Report of the Czech Republic on implementation of a national policy framework for the development of an alternative fuels markets in the transport sector and related infrastructure in accordance with Article 10 of Directive 2014/94/EU of the European Parliament and of the Council of 22 October 2014 on the deployment of alternative fuels infrastructure

1. Introduction

Following a request based on Article 3 of Directive 2014/94/EU (the 'AFI Directive') for Member States to adopt a national policy framework for development of an alternative fuels markets in the transport sector and related infrastructure ('National Framework'), Resolution of the Government of the Czech Republic No 941 of 20 November 2015 approved the National Action Plan for Clean Mobility ('NAP CM'). The document in question was then sent to the European Commission in fulfilment of the request.

Under Article 10 of the Directive, Member States are to submit a report on the implementation of their national policy framework to the Commission by 18 November 2019, and every three years thereafter. The report is to cover the information listed in Annex I of the Directive and, where appropriate, to include a relevant justification regarding the level of attainment of the national targets and objectives referred to in Article (3)(1).

The report shall contain a description of the measures taken in the Member State in support of creating an alternative fuels infrastructure.

2. Information on implementation of a national policy framework in accordance with the Annex to Directive 2014/94/EU

2.1 Legal measures

Since the adoption of the National Action Plan for Clean Mobility, amendments have been adopted to the following legislation:

- **Act No 134/2016 on public procurement -** introducing the possibility for public contracting authorities, when purchasing vehicles, to apply the methodology for calculating lifecycle operating costs under Directive 2009/33/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of clean and energy-efficient road transport vehicles
- **Act No 311/2006 on fuels and filling stations - obligations of charging station owners -** as part of the transposition of the AFI Directive, electricity and hydrogen were included for the first time in the scope of this Act, certain shortcomings relating to LNG were removed and the following obligations were set out for public charging station operators:
  - to provide the possibility of ad hoc charging without first entering into an agreement with the relevant power supplier or operator;
  - clearly comparable, transparent and non-discriminatory prices for charging;
  - awareness of which motor vehicles can regularly be filled with the individual fuels available on the market and which vehicles can be charged regularly in charging stations.
- **Implementing Decree No 268/2009 on technical requirements for structures[1] – as part of the transposition of the AFI Directive, technical specifications have been incorporated into this Decree for** charging stations and filling stations for hydrogen and for CNG for motor vehicles.

- **Act No 56/2001 on the conditions for operating vehicles on roads[2]** - effective from 1 April 2019, makes it possible to issue 'electric vehicle registration numbers'[3].

[1] The amendment to the Implementing Decree (adopted under number 323/2017) has been effective since October 2017

[2] See Act No 193/2018.

- **Act No 13/1997 on roads** - effective from 1 January 2020, introduces an exemption from periodic and performance-related charges for electric and hydrogen powered vehicles and, a year later (in connection with the introduction of electronic motorway signs), partial exemption from periodic charges for vehicles powered by CNG and biomethane.[4]

In addition to this, technical standard TPG 982 02 was adopted (Conditions for operating, repairing, maintaining and checking the issuing and sale of motor vehicles powered by CNG systems), eliminating barriers in the area of servicing for CNG vehicles.

In some cases, adoption of the planned measures contained in the National Action Plan for Clean Mobility has either been delayed or not enforced. These measures include:

- **Specification of the qualification requirements for electrical engineers (Implementing Decree No 50/1978) in relation to electrical vehicles** - to be adopted in 2020.
- **Removal of barriers in the area of garages for gas-powered vehicles -** discussions are continuing with the Central Fire Brigade and a comprehensive solution will be found for all types of alternative fuel.
- **Amendment of road tax systems and rates for CNG/LNG or electric-powered vehicles over 12 tonnes and also the introduction of tax relief for LNG and hydrogen-powered vehicles** – adoption of this measure has been postponed pending completion of a comprehensive study on taxes and charges.
- **The increase in depreciation in the first year of depreciations for charging station and CNG/LNG filling station infrastructure** – plans for implementing this measure have been suspended for now following the opinion of the Finance Ministry.
- **The depreciation increase in the first year of depreciation for CNG/LNG and electric-powered vehicles** – plans for implementing this measure have been suspended for now based on a statement from the Finance Ministry.
- **Using IT systems to inform drivers about the locations, types and facilities of charging and filling stations -** work on implementing this measure is proceeding in full compliance with the framework in the applicable Commission Delegated Regulation (EU) 2015/962 of 18 December 2014 supplementing Directive 2010/40/EU of the European Parliament and of the Council[5] and in accordance with the timetable for the project of the Connecting Europe Facility Programme Support Action, in which the Czech Republic is involved[6]. To this end, it is expected that the Ministry of Transport will adopt an implementing decree specifying a method for transmitting dynamic data on charging stations.

