



MINISTERSTVO
HOSPODÁRSTVA
SLOVENSKEJ REPUBLIKY

-Draft-

**National Policy Framework for the
Development of the Market in Alternative Fuels
– Review and Update**

INTRODUCTION

The automotive industry has long been one of the central planks of European economic growth. However, multiple expert analyses have confirmed that this industry is extremely dynamic at the moment and the scale of innovation we are witnessing among the biggest manufacturers will also have a major influence on their competitiveness in the international arena. The challenges they face have been triggered in particular by Industry 4.0, the international legitimisation of commitments in the fight against climate change (the Paris Climate Summit), and efforts at local CO₂ emission abatement, especially in large conurbations.

We can expect vehicle manufacturers to reflect the impact of these trends most keenly in the advancement of digitalisation and IT components in vehicles. In terms of design, the biggest consequence is likely to be the switch from internal combustion engines to the more widespread deployment of alternative drives. A secondary factor will be transformation in other areas, such as enhanced safety, an ownership model edging closer to the sharing economy, and revamped public transport.

Starting in 2020, vehicle manufacturers will have to achieve average CO₂ emissions of 95 g/km (down from the current 130 g/km). There are plans to fine non-complying manufacturers €95 per gram over the above limit multiplied by the number of vehicles sold by the manufacturer after 2020.¹ In 2017, the average emissions reported for new passenger cars in the EU was 118.5 g/km (121.6 g/km for new petrol cars and 117.9 g/km for new diesel cars). Average emissions of new passenger cars in Slovakia in 2017 were slightly higher, at 126.1 g/km. The ratio of fuel-type sales is evolving in favour of cars with petrol engines at the expense of diesel. This is pushing up year-on-year measurements of CO₂ emissions.

In 2016, the ratio of petrol to diesel engines was approximately 46:50, but by 2018 the scales had tipped to 50% petrol engines versus 47% diesel engines. Alternative drives accounted for the rest.

As things stand, the sale of any car reporting the average CO₂ emissions for 2017 will exceed the 95 g/km limit. Financially, this would translate into a penalty of up to €2,000 per car sold for vehicle manufacturers. However, they can save themselves this expense by selling vehicles running on CNG or LPG instead of diesel and petrol. As many as seven out of the eleven main vehicle manufacturers are on course to miss the 2020 targets, placing each of them at risk of potential fines racking up to hundreds of millions – and perhaps even several billion – euros per year. One of the paths open to manufacturers if they want to comply with the emission limits is to replace engines running on traditional fuel with those that use alternative fuels.

In the reporting period, CNG consumption kept to a year-on-year downtrend, contracting by 9.6% in 2016, 2.8% in 2017 and 15.8% in 2018. By contrast, there were year-on-year rises in diesel and petrol consumption, with diesel and petrol use increasing by 6.7% and 3.3%, respectively, in 2016, 4.4% and 1.3% in 2017, and 4.1% and 1.2% in 2018. LPG consumption climbed year on year by 12.1% in 2016 and 10.5% in 2017, before recording a 0.8% dip in 2018. There was a slight fall in biofuel consumption in 2016, followed by a modest upturn in 2017 and 2018 to a level higher than that reported in 2015.

¹) Source: Regulation (EC) No 443/2009 of the European Parliament and of the Council, as amended.

Table 1 Total fuel consumption in road transport in Slovakia

Type of fuel	2015	2016	2017	2018
Petrol (t)	516,254	533,244	540,371	547,036
Diesel (t)	1,714,402	1,829,091	1,909,727	1,987,611
LPG (t)	40,324	40,528	42,262	41,582
CNG* (m³)	6,212,176	5,617,119	5,457,348	4,587,929
Biofuels** (t)	182,067	179,576	195,861	198,211

* total national consumption (households + transport)

** biodiesel, bioethanol and bioETBE

Source: The Ministry of Economy and the Slovak Hydrometeorological Institute (2019), collated from data published in entities' annual reports in accordance with Article 7a of the Fuel Quality Directive (FQD),² Art. 7a* 2015-2017 – LPG consumption is reported according to information from the Slovak Association of Petroleum Industry and Trade

On 27 March 2019, the European Parliament adopted a legislative resolution on the proposal for a regulation of the European Parliament and of the Council³ setting emission performance standards for new passenger cars and for new light commercial vehicles as part of the Union's integrated approach to reduce CO₂ emissions, in which, for 2030, it targeted a reduction in emissions by 37.5% for passenger cars and 31% for light commercial vehicles compared to the situation in 2021. On 18 April 2019, the European Parliament adopted a legislative resolution on the proposal for a regulation of the European Parliament and of the Council⁴ setting CO₂ emission performance standards for new heavy-duty vehicles, according to which new heavy-duty vehicles' specific CO₂ emissions would be reduced (compared to the reference CO₂ emissions) by 15% as of 2025 and by 30% from 2030 onwards.

Another factor heavily influencing vehicle manufacturers' strategy and support for different types of engines has been the introduction of a new vehicle consumption testing method. After 25 years' service, the New European Driving Cycle (NEDC) has been replaced by a new testing cycle, the World Harmonised Light Vehicle Test Procedure (WLTP). The new WLTP cycle has been legally binding since 1 September 2017 (for the type-approval of new models). Since 1 September 2018, fuel consumption and emissions have had to be stated for all new vehicles, including existing models, according to the WLTP standard. WLTP testing has been introduced in order to bring a vehicle's reported consumption closer to the levels that can truly be achieved in normal operations so that consumers are no longer misled, since the mismatch between those two sets of values used to amount to tens of per cent. The new WLTP test is also better at testing the consumption of electric vehicles and hybrid drives, again contributing to greater transparency in comparisons of the different types of engines.

In accordance with Article 10 of Directive 2014/94/EU, the Ministry of Economy, with the cooperation of the Ministry of Transport and Construction, is submitting this **National Policy Framework for the Development of the Market in Alternative Fuels – Review and Update** in the form of an evaluation report to the European Commission. It includes an updated list of measures promoting the use of alternative fuels⁵ in those transport segments where such use delivers the most value added for Slovakia.

²) Council Directive (EU) 2015/652 of 20 April 2015 laying down calculation methods and reporting requirements pursuant to Directive 98/70/EC of the European Parliament and of the Council relating to the quality of petrol and diesel fuels, Articles 7a and 8 (FQD, Articles 7 and 8).

³) Source: http://www.europarl.europa.eu/doceo/document/TA-8-2019-0304_EN.pdf

⁴) Source: http://www.europarl.europa.eu/doceo/document/TA-8-2019-0426_EN.html

⁵) Communication from the Commission of 24 January 2013, entitled 'Clean Power for Transport: A European alternative fuels strategy', identified electricity, hydrogen, biofuels, natural gas, and liquefied petroleum gas (LPG) as currently the principal alternative fuels with

The National Policy Framework for the Development of the Market in Alternative Fuels – Review and Update also draws on the following government-approved documents of 6 November 2016: the National Policy for the Deployment of Alternative Fuels Infrastructure in the Slovak Republic and the National Policy Framework for the Development of the Market in Alternative Fuels (the ‘National Policy Framework’).

Following on from those documents, on 13 March 2019 the Slovak government approved the Action Plan for the Development of Electromobility in the Slovak Republic (the ‘Action Plan’). In the Action Plan, the Ministry of Economy – as the body responsible for coordinating the development of alternative fuels – made the commitment, further to Directive 2014/94/EU, to draw up development action plans for other alternative fuels defined in that Directive, taking into account measures under the Action Plan for the Development of Electromobility.

COMMISSION EVALUATION

On 8 November 2017, the Commission published its evaluation of the national policy frameworks for the deployment of alternative fuels infrastructure⁶ (SWD(2017) 365 final).

The measures adopted by Slovakia were evaluated as follows:

- most measures are administrative and have only limited impact;
- measures in support of alternative fuels for public passenger transport are lacking;

apart from the support of electromobility, support measures for other alternative fuels score poorly.

Under Directive 2014/94/EU, all of the alternative fuels defined merit Member States’ attention, respecting technological neutrality and the special advantages of using the different alternative fuels in various transport segments. If the various alternative fuels are suitably combined, the commitments made by Slovakia and the EU with a view to cutting greenhouse gas emissions and pollutants, along with the objectives set out in the National Policy Framework, can be met.

