

- **Estonia (EE)**

- **Main messages from the Commission assessment of the NPF**

In its original assessment of the Estonian NPF the Commission concluded:

The Estonian NPF addresses partially the requirements of Directive's Article 3. For many aspects more details would have been needed for an accurate assessment. The NPF does not contain any future estimates for alternative fuels vehicles. Vague targets are provided concerning AFI for 2020 (>100 for high power recharging points and >10 for biomethane refuelling points). Spatial distribution details or references to urban areas and the TEN-T network are not presented. Estonia is focusing on increasing the proportion of alternative fuels use in road transport and is seeking to increase the use of renewable energy sources in road transport to 10% of the amount of fuel consumed. The objective is to be achieved through three types of fuel – liquid biofuels, biomethane and electricity.

The Estonian NPF lacks concrete targets for EV infrastructure and information about the future EV vehicle market development. It neither contains targets for further deployment of electricity supply for stationary airplanes nor shore-side electricity.

One of the Estonian NPF's main objectives is the introduction of methane-based fuels in transport. Longer term preference is biomethane because of its environmental and energy security benefits. Promoting the creation of a comprehensive network of natural gas refuelling points is considered to be the main challenge in the period leading up to 2020.

Regarding LNG, the NPF mentions that an LNG terminal including an LNG bunkering terminal is due to be completed in 2017, at the Harbour of Muuga (part of the Tallinn port) where a distribution system will also be developed, including loading facilities for LNG tank vehicles.

For hydrogen, a first pilot project is pointed out, in which the University of Tartu and the private sector plan to jointly create a hydrogen refuelling point, a production facility in Pärnu.

The Estonian NPF contains a reduced and vaguely described portfolio of existing and proposed measures covering road transport and shore-side electricity supply. All the measures concerning the use of electricity for road transport (private or public infrastructure) have expired and no future ones are proposed. Support measures for natural gas infrastructure and the promotion of biomethane are vaguely mentioned and lack concrete information (e.g. start year, budget). Biofuels are promoted in the short term and Estonia's energy policy regulates the blending shares of biofuels in petrol and diesel (gradually increasing up to at least 10% as of 2020). For LNG, no measures are proposed at this moment but the degree of interest and need will be further investigated after the completion of the first terminal in 2017. The NPF presents two measures regarding public transport that relate to public procurement of CNG and hydrogen public buses.

The NPF mentions cross-border cooperation focussing on shore-side electricity supply.

▪ **Overview of requirements' fulfilment from Annex I of the Directive**

Table Error! No text of specified style in document.-1 Checklist Table

Part of the Directive 2014/94/EU	Requirement	Mode of transport / Alternative Fuel (provided in the NIR)		Yes / No
ANNEX I: 1. Legal measures	Information on legal measures, which may consist of legislative, regulatory or administrative measures to support the build-up of alternative fuels infrastructure, such as building permits, parking lot permits, certification of the environmental performance of businesses and fuel stations concessions.	All / All		Y
ANNEX I: 2. Policy measures supporting the implementation of the national policy framework	Information on those measures shall include the following elements: <ul style="list-style-type: none"> • direct incentives for the purchase of means of transport using alternative fuels or for building the infrastructure, • availability of tax incentives to promote means of transport using alternative fuels and the relevant infrastructure, • use of public procurement in support of alternative fuels, including joint procurement, • demand-side non-financial incentives, for example preferential access to restricted areas, parking policy and dedicated lanes, • technical and administrative procedures and legislation with regard to the authorisation of alternative fuels supply, in order to facilitate the authorisation process. 	Road, combination / electricity, CNG		Y
	• consideration of the need for renewable jet fuel refuelling points in airports within the TEN-T Core Network	Air	Biofuels	N
ANNEX I: 3. Deployment and manufacturing support	• Annual public budget allocated for alternative fuels infrastructure deployment, broken down by alternative fuel and by transport mode (road, rail, water and air).	Road / electricity, CNG		Y
	• Annual public budget allocated to support manufacturing plants for alternative fuels technologies, broken down by alternative fuel and by transport mode.			N
	• Consideration of any particular needs during the initial phase of the deployment of alternative fuels infrastructures.			N
ANNEX I: 4. Research, technological development and demonstration	• Annual public budget allocated to support alternative fuels RTD&D, broken down by fuel and by transport mode.			N
ANNEX I: 5. Targets and objectives	• Estimation of the number of alternative fuel vehicles expected by 2020, 2025 and 2030	Road / combined AF		Y
	• Level of achievement of the national objectives for the deployment of alternative fuels in the different transport modes (road, rail, water and air)			N
	• Level of achievement of the national targets, year by year, for the deployment of alternative fuels infrastructure in the different transport modes			N
	• Information on the methodology applied to take account of the charging efficiency of high power recharging points	All	Electricity	N
ANNEX I:6 Alternative fuels infrastructure developments	Changes in supply (additional infrastructure capacity) and demand (capacity actually used)			N

