



**MINISTRY OF THE SEA,
TRANSPORT AND
INFRASTRUCTURE**

Report

**on the implementation of the National policy framework for the
deployment of the infrastructure and development of the market
for alternative transport fuels**

Zagreb, December 2019

TABLE OF CONTENTS

INTRODUCTION	3
1. Information on legal measures	3
2. Information on policy measures supporting the implementation of the NPF and on measures supporting the production of technologies for alternative transport fuels	7
3. Information on measures for promoting research, technological development and the activities demonstrated	11
4. Information on the objectives	12
5. Tables	23
6. LIST OF TABLES	31

INTRODUCTION

The Act on the deployment of alternative fuels infrastructure (*Narodne Novine* (NN; Official Gazette of the Republic of Croatia) No 120/16; the Act) transposes into Croatian law the provisions of Directive 2014/94/EU of the European Parliament and of the Council of 22 October 2014 on the deployment of alternative fuels infrastructure (OJ L 307, 28.10.2014) (the Directive).

The Act lays down minimum requirements for the construction of alternative fuels infrastructure, including recharging points, common technical specifications for recharging and refuelling points, user information requirements, and the means of complying with the obligation to report on the implementation of measures relative to the deployment of the alternative fuels infrastructure.

A common framework of measures for the development of the market for alternative fuels in the transport sector and the deployment of the relevant infrastructure is to be laid down by a National policy framework for the deployment of the infrastructure and development of the market for alternative transport fuels (NPF), which is to cover the period from 2016 until the relevant goals have been met.

Chapter III of the Act on reporting:

The report on the implementation of the NPF shall set out the measures undertaken to support the construction of alternative fuels infrastructure.

The report shall include information on legal measures, policy measures supporting the implementation of the NPF, measures supporting the construction of alternative transport fuels infrastructure, the production of technologies for alternative transport fuels, research, technological development and activities concerning alternative fuels broken down by fuel and transport type, and the objectives of and information on the development of alternative fuels infrastructure.

1. Information on legal measures

Information on legal measures comprises information on legislative, regulatory and administrative measures supporting the construction of alternative fuels infrastructure.

The legal framework for the deployment of alternative fuels infrastructure

ACTS

1. Act on the deployment of alternative fuels infrastructure (NN No 120/16)
2. Act on a special tax levied on motor vehicles (NN Nos 15/13, 108/13, 115/16, 127/17 and 121/19)
3. Act promoting the use of clean and energy-efficient road vehicles (NN No 127/13)
4. Road Traffic Safety Act (NN Nos 67/08, 48/10, 74/11, 80/13, 158/13, 92/14, 64/15, 108/17, 70/19 and 42/20)

5. Energy Act (NN Nos 120/12, 14/14, 95/15, 102/15 and 68/18)
6. Energy Efficiency Act (NN Nos 127/14, 116/18 and 25/20)
7. Electricity Market Act (NN Nos 22/13, 95/15, 102/15 and 68/18)
8. Transport Biofuels Act (NN Nos 65/09, 145/10, 26/11, 144/12, 14/14 and 94/18)
9. Environmental Protection Act (NN Nos 80/13, 153/13,78/15, 12/18 and 118/18)
10. Gas Market Act (NN Nos 18/18 and 23/20)
11. Excise Duty Act (NN Nos 106/18 and 121/19)
12. Renewable Energy Sources and High-Efficiency Cogeneration Act (NN Nos 100/15, 123/16, 131/17 and 111/18)
13. Public Procurement Act (NN No 120/16)
14. Air Protection Act (NN No 127/19)
15. Environmental Protection and Energy Efficiency Fund Act (NN Nos 107/03 and 144/12)
16. Energy Sector Regulation Act (NN Nos 120/12 and 68/18)

IMPLEMENTING REGULATIONS

1. Rules on incentives for promoting the use of biofuels in transport (NN Nos 42/10 and 119/18)
2. Decree on a special environmental charge for failure to market biofuel and reduce GHG emissions (NN No 116/18)
3. Rules on determining the average energy value of fuels (NN No 36/11)
4. Rules on the means and conditions for applying sustainability requirements in the production and use of biofuel (NN Nos 83/13 and 118/18)
5. General gas supply terms (NN Nos 50/18, 88/19 and 39/20)
6. Gas distribution system network rules (NN Nos 50/18, 88/19 and 36/20)
7. Gas market organisation rules (NN No 50/18)
8. Gas transmission system network rules (NN Nos 50/18, 31/19 and 89/19)
9. Gas storage system rules (NN Nos 50/18 and 26/20)
10. LNG terminals usage rules (NN Nos 60/18 and 39/20)
11. Methodology for setting tariff lines for gas supply provided as a public service and guaranteed supply (NN Nos 34/18 and 14/20)
12. Decision on tariff lines for gas supply provided as a public service for the periods from 1 April to 31 December 2019 and from 1 January to 31 March 2020 (NN No 15/19)
13. Methodology for setting tariff lines for gas distribution (NN No 48/18)
14. Decision on tariff lines for gas distribution (NN No 127/17)
15. Methodology for setting tariff lines for gas transmission (NN Nos 48/18 and 58/18)
16. Decision on tariff lines for gas transmission (NN No 124/19)
17. Decision on indicative tariff lines for gas transmission (NN No 56/18)
18. Methodology for setting tariff lines for gas storage (NN No 48/18)
19. Decision on tariff lines for gas storage (NN No 122/16)
20. Methodology for setting tariff lines for receiving and dispatching LNG (NN No 48/18)
21. Decision on indicative tariff lines for receiving and dispatching LNG (NN No 56/18)
22. Methodology for setting the charge for connection to the gas distribution or transmission system and for increasing connection capacity (NN No 48/18)
23. Decision on the charge for connection to the gas distribution or transmission system and for increasing connection capacity in the 2017-2021 regulatory period (NN No 122/16)
24. Methodology for setting the price of non-standard services related to the transmission, distribution and storage of gas, the reception and dispatching of LNG and gas supply provided as a public service (NN Nos 48/18 and 25/19)