The approved National Policy Framework did not discuss the issues surrounding the development of hydrogen as an alternative fuel. The reviewed and updated National Policy Framework has responded to this by also proposing national targets for hydrogen development.

potential for long-term oil substitution, also in light of their possible simultaneous and combined use by means of, for instance, dual-fuel technology systems.

⁶) Source: <https://eur-lex.europa.eu/legal-content/en/TXT/PDF/?uri=CELEX:52017DC0652&from=DA>

1 REVIEW AND EVALUATION REPORT OF THE NATIONAL POLICY FRAMEWORK FOR 2016-2018

The review is born of Slovakia's obligation to evaluate the implementation of measures stemming from the National Policy Framework and laid down in Article 10 of the Directive, and its obligation, as a Member State, to report on the implementation of the Framework to the Commission by 18 November 2019 and thereafter every three years. This report covers the information listed in Annex I to the Directive and, where appropriate, includes relevant justification regarding the level of attainment of the national targets and objectives referred to in Article 3(1).

1.1 LEGAL MEASURES

Certain steps of a legislative and regulatory nature have been taken to comply with the measures set out in the National Policy Framework. The most prominent of these are the approval of the Action Plan for the Development of Electromobility in the Slovak Republic (Resolution No 110/2019) and the legal revision of certain legislative acts. They are described in more detail in an annex to the evaluation report (1. Legal Measures).

1.2 POLICY MEASURES

The use of alternative fuels has been promoted under the National Policy Framework for the Development of the Market in Alternative Fuels in various ways, which have been reflected in its measures.⁷ These measures, which are both financial and non-financial, are described in more detail in Table 1 and in an annex to the evaluation report (2. Policy Measures).

Table 2 Measures promoting the use of alternative fuels

Measure 1	Stimulation to support sales of low-emission vehicles for all types of use (for the private sector, for the fleets of municipal undertakings operating municipal waste collection vehicles, for the fleets of postal undertakings, and for the fleets of carriers responsible for urban mass transport and public passenger services).
Coordinator	Automotive Industry Association, Ministry of Economy
Dates	no later than 31 January 2020
Progress	support of low-emission vehicles in the form of direct financial incentives under a project of nationwide support for the sale of electric vehicles and hybrid vehicles, which was rolled out on 11 November 2016. This project involved the creation of a mechanism that would make a financial contribution to the purchase of BEVs or PHEVs. The support applied only to the purchase of a newly registered M1 or N1 BEV with an 18-150 kW motor, the specifications of which were guaranteed by the brand manufacturer's representative. The project came to an end on 30 June 2018, having granted support to 831 applicants.
Status	task fulfilled
Measure 2	Support of alternative fuels infrastructure
Coordinator	Ministry of Transport and Construction
Dates	2016-2030

⁷) Source: <https://www.mhsr.sk/uploads/files/455dKhub.pdf>

Status task fulfilled

Measure 3	Support for the deployment of alternative fuels in water transport
Coordinator	Ministry of Transport and Construction
Dates	2016-2020
Status	task fulfilled
Measure 4	Support for the deployment of LNG refuelling points at inland ports
Coordinator	Ministry of Transport and Construction
Dates	2018-2025
Performance of tasks 2-4	In the opinion of the Ministry of Transport and Construction, Measures 2-4 have been fulfilled because the Ministry – within the scope of its competence – has incorporated the support of alternative fuels and the development of the relevant infrastructure into the Transport Development Strategy Plan of the Slovak Republic up to 2030 (approved by Government Resolution No 13/2017) within the scope of Strategic Global Objective 5 – ‘Reduction in the negative environmental and negative socio-economic impacts of transport (including climate change) by environmental monitoring, the efficient planning/implementation of infrastructure and a reduction in the number of conventionally propelled vehicles, specifically the use of alternative fuels.’ The Ministry of Transport and Construction assists relevant partners in the production of grant applications under the calls of the Connecting Europe Facility (CEF), focusing on the promotion of electromobility, CNG/LNG refuelling points and related infrastructure, and technology for the efficient use of hydrogen as an alternative fuel.
Status	task fulfilled
Measure 5	Tax rate applicable to motor vehicles running on compressed natural gas <i>Preserve the 50%-reduced annual tax rate for vehicles running on compressed natural gas (CNG).</i>
Coordinator	Ministry of Finance
Dates	2016-2025
Progress	This measure is intended to maintain the current state of affairs until 2025. The 50% reduction in the annual rate for CNG-powered vehicles has been regulated by law since 1 January 2015. This 50% reduction in the annual rate also applies to hybrid motor vehicles, plug-in hybrid electric vehicles, LNG-powered vehicles and hydrogen-powered vehicles.
Status	task fulfilled, measure continues to be implemented
Measure 6	Minimum excise duty rate for natural gas supplied for the production of compressed natural gas intended for use as a fuel. <i>No increase in the excise duty rate for natural gas supplied for the production of compressed natural gas intended for use as a fuel, under Act No 609/2007 on excise duty on electricity, coal and natural gas and amending Act No 98/2004 on excise duty on mineral oils, as amended, beyond the current level of €0.141 per kilogram, at least until 2025. This will not apply if there is a change in European legislation governing the taxation of energy-related products.</i>
Coordinator	Ministry of Finance
Dates	2016-2025
Progress	This measure is intended to maintain the current state of affairs until 2025. The CNG excise duty rate of €0.141 per kilogram has remained unchanged since 2011. This measure simply maintains the current state of affairs.
Status	task fulfilled, measure continues to be implemented

Measure 7	50% reduction in the fee for registration in the vehicles register in Slovakia for motor vehicles running on alternative fuels. <i>A reduction in the fee for initial registration in the vehicles register in Slovakia for keepers of M1 and N1 motor vehicles if those vehicles run on alternative fuel (CNG, LNG, hydrogen and hybrids). The fee will be reduced by 50% (but not below €33) upon registration by a keeper of a hybrid motor vehicle, a hybrid electric vehicle, a motor vehicle running on compressed natural gas (CNG), a motor vehicle running on liquefied natural gas (LNG), or a motor vehicle running on hydrogen.</i>
Coordinator	Ministry of Finance
Dates	Since 1 February 2017
Progress	The fee for registering alternative fuel vehicles in the vehicles registered in Slovakia has been reduced by 50%, but not below €33, since 1 February 2017.
Status	task fulfilled
Measure 8	Introduction of low-emission zones
Coordinator	Ministry of the Environment, towns and municipalities
Dates	2017
Progress	Low-emission zones can be set up in Slovakia further to a 2017 amendment to the Clean Air Act. They can be set up if they are approved by the district authority, as the road administration body, and, before being established, they need to have been sufficiently prepared and must have been discussed by experts because this sort of solution primarily requires an expert study on the enforceability of a low-emission zone. <i>Bratislava is considering whether to introduce low-emission zones as part of the capital's new parking policy.</i>
Status	task fulfilled
Measure 9	Road user awareness of the location, type and equipment of charging and refuelling points via integrated transport systems
Coordinator	Ministry of Transport and Construction
Dates	2016-2020
Progress	At the end of 2016, the Ministry of Transport and Construction launched the online National Transport Information System (www.odoprave.info), which, besides reporting on traffic news, also provides information on the location and types of charging and refuelling points.
Status	task fulfilled, measure continues to be implemented
Measure 10	Awareness at schools; information on new skills and knowledge in the education system
Coordinator	Ministry of Education, Ministry of Economy, Slovak Innovation and Energy Agency
Dates	2017-2025
Progress	In exercising its competence, the Ministry of Education supports the supplementation and implementation of the syllabus of relevant subjects and the introduction of new-look curricula at secondary vocational schools focusing on alternative fuels, electromobility, electric traction, the environmental impact of alternative fuels and electromobility, and, most importantly, reductions in combustion gases, especially CO ₂ , in the air. It also encourages the development of dual education in this area, not only at secondary schools, but also at higher-education institutions, in cooperation with advisory businesses operating in the automotive industry and downstream sectors. This issue is also covered by the study programmes of relevant fields at higher-education institutions, especially

those of a technical bent, such as the University of Žilina, the Slovak University of Technology in Bratislava, and the Technical University of Košice. Higher-education institutions, working with prominent businesses in the automotive industry, are also implementing dual-education projects.

