Hungary
Ministry of National Development

Report

on the use of renewable energy sources in Hungary in 2015 and 2016 (Reporting by the Member States pursuant to Articles 18 and 22 of Directive 2009/28/EC)

Budapest
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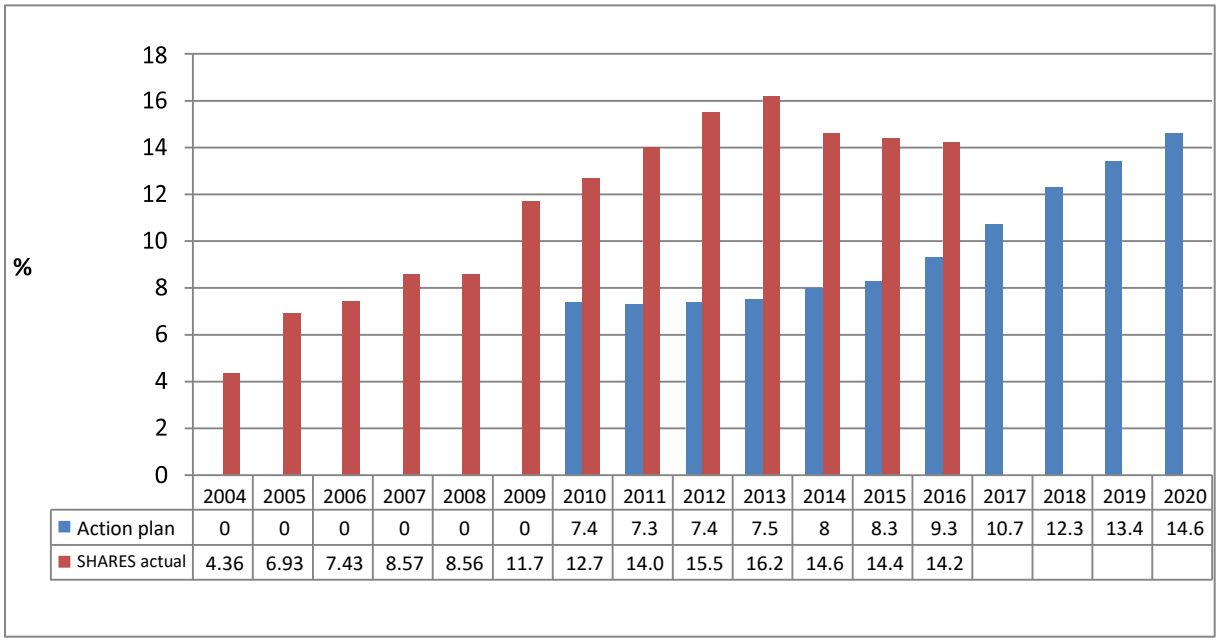
Introduction

Environmental sustainability and responsible management of resources with limited availability are values of special importance for Hungary. This idea is represented in the highest legislation in Hungary, in the country's new Fundamental Law adopted in 2011, which mentions the careful utilisation of natural resources.
In 2011 the Parliament of Hungary adopted the National Energy Strategy which stated that energy efficiency and renewable energy sources play an important strategic role in reducing dependence on energy import.

Hungary's Renewable Energy Utilisation Action Plan adopted in 2010 (hereinafter referred to as: Action Plan) aims at achieving a share of 14.65 % of renewable energy sources by 2020 compared to the total gross energy consumption.

The laws adopted and measures taken on the subject by the Government and the Parliament of Hungary from the second half of 2010 aimed at causing a shift towards sustainable energy management in line with the above, thereby promoting energy efficiency and the increasing utilisation of renewable energy sources. The objectives stipulated in the Action Plan were fulfilled in due course, and like in the previous years, the 2014-2015 statistical data continue to exceed the objectives undertaken. Figure 1 shows the objectives of the Action Plan and the known results.[1]



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Action plan	0	0	0	0	0	0	7.4	7.3	7.4	7.5	8	8.3	9.3	10.7	12.3	13.4	14.6
SHARES actual	4.36	6.93	7.43	8.57	8.56	11.7	12.7	14.0	15.5	16.2	14.6	14.4	14.2				

Figure 1: Share of renewable energy in total gross energy consumption. Source: Ministry of National Development, Hungarian Energy and Public Utilities Office (MEKH)

The aim of the aforementioned report is to demonstrate – as part of the reporting obligation of Member States defined under Articles 18 and 22 of Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and

[1] According to Commission Regulation (EU) No 431/2014, the Hungarian Energy and Public Utility Regulatory Authority used a new methodology to provide the statistical data relating to the energy utilisation of households in 2015.

2003/30/EC (hereinafter referred to as: RED), published in the Official Journal of the European Union L 110, 5.6.2009 – the progress achieved in the utilisation of renewable energy sources in 2015 and 2016.

The report has been prepared using the form specified by the European Commission, with the structure and data content specified therein.

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1. Sectoral and overall shares and actual total consumption of energy from renewable sources in Hungary in 2015 and 2016

Table 1: The sectoral (electricity, heating and cooling, and transport) and overall shares of energy from renewable sources)

Designation	2015	2016
RES – H&C[2] (%)	21.15	20.76
RES –E3 (%)	7.30	7.20
RES – T4 (%)	6.99	7.44
Overall RES share5 (%)	**14.42**	**14.19**
Of which from cooperation mechanism (%)*	0	0
Surplus for cooperation mechanism (%)*	0	0

* Hungary has not entered into partnership agreements with other Member States yet, but is open to transferring the surplus under a partnership agreement.

Source: MEKH

[2] Share of renewable energy in heating and cooling: gross final consumption of energy from renewable sources for heating and cooling (as defined in Articles 5(1)(b) and 5(4) of Directive 2009/28/EC) divided by gross final consumption of energy for heating and cooling. The same methodology as in Table 3 of the National Renewable Energy Action Plans applies.

[3] Share of renewable energy in electricity: gross final consumption of electricity from renewable sources for electricity (as defined in Articles 5(1)(a) and 5(3) of Directive 2009/28/EC) divided by total gross final consumption of electricity. The same methodology as in Table 3 of the National Renewable Energy Action Plans applies.

[4] Share of renewable energy in transport: gross final energy from renewable sources consumed in transport (final energy consumption) (cf. Articles 5(1)(c) and 5(5) of Directive 2009/28/EC) divided by the consumption in transport of 1) petrol; 2) diesel; 3) biofuels used in road and rail transport and 4) electricity in land transport (as reflected in row 3 of Table 1. The same methodology as in Table 3 of the National Renewable Energy Action Plans applies.

[5] Share of renewable energy in gross final energy consumption. The same methodology as in Table 3 of the National Renewable Energy Action Plans applies.

Table 1a: Calculation table for the renewable energy contribution of each sector to final energy consumption (ktoe)

Designation	2015	2016
A) Gross final consumption of RES for heating and cooling	2 168.1	2 176.0
B) Gross final consumption of electricity from RES	250.9	248.2
C) Gross final consumption of energy from RES in transport	199.6	213.7
D) Gross final consumption of electricity from RES	**2 618.6**	**2 637.8**
E) Transfer of RES to other Member States	0	0
F) Transfer of RES from other Member States and 3rd countries	0	0
G) RES consumption adjusted for target (D)-(E)+(F)	**2 618.6**	**2 637.9**

Source: MEKH

Table 1b: Total actual contribution (installed capacity, gross electricity generation) from each renewable energy technology in Hungary to meet the binding 2020 targets and the indicative interim trajectory for the period until 2020 for the shares of energy from renewable resources in electricity

Energy source type	***2015***		***2016***	
	MW	***GWh***	***MW***	***GWh***
Hydropower:[6]	57.00	229.80	57.00	232.3
non-pumped	57.00	230.10	57.00	232.3
< 1 MW	4.00	19.20	4.00	18.9
1 MW–10 MW	12.00	42.10	12.00	42.7
> 10 MW	41.00	168.80	41.00	170.8
pumped	0.00	0.00		
mixed[7]	0.00	0.00		
Geothermal:	0.00	0.00	0.00	0.00
Solar:	168.00	122.60	220.00	201.4
photovoltaic	168.00	122.60	220.00	201.4
concentrated	0.00	0.00	0.00	0.00
Tide, wave, ocean	0.00	0.00	0.00	0.00
Wind:[8]	329.00	701.30	329.00	705.7
onshore	329.00	701.30	329.00	705.7
offshore	0.00	0.00	0.00	0.00
Biomass:[9]	491.00	1 953.90	398.00	1 826.1
solid biomass	422.00	1 661.00	322.00	1 492.8
biogas	69.00	293.00	76.00	333.3
bioliquids	0.00	0.00	0.00	0.00
TOTAL	**1 045.00**	**3 007.70**	1004.00	2 965.5
Of which in CHP		870.40		908.8

Source: MEKH

[6] Normalised in accordance with Directive 2009/28/EC and Eurostat methodology.
[7] In accordance with new Eurostat methodology.
[8] Normalised in accordance with Directive 2009/28/EC and Eurostat methodology.
[9] Only those complying with applicable sustainability criteria were taken into account, in line with Article 5(1) of Directive 2009/28/EC, last subparagraph.

Table 1c: Total actual contribution (final energy consumption[10]) from each renewable energy technology in Hungary to meet the binding 2020 targets and the indicative interim trajectory for the period until 2020 for the shares of energy from renewable resources in heating and cooling (ktoe)

Designation	2015	2016
Geothermal (excluding low temperature geothermal heat in heat pump applications)	95.7	115.0
Solar	10.7	11.2
Biomass	2 042.5	2 029.5
solid biomass	2 026.6	2 012.2
biogas	15.9	17,2
bioliquids	0.0	0.0
Renewable energy from heat pumps*	4.6	5.3
of which aerothermal	1.0	1.5
of which geothermal	2.6	2.7
of which hydrothermal	0.9	1.0
TOTAL	**2 153.5**	2 161.0
of which DH[11]	162.7	204.0
of which biomass in households[12]	1 764.7	1 719.1

* taking into account that in the interest of reducing administrative burden, the establishment of heat pumps is not always subject to a licence, reliable data is not yet available for the whole volume

Source: MEKH

[10] Direct use and district heat as defined in Article 5(4) of Directive 2009/28/EC
[11] District heating and/or cooling from total renewableheating and cooling consumption (RES- DH).
[12] From the total renewable heating and cooling consumption

Table 1d: Total actual contribution from each renewable energy technology in Hungary to meet the binding 2020 targets and the indicative interim trajectory for the period until 2020 for the shares of energy from renewable resources in the transport sector (ktoe)

Designation	2015	2016
Bioethanol/bio-ETBE	43	45
Of which biofuels under Article 21(2)		
Of which imported[13]	32	26
Biodiesel	131	141
Of which biofuels under Article 21(2)	58	67
Of which imported[14]	94	82
Hydrogen from renewables		
Renewable electricity	25.55	27.79
Of which road transport	0.41	0.57
Of which non-road transport	25.14	27.22
Others (such as biogas, vegetable oils, etc.) – please specify		
Of which biofuels under Article 21(2)		
TOTAL	**199.6**	**213.7**

Source: MEKH

[13] From the whole amount of bioethanol / bio-ETBE.
[14] From the whole amount of biodiesel.

2. Measures taken in 2015 and 2016 and/or planned at national level to promote the growth of energy from renewable sources taking into account the indicative trajectory for achieving the national RES targets as outlined in the National Renewable Energy Action Plan

Table 2: Overview of all policies and measures

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Implemented or planned	Start and end dates of the measure
Mandatory off-take of electricity at a guaranteed price	financial	New installed capacities and increase in the quantity of energy produced. Quantitative information in relation to RES: 2015: Quantity sold: 2 402 GWh (206.56 ktoe); Aid: HUF 49.26 billion (EUR 158.95 million) 2016: Quantity sold: 2 356 GWh (202.55 ktoe); Aid: HUF 50.53 billion (EUR 162.24 million)	**Target group:** investors, power plants activity: power generation	**implemented**	From 1 January 2003; final date for new applications: 31 December 2016. The new METÁR scheme came into force on 1 January 2017 but it does not affect pre-existing entitlements under the mandatory off-take scheme.
TOP-1.1.1-15 Development of industrial parks and industrial areas	financial	Increase in energy efficiency. Increase in the use of renewable energy sources. Reduction of greenhouse gas emissions.	**Target group:** - Local governments (GFO 321) - companies under majority local-government ownership (GFO 11; 572; 573) **Activities:** Increasing the share of renewable energy sources when constructing new buildings or improving the energy performance of existing buildings	**implemented**	1 January 2014 – 31 December 2020

TOP-1.1.1-16 Development of industrial parks and industrial areas	financial	Increase in energy efficiency. Increase in the use of renewable energy sources. Reduction of greenhouse gas emissions.	**Target group:** - Local governments (GFO 321) - companies under majority local-government ownership (GFO 11; 572; 573) **Activities:** Increasing the share of renewable energy sources when constructing new buildings or improving the energy performance of existing buildings	**implemented**	1 January 2014 – 31 December 2020
TOP-1.1.2-16 Development of incubator centres	financial	Increase in energy efficiency. Increase in the use of renewable energy sources. Reduction of greenhouse gas emissions.	**Target group**: - Local governments (GFO 321) - Local government budgetary bodies (GFO 322) - Local government offices (budgetary bodies) (GFO 325) - Associations of local governments (GFO 327) - Territorial development associations of local governments (GFO 328) - Companies under majority local-government ownership (GFO 11, 57) - Other incorporated non-profit organisations under majority local-government ownership (GFO 599) - Other unincorporated non-profit organisations under majority local-government ownership (GFO 699) **Activities**: Increasing the share of renewable energy sources when constructing new buildings or improving the energy performance of existing buildings	**implemented**	1 January 2014 – 31 December 2020

