargepoints.

The cost requirements will vary depending on the method chosen for enabling ad hoc access, and the existing systems and back offices the network operators already have in place. Installing a credit card reader on a chargepoint for example could be expensive, whilst we anticipate that an ‘e-mobility scheme’ based ad hoc access method delivered by a mobile application / SMS system would likely be much cheaper. The majority of network operators already have systems in place to enable this and thus the cost of installing new chargepoints or ensuring existing chargepoints have the necessary capabilities is likely to be minimal.

We have been unable to identify the costs of setting up a mobile application for accessing chargepoints, as this has been too commercially sensitive, although the majority of network operators already have this kind of system in place, or an equivalent system.

To be conservative we have therefore looked at a more conservative cost to gain compliance by assuming the full chargepoint would need to be replaced by the operators. The cost of a publically accessible chargepoint is on average £2,000. Therefore in the central case scenario all 2750 charge points that require upgrading will be totally replaced in 2018 leading to a total cost to business of £503,456. This captures the cost of mandating business to upgrade immediately rather than incurring the cost of upgrading in 3 years’ time. Please see Annex A for a list of assumptions and scenario testing.

It is important to note that allowing this to be a requirement from 2018 for existing chargepoints gives the industry time to meet these requirements. We could therefore expect that, due to natural turnover, a significant proportion of the 2750 chargepoints which currently do not feature ad hoc access will be

replaced with ones which do before November 2018, regardless of the Directive. We have not been able to estimate with certainty this proportion, so have therefore assumed the number that require upgrading in 2016 is constant. In reality, the number of chargers requiring upgrading in 2018 would be a lot less than in 2016, which would lower the cost to business.

It should also be noted that a proportion of public chargepoints are owned by Local Authorities and the cost of meeting the Directive's requirements will fall to them rather than private business which would further reduce the impact on businesses (though increase the costs to government).

Article 6.6 – 'Shore-side electricity supplies'

Regarding shore side electricity supplies, the trade body representing the manufacturers of this equipment has indicated that all installations and available equipment already complies with the technical standard stipulated by the Directive. There is therefore no additional cost burden imposed by this requirement.

Article 5.2 – 'Hydrogen supply for road transport'

On the subject of hydrogen supply for road transport there is only one requirement which we are in a position to transpose (as agreed with the European Commission). This relates to the technical standard which hydrogen refuelling connectors must comply. Following discussion on this matter with industry representatives we have identified that all connectors currently installed, and on the market, already comply with this standard. There is therefore no additional cost burden imposed by this requirement.

Finally, in relation to the availability of information regarding the geographic location of recharging and refuelling infrastructure this information is already freely available on the websites of infrastructure operators and other aggregation websites. There would therefore be no additional cost placed on Operators in order to comply with this. Real-time charging information is not currently available and the Directive does not require it to be made available. However, when available this information should be made freely available, something Infrastructure Operators have indicated they plan to do anyway. This would therefore not result in an additional imposed cost.

In total, we expect a total cost to business of £601,805 from transposing the Directive in line with our preferred approach.

URN: BIS/16/178

Annex A

Analytical assumptions and scenario testing

It is important to highlight that the total cost of transposing the Directive is sensitive to the assumptions used in the analysis. The purpose of this annex is to provide information on the assumptions used and present estimates from sensitivity testing.

Article 4.4

Table 1 (below) lists the input assumptions that have been used for calculating the total cost to business of transposing Article 4.4.

Table 1

| Assumption | Source | Low | Central | High |
|--|--------------------------------|--------|---------|---------|
| Number of high powered charge points requiring upgrade | National charge point registry | 32 | 32 | 32 |
| Cost of upgrading (£ per charger) | Policy assumption | 15000 | 20000 | 25000 |
| Renewal (years) | Policy assumption | 4 | 5 | 6 |
| Discount rate (%) | HMT Green Book | 3.5% | 3.5% | 3.5% |
| Total cost to business (£) | | | | |
| Article 4.4 | | 45,476 | 97,717 | 144,154 |

Using data from the National Charge Point Registry it is known how many high powered charge points currently in operation that require upgrading in order to meet the technical standards in Article 4.4 Likewise, discounting at the social rate of time preference (3.5%) is the standard discounting method used in government appraisals. Given that these assumptions are certain, they do not vary by scenario.

There is less certainty over the true cost of replacing charge points and when they would be renewed. Our central values are based on regular interaction with industry. However, for the purpose of estimating 'best' and 'worst' case scenarios we have assumed that these values could be up to 25% lower or high than our central values.

It has not been possible to obtain reliable evidence on what will happen to costs over time. It could be expected that costs are to increase over time due to inflationary pressures. Conversely, it is entirely possible that the cost of chargepoints decrease over time as technical components achieve economies as the market develops. We assume that any potential cost increases or decreases are captured in our scenarios.

Article 4.9

Table 2 (below) lists the input assumptions that have been used for calculating the total cost to business of transposing Article 4.9.

Table 2

| Assumption | Source | Low | Central | High |
|---|-------------------|------------|----------------|-------------|
| Number of publically accessible charge points | Network Operators | 11000 | 11000 | 11000 |
| Proportion of publically accessible charge points that don't facilitate ad-hoc charging | Policy assumption | 19% | 25% | 31% |
| Number of publically accessible charge points that don't facilitate ad-hoc charging | Calculation | 2063 | 2750 | 3438 |
| Cost of upgrading (£ per charger) | Policy assumption | 1500 | 2000 | 2500 |
| Renewal (years) | Policy assumption | 2 | 3 | 4 |
| Discount rate (%) | HMT Green Book | 3.5% | 3.5% | 3.5% |

Total cost to business (£)

| | | | |
|-------------|---------|---------|---------|
| Article 4.9 | 192,024 | 503,456 | 786,651 |
|-------------|---------|---------|---------|

Through engagement with Network Operators we are certain that there are 11,000 publically accessible charge points. In addition to the discount rate, this assumption is fixed between scenarios.

There is less certainty surrounding the exact number of charge points that require upgrading, when they would naturally be renewed and the true cost of replacing each charge point. Using the same method as in Article 4.4, high and low values have been constructed to reflect our uncertainty in the assumptions and to perform sensitivity analysis.

Total cost to business of Directive

Table 3

Table 3 below presents low, central and high estimates of the total cost to business of implementing the Directive. As mentioned in the main body of the text, we anticipate that the total cost to business of implementing the Directive will be £601,173 (central scenario). Even in the worst case scenario, we anticipate the total cost to business to be less than £1,000,000. This is demonstrated in figure 1.

| Total cost to business (£) | | | |
|-------------------------------------|---------|---------|---------|
| Directive (Article 4.4+Article 4.9) | 237,500 | 601,173 | 930,805 |

Figure 1