Status this task continues to be performed

1.3 DEPLOYMENT AND MANUFACTURING SUPPORT

The deployment of alternative fuels is supported by state subsidies intended for the build-up of publicly accessible infrastructure, as set forth in Act No 71/2013 and the approved Scheme for the Build-up of Alternative Fuels Infrastructure (a de minimis aid scheme) – DM 6/2019. The granting of investment aid in the form of tax concessions for businesses that manufacture electric vehicle components (Intercable, s.r.o., Nematik Slovakia, s.r.o.) can also be regarded as manufacturing support. Deployment and manufacturing support is described in more detail in an annex to the evaluation report (3. Deployment and Manufacturing Support).

Support under preparation as part of the Operational Programme Integrated Infrastructure – Financial instruments

Alternative fuels infrastructure in Slovakia will also be supported by means of financial instruments. The Operational Programme Integrated Infrastructure is being updated to incorporate alternative fuels into Priority Axis 6 – as a potential means of using financial instruments (as part of National Development Fund II, a.s., which accounts for 3% of each operational programme). The review of this operational programme may be approved by the Commission at the end of 2019.

1.4 RESEARCH, TECHNOLOGICAL DEVELOPMENT AND DEMONSTRATION

Financial resources have been channelled into the support of research, development and demonstration in the form of grant calls by the Slovak Research and Development Agency and via the Operational Programme Research and Innovation and the Operational Programme Integrated Infrastructure. Projects supported in the area of research, development and demonstration are described in more detail in an annex to the evaluation report (4. Research, Technological Development and Demonstration).

1.5 DEVELOPMENTS ON THE MARKET IN ALTERNATIVE FUEL VEHICLES

Between 2016 and 2018, there was only modest growth on the market in alternative fuel vehicles (Table 9). In 2018, alternative fuel vehicles accounted for 2.30% of the market, having nudged up from 2.16% in 2016. In this respect, the sector of battery and plug-in hybrid electric vehicles showed the most momentum. The range of vehicles in Slovakia, broken down by drive-type, is described in more detail in Table 3 at the end of this subchapter and in an annex to the evaluation report (5a. Alternative Fuels Vehicles Estimates).

Battery and plug-in hybrid electric vehicles

The National Policy Framework for the Development of the Market in Alternative Fuels has forecast how the market in battery electric vehicles (BEVs) and plug-in hybrids (PHEVs) will develop (Table 3). In doing so, it took account the fact that the trajectory need not be straightforward, since long-term trends may be influenced by numerous factors and unknown variables.

Table 3 Estimated numbers of BEVs and PHEVs in Slovakia

Year	2016	2017	2018	2019	2020	2025	2030
Estimated number of BEVs + PHEVs	500	1,200	2,500	5,500	10,000	20,000	35,000

Table 4 Number of BEVs and PHEVs registered in 2018

Vehicle category	L	L7e	M1	M1*	N1	M3	Total
2016	349	20	321	183	38	15	926
2017	378	24	625	462	72	26	1,587
2018	367	51	951	619	74	47	2,109

* only PHEVs

Developments on the market in alternative vehicles to date have been significantly affected by the first project geared towards direct support for the purchase of alternative fuel vehicles – ‘Nationwide support from the Ministry of Economy and the Automotive Industry Association for the use of highly ecological low-emission vehicles not propelled solely by an internal combustion engine in order for such vehicles to be acquired for the testing of processes in their subsequent treatment’. Under this project, a €5,000 contribution was made to the purchase and registration of M1 and N1 category BEVs (battery electric vehicles), while €3,000 was made available for PHEVs with a battery chargeable via an external electricity source (plug-in hybrid vehicle).

This project and associated activities have played a part in kickstarting the development of the market in electric-drive vehicles. The market in electric-drive vehicles (BEVs + PHEVs) numbered 643 vehicles in 2015, rising to 926 vehicles in 2016 and leaping to 1,587 registrations of new electric-drive vehicles in 2017. As at 31 December 2018, there were 2,109 registered electric vehicles.

Vehicles running on CNG/LNG

The National Policy Framework for the Development of the Market in Alternative Fuels has set the following estimates for the number of CNG vehicles (Table 5). Adding to the Commission, the National Policy Framework’s targets were sufficient, but its measures were found wanting. These analyses of scenarios assume that support for the development of infrastructure-building will be harmonised with the stimulation of the vehicles market, achievable by means of the measures framed in this National Policy Framework update.

Table 5 Forecast of CNG vehicle numbers up to 2030

Number of CNG vehicles	2016	2017	2018	2019	2020	2025	2030
National Policy Framework forecast	2,000	2,400	2,900	3,500	5,000	15,000	30,000
Scenario without support measures	1,893	2,131	2,469	2,700	3,000	4,500	5,900
Scenario with the measures defined in this document	1,893	2,131	2,469	3,000	4,500	14,300	24,000

In 2018, **277 new CNG vehicles**, in various categories, were registered in Slovakia. This was tantamount to **121.6%** growth in new registrations year on year. As at 31 December 2018, **2,469** CNG vehicles, in various categories, were registered in Slovakia (Table 6). However, this was a mere 0.077% of the total number of vehicles registered.

Table 6 Number of registered CNG vehicles in 2018

Vehicle category	M1	N1	M2	N2	M3	N3	Total
2018	1,855	334	1	16	240	23	2,469

The figures in the table report growth in the categories of passenger cars, light commercial vehicles, and even heavy goods vehicles. It can safely be assumed that these segments will develop if the National Policy Framework's targets for the build-up of new CNG refuelling point infrastructure are fulfilled. In the first three quarters of 2019, the first 20 or so heavy-duty vehicles running on LNG were also registered, with interest in these vehicles growing. In response to the new CO₂ emission limits for heavy-duty vehicles and the gradual build-up of new LNG refuelling points, this National Policy Framework update also frames the initial forecast of developments in the number of LNG vehicles up to 2030.

Table 7 Forecast of numbers of heavy-duty vehicles running on LNG up to 2030

Number of LNG vehicles	2019	2020	2025	2030
Scenario with the measures defined in this document	20	100	385	1,850

Vehicles running on LPG and other alternative carbon-based fuels

As noted by the National Policy Framework, unlike other alternative fuels, LPG is covered by a relatively large nationwide network of refuelling points genuinely meeting the requirements of motor vehicle operators. The range of passenger cars adjusted to run on LPG directly by the manufacturer is not as broad as it used to be, and automotive companies are no longer adding new models to their portfolios. The infrastructure of LPG refuelling points is constantly expanding, and we expect it to develop in parallel with the development of service stations for conventional fuels.

In 2018, 535 new M1-category LPG vehicles were registered in Slovakia. This was a 17% year-on-year drop. Likewise, the year-on-year drops in the number of vehicle conversions to LPG at service centres have persisted, falling by 16% between H1 2017 and H1 2018. LPG is well positioned to develop as an alternative fuel if the National Policy Framework's targets

for the stimulation of purchases of new LPG vehicles and the aftersales conversion of vehicles to LPG are met. The optimal, sustainable and logical share in the total number of vehicles is 5-10% (Table 8).

Table 8 Forecast of LPG vehicle numbers up to 2030

year	2016	2017	2018	2020	2025	2030
Number of LPG vehicles	48,392	50,659	52,219	55,514	61,017	66,022

Vehicles running on hydrogen

The National Policy Framework did not foresee the registration of fuel cell electric vehicles (FCEVs) in Slovakia in the coming years (up to 2020). No FCEVs were registered in Slovakia as at 31 December 2018.

In response to the new CO₂ emission limits for passenger cars and light commercial vehicles, along with the forecast build-up of hydrogen refuelling infrastructure in Slovakia and neighbouring EU Member States, this National Policy Framework update also frames the initial forecast of developments in the number of FCEVs up to 2030.