2.2 Policy measures supporting the implementation of the national policy framework

2.2.1 Direct incentives for purchasing means of transport using alternative fuels or for building the infrastructure

In the implementation of direct incentives for purchasing means of transport using alternative fuels or for building infrastructure, the Czech Republic is making the greatest possible use of money from European funds. The main sources are the following Operational Programmes:

- Operational Programme Enterprise and Innovation for Competitiveness (OP EIC) under the auspices of the Ministry of Industry and Trade - supports the purchasing of electric vehicles and non-public charging stations for businesses. In the first three calls, businesses were expected to acquire about

[3] Under Act No 227/2019, this exemption applies to vehicles fuelled by 'electricity or hydrogen, either exclusively or in combination with another fuel, provided that the CO2 emissions in combined mode do not exceed 50 g/km.'

[4] The relief for these vehicles amounts to CZK 500. Whilst the standard annual charge is CZK 1,500, the reduced charge is CZK 1,000.

[5] See Regulation (EU) 2015/962 and (EU)2017/1926

[6] See the IDACS project.

500 electric vehicles and 270 charging stations. The fifth call will be announced in December 2019. In total, more than CZK 500 million has been allocated in the five calls.

- Operational Programme Transport (OPT) under the auspices of the Transport Ministry - also supports the construction of public charging stations and public filling stations for hydrogen, CNG and LNG. So far, support has been provided for 375 rapid charging stations and 444 standard stations, as well as 13 LNG stations and 4 hydrogen stations. They are expected to come into operation in the next few years.
- Integrated Regional Operational Programme (IROP) under the auspices of the Ministry for Local Development - support has been provided for 70 electric buses, 100 trolleybuses and 150 CNG-powered buses.

Some businesses have also responded to the calls announced by the European Commission under the Connecting Europe Facility. In 2020, support from this source should lead to the construction of 149 rapid charging stations and 10 ultra-rapid charging stations on the corridors of the TEN-T Core Network.

The national sources supporting the purchasing of vehicles powered by alternative fuels include a national programme of the Environment Ministry helping local and regional authorities to purchase these vehicles. Three calls have been announced, with allocations of CZK 100 calls. The first and second calls resulted in support for 430 electric vehicles, nine plug-in hybrids and 127 CNG vehicles.

2.2.2 Availability of tax incentives to promote means of transport using alternative fuels and infrastructure

Even before the National Action Plan for Clean Mobility was adopted, Czech law contained certain measures related to taxation which went some way towards supporting alternative fuels in transport. These measures include:

- Exemption from road tax for CNG, LPG and electric-powered vehicles
- Reduced rates of excise duty for CNG and LPG

To encourage the use of natural gas, the Government approved a Long-term Cooperation Memorandum in 2018 with gas companies in the area of vehicles powered by natural gas, covering the period up to 2025, and established the conditions for developments in excise duty on compressed natural gas so that it would continue to be price-competitive compared to conventional fuels after 2020. For transport businesses, this means the possibility of continuing to enjoy lower operating costs for CNG-powered buses in future years.

2.2.3 Use of public procurement in support of alternative fuels, including joint procurement

As mentioned above in part 2.1, the Public Procurement Act was amended in 2016 to introduce the option for public contracting authorities, when purchasing vehicles, to apply the methodology for calculating lifecycle operating costs under Directive 2009/33/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of clean and energy-efficient road transport vehicles. This methodology was, however, removed from the recent amendment to the Directive. The Czech Republic is therefore currently preparing to implement the requirements placed on public contracting authorities by the new EU legislation.