The checklist shows that the requirements of Annex I from the Directive are scarcely covered in the Estonian NIR.

The Estonian NIR does not offer any quantitative future AFI targets and provides only AFV estimates on a cumulative all-AFs level.

The EE NIR reports 13 measures in total. Under the Policy and Deployment & Manufacturing sections it was possible to identify three AF/transport mode clusters of measures, all assessable.

▪ **Quantitative assessment: Vehicles and infrastructure**

Table Error! No text of specified style in document.-2 National AFV estimates and AFI targets established in the NIR at the horizon 2020, 2025 and 2030 and their comparison with the NPF situation

Alternative fuel / Transport mode		2018		2020		2025		2030	
		AFV	AFI public	AFV	AFI public	AFV	AFI public	AFV	AFI public
General AF / road	NIR	5,500 (8,676*)	484*	7,000	NA	14,200	NA	25,000	NA
Electricity / road	NIR	1,434*	394*	NA	NA (384***)	NA	NA (384***)	NA	NA
	Change NIR vs NPF [%]								
	Attainment [%]								
CNG / road	NIR	1,014*	10*	NA	19**	NA	19**	NA	19**
	Change NIR vs NPF [%]				18.75%				
	Attainment [%]				52.63%		52.63%		52.63%
LNG / road	NIR	0*	0*	NA	NA (1***)	NA	NA	NA	NA
	Change NIR vs NPF [%]								
	Attainment [%]								
LNG / water (maritime)	NIR	NA	NA	NA	NA (1***)	NA	NA	NA	NA
	Change NIR vs NPF [%]								
	Attainment [%]								
LPG / road	NIR	6,160*	80*	NA	NA	NA	NA	NA	NA
	Change NIR vs NPF [%]								
	Attainment [%]								

Legend:		not applicable
		the value could not be computed
	NA	no value/information provided/available in the NIR

* Data from EAFO since the EE NIR did not provide detailed information, ** Values corresponding to 2019 from EAFO (the NIR mentions that the CNG infrastructure was established in 2019 and no further plans are presented), *** Targets from the EE NPF.

- Road transport

NOTE: Similarly to the NPF, there are no fuel-specific AFV estimates presented in the Estonian NIR. Instead, an overall projection of AFV on Estonian roads is provided. Total AFV fleet is foreseen to develop from 5,500 vehicles in 2018 to 7,000 in 2020, 14,200 in 2025 and 25,000 in 2030.

The Estonian NIR provides no quantitative future AFI targets for any alternative fuel.

The NIR mentions that Estonia will complete its National Transport and Mobility Development Plan 2021+ by the end of 2020 in order to set new national objectives for the deployment of alternative fuels and their infrastructure.

- Electricity

Vehicles

The Estonian NIR does not provide the 2016-2018 quantitative situation regarding electric vehicles. According to EAFO, Estonia recorded 1,434 battery-electric and plug-in hybrid electric vehicles in use in 2018, of which 1,377 were passenger cars, 31 LCVs and 26 buses and coaches (Table Error! No text of specified style in document.-2).

Similarly to the Estonian NPF, the NIR did not provide future electric vehicle estimates and the 2018 **attainment** and **progress** could not be computed.

Infrastructure

The Estonian NIR does not provide the 2016-2018 quantitative situation regarding publicly accessible recharging infrastructure. According to EAFO, Estonia recorded 384 publicly accessible recharging points in 2016 and 2017, and 394 in 2018 (Table Error! No text of specified style in document.-2).

In the Estonian NIR, no specific future targets are listed concerning the development of electric recharging points. Instead, the long-term vision is loosely described as planned to achieve recharging infrastructure that would be convenient for all users.