Table 9 Forecast of FCEV vehicle numbers up to 2030

Number of FCEVs	2020	2025	2030
Passenger cars (M1)	0	100	3,000
Light commercial vehicles (N1)	0	30	250
Goods vehicles over 12 tonnes (N3)	0	0	150
Buses (M3)	0	30	200
Total	0	160	3,600

Table 10 Number of vehicles registered in categories M and N, 2015-2018

Indicator	2015		2016		2017		2018		2018 - 2015	
	number	share	number	share	number	share	number	share	difference	change (%)
Total number of vehicles	2,182,898	100.00%	2,345,306	100.00%	2,522,547	100.00%	2,651,049	100.00%	468,151	21.45%
PETROL	1,066,796	48.87%	1,123,639	47.91%	1,190,252	47.18%	1,240,053	46.78%	173,257	16.24%
DIESEL	1,021,924	46.82%	1,124,982	47.97%	1,230,463	48.78%	1,307,373	49.32%	285,449	27.93%
Total fossil fuels	2,088,720	95.69%	2,248,621	95.88%	2,420,715	95.96%	2,547,426	96.09%	458,706	21.96%
CNG	327	0.01%	397	0.02%	459	0.02%	659	0.02%	332	101.52%
CNG + other fuel	1,155	0.05%	1,343	0.06%	1,595	0.06%	1,774	0.07%	619	53.59%
CNG total	1,482	0.07%	1,740	0.07%	2,054	0.08%	2,433	0.09%	951	64.17%
LPG	10	0.00%	10	0.00%	10	0.00%	10	0.00%	0	0.00%
LPG + other fuel	46,128	2.11%	47,936	2.04%	50,311	1.99%	51,866	1.96%	5,738	12.44%
LPG total	46,138	2.11%	47,946	2.04%	50,321	1.99%	51,876	1.96%	5,738	12.44%
ELECTRICITY	201	0.01%	331	0.01%	664	0.03%	1,041	0.04%	840	417.91%
ELECTRICITY + other fuel	435	0.02%	747	0.03%	2,871	0.11%	5,602	0.21%	5,167	1187.82%
Total ELECTRICITY	636	0.03%	1,078	0.05%	3,535	0.14%	6,643	0.25%	6,007	944.50%
HYDROGEN	0	-	0	-	0	-	0	-	0	-
Total alternative drive	48,256	2.21%	50,764	2.16%	55,910	2.22%	60,952	2.30%	12,696	26.31%

Source: Ministry of Economy – processed according to figures from the Presidium of the Police Force; 2019

1.6 TARGETS FOR ALTERNATIVE FUELS INFRASTRUCTURE DEVELOPMENTS

Alternative fuels infrastructure has advanced most in the electromobility sector. In 2018, the number of charging points was more than double that reported in 2016. One of the most significant factors underpinning this growth was the successful uptake of funds under Connecting Europe Facility (CEF) grants. Developments in the alternative fuels infrastructure, including a forecast up to 2030, are described in more detail in an annex to the evaluation report (5b. Alternative Fuels Infrastructure Targets).

Charging stations for electric vehicles

If the public is to be encouraged to buy electric vehicles and plug-in hybrids, readily accessible and reliable charging infrastructure with medium-fast and rapid charging stands needs to be built up locally and nationally. The National Policy Framework for the Development of the Market in Alternative Fuels estimated the number of charging stations up to 2025. For the purposes of the National Policy Framework review, the estimate has been extended to 2030.

Table 11 Estimated number of charging stands up to 2030

Year	2016	2017	2018	2019	2020	2025	2030
Medium-fast charging	50	100	200	400	600	1,200	2,340
Rapid charging	30	40	80	120	150	300	660
Total stands	80	140	280	520	750	1,500	3,000

Current figures on the number of charging stations built in 2018 can be found in the Action Plan for the Development of Electromobility in the Slovak Republic. As at 31 December 2018, **92 publicly accessible DC charging points** with an output of more than 44 kW and **143 publicly accessible AC charging points** with an output of less than 44 kW were in operation (Table 12).

Table 12 Number of publicly accessible charging stations in 2018

Year	Number	Output
2018	92 DC	≥44 kW
	143 AC	≤44 kW

In order to reach the prescribed number of charging stations for electric vehicles, the Ministry of Economy has prepared the Scheme for the Build-up of Alternative Fuels Infrastructure (a *de minimis* aid scheme) and is now preparing a Call for Grant Applications for Support in the Build-up of Publicly Accessible Charging Stations for Electric Vehicles. This call, open to municipalities and local government authorities, is geared towards support for the construction of approximately 200 publicly accessible AC charging stations in 2019 and 2020. Much of the network of charging stations for electric vehicles in Slovakia is being built by private companies, particularly Západoslovenská energetika, a. s. (ZSE) and GreenWay Infrastructure, s. r. o.

These companies draw on funds for the implementation of charging infrastructure projects primarily from grants available under the Connecting Europe Facility (CEF), as well as from their own resources. ZSE has entered successful projects in all three of the Cohesion calls to date (with the CEF providing co-financing of up to 85%). GreenWay has been successful in two Cohesion calls and is the only Slovak beneficiary to have successfully participated in a CEF Blending call (a combination of grants and financial instruments).

Table 13 CEF-approved projects for the build-up of charging station infrastructure

Call	Applicant	Project title	Number of charging stations in Slovakia
CEF Transport 2014 (Cohesion) – Call I	ZSE	FAST-E	14
CEF Transport 2015 (Cohesion) – Call II	ZSE	EAST-E	15
	GreenWay Infrastructure	NCE-FastEvNet	10
CEF Transport 2016 (Cohesion) – Call III	ZSE	NEXT-E	25
	ZSE	URBAN-E	60
	GreenWay Infrastructure	NCE-AdvancedEvNet	20
CEF Transport Blending 2017/2018 (General) – Call IV	GreenWay Infrastructure	Central European Ultra Charging	10-14
	ZSE	MULTI-E	TBC

Charging station projects financed with CEF grants are transnational and focus on building up infrastructure on the corridors of the TEN-T Core Network.

CNG and LNG refuelling points

There are currently 12 public CNG refuelling points in Slovakia (Figure 1), nine of which are operated by SPP CNG, s. r. o. In addition, there are two private CNG refuelling points in Prievidza and Trnava. These are dedicated to public transport services in those towns (Table 14). Considering user numbers and how sales of CNG are developing, the number of refuelling points appears to be inadequate. The target situation, as defined in the National Policy Framework, is to achieve a critical mass of CNG refuelling point infrastructure that will trigger the spontaneous development of CNG use. Until the supporting infrastructure has been built up, it is necessary to employ a combination of measures appropriate to launch the construction of new infrastructure and the purchase of CNG vehicles.

Table 14 Number of CNG and LNG refuelling points in 2018

Year	Number	Type
2018	12	public refuelling points
	2	private refuelling points

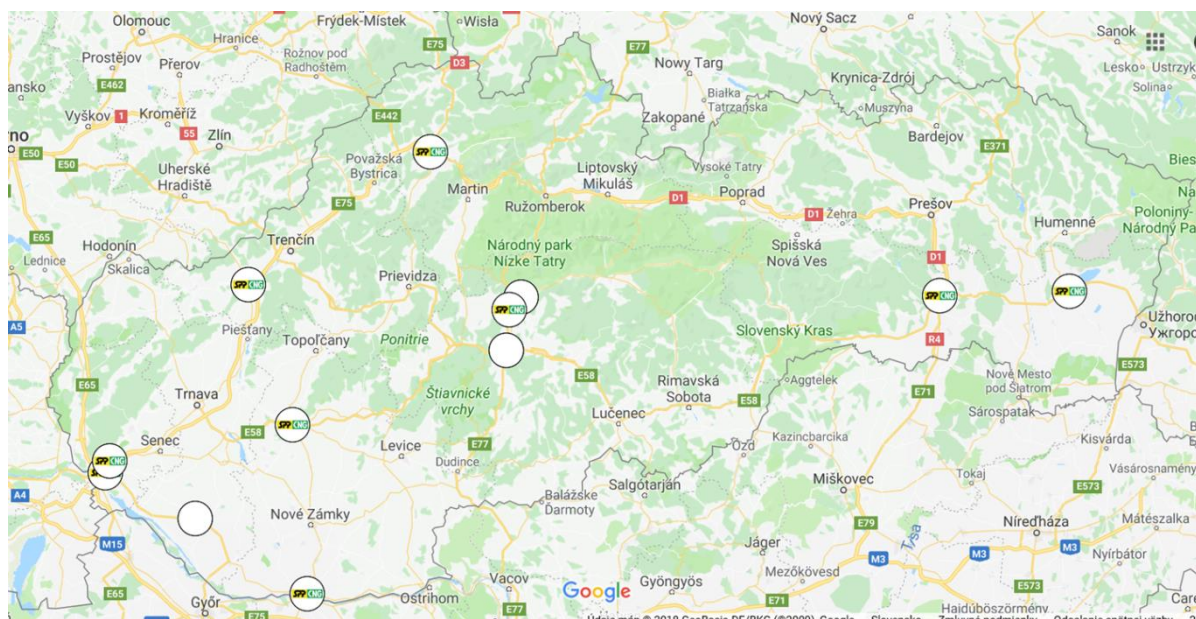


Figure 1 Map of CNG refuelling points in Slovakia as at 31 December 2018

According to the National Policy Framework, the ideal situation for Slovakia appears to be 3-5 public LNG refuelling points for road transport by 2025 and one LNG refuelling point for water transport by 2030. Bearing in mind the projects supported by the CEF under the 2016 transport call, the LNG infrastructure targets set by the National Policy Framework should be achieved early. However, in connection with the adoption of the Regulation of the European Parliament and of the Council setting CO₂ emission performance standards for new heavy-duty vehicles, along with the forecast rise in heavy-duty vehicles running on LNG, the optimal situation in road transport would appear to be 5-10 public LNG refuelling points by 2025. The number of LNG refuelling points for water transport has also been increased by one because the Directive envisages LNG availability at each port in the TEN-T Core Network, i.e. the ports of Bratislava and Komárno in Slovakia.

