NEMZETI FEJLESZTÉSI MINISZTÉRIUM

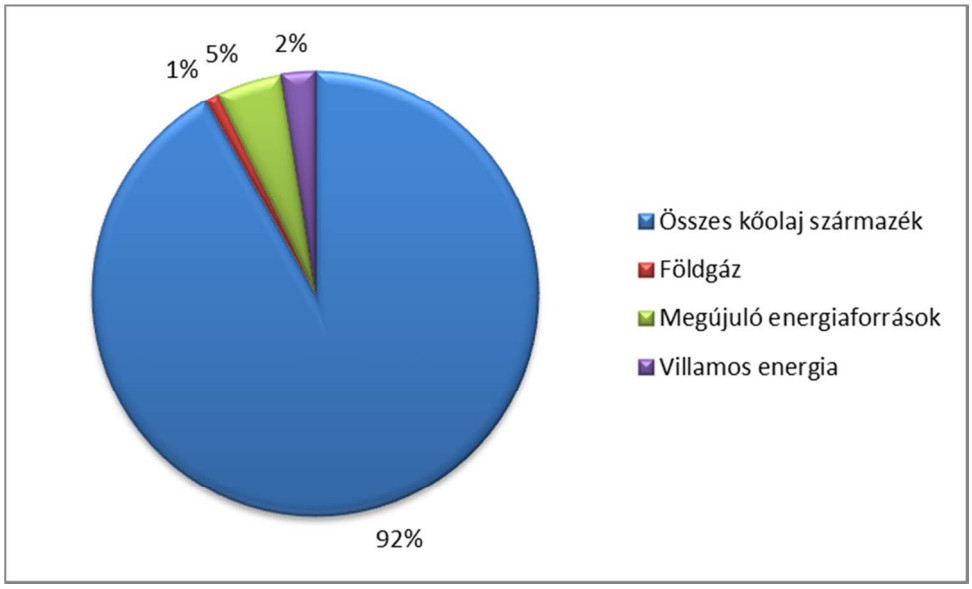
MINISTRY OF NATIONAL DEVELOPMENT

The programme ‘National policy framework as defined by the Directive on the deployment of alternative fuels infrastructure’

2016

1. CURRENT STATE OF ALTERNATIVE FUELS USED IN THE TRANSPORT SECTOR

1.1 BREAKDOWN OF FUELS USED IN TRANSPORT



Source: Hungarian Energy and Public Utility Regulatory Authority (2014)

Összes kőolaj származék	=	All petroleum derivatives
Földgáz	=	Natural gas
Megújuló energiaforrások	=	Renewable energy sources
Villamos energia	=	Electricity

1.2 THE NUMBER OF ALTERNATIVE FUEL VEHICLES, according to 2015 year-end data

Table 1.1: Current number of alternative fuel vehicles*

ALTERNATIVE FUEL VEHICLES	NUMBER OF VEHICLES
	2015
Electric passenger cars	332 (FEV)[1] + 8 388 (HEV)[2]
Light-duty electric trucks	40 (FEV) + 8 (HEV)
Heavy-duty electric trucks	0
Electric buses	23 (FEV) + 67 (HEV)
Electric motorcycles	77 (FEV) + 2 (HEV)
CNG[3] passenger cars	1,742
CNG light-duty trucks <3.5t	429
CNG heavy-duty trucks >3.5t	81
CNG buses	133
LNG[4] light-duty trucks	0
LNG heavy-duty trucks	0
LNG buses	0
Hydrogen-powered passenger cars	0
Hydrogen-powered light-duty trucks	0
Hydrogen-powered heavy-duty trucks	0
Hydrogen-powered buses	0
LPG[5] passenger cars	24,037
LPG light-duty trucks	826
LPG heavy-duty trucks	6
LPG buses	3
Biofuel-powered passenger cars	461
Biofuel-powered light-duty trucks	13
Biofuel-powered heavy-duty trucks	5
Biofuel-powered buses	0
Passenger cars using synthetic or paraffinic fuels	-
Light-duty trucks using synthetic or paraffinic fuels	-
Heavy-duty trucks using synthetic or paraffinic fuels	-
Buses using synthetic or paraffinic fuels	-

Source: Central Office for Administrative and Electronic Public Services

*****: The Central Office for Administrative and Electronic Public Services registers electric vehicles only as either purely electric or hybrid vehicles. Electromobile vehicles (EV, i.e. vehicles powered by batteries or rechargeable from external sources across all vehicle categories (M1, N1, L)) for which the targets in Chapter 2 are defined cannot be distinguished on the basis of the records. Hereinafter, the term 'electric vehicle' refers to vehicles powered

[1] FEV = Full Electric Vehicle
[2] HEV = Hybrid Electric Vehicle
[3] CNG = Compressed Natural Gas
[4] LNG = Liquefied Natural Gas
[5] LPG = Liquefied Petroleum Gas

by batteries (battery electric vehicles – BEV) and vehicles rechargeable from an external source (plug-in hybrid electric vehicles – PHEV).