25. Decision on average hourly rates for providers of non-standard services in the gas sector in the second regulatory period of 2017-2021 (Croatian Energy Regulatory Agency (HERA), 11/2016)
26. Decision on the gas market organisation charge (NN No 23/16)
27. Decree setting the amount and payment method of concession fees for gas distribution and for the construction of a distribution system (NN No 31/14)
28. Decree on the criteria for acquiring the status of protected customer in a gas supply crisis (NN No 65/15)
29. Decision to adopt an intervention plan on measures for safeguarding security of gas supply in the Republic of Croatia (NN No 78/14)
30. Methodology for setting tariff lines for guaranteed electricity supply (NN No 20/19)
31. Decision on tariff lines for guaranteed electricity supply (NN No 28/20)
32. Decision on tariff lines for electricity distribution (NN No 112/18)
33. Decision on tariff lines for electricity transmission (NN No 112/18)
34. Decision on the electricity market organisation charge (NN Nos 94/07 and 38/12)
35. Rules on the use of renewable energy sources and cogeneration (NN No 88/12)
36. Rules on the acquisition of eligible electricity producer status (NN Nos 132/13, 81/14, 93/14, 24/15, 99/15 and 110/15)
37. Rules on the charge for renewable energy sources and high-efficiency cogeneration (NN No 87/17)
38. Decree establishing a guarantee of origin system for electricity (NN Nos 84/13, 20/14, 108/15 and 55/19)
39. Decision on compensation amounts for participating in the guarantee of origin system for electricity (NN No 34/15)
40. Methodology for setting tariff lines for electricity distribution (NN No 104/15)
41. Methodology for setting tariff lines for electricity transmission (NN Nos 104/15 and 84/16)
42. Electricity market organisation rules (NN Nos 107/19 and 36/20)
43. Methodology for determining the origin of electricity (NN Nos 133/14 and 127/19)
44. Electricity system balancing rules (Croatian Transmission System Operator (HOPS), 11/2019)
45. Methodology for the pricing of ancillary services (HOPS, 7/2016)
46. Methodology for determining the charge payable by new network users for connecting to the electricity grid and for increasing the connection capacity of existing network users (NN Nos 51/17 and 31/18)
47. Decision on the charge payable for connecting to the electricity grid and for increasing connection capacity (NN No 52/06)
48. Network rules for the distribution system (NN Nos 74/18, 88/19 and 36/20)
49. Transmission system network rules (NN No 67/17)
50. Rules for switching electricity provider (NN Nos 56/15 and 33/17)
51. Rules for determining account balance and reading the meter under the procedure for switching supplier (Croatian Electricity Company – Distribution System Operator (HEP-ODS), 10/2016)
52. Decree on the issuing of energy approvals and the setting of conditions and deadlines for connecting to the electricity grid (NN No 7/18)
53. General terms for the use of the grid and electricity supply (NN Nos 85/15 and 49/20)
54. Rules on the use of the register of guarantees of origin for electricity (Croatian Energy Market Operator (HROTE), 12.7.2019)
55. Decree on the criteria for acquiring the status of vulnerable customer of a network energy system (NN No 95/15)

56. Procedural rules applicable in the case of exceedance of power by the authorised electricity producer (HERA, 2/2017)
57. Electricity supply quality terms (NN Nos 37/17, 47/17, 31/18 and 16/20)
58. Criteria for issuing approvals for the construction and operation of direct lines (NN No 43/17)
59. Distribution grid connection rules (HEP-ODS, 4/2018)
60. Transmission grid connection rules (HOPS, 4/2018)
61. Decree on the promotion of the production of electricity from renewable energy sources and high-efficiency cogeneration (NN No 116/18)
62. Decree on the share of net electricity delivered by eligible electricity producers which electricity suppliers are obliged to take over from the energy market operator (NN No 119/19)
63. Electricity sale rules (HROTE, 12/2018)
64. Decree on per-unit charges, correction coefficients, and detailed criteria and conditions for determining a special environmental charge for motor vehicles (NN Nos 114/14 and 147/14)
65. Rules on liquefied natural gas (NN No 117/07)
66. Rules on CNG supply systems for vehicles (NN No 134/09)
67. Rules on drivetrains and engines in gas-powered vehicles (NN Nos 78/14, 97/14 and 62/18)
68. Rules on the type approval procedure for compression ignition engines and gas-powered engines used in vehicles and for vehicles equipped with those engines with a view to reducing the emissions of gaseous and particulate pollutants from VRT-141 engines (NN Nos 31/13 and 41/13)
69. Rules on fuel stations for vehicles (NN Nos 93/98, 116/07 and 141/08)
70. Rules on the annual charge for the use of public roads payable on registering a motor vehicle or a trailer (NN Nos 96/15 and 98/15)
71. Rules on the availability of user data on fuel efficiency and CO₂ emissions in new passenger cars (NN No 07/15)

NATIONAL STRATEGIC DOCUMENTS

1. The 2017-2030 Transport Development Strategy of the Republic of Croatia (NN No 84/17) was adopted on 24 October 2017. The responsible body is the Ministry of the Sea, Transport and Infrastructure.
<https://mmpi.gov.hr/UserDocsImages/arhiva/MMPI%20Strategija%20prometnog%20razvoja%20RH%202017.-2030.-final.pdf>
2. The 2014-2030 Transport Development Strategy of the Republic of Croatia (NN No 131/14) was adopted on 30 October 2014 and ceased to apply in 2017.
http://narodne-novine.nn.hr/clanci/sluzbeni/2014_11_131_2465.html
3. The Energy Development Strategy of the Republic of Croatia (NN No 130/09) was adopted on 16 October 2009. The responsible body is the Ministry of Environmental Protection and Energy. One of the goals of energy policy is to use renewable energy sources and commit to the EU 20-20-20 goals.
http://narodne-novine.nn.hr/clanci/sluzbeni/2009_10_130_3192.html

4. Third National Energy Efficiency Action Plan of the Republic of Croatia for the period 2014-2016 (as of 30 July 2014)
https://mzoe.gov.hr/UserDocsImages/UPRAVA%20ZA%20ENERGETIKU/Strategije,%20planovi%20i%20programi/Treći%20nacionalni_akcijski_plan%20energetske%20učinkovitosti%20za%20razdoblje%202014-2016.pdf
5. Fourth National Energy Efficiency Action Plan of the Republic of Croatia for the period up to the end of 2019
https://mzoe.gov.hr/UserDocsImages/UPRAVA%20ZA%20ENERGETIKU/Strategije,%20planovi%20i%20programi/Cetvrti_nacionalni_akcijski_plan_energetske_ucinkovitosti_za_razdoblje_do_kraja_2019_godine_.pdf
6. National Action Plan for Renewable Energy Sources until 2020
https://mzoe.gov.hr/UserDocsImages/UPRAVA%20ZA%20ENERGETIKU/Strategije,%20planovi%20i%20programi/Nacionalni_akcijski_plan_za_obnovljive%20izvore%20energije%20do_2020%20godine.pdf
7. Integrated National Energy and Climate Plan of the Republic of Croatia for the 2021-2030 period
https://mzoe.gov.hr/UserDocsImages//UPRAVA%20ZA%20ENERGETIKU/Strategije,%20planovi%20i%20programi/hr%20necp//Integrirani%20nacionalni%20energetski%20i%20klimatski%20plan%20Republike%20Hrvatske%20%20_final.pdf

2. Information on policy measures supporting the implementation of the NPF and on measures supporting the production of technologies for alternative transport fuels

Information on policy measures supporting the implementation of the NPF and on measures supporting the production of technologies for alternative transport fuels comprises direct incentives for the purchase of means of transport using alternative fuels or for building the infrastructure.

▪ **ACTIVITIES AIMED AT PROMOTING ENERGY EFFICIENCY IN TRANSPORT IN 2019**

- In line with the priority to reduce transport emissions, laid down in the National Energy Efficiency Action Plan (NEEAP), in March 2019 the Environmental Protection and Energy Efficiency Fund (the Fund) published a public call for direct grants to citizens with a view to co-financing the purchase of energy-efficient vehicles. The call was open to all private individuals in Croatia.

Summary:

- Total number of applications received: 847
- Total funds approved: HRK 17,010,829.20

- Total funds disbursed: HRK 7,381,480.50 (ongoing)
 - Projects implemented: 443
- In May 2019 the Fund published a public call for all legal persons designated as Fund beneficiaries for co-financing the purchase of energy-efficient vehicles. The call was open to all legal persons in Croatia.

Summary:

 - Total number of applications received: 193
 - Total funds approved: HRK 17,490,000.00
 - Total funds disbursed: HRK 7,007,769.68 (ongoing)
 - Projects implemented: 91
 - In May 2019 the Fund published a public call for grants for co-financing the construction of charging stations for electric vehicles. The call was open to all legal persons in Croatia.

