

Evaluation of the Directive on the Deployment of Alternative Fuels Infrastructure (2014/94/EU)

1. Objectives of the study

The European Commission is conducting an evaluation of the [Directive on the Deployment of Alternative Fuels Infrastructure 2014/94/EU](#) (henceforth the Directive or AFID).

The Directive was adopted in 2014 and creates a common framework of measures for the deployment of alternative fuels infrastructure (AFI) in the EU.

The Directive requires Member States to set up long-term National Policy Frameworks (NPFs) for the development of the market as concerns alternative fuels and the planning of the deployment of relevant alternative fuels infrastructure. It also stipulates requirements for the rollout of alternative fuels infrastructure along the core network of the Trans-European Transport Network (TEN-T) and its urban nodes - with different milestones for 2020, 2025 and 2030 for different alternative fuels. The Directive sets common technical specifications for recharging and refuelling stations that aim at ensuring interoperability and adequate consumer information. It covers electricity (including shore-side electricity for ships), hydrogen, and natural gas (CNG for light duty road and LNG for heavy duty road, maritime and inland waterway transport).

The Commission has contracted a team led by consultants Ricardo (including Transport and Environmental Policy Research (TEPR) and E3-Modelling (E3M)) to undertake a support study for the European Commission for the evaluation of the Directive.

The objective of the study is to provide a comprehensive evaluation of the Directive and to collect and analyse evidence to help assess whether it has achieved its objectives in an effective and efficient manner. In addition, the study aims to determine whether its objectives and priorities remain relevant with emerging needs and consistent with other EU policies and priorities. It aims to provide an overall assessment of how successful the Directive has been in achieving its objectives and it will examine the progress made across the relevant policy areas.

In the context of the study we are organising surveys with national and local authorities, with direct experience in the development of National Policy Frameworks and the implementation of measures related to the Directive

The objectives of the interviews are to obtain your input and data (where relevant) on the evaluation of the Directive on the deployment of alternative fuels infrastructure.

The roadmap of the evaluation process can be found [here](#).

If you have any questions, please do not hesitate to contact us at AFInfrastructure.Eval@ricardo.com

2. Introduction to the survey

To facilitate the development of the survey in multiple languages, the EU machine translation tool has been used. Therefore, please accept our apologies in advance if you find any errors in translation. Please contact AFInfrastructure.Eval@ricardo.com, if you require further assistance.

This survey is intended to gather feedback from regional/local authorities to support the evaluation of the AFID from national authorities who have experience with the development of National Policy Frameworks since 2014.

It may be the case that not all questions will be relevant for your organisation or you may not be in a position to respond to them. In these instances, you can simply select “Do not know” or “Not applicable”.

We appreciate that there may be more than one authority/department in your region/urban or local area that has been involved or are responsible for the implementation of specific measures related to the promotion of alternative fuels infrastructure. Thus, we would like to ask you to forward the invitation email to the appropriate contact point in the other authorities that are responsible and ask them to complete the survey.

Alternatively, if it is considered more appropriate, you can coordinate with them when responding to the question and submit a single response indicating all the organisations involved. However, we expect that this may be particularly challenging, and it may not be possible to prepare the response within the period that the survey will remain open.

The survey is expected to remain open for eight weeks. The deadline for the submission of your answers is **26th March 2020**.

Note: You can only take the survey once (one response per computer). You can save the progress you have made in filling out your survey and complete it at a later time - once you open the link to the survey on the same computer and the same browser you will be directed to the same page of the questionnaire where you left, with your previous responses saved. You can also print a pdf format of the survey if this is convenient in developing your responses.

3. Use of your input

The study team will make use of your contribution (information/data provided) only for the needs of this study and of the underlying evaluation report prepared by the Commission services. Your responses will be shared with the Commission services. Please indicate how you would like us to present the information provided during our discussion and any other information or data you provide to us:

Select one of the following:

- Your contribution will be referenced to the organisation represented

- Your contribution will be anonymised (i.e. without the name/name of the organisation but with affiliation to industry sector, e.g. “local authority, transport operator representative, environmental NGO”)

4. Contact information

4.1 In order to analyse the input to this survey, we would ask you to provide some personal information (name, email address, telephone number, etc.). Undertaking this survey means you are providing consent to Ricardo to store your data for the purposes of the study. Your personal data will not be shared with any third party outside of this study and your responses will be treated as specified in the box above (see 'Use of your input'). You can read our policy on how we process data [here](#).