2.2.3 Non-financial incentives on the demand side: e.g. priority access to areas with restricted access, regulations on parking and reserved traffic lanes

The basis for the implementation of these types of incentive was established at the national level through the introduction of registration numbers for electric vehicles. Applications have been accepted for these numbers from users of battery-electric and hydrogen-powered vehicles and also plug-in hybrids with emissions of up to 50 g CO_2/km since 1 April 2019, and the applications are exempted from the relevant administrative fee. The Transport Ministry has also released an explanation of the procedure to be followed, on the basis of the applicable national legislation, by individual municipalities who have decided to users of vehicles bearing these registration numbers to enter reserved traffic lanes. However, no municipalities in the Czech Republic have yet decided to implement the measure. A measure has been

implemented in Prague whereby free parking is offered in 'blue zones' in the city centre for electric vehicles bearing the relevant registration number.

2.2.4 Assessment of the need for renewable jet fuel refuelling points at airports within the TEN-T Core Network

In the Czech Republic, analysis of this factor is relevant primarily in relation to Prague's Václav Havel Airport, which is the only airport in the Czech Republic meeting the criteria in EU legislation for the category of 'large airports'. At present, the airport is equipped with power connections (400 Hz) at all 31 contact stands (stands served by boarding bridges), and every new contact stand will also be fitted with one. Remote stands are not provided with permanent connections and there are no plans to fit these. However, the handling companies have mobile ground power units (GPUs), which can be used for aircraft at remote stands. The use of electricity as an alternative fuel for aircraft standing at Václav Havel Airport is a direct requirement in the provisions of the Czech Republic's Aeronautical Information Publication (AIP), which restricts the use of auxiliary power units (APUs) on aircraft powered by aviation fuels. Within five minutes of an aircraft stopping at a stand, it must be connected to an external power source and the auxiliary power unit must be disconnected. Auxiliary power units cannot be started up until 20 minutes prior to the expected time of departure (ETD).

The other international airports included in the TEN-T core or global network, i.e. Ostrava/Mošnov airport and Brno/Tuřany airport, and equipped with permanent power connections do not have contact stands, but even here the same requirement applies concerning restrictions on auxiliary power units and the use of mobile ground power units instead.

2.3 Deployment and manufacturing support

As follows from part 2.2.1, public funds for the deployment of alternative fuels infrastructure should be allocated primarily on the basis of a Transport Ministry subsidy programme using EU funds (see OPD).

Table 1: Summary of results of individual calls under the subsidy programme in support of alternative fuels infrastructure within Operational Programme Transport

Call	Allocated amount (in CZK millions)	Number of applications supported	Total number of charging/filling stations	Total amount of allocated support (in CZK /EUR millions)
Core network of rapid charging stations - 1st call	130	1	125	78.1 / 3.05
Additional network of standard charging stations - 1st call	100	4	132	25.9 / 1.01
CNG filling stations - 1st call	50	1	2	4.7 / 0.18
LNG filling stations - 1st call	100	2	13	100 / 3.9
Hydrogen filling stations – 1st call (2019)	150	2	4	150 / 5.84
Additional network of standard charging stations - 2nd call	174	4	312	81.8 / 3.18
Core network of rapid charging stations - 2nd call	130	1	125	77.5 / 3.02

Core network of rapid charging stations - 3rd call	130	1	125	96.6 / 3.76
Additional network of standard charging stations - 3rd call	146	We received three applications; admissibility checks are being made		146 / 5.68
Hydrogen filling stations – 2nd call	102	We received four applications; admissibility checks are being made		102 / 3.97
LNG filling stations - 2nd call	50	Call announced 09/2019		50 / 1.95
Core network of rapid charging stations - 4th call	145	Call announced 10/2019		145 / 5.64

2018 exchange rate CZK 25.643/EUR, 2019 exchange rate CZK 25.69/EUR

As the subsidy programme's first call was announced in November 2017, table 1 shows only a summary of the results of individual calls in the form of the number of projects supported and the resulting sums approved for these projects. The public funds in the subsidy programme will nonetheless be provided to individual applicants only gradually in connection with the progress in implementing the projects in question. The measures in support of deployment and production also include financial support from Operational Programme Transport's Technical Assistance to draw up a study entitled **'***Assessing the potential for using hydrogen fuel in the Czech Republic'*. The aim of this study was produce a feasibility study into the potential for using hydrogen fuel in the Czech Republic, partly in the context of the worldwide and especially the Europe-wide technological progress in this area, but mainly to assess demand from potential users in the Czech Republic. Based on the results of this study, a decision was taken to support the development of hydrogen filling station infrastructure (under Operational Programme Transport) to a greater extent than originally envisaged.