1.3 ELECTRICITY

Table 1.2: Current number of recharging points

Electricity	Number of recharging points
	2015
Normal-power recharging points (public)	114
High-power recharging points (public)	14
Normal-power recharging points (private)	N/A
High-power recharging points (private)	N/A
Shore-side electricity supply in maritime and inland navigation ports (terminals)	28
Electricity supply to stationary airplanes at airports	9

Source: Background study prepared by the Institute for Transport Sciences

1.4 NATURAL GAS

Table 1.3: Current number of natural gas refuelling points

Natural gas	Number of refuelling points
	2015
Refuelling points for CNG vehicles (public)	8
Refuelling points for CNG vehicles (private)	15
Refuelling points for heavy-duty LNG trucks (public)	0
Refuelling points for LNG trucks (private)	0
LNG refuelling points at maritime ports	0
LNG refuelling points at inland ports	0

Source: Background study prepared as part of the PAN-LNG project of the Hungarian Gas-powered Transport Cluster Association

1.4 HYDROGEN

Table 1.4: Current number of hydrogen refuelling points

Hydrogen	Number of refuelling points	
	2015 (350 bar)	2015 (700 bar)
Refuelling points (public)	0	0
Refuelling points (private)	0	0

1.6 OTHER ALTERNATIVE FUELS (LPG, BIOFUEL, SYNTHETIC AND PARAFFINIC FUELS)

Table 1.5: Current number of refuelling points for other alternative fuels

Other alternative fuels	Number of refuelling points for other alternative fuels 2015
Refuelling points for LPG vehicles (public)	611
Refuelling points for LPG vehicles (private)	N/A
Biofuel refuelling points (public)	110
Biofuel refuelling points (private)	N/A
Synthetic and paraffinic fuels refuelling points (public)	0
Synthetic and paraffinic fuels refuelling points (private)	0

2. NATIONAL OBJECTIVES AND TARGETS

2.1 PERCENTAGE TARGETS FOR ALTERNATIVE FUELS USED IN TRANSPORT

To encourage the use of biofuels, annual sales quotas were defined in 2010 for Hungarian fuel distributors by Government Decree No 343/2010. As per current regulations, at least **4.9% of energy** of the total motor gasoline and diesel fuel quantity marketed by Hungarian fuel distributors between 1 January 2014 and 31 December 2018 must come from biofuels.

National legislation serves to fulfil the obligation set out for Member States in Article 3(4) of Directive 2009/28/EC of the European Parliament and of the Council on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC. The Directive requires each Member State to ensure that the share of energy from renewable sources in transport by 2020 is at least **10%** of the final consumption of energy in transport in that Member State.

The rules for meeting this obligation (especially in terms of sustainability and traceability) were radically changed by Directive (EU) 2015/1513 of the European Parliament and of the

Council, which stipulates that the share of energy from biofuels produced from cereals and other starch-rich crops, sugar crops, oil crops and from crops grown as main crops primarily for energy purposes on agricultural land must be no more than 7% of the final consumption of energy in transport in the Member States in 2020. Accordingly, the remaining 3% should come from so-called advanced biofuels[6], and other renewable energy sources (e.g. from electricity produced from renewables, hydrogen or CNG/LNG).

2.2 TARGETS FOR VEHICLES POWERED BY ALTERNATIVE FUELS

Various scenarios have been prepared to forecast the penetration of vehicles powered by alternative fuels and of the associated infrastructure due to the current changing economic environment and rapid technological advances.

The low-penetration scenario assumes that current economic growth projections do not materialise and no further incentives are introduced. However, Hungary would still meet the targets identified in the Directive even under the low-penetration scenario.

The realistic penetration scenario assumes that the present legal and economic environment is sustained and the current subsidy schemes are continued.

The high-penetration scenario assumes more rapid technological advances in alternative fuel vehicles and an expansion of the present incentive system.

The targets were specified on the basis of the background study prepared by the Institute for Transport Sciences, the background studies for the PAN-LNG project, the Jedlik Ányos Plan and technical consultations with the Ministry of National Economy and other organisations participating in public consultation.

Table 2.1: Number of alternative fuel vehicles

Alternative fuel vehicles	Low-penetration scenario			Realistic penetration scenario			High-penetration scenario		
	2020	2025	2030	2020	2025	2030	2020	2025	2030
Electric passenger cars	12,000	38,400	59,600	21,000	81,600	181,900	53,778	205,699	450,099
Light-duty electric trucks	-	-	-	-	-	-	-	-	-
Heavy-duty electric trucks	-	-	-	-	-	-	-	-	-
Electric buses	150	-	-	200	-	-	300	-	-
Electric motorcycles	-	-	-	-	-	-	-	-	-
CNG passenger cars	17,000	37,500	122,000	34,000	187,000	284,000	68,500	262,000	405,000
CNG light-duty trucks	1,800	4,100	13,000	3,600	20,500	30,000	7,300	29,000	64,500
CNG heavy-duty trucks	450	1,250	3,200	1,650	4,750	10,100	2,950	9,600	20,100
CNG buses	500	700	1,000	750	1,500	2,700	1,500	2,800	4,100
LNG light-duty trucks	-	-	-	-	-	-	-	-	-
LNG heavy-duty trucks	350	800	2,300	2,500	6,000	13,500	3,500	8,000	18,000
LNG buses	0	150	350	50	300	700	150	1,100	2,000

[6] 'Advanced biofuels' means biofuels made from waste, forestry or agricultural residues, non-food cellulosic materials or ligno-cellulosic materials.