The Estonian NIR mentions that, during the process of privatising the national recharging infrastructure, obligations derived from the AFI Directive were put on the new owners (e.g. adding 'Combo 2' sockets to the existing/future high-power recharging points, distance between recharging points). Developing the national recharging infrastructure is considered to depend on the business plan of the new owners.

The targets for 2020 and 2025 considered in the Estonian NPF assessment were both equal to 384 publicly accessible recharging points.

Because the Estonian NIR did not provide any future targets for publicly accessible recharging points, the 2018 **attainment** and **progress** could not be computed.

Ratio

Based on the EE NIR, the following table shows the ratio between vehicles and publicly accessible recharging points (i.e. sufficiency index) for the pair electricity/road. Because the Estonian NIR did not provide present values and future targets, the sufficiency index could only

be computed for 2016 and 2018 by using data from EAFO. The 2016 - 2018 situation is considered adequate since the sufficiency index is inferior to the indicative value of 10.

Sufficiency Index		2016	2017	2018	2020	2025	2030
Road	Electricity	3.27*		3.64*			

* data from EAFO

Information on charging efficiency

The NIR mentions that, due to Estonia's privatization process of the recharging infrastructure, the specific methodology to take account of the charging efficiency of high power (>22kW) recharging points is subject to the developer's business plan.

○ CNG

Vehicles

The Estonian NIR does not provide the 2016-2018 quantitative situation regarding CNG vehicles. The report only mentions that public transport in Estonia is largely based on natural gas buses and some support vehicles at airports use biogas.

According to EAFO, Estonia recorded 1,014 CNG vehicles in use in 2018, of which 651 were passenger cars, 170 LCVs, 82 HCVs and 111 buses and coaches (Table Error! *No text of specified style in document.*-2).

There are no future CNG vehicle estimates provided in the Estonian NIR, thus the 2018 **attainment** and **progress** could not be computed.

Infrastructure

The Estonian NIR does not provide the 2016-2018 quantitative situation regarding publicly accessible CNG refuelling infrastructure. According to EAFO, Estonia recorded 6 CNG refuelling points in 2016 and 2017, 10 in 2018 (and 19 in 2019).

The Estonian NIR provides no specific quantitative future targets for publicly accessible CNG refuelling points but reports that the nationwide CNG and biogas refuelling infrastructure has already been established in 2019, funded by the government and the private sector that contributed each with 2.78 million €. In the case of biogas, it is added that the refuelling infrastructure is developing on demand.

In accordance with the statement of the EE NIR, the current assessment considers the future number of CNG refuelling points to remain the same as in 2019 (Table Error! *No text of specified style in document.*-2). This considered target for 2020 is 18.75% higher than the NPF target of 16 CNG refuelling points.

The 2018 **attainment** of future publicly accessible CNG refuelling infrastructure targets is constant and equal to 52.63% for 2020, 2025 and 2030. According to the assessment methodology described in Section 2.1, the 2018 situation corresponds to a **fast progress** towards reaching these envisaged targets. The calculated **average annual growth rate** corresponding to

the period 2016-2030 for publicly accessible CNG refuelling infrastructure evolution planned by Estonia is equal to 7%.

Ratio

The following table shows the ratio between vehicles and publicly accessible CNG refuelling points (i.e. sufficiency index) for the pair CNG/road. As is the case for electricity/road, the sufficiency index could only be computed for the 2016 - 2018 period by using data from the Estonian NPF and from EAFO, respectively. The 2016 - 2018 situation is considered adequate since the sufficiency index is inferior to the indicative value of 600 (see Section 2.1.5).

Sufficiency Index		2016*	2017**	2018**	2020	2025	2030
Road	CNG	333.33	154.17	101.40			

* data from EE NPF; ** data from EAFO

○ LNG

Vehicles

Similarly to the Estonian NPF, there is no information provided about LNG vehicles in the Estonian NIR. Therefore, the 2018 **attainment** and **progress** could not be computed.

Infrastructure

There is no information provided about road LNG refuelling points in the Estonian NIR. According to EAFO, Estonia did not record any road LNG refuelling points in 2018.

The NPF target for 2020 was equal to one road LNG refuelling point.

Since there are no road LNG refuelling points targets provided in the Estonian NIR, the 2018 **attainment** and **progress** could not be computed.