Table 15 Update of the target number of CNG and LNG refuelling points up to 2030

Year		2025	2030
Target	CNG	50-80	80-120
	LNG	5-10 for road transport	2 for water transport

However, interest in purchasing goods vehicles that run on LNG needs to be increased by effective measures that will motivate operators in the segments of goods vehicles and buses to make greater use of CNG and LNG as alternative fuels. Measures will be introduced as

compensation for the fact that the network in place for the refuelling infrastructure has not been sufficiently built up, and for the fact that acquisition costs and servicing costs are higher, especially in the first years in which the new technology is deployed. Cost savings will make carriers who use alternative fuels more competitive. This will also encourage the building of further infrastructure.

Refuelling points for LPG and other alternative carbon-based fuels

Unlike other alternative fuels, LPG is covered by a relatively large nationwide network of some 330 refuelling points. Despite this, the take-up of this alternative fuel among motorists is relatively low. There are estimated to be approximately 1,000 service stations in Slovakia; the share of LPG refuelling points is approximately 38%. It is estimated that the share of refuelling points where exclusively LPG is pumped stands at approximately 37%. Most LPG refuelling points are distributed along and in the vicinity of the main roads. Broken down regionally, most coverage can be found in the west and east of Slovakia.

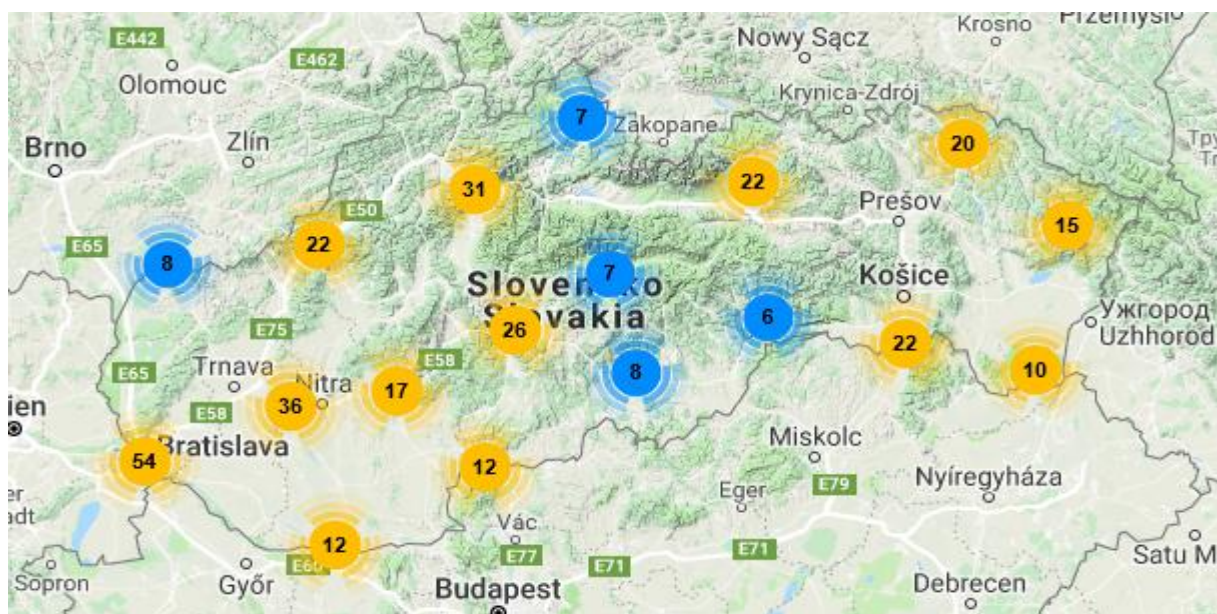


Figure 2 Map of LPG refuelling points in Slovakia; Source: mylpg.eu ⁸

The infrastructure of LPG refuelling points is constantly expanding, and we expect it to develop in parallel with the development of service stations for conventional fuels.

Hydrogen refuelling points

The National Policy Framework foresaw neither the registration of fuel cell electric vehicles up to 2020, nor the construction of hydrogen refuelling points. As at 31 December 2018, there were no such refuelling points and no such vehicles in Slovakia. In connection with forecasts of the development of hydrogen technology, including the build-up of hydrogen refuelling infrastructure in neighbouring EU Member States, this National Policy Framework update also frames the initial forecast of developments in the number of hydrogen refuelling points up to 2030 (Table 16).

At the end of 2018, Slovakia joined an international hydrogen initiative aimed at maximising the potential of hydrogen made from renewable sources. The development of hydrogen

⁸) Source: <https://www.mylpg.eu/stations/slovakia/#stations>.

infrastructure will be important in ensuring that Slovakia becomes part of the international network for FCEVs. If the above targets are to be met, it will be important to ensure the availability of cheap renewable (green) hydrogen or, alternatively, blue hydrogen made from fossil resources that captures CO₂ or re-uses it in the production of other products.

Table 16 Forecast of the number of hydrogen refuelling points up to 2030

Year	2020	2025	2030
hydrogen refuelling points	0	6	18

In this light, it is important for Slovakia to follow a trajectory where the fossil component in the hydrogen used at hydrogen refuelling points is gradually reduced up to 2030, with a recommendation of 0% grey hydrogen at such refuelling points by 2050. Another factor affecting the development of infrastructure is the price of the fuel – hydrogen – itself. The goal should be to reach a retail price for hydrogen that, when converted, is not more than the price of fossil fuels. The current price at hydrogen refuelling points in the EU hovers around €9-10 per kilogram of hydrogen. When converted, this price is comparable to that of petrol, diesel, or electricity at public rapid-charging stations. The price of near-zero-carbon hydrogen in 2030 is projected to be €5-7 per kilogram of hydrogen. The price of a hydrogen refuelling point itself is currently relatively high, costing approximately €1.5 million. However, the investment cost is following a downtrend as each year passes. The final price of a hydrogen refuelling point hinges on the point’s capacity, the discharge pressure of the hydrogen, and supplementary equipment for the local production of hydrogen or, where appropriate, supply from central hydrogen sources.

1.7 ALTERNATIVE FUELS INFRASTRUCTURE DEVELOPMENTS

The following table documents alternative fuels infrastructure developments in 2016-2018 by reference to data available on the expansion in alternative fuel vehicles and the corresponding infrastructure. It indicates that the ratio between vehicles and infrastructure is reporting the even development of both components. Even so, the rate of development in 2016-2018 can be regarded as sluggish.

Table 17 Alternative fuels infrastructure developments in 2016-2018

		2016			2017			2018		
Type of transport	Alternative fuel/drive	AFI	AFV	Ratio	AFI	AFV	Ratio	AFI	AFV	Ratio
Road transport	BEVs + PHEVs	115	557	5	150	1,185	8	237	1,691	7
	CNG	11	1,893	172	12	2,131	178	12	2,469	206
	LNG	0	0	-	0	0	-	0	15	-
	Hydrogen	0	0	-	0	0	-	0	0	-

The following table presents the alternative fuels infrastructure developments forecast up to 2030 further to estimates and analyses of how the alternative fuels market will develop, also taking into account current and proposed National Policy Framework measures up to 2030. Forecast developments in the alternative fuels infrastructure, including an assessment of the

future development of fuel in the transport sector up to 2030, are described in more detail in an annex to the evaluation report (6. Alternative Fuels Infrastructure Developments).