Hydrogen-powered passenger cars	0	15	30	15	30	80	25	60	120
Hydrogen-powered light-duty trucks	0	0	0	10	25	40	15	35	60
Hydrogen-powered heavy-duty trucks	-	-	-	-	-	-	-	-	-
Hydrogen-powered buses	5	10	20	10	20	30	15	35	50
LPG passenger cars	22,000	16,250	10,500	22,000	35,000	45,000	22,000	46,000	70,000

2.3 ELECTRICITY

Table 2.2: Target numbers for recharging points

Electricity	Low-penetration scenario			Realistic penetration scenario			High-penetration scenario		
	2020	2025	2030	2020	2025	2030	2020	2025	2030
Normal[7] and high[8]-power recharging points (public)	1,200	3,800	5,900	2,100	8,100	18,100	5,300	20,500	45,000
Rapid charging points[9] (public)	65	-	-	150	-	-	-	-	-
Normal-power recharging points (private)	-	-	-	-	-	-	-	-	-
High-power recharging points (private)	-	-	-	-	-	-	-	-	-
Shore-side electricity supply in maritime and inland navigation ports (terminals)	-	-	-	-	-	-	-	-	-
Electricity supply to stationary airplanes at airports	-	-	-	-	-	-	-	-	-

2.4 NATURAL GAS

Table 2.3: Target numbers for natural gas refuelling points

Natural gas	Refuelling points								
	Low-penetration scenario			Realistic penetration scenario			High-penetration scenario		
	2020	2025	2030	2020	2025	2030	2020	2025	2030
Refuelling points for CNG vehicles (public)	29	65	176	62	145	286	59	247	309
Refuelling points for CNG vehicles (private)	-	-	-	-	-	-	-	-	-
Refuelling points for heavy-duty LNG trucks (public)*	16	36	147	23	83	224	35	182	244

[7] A normal-power recharging point is a recharging point capable of delivering a maximum of 22 kW to an electric vehicle.

[8] A high-power recharging point is a recharging point capable of delivering more than 22 kW to an electric vehicle.

[9] A rapid recharging point is a recharging point capable of delivering more than 50 kW to an electric vehicle.

Refuelling points for LNG trucks (private)	-	-	-	-	-	-	-	-	-
LNG refuelling points at inland ports	1	6	8	1	6	8	1	6	8

***:** All LNG refuelling points established after 2020 are expected to be also CNG refuelling points.

2.5 HYDROGEN

Table 2.4: Target numbers for hydrogen refuelling points

Hydrogen	Refuelling points		
	2020	2025	2030
Refuelling points - 350 bar (public)	-	-	-
Refuelling points - 350 bar (private)	-	-	-
Refuelling points - 700 bar (public)	2	5	14
Refuelling points - 700 bar (private)	-	-	-

2.6 LPG

Table 2.5: Target numbers for LPG refuelling points

LPG	Refuelling points								
	Low-penetration scenario			Realistic penetration scenario			High-penetration scenario		
	2020	2025	2030	2020	2025	2030	2020	2025	2030
LPG Refuelling points (public)	610	530	450	630	650	700	650	700	750
LPG Refuelling points (private)	-	-	-	-	-	-	-	-	-

3. MEASURES ENSURING THAT NATIONAL OBJECTIVES AND TARGETS ARE REACHED

3.1 LEGISLATIVE MEASURES

- Act CXVII of 2010 on promoting the use of renewable energy in transport and reducing the greenhouse gas emission of energy used in transport.
- Government Decree No 343/2010 of 28 December 2010 on the requirements and certification of sustainable biofuel production.
- Directive 2009/28/EC of the European Parliament and of the Council on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC.

- Directive (EU) 2015/1513 of the European Parliament and of the Council amending Directive 98/70/EC relating to the quality of petrol and diesel fuels and amending Directive 2009/28/EC on the promotion of the use of energy from renewable sources.

- White paper: Roadmap to a Single European Transport Area - Towards a competitive and resource-efficient transport system (2011, COM).

3.1.1. Electricity (based on the Jedlik Ányos Plan)

- Government Decree No 369/2015 of 2 December 2015 classified as priority cases all public administrative procedures concerning the establishment of a basic recharging infrastructure for using electric vehicles under the Jedlik Ányos Plan, with effect from 3 December 2015.

- A Draft Act amending certain provisions of Act LXXXVI of 2007 on electricity was prepared and adopted by the National Assembly as part of Act CLXXXVI of 2015 on the reduction of bureaucracy, to enable operators of recharging points, as well as electricity traders, to sell electricity from electric vehicle recharging equipment without an electricity trading licence. The amendment to the implementing decree was published in Government Decree No 281/2016 of 21 September 2016 amending certain Government Decrees on energy.

- Decree No 4/2011 of 31 January 2011 of the Minister for National Development on the pricing of universal supply of electricity was amended, with effect from 1 January 2016, by Decree No 76/2015 of 29 December 2015 of the Minister for National Development, to enable the operation of residential equipment for recharging electric vehicles using different 'Time of Use' tariffs.

- Decrees Nos 39/2015 of 30 June 2015 and 40/2015 of 30 June 2015 of the Minister for National Development amending Decree No 5/1990 of 12 April 1990 of the Minister for Transport, Telecommunication and Building Affairs made it possible for operators of environmentally friendly vehicles to request green registration plates from 1 July 2015. Further provisions relating to green registration plates are set out in Government Decree No 467/2015 of 29 December 2015.

- The Ministry of National Development has been preparing a separate proposal on the amendment of Joint Decree No 1/1975 of 5 February 1975 of the Minister for Transport and Post and the Minister for the Interior on the rules of public road traffic in connection with the Jedlik Ányos Plan (use of bus lanes, free parking during recharging, etc.). Several municipalities (including Budapest) have authorised free parking for vehicles with green registration plates.

- Government Decree No 10/2016 of 9 February 2016 amending Government Decree No 253/1997 of 20 December 1997 on the national requirements for town planning and building and Government Decree No 306/2010 of 23 December 2010 on the protection of air, ensures that the criteria for promoting electro-mobility must be taken into consideration.