TOP-1.1.3-15 Development of local economy	financial	Increase in energy efficiency. Increase in the use of renewable energy sources. Reduction of greenhouse gas emissions.	**Target group**: - Local government fiscal governance and budgetary bodies (GFO 32) - Non-SME incorporated enterprises owned by a local government (GFO 1) - Non-SME non-profit companies owned by a local government (GFO 57) - County local governments (GFO 321) - Local government offices (budgetary bodies) (GFO 325) - Non-profit companies and organisations (GFO 57; GFO 599) - Enterprises owned by a local government (GFO 11) **Activities**: Increasing the share of renewable energy sources when constructing new buildings or improving the energy performance of existing buildings	**implemented**	1 January 2014 – 31 December 2020
TOP-1.1.3-16 Development of local economy	financial	Increase in energy efficiency. Increase in the use of renewable energy sources. Reduction of greenhouse gas emissions.	**Target group**: - Local governments (GFO 321) - Local government budgetary bodies (GFO 322) - Associations of local governments (GFO 327) - Territorial development associations of local governments (GFO 328) - Non-SME incorporated enterprises under majority local-government ownership (GFO 11) - Non-SME non-profit companies under majority local-government ownership (GFO 57) - Local government offices (budgetary bodies) (GFO 325) - Other incorporated non-profit organisations owned by a local government (GFO 599)	**implemented**	1 January 2014 – 31 December 2020

			Activities: Increasing the share of renewable energy sources when constructing new buildings or improving the energy performance of existing buildings		
TOP-1.2.1-15 Development of socially and environmentally sustainable tourism	financial	Increase in energy efficiency. Increase in the use of renewable energy sources. Reduction of greenhouse gas emissions.	**Target group**: - Local governments (GFO 321); - Local government offices (budgetary bodies) (GFO 325) - Associations of local governments (GFO 327); - Companies established by local governments or local government associations under majority local-government ownership (GFO 11, 57); - Ecclesiastical legal entities (GFO 55); - Civil society organisations established as a legal entity in the territory of and having their registered office in Hungary in accordance with Act CLXXV of 2011 (GFO 517, 521, 529, GFO 563, 565, 569) **Activities**: Investments improving the energy-efficient operation of buildings to be developed under the project, and the utilisation of renewable energy sources. Energy efficiency: in the development of new and existing buildings. In the course of the development, advanced, energy-saving technologies and technologies utilising renewable energy are applied, such as: geothermal energy, solar collectors, biomass, thermal springs, energy-saving lighting, etc.). The proposed development increases GHG emission as little as possible, and preferably reduces it.	**implemented**	1 January 2014 – 31 December 2020 (eligibility of expenditure)

TOP-1.2.1-16 Development of socially and environmentally sustainable tourism	financial	Increase in energy efficiency. Increase in the use of renewable energy sources. Reduction of greenhouse gas emissions.	**Target group**: - Local governments (GFO 321); - Local government offices (budgetary bodies) (GFO 325); - Associations of local governments (GFO 327); - Companies majority-owned by a local government or association of local governments (GFO 11, 57); - Ecclesiastical legal entities (GFO 55); - Civil society organisations established as a legal entity in the territory of and having their registered office in Hungary in accordance with Act CLXXV of 2011 (GFO 517, 521, 529, GFO 563, 565, 569) **Activities**: Investments improving the energy-efficient operation of buildings to be developed under the project, and the utilisation of renewable energy sources. Energy efficiency: in the development of new and existing buildings. In the course of the development, advanced, energy-saving technologies and technologies utilising renewable energy are applied, such as: geothermal energy, solar collectors, biomass, thermal springs, energy-saving lighting, etc.). The proposed development increases GHG emission as little as possible, and preferably reduces it.	**implemented**	1 January 2014 – 31 December 2022 (eligibility of expenditure)

TOP-1.4.1-15 Increasing employment and improving living standards by developing family-friendly institutions and public services promoting work	financial	Kindergartens and day nurseries: Increase in energy efficiency. Increase in the use of renewable energy sources. Reduction of greenhouse gas emissions.	**Target group**: a) Central fiscal governance and budgetary bodies (GFO 31); b) Local governments and their associations (GFO 321, 327); c) National and local minority governments and their associations (GFO 351, 353, 371, 373); d) Ecclesiastical legal entities (hereinafter referred to as churches) (GFO 55); - Civil society organisations established as a legal entity in the territory of and having their registered office in Hungary in accordance with Act CLXXV of 2011 (GFO 529, 563, 565, 569); f) Public foundations (GFO 561); g) Non-profit companies and organisations (GFO 57; GFO 599); h) Enterprises under majority local-government ownership (GFO 11). **Activities**: Increasing the share of renewable energy sources when constructing new buildings or improving the energy performance of existing buildings	**implemented**	1 January 2014 – 31 December 2020

TOP-1.4.1-16 Increasing employment and improving living standards by developing family-friendly institutions and public services promoting work	financial	Kindergartens and day nurseries: Increase in energy efficiency. Increase in the use of renewable energy sources. Reduction of greenhouse gas emissions.	**Target group**: a) Central fiscal governance and budgetary bodies (GFO 31); b) Local governments and their associations (GFO 321, 327); c) National and local minority governments and their associations (GFO 351, 353, 371, 373); d) Ecclesiastical legal entities (hereinafter referred to as churches) (GFO 55); - Civil society organisations established as a legal entity in the territory of and having their registered office in Hungary in accordance with Act CLXXV of 2011 (GFO 529, 563, 565, 569); f) Public foundations (GFO 561); g) Non-profit companies and organisations (GFO 572, 573, 575, 576, 599); h) Enterprises under majority local-government ownership (GFO 11). **Activities**: Increasing the share of renewable energy sources when constructing new buildings or improving the energy performance of existing buildings	**implemented**	1 January 2014 – 31 December 2022
TOP-2.1.1-15 Brownfield rehabilitation	financial	Increase in energy efficiency. Increase in the use of renewable energy sources. Reduction of greenhouse gas emissions.	**Target group**: - Local and city governments except for local governments of cities with county rights (GFO 321) - Companies with a local government (excluding cities with county rights) as their sole owner (GFO 11; 572; 573) **Activities**: Modernisation of eligible building stocks in urban brownfield areas or, where justified, the construction of new buildings.	**implemented**	1 January 2014 – 31 December 2021

TOP-2.1.1-16 Brownfield rehabilitation	financial	Increase in energy efficiency. Increase in the use of renewable energy sources. Reduction of greenhouse gas emissions.	**Target group**: - Local and city governments except for local governments of cities with county rights (GFO 321) - Companies with a local government (excluding cities with county rights) as their sole owner (GFO 11; 572; 573) **Activities**: Modernisation of eligible building stocks in urban brownfield areas or, where justified, the construction of new buildings is such areas.	**implemented**	1 January 2014 – 31 December 2022
TOP-3.2.1-15 Development of the energy performance of local government buildings	financial	GHG reduction: Estimated annual decrease of GHG (in tonnes); Energy efficiency: Decrease of annual primary energy consumption of public buildings (in kWh); Renewables: Additional capacity of renewable energy production (MW); Decrease of annual primary energy consumption as a result of energy efficiency developments (PJ); Annual energy from RES (PJ)	**Target group**: - Local governments except for local governments of cities with county rights (GFO 321) - Companies with a local government (excluding cities with county rights) as their sole owner (GFO 11; 572; 573) **Activities**: Improving the thermal performance of buildings (thermal insulation, replacement of windows and doors), modernisation of thermal and heating systems of buildings; modernisation of outdoor and indoor lighting systems of buildings; modernisation of central ventilation and air-conditioning systems of buildings; installation of solar collectors, household power plants and heat pumps; establishing connections to community heating plants, preparing Sustainable Energy Action Plans (SEAP) and Sustainable Energy and Climate Action Plans (SECAP) at a county level	**implemented**	1 January 2014 – 31 December 2020

TOP-3.2.1-16 Development of the energy performance of local government buildings	financial	GHG reduction: Estimated annual decrease of GHG (in tonnes); Energy efficiency: Decrease of annual primary energy consumption of public buildings (in kWh); Renewables: Additional capacity of renewable energy production (MW); Decrease of annual primary energy consumption as a result of energy efficiency developments (PJ); Annual energy from RES (PJ)	**Target group**: - Local governments except for local governments of cities with county rights (GFO 321) - Regional (county) governments (GFO 321) – only for activity 3.1.1/g. and for consortium leaders; - Local government fiscal governance and budgetary bodies (GFO 322) - Local minority government fiscal governance and budgetary bodies (GFO 37) - Associations of local governments (GFO 327) - Companies under majority local-government ownership (GFO 11; 572; 573; 575; 576) **Activities**: Improving the thermal performance of buildings (thermal insulation, replacement of windows and doors), modernisation of thermal and heating systems of buildings; modernisation of outdoor and indoor lighting systems of buildings; modernisation of central ventilation and air-conditioning systems of buildings; installation of solar collectors, household power plants and heat pumps; establishing connections to community heating plants, preparing Sustainable Energy Action Plans (SEAP) and Sustainable Energy and Climate Action Plans (SECAP) at a county level	**implemented**	1 January 2014 – 31 December 2020

TOP-3.2.2-15 Complex development programmes controlled by local governments for the implementation of energy supply aimed at the exploitation of renewable energy sources in a way which fits into the local environment	financial	GHG reduction: Estimated annual decrease of GHG (in tonnes); Renewables: Additional capacity for renewable energy production (MW); Annual energy from RES (PJ)	**Target group**: - Local governments except for local governments of cities with county rights (GFO 321) - Companies with a local government (excluding cities with county rights) as their sole owner (GFO 11; 572; 573), except for companies supplying district heating that have a local government as their sole owner. **Activities**: Meeting own (public) heating, cooling and electricity needs with renewable energy from biomass; Meeting own (public) heating, cooling and electricity needs with geothermal energy; The establishment of solar power plants to meet own (public) electricity needs	**implemented**	1 January 2014 – 31 December 2020

TOP-4.1.1-15 Infrastructural development in primary healthcare	financial	In the case of buildings in which primary healthcare is provided: Increase in energy efficiency. Increase in the use of renewable energy sources. Reduction of greenhouse gas emissions.	**Target group**: a) Central fiscal governance and budgetary bodies (GFO 31); b) Local governments and their associations (GFO 321, 327); c) Companies established by local governments or local government associations under majority local-government ownership (GFO 57); d) Civil society organisations established as a legal entity in the territory of and having their registered office in Hungary in accordance with Act CLXXV of 2011 (GFO 529, 563, 565, 569); e) Public foundations (GFO 561); f) Ecclesiastical legal entities (hereinafter referred to as churches) (GFO 55); g) Other incorporated non-profit organisations (GFO 59). **Activities**: - Energy efficiency measures - Use of renewable energy sources (such as solar collectors, photovoltaic solar cells) to make building management more economical and modern.	**implemented**	1 January 2014 – 31 December 2020

TOP-4.1.1-16 Infrastructural development in primary healthcare	financial	In the case of buildings in which primary healthcare is provided: Increase in energy efficiency. Increase in the use of renewable energy sources. Reduction of greenhouse gas emissions.	**Target group**: a) Central fiscal governance and budgetary bodies (GFO 311, 312); b) Local governments (GFO 321); c) Associations of local governments (GFO 327); d) Companies established by local governments or local governments' associations majority-owned by a local government or association (GFO 11, 572, 573, 575, 576); e) Civil society organisations established as a legal entity in the territory of and having their registered office in Hungary in accordance with Act CLXXV of 2011 (GFO 529, 563, 565, 569); f) Public foundations (GFO 561); g) Ecclesiastical legal entities (GFO 55); h) Other incorporated non-profit organisations (GFO 591, 599). **Activities**: - Energy efficiency measures - Use of renewable energy sources (such as solar collectors, photovoltaic solar cells) to make building management more economical and modern.	**implemented**	1 January 2014 – 31 December 2022

TOP-4.2.1-15 Extension and development of infrastructure in primary social care	financial	Social care institutions: Increase in energy efficiency. Increase in the use of renewable energy sources. Reduction of greenhouse gas emissions.	**Target group**: - Local governments and their associations (GFO 321; 327); - Local and national minority governments and their associations (GFO 351; GFO 353; GFO 371; GFO 373); - Enterprises under majority local-government ownership (GFO 11); - Ecclesiastical legal entities (hereinafter referred to as churches) (GFO 55); - Civil society organisations established as a legal entity in the territory of and having their registered office in Hungary in accordance with Act CLXXV of 2011 (GFO 529, 563, 565, 569) - Public foundations (GFO 561) - Non-profit companies and organisations (GFO 57, GFO 599) **Activities**: Increasing the share of renewable energy sources when constructing new buildings or improving the energy performance of existing buildings	**implemented**	1 January 2014 – 31 December 2020
TOP-4.2.1-16 Extension and development of infrastructure in primary social care	financial	Social care institutions: Increase in energy efficiency. Increase in the use of renewable energy sources. Reduction of greenhouse gas emissions.	**Target group**: • Local governments and their associations (GFO 321; 327); • Local and national minority governments and their associations (GFO 351; GFO 353; GFO 371; GFO 373); • Enterprises under majority local-government ownership (GFO 11); • Ecclesiastical legal entities (hereinafter referred to as churches) (GFO 55); • Civil society organisations established as a legal entity in the territory of and having their registered office in Hungary in accordance with Act CLXXV of 2011 (GFO 529, 563, 565, 569)	**implemented**	1 January 2014 – 31 December 2020