Table 18 Alternative fuels infrastructure developments forecast up to 2030

		2020			2025			2030		
Type of transport	Alternative fuel/drive	AFI	AFV	Ratio	AFI	AFV	Ratio	AFI	AFV	Ratio
Road transport	BEVs + PHEVs	750	10,000	13	1,500	20,000	13	3,000	35,000	12
	CNG	18	4,500	250	76	14,300	188	114	24,000	211
	LNG	3	100	33	8	397	50	10	1,888	189
	Hydrogen	0	0	-	6	100	17	18	3,600	200

AFI – alternative fuel infrastructure (for the relevant fuel)

AFV – alternative fuel vehicles

2 NEW MEASURES PROPOSED FOR THE NATIONAL POLICY FRAMEWORK

Electromobility

The Ministry of Economy has drawn up an Action Plan for the Development of Electromobility in the Slovak Republic (Government Resolution No 110/2019), which aims, by means of a set of 15 measures, to ensure that consumers see that low-emission mobility is flawless. This includes the accelerated deployment of the relevant infrastructure. **For this reason, no further specific measures in support of electromobility will be proposed in the National Policy Framework for the Development of the Market in Alternative Fuels – Review and Update.**

CNG/LNG

One of the most topical trends and movements in transport and mobility in Europe is the ever increasing interest in the use of CNG, and particularly LNG, in freight transport. The combustion of methane, as the simplest hydrocarbon, generates the least greenhouse gas emissions of any fossil fuels and has hardly any pollutant emissions. By gradually phasing out fossil methane in favour of renewable biomethane, it is possible to achieve minimised, negligible greenhouse gas emissions.

Another reason why CNG/LNG mobility (or G-mobility) has a future is that it will enable vehicle manufacturers to capitalise on the tens of billions of euros that have been invested in the development of internal combustion engines by introducing a combination of the cleanest internal combustion engine running on CNG with an electric motor. This will reap the rewards of years of research, development and industrial optimisation in the field of internal combustion engines. CNG, in tandem with BEVs and plug-in hybrids, has the potential to increase its market share at the expense of a palpable downturn in the market share enjoyed by the conventional fuels of petrol and diesel.

Blending biomethane into natural gas, or completely replacing natural gas with biomethane, is another way of cutting greenhouse gas emissions. The addition of a 20% biomethane ingredient will ensure that the value of emissions drops to 74 g/km, to just 15 g/km if synthetic gas is used, and even lower in the event of biomethane from wastewater treatment plants or facilities for the processing of biodegradable waste. Vehicles of those marques and models that also offer CNG engines make for a solid, popular group of fleet of vehicles, so there is good reason to believe that the National Policy Framework's targets will be reached if appropriate support measures are implemented.

The advantage of CNG and LNG as alternative fuels (including their renewable versions – bioCNG and bioLNG) is that they are used in an internal combustion engine, which happens to be the most widely used powertrain in Europe. ICE production is deeply ingrained in Europe and is linked to the downstream production capacities and workforce that exist on a huge scale in virtually every EU Member State. The modern-day automotive industry in Slovakia is facing up to the challenges of electromobility, even though – for the moment – it is yoked to the production of ICE vehicles. Some of the existing production capacities can be preserved for internal combustion engines by simply adapting production models to the manufacture of vehicles running on CNG and LNG.

Another benefit of CNG and LNG is that they can be put to versatile use in all transport segments, even those where the technological advances in electromobility fall short of the

required standard at the moment. This applies in particular to heavy goods vehicles and long-distance coach services.

LPG

The advantage of LPG as an alternative fuel is its sparing environmental impact. LPG emits much lower levels of CO₂, as well as less nitrogen oxide. It blends well with the air and, courtesy of its virtually flawless combustion, significantly restricts the levels of pollutants discharged into the air. LPG markedly cuts down on particulate matter emissions – soot, smoke and dust.

One of the main barriers hindering the development of LPG vehicles is the restriction on parking in underground parking facilities. LPG vehicles account for 2% of all vehicles in Slovakia. The range of passenger cars adapted to run on LPG directly by the manufacturer or subsequently converted at service centres continues to fall.

The optimal, sustainable and logical share of LPG vehicles in the total number of vehicles is 5-10%. However, interest in purchasing an LPG vehicle or in the aftersales conversion of a petrol vehicle into an LPG vehicle needs to be shored up by effective measures that will incentivise customers.

FCEVs

The development and use of hydrogen technologies in transport may be contingent on multiple factors in the future. Customers contemplating the purchase of an FCEV tend to be put off at the moment by the relatively high price tag compared with ICE vehicles. On the other hand, a positive factor is that M1 FCEVs cost more or less the same as battery electric vehicles (BEVs) with a similar standard of equipment and range. Astutely tuned subsidisation could prove a stimulus in the purchase of new vehicles. Another economic factor is the price of the fuel – hydrogen, which is currently more or less on a par with the price of the petrol/diesel used by ICE vehicles. The pricing trend is stable and, if anything, is dropping as it becomes cheaper to make green hydrogen.⁹

The biggest barrier to the purchase of FCEVs at present is the sparsity of hydrogen refuelling points. With this in mind, the priority will be to build up a basic network of hydrogen refuelling points at major transport hubs and in the main conurbations by 2023. One of the undeniable advantages of FCEVs is that customers need not change the habits they have acquired in the use of ICE vehicles. The normal everyday use of FCEVs combines the benefits of ICE vehicles and BEVs. As with ICE vehicles, it takes 3-5 minutes to fill up with hydrogen. The price of fuel and a vehicle range in excess of 600 km remain more or less the same, too. The comfort and handling is similar to that of a BEV.

The operation of FCEVs does not generate local emissions. The total amount of emissions discharged, however, depends on how the hydrogen is made. On the road, there is less interior noise in the car, making the ride more comfortable, while the reduced exterior noise helps to improve the environment in more densely populated areas. For an increasing number of customers, the low environmental footprint throughout the life-cycle will be an important factor when they are deciding what the vehicle to buy.

The energy efficiency of FCEVs, measured by the tank-to-wheel criterion, is lower than that of BEVs, but higher than that of ICE vehicles. In the winter, the gap in efficiency between FCEVs and BEVs tends to be narrower, with the need for electric heating heavily impacting

⁹) Source: http://www.certify.eu/images/Certifyh_Deliverable_D2_4_green_hydrogen_definition_Consultation_low-res.pdf.

the efficiency of both types of vehicle. Electric vehicles are characterised by effective regenerative braking, which increases their efficiency over ICE vehicles.

BIOFUELS

Biofuels constitute an alternative fuel under Article 2 of Directive 2014/94/EU of the European Parliament and of the Council on the deployment of alternative fuels infrastructure. These days, biofuels blended into fossil fuels are a major source of greenhouse gas (GHG) emission savings in the transport sector.

Biofuels are blended into both diesel and petrol. With diesel, the biofuel content is at the upper limit of the technical standard (7% by volume). With petrol, there is scope to increase the share of biofuels from the present 7.4% or so by volume to 9% by volume. This entails the introduction of E10 petrol, which is another step on the way to reducing greenhouse gas emissions further in the transport sector without hefty investment costs, the replacement of the vehicle fleet, or the adjustment of engines.

Bearing in mind the measures expected in relation to greenhouse gas emission abatement in the transport sector, deriving from measures anticipated at EU level (a climate-neutral economy by 2050 and the inclusion of transport in the EU ETS), and taking into account that this is one of a handful of sectors where these emissions are constantly rising, the introduction of high-biofuel blends in the form of E20, E85 and, if appropriate, B30 is expected to be considered in the near future in parallel to the development of electromobility.

This issue is covered by the Draft Integrated National Energy and Climate Plan for 2021-2030. The final emission abatement targets, the establishment of targets and the share of biofuels will be subject to further analysis as part of the implementation of Directive 2018/2001/EC of the European Parliament and of the Council on the promotion of the use of energy from renewable sources.