- Act CLXXXVII of 2015 amending Act XCII of 2003 on the rules of taxation and certain tax laws has been amended. As of 1 January 2016, no tax on the transfer of assets for consideration, vehicle tax, company car tax or registration tax is required to be paid for environmentally friendly vehicles.

3.2 POLITICAL ACTIONS AND INVESTMENTS

- Purchase subsidies: direct price subsidies for the purchase of purely electric passenger cars up to 21% of the purchase price (a maximum of EUR 5 000 per vehicle).
- Exemption from registration taxes: electric vehicles are exempt from registration tax.
- Exemption from ownership taxes: electric vehicles are exempt from annual vehicle tax.
- Exemption from company car taxes: electric vehicles are exempt from company car tax, and various 'Time of Use' tariffs may be applied.
- Local initiatives: free parking while recharging electric vehicles, free parking in certain municipalities (e.g. Budapest, Debrecen, Hódmezővásárhely), traffic allowances during smog alerts; support for municipalities for the installation of recharging points.

3.2.1 Support for installation and production

Table 3.1: Investment schemes for installation and production subsidies*

State projects		**Total amount of investment**			
Title of investment scheme	**Short description**	**2015**	**2016**	**2017**	**2018**
PAN-LNG 4 Danube project	Establishment of LNG refuelling station for vessels in the Freeport of Csepel, development of an LNG ship-to-ship bunkering vessel. The refuelling station opens the way to LNG-based navigation and also to later railway application.	-	-	EUR 3 m (HUF 930 m)	EUR 4.5 m (HUF 1.4 bn)
Jedlik Ányos Plan - Sub-scheme for electric refuelling stations for local municipalities	Support for the installation of public electric refuelling points accessible without discrimination and at any time in order to reduce the emission of greenhouse gases from traffic and to enable environmentally friendly vehicles to travel throughout the country.	-	EUR 4 m (HUF 1.2 bn)	N/A	N/A
Jedlik Ányos Plan – direct price subsidies for the purchase of electric passenger cars	Direct price subsidies for the purchase of purely electric passenger cars (for vehicles costing less than approx. EUR 48 300)	-	EUR 6.5 m (HUF 2.0 bn)	EUR 9.7 m (HUF 3 bn)	N/A

*****: exchange rate (September 2016): HUF 310 = EUR 1

Private projects		Total amount of investment			
Title of investment scheme	**Short description**	**2015**	**2016**	**2017**	**2018**
PAN-LNG project	Preparations for the establishment of LNG refuelling infrastructure in Hungary, installation of the first refuelling points and organising their supply.	-	EUR 5 m (HUF 1.5 bn)	EUR 12 m (HUF 3.7 bn)	N/A
Clean Fuel Box project	Promoting the establishment of CNG refuelling infrastructure in Hungary along TEN-T corridors by installing 39 innovative Clean Fuel Boxes, and the establishment of domestic production and international marketing capacities for the technology.	-	EUR 1 m (HUF 310 m)	EUR 7 m (HUF 2.2 bn)	EUR 4 m (HUF 1.2 bn)
LNG bus development	Development of LNG-powered Ikarus buses.	-	EUR 0.5 m (HUF 155 m)	N/A	N/A

*****: exchange rate (September 2016): HUF 310 = EUR 1

3.2.2 Research, technology development and demonstration (RTD&D)

Table 3.2: Research, technology development and demonstration projects*

State project		Total amount of investment			
Title of investment scheme	**Short description**	**2015**	**2016**	**2017**	**2018**
PAN-LNG 4 Danube project	Establishment of LNG refuelling station for vessels in the Freeport of Csepel, development of an LNG ship-to-ship bunkering vessel. The refuelling station opens the way to LNG-based navigation and also to later railway application.	-	-	EUR 1.5 m (HUF 465 m)	EUR 0.5 m (HUF 155 m)

*****: exchange rate (September 2016): HUF 310 = EUR 1

Private projects		Total amount of investment			
Title of investment scheme	**Short description**	**2015**	**2016**	**2017**	**2018**
Clean Fuel Box project	Promoting the establishment of CNG refuelling infrastructure in Hungary along TEN-T corridors by installing 39 innovative Clean Fuel Boxes, and the establishment of domestic production and international marketing capacities for the technology.	-	EUR 1 m (HUF 310 m)	EUR 2 m (HUF 620 m)	N/A

LNG bus development	Development of LNG-powered Ikarus buses.	-	EUR 0.5 m (HUF 155 m)	EUR 0.5 m (HUF 155 m)	EUR 0.5 m (HUF 155 m)

*: exchange rate (September 2016): HUF 310 = EUR 1

4. MEASURES PROMOTING THE EXPANSION OF PRIVATE ALTERNATIVE FUEL INFRASTRUCTURE

4.1 LEGISLATIVE MEASURES

- A Draft Act amending certain provisions of Act LXXXVI of 2007 on electricity was prepared and adopted by the National Assembly as part of Act CLXXXVI of 2015 on the reduction of bureaucracy, to enable operators of recharging points, as well as electricity traders, to sell electricity from electric vehicle recharging equipment without an electricity trading licence. The amendment to the implementing decree was published in Government Decree No 281/2016 of 21 September 2016 amending certain Government Decrees on energy.

- Decree No 4/2011 of 31 January 2011 of the Minister for National Development on the pricing of universal supply of electricity was amended, with effect from 1 January 2016, by Decree No 76/2015 of 29 December 2015 of the Minister for National Development, to enable the operation of residential equipment for recharging electric vehicles using different 'Time of Use' tariffs.