Ratio

Since there is no current LNG infrastructure available and no targets were provided in the Estonian NIR, it is not possible to compute the sufficiency index.

○ Hydrogen

Vehicles

The Estonian NIR mentions that hydrogen vehicles are only slowly entering the Estonian market. On the basis of this observation, the Estonian NIR stipulates that no concrete actions have thus been taken.

Similarly to the Estonian NPF, there are no future hydrogen vehicle estimates provided in the Estonian NIR. Therefore, the 2018 **attainment** and **progress** could not be computed.

Infrastructure

The Estonian NIR provides no quantitative information for hydrogen refuelling points. According to the Estonian NIR, different ideas have been put forward on the hydrogen refuelling infrastructure, but no concrete targets or actions have yet been declared.

According to EAFO, Estonia did not record any hydrogen refuelling points in 2018.

Since there are no hydrogen refuelling points targets provided in the EE NIR, the 2018 **attainment** and **progress** could not be computed.

Ratio

Since there is no current hydrogen refuelling infrastructure available and no targets were provided in the Estonian NIR, it is not possible to compute the sufficiency index.

- Biofuels

Vehicles

Information is not available in the Estonian NIR.

Infrastructure

Information is not available in the Estonian NIR.

- LPG

Vehicles

The Estonian NIR does not provide information on the number of LPG vehicles. According to EAFO, Estonia recorded 6,160 LPG vehicles in use in 2018, all of them being passenger cars (Table Error! No text of specified style in document.-2).

Infrastructure

The Estonian NIR does not provide information on the number of LPG refuelling points. According to EAFO, Estonia recorded 55 LPG refuelling points in 2016, 60 in 2017, and 80 in 2018.

Ratio

The following table shows the ratio between vehicles and publicly accessible LPG refuelling points (i.e. sufficiency index) for the pair LPG/road. The sufficiency index could only be computed for 2016 and 2018 by using data from NPF and EAFO.

Sufficiency Index		2016	2017	2018	2020	2025	2030
Road	LPG	54.55*		77**			

* Calculated from NPF and EAFO values; ** Calculated from EAFO values

- Rail transport
 - Electricity

Vehicles

The Estonian Cabinet of Ministers has approved the acquisition of six electric trains by the public transport company ELRON (see also Section 5.6.4.2.2).

Infrastructure

The Estonian Cabinet of Ministers decided to fully electrify Estonia's railway system by 2028. Design work begins in 2020 and construction work will commence in 2022 (see also Section 5.6.4.2.2).

- Waterborne transport (maritime)
 - Electricity

Vessels

Information is not available in the Estonian NIR.

Infrastructure

According to the previously evaluated Estonian NPF, there was one maritime port equipped with shore-side electricity supply in 2016. The target set out in the NPF for 2020 and 2025 accumulated to 11 maritime ports with shore-side electricity supply available. It is not clear if this target is still meant to be achieved as the Estonian NIR does not provide any information on shore-side electricity supply.

- LNG

Vessels

Information is not available in the Estonian NIR. However, one LNG vessel was mentioned in the Estonian NPF that began sailing the Tallinn–Helsinki line in 2017.

Infrastructure

No information was provided regarding LNG refuelling infrastructure in maritime ports along the TEN-T Core Network in the Estonian NIR. The NPF target for 2020 was one LNG terminal in the TEN-T Core maritime port of Tallinn.

- Waterborne transport (inland)

Not applicable since Estonia has no inland ports in the TEN-T Core Network.

- Air transport
 - Electricity

Airplanes

No specific information was found in the Estonian NIR.

Infrastructure (for stationary airplanes)

The Estonian NIR does not provide any information on electricity supply for stationary airplanes. According to the EE NPF, there was electricity supply available for stationary airplanes at the five Estonian airports with international flights in 2016. However, the NPF did not contain information on future plans.

- *Biofuels*

Airplanes

The Estonian NIR reports that the aviation sector has signalled openness to introduce machinery powered by alternative fuels. There are, however, no big investments expected due to low volumes.

Infrastructure

The Estonian NIR does not provide information on the introduction of renewable jet fuel refuelling points.