Member State

Germany

Name of region/urban or local area

Scandria@Alliance
(comprising six regions located along the Scandria@Corridor: Helsinki-Uusimaa, City of Turku, Eastern Norway County Network, Region Örebro County, Region Skane and Capital Region Berlin-Brandenburg)

Name of responding authority

Joint Spatial Planning Department Berlin-Brandenburg

Specific department (if relevant)

Division for European Spatial Development

Contact name

Nora Schindler

Position/role in the organisation

Scandria@Alliance Secretariat

Email address

nora.schindler@gl.berlin-brandenburg.de

Telephone number

+49.331.866-8725

4.2 Please identify the policy areas that your administration/department is responsible for (please select all that are applicable):

	Select
a. Transport sector policy (general)	<input type="checkbox"/>
b. Road transport	<input type="checkbox"/>
c. Maritime transport	<input type="checkbox"/>
d. Aviation transport	<input type="checkbox"/>
e. Rail transport	<input type="checkbox"/>
f. Urban transport	<input type="checkbox"/>
g. Climate change adaptation/mitigation	<input type="checkbox"/>
h. Environmental policy (air quality, noise, waste etc.)	<input type="checkbox"/>
i. Energy policy	<input type="checkbox"/>
j. Social/employment policy (including transport sector)	<input type="checkbox"/>
k. Industrial/R&D/Innovation policy	<input type="checkbox"/>
l. Other area (please indicate below)	<input checked="" type="checkbox"/>

Other area:

Spatial planning, spatial development, state planning

5. Relevance of the Directive and its provisions

The following set of questions ask you to provide input to help us understand the relevance of the Directive's objectives, targets and provisions reflecting on the ongoing political, economic, technological and social developments. Key aspects are the extent to which the scope (in terms of fuels and modes covered) and the approach (based on Member States National Policy frameworks and indicative targets) are appropriate in view of the development, especially in view of the policy objectives concerning the decarbonisation of transport.

5.1 At the time of the adoption of the Directive, the identified challenges for the uptake of Alternative Fuels in the EU were:

- **Technological and commercial short-comings:** The network for the provision of electricity, hydrogen and natural gas (LNG for trucks and waterborne transport and CNG for road transport vehicles) was considered insufficient compared to a network that would be necessary to enable market uptake of these fuels and was not likely to become available in the near future.
- **Lack of consumer acceptance:** Full scale deployment and commercialisation of alternative fuels was considered hampered by poor acceptance by potential consumers, due to perceived distance needs, knowledge of availability of recharging/refuelling stations, longer refuelling times than they are

accustomed to, high cost of Alternatively Fuelled Vehicles compared to conventional internal combustion engine vehicles.

- **Missing adequate infrastructure:** The industry was reluctant to invest in alternative fuel vehicles due to concern of viability and profitability in the absence of sufficient network of refuelling/recharging points (and vice versa). There was a 'chicken and egg' problem between vehicles and investing in infrastructure.

In your view, to what extent are the challenges described above are still relevant today?

	Do not know	Not at all	To a limited extent	To some extent	To a significant extent	Fully
1. Technological and commercial short-comings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
2. Lack of consumer acceptance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
3. Missing adequate infrastructure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

Please explain your answer (e.g. what is the reason that these challenges may not be as relevant today?):

All problems described above are still relevant. There is insufficient infrastructure, the deployment of supply networks/charging points is happening too slowly to meet .

It is still expensive for consumers to choose more environmentally friendly alternatives and there is still uncertainty about which fuels to invest in. Consumer acceptance requires to take actions taht make it affordable for consumers to buy AF vehicles. Private persons and industry are in general positive to convert to alternative fuels, and want the transition to speed up. However, there are still some issues regarding knowledge of how the solution copes with the needs when it comes to range, payload etc. Costs, safety and second hand value are also important issues.

5.2 Based on your experience, how (if at all) have the following developments affected (positively or negatively) the level of uptake of Alternative Fuels Infrastructure in your region?