- Act CLXXXVII of 2015 amending Act XCII of 2003 on the rules of taxation and certain tax laws has been amended. As of 1 January 2016, no tax on the transfer of assets for consideration, vehicle tax, company car tax or registration tax is required to be paid for environmentally friendly vehicles.

5. MEASURES PROMOTING THE EXPANSION OF ALTERNATIVE FUEL INFRASTRUCTURE IN PUBLIC TRANSPORT

5.1 MEASURES TARGETING PUBLIC TRANSPORT

Resources are available under the Modern Cities Programme, as well as other European Union Funds (such as the Integrated Transport Development Operational Programme or the Regional and Municipal Development Operational Programme), for municipalities intending to procure alternative-fuel buses or replace buses powered by traditional fuels with alternative-fuel buses.

The Ministry of National Economy subsidised the purchase of 20 electric buses by BKV Zrt. in December 2015 under the Environmental Programme 'Gazdasági Zöldítési Rendszer', as a result of which one of the European Union's largest electric bus fleets began operating in Budapest.

The Government adopted a decision on the National Action Plan for Bus Manufacturing in the second quarter of 2016, which treats the deployment of alternative fuel buses – in particular

purely electric buses – as a priority. A working group headed by the Ministry of National Economy was set up during the implementation of the Action Plan, involving representatives of Hungarian municipalities, who declared their intention to purchase alternative-fuel buses by 2020.

5.2 NATIONAL OBJECTIVES AND TARGETS IN RELATION TO PUBLIC TRANSPORT

Table 5.1: Target numbers for alternative-fuel buses

Public	**Low-penetration scenario**			**Realistic penetration scenario**			**High-penetration scenario**		
	2020	**2025**	**2030**	**2020**	**2025**	**2030**	**2020**	**2025**	**2030**
CNG	500	700	1,000	750	1,500	2,700	1,500	2,800	4,100
LNG	0	150	350	50	300	700	150	1,100	2,000
Electric	150	-	-	200	-	-	300	-	-
Hydrogen	5	10	20	10	20	30	15	35	50
Total	**655**	**860**	**1,370**	**1,010**	**1,820**	**3,430**	**1,965**	**3,935**	**6,150**

6. INSTALLATION OF NETWORK IN URBAN/SUBURBAN AGGLOMERATIONS AND OTHER DENSELY POPULATED AREAS

The agglomeration regions in Hungary presented below are based on the territorial delineation by the Central Statistical Office in 2003, which identified 21 urban settlement groups. Urban settlement groups are of three types: agglomerations, agglomerating regions and settlement groups. The designations refer to how closely interconnected these settlements are. The locations of these urban settlement groups are shown in the map below:

Source: Central Statistical Office (KSH)

Balatoni agglomerálódó térség	=	Balaton agglomerating region
Békéscsabai nagyvárosi településegyüttes	=	Békéscsaba urban settlement group
Budapesti agglomeráció déli szektor	=	Budapest agglomeration South sector
Budapesti agglomeráció délkeleti szektor	=	Budapest agglomeration South-east sector
Budapesti agglomeráció északi szektor	=	Budapest agglomeration North sector
Budapesti agglomeráció északnyugati szektor	=	Budapest agglomeration North-west sector
Budapesti agglomeráció keleti szektor	=	Budapest agglomeration East sector
Budapesti agglomeráció nyugati szektor	=	Budapest agglomeration West sector
Debreceni nagyvárosi településegyüttes	=	Debrecen urban settlement group
Egri agglomerálódó térség	=	Eger agglomerating region
Győri agglomeráció	=	Győr agglomeration
Kaposvári nagyvárosi településegyüttes	=	Kaposvár urban settlement group
Kecskeméti nagyvárosi településegyüttes	=	Kecskemét urban settlement group
Miskolci agglomeráció	=	Miskolc agglomeration
Nyíregyházi nagyvárosi településegyüttes	=	Nyíregyháza urban settlement group
Pécsi agglomeráció	=	Pécs agglomeration
Salgótarjáni nagyvárosi településegyüttes	=	Salgótarján urban settlement group
Soproni nagyvárosi településegyüttes	=	Sopron urban settlement group
Szegedi nagyvárosi településegyüttes	=	Szeged urban settlement group
Székesfehérvári nagyvárosi településegyüttes	=	Székesfehérvár urban settlement group
Szekszárdi nagyvárosi településegyüttes	=	Szekszárd urban settlement group
Szolnoki nagyvárosi településegyüttes	=	Szolnok urban settlement group
Szombathelyi agglomerálódó térség	=	Szombathely agglomerating region
Tatabányai nagyvárosi településegyüttes	=	Tatabánya urban settlement group
Veszprémi nagyvárosi településegyüttes	=	Veszprém urban settlement group
Zalaegerszegi agglomerálódó térség	=	Zalaegerszeg agglomerating region

6.1 URBAN/SUBURBAN AGGLOMERATIONS AND OTHER DENSELY POPULATED AREAS

Table 6.1: Urban/suburban agglomerations and other densely populated areas in Hungary in 2014

	Number of inhabitants (thousand inhabitants)
Budapest agglomeration	2,541
Győr agglomeration	227
Miskolc agglomeration	256
Pécs agglomeration	183
Eger agglomerating region	77
Szombathely agglomerating region	117
Zalaegerszeg agglomerating region	87
Békéscsaba urban settlement group	135
Debrecen urban settlement group	268
Dunaújváros urban settlement group	59
Kaposvár urban settlement group	84
Kecskemét urban settlement group	133
Nagykanizsa urban settlement group	62
Nyíregyháza urban settlement group	148
Salgótarján urban settlement group	50
Sopron urban settlement group	75
Szeged urban settlement group	204
Székesfehérvár urban settlement group	167
Szekszárd urban settlement group	48
Szolnok urban settlement group	101
Tatabánya urban settlement group	86
Veszprém urban settlement group	83