			• Public foundations (GFO 561) • Non-profit companies and organisations (GFO 57, GFO 599) **Activities**: Increasing the share of renewable energy sources when constructing new buildings or improving the energy performance of existing buildings		
TOP-4.3.1-15 Rehabilitation of deteriorated urban areas	financial	In the case of social housing: increase in energy efficiency, increase in the use of renewable energy sources, reduction of greenhouse gas emissions.	**Target group**: - Local and city governments except for local governments of cities with county rights (GFO 321) - Companies with a local government (excluding cities with county rights) as their sole owner (GFO 11; 572; 573) **Activities**: - Development of social housing apartments owned or to be owned by a local government or a non-profit operator.	**implemented**	1 January 2014 – 31 December 2022
TOP-4.3.1-16 Rehabilitation of deteriorated urban areas	financial	In the case of social housing: increase in energy efficiency, increase in the use of renewable energy sources, reduction of greenhouse gas emissions.	**Target group**: - Local and city governments except for local governments of cities with county rights (GFO 321) - Companies with a local government (excluding cities with county rights) as their sole owner (GFO 11; 572; 573) **Activities**: - Development of social housing apartments owned or to be owned by a local government or a non-profit operator.	**implemented**	1 January 2014 – 31 December 2022
TOP-6.1.1-15 Development of industrial parks and industrial areas	financial	Increase in energy efficiency. Increase in the use of renewable energy sources. Reduction of greenhouse gas emissions.	**Target group**: - Local governments of cities with county rights (GFO 321) - Companies majority-owned by the local government of a city with county rights (GFO 11; 57)	**implemented**	1 January 2014 – 31 December 2020

			Activities: Increasing the share of renewable energy sources when constructing new buildings or improving the energy performance of existing buildings		
TOP-6.1.1-16 Development of industrial parks and industrial areas	financial	Increase in energy efficiency. Increase in the use of renewable energy sources. Reduction of greenhouse gas emissions.	**Target group**: - Local governments of cities with county rights (GFO 321) - Companies majority-owned by the local government of a city with county rights (GFO 11; 57) **Activities**: Increasing the share of renewable energy sources when constructing new buildings or improving the energy performance of existing buildings	**implemented**	1 January 2014 – 31 December 2020
TOP-6.1.2-16 Development of incubator centres	financial	Increase in energy efficiency. Increase in the use of renewable energy sources. Reduction of greenhouse gas emissions.	**Target group**: - Local governments of cities with county rights (GFO 321) - Companies majority-owned by a city with county rights (GFO 11, 57) - Unincorporated non-profit organisations majority-owned by a city with county rights (GFO 699) - Incorporated non-profit organisations majority-owned by a city with county rights (GFO 599) - Local government budgetary bodies (GFO 322) - Local government offices (budgetary bodies) (GFO 325) - Associations of local governments (GFO 327) - Territorial development associations of local governments (GFO 328) **Activities**:	**implemented**	1 January 2014 – 31 December 2020

			Increasing the share of renewable energy sources when constructing new buildings or improving the energy performance of existing buildings		
TOP-6.1.3-15 Development of local economy	financial	Increase in energy efficiency. Increase in the use of renewable energy sources. Reduction of greenhouse gas emissions.	**Target group**: - Local governments (GFO 321); - Local government budgetary bodies (GFO 322), Local government offices (budgetary bodies) (GFO 325), Associations of local governments (GFO 327), Territorial development associations of local governments (GFO 328) - Non-SME incorporated enterprises owned by a local government (GFO 1) - Non-SME non-profit companies owned by a local government (GFO 57) **Activities**: Increasing the share of renewable energy sources when constructing new buildings or improving the energy performance of existing buildings	**implemented**	1 January 2014 – 31 December 2020

TOP-6.1.3-16 Development of local economy	financial		**Target group**: - Local governments of cities with county rights (GFO 321) - Companies majority-owned by the local government of a city with county rights (GFO 11, 57) - County local governments (GFO 321) - Local government budgetary bodies (GFO 322) - Local government offices (budgetary bodies) (GFO 325) - Associations of local governments (GFO 327) - Territorial development associations of local governments (GFO 328) **Activities**: Increasing the share of renewable energy sources when constructing new buildings or improving the energy performance of existing buildings	**implemented**	1 January 2014 – 31 December 2020

TOP-6.1.4-15 Development of socially and environmentally sustainable tourism	financial	Increase in energy efficiency. Increase in the use of renewable energy sources. Reduction of greenhouse gas emissions.	**Target group**: - Local governments of cities with county rights (GFO 321) - Associations of local governments (GFO 327); - Companies established by local governments or local government associations under majority local-government ownership (GFO 11, 57); - Ecclesiastical legal entities (GFO 55); - Civil society organisations established as a legal entity in the territory of and having their registered office in Hungary in accordance with Act CLXXV of 2011 (GFO 517, 521, 529, GFO 563, 565, 569) - Exclusive builders appointed in accordance with legislation (e.g. NIF Zrt., Magyar Közút Nonprofit Zrt.). **Activities**: - Investments improving the energy-efficient operation of buildings, and the utilisation of renewable energy sources; - Energy efficiency measures: Where an existing building is renovated: complete thermal insulation, replacement of some or all of the windows and doors, modernisation of the complete heating and/or domestic hot water system of the building, partial renewal of the heating system; Where an existing building is extended: Developments to achieve an energy rating of 'DD: approaching modern'. The application of advanced energy-saving and/or renewable energy technologies and minimum GHG emissions are expected.	**implemented**	1 January 2014 – 31 December 2020 (eligibility of expenditure)

TOP-6.1.4-16 Development of socially and environmentally sustainable tourism	financial	Increase in energy efficiency. Increase in the use of renewable energy sources. Reduction of greenhouse gas emissions.	**Target group**: - Local governments of cities with county rights (GFO 321); - Companies majority-owned by the local government of a city with county rights (GFO 11, GFO 572, 573, 575, 576) - Associations of local governments (GFO 327); - Companies under majority local-government ownership (GFO 11, 57); - Ecclesiastical legal entities (GFO 55); - Civil society organisations established as a legal entity in the territory of and having their registered office in Hungary in accordance with Act CLXXV of 2011 (GFO 517, 521, 529, GFO 563, 565, 569) - exclusive builders appointed in accordance with legislation (e.g. NIF Zrt., Magyar Közút Nonprofit Zrt.). Activities: - Investments improving the energy-efficient operation of buildings, and the utilisation of renewable energy sources; - Energy efficiency measures: Where an existing building is renovated: complete thermal insulation, replacement of some or all of the windows and doors, modernisation of the complete heating and/or domestic hot water system of the building, partial renewal of the heating system; Where an existing building is extended: Developments to achieve an energy rating of 'DD: approaching modern'. The application of energy-saving and/or renewable energy technologies and minimum GHG emissions are expected.	**implemented**	1 January 2015 – 31 December 2022 (eligibility of expenditure)

TOP-6.2.1-15 Developing family-friendly institutions and public services promoting work	financial	Kindergartens and day nurseries: Increase in energy efficiency. Increase in the use of renewable energy sources. Reduction of greenhouse gas emissions.	**Target group**: - Local governments of cities with county rights (GFO 321) - Companies majority-owned by the local government of a city with county rights As a consortium member: a) Central fiscal governance and budgetary bodies (GFO 31); b) Local governments and their associations (GFO 321, 327); c) National and local minority governments and their associations (GFO 351, 353, 371, 373); d) Ecclesiastical legal entities (hereinafter referred to as churches) (GFO 55); e) Civil society organisations established as a legal entity in the territory of and having their registered office in Hungary in accordance with Act CLXXV of 2011 (GFO 529, 563, 565, 569); f) Public foundations (GFO 561); g) Non-profit companies and organisations (GFO 57; GFO 599); h) Enterprises under majority local-government ownership (GFO 11). **Activities**: Increasing the share of renewable energy sources when constructing new buildings or improving the energy performance of existing buildings	**implemented**	1 January 2014 – 31 December 2020

TOP-6.2.1-16 Developing family-friendly institutions and public services promoting work	financial	Kindergartens and day nurseries: Increase in energy efficiency. Increase in the use of renewable energy sources. Reduction of greenhouse gas emissions.	**Target group**: - Local governments of cities with county rights - Companies majority-owned by the local government of a city with county rights (GFO 321). As a consortium member: a) Central fiscal governance and budgetary bodies (GFO 31); b) Local governments and their associations (GFO 321, 327); c) National and local minority governments and their associations (GFO 351, 353, 371, 373); d) Ecclesiastical legal entities (hereinafter referred to as churches) (GFO 55); e) Civil society organisations established as a legal entity in the territory of and having their registered office in Hungary in accordance with Act CLXXV of 2011 (GFO 529, 563, 565, 569); f) Public foundations (GFO 561); g) Non-profit companies and organisations (GFO 57; GFO 599); h) Enterprises under majority local-government ownership (GFO 11). **Activities**: Increasing the share of renewable energy sources when constructing new buildings or improving the energy performance of existing buildings	**implemented**	1 January 2014 – 31 December 2022
TOP-6.3.1-15 Brownfield rehabilitation	financial	Increase in energy efficiency. Increase in the use of renewable energy sources. Reduction of greenhouse gas emissions.	**Target group**: - Local governments of cities with county rights (GFO 321) - Companies with a local government (excluding cities with county rights) as their sole owner (GFO 11; 572; 573)	**implemented**	1 January 2014 – 31 December 2021

			Activities: Modernisation of eligible building stocks in urban brownfield areas or, where justified, the construction of new buildings is such areas.		
TOP-6.3.1-16 Brownfield rehabilitation	financial	Increase in energy efficiency. Increase in the use of renewable energy sources. Reduction of greenhouse gas emissions.	**Target group**: - Local governments of cities with county rights (GFO 321) - Companies with a local government (excluding cities with county rights) as their sole owner (GFO 11; 572; 573) **Activities**: Modernisation of eligible building stocks in urban brownfield areas or, where justified, the construction of new buildings is such areas.	**implemented**	1 January 2014 – 31 December 2022
TOP-6.5.1-15 Development of the energy performance of local government buildings	financial	GHG reduction: Estimated annual decrease of GHG (in tonnes); Energy efficiency: Decrease of annual primary energy consumption of public buildings (in kWh); Renewables: Additional capacity for renewable energy production (MW); Decrease of annual primary energy consumption as a result of energy efficiency developments (PJ); Annual energy from RES (PJ)	**Target group**: - Local governments of cities with county rights (GFO 321) **Activities**: Improving the thermal performance of buildings (thermal insulation, replacement of windows and doors), modernisation of thermal and heating systems of buildings; modernisation of outdoor and indoor lighting systems of buildings; modernisation of central ventilation and air-conditioning systems of buildings; installation of solar collectors, household power plants and heat pumps; establishing connections to community heating plants, preparing Sustainable Energy Action Plans (SEAP) and Sustainable Energy and Climate Action Plans (SECAP) at a county level	**implemented**	1 January 2014 – 31 December 2020

TOP-6.5.1-16 Development of the energy performance of local government buildings	financial	GHG reduction: Estimated annual decrease of GHG (in tonnes); Energy efficiency: Decrease of annual primary energy consumption of public buildings (in kWh); Renewables: Additional capacity of renewable energy production (MW); Decrease of annual primary energy consumption as a result of energy efficiency developments (PJ); Annual energy from RES (PJ)	**Target group**: - Local governments of cities with county rights (GFO 321) - Companies majority-owned by the local governments of cities with county rights (GFO 11; 572; 573; 575; 576) **Activities**: Improving the thermal performance of buildings (thermal insulation, replacement of windows and doors), modernisation of thermal and heating systems of buildings; modernisation of outdoor and indoor lighting systems of buildings; modernisation of central ventilation and air-conditioning systems of buildings; installation of solar collectors, household power plants and heat pumps; establishing connections to community heating plants, preparing Sustainable Energy Action Plans (SEAP) and Sustainable Energy and Climate Action Plans (SECAP) at a county level	**implemented**	1 January 2014 – 31 December 2020
TOP-6.5.2-15 Complex development programmes controlled by local governments for the implementation of energy supply aimed at the exploitation of renewable energy sources in a way which fits into the local	financial	GHG reduction: Estimated annual decrease of GHG (in tonnes); Renewables: Additional capacity of renewable energy production (MW); Annual energy from RES (PJ)	**Target group**: - Local governments of cities with county rights (GFO 321) **Activities**: Meeting own (public) heating, cooling and electricity needs with renewable energy from biomass; Meeting own (public) heating, cooling and electricity needs with geothermal energy; The establishment of solar power plants to meet own (public) electricity needs; Producing renewable energy from the biogas generated during the operation of a wastewater purification station that has the local government of a city with county rights as its sole owner and is operated under a public service	**implemented**	1 January 2014 – 31 December 2020

environment			contract to supply energy for the facilities and service buildings of the same station, including related activities		
TOP-6.6.1-15 Infrastructural development in primary healthcare	financial	In the case of buildings in which primary healthcare is provided: Increase in energy efficiency. Increase in the use of renewable energy sources. Reduction of greenhouse gas emissions.	**Target group**: - Local governments of cities with county rights (GFO 321). **Activities**: - Energy efficiency measures - Use of renewable energy sources (such as solar collectors, photovoltaic solar cells) to make building management more economical and modern.	**implemented**	1 January 2014 – 31 December 2020
TOP-6.6.1-16 Infrastructural development in primary healthcare	financial	Healthcare institutions: Increase in energy efficiency. Increase in the use of renewable energy sources. Reduction of greenhouse gas emissions.	**Target group**: a) Local governments of cities with county rights (GFO 321); b) Companies majority-owned by the local government of a city with county rights (GFO 11, GFO 572, 573, 575, 576). **Activities**: - Energy efficiency measures - Use of renewable energy sources (such as solar collectors, photovoltaic solar cells) to make building management more economical and modern.	**implemented**	1 January 2014 – 31 December 2022