List of proposed measures

1. Inclusion of alternative fuels as a theme in all relevant government strategies and policies.....	23
2. Creation of a financial mechanism facilitating the support of alternative fuel vehicle purchases.....	24
3. Creation of a financial mechanism to support the development of alternative fuels infrastructure.....	25
4. Support for the use of CNG and LNG as alternative fuels in the transport sector.....	27
5. Removal/elimination of restrictions imposed on the parking of LPG vehicles in underground parking facilities.....	28
6. Alternative fuels unit price comparison.....	29
7. Application of green public procurement principles in the purchase of alternative fuel vehicles.....	30

1. Inclusion of alternative fuels as a theme in all relevant government strategies and policies

Coordinator	Ministries and other central bodies of state administration
Dates	Ongoing
Link to objective	Creation of conditions to improve the Slovak public's perception of alternative fuels in the transport sector
Basis and requirements for the implementation of the measure	<p>Continuous monitoring of the production and adoption of government documents, strategies and policies within the scope of the overall issues surrounding all alternative fuels (electromobility, CNG/LNG, LPG, hydrogen drive and biofuels).</p> <p>Arrange for the preparation, among the various ministries, of opinions and/or recommendations in cooperation with the Ministry of Economy as the coordinator for the market in alternative fuels.</p>
Indicator of successful implementation of the measure	Considering how cross-cutting a theme this is, arrangements for the inclusion of the issue of alternative fuels in all relevant government strategies and policies, including in response to EU legislation.

2. Creation of a financial mechanism facilitating the support of alternative fuel vehicle purchases

Coordinator	Ministry of Economy; coordinator of the managing authority of the OP for the 2021-2027 period
Dates	2019-2027
Link to objective	Stimulation of demand for alternative fuel vehicles
Basis and requirements for the implementation of the measure	<p>Direct support for the purchase or conversion of alternative fuel vehicles needs to be established in order for alternative fuels to be developed comprehensively.</p> <p>Direct support in the form of subsidies for the purchase or conversion of vehicles should apply to vehicle categories M1, N1, N2, M3 and N3. The amount of the subsidy will be defined separately for the different categories of vehicles and their drives.¹⁰</p> <p>The Commission's evaluation of the National Policy Framework (EU – SWD(2017) 365 final) criticised Slovakia for the fact that the Framework had not factored in any specific measures to encourage alternative fuels in public transport, hence the subsidy will also specifically apply to M3 category vehicles in the form of a subsidy covering the difference between a diesel version and an alternative fuel version.</p> <p>The proposal with this measure is to follow up on previous support projects and to expand the range of alternative low-emission vehicles supported to include vehicles that also run on other alternative fuels. Experience in other countries testifies to the success of proposing the implementation of similar measures. In view of the above, the Ministry of Economy has amended Act No 71/2013 on the provision of subsidies in the competence of the Ministry of Economy of the Slovak Republic, as amended.</p> <p>The subject of this measure will also be taken into account in the preparation of the Partnership Agreement and policy objectives for the 2021-2027 programming period. If this measure is reflected in a 2021-2027 OP, the competent ministry – the managing authority of the relevant OP – will be a joint coordinator of this measure.</p>
Indicator of successful implementation of the measure	An increase in the number of alternative fuel vehicles
Source of funding	Ministry of Economy: Amendment to Act No 71/2013 on the provision of subsidies in the competence of the Ministry of Economy of the Slovak Republic.

¹⁰⁾ In relation to categories M1 and N1, alternative vehicles factory made with a dual-fuel system, i.e. fitted with a petrol tank as a reserve, will also be supported.

Potential source of funding envisaged – operational programmes for the 2021-2027 period. These measures will only be implemented if funds reflecting the need for the further development of alternative fuels are allocated in the new OP.

3. Creation of a financial mechanism to support the development of alternative fuels infrastructure

Coordinator	Ministry of Economy; coordinator of the managing authority of the OP for the 2021-2027 period
Dates	2021-2027
Link to objective	Support for the construction of alternative fuels infrastructure
Basis and requirements for the implementation of the measure	<p>Further to the amendment to Act No 71/2013 on the provision of subsidies in the competence of the Ministry of Economy of the Slovak Republic, as amended, the Ministry of Economy has introduced a subsidy mechanism to support the construction, conversion and reconstruction of publicly accessible charging stations, refuelling points for liquefied natural gas (LNG) and compressed natural gas (CNG), hydrogen refuelling points, or refuelling points for other fuel made from renewable energy sources, under which eligible applicants may be a municipality or a higher territorial unit, a natural person engaging in business, or a legal person.</p> <p>In the coming years, this measure will aim to further the development of the alternative fuels infrastructure. The amount of the subsidy will be defined separately for the different types of refuelling or charging infrastructure.</p> <p>This plan will also be proposed in the preparation of the Partnership Agreement and policy objectives for the 2021-2027 programming period. If this measure is reflected in a 2021-2027 OP, the competent ministry – the managing authority of the relevant OP – will be a joint coordinator of this measure.</p>
Indicator of successful implementation of the measure	An expansion in the alternative fuels infrastructure
Source of funding	<p>Ministry of Economy: Amendment to Act No 71/2013 on the provision of subsidies in the competence of the Ministry of Economy of the Slovak Republic.</p> <p>Potential source of funding envisaged – operational programmes for the 2021-2027 period. These measures will only be implemented if funds reflecting the need for the further development of alternative fuels are allocated in the new OP.</p>

4. Support for the use of CNG and LNG as alternative fuels in the transport sector

Coordinator	Ministry of Finance, Ministry of Transport and Construction, Ministry of Economy
Dates	2019-2020 Preparation of a model for support and consultation with the European Commission. Duration of the support scheme – depending on the outcome of consultations with the Commission.
Link to objective	Stimulation of demand for vehicles running on CNG and LNG
Basis and requirements for the implementation of the measure	<p>The use of alternative fuel vehicles should be increased by introducing measures that will motivate legal and natural persons to make long-term use of such vehicles. CNG and LNG, as alternative fuels, have undeniable environmental advantages as they release minimum pollutant emissions, including very low emissions of nitrogen oxides, virtually no emissions of fine dust particles and, if biomethane is used, very low levels of carbon oxides.</p> <p>Concessions in the field of subsidies, taxes and charges could be included among measures capable of motivating users to engage in the long-term use of CNG and LNG as alternative fuels.</p> <p>In view of the above, the Ministry of Finance, the Ministry of Transport and Construction, and the Ministry of Economy (each within the scope of its competence) need to verify that measures may be implemented to support the use of alternative fuels by consulting them with the Commission. The admissibility of measures must be consistent with the European Union’s State aid rules. The consultations will be able to examine the admissibility of the parallel implementation of measures under this point, other measures under this National Policy Framework update, and other existing forms of support.</p>
Indicator of successful implementation of the measure	An increase in the number of alternative fuel vehicles.
Source of funding	Central government budget

5. Removal/elimination of restrictions imposed on the parking of LPG vehicles in underground parking facilities

Coordinator	Ministry of Transport and Construction
Joint coordinator	Slovak Office of Standards, Metrology and Testing
Dates	2020-2021
Link to objective	Stimulation of demand for alternative fuel vehicles
Basis and requirements for the implementation of the measure	<p>The Ministry of Transport and Construction and the Ministry of the Interior are approaching the Slovak Office of Standards, Metrology and Testing with a proposal to include, in the technical standardisation plan, reviews of relevant original Slovak technical standards (STN) concerning requirements for the technical specifications of indoor parking facilities (such as ventilation technology, fire prevention arrangements, and alarms) to ensure that parking in such facilities is safe even with motor vehicles running on LPG.</p> <p><u>Basis:</u> When designing and proposing LPG stands, factors specific to fire safety in indoor parking facilities need to be taken into account. The design of indoor parking facilities is covered by STN 73 6058:1987, and fire safety in indoor parking facilities is the subject of STN 73 0838:1977. As the above standards are obsolescent, this measure acts as a stimulus for them to be updated. That update will establish, among other things, levels for the activation of forced and emergency ventilation, and the fire alarm system if a gas leak is detected, depending on the concentration thereof relative to lower explosive limits, and will also draw on research in relevant areas and fields.</p> <p>This measure is based on experience in the Czech Republic, specifically Czech standard ČSN 73 6058, which lays down technical specifications for the design of new structures intended for individual garages, rows of garages, and indoor parking facilities, etc., in order to facilitate parking for vehicles that run on gaseous and other alternative fuels. That standard, among other things, imposes the obligation (in section 5.4.3) for indoor parking facilities with more than 27 parking spaces in new structures to be designed in such a way that at least 10% of those parking spaces can be used for parking by vehicles running on gaseous fuels.</p>
Indicator of successful implementation of the measure	An increase in the number of LPG vehicles.