▪ ***Measures assessment***

The Estonian NIR mentions a series of measures that cumulate in three AF/transport mode clusters. Unfortunately, the Estonian NIR falls short of providing detailed information needed to perform the assessment. Many measures are vaguely defined or lack concrete information. The need to report this information has already been emphasized in the previous assessment of the Estonian NPF.

- Legal measures

The Estonian NIR contains three legal measures to promote AFs. The previous NPF contained three measures as well, but different ones.

- Legislative & Regulatory

The legislative & regulatory category of the Estonian NIR contains two measures. The planned measures are the above-mentioned National Transport and Mobility Development Plan 2021+ setting national deployment and AFI targets as well as a new regulation for 2021 requiring new building projects to install electric recharging points relative to the availability of parking spaces. Two different legislative and regulatory measures have been featured in the Estonian NPF. These concerned a memorandum of cooperation for the implementation of shore-side

electricity supply in Estonia's Baltic maritime ports as well as the Estonia-Latvia cross-border cooperation programme for a joint network of small ports. The current Estonian NIR does not indicate whether these measures have been successfully implemented or not.

- Administrative

The Estonian NIR reports solely one administrative measure. The member state mentions the EU Clean Vehicles Directive which stipulates that 31% and 43% of public buses procured by 2025 and 2030, respectively, must be clean vehicles with half of those operating with zero emissions. The past Estonian NPF also reported only one administrative measure, which concerned biofuels blending mandates for petrol and diesel fuel. This measure was mentioned as adopted and has not been reported again in the Estonian NIR.

- Policy measures

The Estonian NIR reports eight policy measures intended to foster alternative fuels in Estonia. Only one measure is featured in both NPF and NIR, seven have been newly introduced. This is an improvement compared to the NPF, which contained only three policy measures. Most policy measures in the Estonian NIR are financial incentives. The modes of transport covered are road or a combination of modes where fuels as such have been subject of the measures. The policy measures target exclusively electricity and CNG (including biomethane).

- Measures to ensure national targets and objectives

Road transport

Six of the eight policy measures in the Estonian NIR are measures to ensure national targets and objectives. All six measures exclusively focus on electricity/road as well as CNG/combination of modes.

The three measures concerning electricity/road are all new measures that did not appear in the NPF. The most substantial among them is a purchase incentive with an allocated budget of 1.2 million € for the purchase of electric vehicles announced to begin at the end of 2019. The maximum grant per EV is €5,000. The other measures include discounts and free parking for electric vehicles in various cities as well as the possibility for EVs to use bus lanes.

As a fuel-specific measure, biomethane is exempt from excise duty in Estonia. Additionally, no excise warehouse permit is required for production and sale of biomethane. Information campaigns have been conducted to educate the population on biomethane, with a budget of €120,000 for the last two years, which included, among others, creating the Biomethane Advisory Council, advertising, launching a biomethane website and seminars.

- Measures that can promote AFI in public transport services

The Estonian NIR lists two new measures that can promote AFI in public transport services. They are both related to rail transport (see next paragraph). The previous NPF offered a measure

concerning the introduction of natural gas-powered public buses. The Estonian NIR does not refer to this past measure again.

Rail transport

The Estonian Cabinet of Ministers decided to fully electrify Estonia's railway system by 2028 for an estimated total cost of 300 million €. It is foreseen that design work begins in 2020 and construction work in 2022. The Cabinet of Ministers additionally aims to purchase six new electric trains for an estimated cost of 60 million €.

- Measures that can promote the deployment of private electro-mobility infrastructure

The Estonian NIR does not list any measure that can promote the deployment of private electro-mobility infrastructure.

- Deployment and manufacturing support
 - AFI deployment

The Estonian NIR lists two measures fostering the deployment and manufacturing support of alternative fuels. The first measure was due to expire at the end of 2019. It supported the maintenance of the electric recharging infrastructure for an amount of €50,000 per month. The Estonian NIR argues, however, that due to the privatisation of the recharging infrastructure no financial support is needed anymore. The second measure concerns the deployment of the nation-wide CNG refuelling infrastructure and has also been listed in the NPF but updated since. The Estonian NIR argues that no further action is needed as the complete CNG infrastructure has been established in 2019. Public and private investors contributed 2.78 million € each.

The Estonian NIR does not consider any other transport modes or other alternative fuels other than CNG and electricity in this section.