TOP-6.6.2-15 Extension and development of infrastructure in primary social care	financial	Social care institutions: Increase in energy efficiency. Increase in the use of renewable energy sources. Reduction of greenhouse gas emissions.	**Target group**: - Local governments of cities with county rights (GFO 321). As a consortium member: - Central fiscal governance and budgetary bodies (GFO 311; 312); - Local governments and their associations (GFO 321; 327); - Local and national minority governments and their associations (GFO 351; GFO 353; GFO 371; GFO 373); - Enterprises under majority local-government ownership (GFO 11); - Ecclesiastical legal entities (hereinafter referred to as churches) (GFO 55); - Civil society organisations established as a legal entity in the territory of and having their registered office in Hungary in accordance with Act CLXXV of 2011 (GFO 529, 563, 565, 569); - Public foundations (GFO 561); - Non-profit companies and organisations (GFO 572; 573; 575; 576, GFO 599). **Activities**: Increasing the share of renewable energy sources when constructing new buildings or improving the energy performance of existing buildings	**implemented**	1 January 2014 – 31 December 2020

TOP-6.6.2-16 Extension and development of infrastructure in primary social care	financial	Social care institutions: Increase in energy efficiency. Increase in the use of renewable energy sources. Reduction of greenhouse gas emissions.	**Target group**: - Local governments of cities with county rights (GFO 321). - Companies majority-owned by the local government of a city with county rights As a consortium member: - Central fiscal governance and budgetary bodies (GFO 311; 312); - Local governments and their associations (GFO 321; 327); - Local and national minority governments and their associations (GFO 351; GFO 353; GFO 371; GFO 373); - Enterprises under majority local-government ownership (GFO 11); - Ecclesiastical legal entities (hereinafter referred to as churches) (GFO 55); - Civil society organisations established as a legal entity in the territory of and having their registered office in Hungary in accordance with Act CLXXV of 2011 (GFO 529, 563, 565, 569); - Public foundations (GFO 561); - Non-profit companies and organisations (GFO 572; 573; 575; 576, GFO 599). **Activities**: Increasing the share of renewable energy sources when constructing new buildings or improving the energy performance of existing buildings	**implemented**	1 January 2014 – 31 December 2020
TOP-6.7.1-15 Rehabilitation of deteriorated urban areas in cities with county rights	financial	In the case of social housing: increase in energy efficiency, increase in the use of renewable energy sources, reduction of greenhouse gas emissions.	**Target group**: - Local governments of cities with county rights (GFO 321) - Companies with a local government (excluding cities with county rights) as their sole owner (GFO 11; 572; 573) **Activities**:	**implemented**	1 January 2014 – 31 December 2022

			- Development of social housing apartments owned or to be owned by a local government or a non-profit operator.		
TOP-6.7.1-16 Rehabilitation of deteriorated urban areas in cities with county rights	financial	In the case of social housing: increase in energy efficiency, increase in the use of renewable energy sources, reduction of greenhouse gas emissions.	**Target group**: - Local governments of cities with county rights (GFO 321) - Companies with a local government (excluding cities with county rights) as their sole owner (GFO 11; 572; 573) **Activities**: - Development of social housing apartments owned or to be owned by a local government or a non-profit operator.	**implemented**	1 January 2014 – 31 December 2022
KEOP-2015-4.10.0/U Application of renewable energy sources to meet the thermal energy and electricity needs associated with the operation of swimming pools owned by local budgetary bodies	financial	Annual increase in the use of renewable energy sources (tonnes), Increase in the use of renewable energy sources (increase in the use of renewable energy sources within the indicator), Reduction of greenhouse gas emissions (CO_2 eq)	**Applicants:** Local government fiscal governance and budgetary bodies: 321 – Local governments 322 – Local government budgetary bodies **Description of eligible activities:** I. Application of heat pumps to partially or completely and directly meet the thermal energy needs associated with the operation of swimming pool facilities involved in the development. II. Establishment of a solar cell system or systems with an interconnection capacity of less than 50 kVA (household power plant) to partially or completely and directly meet the electricity needs associated with the operation of swimming pool facilities involved in the development.	**implemented**	10 September 2015 – 31 December 2015

KEOP-2015-4.11.0 Development of a solar cell system to reduce the electricity costs of budgetary and public bodies	financial	Annual increase in the use of renewable energy sources (tonnes). Increase in the use of renewable energy sources (increase in the use of renewable energy sources within the indicator), Reduction of greenhouse gas emissions (CO_2 eq)	**Applicants:** MVM Magyar Villamos Művek Zrt., specified in the Government Decision concerning the programme KEOP-2015-4.11.0, or its wholly owned companies **Description of eligible activities:** Establishment of grid-connected photovoltaic systems to partially or completely meet the electricity needs of the parties specified in the supply agreement.	**implemented**	9 September 2015 – 31 December 2015

KEHOP-5.2.1 Development of the energy performance of church-owned hospitals and the Medical Centre of the Hungarian Defence Forces	financial	Annual energy from RES: 6 200 GJ Decrease in annual primary energy consumption as a result of energy efficiency developments: 17 190 GJ Annual decrease of GHG: 1 130 tonnes CO_2 eq	**Applicants:** Four church-owned hospitals and the existing building stock of the Medical Centre of the Hungarian Defence Forces under the trusteeship of the Ministry of Defence, Defence Economic Bureau. **Description of eligible activities:** A) Activities concerning the improvement of energy efficiency: I. Improving the thermal characteristics of and reducing heat loss in a building, buildings or a cluster of buildings in direct contact with each other involved in the development. II. Modernisation of heating, cooling and domestic hot water systems of institutions III. Refurbishment of lighting systems to be more energy-saving B) Activities concerning the use of renewable energy sources: I. Application of solar collectors to partially or completely meet the demand for domestic hot water and/or to assist the heating system. II. Application of heat pumps to provide heating and/or to produce domestic hot water and/or to assist the heating system. III. Utilisation of geothermal energy to provide heating or to assist the heating system and/or to produce domestic hot water. IV. Application of solar cells for grid-connected or independent (off-grid) electricity generation to supply electricity exclusively for the building involved in the development.	**on-going**	On-going since 6 July 2015

KEHOP-5.2.2 Priority development of the energy performance of public buildings	financial	Annual energy from RES: 100 090 GJ Decrease in annual primary energy consumption as a result of energy efficiency developments: 1 005 600 GJ Annual decrease of GHG: 48 730 tonnes CO_2 eq	**Applicants:** Applicants listed in Government Decision No 1084/2016 of 29 February 2016 on the determination of the KEHOP annual development budget, and the consortia led by the National Development and Strategy Institute Non-profit Limited Liability Company (NFSI) named in Government Decree No 435/2015 of 28 December 2015. **Description of eligible activities:** Activities concerning the improvement of energy efficiency: I. Improving the thermal characteristics of a building, buildings or a part or all of a cluster of buildings in direct contact with each other involved in the development. II. Modernisation of heating, cooling, ventilation and domestic hot water systems of institutions. Activities concerning the use of renewable energy sources: III. Application of solar collectors to partially or completely meet the demand for domestic hot water and/or to assist the heating system. IV. Utilisation of biomass, more specifically, agricultural by-products, horticultural by-products, energy crops, forestry products and by-products, wood industry and other industry wastes and by-products or a mixture of these to provide heating and/or to assist the heating system. V. Application of heat pumps to provide heating and/or to produce domestic hot water and/or to assist the heating system. VI. Utilisation of geothermal energy to provide heating or to assist the heating system and/or to produce domestic hot water.	**on-going**	On-going since 10 March 2016

			VII. Application of solar cells for grid-connected or independent (off-grid) electricity generation to supply electricity exclusively for the building involved in the development.		

KEHOP-5.2.3 Development of the energy performance of ecclesiastical buildings with the possibility to utilise renewable energy sources	financial	Annual energy from RES: 16 210 GJ Decrease in annual primary energy consumption as a result of energy efficiency developments: 88 230 GJ Annual decrease of GHG: 6 560 tonnes CO_2 eq	**Applicants:** Ecclesiastical beneficiaries specified **Description of eligible activities:** A. Activities concerning the improvement of energy efficiency: I. Improving the thermal characteristics of a building, buildings or a part or all of a cluster of buildings in direct contact with each other involved in the development. II. Modernisation of heating, cooling, ventilation and domestic hot water systems of institutions. B. Activities concerning the use of renewable energy sources: I. Application of solar collectors to partially or completely meet the demand for domestic hot water and/or to assist the heating system. II. Utilisation of biomass, more specifically, agricultural by-products, horticultural by-products, energy crops, forestry products and by-products, wood industry and other industry wastes and by-products or a mixture of these to provide heating and/or to assist the heating system. III. Application of heat pumps to provide heating and/or to produce domestic hot water and/or to assist the heating system. IV. Utilisation of geothermal energy to provide heating or to assist the heating system and/or to produce domestic hot water. V. Application of solar cells for grid-connected or independent (off-grid) electricity generation to supply electricity exclusively for the building involved in the development.	**on-going**	On-going since 9 September 2016

KEHOP-5.2.4 Energy efficiency investments of central budgetary authorities – staggered projects	financial	Annual energy from RES: 2 400 GJ Decrease in annual primary energy consumption as a result of energy efficiency developments: 74 100 GJ Annual decrease of GHG: 5 520 tonnes CO_2 eq	**Applicants:** KEOP-5.6.0 staggered projects: Semmelweis University / National Oncology Institute / Counter Terrorism Centre / Eötvös Loránd University of Sciences **Description of eligible activities:** A) Activities concerning the improvement of energy efficiency: I. Improving the thermal characteristics of a building, buildings or a part or all of a cluster of buildings in direct contact with each other involved in the development. II. Modernisation of heating, cooling, ventilation and domestic hot water systems and energy-intensive assets of institutions. III. Refurbishment of lighting systems to be more energy-saving. B) Activities concerning the use of renewable energy sources: I. Application of solar collectors to partially or completely meet the demand for domestic hot water and/or to assist the heating system. II. Utilisation of biomass, more specifically, agricultural by-products, horticultural by-products, energy crops, forestry products and by-products, wood industry and other industry wastes and by-products or a mixture of these to provide heating and/or to assist the heating system. III. Application of heat pumps to provide heating and/or to produce domestic hot water and/or to assist the heating system. IV. Utilisation of geothermal energy to provide heating or to assist the heating system and/or to produce domestic hot water. V. Application of solar cells for grid-	**on-going**	On-going since 9 March 2016

			connected or independent (off-grid) electricity generation to supply electricity exclusively for the building involved in the development.		
KEHOP-5.2.5 Construction of nearly zero energy buildings as pilot projects	financial	Annual energy from RES: 3 500 GJ Decrease in annual primary energy consumption as a result of energy efficiency developments: 3 000 GJ Annual decrease of GHG: 980 tonnes CO_2 eq	**Applicants:** Central budgetary authorities specified, or consortia led by them **Description of eligible activities:** In relation to the construction of new nearly zero-energy public buildings: Establishment of support and divider structures of buildings, heating, cooling and ventilation systems, and photovoltaic and solar collector systems. Demolition of buildings that previously served the function of the new buildings.	**on-going**	On-going since 5 September 2016
KEHOP-5.2.9 Calls for proposals concerning the energy performance of buildings for municipal governments in the Central Hungary Region	financial	Annual energy from RES: 46 120 GJ Decrease in annual primary energy consumption as a result of energy efficiency developments: 174 050 GJ Annual decrease of GHG: 11 450 tonnes CO_2 eq	**Applicants:** Municipal governments in Central Hungary Legal status code used by the Hungarian Central Statistical Office (the 'HCSO'): 321 – Local governments Aid applications may not be submitted by consortia. **Description of eligible activities:** I: The improvement of the thermal characteristics of buildings by developing the divider structures of buildings as listed in Table 1 of Annex 5 of Decree No 7/2006 of the Minister without Portfolio of 24 May 2006. II. Application of solar cells for grid-connected or independent (off-grid) electricity generation to supply electricity exclusively for the building involved in the development.	**on-going**	On-going since 25 March 2016

KEHOP-5.2.10 Calls for proposals concerning the improvement of the energy performance of buildings for budgetary bodies	financial	Annual energy from RES: 20 200 GJ Decrease in annual primary energy consumption as a result of energy efficiency developments: 146 380 GJ Annual decrease of GHG: 9 600 tonnes CO_2 eq	**Applicants:** workers' hostels for law enforcement staff (police officers' hostels), hostels for hospital workers (nurses' hostels), dormitories of primary schools and secondary schools **Description of eligible activities:** I: The improvement of the thermal characteristics of buildings by developing the divider structures of buildings as listed in Table 1 of Annex 5 of Decree No 7/2006 of the Minister without Portfolio of 24 May 2006. II. Application of solar cells for grid-connected or independent (off-grid) electricity generation to supply electricity exclusively for the building involved in the development. + solar collectors	**on-going**	On-going since 17 May 2016
KEHOP-5.2.11 Establishment of photovoltaic systems for central budgetary authorities	financial	Annual energy from RES: 160 080 GJ Annual decrease of GHG: 29 500 tonnes CO_2 eq	**Applicants:** central budgetary authorities **Description of eligible activities:** Installation of photovoltaic systems with a maximum capacity of 500 kW for own use	**on-going**	On-going since 16 September 2016