2.4 Research, technological development and demonstration

In the area of science and research, the subject of alternative fuels in transport is addressed in many programmes implemented by the Technology Agency of the Czech Republic (TA CR) in cooperation with selected ministries. The following activities should be mentioned:

- **4th public tender for the Epsilon programme** (announced 28 February 2018) - subsidies for projects implemented with the established research priority objectives (including innovation in the automotive industry). In this public tender, the allocations in sub-programme 1 are expected to be CZK 180 million[7].
- **4th public tender for the TRIO programme** (announced 3 September 2018) – also subsidies for projects from the automotive industry.
- **1st public tender for the TREND programme (announced May 2019) –** subsidies for using new technologies in Automotive.
- **2nd public tender in the Théta programme** (announced 6/2019) – support includes two projects: *'Research into the potential for using hydrogen technologies to transform the energy mix in the*

[7] This is the sum for the first two years of the solution, i.e. 2018 and 2019

*Moravia-Silesia region, low-carbon power generation and the development of low-emission transport' and 'Clean mobility and its prospects in freight transport'***.**

- **1st public tender** in **the Transport 2020+ programme** (announced in spring 2019) – this call included several projects related to the issue of alternative fuels (e.g. 'Study on the use of hydrogen in rail transport' or 'Conditions for the use of biomethane in transport')
- **Targeted non-investment subsidy/institutional support provided for a long-term plan to develop research organisations in the transport area** – in 2018 – 19 this programme supported projects including 'Studies on taxes and charges in road transport'
- **Priority axis 1 (OP EIC) focusing on Expansion of research and development for innovation -** especially in the Innovation, Potential and Application sub-programmes or in the Cooperation-clusters programme, where direct links to the automotive industry can be seen in 22 projects with a total approved sum of CZK 507 million, giving an average support of more than CZK 20 million per project.

The issue of science and research is closely connected with the topic of education. The following activities should be mentioned here:

- **Inclusion of clean mobility within framework educational programmes at secondary schools, accredited educational programmes at higher vocational schools and accredited programmes at universities -** reviews of the relevant framework educational programmes are being drawn up by expert groups at the National Institute for Education with the participation of schools and employers. In June 2018, corrections and additions were made to the revised vocational elements of the framework educational programmes in the category H educational fields: Automotive-electrician, Motor vehicle repair mechanic and Electrician for equipment and instruments, and the category L educational field: Automotive electronics. In the case of the remaining educational fields in categories M and L: Means of transport, Mechanics, electrical engineers and Electrical engineering, corrections and additions were made to the revised vocational elements in September and October 2018. All the reviewed framework educational programmes are now in the approval process. Following approval of the framework educational programmes, schools will have a two-year period in which to amend their school educational programmes.
- Within the Engineering Vocational Group, the working group for 'Automotive fields' is identifying the minimum general knowledge on vehicles with alternative propulsion, including electric vehicles, for the updated school-based educational programmes in educational fields with an apprenticeship certificate (including automotive fields). The working group includes representatives of pilot schools teaching automotive subjects (14 schools across the Czech Republic), including Integrated Automotive Secondary School Brno, Automotive Higher Vocational School and Secondary School Zábřeh na Moravě and Automotive Higher Vocational School and Secondary School České Budějovice.
- As part of the Modernisation of Vocational Training project, Working group (PS 10) Automotive has been created - modules are now drawn up to include potential complex tasks focusing on alternative vehicle propulsion systems. These modules are to be created mainly for the educational field with a graduation exam in Automotive electronics.