Source: Central Statistical Office (KSH)

Table 6.2: Target numbers for recharging/refuelling points in urban/suburban agglomerations and other densely populated areas by 2020

2020	High and normal-power recharging points	CNG refuelling points	LNG refuelling points	LPG refuelling points
Budapest agglomeration	187+	17	3	71
Győr agglomeration	10	2	1	10
Miskolc agglomeration	10	3	1	11
Pécs agglomeration	10	1	1	12
Balaton agglomerating region	10+	6	3	16
Eger agglomerating region	5	1		3
Szombathely agglomerating region	5	1	1	6
Zalaegerszeg agglomerating region	5	1		6
Békéscsaba urban settlement group	10	1	1	4
Debrecen urban settlement group	5	2		11
Dunaújváros urban settlement group	5	2	1	2
Kaposvár urban settlement group	5	1		6
Kecskemét urban settlement group	5	2	1	5
Nagykanizsa urban settlement group	5	2	1	4
Nyíregyháza urban settlement group	3	1		8
Salgótarján urban settlement group	5	2		3
Sopron urban settlement group	10	1		3
Szeged urban settlement group	3	3	2	9
Székesfehérvár urban settlement group	5	3	1	6
Szekszárd urban settlement group	5	1	1	1
Szolnok urban settlement group	5	1	1	5
Tatabánya urban settlement group	5	1	1	6
Veszprém urban settlement group	10	1	1	5

Table 6.3: Target numbers for recharging/refuelling points in urban/suburban agglomerations and other densely populated areas by 2025

An expansion of recharging/refuelling points is in the planning stage. At present, the number of recharging/refuelling points for the various agglomeration areas has been planned as far ahead as 2020.

2025	High and normal-power recharging points	CNG refuelling points	LNG refuelling points	LPG refuelling points
Budapest agglomeration	-	21	7	75
Győr agglomeration	-	4	3	12
Miskolc agglomeration	-	5	3	12
Pécs agglomeration	-	2	2	12
Balaton agglomerating region	-	6	3	17
Eger agglomerating region	-	2	1	4
Szombathely agglomerating region	-	1	1	6
Zalaegerszeg agglomerating region	-	1		6
Békéscsaba urban settlement group	-	2	2	5
Debrecen urban settlement group	-	3	1	13
Dunaújváros urban settlement group		3	1	2
Kaposvár urban settlement group	-	2	1	6
Kecskemét urban settlement group	-	3	2	6
Nagykanizsa urban settlement group		2	1	5
Nyíregyháza urban settlement group	-	2	1	9
Salgótarján urban settlement group	-	3	1	3
Sopron urban settlement group	-	2	1	3
Szeged urban settlement group	-	4	3	10
Székesfehérvár urban settlement group	-	4	1	7
Szekszárd urban settlement group	-	1	1	2
Szolnok urban settlement group	-	2	2	6
Tatabánya urban settlement group	-	2	2	7
Veszprém urban settlement group	-	3	3	6

Table 6.4: Target numbers for recharging/refuelling points in urban/suburban agglomerations and other densely populated areas by 2030

An expansion of recharging/refuelling points is in the planning stage. At present, the number of recharging/refuelling points for the various agglomeration areas has been planned as far ahead as 2020.

2030	High and normal-power recharging points	CNG refuelling points	LNG refuelling points	LPG refuelling points
Budapest agglomeration	-	46	32	80
Győr agglomeration	-	5	4	14
Miskolc agglomeration	-	6	4	14
Pécs agglomeration	-	5	5	14
Balaton agglomerating region	-	6	3	19
Eger agglomerating region	-	3	2	6
Szombathely agglomerating region	-	3	3	8
Zalaegerszeg agglomerating region	-	3	2	8
Békéscsaba urban settlement group	-	3	3	7
Debrecen urban settlement group	-	5	3	15
Dunaújváros urban settlement group	-	4	2	4
Kaposvár urban settlement group	-	3	2	7
Kecskemét urban settlement group	-	4	3	7
Nagykanizsa urban settlement group	-	3	1	6
Nyíregyháza urban settlement group	-	3	2	10
Salgótarján urban settlement group	-	3	1	4
Sopron urban settlement group	-	3	2	5
Szeged urban settlement group	-	7	6	13
Székesfehérvár urban settlement group	-	6	3	10
Szekszárd urban settlement group	-	2	2	4
Szolnok urban settlement group	-	3	3	7
Tatabánya urban settlement group	-	3	3	8
Veszprém urban settlement group	-	3	3	8

6.2 TEN-T CORE NETWORK

6.2.1 Recharging points

Directive 2014/94/EU on the deployment of alternative fuels infrastructure ('the Directive') requires an appropriate number of recharging and refuelling points to be put in place by 31 December 2025, at least along the TEN-T Core Network. It is currently in the planning phase, and no specific sites have been identified as yet.