GINOP-8.4.1/B-16 Energy loan for SMEs	financial	The purpose of the loan scheme is to increase the competitiveness of micro, small and medium-sized enterprises which have limited to no access to funding sources, to establish a basis for their advanced product and service development capacities and to support these capacities by improving access to external financing. The loan scheme supports financially viable and income-generating investments of micro, small and medium-sized enterprises which generate electricity for network production with the use of renewable energy sources (with the exception of wind energy).	Within the framework of the loan scheme, financially viable corporations, self-employed entrepreneurs, one-man firms, cooperatives or Hungarian branches of foreign enterprises with limited to no access to funding sources which are resident in Hungary and have a registered seat in Hungary or a registered seat in the European Economic Area and a branch office in Hungary and are classified as a micro, small or medium-sized enterprise under Annex I to Commission Regulation (EU) No 651/2014 of 17 June 2014 declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty are eligible for the loan. Accordingly, the loan may be requested by an enterprise which is a micro, small or medium-sized enterprise within the meaning of Annex I to Commission Regulation (EU) No 651/2014 on the basis of its consolidated annual statements involving its partner enterprises or affiliates – which may be foreign partner enterprises or affiliates – or, in the absence of such, the accounts and records of the applicant and, where appropriate, its foreign partner enterprises or affiliates. An enterprise already registered or recorded by a competent court or authority which started its operation within the business year concerned may also be entitled to receive a loan. Consortia may not apply for a loan under this loan scheme.	**planned**	Applications for loans under this scheme may be submitted since 28 February 2017. (the scheme is now temporarily suspended as the envelope has been exhausted)

GINOP-4.1.1-8.4.4-16 Support for the improvement of the energy performance of buildings with the use of renewable energy through combined loan products	financial	This non-refundable aid and loan scheme contributes to the implementation of investments aiming at improving the energy conservation and energy efficiency of buildings with the utilisation of renewable energy sources. It simultaneously helps to strengthen environmentally-conscious economic competitiveness, reduce environmental load and the amount of primary energy used, reduce greenhouse gas emissions by increasing the utilisation of renewable energy sources, and alleviate the burden linked to the overhead costs of enterprises.	Aid applications may be submitted by small and medium-sized enterprises which fully comply with the eligibility criteria specified in the call for proposals. Aid applications may not be submitted under this call by consortia.	**planned**	Aid applications may be submitted from 16 March 2017 to 8 January 2018, 12.00.
GINOP-4.1.2-17 Support for the improvement of the energy performance of buildings with the use of renewable energy	financial	This non-refundable aid scheme contributes to the implementation of investments aiming at improving the energy conservation and energy efficiency of buildings with the utilisation of renewable energy sources. It simultaneously helps to strengthen environmentally-conscious economic competitiveness, reduce environmental load and the amount of primary energy used, reduce greenhouse gas emissions by increasing the utilisation of renewable energy sources, and alleviate the burden linked to the overhead costs of enterprises.	Aid applications may be submitted by small and medium-sized enterprises which fully comply with the eligibility criteria specified in the call for proposals. Aid applications may not be submitted under this scheme by consortia.	**planned**	Aid applications may be submitted from 15 January 2018 to 28 June 2018, 12.00.

2a The progress made in evaluating and improving administrative procedures to remove regulatory and non-regulatory barriers to the development of renewable energy

We intend to encourage the spread of renewable energy power plants primarily **by gradually simplifying the licensing rules currently in force.** Heat pumps and solar collectors still do not require any construction permit or energy licence, which greatly helps the more widespread use of these devices.

Act LXXXVI of 2007 on Electric Energy (hereinafter referred to as the Act on Electric Energy) does not prescribe a separate licence for the establishment of power plants with a rated capacity of 0.5 MW or less, whereas, pursuant to Section 80(1) and (2) of the Act on Electric Energy, the regulatory authority (Hungarian Energy and Public Utility Regulatory Authority, 'MEKH') issues ***a combined small power plant licence*** (*an establishment and generation licence in one*) for power plants with a rated capacity of between 0.5 MW and 50 MW in ***a simplified licensing procedure***. Pursuant to the relevant European Union directives, environmental and construction permits have also to be obtained in addition to the above licences and a network connection agreement has to be concluded.

Furthermore, Act LIII of 2006 on simplifying and accelerating the execution of investments with priority importance to the national economy (hereinafter referred to as the Priority Projects Act) ensures that in Hungary *investments partly or fully implemented using European Union assistance and/or promoting the accomplishment of environmental or research and development objectives**, i.e. procedures initiated in relation to 'priority issues', may be conducted in a shorter timeframe than that stipulated in general regulations.*** Renewable energy power plant projects may also belong to this category. The authorities have to assess applications relating to priority issues as a matter of urgency; there is also a maximum time set for each phase of the licensing procedure. The Government classifies issues as having priority importance in decrees.

In the case of priority issues, *the timeframe for the administrative handling of official licensing procedures concerning the construction of electrical installations was reduced* with the amendment of the Priority Projects Act, which entered into force on 1 May 2012, further simplifying the procedures for high-priority cases. The competent authority has to take a decision in cases that fall within the scope of the Priority Projects Act and are classified as such within ***30 days*** instead of the previous deadline of two months. Section 71(2) of Act CXL of 2004 on the general rules of administrative procedures and services (hereinafter referred to as the Act on Administrative Proceedings) provides for the automatic acquisition of certain licences as follows:

'Section 71 […] (2) If the purpose of the client's application is to acquire a right and no opposing party took part in the procedure at first instance, instead of designating another authority or specialist authority to conduct a procedure, legislation may stipulate that:
(a) if the authority does not take a decision by the prescribed deadline, the client is entitled to exercise the right applied for;
(b) if the specialist authority does not issue a position statement within the prescribed deadline, its consent shall be regarded as granted.'

However, it must be noted that although the Act on Administrative Proceedings provides for 'automatic consent' by the special authority, this rule may only apply if it is specifically provided for in legislation.

In addition to licensing procedures, Hungary also places significant emphasis on simplifying aid procedures and making them more 'client-friendly'. As a first step in this regard, the application procedures for certain investment aids were significantly simplified in the first half of 2011. First, the simplified electronic application management process was introduced more widely in certain support schemes published in the Environment and Energy Operational Programme; then, in the second half of 2011, an electronic application submission system was introduced for residential Solar Collector applications under the Green Investment Scheme (GIS) as well. Furthermore, provisions were introduced in 2017 which stipulate that the amendment of Decisions concerning mandatory off-take schemes, too, may only be requested by electronic means.

The concept of household power plants was introduced as of 2008 in Act LXXXVI of 2007 on Electric Energy. 'Household power plant' means a micro power plant connected to a low-voltage grid (a network with a nominal voltage of no more than 1 kV) with an interconnection capacity of less than 50 kVA at the connection point. This mainly includes micro power plants with a maximum installed capacity of 50 kW[15].

Where a household power plant is installed, electricity flow is measured by means of a special two-way electronic meter from which the amount of electricity received from and supplied to the grid can be read for the reference period (year or month) in each direction (it is to be noted that the meter does not measure the amount of electricity produced). Service providers calculate the settlement based on the balance of the total amounts of energy consumed and supplied as recorded by the meters and the current unit prices (for 2016, these were set out in Decree No 4/2011 of the Minister for National Development of 31 January 2011 on the pricing of the universal supply of electricity and Decree No 4/2013 of the Hungarian Energy and Public Utility Regulatory Authority of 16 October 2013[16] on electricity grid use charges and the rules of their application).

Balance accounting means that the amount of electricity received from the grid (that is to be purchased) during the given accounting period (no more than one year) is reduced by the amount of electricity supplied to the grid. This way, the unit price of electricity produced by an operator of a household power plant for residential consumers **is equal to the total end consumer price** (product price + grid use and other charges + VAT) **as long as the amount of electricity supplied to the grid does not exceed the amount received from the grid in the accounting period.** If the amount of electricity supplied to the grid during the accounting period is greater than the amount of electricity received, the electricity trader or universal service provider supplying at that connection point must pay for the surplus a price corresponding to the average electricity price to be paid otherwise (as a user) by the operator

[15] The installed capacity of a photovoltaic micro power plant at the public grid connection point is equal to the nominal capacity of the alternating voltage inverter output. It is important to note that the momentary capacity of the photovoltaic micro power plant varies continuously depending on the intensity and angle of incidence of solar radiation and on temperature.

[16] It must be noted that the regulatory framework, the rules for determining and the amount of grid use charges, connection charges and other charges are regulated in three new decrees of the Authority as of 1 January 2017: Decree No 7/2016 of the Hungarian Energy and Public Utility Regulatory Authority of 13 October 2016 on the framework rules for the determination of electricity grid use charges, connection charges and other specific charges, Decree No 10/2016 of the Hungarian Energy and Public Utility Regulatory Authority of 14 November 2016 on the rules for applying electricity grid use charges, connection charges and other specific charges, and Decree No 15/2016 of the Hungarian Energy and Public Utility Regulatory Authority of 20 December 2016 on the amount of electricity grid use charges, connection charges and other specific charges.

of the household power plant. This amount is considerably lower than the total end consumer price; in 2016 the highest net universal service prices for residential consumers under universal supply in price category 'A1' (annual consumption of up to 1 320 kWh) [17] varied between HUF 14.34 and 15.2 per kWh. [18]

The Hungarian Energy and Public Utility Regulatory Authority ('the Authority') annually reports the data of household power plants and of non-household micro power plants with an installed capacity below 0.5 MW.[19]

The number and installed capacity of household power plants have increased considerably in recent years: while their total capacity at the end of 2008 was only 0.51 MW, **it had reached 165.5 MW by the end of 2016.** Overall capacity quadrupled in 2012 compared to the previous year and then doubled year by year between 2013 and 2015. In 2016, the installed capacity of household power plants increased by 28 % compared to the previous year.

At the end of 2016 a total of **20 496** household power plants were connected to the electricity grid, which is a 35 % increase compared to the 15 220 in the previous year[20]. Similarly to the previous year, **the largest number of household power plants was in the capacity category of under 5 kW**; consequently, **the majority of household solar power plants (9 876) can be found in this category, typical of residential consumers**.

Regarding the type of energy used, household power plants utilise solar energy, wind energy, hydropower, biogas[21], biomass[22], natural gas and other energy sources (thermal methane, petrol and diesel oil). The most widespread are photovoltaic micro power plants. The installed capacity of **photovoltaic** household power plants was **164.08 MW** by the end of 2016**,** which represents 99.17% of the total installed capacity and is supplied by **20 401 household solar power plants.** The increase in the number of household solar power plants in recent years was facilitated by the rapid decrease in their cost of purchase, the use of balance accounting, and the investment subsidies made available periodically through tenders.

[17] As of 1 April 2017, the highest universal supply prices in this consumption category vary between HUF 13.84 and 14.70 per kWh

[18] The website of the Hungarian Energy and Public Utility Regulatory Authority provides specific information on the rules pertaining to household power plants: http://www.mekh.hu/tajekoztatas-a-haztartasi-meretu-kiseromuvekrol-villamos-energia

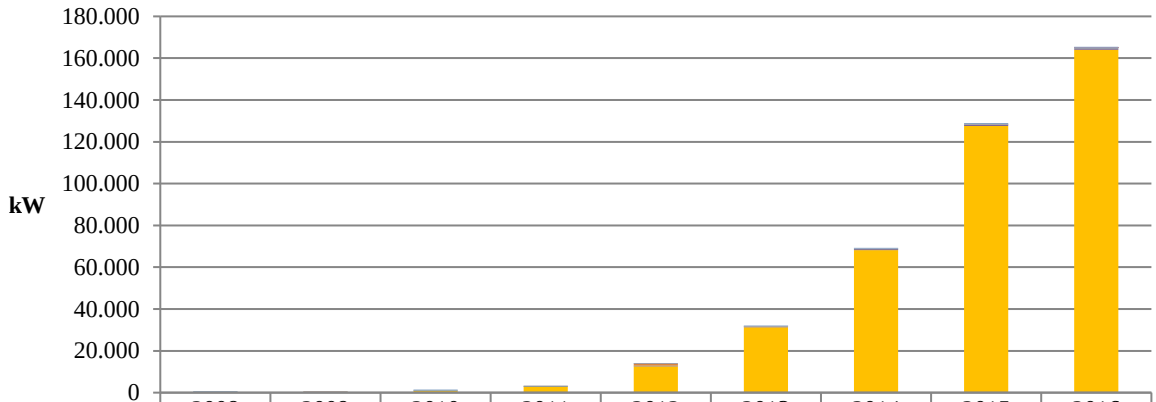
[19] The report for the period between 2008 and 2016 and its background data are available on the Authority's website: http://mekh.hu/nem-engedelykoteles-kiseromuvek-es-haztartasi-meretu-kiseromuvek-adatai

[20] The number of household power plants is presented in an additional table on the Authority's website, broken down by authorised distributors and energy source used.

[21] Including landfill gas and sewage gas.