Summary:

 - Total number of applications received: 60
 - Total funds approved: HRK 3,882,291.04
 - Total funds disbursed: HRK 344,982.40 (ongoing)
 - Projects implemented: 9
- **REPORT ON THE USE OF REVENUES GENERATED THROUGH THE AUCTIONING OF EMISSION ALLOWANCES IN CROATIA IN 2018**
 - In line with the NEEAP priority to reduce transport emissions, the Fund paid out a total of HRK 10,204,197.37 in 2018 to finance 244 projects in the transport sector, as described below.
 - In order to extend the financing period for the measures in the previous NEEAP, HRK 2,282,821.96 were paid out for three Green Line projects whereby old vehicle fleets used in national and nature parks were replaced by environmentally friendly means of transport in order to help protect nature and the environment.
 - Incentives for energy-efficient and environmentally friendly vehicles comprised: HRK 4,558,748.74 spent on 208 projects involving the purchase of electric bicycles, electric vehicles (categories L1, L2, L3, L4, L5, L6 and L7), and electric and plug-in hybrid vehicles (M1 category) by private individuals; HRK 3,326,124.73 spent on 32 projects involving the co-financed purchase of electric bicycles, electric vehicles (categories L1, L2, L3, L4, L5, L6 and L7), electric and plug-in hybrid vehicles (M1 category), energy-efficient motor vehicles for passenger transport (categories M2 and M3), and electric, PHEV, CNG- and LNG-powered motor vehicles for the transport of goods (categories N1, N2 and N3) by legal persons; and HRK 36,501.94 spent on the Solar Cars

Race Until 2020, a programme run by the Sisak Technical School to promote clean transport.

▪ **REPORT ON THE USE OF REVENUES GENERATED THROUGH THE AUCTIONING OF EMISSION ALLOWANCES IN CROATIA IN 2017**

- In line with the NEEAP priority to reduce transport emissions, the Fund paid out a total of HRK 4,988,702.33 in 2017 to finance 11 projects in the transport sector and extend the financing of measures under the previous Plan.

These are the projects:

- purchase of a hybrid vehicle and 10 electric bicycles, and construction of three charging stations for electric vehicles (Žumberak-Samoborsko Gorje Nature Park);
- development of a non-commercial network of fast charging stations for electric vehicles, KIT d.o.o. (Pisarovina);
- construction of a public fast charging station for electric vehicles (Municipality of Radoboj);
- construction of a charging station for electric vehicles (Town of Rab);
- purchase of three plug-in hybrid vehicles (Plitvice Lakes National Park);
- installation of a fast charging station for electric vehicles (Municipality of Preko);
- electric tourist boat (Kopački Rit Nature Park);
- Zeleni Kotači (Town of Pula);
- conversion of vessels to run on electricity produced from renewable energy sources (Mljet National Park);
- charging stations for electric vehicles, Centar za transfer tehnologije d.o.o. (Zagreb);
- Spin City e-car sharing, Urban Mobility d.o.o.

▪ **REPORT ON THE USE OF REVENUES GENERATED THROUGH THE AUCTIONING OF EMISSION ALLOWANCES IN CROATIA IN 2016**

- In line with the NEEAP, the Fund paid out a total of HRK 21,671,162.68 in 2016 to finance 254 projects in the transport sector.

The use of allowance revenues in 2016 is broken down by individual measure under this priority.

PR-1: Setting up a system for eco-driving training

- *funds disbursed in 2016: HRK 39,081.60*

As part of a project promoting cleaner transport (*Training on energy-efficient driving*), three projects were carried out in 2016 in which 57 drivers obtained a certificate of successful completion of eco-training for motor vehicle categories M1, M2, M3, N1, N2 and N3.

These are the three projects:

- *Training on elements of eco-driving*, a project promoting cleaner transport (by HAVI Logistics d.o.o.);
- *Training on elements of eco-driving*, a project promoting cleaner transport (by CEMEX Hrvatska d.d.);
- *Training on energy-efficient driving* (by PHILIP MORRIS ZAGREB d.o.o.).

PR-2: Financial incentives for energy-efficient and environmentally friendly vehicles

- *funds disbursed in 2016: HRK 16,370,775.54*

Projects promoting energy-efficient and environmentally friendly vehicles continued in 2016, comprising: 90 projects involving the purchase of new hybrid and electric vehicles by private individuals and 73 such projects for legal persons where co-financing was available for vehicles in the categories L1, L3, L6, L7, M1, M2 and N1; seven project involving the purchase of new M3-category vehicles and 11 Green Line projects in national and nature parks where old vehicles were replaced by environmentally friendly means of transport in order to help protect nature and the environment.

The projects were implemented in the following public institutions: the national parks of Mljet, Krka, Plitvice Lakes, Risnjak, Sjeverni Velebit and Paklenica, and the nature parks of Velebit, Telašćica and Lonjsko Polje.

PR-3: Developing infrastructure for alternative fuel vehicles

- *funds disbursed in 2016: HRK 1,843,188.10*

Under this measure, the Fund co-financed 28 projects involving the construction of charging stations for electric vehicles in 2016 in the following local self-government units: Velika Gorica, Samobor, Ivanić Grad, Dugo Selo, Vrbovec, Sveta Nedelja, Zaprešić, Jastrebarsko, Sveti Ivan Zelina, Pokupsko, Žumberak, Pisarovina, Sisak, Ludbreg, Rijeka promet d.d., Baška, Dobrinj, Malinska-Dubašnica, Omišalj, Vrbnik, Punat, Krk, Gospić, NP Sjeverni Velebit, Novigrad, Ston, Dekanovec, and Zagreb.

PR-4: Promoting integrated transport

- *funds disbursed in 2016: HRK 3,318,574.94*

A total of 40 projects were implemented in 2016 under the measures *Introducing a city bike rental system* and *Software solutions with an integrated road database*, which aim to increase the energy performance of urban areas and the purchase of electric vehicles. Thanks to these projects, electric bicycles were purchased, a city bike rental system was set up and software was procured for calculating distribution routes to ensure maximum efficiency of everyday fleet movements and optimise the routes.

These are the three projects:

- a project for promoting cleaner transport, a WebGis software solution called *e-grad* for managing the road database of Velika Gorica with a view to increasing the town's energy performance;

- a GIS software solution for the town of Ogulin called *e-ceste*;
- development of a road database, with a road maintenance module, for the Municipality of Preko.

PR-5: Introducing advanced regulation of crossings equipped with smart traffic signalling

- *funds disbursed in 2016: HRK 99,542.50*

Installing traffic lights with red light indicators or retrofitting the latter on existing traffic lights is one of the best and quickest solutions for increasing the throughput of urban and extra-urban street networks. This measure was implemented through two respective projects in Zaprešić and Koprivnica.

To sum up, most of the funding in 2016 (75.5%) was paid out through financial incentives for energy-efficient and environmentally friendly vehicles (PR-2).