3. Justification for levels achieved in general and specific national objectives

3.1 Area of vehicles powered by alternative fuels

The National Action Plan for Clean Mobility included a forecast that up to 17,000 electric-powered passenger and goods vehicles could be in operation in the Czech Republic in 2020. Although the number of electric vehicles in operation by then will clearly not be even one third of that (the forecast is now for about 5,000 electric vehicles), and is currently running at a level of about 3,400 [8], some recent developments give grounds for cautious optimism. First and foremost is the fact that the first eight months of 2019 saw a

[8] By August 2019, a total of 3 028 electric vehicles had been registered in the Czech Republic in category M1, 102 in category M3 and 243 in category N1. A total of 3 373 electric vehicles were thus in operation as at this date.

record number of new electric cars registered (527), representing annual growth of 19%. In addition, the updated forecasts drawn up this year for the update to the National Action Plan for Clean Mobility should also be taken into account. They show that, even though the uptake of electro-mobility in the Czech Republic has not been as fast as originally expected or in line with developments in certain western European countries in particular, the Czech Republic is still on course for just over 200,000 vehicles by 2030, as predicted in the National Action Plan for Clean Mobility. If the optimistic scenario worked out, this number could be more than doubled [9]. Both scenarios take account of the current aims of European automotive manufacturers, including the Czech Republic's Škoda Auto, whose proactive pricing policy could be another stimulus in the area.

The current number of vehicles powered by natural gas is slightly less than forecasted, and this is mainly due to the reduced offering of these vehicles resulting from the transition to the new Worldwide Harmonized Light Vehicle Test cycles. The updated forecasts drawn up this year for the update to the National Action Plan for Clean Mobility show a much lower number of these vehicles in 2030 than predicted in the original updated forecasts drawn up this year for the update to the National Action Plan for Clean Mobility (46,000 as against the original aim of 250,000 CNG vehicles), but the outlook for LNG goods vehicles, on the other hand, is very good. At present, five LNG vehicles are registered, and their number has more than doubled in the first three quarters of this year alone compared to last year. The updated forecast in the National Action Plan for Clean Mobility this year counts on the number of LNG vehicles rising to at least 5,000 by 2030, with the more optimistic scenario envisaging 12,000 vehicles. Even with this less ambitious forecast, however, the number is considerably higher than in the target under the 2015 National Action Plan for Clean Mobility. Here it was stated that the target was for 1,300 LNG vehicles.

The 2015 National Action Plan for Clean Mobility did not include any concrete forecast for numbers of hydrogen vehicles by 2030. Based on the above study and further refinement of the forecast in the update to the National Action Plan for Clean Mobility, the number of hydrogen cars can be expected to reach between 40,000 and 60,000 in 2030.

3.2 Alternative fuels infrastructure

The National Action Plan for Clean Mobility established specific targets for numbers of charging/filling stations for the individual types of alternative fuel, some of which applied to 2020 and others to 2025. A summary of these is provided in Table 2.

Type of alternative fuel	**Total number of charging/filling stations by 2020**	**Total number of charging/filling stations by 2025**
Charging stations/points	1,300 (of which 500 rapid charging)	-
CNG filling stations	200	300
LNG filling stations	2	5
Hydrogen filling stations	-	3-5

Table 2: specific targets for numbers of charging/filling stations under the National Action Plan for Clean Mobility

[9] The updated forecast for 2030 is for the Czech Republic to have at least 220,000 electric vehicles, but this number could rise to 500,000 if the optimistic scenario works out.

With regard to the target for the number of charging stations and CNG filling stations by 2020, in the case of CNG stations the target has already been met ahead of schedule[10], but in the case of charging stations it clearly will not be entirely fulfilled. In this case, it should be pointed that the number of charging stations/points is increasing more rapidly than the number of electric vehicles[11], and above all that the delay is due to real reasons such as the rejection of one project within the Connecting Europe Facility, and particularly the delay in the process for notifying public support for this subsidy programme within Operational Programme Transport, which the Czech Republic was unable to influence. Whilst the Transport Ministry's original plan envisaged the launch of the subsidy programme in January 2017, it did not finally happen until November this year. Most projects supported so far under the subsidy programme are either still in the initial stages of implementation or only in the stage of selection for funding. Either way, thanks to the allocations established for the subsidy programme, we confidently expect that the number of charging stations in operation and charging stations being built by 31 December 2020 will not only meet, but will in all probability exceed the specified target.