6. Alternative fuels unit price comparison

Coordinator	Ministry of Economy
Joint coordinator	Ministry of Transport and Construction; Ministry of the Environment
Dates	2020
Link to objective	<p>Commission Implementing Regulation (EU) 2018/732 of 17 May 2018 on a common methodology for alternative fuels unit price comparison in accordance with Directive 2014/94/EU of the European Parliament and of the Council.</p> <p>Creation of conditions for potential customers' improved perception of alternative fuels</p>
Basis and requirements for the implementation of the measure	<p>Introduce the compulsory comparison of alternative fuels further to Commission Implementing Regulation (EU) 2018/732 of 17 May 2018 on a common methodology for alternative fuels unit price comparison in accordance with Directive 2014/94/EU of the European Parliament and of the Council.</p> <p>As a matter of priority, accommodate recital (7), which provides that, in order to make the methodology workable at any moment in time, the fuel price to be taken into account should be the average price of the relevant fuel per conventional unit over a maximum of the last calendar quarter prior to the time of calculation.</p> <p>Also take recital (8) into account: because of the constraints inherent in the display of comparisons in fuel stations, it should be specified that the use of such methodology supposes the establishment of samples of passenger cars that are comparable, at least in view of their weight and their power, but use different fuels.</p> <p>This methodology should be introduced to raise consumers' awareness of the transparency of fuel prices.</p> <p>The content proposed for the display of comparisons of fuel prices is intended to provide consumers with the information they need to compare the efficiency of different fuels, and should specify the motor vehicle and the price per kilometre for each relevant fuel in the context of Directive 2014/94/EU. In relation to the charging of an electric vehicle, a distinction also needs to be made between the price of electricity used to charge an electric vehicle at home and the price for charging at a public charging station.</p> <p>The proposed measure is technologically neutral, is in keeping with the EU's Implementing Regulation, and will help to raise awareness of alternative fuels.</p>

Indicator of successful implementation of the measure	An increase in the number of alternative fuel vehicles.
Source of funding	The costs of implementing the proposed measure are negligible.

7. Application of green public procurement principles in the purchase of alternative fuel vehicles

Coordinator	Office for Public Procurement, ministries, and other central bodies of state and public administration
Dates	2019-2025
Link to objective	Stimulation of demand for alternative fuel vehicles. Creation of conditions for potential customers' improved perception of alternative fuels
Basis and requirements for the implementation of the measure	<p>By applying green public procurement principles, public administration will set an example to the public, not only by using alternative fuel vehicles, but also by its overall approach to procurement respecting the efficiency and greenness of the products that are being procured.</p> <p>The Commission's statistics show that, every year, EU Member States procure goods and services for more than €2 trillion, or approximately 14% of the EU's GDP.¹¹</p> <p>At the moment, green public procurement in Slovakia is only a voluntary vehicle of environmental policy because the obligation to apply green public procurement principles is not governed by law. Government Resolution No 590 of 14 December 2016, under which the Slovak government approved the National Action Plan for Green Public Procurement in the Slovak Republic for 2016-2020, made it incumbent on ministers and the chairpersons of central bodies of state administration to apply green public procurement principles within the scope of their competence, and the chairpersons of self-governing regions and the chairperson of the Association of Towns and Municipalities of Slovakia were recommended to apply green public procurement principles within the scope of their competence.</p> <p>Within the scope of secondary EU law, legal acts were adopted that, in the field of public procurement, challenge the voluntary nature underpinning the application of environmental aspects in public procurement processes. These legal acts cover, among other things, road transport vehicles. Specifically at issue here is Directive 2009/33/EC of the European Parliament and of the Council on the promotion of clean and energy-efficient road transport vehicles, which was reflected in Slovak law by Act No 158/2011 on the promotion of energy-efficient and environmentally efficient motor vehicles, which provides that public bodies should try to procure products (goods, services and works) with a reduced negative environmental impact throughout their life-cycle (i.e. encompassing</p>

¹¹) Source: Communication from the Commission: *Making Public Procurement work in and for Europe*, of 3 October 2017.

	<p>the extraction of raw materials, production, use, and end-of-life treatment). This act aims to promote the marketing of clean and energy-efficient motor vehicles, thereby contributing to the energy efficiency of road transport vehicles by reducing fuel consumption, to climate protection by reducing CO₂ emissions, and to improved air quality by cutting pollutant emissions.</p> <p>The act lays down methods used, when purchasing or leasing vehicles, to take into account the energy and environmental impacts of operating M1, M2, M3, N1, N2 and N3 vehicles ('vehicles') throughout their life. It also introduces methodology for calculating the running costs over the life of such vehicles with a view to promoting and stimulating the market in energy-efficient and environmentally efficient vehicles. In addition, it places obligations on contracting authorities and carriers providing public services, who are required, when purchasing particular categories of motor vehicles above prescribed financial thresholds, to factor in the energy and environmental impacts of operating such a motor vehicle over its lifetime.</p>
<p>Indicator of successful implementation of the measure</p>	<p>An increase in the number of alternative fuel vehicles.</p>

CONCLUSION

The draft National Policy Framework for the Development of the Market in Alternative Fuels – Review and Update is a direct response to Directive 2014/94/EU of the European Parliament and of the Council on the deployment of alternative fuels infrastructure, including the assessment of national policy frameworks under Article 10(2) of that Directive.

Further to Article 10(1) of Directive 2014/94/EU, this document reviews the measures proposed in the *National Policy Framework for the Development of the Market in Alternative Fuels* (Resolution No 504/2016), and will be presented in the form of an evaluation report submitted to the Commission by 18 November 2019, to be followed, every three years thereafter, by a report on the implementation of the National Policy Framework.

This document also defines seven new measures for the fulfilment of national objectives and plans under the National Policy Framework, and measures to support the deployment of alternative fuels infrastructure, including public transport.

The National Policy Framework – Review and Update is the first document to define national targets for the development of hydrogen as an alternative fuel, including the development of the corresponding infrastructure. All fuels included in the National Policy Framework are eligible for Union and national support measures for alternative fuels infrastructure, in order to focus public support on coordinated internal market development towards mobility using alternative fuels vehicles.

This document contains measures that are important instruments for the development of the market in alternative fuels in the transport sector and for the development of the corresponding national infrastructure, and that require implementation by the individual state administration stakeholders.

LIST OF ABBREVIATIONS

AFI	alternative fuels infrastructure
AFV	alternative fuel vehicles
B30	diesel fuel with a 30% biological component
BEV	battery electric vehicle
CNG	compressed natural gas
CEF	Connecting Europe Facility
VAT	value added tax
E10	petrol with a 10% biological component
E20	petrol with a 20% biological component
E85	petrol with an 85% biological component
EU	European Union
EU ETS	EU Emissions Trading Scheme
FCEV	fuel cell electric vehicle
GHG	greenhouse gases
ICE	internal combustion engine
FEC	final energy consumption
LNG	liquefied natural gas
LPG	liquefied petroleum gas
Ministry of Transport and Construction	Ministry of Transport and Construction of the Slovak Republic
Ministry of Finance	Ministry of Finance of the Slovak Republic
Ministry of Economy	Ministry of Economy of the Slovak Republic
Ministry of Education	Ministry of Education, Science, Research and Sport of the Slovak Republic
Ministry of the Environment	Ministry of the Environment of the Slovak Republic
National Policy Framework	National Policy Framework for the Development of the Market in Alternative Fuels – Review and Update
RES	renewable energy sources
PEC	primary energy consumption
PHEV	plug-in hybrid electric vehicle
SIEA	Slovak Innovation and Energy Agency
Directive 2014/94/EU	Directive 2014/94/EU of the European Parliament and of the Council of 22 October 2014 on the deployment of alternative fuels infrastructure
Slovakia	Slovak Republic
CGB	central government budget
SOT	system operation tariff
ÚRSO	Regulatory Office for Network Industries
HRP	hydrogen refuelling point
ZAP SR	Automotive Industry Association of the Slovak Republic

ANNEX – EVALUATION REPORT

further to 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.