- Support of manufacturing plants for AF technologies

No measures regarding the support of manufacturing plants for AF technologies are presented in the Estonian NIR.

- Consideration of any particular needs during the initial phase of the deployment of alternative fuels infrastructures

The Estonian NIR provides no information on this subject.

- Quantitative assessment of Policy and Deployment & Manufacturing measures

Table Error! No text of specified style in document.-3 presents an overview of the analysis of all the Policy and Deployment & Manufacturing measures, carried out according to the assessment

methodology described in Section 2.2. No clusters of measures have emerged for hydrogen, LNG and LPG nor for waterborne and air transport modes.

Electricity/road is a new cluster appearing only in the NIR. While it results comprehensive since it concerns both vehicles and infrastructure (with financial and non-financial measures), it obtained a medium overall score influenced by the lack of specific details that made the assessment very difficult. Electricity/rail is also a cluster newly introduced in the NIR. It is comprehensive and has a medium overall score.

CNG/road cluster was already present in the NPF, where it was assessed with an overall medium score and as comprehensive. In the EE NIR, the result of the assessment is different (high overall score but not comprehensive).

In terms of expected impact of these measures to support the realisation of the AFV/AFI objectives as presented in the NPF and revised in the NIR, the lack of objectives and information related to budget allocations, does not allow to put this assessment into the right perspective. However, on the basis of a comparison of the Estonian measures with those provided by other Member States, it can be said that the measures for the pairs electricity/road, electricity/rail and CNG/road could have a medium impact. The three identified clusters of measures show a higher level of ambition compared to the NPF.

Table Error! No text of specified style in document.-3 Quantitative assessment of Policy and Deployment & Manufacturing support measures

AF	Transport mode	Score	Comprehensiveness	Impact	Ambition (NIR vs NPF)
Electricity	Road	M	C	M	+
CNG	Road	H	N	M	+
LNG	Road				
	Water - maritime				
Electricity	Rail	M	C	M	+

Legend: Score and Impact: H = high; M = medium; L = low; X = not assessable. Comprehensiveness: C = comprehensive; N = Not comprehensive. Ambition level: '+' means 'higher'; '=' means 'comparable'; '-' means 'lower'.

- Research, Technological Development & Demonstration

The Estonian NIR does not list any measures that can be assessed as supporting research, technological development and demonstration (RTD&D). Two measures presented only in the NPF concerned a pilot project at the University of Tartu, which at the time of 2017 planned to acquire the first hydrogen powered public buses and to build a hydrogen refuelling point. These measures were under consideration in the NPF and their current status is unclear as the Estonian NIR does not mention them anymore.

- *Additional information on alternative fuels infrastructure developments*

The Estonian NIR does not provide information on the changes in fuel use.

▪ *Summary of the assessment*

Tabular overview

Table Error! No text of specified style in document.-4 Overview of the NIR assessment

		Indicators	Alternative fuel / transport mode				
			Electricity / road	CNG / road	LNG / road	LNG / water (maritime)	LPG / road
AF Vehicles / Vessels	Past situation (2016)		1,257**	2,000*	0**	1*	5,840**
	Situation (2018)		1,434**	1,014**	0**	NA	6,160**
	Estimate (2030)		NA	NA	NA	NA	NA
	Future share (2030) [%]						
	Estimate attainment (2018 vs 2030) [%]						
	Progress (2018)						
Publicly accessible AF Infrastructure	Past situation (2016)		384**	6*	0**	NA	55**
	Situation (2018)		394**	10**	0**	NA	80**
	Target (2030)		NA	19***	NA	NA	NA
	Target attainment (2018 vs 2030) [%]			52.63%			
	Progress (2018)			fast			
Sufficiency Index	2016		3.27	333.33			106.18
	2018		3.81	101.40			77.00
	2020						
	2025						
	2030						
Measures	Legal measures	Ambition (IR vs NPF)	+				
	Policy measures	Score	M	H			
	+	Comprehensiveness	C	N			
	Deployment & manufacturing	Impact	M	M			
		Ambition (IR vs NPF)	+	+			
	RTD&D	Ambition (IR vs NPF)					

Legend:		not applicable
		the value could not be computed
	NA	no value/information provided/available in the NIR

* Value taken or calculated from EE NPF. ** Value taken from EAFO (absent in the NIR). *** Values corresponding to 2019 from EAFO (the NIR mentions that the CNG infrastructure was established in 2019 and no further plans are presented).