In relation to the charging infrastructure, it should be mentioned that some projects now implemented go beyond the scope of the forecasts for National Action Plan for Clean Mobility targets. This is a trend connected with the construction of 'ultra-fast' stations, i.e. stations operating at 150- 350 kW. In addition to the aforementioned stations built with support from the Connecting Europe Facility, there is one purely commercial project to build ultra-fast stations operating at 350 kW, which will be located on the motorway network within the TEN-T core network.

With regard to the target for numbers of publicly available LNG filling stations and hydrogen filling stations by 2025, developments in both cases now look more optimistic than in 2015, when the National Action Plan for Clean Mobility was produced. The Transport Ministry's existing subsidy programme is making a substantial contribution here. The interest from applicants for this programme (13 LNG stations and four hydrogen stations supported in the 1st call alone), however, reflects developments on the market for these alternative fuels (see the updated forecast for 2030 in part 3.1).

In the 2015 National Action Plan for Clean Mobility, the Czech Republic did not, in relation to Article 6(3) of the AFI Directive, set any target for the construction of LNG fillings stations at inland ports. It was stated, however, that construction of filling stations for LNG-powered vessels in public ports in the Czech Republic does not look effective for the immediate future. The European Commission criticised the Czech Republic for this decision within its evaluation of the national policy framework published in November 2017. In view of this, and in response to current developments in other EU countries, the draft update to the National Action Plan for Clean Mobility includes the target of building at least 30 LNG stations by 2030. The formulation of this target is to be confirmed by a study that should be produced next year, on the basis of which specific measures should be proposed for achieving this target (including any investment support for constructing infrastructure).

4. Conclusion

The Czech Republic's report on implementation of the national framework can be summarised in the following conclusions:

1) Alternative fuels infrastructure development is proceeding in the Czech Republic basically in accordance with the targets which the country set out in 2015 in the National Action Plan for Clean Mobility. Even though the 2020 target for charging stations will clearly be delayed, the number of publicly accessible charging stations in operation by 31 December 2020 will undoubtedly be closer to the specified target than electric vehicle numbers will be. In addition to this, there are several objective reasons justifying this slight delay. The number of publicly accessible charging stations should also at least include those that will be at an advanced stage of construction by the deadline.

[10] According to statistics from the Czech Gas Association, there were 200 CNG filling stations in the Czech Republic by the third quarter of this year. See http://www.cng4you.cz/cng-info/statistiky.html

[11] At present, there are about 500 publicly available charging points in the Czech Republic, but this number does not yet include most of the new charging stations supported by the Connecting Europe Facility.

2) With regard to electric vehicle numbers, the main message is that the updated forecast from this year for 2030 confirms that the original target of 200,000 vehicles should not only be met but clearly also slightly surpassed. The slight delay in the uptake of electro-mobility compared to the original forecast in 2015 will thus be compensated for mainly in the period after 2025, when automotive plants are expected to see intensive manufacturing activities, making the vehicles more affordable.

3) In the case of CNG vehicles, the Czech Republic set a very ambitious target for 2030 in 2015. The new and less optimistic forecast for CNG vehicles reflects the current lack of new vehicles powered by this fuel, and also the unfavourable developments in European legislation[12], which could not have been foreseen in 2015. However, we expect substantial growth in numbers of LNG and hydrogen vehicles by 2030, and this is confirmed among other things by the increased interest now seen in the subsidy programme promoting LNG and hydrogen filling stations.

4) Although it has not yet been possible to implement all the measures intended in the 2015 National Action Plan for Clean Mobility, the scope of the measures implemented shows that the Czech Republic is devoting considerable attention to the issue of clean mobility and the deployment of alternative fuels in transport. Measures whose implementation relies on the use of European funds are key here. The draft update to the National Action Plan for Clean Mobility which is due to be submitted to the Czech government by the end of this year, indicates that this strategy is to be continued in the coming years. From the Czech Republic's perspective, the key issue is to ensure that discussions proceed smoothly with the European Commission over the operational programmes in the new programming period and over the new proposal envisaged for the notification of public support under the next subsidy heading in support of infrastructure for alternative fuels, and that the expected scope of the support is not put at risk.

Annex

[12] An example worth mentioning is the amendment to Directive 2009/33/EU on the promotion of clean and energy-efficient road transport vehicles, which actually excludes CNG vehicles from the definition of 'clean vehicle' in some vehicle categories.