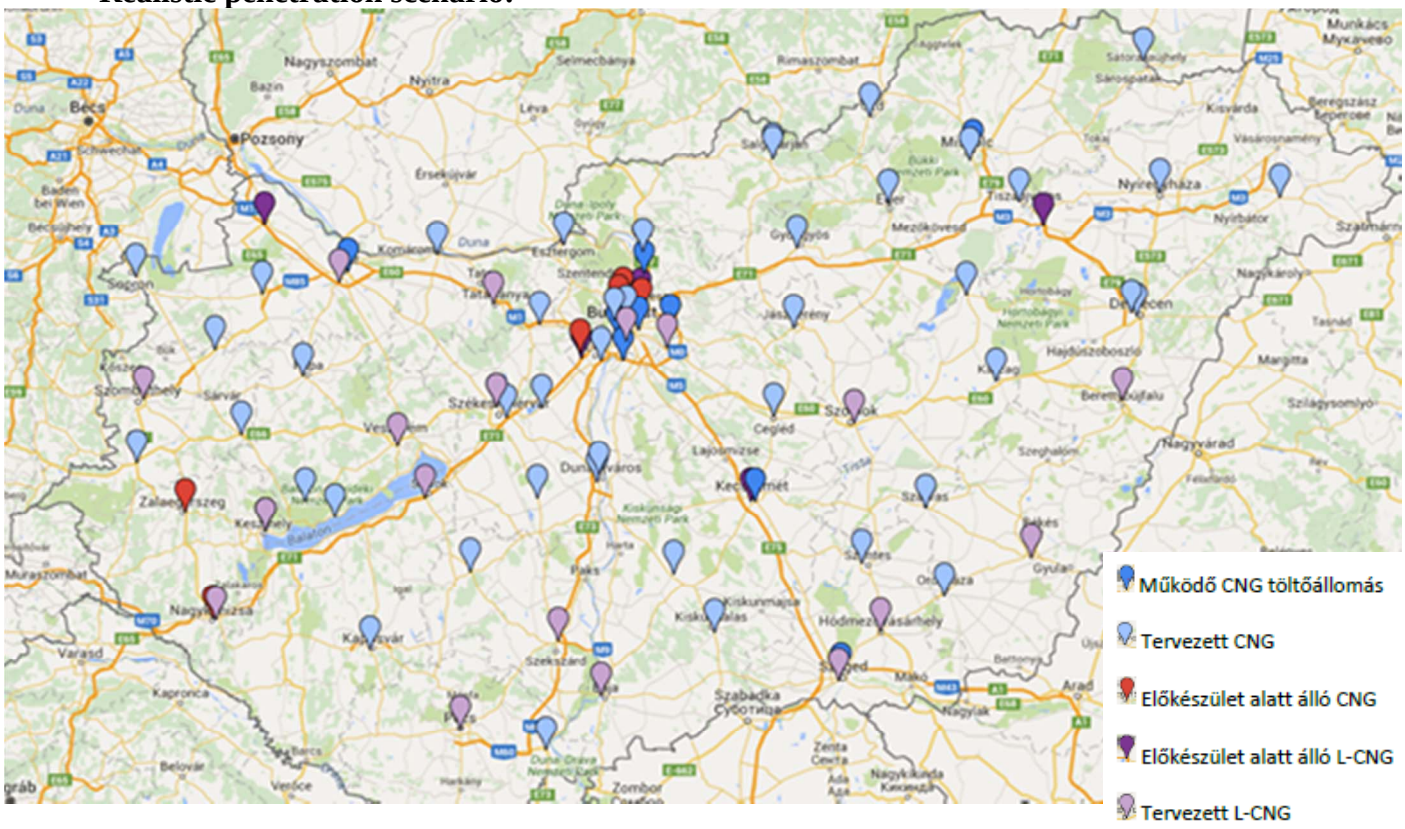
6.2.2 Natural gas refuelling points

Table 6.5: Number of natural gas refuelling points planned along the TEN-T Core Network

		2020		2025		2030	
NETWORK NAME		**Number (units)**	**Max. distance (km)**	**Number (units)**	**Max. distance (km)**	**Number (units)**	**Max. distance (km)**
Mediterranean Corridor	CNG	24	41	40	32	40	32
Mediterranean Corridor	LNG	7	156	18	52	18	52
Orient East-Med Corridor[10]	CNG	14	41	30	35	30	35
Orient East-Med Corridor	LNG	8	88	15	54	15	54

[10] As the Hungarian section of the Orient East-Med Corridor corresponds to the Hungarian section of the Rhine-Danube Corridor, only one of them is shown.

Existing or proposed CNG & LNG refuelling points in Hungary in 2020 – under the Realistic penetration scenario:



Működő CNG töltőállomás	=	CNG refuelling point in operation
Tervezett CNG	=	CNG planned
Előkészület alatt álló CNG	=	CNG in preparation
Előkészület alatt álló L-CNG	=	L-CNG in preparation
Tervezett L-CNG	=	L-CNG planned

Present network of LPG refuelling points in Hungary (November 2016)

Source: http://mpe-pbgaz.hu/terkep/

6.3 TEN-T AUXILIARY NETWORK

6.3.1 Recharging points

The Directive requires an appropriate number of refuelling points to be put in place by 31 December 2025, at least along the TEN-T Core Network. It is currently in the planning phase, and no specific sites have been identified as yet.