3. Information on measures for promoting research, technological development and the activities demonstrated

Information on measures for promoting research, technological development and the activities demonstrated relating to alternative fuels broken down by fuel and transport type, includes information on annual budgetary funds allocated to support research, technological development and the activities demonstrated relating to alternative fuels broken down by fuel and transport type:

The Fund allocated **HRK 1,857,509.48** covering 100% of the eligible costs to the project PKP-2016-06-9081 **Assessment of the potential of Adriatic algae in the co-generation of third-generation biofuels** on the basis of the following documents:

- Decision of 5 November 2015 on the adoption of a Programme for promoting research and development activities in the field of climate change for the 2015-2016 period (Class: 022-03/15-04/505, ref. No: 50301-05/25-15-3)
- Agreement of 31 March 2016 on the direct financing of the Programme for promoting research and development activities in the field of climate change for the 2015-2016 period through grants of the **Environmental Protection and Energy Efficiency Fund and the Croatian Science Foundation**
- Annex of 26 February 2018 to the Agreement on the direct financing of the Programme for promoting research and development activities in the field of climate change for the 2015-2016 period through grants
- Agreement of 20 March 2017 on the allocation of the Croatian Science Foundation grant, signed by the Beneficiary, the project manager, Dr Maria Blažina, and the Ruđer Bošković Institute

4. Information on the objectives

Information on the objectives includes the following elements:

Regulation (EU) No 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action, amending Regulations (EC) No 663/2009 and (EC) No 715/2009 of the European Parliament and of the Council, Directives 94/22/EC, 98/70/EC, 2009/31/EC, 2009/73/EC, 2010/31/EU, 2012/27/EU and 2013/30/EU of the European Parliament and of the Council, Council Directives 2009/119/EC and (EU) 2015/652 and repealing Regulation (EU) No 525/2013 of the European Parliament and of the Council requires each Member State to establish a **10-year integrated national energy and climate plan**. The first of these plans is to cover the **period from 2021 to 2030**.

The achievement of the Energy Union objectives and targets is to be ensured through a combination of Union initiatives and coherent national policies set out in integrated national energy and climate plans.

The 2021-2030 integrated energy and climate plan relates to existing national strategies and plans. It provides an overview of the current energy system and the situation regarding energy and climate policy. It also sets out national objectives for each of the five key dimensions of the Energy Union and corresponding policies and measures to meet those objectives, which entails setting up an analytical basis. The Plan focuses particularly on 2030 targets, which include reducing greenhouse gas emissions, using energy from renewable sources, energy efficiency and electricity interconnection. The integrated energy and climate plan must be consistent with, and contribute to, sustainable development goals.

The table below shows the main 2030 targets of the Plan.

INDICATOR	TARGET
Reducing GHG emissions in the ETS* sector compared to 2005	min 43% ¹
Reducing GHG emissions in non-ETS sectors compared to 2005	min 7%
Share of RES** in gross final energy consumption	36.4%
Share of RES in final energy consumption in transport	13.2%
Primary energy consumption (gross consumption exclusive of non-energy consumption)	344.38 PJ (8.23 ktoe)
Final consumption	286.91 PJ (6.85 ktoe)

Table 1 Integrated energy and climate plan targets until 2030

The main goals laid down in the Plan concern the reduction of GHG emissions for Croatia by 2030, the share of RES in gross final consumption, and energy efficiency, expressed as primary energy consumption and final energy consumption.

¹ The target for Croatia is indicative but binding at EU ETS level

* International GHG emissions trading system

** Renewable energy sources

The Plan comprises the following policies and measures intended to achieve low-emission mobility (including electrification of transport):

TR-5: Legislative adjustments for cleaner transport

Regulatory measure; implementation in 2021-2030

Description of the measure and its goal Amendments to acts and implementing regulations are intended to facilitate the development of alternative fuels infrastructure, increase the share of RES in final energy consumption in transport and promote clean and energy-efficient road vehicles. The goals of the measure are to increase the share of RES in transport by 2030, so that 37% of light-duty vehicles, 13% of heavy goods vehicles and 65% of buses purchased at national level comply with the relevant requirements.

Activities The activities to be implemented under the measure are described below.

- Acts and implementing regulations must be adopted at national level to regulate the manner in which conditions are to be laid down for constructing charging stations for electric vehicles (including those with a photovoltaic system), distributing, charging for and setting the single price of alternative transport fuels and for LNG, CNG/CBG charging stations and to examine the requirements of the new Energy Performance of Buildings Directive. The legislative amendments must be planned ahead so that the obligation to set up alternative fuels infrastructure is imposed on transport infrastructure managers. Furthermore, regulations governing the construction of parking facilities must be amended to provide for alternative fuels charging points. Any further development of alternative fuels infrastructure is contingent on the fulfilment of this condition.
- The main legal instrument governing and promoting the use of biofuels is the Transport Biofuels Act (NN Nos 65/09, 145/10, 26/11, 144/12, 14/14 and 94/18). The 2011-2020 National action plan for the promotion of the production and use of transport biofuels was adopted pursuant to the above Act in 2010. The action plan lays down a policy for promoting the production and use of transport biofuels in Croatia. The plan comprises an overview and assessment of the situation regarding the transport fuels market and air protection, a comparative analysis, long-term objectives, including the targeted biofuels market, and measures for promoting the production and use of transport biofuels. The various measures laid down in the action plan promote the production of biofuel feedstock, incentivise biofuel production through the payment of compensation, promote biofuel consumption by encouraging distributors of petroleum products to market biofuels, and concern administrative aspects and R&D. The 2013 national RES action plan laid down the objectives and policies relative to increasing the share of RES in final energy consumption by 2020 and analysed the energy contribution of biofuel in transport.
- Croatia will incorporate the requirements stemming from Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources in due course. The year 2030 marks the date by which the ambitious target concerning RES in transport has to be achieved, not least through promoting the use of renewable electricity in transport. The European

Commission's upcoming framework on additionality in the transport sector will be incorporated into Croatian law so as to ensure that the expected increase in demand for electricity in transport above the current baseline is met by additional production capacities for renewables.

- Detailed research into and analysis of the production capacity for advanced fuels will be carried out in order to meet the 2030 target of producing 3.5% of advanced fuels from domestic feedstock as required by Article 25(1) of Directive (EU) 2018/2001. The analysis will aim to identify potential domestic production capacities in view of feedstock availability and technological parameters. As the regulatory framework is set up, financial mechanisms will be introduced to support the development and use of the favourable options identified by the analysis. The regulatory framework and conditions for setting up a system for monitoring sustainability and greenhouse gas emissions saving criteria for biofuels, liquid fuels and biomass-based fuels will be established under Measure OIE-4.
- The current Act promoting the use of clean and energy-efficient road vehicles (NN No 127/13) provides that when purchasing a new road vehicle, any party either contracting or carrying out scheduled public passenger transport under a public service contract is to take into account the energy performance and environmental impact that vehicle will have for as long as it is in use. Croatia will need to incorporate into its law the revised obligations stemming from Directive (EU) 2019/1161 of the European Parliament and of the Council of 20 June 2019 amending Directive 2009/33/EC on the promotion of clean and energy-efficient road transport vehicles (Text with EEA relevance) with a view to promoting low-emission mobility with regard to the purchase, lease, rent or hire-purchase of road transport vehicles conducted by contracting authorities or contracting entities in so far as they are under an obligation to apply the procurement procedures, and operators providing contracted public service.
- In addition to transposing the abovementioned obligations under the Directive, Croatia will produce an action plan and a schedule for the gradual introduction of low-carbon solutions in the context of public services. In due course, all public service providers will be obliged to use only energy-efficient fleets with low or zero emissions.

Funds required for implementation The funds required to implement these activities are earmarked by the competent ministries (transport infrastructure, energy, interior, construction and spatial planning, environmental protection) in their respective annual budgets as an integral part of their regular activities.