	Do not know	Not relevant	Positive impact (increase in uptake)	No impact	Negative impact (decrease in uptake)
1. Increase in level of e-commerce/ increase online purchase	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. New mobility patterns and new business models (e.g. mobility as a service, ride sharing)	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Increasing connectivity and digitisation of vehicles	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

4. New alternatively fuelled technologies and increasing use of renewables	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Adoption of restrictions for the use of vehicles in urban and suburban areas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Smart electricity grid management technologies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Improved quality of vehicles (e.g. increased range of electric vehicles)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Overall reduction in the price of vehicles	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please explain your answer:

2) Positive, as there are a some "new mobility service providers" (i.e. car sharing) are starting to offer substantial number of BEVs in their fleets.

4) In general positive influence, since range of vehicles increases, costs go down, additional use-cases are tested (i.e. last-mile logistics)

5) Environmental Zones in urban areas have the potential to contribute positively as has been seen in Norway, but elsewhere the environmental zones are not enough strict or have not yet been implemented.

6) in research phase, no application yet.

7) see 4)

8) Positive tendency but still high difference between AFV and ICE-V. public-private financed price reductions seem to have only limited effect.

5.3 Are there any other technological, economic, societal/behavioural and/ or environmental developments that have played a positive or negative impact not identified above and that are not properly reflected in the Alternative Fuels Infrastructure Directive?

Please explain your answers:

From a Scandinavian perspective there has been a negative impact deriving from the EU definition of biofuels which does not regard national or regional differences in the prerequisites.

Reluctance in private and public organisations as well as among private persons towards alternative fuels due to fear of higher costs and behavioural habits.

5.4 The Directive sets a number of objectives (summarised below). Considering the new issues and challenges identified above, do you think that the objectives are still appropriate?

	Do not know	Not at all	To a limited extent	To some extent	To a significant extent	Fully
1. Increase/trigger investments in Alternative Fuels Infrastructure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
2. Ensure interoperability of Alternative Fuels Infrastructure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

3. Increase consumer awareness of alternative(ly) fuelled infrastructure (i.e. location, price, availability)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
4. Increase consumer awareness of alternative(ly) fuelled vehicles	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
5. Ensure integration of electromobility into the electricity system	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

Please explain your answers:

There has been substantial investments in the infrastructure (to a large extent thanks to grants from EU) but we don't see a sufficient upscale on the demand side.

- 1) still gaps concerning charging / fast charging, extreme gaps in hydrogen fuelling stations, low progress in LBG/LNG stations
- 2) applies to: plug-in systems, payment systems, security standards, especially across borders
- 3) absolutely, but first infrastructure has to be available, then it should be easily communicated i.e. via mobile apps
- 4) steadily increasing, but still of utmost importance. Price argument decisive (purchase + operation)
- 5) Is an issue before the background of energy storage from renewable sources (wind, solar). Will become an issue, when BEV gain substantial market shares in cities (electricity supply). Electromobility is just one alternative fuel option, the others have to be considered as well, especially for long distance (hydrogen and liquified gas).

5.5 As currently stated within the Directive, the alternative fuels are: electricity, hydrogen, biofuels, synthetic and paraffinic fuels, natural gas (including biomethane, CNG and LNG, and LPG).

Do you consider that there is a need to make changes relating to the following aspects?

	Do not know	Not at all	To a limited extent	To some extent	To a significant extent	Fully
1. Exclusion of fuels included in the Directive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Inclusion of other modes of transport or alternative fuels emerging that are not currently covered by the Directive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please explain your answers:

The directive should focus on fuels that are low or zero emission. The directive should provide a level playing field for all fuels, given their optimum use range. A revised directive should define precise targets. The directive should open up for new possible solutions that could be added in the future which encourages continued research and innovation, however regards have to be taken to the fact that OEMs do not have the possibility to produce models for numerous fuels. Consider if gas produced by fossil sources should be included in the directive: for a certain period it will be necessary as bridging fuel, but there need to be clear targets and incentives set to reach zero emission.

5.6 Do you consider there is a need to add new/additional objectives relating to the inclusion of other transport modes (e.g. rail and/or aviation)?

- Do not know
- Not at all
- To a limited extent
- To some extent
- To a significant extent
- Fully

Please explain your answers:

There are national differences but all transport mode have to become fossil free, hence alternative fuels needs to be encouraged for all modes. As there is a rapidly increasing focus on low and zero emission solutions within rail and aviation, relevant objectives for these modes should be included in the directive as well; i.e. electricity powered rail transport should be considered as clean fuel transport. For rail lines, where electrification isn't feasible, diesel traction should be replaced by renewable energy traction (i.e. hydrogen). The directive might consider defining optimum use cases for the different fuels, given their production capacity. In the aviation industry, there is room for new solutions like electric planes and higher demands on cleaner fuels both inside and outside the EU.