[22] It is to be noted that the first household power plant of 20 kW utilising biomass was put into operation in 2016

The installed capacity of household power plants by energy sources (2008-2016)
* Other: thermal methane, diesel oil



	2008	2009	2010	2011	2012	2013	2014	2015	2016
Egyéb*	0	0	50	50	120	246	246	257	257
Földgáz	117	55	85	48	48	67	188	205	261
Biomassza	0	0	0	0	0	0	0	0	20
Biogáz	0	0	0	24	1.095	100	160	165	165
Vízenergia	16	0	39	39	90	64	64	64	64
Szélenergia	10	59	97	128	246	395	493	603	609
Napenergia	363	465	992	2.883	12.530	31.210	68.127	127.540	164.080
Összesen	505	579	1.263	3.172	14.129	32.082	69.277	128.833	165.455

Other*
Natural gas
Biomass
Biogas
Hydropower
Wind energy
Solar energy
Total
Source: MEKH

Hungary takes all measures necessary to ensure that, in accordance with the requirements of Article 6(3), (4) and (8) of the **Aarhus** Convention and in compliance with the provisions of Article 7 thereof, the legislation, measures, strategies and concepts for renewable energy are drafted in view of these considerations. For this purpose, pursuant to Act CXXXI of 2010 on social participation in the drafting of legislation, each policy measure ensures that the widest possible range of opinions – in particular those of socio-economically marginalised and disadvantaged groups – are represented in the course of public consultation. Therefore, the transparency and maximum publicity of consultations are ensured when drafting legislation. In the course of public consultation, the participants are obliged to act in cooperation.

The following associations, research institutes, civil society organisations and other institutions participated in designing Hungary's Renewable Energy Utilisation Action Plan, the most important national strategy document related to renewable energy:

>> Aquaprofit Zrt.	>> Környezetvédelmi és Vízügyi Minisztériu	>> Magyar Pellet Egyesület
>> ArchEnerg – Regionális Megújuló Energetika	Fejlesztési Igazgatóság	>> Magyar Szélenergia Társaság
és Építőipari Klaszter	>> Környezetvédelmi Szolgáltatók	>> Magyar Termálenergia Társaság
>> Békéscsabai Regionális Képző Központ	és Gyártók Szövetsége	>> Magyar Természetvédők Szövetsége
>> Bell Research Kft.	>> Levegő Munkacsoport	>> Magyar Tudományos Akadémia
>> Biomassza Erőművek Egyesülete	>> Magán Erdőtulajdonosok és Gazdálkod	Energetikai Bizottság
>> Budapesti Műszaki Egyetem	Országos Szövetsége	>> Magyar Tudományos Akadémia
>> Budapesti Corvinus Egyetem	>> Magosfa Környezeti Nevelési és	Világgazdasági Kutatóintézet
>> Bükk-mak Leader Nonprofit Kft.	Ökoturisztikai Alapítvány	>> Menedzserek Országos Szövetsége
>> EBRD Európai Újjáépítési és Fejlesztési Bank	>> Magyar Bioetanol Szövetség	>> MOL Csoport
>> Ecorys Nederland BV.	>> Magyar Biogáz Egyesület	>> Naplopó Kft.
>> EETEK Holding Energiahatékonysági Zrt.	>> Magyar Biokultúra Szövetség	>> Negos Zrt.
>> Első Magyar Napelem Erőmű Klaszter	>> Magyar Elektrotechnikai Egyesület	>> Nemzeti Energetikai Kör
>> ÉMI Nonprofit Kft.	>> Magyar Energetikai Társaság	>> Nemzeti Fejlesztési Ügynökség
>> Energia Központ Nonprofit Kft.	>> Magyar Energia Hivatal	>> NORDA Észak-Magyarországi Regionális
>> Energiagazdálkodási Tudományos Egyesület	>> Magyar Energiahatékonyság Társaság	Fejlesztési Ügynökség
>> Energiahatékony Önkormányzatok Egyesület	Magyar Építész Kamara	>> Novoflex-4 Kft.
>> Energiaklub	>> Magyar Építőanyag-ipari Szövetség	>> Nyugat-dunántúli Regionális Fejlesztési
>> ENREA Észak-alföldi Regionális Energia Ügyr	>> Magyar Épületgépészek Szövetsége	Ügynökség Közhasznú Nonprofit Kft.
Nonprofit Kft.	>> Magyar Feltalálók Szövetsége	>> OBEKK Országos Bioenergetikai Kutató Központ
>> Fagazdasági Országos Szakmai Szövetség	>> Magyar Geotermális Egyesület	>> Pannon Egyetem Gazdaságtudományi Kar
>> Fenntartható Fejlődésért Egyesület	>> Magyar Hőszivattyú Szövetség	>> Reeco Hungary Kft.
>> Gaiasolar Kft	>> Magyar Innovációs Szövetség	>> Regionális Energiagazdasági Kutatóközpont
Greenpeace Magyarország	>> Magyar Kapcsolt Energia Társaság	>> Simply Green Kft.
>> HBF Hungaricum Kft.	>> Magyar Megújuló Energia Szövetség	>> Századvég Alapítvány
>> Hidrogén és Tüzelőanyag-cella	>> Magyar Mérnöki Kamara	>> Szent István Egyetem
Technológiai Platform	>> Magyar Napelem Iparági Szövetség	>> Trebag Kft.
>> Hűtő- és Klímatechnikai Vállalkozások Szöve	>> Magyar Napenergia Társaság	>> WWF Magyarország
>> Ipolymente-Börzsöny Natúrpark Egyesület	>> Magyar Nemzeti Vidéki Hálózat	
>> ISO 9000 Fórum	>> Magyar Passzívház Szövetség	

Priority access

Pursuant to Article 16 of Directive 2009/28/EC (RED) and pursuant to Article 15 of Directive 2009/72/EC (IEMD), Member States require system operators (transmission system operators and distribution system operators) to give priority access to generating installations using renewable energy sources. In accordance with Articles 15 and 25 of the IEMD, priority access may also be given to generating installations producing combined heat and power. These provisions were transposed by Section 35(3) of the Act on Electric Energy as follows: *'Authorised network operators, subject to the conditions laid down in specific other legislation, shall give priority to electricity producers using technologies free of emissions of carbon dioxide or using renewable energy sources or waste in electricity production or producing electricity in a cogeneration process in connection with the operation of and access to networks.'*

Timeframe for data supply concerning utilities

In accordance with the 2017 amendment of Government Decree No 324/2013, data must be provided by the parties within 30 days of the establishment of a public utility.

2b The measures in ensuring the transmission and distribution of electricity produced from renewable energy sources and in improving the framework or rules for bearing and sharing of costs related to grid connections and grid reinforcements

The measures planned for the period between 2010 and 2020 are described in detail in Hungary's Renewable Energy Utilisation Action Plan 2010-2020 sent to the European Commission; therefore, the Report includes only a short summary of said measures.

The rules relating to ensuring the transmission and distribution of electricity generated from renewable energy sources and to grid connections and grid reinforcements can be summarised as follows.

Operational Code of the Hungarian Electricity System

Pursuant to Clause 1.2.2 of the Operational Code (the 'OC') adopted via Decision 1871/2017 of the Hungarian Energy and Public Utility Regulatory Authority:

'The OC has been devised with a view to the establishment of an efficiently functioning, competitive electricity market, the enforcement of the principles of energy efficiency and energy conservation in the interest of sustainable development, the provision of electricity supply to customers in a secure and uninterrupted way, at a satisfactory standard of quality and with a transparent cost structure, the integration of the Hungarian electricity market into the increasingly integrated electricity markets of the European Communities, compliance with the legislation of the European Communities, and the development of objective and transparent regulations, which meet the requirement of equal treatment and ensure the implementation of all the above objectives.'

In accordance with Clause 1.2.4 of the OC:

'The OC defines:
(D) the technical conditions for taking off electricity generated from renewable energy and at power plants defined in specific other legislation and the connection of such electricity generation equipment.'

Pursuant to Clause 4.2.4 of the OC, the transmission system operator – when preparing the network development plan and the underpinning analysis of medium- and long-term resource capacity development – must pay special attention to the common indicators of electricity supply in Hungary, including the share of electricity produced from renewable sources.

Since 2015, power plants producing electricity from renewable energy sources are also represented in the Operational Code Committee preparing the amendment of the OC.

The OC is available at:
http://www.mavir.hu/web/mavir/uzletszabalyzat

Section 28 of MEKH Decree No 10/2016 of 14 November 2016 on the rules of applying electricity grid use charges, connection charges and other specific charges sets out the rules for determining connection charge discounts for the grid connection of renewables.

Code of Trade of the Hungarian Electricity System

The Code of Trade of the Hungarian Electricity System (CoT) specifies the detailed provisions on the operation of the balance group comprising power plants generating electricity from renewable energy sources. As of 1 April 2016, the entire amount of electricity taken off under the mandatory off-take scheme is sold on the organised market.

Since 2015, power plants producing electricity from renewable energy sources are also represented in the Trade Code Committee preparing the amendment of the CoT.

The CoT is available at:
http://www.mavir.hu/web/mavir/kereskedelmi-szabalyzat

Code of Business Practice of the Transmission System Operator

Pursuant to Section III/3.1.1 of the Code of Business Practice of the Transmission System Operator:

'The medium-term network development objective of MAVIR ZRt. is to provide supply and system security to users as required by the Act on Electric Energy, regulations and contracts. The aim is to construct (or arrange for the construction of) a transmission network and a 132 kV network which allows the achievement of the highest possible common profit (usefulness) for the electricity market as a whole. In the long run, keeping current medium-term objectives in mind, it is necessary to ensure the compliance of the Hungarian electricity system with the principles laid down in legislation, regulations and contracts and to cooperate in a proportionate manner in maintaining the viability of the European electricity system.'

As laid down in Clause IV./2.12 of the Code of Business Practice, the transmission system operator operates an autonomous balance group to facilitate the production of electricity generated from renewable energy sources or waste and establishes the contractual legal relationships required for settlement.

The Code of Business Practice is available at:
http://www.mavir.hu/web/mavir/uzletszabalyzat

Connection charge discounts

Pursuant to Section 28 of MEKH Decree No 10/2016 of 14 November 2016 on the rules of applying electricity grid use charges, connection charges and other specific charges, power plants using renewable energy sources are eligible for connection charge discounts as follows:

'Section 28(1) A new power plant or a new unit of an existing power plant requiring excess capacity beyond the existing connection capacity is eligible for a connection charge discount if

(a) it can only be operated using primary renewable energy sources as laid down in clause (a)(aa) to (ad) of Annex 7 to the Implementing Decree, or

(b) it can be fully or partly operated using renewable energy sources other than those under clause (a) but considered as primary as provided for in clause (a) of Annex 7 to the Implementing Decree, and the operator of the power plant undertakes to use renewable energy sources classified as primary under clause (a) of Annex 7 to the Implementing Decree for the production of all the final products in the new power plant or power plant unit

(ba) at a minimum of 70 %, or

(bb) at a minimum of 90 %

calculated as an annual average from the beginning of the first calendar year to the end of the fifth calendar year after the year of commencement of operation.

(2) For the purposes of connection charge discounts, technical solutions connected in any technical manner to an existing power plant or power plant unit – except for lines and other electrical equipment used to supply electricity to the grid – or having common main equipment therewith shall not qualify as a new power plant or power plant unit.

(3) Before concluding a connection agreement, the operator of a power plant claiming a connection charge discount (for the purposes of this Section, hereinafter referred to as the applicant) shall make a written declaration to the authorised network operator that it intends to make use of the connection charge discount.

(4) To certify the content of the declaration referred to in paragraph (3), the applicant shall submit a request to the Authority within one month from the date of commissioning to obtain a qualification relating to the new power plant or power plant unit for which the connection charge discount is calculated in accordance with the Government Decree on the certification of origin as regards electricity produced from renewable energy sources or high-efficiency cogeneration plants.

(5) The commitment of the applicant under paragraph (1)(b) shall be fulfilled as calculated on the basis of the ratio between

(a) the amount of primary renewable energy sources measured in gigajoules (GJ) and

(b) the total amount of the primary energy sources measured in gigajoules (GJ)

used for the operation of the new power plant or the new power plant unit requiring excess connection capacity.

(6) The extent of the connection charge discount shall be

(a) where paragraph (1)(a) applies: 50 % of the connection charge,

(b) where paragraph (1)(b)(ba) applies: 30 % of the connection charge,

(c) where paragraph (1)(b)(bb) applies: 50 % of the connection charge.

(7) The fulfilment of the eligibility requirements under paragraph (1) shall be verified by the Authority, and the operator of the power plant shall refund to the authorised network operator

(a) the connection charge discount received, in a single payment, if it is found that the power plant or power plant unit(s) for which the connection charge discount is calculated have not obtained the qualification under paragraph (4),

(b) a part of the connection charge discount proportionate to the unqualified period within 5 years if it is found that the qualification under paragraph (4) of the power plant or power plant unit(s) for which the connection charge discount is calculated was withdrawn within 5 years from the launch of operation, or

(c) 20 % of the connection charge discount received (annually) if it is found that the rate for a given calendar year of primary renewable energy sources used in the power plant under paragraph (1)(b) calculated from the beginning of the first calendar year after the year of

commencement of operation to the end of the fifth calendar year has not reached the threshold values undertaken in advance pursuant to paragraph (1)(b)
in accordance with the Authority's Decision.'

Exemption from paying connection charges

In addition to the above, pursuant to Section 146/A(9) of the Act on Electric Energy, plants below the nominal capacity of 32 A may be granted an exemption from paying any connection and other charges to the distribution system operator. This provision facilitates the more widespread use of household power plants in the field of electricity generation from renewable sources.