Sources of financing State budget (competent ministries)

Executive body Competent ministries

Monitoring (supervision) bodies Ministry of the Protection of the Environment and Energy as the national coordinating body (NCB) and other competent ministries

Impact Accelerating the development of the alternative energy market, increasing the share of RES in final energy consumption in transport, increasing the share of clean vehicles in road transport

Monitoring method Reporting on the share of RES marketed in the transport sector and on energy consumption in transport

Links with other dimensions Direct link with the energy efficiency dimension

Link with climate change adaptation /

R&D Sustainable mobility and alternative transport fuels entail the development of new technologies with regard to vehicles, infrastructure and advanced IT-based management systems

TR-6: Financial incentives for energy-efficient vehicles

Financing measure implementation in 2014-2030

Description of the measure and its goal As part of co-financing cleaner-transport projects, co-financing routes for specific purposes need to be defined that will apply to the purchase of all vehicles of all categories powered by electricity, CNG/CBG (compressed natural gas/compressed biogas), LNG/LBG (liquefied natural gas, liquefied biogas) and hydrogen. Incentives in the form of co-financing of vehicle purchases must be consistent, transparent and continuous. Co-financing will first target vehicles running on alternative fuels where the number of such vehicles has been shown by an assessment of the current situation to be negligible, and will be available until the minimum share of vehicles using these fuels has been reached. The minimum market share means 1% of all vehicles registered in Croatia using a particular alternative fuel.

Activities The measure will comprise the co-financing of energy-efficient vehicles through public calls organised by the Environmental Protection and Energy Efficiency Fund.

Funds required for implementation HRK 900,000,000

Sources of financing Revenues obtained by the Fund from the auctioning of allowances, the special vehicle charge, and the special environmental charge for failure to market biofuels; ESI funds

Executive body Environmental Protection and Energy Efficiency Fund

Monitoring (supervision) bodies Ministry of the Protection of the Environment and Energy (NCB)

Impact Energy savings, reduced CO_{2e} emissions, reduced pollutant emissions; estimated savings in 2030: 0.25 PJ (reduced consumption of petrol and diesel fuel) and 0.1 PJ (increased electricity consumption); estimated reduction of CO₂ emissions in 2030: 18.3 kt CO_{2e}; cumulative energy savings in 2021-2020: 1.39 PJ; cumulative reduction of CO₂ emissions in 2021-2030: 101.8 kt CO_{2e}

Monitoring method The measure will be monitored by assessment method using the System for monitoring, measuring and verifying energy savings.

Links with other dimensions Direct link with the energy efficiency dimension

Link with climate change adaptation /

R&D Sustainable mobility and alternative transport fuels entail the development of new technologies with regard to vehicles, infrastructure and advanced IT-based management systems

TR-7: Developing alternative fuels infrastructure

Financing measure implementation in 2019-2030

Description of the measure and its goal The measure aims to facilitate the acceptance of alternative fuels by end users/consumers by strengthening the infrastructure for distributing alternative fuels and by implementing common technical specifications. While this infrastructure measure will not directly reduce fuel consumption in transport, it does mark a necessary first step for the development of the market for vehicles and vessels running on electricity, CNG/CBG, LNG/LBG and hydrogen in Croatia.

Incentives in the form of co-financing of infrastructure will first target infrastructure for alternative fuels where such infrastructure has been shown by an assessment of the current situation to be underdeveloped, and will be available until minimum infrastructure coverage has been achieved. Minimum infrastructure coverage means the availability of infrastructure that corresponds to the minimum infrastructure targets set out in the NPF.

In addition, a central register of alternative fuels infrastructure will be set up to provide drivers with a better user experience and ultimately provide an insight into real energy consumption for analytical purposes.

Activities The measure will comprise the co-financing of alternative fuels infrastructure through public calls organised by the Environmental Protection and Energy Efficiency Fund.

Funds required for implementation HRK 370,000,000

Sources of financing Revenues obtained by the Fund from the auctioning of allowances, the special vehicle charge, and the special environmental charge for failure to market biofuels, Modernisation Fund, ESI funds and other sources

Executive body Environmental Protection and Energy Efficiency Fund (co-financing), Ministry of the Sea, Transport and Infrastructure (central infrastructure register)

Monitoring (supervision) bodies Ministry of the Protection of the Environment and Energy (NCB)

Impact Accelerating the development of the alternative energy market

Monitoring method /

Links with other dimensions Direct link with the energy efficiency dimension

Link with climate change adaptation /

R&D Sustainable mobility and alternative transport fuels entail the development of new technologies with regard to vehicles, infrastructure and advanced IT-based management systems

TR-8: Promoting integrated goods transport

Regulatory measure; implementation in 2016-2030

Description of the measure and its goal The measure is governed by the Combined Transport of Goods Act (NN No 120/16), specifically the Rules on incentive payments for combined transport of goods (NN No 5/18), which provide for incentive payments for the combined transport of goods by rail, inland waterways or sea and for combined transport of goods involving a road leg.

Activities Implementation will continue in accordance with the Act. The existing system will be analysed to determine whether it needs to be adjusted or upgraded. The possibility of adding other road vehicles (except lorries) to the incentive system will also be examined.

Funds required for implementation The funds awarded under the Rules on incentive payments for combined transport of goods will come from the State budget.

Sources of financing State budget

Executive body Ministry of the Sea, Transport and Infrastructure

Monitoring (supervision) bodies Ministry of the Protection of the Environment and Energy (NCB)

Impact Energy savings, reduced CO_{2e} emissions, reduced pollutant emissions

Monitoring method Reports on incentives paid

Links with other dimensions Direct link with the energy efficiency dimension

Link with climate change adaptation /

R&D /

TR-9: Promoting the development of sustainable integrated transport at national level

Information and organisational measure; implementation in 2019-2030

Description of the measure and its goal The measure pursues the objectives and targets of the 2017-2030 Transport Development Strategy of Croatia with regard to energy efficiency/integration in rail, road, sea, inland waterway, urban, suburban and regional transport (modernisation of tracks and signalling systems, purchase of new locomotives, rolling stock, vessels, integrated logistics platforms, integrated public passenger transport, etc.). In terms of development, quality and interconnection, railway and, in general, multimodal infrastructure lag behind motorway infrastructure. Investment is planned in order to develop a sustainable and integrated European transport network that is resistant to climate change. Croatia will consult the other EU Member States in order to analyse the possibility of introducing appropriate mechanisms for transitioning to low-carbon solutions in sea and inland waterway transport, particularly through the use of alternative energy sources. To this end, an action plan will be produced for the shipping industry, which will lay down appropriate emission standards for the coming period, among other things. A similar plan will be produced for the air sector, which will lay down guidelines on how to significantly reduce GHG emissions. All work related to

the plans and guidelines will be undertaken jointly at EU level and will take on board the opinions expressed by the International Civil Aviation Organization (ICAO).

Activities The measure will incorporate activities as laid down in the Strategy.

Funds required for implementation No estimate

Sources of financing ESI funds (depending on plans and projects) Ministry of the Sea, Transport and Infrastructure

Executive body Ministry of the Sea, Transport and Infrastructure

Monitoring (supervision) bodies Ministry of the Protection of the Environment and Energy (NCB) in coordination with the Ministry of the Sea, Transport and Infrastructure

Impact Energy savings, reduced CO₂e emissions, reduced pollutant emissions

Monitoring method The effects of the measure will be recorded separately per project using a top-down methodology for calculating energy savings in final consumption, which may be supplemented by a bottom-up approach.