The requirements of Annex I from the Directive are only partly covered in the Estonian NIR. The NIR does not contain a sufficient description of the policy direction towards the introduction of alternative fuels in Estonia. It does not establish AFI targets nor does it present AFV estimates differentiating between the different kinds of fuels. The EE NIR only provides an overall projection of AFV on Estonian roads. However, it mentions that a National Transport and Mobility Development Plan 2021+ will be completed by the end of 2020. The plan will set new national targets for the deployment of alternative fuels and their infrastructure.

The main outcomes of the technical assessment of the Estonian NIR on vehicles/vessels estimates and infrastructure targets can be summarised as follows:

Road transport

- **Electricity** – According to EAFO, Estonia recorded 1,434 electric vehicles in 2018 (1,377 passenger cars, 31 LCVs, 0 HCVs and 26 buses and coaches). There are no quantitative infrastructure targets or vehicle estimates outlined in the Estonian NIR. It is only mentioned that their vision is to achieve recharging infrastructure that would be convenient for all users. The recharging infrastructure was privatised and its further development is considered to depend on the business plan of the new owners. Due to the lack of reported values, the sufficiency index, progress and target attainment could not be calculated.
- **CNG** – According to EAFO, Estonia recorded 1,014 CNG vehicles in use in 2018 (651 passenger cars, 170 LCVs, 82 HCVs and 111 buses and coaches). As in the NPF, the Estonian NIR does not provide estimates for CNG vehicles. The NIR signals that the CNG infrastructure was completely established in 2019 so that the value of 19 CNG refuelling points was considered as the target for the future years. With reference to the objectives of the EE NPF as updated by the NIR, in 2018 Estonia was progressing fast in terms of CNG infrastructure deployment.
- **LNG** – According to EAFO, Estonia did not record any road LNG refuelling points or vehicles in 2018. Similarly to the NPF, the EE NIR does not include quantitative estimates for road vehicles powered by LNG. Regarding LNG refuelling infrastructure, the EE NIR does not provide any future target while the NPF had presented a target of one LNG refuelling point for 2020.
- **Hydrogen** – The Estonian NIR mentions that, because hydrogen vehicles are only slowly entering the Estonian market, no concrete objectives or actions have yet been declared.
- **Biofuels** – Information is not available in the Estonian NIR.
- **LPG** – According to EAFO, Estonia recorded 6,160 LPG vehicles on the road and 80 LPG refuelling points in 2018. Similarly to the NPF, the Estonian NIR does not provide estimates for LPG vehicles or targets for LPG refuelling infrastructure.

Rail transport

- **Electricity** – The electrification process of Estonia's railway system is set to be completed by 2028.

Waterborne transport (maritime)

- **Electricity** – The Estonian NIR does not provide any information on shore-side electricity supply. The NPF had mentioned one port was equipped with shore-side electricity supply in 2016 and included a target of 11 maritime ports with shore-side electricity supply available in 2020 and 2025.
- **LNG** – Regarding LNG refuelling infrastructure in maritime ports along the TEN-T Core Network, the EE NIR does not provide any future target while the NPF had presented a target of one LNG terminal in the port of Tallinn for 2020.

Air transport

- **Biofuels** – According to the Estonian NIR, the aviation sector has signalled openness to introduce machinery powered by alternative fuels but no big investments are expected due to low volumes.

The Estonian NIR contains a modest list of **measures** to support the substitution of conventional fuels with alternative fuels. Most of the presented measures lack concrete information needed

for a proper assessment. The number of legal measures remained the same in the NIR as in the NPF, but they are totally different. Concerning the Policy and Deployment & Manufacturing support measures, compared with the NPF, the level of ambition has increased for all the three existing clusters in the NIR: electricity/road, electricity/rail and CNG/road. The first two clusters are totally new in the NIR, while the CNG/road cluster was already present in the NPF.

On the basis of the assessment methodology described in Section 2.2, the new electricity/road and electricity/rail clusters were assessed to have medium impact towards reaching the electromobility objectives of Estonia. The CNG/road cluster was assessed as well to have a medium impact towards reaching the CNG objectives of Estonia.

The Estonian NIR does not provide information about measures that can be assessed as supporting RTD&D of AFI and AFV.