Pursuant to Section 146/A(9) of the Act on Electric Energy: *'No connection or other charges shall be paid to the distribution system operator for the installation of a consumption meter up to a nominal capacity of 32 A, with the provision that, where the needs of the applicant require*
(a) the construction of a low-voltage public distribution network, no charge shall be paid for a maximum of one connection point per place of use
(aa) up to 100 metres of public overhead lines (including insulated overhead lines as well),
(ab) up to 50 metres of public underground cables,

(b) the construction of a medium-voltage public distribution network, no charge shall be paid for each new medium-/low-voltage transformer station with low-voltage consumption or for each connection point with medium-voltage consumption
(ba) up to 500 metres of overhead lines,
(bb) up to 250 metres of public underground cables
or for the construction of a new high-/medium-voltage or medium-/medium-voltage transformer station.'

3. The support schemes and other measures currently in place that are applied to promote energy from renewable sources and developments in the measures used with respect to those set out in the National Renewable Energy Action Plan

Investments made under the operational programmes are implemented using EU funding and national co-financing. In the period 2014-2020, four operational programmes will focus on measures to promote energy efficiency and the use of renewable energy sources.

Funds allocated to the measures under the operational programmes to promote energy efficiency and the use of renewable energy sources

Operational Programme	Priority axis	Aid to be granted in connection with energy performance
Environmental and Energy-efficiency Operational Programme (KEHOP)	5	HUF 325.96 billion
Economic Development and	4, 8	HUF 226.73 billion

Innovation Operational Programme (GINOP)		
Territorial Development Operational Programme (TOP)	3, 6	HUF 186.99 billion
Competitive Central Hungary Operational Programme (VEKOP)	5	HUF 21.17 billion
Total		**HUF 760.85 billion**

Source: Operational Programmes/Ministry of National Development

More than two-thirds of the calls for proposals linked to the measures were published in 2015 and 2016. Detailed financial measures are presented in Table 2 of the report under Question 2.

The mandatory off-take scheme is of utmost importance in the field of electricity produced from renewable energy sources and renewable-based combined heat energy production. The full revision of the system was commenced in 2013 in line with the provisions specified in the Action Plan.

The METÁR system to support electricity from renewable energy sources entered into force on 1 January 2017. METÁR does not affect entitlements granted under the previous mandatory off-take scheme; however, aid could only be claimed under that scheme up to 31 December 2016. Under METÁR, power plants producing electricity from **renewable energy sources** are eligible, with the exception of household power plants which are still subject to balance accounting.

Under the set-up of METÁR, grants are mainly allocated through competitive tendering. Exceptions include power plants with a capacity below 1 MW (except for wind power stations) and demonstration projects providing significant technological advances, and the so-called 'brown premium', an operating aid provided for biomass/biogas power plants. The main form of support is a premium over the market price; mandatory off-take will remain only for plants with a capacity below 0.5 MW and for demonstration projects.

The operation of the previous mandatory off-take scheme is regulated by Government Decree No 389/2007 of 29 December 2007 on the mandatory off-take and purchase price of electricity generated from renewable energy sources or waste and electricity generated in a combined system ('the Government Decree on Mandatory Off-take').

The data for the mandatory off-take of electricity for the years 2015 and 2016 are shown in Table 3. Certain elements of the relevant table of the form were not filled in, as the questions provided there were not relevant to the Hungarian situation.

Table 3: Support schemes for renewable energy

2015	Average feed-in tariff[23]		Per unit subsidy[24]		Total subsidy[25]	
	HUF/kWh	EUR/MWh[26]	HUF/kWh	EUR/MWh	Billion HUF	Million EUR
Renewables	**32.96**	106.35	**20.50**	66.16	**49.26**	158.95
Wind power plants	34.39	110.97	21.94	70.79	14.56	46.97
Hydropower plants over 5 MW	18.04	58.21	5.59	18.02	0.94	3.04
Hydropower plants, 5 MW or less	32.48	104.82	20.03	64.63	1.10	3.55
Average/total hydropower	21.59	69.66	9.13	29.47	2.04	6.59
Biomass firing only	34.10	110.03	21.65	69.85	15.99	51.61
Mixed coal and biomass firing	34.45	111.17	22.00	70.98	12.54	40.48
Average/total biomass firing	34.25	110.53	21.80	70.34	28.54	92.09
Biogas	33.00	106.49	20.55	66.31	2.80	9.02
Landfill gas	31.27	100.90	18.82	60.72	1.11	3.58
Sewage treatment plant gas	32.97	106.39	20.52	66.21	0.01	0.02
Solar power plants	32.14	103.71	19.69	63.52	0.21	0.67
Waste	22.63	73.02	10.17	32.8	0.26	0.84

2016	Average feed-in tariff[27]		Per unit subsidy[28]		Total subsidy[29]	
	HUF/kWh	EUR/MWh[30]	HUF/kWh	EUR/MWh	Billion HUF	Million EUR
Renewables	**32.45**	104.20	**21.45**	68.87	**50.53**	162.24
Wind power plants	34.28	110.06	23.28	74.73	15.12	48.55
Hydropower plants over 5 MW	17.91	57.49	6.90	22.16	1.27	4.09

[23] The average feed-in tariff is the quotient of the total amount paid under the mandatory off-take scheme and the quantity of electricity taken off for the given technology.
[24] The per unit subsidy is the quotient of the total subsidy under the mandatory off-take scheme and the quantity of electricity taken off for the given technology.
[25] The subsidy under the mandatory off-take scheme is the product of the difference between the mandatory off-take price and the average day-ahead market price on the organised power exchange (HUPX) and the quantity of electricity taken off for the given technology.
[26] The conversion to EUR was performed by applying the average HUF/EUR exchange rates published by the Central Bank of Hungary (309.9 HUF/EUR)
http://english.mnb.hu/Statisztika/data-and-information/mnben_statisztikai_idosorok
[27] The average feed-in tariff is the quotient of the total amount paid under the mandatory off-take scheme and the quantity of electricity taken off for the given technology.
[28] The per unit subsidy is the quotient of the total subsidy under the mandatory off-take scheme and the quantity of electricity taken off for the given technology.
[29] The subsidy under the mandatory off-take scheme is the product of the difference between the mandatory off-take price and the average day-ahead market price on the organised power exchange (HUPX) and the quantity of electricity taken off for the given technology.
[30] The conversion to EUR was performed by applying the average HUF/EUR exchange rates published by the Central Bank of Hungary for the given year (317 HUF/EUR)
http://english.mnb.hu/Statisztika/data-and-information/mnben_statisztikai_idosorok

Hydropower plants, 5 MW or less	32.49	104.31	21.48	68.98	1.30	4.18
Average/total hydropower	21.51	69.06	10.51	33.73	2.57	8.27
Biomass firing only	33.82	108.59	22.82	73.27	17.84	57.29
Mixed coal and biomass firing	33.71	108.22	22.70	72.89	9.60	30.82
Average/total biomass firing	33.78	108.46	22.78	73.14	27.44	88.11
Biogas	32.62	104.72	21.61	69.39	3.11	9.99
Landfill gas	31.00	99.52	19.99	64.19	1.38	4.43
Sewage treatment plant gas	33.68	108.14	22.68	72.81	0.03	0.08
Solar power plants	31.77	102.00	20.77	66.68	0.88	2.81
Waste	26.29	84.41	15.29	49.09	0.58	1.87

3.1 Information on how supported electricity is allocated to final customers for purposes of Article 3(9) of Directive 2009/72/EC

Allocation of electricity taken off under the mandatory off-take scheme

The rules governing the allocation of electricity taken off under the mandatory off-take scheme are regulated in Section 13 of Act on Electric Energy.

By 31 March 2016, each balance group manager was obliged accordingly to **take off** the **electricity** subject to the off-take obligation and transferred by the transmission system operator on the basis of a schedule in proportion to the amount sold to users in its balance group in accordance with the Ministerial Decree on the distribution of electricity subject to the off-take obligation, to pay the price of the electricity that is subject to the off-take obligation, and to conclude a relevant agreement with the transmission system operator.

As of 1 April 2016, there is no physical allocation, only financial, due to the changes in the allocation model of the mandatory off-take scheme. Therefore, each balance group manager, in accordance with the Minister's Decree on the financing of operating aid for electricity from renewable energy sources and waste, must **pay its share of the amount** determined by the transmission system operator as support for electricity generation under the mandatory off-take system, and must enter into a relevant agreement with the transmission system operator. The basis used to determine the payment obligation imposed on the balance group manager is the quantity of electricity sold to users within the balance group.

The share of electricity sold to users in the balance group of the balance group manager and the calculation of the consideration paid for the electricity still does not include:

- electricity sold by providers of universal services,
- electricity sold by electricity traders to users eligible for universal services where:
    - the electricity traders supply electricity tied to the price schedule established under the Minister's Decree on the pricing mechanisms for universal electricity services, at prices not exceeding the universal service rates applicable to the service location concerned, but at a reduced price with respect to at least one specific rate; and

- the electricity traders make available to the users supplied under the universal service the services specified in the Government Decree on the implementation of certain provisions of the Act on Electric Energy.

Thus, **the amount of the costs of operating the support scheme is determined each month by MAVIR** on the basis of the Act on Electric Energy and the FINR, and **this amount**, reduced by revenues (e.g. revenues from the HUPX sale of electricity taken off and surcharges), **is allocated** through balance group managers to **electricity consumers not entitled to universal supply in proportion to the amount of electricity they purchased.** Consumers involved in the financing scheme pay the HUF/kWh value published on the website of MAVIR for the respective month.

Electricity generated by a household power plant is not subject to the mandatory off-take scheme; the electricity produced by their operators must be taken off by the electricity trader that supplies electricity at the connection point in question (the details are regulated by Sections 4 and 5 of Government Decree No 273/2007 of 19 October 2007 implementing certain provisions of the Act on Electric Energy).

Information on how supported electricity is allocated to final consumers

Pursuant to Section 13 of the Act on Electric Energy, the costs of support for electricity generation are covered since 1 January 2014 by balance group managers. The level of contribution of each balance group is proportional to the amount of electricity sold to users in that balance group. However, this amount of electricity does not include electricity sold to users eligible for universal services.

'Section 13 (1) Each balance group manager, in accordance with the Minister's Decree on the financing of operating aid for electricity from renewable energy sources and waste, shall pay its share of the amount determined by the transmission system operator as support for electricity generation under the mandatory off-take system and the premium-based support scheme, and shall enter into an agreement to that end with the transmission system operator.
(2) The basis used to determine the payment obligation imposed on the balance group manager under paragraph (1) shall be the quantity of electricity sold to users within the balance group.
(3) The electricity sold as referred to in paragraph (2) shall not include the following:
(a) electricity sold by providers of universal services, and
(b) electricity sold by electricity traders to users eligible for universal services where:
(ba) the electricity traders supply electricity tied to the price schedule established under the Minister's Decree on the pricing mechanisms for universal electricity services, at prices not exceeding the universal service rates applicable to the service location concerned, but at a reduced price with respect to at least one specific rate; and
(bb) the electricity traders make available to the users supplied under the universal service the services specified in the Government Decree on the implementation of certain provisions of the Act on Electric Energy (hereinafter referred to as the "Implementing Decree").'

However, pursuant to Section 12(1) of the Act on Electric Energy, to certify the quantity of electricity produced from renewable sources or from high-efficiency cogeneration plants, the supplier must provide the user with a guarantee of origin. This means that only the costs of the support system are split between the final consumers under the rules of Section 13 of the

Act on Electric Energy, but not the electricity from renewable sources itself. Electricity from renewable energy sources can only be verified to a user with a so-called guarantee of origin (see Chapter 5). The amount of electricity produced from a renewable energy source but not verified to the user via a guarantee of origin is distributed equally among all users.

Information to consumers on the amount of electricity they use by type of energy source

Pursuant to Article 3(9) of the Directive 2009/72/EC, electricity suppliers must inform final customers on an annual basis about the contribution of each energy source to the overall fuel mix of the supplier and the environmental impact caused in the generation of electricity. This is the so called 'fuel mix disclosure obligation'. The disclosure obligation under this Directive does not only cover the proportion of supported electricity.

The EU provision was transposed into national legislation by Section 56/A(3) of the Act on Electric Energy and by Decree No 6/2008 of the Minister for Transport, Telecommunications and Energy of 18 June 2008 on certain data to be supplied in relation to the control, operation and use of the electricity system.

Pursuant to Section 56/A(3) of the Act on Electric Energy, users must be informed about the shares and environmental impacts of energy sources used for generating the electricity sold to them in the previous calendar year.

The detailed rules of the provision of such information are specified in Decree No 6/2008 of the Minister for Transport, Telecommunications and Energy of 18 June 2008. Pursuant to Section 6(2) to (4) of this Decree, the seller of electricity is obliged to provide information to the users about the proportion of primary energy sources actually used, the source of such information, and the environmental impacts of the primary energy sources used during the generation of the electricity sold. The information may be provided in an invoice or preliminary invoice issued or in an information letter attached to such invoices or in another place accessible to the buyer of electricity as specified in the invoice or preliminary invoice issued and.

The information to be provided in accordance with Decree No 6/2008 of the Minister for Transport, Telecommunications and Energy of 18 June 2008 may be based on guarantees of origin presented to users. The detailed legal provisions for the linking of the energy mix disclosure obligation to guarantees of origin are being drafted. Trading of guarantees of origin will be discussed in Chapter 5.