Links with other dimensions Direct link with the energy efficiency dimension

Link with climate change adaptation /

R&D Sustainable mobility and alternative transport fuels entail the development of new technologies with regard to vehicles, infrastructure and advanced IT-based management systems

TR-10: Promoting integrated and intelligent transport and developing alternative fuels infrastructure at local and regional levels

Information and organisational measure; implementation in 2019-2030

Description of the measure and its goal It is vital to promote the sustainable development of urban transport systems by optimising the logistics of goods transport, introducing ICT-based smart management of public parking spaces, integrated passenger transport, car-sharing schemes, low-emission zones and bicycle-sharing systems (for electric and conventional bicycles) in urban areas and constructing appropriate cycling infrastructure, and by opting for smart traffic management (upgrading, adapting and replacing old signalling devices and equipment, installing advanced transport equipment and smart self-charging traffic lights based on RES, building and fitting central operational centres for monitoring and controlling crossings with traffic lights). In order to meet the present and future mobility needs of urban dwellers and improve the quality of life in and around urban areas, sustainable mobility and strategic plans that tie in with existing planning practice and incorporate the principles of integration, participation and evaluation must be continuously developed and implemented at local level. These activities will be accompanied by corresponding information and awareness-raising campaigns. The goal is to cover all the counties, larger towns and cities (with a population over 35,000) and municipalities and towns and cities that form urban areas of 35,000 inhabitants or more.

Activities The measure will comprise co-financing through public calls by the Environmental Protection and Energy Efficiency Fund and activities undertaken independently by local and

regional authorities in line with their plans for the sustainable development of their transport systems.

Funds required for implementation HRK 85,000,000

Sources of financing Revenues obtained by the Fund from the auctioning of allowances, the special vehicle charge, and the special environmental charge for failure to market biofuels, Modernisation Fund, ESI funds, local and regional governments' budgets, EU funds (depending on plans and projects at local/regional level)

Executive body Environmental Protection and Energy Efficiency Fund (co-financing and organising public calls), local and regional governments (planning through annual and action plans and implementation)

Monitoring (supervision) bodies Ministry of the Protection of the Environment and Energy (NCB) in coordination with the Ministry of the Sea, Transport and Infrastructure

Impact Energy savings, reduced CO₂e emissions, reduced pollutant emissions; estimated savings in 2030: 0.15 PJ; estimated reduction of CO₂ emissions in 2030: 11.0 kt CO₂e; cumulative energy savings in 2021-2030: 1.19 PJ; cumulative reduction of CO₂ emissions in 2021-2030: 87.1 kt CO₂e

Monitoring method The effects of the measure will be recorded separately per project using a top-down methodology, which may be supplemented by a bottom-up approach.

Links with other dimensions Direct link with the energy efficiency dimension

Link with climate change adaptation /

R&D Sustainable mobility and alternative transport fuels entail the development of new technologies with regard to vehicles, infrastructure and advanced IT-based management systems

TR-11: Training on eco-driving

Information measure; implementation in 2011-2030

Description of the measure and its goal The measure aims to raise awareness of the advantages of energy-efficient driving. Training on the elements of eco-driving (lasting 1-2 hours per candidate) is for drivers who obtained their licence before the entry into force of the Rules on training for learner drivers and riders (NN Nos 13/09 and 132/17), which impose an obligation on all driving schools and instructors to incorporate eco-driving training in their standard programme for learner drivers. We would stress that the measure does not target new drivers, who have been trained on eco-driving as required by the abovementioned Rules. Specific elements of the national campaign must be dedicated to delivering eco-driving training to drivers of personal vehicles, buses, commercial vehicles and heavy goods vehicles. The plan is to introduce a specific teaching module focusing solely on electric vehicles (driving and charging habits). The measure is expected to target 1,000 drivers annually.

Activities The measure will comprise co-financing through public calls organised by the Environmental Protection and Energy Efficiency Fund.

Funds required for implementation HRK 18,000,000

Sources of financing Revenues obtained by the Fund from the auctioning of allowances, the special vehicle charge, and the special environmental charge for failure to market biofuels

Executive body Environmental Protection and Energy Efficiency Fund

Monitoring (supervision) bodies Ministry of the Protection of the Environment and Energy (NCB)

Impact Energy savings, reduced CO₂e emissions, reduced pollutant emissions; estimated savings in 2030: 0.03 PJ; estimated reduction of CO₂ emissions in 2030: 2.2 kt CO₂e; cumulative energy savings in 2021-2030: 0.3 PJ; cumulative reduction of CO₂ emissions in 2021-2030: 22.0 kt CO₂e

Monitoring method The measure will be monitored using the System for monitoring, measuring and verifying energy savings.

Links with other dimensions Direct link with the energy efficiency dimension

TR-12 Incentivising shipping powered by alternative fuels

Financing measure implementation in 2019-2030

Description of the measure and its goal The Deployment of Alternative Fuels Infrastructure Act defines alternative fuels as fuels or energy sources that can replace fossil fuels at least in part. These fuels comprise electricity, with a battery system, hydrogen, biofuels, synthetic and paraffinic fuels, natural gas, including biogas, in gaseous form (compressed natural gas (CNG)) and liquefied form (liquefied natural gas (LNG)), and liquefied petroleum gas (LPG). In line with the National Development Plan for Scheduled Coastal Maritime Transport, and since Croatia is a maritime country with a developed system of scheduled coastal transport and navigable inland waterways and lakes, this measure would help to co-finance projects for gradually converting obsolete vessels to run on alternative fuels and/or hybrid power and replacing them with new vessels. Ships and boats running on alternative fuels are generally more expensive than conventional ones, so shipping companies have no interest in investing in them. It is therefore important to begin by financially supporting the conversion/replacement of conventional vessels to the point where an equal purchase price is achieved, i.e. to put ship operators who receive co-financing on an equal footing with those buying conventional ships. This measure ties in with the measure concerning the development of alternative fuels infrastructure in terms of permanent users/consumers of the infrastructure and has a significant impact on potentially reducing the pollution of the sea, rivers and lakes.

Activities The measure will comprise the co-financing of the conversion of existing vessels and the construction of new vessels running on alternative fuels through public calls organised by the Environmental Protection and Energy Efficiency Fund.

Funds required for implementation HRK 300,000,000

Sources of financing Revenues obtained by the Fund from the auctioning of allowances, calls published by the Agency for Scheduled Coastal Maritime Transport, ESI funds and other sources

Executive body Environmental Protection and Energy Efficiency Fund

Monitoring (supervision) bodies Ministry of the Sea, Transport and Infrastructure (NCB)

Impact Accelerating the development of active users of alternative energy sources, energy savings, reduced CO2 emissions, reduced pollutant emissions

Monitoring method Reports on the number of vessels running on alternative fuels obtained from the Croatian Register of Shipping

Links with other dimensions Direct link with the energy efficiency dimension

Link with climate change adaptation /

R&D opportunity from vessel design phase to finished product

TR-13: Plan to develop the market for advanced biofuels

Regulatory and promotional measure; implementation in 2021-2030, to be updated every two years

Description of the measure and its goal Increasing the share of RES in transport by 2030 by developing the advanced fuels market and attaining the planned share of advanced fuels in final energy consumption in transport using the minimum cost and maximum multiplier criterion. The measure will be implemented after the relevant acts and implementing regulations have been amended in accordance with Directive (EU) 2018/2001 on the promotion of the use of energy from renewable sources, and particularly after the system for monitoring sustainability and GHG emissions saving criteria has been set up.