6.3.2 Recharging points

Table 6.6: Number of natural gas refuelling points planned along the TEN-T Auxiliary Network

		2020		2025		2030	
ROAD NUMBER		**Number (units)**	**Max. distance (km)**	**Number (units)**	**Max. distance (km)**	**Number (units)**	**Max. distance (km)**
E65	CNG	7	51	7	51	8	51
E65	LNG	3	72	3	72	4	72
61	CNG	2	82	2	82	3	82
61	LNG	1	112	1	112	2	112
55	CNG	3	101	4	80	5	48
55	LNG	1	101	2	80	3	48
E73	CNG	5	62	6	48	6	48
E73	LNG	3	82	4	48	4	48
E66	CNG	7	47	9	34	10	34
E66	LNG	2	137	4	117	5	117
62	CNG	2	52	2	52	3	27
62	LNG	2	52	2	52	3	27
51	CNG	1	13	1	13	1	13
51	LNG	1	13	1	13	1	13
52	CNG	2	48	2	48	3	30
52	LNG	1	59	1	59	2	41
441	CNG	3	38	3	38	3	38
441	LNG	2	38	2	38	2	38
E60	CNG	3	64	3	64	5	31
E60	LNG	2	64	2	64	4	64
42	CNG	1	36	1	36	1	36
42	LNG	1	36	1	36	1	36
47	CNG	3	36	3	36	3	36
47	LNG	2	36	2	36	2	36
E79	CNG	5	58	7	41	7	41
E79	LNG	2	68	4	51	4	51
E71	CNG	1	60	2	60	2	60
E71	LNG	0	N/A	1	60	1	60
E573	CNG	1	67	2	44	4	28
E573	LNG	0	N/A	2	44	4	28
E77	CNG	4	45	4	45	6	27
E77	LNG	2	45	2	45	4	27

7. INLAND LNG REFUELLING POINTS WITHIN THE TEN-T CORE NETWORK

7.1 MARITIME PORTS WITHIN THE TEN-T CORE NETWORK

Not applicable to Hungary.

7.2 INLAND PORTS WITHIN THE TEN-T CORE NETWORK

Table 7.1: Installation of LNG refuelling points in inland ports within the TEN-T Core Network

PORT	2020	2025	2030
Freeport of Csepel	1	-	-
Komárom	-	1	-

Table 7.2: Installation of LNG refuelling points in inland ports within the TEN-T Auxiliary Network

PORT	2020	2025	2030
Baja	-	1	-
Dunaújváros	-	1	-
Paks	-	1	-
Győr-Gönyű	-	1	-
Szeged	-	-	1

8 ASSESSMENT OF THE NEED FOR LNG REFUELLING POINTS TO BE INSTALLED IN MARITIME AND INLAND PORTS OUTSIDE THE TENT-T CORE NETWORK

8.1 MARITIME PORTS OUTSIDE THE TEN-T CORE NETWORK

Not applicable to Hungary.

8.2 INLAND PORTS OUTSIDE THE TEN-T CORE NETWORK

Table 8.1: Installation of LNG refuelling points in inland ports within the TEN-T Network

PORT	2020	2025	2030
Siófok	-	1	-
Balatonfüred	-	1	-
Badacsony	-	1	-

9. SHORE-SIDE ELECTRICITY SUPPLY IN MARITIME AND INLAND NAVIGATION PORTS

9.1 MARITIME PORTS WITHIN THE TEN-T CORE NETWORK

Not applicable to Hungary.

9.2 MARITIME PORTS OUTSIDE THE TEN-T CORE NETWORK

Not applicable to Hungary.

9.3 INLAND PORTS WITHIN THE TEN-T CORE NETWORK

Table 9.1: Shore-side electricity supply infrastructure in inland ports within the TEN-T Core Network

Port	Terminal	2020	2025	2030
Freeport of Csepel		16	-	-
Komárom		1	-	-

At the end of 2015, there were 13 recharging points in the ports within the TEN-T Core Network, 12 of which were in the Freeport of Csepel. The installation of 2x2 new recharging points is included in a project in preparation. Komárom currently has no demand for further recharging points.

9.4 INLAND PORTS OUTSIDE THE TEN-T CORE NETWORK

Table 9.2: Shore-side electricity supply infrastructure in inland ports outside the TEN-T Core Network

Port	Terminal	2020	2025	2030
Baja		0	-	-
Dunaújváros		12	-	-
Győr-Gönyű		7	-	-

At the end of 2015, there were 15 recharging points in the ports outside the TEN-T Core Network. Baja currently has no recharging point, and there are no plans to install such facilities. Dunaújváros currently has 12 recharging points, which meet demand; no expansion is therefore planned. In Győr-Gönyű, the installation of an additional 4 recharging points is planned in addition to the 3 existing points.

10. ELECTRICITY SUPPLY AT AIRPORTS

10.1 AIRPORTS WITHIN THE TENT-T CORE NETWORK

Liszt Ferenc International Airport

There are 20 marked and published stands at Terminal 1 and 37 at Terminal 2 for departing and arriving aircraft. A ground power unit is only available at 9 stands close to Terminal 2. When the new jetty is constructed, some new stands with ground power units will be built nearby.

10.2 AIRPORTS OUTSIDE THE TENT-T CORE NETWORK

Debrecen International Airport

At Debrecen International Airport, there are 2 stands for domestic traffic (opposite the tower) and 4 stands for international traffic (Apron A and B). There is currently no ground power unit, and there is no demand for one either.

Győr-Pér International Airport

At Győr International Airport, there are 7 stands (or fewer, depending on aircraft size) since the renovation in 2013. There is currently no ground power unit; however, one might be installed during future development projects.

Pécs-Pogány Airport

At Pécs-Pogány Airport, 6 stands have been constructed. There is no electricity supply point at the stands, as it is not required by the nature and intensity of traffic.

Hévíz-Sármellék Airport

Hévíz-Balaton Airport currently operates with 4 aircraft stands.

The stands are not provided with electricity supply devices for on-board power supply, so during servicing, aircraft have to use their own built-in auxiliary power unit (APU), or the diesel-operated ground power unit (GPU) provided by us. Ground power units could be installed if financial resources were available.