▪ *Final remarks*

The Estonian NIR provides a rather limited report on the efforts to implement the Directive. It does not provide information on several requirements of Annex I to the Directive: it does not offer any quantitative targets for alternative fuels infrastructure deployment and provides generic alternative fuels vehicles estimates without differentiation per fuel. It should be noted that the information on shore-side electricity supply at ports and airports, included in the NPF, is not included in the NIR. Nor is there any mention of LNG vessels, while, according to the NPF, these should have started sailing on the Tallinn-Helsinki line in 2017. The NIR focuses on measures promoting electricity for road and rail transport and CNG for vehicles. Future reporting should include information on measures to support ramp up of other alternative fuels in other modes of transport. This could contain particularly more information on promotion of zero-emission vehicles up to 2030. Following the requirements under the Directive, targets for the coverage of publicly accessible infrastructure need to be established and the numbers of specific alternative fuel vehicles and infrastructure need to be adequately quantified and reported.

With regard to electricity, the lack of specific data prevents an assessment of the ambition for 2030. Taking into account the current situation and expected trends, which have been derived either from the NPF or from EAFO, Estonia's level of ambition appears quite low compared to the pace of deployment of electric vehicles considered necessary for a full transition to carbon neutrality by 2050. In this context, increased deployment of the relevant recharging infrastructure is also crucial to meet the objective of realising a dense, wide-spread and easy to use network of recharging and refuelling infrastructure throughout the EU. No information on charging efficiency is provided. The supply of shore-side electricity supply in ports and of electricity supply to stationary aircraft in airports needs to be clarified due to discrepancies between the information given in the NPF and the lack of information in the NIR. The railway network is expected to be fully electrified by 2028.

Regarding hydrogen, the NIR does not provide any plan for the development of an infrastructure for HCEV and does not provide information on fleet development. Although hydrogen is not binding under the Directive, it would be relevant that Estonia provides information on how to ensure EU-wide connectivity for HCEV.

As to natural gas, according to the information provided in the NIR, 19 CNG refuelling points were in place in 2019. The NIR expects no additional deployment of CNG refuelling infrastructure until 2030. Furthermore, the NIR does not report estimates for LNG vehicles and vessels nor targets for the relevant infrastructure. Estonia should provide further information in future reporting..

With regard to LPG infrastructure, the NIR does not provide information. However, EAFO shows that Estonia already had fleet of 6,160 LPG vehicles and around 80 refuelling stations in 2018, with decreasing registrations, but the Estonian NIR does not provide any estimates of vehicles and infrastructure by 2020, 2025 and 2030.

Estonia should provide more information in future reporting on efforts to promote the use of renewable fuels in transport, and particularly in aviation.

▪ ***ANNEX - Description of the Member State***

On a surface area of 45,200 km², Estonia has a population of 1.319 million people in 2018, which makes up for a population density of 29 inhabitants/km².

Number of main urban agglomerations

- 3 urban agglomerations > 50,000 inhabitants

In 2018, Estonia achieves a per capita gross domestic product at market prices of €19,740, which represents a per capita gross domestic product in purchasing power standards of 82 if expressed in relation to the EU-28 average set to equal 100.

Length of the road networks

The length of the road TEN-T Core Network in Estonia is 481 km. The total road network length is 16,604 km, of which 154 km are motorways.

The following lengths of the TEN-T Road Corridors are present in Estonia: 5% (192 km) of the North Sea - Baltic Corridor.

Through the TEN-T Road Corridors, Estonia is connected with the following Member States:
- Latvia (through the North Sea - Baltic Corridor)

Number of registered road vehicles

At the end of 2017, Estonia accounts for 924,802 registered road vehicles of which 746,464 are categorized as passenger cars, 83,313 as light goods vehicles, 38,229 as heavy goods vehicles and 5,026 as buses and coaches. The motorisation rate is 566 passenger cars per 1,000 inhabitants.

Number of ports in the TEN-T Core Network

- 1 maritime port in the TEN-T Core Network (Tallinn)
- 7 maritime ports in the TEN-T Comprehensive Network
- No inland ports

Number of airports in the TEN-T Core Network

- 1 airport in the TEN-T Core Network (Tallinn)
- 4 airports in the TEN-T Comprehensive Network