Activities

- Analysing and researching the scenario for attaining the required share of advanced fuels by 2030 by developing the technological capacities with a greater added value and a multiplier effect on the domestic economy. The analysis will aim to identify and locate possible free capacities for domestic production on the basis of feedstock availability and technological means (both existing and potential) and pinpoint the stakeholders, needs and obstacles to the development of the advanced fuels market.
- Producing, adopting and implementing the plan and programme for the production and application of biofuels in transport. The plan is based on an adjusted legislative framework (OIE-4 and TR-5) and the results of the analysis referred to in point 1. The plan will lay down the policy for promoting the production and use of alternative biofuels in transport across Croatia. It will comprise a current overview and an assessment of the current situation on the biofuels market, lay down new business models and identify stakeholders, measures for promoting the production and application of advanced biofuels in transport and routes for attaining advanced transport fuel targets by 2030. The measures laid down in the plan will include those targeting the production of advanced biofuels from the feedstock listed in Part A of Directive (EU) 2018/2001, those concerning the application of advanced biofuels, and those relevant to R&D, market strengthening and administrative measures. The plan will be a catalyst for attracting investment in zero-pollution Europe.
- The Ministry is setting up a model for promoting and developing the market for advanced biofuels in transport and designing funding instruments to be awarded through

existing programmes (RDP, the Croatian Agency for SMEs, Innovations and Investments, Bio-based Industries Joint Undertaking (BBIJU)) for projects involving advanced biofuels.

Funds required for implementation The funds required to implement these activities are earmarked by the competent ministries (environmental protection and energy, and agriculture) in their respective budgets as an integral part of their regular activities. The cost of the analysis referred to in point 1: HRK 1,000,000

Sources of financing State budget (competent ministries), EU funds

Executive body Ministry of the Protection of the Environment and Energy in cooperation with the Ministry of Agriculture, Ministry of the Economy, Enterprise and Small Business, and Ministry of Finance.

Monitoring (supervision) bodies Ministry of the Protection of the Environment and Energy

Impact Accelerating the development of the advanced fuels market, increasing the share of RES in final energy consumption in transport and reducing transport emissions. Reducing the carbon footprint of bioeconomy stakeholders.

Monitoring method Reporting on the share of RES marketed in the transport sector

R&D Attaining the set goal is contingent on perfecting current and developing new technologies for the production of advanced fuels for transport, as well as novel business models for increasing the use of advanced biofuels.

Links with other dimensions The measure can be first and foremost linked with dimension (3) Energy security and dimension (5) Research, innovation and competitiveness.

Link with climate change adaptation The development of the advanced fuels market is set to run in parallel with the integration of measures for adapting to climate change and boosting resilience, i.e. reducing the market's vulnerability to climate change.

It is expected that cross-border and regional integration of the energy markets will bring about lower prices for energy and energy products. At the same time, a stronger integration of RES in national electric power systems will increase the variability of cross-border electricity flows, which will entail the construction of more robust transmission grids and possibly new interconnecting transmission lines. This could lead to lower-quality electricity being delivered to customers and might jeopardise operational stability due to expected lower inertia and higher speeds in frequency changes. The expectation is that issues to do with quality and lower system inertia will be addressed at EU level.

5. Tables

(These Excel tables contain more detailed information currently available for reporting purposes and are attached as an annex to this Report.)

ANNEX I / 1											
Legal measures											
CATEGORY	No.	DENOMINATION	DESCRIPTION	AF FIELD	ALTERNATIVE FUEL	TYPE	TRANSPORT MODE	APPLICATION LEVEL	Start Year	Stop Year	Observations
Legislative & Regulatory	1			Select:	Select:	Select:	Select:	Select:			
	2			Select:	Select:	Select:	Select:	Select:			
				Select:	Select:	Select:	Select:	Select:			
				Select:	Select:	Select:	Select:	Select:			
Administrative	1			Select:	Select:	Select:	Select:	Select:			
	2			Select:	Select:	Select:	Select:	Select:			
				Select:	Select:	Select:	Select:	Select:			
				Select:	Select:	Select:	Select:	Select:			

Table 2 Legal measures

Deployment and manufacturing support																		
CATEGORY	No.	DENOMINATION	DESCRIPTION	AF FIELD	ALTERNATIVE FUEL	TRANSPORT MODE	APPLICATION LEVEL	CURRENT AND PAST ANNUAL BUDGET [k€]				FUTURE ESTIMATED BUDGET [k€]			TOTAL ESTIMATED BUDGET [k€]	Start Year	Stop Year	Observations
								2016	2017	2018	2019	2020	2021-2025	2026-2030				
								AFI deployment	1			AFI	Select:	Select:				
2			AFI	Select:	Select:	Select:												
			AFI	Select:	Select:	Select:												
			AFI	Select:	Select:	Select:												
Support of manufacturing plants for AF technologies	1			Select:	Select:	Select:	Select:											
	2			Select:	Select:	Select:	Select:											
				Select:	Select:	Select:	Select:											
				Select:	Select:	Select:	Select:											

Table 4 Deployment and manufacturing support

Research, technological development and demonstration (RTD&D)

No.	DENOMINATION	DESCRIPTION	AF FIELD	ALTERNATIVE FUEL	TRANSPORT MODE	CURRENT AND PAST ANNUAL BUDGET [k€]				FUTURE ESTIMATED BUDGET [k€]			TOTAL ESTIMATED BUDGET [k€]	Start Year	Stop Year	Observations
						2016	2017	2018	2019	2020	2021-2025	2026-2030				
1			Select:	Select:	Select:											
2			Select:	Select:	Select:											
			Select:	Select:	Select:											
			Select:	Select:	Select:											
			Select:	Select:	Select:											
			Select:	Select:	Select:											
			Select:	Select:	Select:											

Table 5 Research, technological development and demonstration (RTD&D)