5.7 The Directive (in Article 2) sets out a broad definition of ‘alternative fuel’. It states that **an alternative fuel should be able to (at least in part) substitute for fossil oil sources and have the potential to reduce GHG and pollutant emissions from the sector.**

Please indicate the extent that you agree with each of the following statements:

	Do not know	Strongly disagree	Disagree	Neither disagree or agree	Agree	Strongly agree	Not relevant
1. The inclusion of fossil fuels (e.g. CNG/LNG) as part of the Directive for <u>road - LDV/cars</u> - is still justified	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. The inclusion of fossil fuels (e.g. CNG/LNG) as part of the Directive for <u>road – HDVs</u> - is still justified	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. The inclusion of fossil fuels (e.g. LNG) as part of the Directive for <u>inland waterways</u> is still justified	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. The inclusion of fossil fuels (e.g. LNG) as part of the Directive for <u>maritime transport</u> is still justified	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. There is a need to prioritise the adoption of zero tailpipe emission solutions (i.e. electricity and hydrogen)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please explain your answers:

Zero emission solutions: The directive plays an important role in motivating and forcing the industry to develop the necessary solutions at a faster speed. To meet the goals of the European Green Deal, the directive should prioritise the adoption of zero emission solutions and focus on life cycle emissions. CNG / LNG will be needed in a transition period although we consider LNG/CNG as a bridge for LBG/CBG. However incentives are needed to increase the production of LBG/CBG.

6. Effectiveness of the Directive

The following set of questions aim to obtain input on the type of measures in place at your regional/local level to achieve the objectives of the Directive and their impacts. We also ask your view on the role of specific provisions and measures of the Directive (positive or negative) and any other parameters that have played a role in achieving its objectives.

6.1 How would you characterise the current level of publicly accessible deployment of Alternative Fuels Infrastructure in your region/city in each of the following areas:

	Not relevant	Do not know	Non existent	Very limited	Partly developed	Well developed	Fully developed
1. Electricity for road transport –Light duty vehicles (cars and vans) (electromobility)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Electricity for road transport – Heavy duty vehicles (coaches and trucks)	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. On shore supply of electricity for maritime transport	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. On shore supply of electricity for inland waterway transport	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Hydrogen for road transport	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Liquefied Natural Gas (LNG) for road transport	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Compressed Natural Gas (CNG) for road transport	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Liquefied Natural Gas (LNG) for maritime transport/inland navigation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Electricity supply for use by stationary airplanes at airports	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Other alternative fuel and mode (identify below)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other alternative fuel and mode:

Hydrogen for rail traction.
Electric road (Ongoing demoprojects in the Scandria®Corridor)

Please explain your answers:

The deployment of different alternative fuel infrastructure differs along the Scandria Corridor i.e. recharging points are less developed in Northeastern Germany, hydrogen is locally quite developed - i.e. Oslo and Berlin but still in a very early market phase, LNG/LBG is well developed in Norway and Sweden but rather limited in Northeastern Germany.

Regarding LNG / CNG: the aim is a transision to LBG and CBG, which today is more prevalent in the Nordic countries but not enough.

6.2 Have there been measures in your region/urban/local area concerning the deployment of Alternative Fuels Infrastructure **since the Directive entered into force (2014)**?

These could include legal, financial and non-financial incentives and other administrative measures.

	YES, measures adopted by the national authorities	YES, measures adopted at regional /urban/local level	NO	DO NOT KNOW
1. Measures to promote the deployment of Alternative Fuels Infrastructure in the area of electricity for road transport	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Measures to promote the deployment of Alternative Fuels Infrastructure in the area of electricity for maritime/inland waterway navigation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Measures to promote the deployment of Alternative Fuels Infrastructure in the area of electricity in airports	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Measures to promote the deployment of Alternative Fuels Infrastructure in the area of natural gas for road transport	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Measures to promote the deployment of Alternative Fuels Infrastructure in the area of natural gas for maritime/inland waterway navigation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Measures to promote the deployment of Alternative Fuels Infrastructure in the area of hydrogen for road transport	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Measures to promote the deployment of Alternative Fuels Infrastructure to promote the				