Alternative Fuels Vehicles (AFV) estimates

TRANSPORT MODE	ALTERNATIVE FUELS VEHICLES (AFV)	CURRENT AND PAST NUMBER OF AFV			NUMBER OF AFV EXPECTED TO BE REGISTERED		
		2016	2017	2018	2020	2025	2030
	ELECTRICITY						
Road	Electric Vehicles, EV (total road)	633	698	1.263	0	0	0
	Powered Two Wheelers (PTW)	244	206	471			
	Electric Vehicles, EV (excl. PTW)	389	492	792	0	0	0
	Electric Passenger Cars (BEV+PHEV)	319	411	693	0	0	0
	• BEV	223	279	457			
	• PHEV	96	132	236			
	Electric Light Commercial Vehicles	67	78	96	0	0	0
	• BEV	66	77	95			
	• PHEV	1	1	1			
	Electric Heavy Commercial Vehicles	0	0	0	0	0	0
	• BEV	0	0	0			
	• PHEV	0	0	0			
	Electric Buses and Coaches	3	3	3	0	0	0
• BEV	3	3	3				
• PHEV	0	0	0				
Water	Inland Waterway Vessels	0	2	2			
	Seagoing Ships	0	0	1			
Air	Aircraft						
Rail	Locomotives						
	CNG (including Biomethane)						
Road	CNG Vehicles (total road)	266	324	338	0	0	0
	Powered Two Wheelers	0	0	0			
	CNG Vehicles (excl. PTW)	266	324	338	0	0	0
	CNG Passenger Cars	96	126	133			
	CNG Light Commercial Vehicles	75	92	96			
	CNG Heavy Commercial Vehicles	3	4	9			
	CNG Buses and Coaches	92	102	100			
Water	Inland Waterway Vessels	0	2	2			
	Seagoing Ships	0	0	1			
Air	Aircraft						
Rail	Locomotives						
	LNG (including Biomethane)						
Road	59652	61.315	61.558	61.558	0	0	0
	Powered Two Wheelers	0	0	0			
	LNG Passenger Cars	58.760	60.333	60.527			
	LNG Light Commercial Vehicles	889	981	1.031			
	LNG Heavy Commercial Vehicles	2	1	0			
	LNG Buses and Coaches	1	0	0			
Water	LNG Inland Waterway Vessels						
	LNG Seagoing Ships						
Air	Aircraft						
Rail	Locomotives						
	HYDROGEN						
Road	Fuel Cell Vehicles, FCEV (total road)	0	0	0	0	0	0
	Powered Two Wheelers						
	Hydrogen Passenger Cars						
	Hydrogen Light Commercial Vehicles						
	Hydrogen Heavy Commercial Vehicles						
	Hydrogen Buses and Coaches						
Water	Inland Waterway Vessels						
	Seagoing Ships						
Air	Aircraft						
Rail	Locomotives						
	LPG						
Road	LPG Vehicles (total road)	0	0	0	0	0	0
	Powered Two Wheelers						
	LPG Passenger Cars						
	LPG Light Commercial Vehicles						
	LPG Heavy Commercial Vehicles						
	LPG Buses and Coaches						
Water	Inland Waterway Vessels						
	Seagoing Ships						
Air	Aircraft						
Rail	Locomotives						
	OTHER AF						
Road	Other AF Vehicles (total road)	0	0	0	0	0	0
	Powered Two Wheelers						
	Passenger Cars						
	Light Commercial Vehicles						
	Heavy Commercial Vehicles						
	Buses and Coaches						
Water	Inland Waterway Vessels						
	Seagoing Ships						
Air	Aircraft						
Rail	Locomotives						

Table 6 Alternative Fuels Vehicles (AFV) estimates

Alternative Fuels Infrastructure (AFI) targets							
TRANSPORT MODE	ALTERNATIVE FUELS INFRASTRUCTURE (AFI)	CURRENT AND PAST NUMBER OF RECHARGING/REFUELLING POINTS			TARGET NUMBER OF RECHARGING/REFUELLING POINTS		
		2016	2017	2018	2020	2025	2030
	ELECTRICITY						
Road	Total recharging points (public* + private)	2	3	98	145	0	0
	Recharging points (publicly accessible)	2	3	98	145	0	0
	Normal power recharging points, P ≤ 22kW (public)			45	75		
	High power recharging points, P > 22kW (public)	2	2	53	70	0	0
	• AC fast charging, 22kW < P ≤ 43 kW (public)			10	24		
	• DC fast charging, P < 100 kW (public)	2	2	27	30		
	• DC ultrafast charging, P ≥ 100 kW (public)			16	16		
	Recharging points (private)	0	0	0	0	0	0
	Normal power recharging points, P ≤ 22kW (private)						
	High power recharging points, P > 22kW (private)	0	0	0	0	0	0
	• AC fast charging, 22kW < P ≤ 43 kW (private)						
	• DC fast charging, P < 100 kW (private)						
	• DC ultrafast charging, P ≥ 100 kW (private)						
Water	Shore-side electricity supply for seagoing ships in maritime ports						
	Shore-side electricity supply for inland waterway vessels in inland ports						
Air	Electricity supply for stationary airplanes						
	NATURAL GAS (including Biomethane)						
Road	CNG refuelling points (total)	0	0	2	4	0	0
	CNG refuelling points (public)						
	CNG refuelling points (private fleet operators)			2	4		
	LNG refuelling points (total)	0	0	0	1	0	0
	LNG refuelling points (public)				1		
	LNG refuelling points (private fleet operators)						
Water	Maritime Ports - LNG refuelling points						
	Inland Ports - LNG refuelling points						
	HYDROGEN						
Road	H2 refuelling points (total)	0	0	1	2	0	0
	H2 refuelling points – 350 bar (total)	0	0	1	2	0	0
	H2 refuelling points – 350 bar (public)			1	2		
	H2 refuelling points – 350 bar (private fleet operators)						
	H2 refuelling points – 700 bar (total)	0	0	0	0	0	0
	H2 refuelling points – 700 bar (public)						
	H2 refuelling points – 700 bar (private fleet operators)						
	LPG						
Road	LPG refuelling points (total)	0	0	557	0	0	0
	LPG refuelling points (public)			557			
	LPG refuelling points (private fleet operators)						
	OTHER AF						
All	AF refuelling points (total)	0	0	0	0	0	0
	AF refuelling points (public)						
	AF refuelling points (private fleet operators)						

Table 7 Alternative Fuels Infrastructure (AFI) targets

Alternative Fuels Infrastructure (AFI) developments

		PAST									FUTURE ESTIMATED								
		2016			2017			2018			2020			2025			2030		
MODE OF TRANSPORT	ALTERNATIVE FUEL	Supply	Demand	Ratio	Supply	Demand	Ratio	Supply	Demand	Ratio	Supply	Demand	Ratio	Supply	Demand	Ratio	Supply	Demand	Ratio
Road	Electricity	2	389	195	3	492	164	98	792	8	145	0	0	0	0	0	0	0	0
	CNG (incl. Biomethane)	0	266		0	324		0	338		0	0	0	0	0	0	0	0	0
	LPG							557	0										
Water	Select:																		
	Select:																		
	Select:																		
Air	Select:																		
	Select:																		
	Select:																		
Rail	Select:																		
	Select:																		
	Select:																		

Table 8 Alternative Fuels Infrastructure (AFI) developments

Changes in fuels use

		PAST AND CURRENT STATUS OF FUELS USE IN THE TRANSPORT SECTOR			ASSESSMENT OF FUTURE DEVELOPMENT OF FUELS IN THE TRANSPORT SECTOR		
MODE OF TRANSPORT	FUEL	Percentage of different fuels use for transport [%]			Estimated percentage of different fuels use for transport [%]		
		2016	2017	2018	2020	2025	2030
Road	Gasoline						
	Diesel						
	Electricity						
	CNG	0,1%	0,1%	0,1%	0,1%	1,0%	3,0%
	LNG	0,0%	0,0%	0,0%	0,1%	1,5%	5,0%
	Hydrogen						
	LPG	3,0%	3,0%	3,0%	3,0%	3,0%	3,0%
	Biofuels						
	Synthetic and paraffinic fuels						
	Other AF						
	Total Road		3,1%	3,1%	3,1%	3,2%	5,5%
Maritime	Marine gas oil						
	Marine diesel oil						
	LNG	0,0%	0,0%	0,0%	0,0%	0,0%	10,0%
Inland waterway	Marine gas oil						
	Marine diesel oil						
	LNG	0,0%	0,0%	0,0%	0,0%	0,0%	5,0%

Table 9 Changes in fuels use

6. LIST OF TABLES

Table 1 Integrated energy and climate plan targets until 2030	12
Table 2 Legal measures	23
Table 3 Policy measures supporting the implementation of the NPF	24
Table 4 Deployment and manufacturing support.....	25
Table 5 Research, technological development and demonstration (RTD&D).....	26
Table 6 Alternative Fuels Vehicles (AFV) estimates	27
Table 7 Alternative Fuels Infrastructure (AFI) targets.....	28
Table 8 Alternative Fuels Infrastructure (AFI) developments	29
Table 9 Changes in fuels use	30