Obligation to provide general information about the use of renewable energy sources as of 2013

Section 7/A of Decree No 1/2012 of the Minister for National Development of 20 January 2012 on the calculation methodology of the share of renewable energy provides that, in order to promote the use and spread of renewable energy sources and the obligations relating to renewable energy, and to provide information and guidance for the public, customers, construction specialists, engineers, designers, installers and providers, the Minister has to provide information, by electronic means via a website created on the internet.

To carry out these information tasks, the Authority has been operating a website created for this purpose since late 2015. http://energiahatekonyag.mekh.hu/

The following information on renewable energy sources is available on the website:

- Strategic documents and regulatory background for renewable energy sources,
- Support schemes for renewable energy production (investment and operation aids),
- The benefits of, and practical issues relating to, the development and use of energy from renewable sources,
- Updates on renewable energy sources.

4 Information on how the support schemes have been structured in Hungary to take into account RES applications that give additional benefits, but may also have higher costs, including biofuels made from wastes, residues, non-food cellulosic material, and ligno-cellulosic material

Taking into account its capabilities, Hungary has structured its support system to support primarily the production of solar electricity. Considering the fact that no new demand emerged from market participants for investment projects for second generation biofuel production from waste, non-food residues or cellulose in Hungary in 2015 and 2016, no separate measure or support differentiation was prepared for this area. To the best of our knowledge, there is no sufficient quantity and quality of available feedstock material for the establishment of an advanced biofuel plant. With respect to wastes, biodiesel production from used frying oil was realised to a notable degree, but currently does not require regulations differing from the regulations on biodiesel made directly from vegetable oil.

5 Information on the functioning of the system of guarantees of origin for electricity and heating and cooling from RES, and the measures taken to ensure reliability and protection against fraud of the system

The provisions relating to guarantees of origin are laid down in Directive 2009/28/EC (**RED**) and Directive 2012/27/EU (**EED**). As defined in the RED, 'guarantee of origin' means an electronic document which has the sole function of providing proof to a final customer that a given share or quantity of energy was produced from renewable sources. Member States must ensure that a guarantee of origin is issued as regards electricity produced from renewable energy sources or high-efficiency cogeneration plants, and energy for heating or cooling. The standard unit for a guarantee of origin is 1 MWh.

The Union provisions relating to guarantees of origin are transposed into national legislation by Section 12(1) of the Act on Electric Energy, and Government Decree No 309/2013 of 16 August 2013 on the certification of origin of electricity from renewable energy sources and from high-efficiency cogeneration ('the Government Decree on Guarantees of Origin'). Since 1 January 2014, a system complying with the provisions of the Directives has been in place in Hungary.

The guarantee of origin system is accessible to account holders that have concluded an agreement with the Authority. There were 20 account holders at the end of 2015 and 29 at the end of 2016.

A guarantee of origin is recorded by the Authority in the management system upon request, on the basis of national power plant generation or in accordance with a certificate issued by a body of another Member State. In 2015 a total of 27 448, and in 2016 a total of 6 810 national guarantees of origin were registered. In these two years, an additional 354 293 and 343 131 foreign guarantees of origin were acknowledged by the Authority respectively on the basis of requests submitted by account holders. This demonstrates that the Hungarian guarantee of origin system predominantly includes foreign guarantees of origin.

In order to provide a certificate for a user, the Authority deletes the guarantee of origin from the management system upon request. The renewable origin of electricity was certified to users by guarantees of origin in an amount of 369 207 MWh in 2015, and 349 720 MWh in 2016. The amount of electricity certified by guarantees of origin was less than 1 % (around 0.8 %) of annual consumption in 2016.

The reliability of the system is ensured by the following:

- The management system containing the register of guarantees of origin is handled by the Authority in accordance with the Government Decree on Guarantees of Origin. The Authority performs its related tasks via an interface provided by the Finnish Grexel Systems Oy, which successfully operates similar systems in a number of European countries.
- Access rights to the system are provided by the Authority to customers with whom it has signed a contract.
- The Authority may monitor each transaction in the electronic management system.
- Registration of guarantees of origin can only be done by the Authority. The Authority may only register guarantees of origin in respect of production carried out in a power

plant unit qualified pursuant to Section 3 of the Government Decree on Guarantees of Origin.

- The registration of guarantees of origin in the management system, the recognition of foreign guarantees of origin and the presentation of guarantees of origin to users are carried out on the basis of requests submitted to the Authority. In public administration procedures initiated upon request, the Authority ensures that guarantees of origin contain reliable and credible information.

To check the sustainability criteria of biofuels, the National Food Chain Safety Office (NÉBIH) performs regular audits, the details of which can be found in the following tables:

Audit type			
Verification of the submission of data by the deadline		Audit of data submitted	
Year 2015	Year 2016	Year 2015	Year 2016
1 765	1 797	227	161

Number of non-compliant cases									
Delayed data provision or non-compliance with reporting obligation		Issuance of certificate with incorrect data		Issuance of certificate on false grounds		Misreporting		Non-compliance with obligation to present documents	
Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016
133	113	21	16	3	20	0	0	1	2

Fine				**Warnings**	
number		amount		Number of warnings	
Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016
61	53	HUF 24 937 145	HUF 9 602 093	20	55

Number of decisions to restrict activity	
Year 2015	Year 2016
108	61

6 Developments in 2015 and 2016 in the availability and use of biomass resources for energy purposes

According to the estimation made by the Research Institute of Agricultural Economics (AKI) on the basis of preliminary administrative data collected by the Hungarian Energy and Public Utility Regulatory Authority (MEKH) and calculating with the average yields of silage maize in 2015 and 2016 (24 tonnes/hectare and 32 tonnes/hectare, respectively, according to data of the Hungarian Central Statistical Office), 2 110 hectares of land were required to produce the silage maize for silage production in 2015, and 1 814 hectares in 2016. In accordance with the estimation made by the AKI, silage sorghum to be used in biogas plants was produced in 2015 on 1 816 hectares and in 2016 on 1 429 hectares. The role of other crops is negligible.

Table 4: **Biomass supply for energy use**

	Amount of domestic raw material (*)		**Primary energy in domestic raw material (ktoe)**		**Amount of imported raw material from EU (*)**		**Primary energy in amount of imported raw material from EU (ktoe)**		**Amount of imported raw material from non-EU (*)**		**Primary energy in amount of imported raw material from non-EU (ktoe)**	
	2015	**2016**	**2015**	**2016**	**2015**	**2016**	**2015**	**2016**	**2015**	**2016**	**2015**	**2016**
Biomass supply for heating and electricity:												
Direct supply of wood biomass from forests and other wooded land for energy generation (logging, etc.)	3 279 907 m^3 of firewood 2 943 tonnes of pellets 2 856 tonnes of wooden briquettes	3 225 687 m^3 of firewood 2 390 tonnes of pellets 2 801 tonnes of wooden briquettes	669.8 firewood 1.27 pellets 1.23 wooden briquettes	658.73 firewood 1.03 pellets 1.2 wooden briquettes	29 544 m^3 of firewood 1 072 tonnes of pellets 4 337 tonnes of wooden briquettes	31 844 m^3 of firewood 1 760 tonnes of pellets 8 077 tonnes of wooden briquettes	7.67 firewood 0.46 pellets 1.86 wooden briquettes	8.27 firewood 0.76 pellets 3.47 wooden briquettes	117 790 m^3 of firewood 7 669 tonnes of pellets 2 147 tonnes of wooden briquettes	133 910 m^3 of firewood 11 697 tonnes of pellets 9 176 tonnes of wooden briquettes	30.58 firewood 3.3 pellets 0.92 wooden briquettes	34.77 firewood 5.03 pellets 3.95 wooden briquettes
Indirect supply of wood biomass (residues and co-products from wood industry, etc.)	34 392 m^3 of waste for energy purposes	151 098 m^3 of waste for energy purposes	5.62	24.68	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Energy crops (grasses, etc.) and short rotation trees (please specify)	72 387 m^3 of crops for energy purposes	14 351 m^3 of crops for energy purposes	7.33	1.45	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Agricultural by-products / processed residues and fishery by-products**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biomass from waste (municipal, industrial, etc.)**	77 356 tonnes (1)	136 653 tonnes (1)	27.71	48.96	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Others (please specify)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biomass supply for transport:												
Common arable crops for biofuels (please specify main types)	Rape seed: 337 503 tonnes Maize: 1 253 001 tonnes	Rape seed: 325 006 tonnes Maize: 1 350 007 tonnes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Energy crops (grasses, etc.) and short rotation trees for biofuels (please specify main types)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Others (please specify)	Used frying oil: 31 000 tonnes	Used frying oil: 30 000 tonnes	N/A	N/A	?	?	N/A	N/A	?	?	N/A	N/A

*The amount of raw material for **biomass from forest management** should preferably be given **in cubic metres**, and the amount **from agriculture, fisheries and waste in tonnes**.
**This biomass category is to be understood in accordance with Table 7 in point 4.6.1 of Commission Decision C(2009) 5174 final establishing a template for National Renewable Energy Action Plans under Directive 2009/28/EC.

Table 4a: Current domestic agricultural land use for the production of crops dedicated to energy production (ha)

Land use	Surface (ha)	
	2015	2016
1. Land used for common arable crops (wheat, sugar beet, etc.) and oilseeds (rapeseed, sunflower, etc.) (please specify main types)	**N/A**	**N/A**
2. Land used for short rotation trees (willow, poplar) (please specify main types)	**4 082.02**	**4 104.04**
3. Land used for other energy crops (reed canary grass, switch grass, *Miscanthus*) and sorghum (please specify main types)	**N/A**	**N/A**

Energy crops, by type (hectares; 2016)	
Populus	3 352
Salix	505
Robinia	243
Other	4
Total	**4 104**

(1) Detailed data of biomass from wastes:

Biomass from wastes		Quantity			
		2013	2014	2015	2016
1/a	Amount of municipal waste composted (without household compost)* (tonnes)	187 330	236 087	230 595	293 968
1/b	Landfill gas (m^3)	30 692 000	30 004 000	37 913 931	39 060 054
2	Biodegradable fraction of industrial waste reported per transferor* (tonnes)	932 580	890 290	680 546	645 492
3	Sewage sludge** (tonnes)	156 555	159 745	162 818	N/A

* *On the basis of quantity data reported in the single waste management information system (EHIR) (tonnes)*

** *Data are available to the Ministry of Home Affairs.*

In contrast to the data reported in the 2013 report, a part of the data for 2013 and 2014 for municipal waste is now given by the amount of composted waste that is part of municipal waste and not by the biodegradable part of solid municipal waste. The composted volume gives a better indication of the amount of biomass from municipal waste. This is the reason for the significant increase in volumes. The source of the data is the single waste management information system (EHIR). It should be pointed out that this quantity does not include household compost quantities (as household composting cannot be considered as waste management). The other part of the data on municipal waste is derived from landfill gas generated from biodegradable waste at landfills. The data was provided by the Central

Statistical Office, while the 2016 data comes from NHKV Zrt's own survey based on data reported by landfill operators.

7 Information on changes in commodity prices and land use within Hungary in 2015 and 2016 associated with increased use of biomass and other forms of energy from renewable sources

It is recommended that at least food and fodder crops, wood used for energy production and pellets be taken into account when evaluating commodity price fluctuations.

Commodity prices of rapeseed and maize were as follows (HUF/tonnes):

2015								
Forage maize	Mar	May	July	Sept	Nov	Dec		
	40 223	40 771	41 365	45 700	45 872	46 369		
Feed wheat	Mar	May	Aug	Sept	Dec			
	47 800	49 451	46 954	45 951	46 819			
Feed barley	Mar	May	Aug	Sept	Dec			
	47 030	-	43 012	43 459	46 033			
Sunflower seed	Mar	May	Oct	Nov	Dec			
	105 775	110 377	107 488	118 109	124 786			
Soybean	Jan	Mar	May	July	Aug	Sept	Oct	Dec
	100 120	100 572	96 246	105 383	97 512	90 138	90 591	93 580
Rapeseed	Mar	May	Aug	Sept	Nov			
	104 050	-	113 013	-	-			
Ammonium nitrate	Jan	Mar	July	Oct				
	-	-	-	-				
Mill wheat	Mar	May	Aug	Sept	Dec			
	55 200	52 360	51 187	50 943	50 033			

2 16								
Forage maize	Mar	May	July	Sept	Nov	Dec		
	43 329	44 162	51 756	-	38 356	40 775		
Feed wheat	Mar	May	Aug	Sept	Dec			
	44 948	41 005	38 262	39 443	39 500			
Feed barley	Mar	May	Aug	Sept	Dec			
	44 033	-	36 019	-	37 000			
Sunflower seed	Mar	May	Oct	Nov	Dec			
	119 759	117 944	98 224	99 285	104 171			
Soybean	Jan	Mar	May	July	Aug	Sept	Oct	Dec
	93 659	91 629	107 795	110 998	102 588	98 010	99 426	110 989
Rapeseed	Mar	May	Aug	Sept	Nov			
	107 071	-	103 438	104 839	107 000			
Ammonium nitrate	Jan	Mar	July	Oct				
	-	-	-	-				
Mill wheat	Mar	May	Aug	Sept	Dec			
	46 457	-	40 476	41 000	41 000			

8 The development and share of biofuels made from feedstocks listed in Annex IX including a resource assessment focusing on the sustainability aspects relating to the effect of the replacement of food and feed products for biofuel production, taking due account of the principles of the waste hierarchy established in Directive 2008/98/EC and the biomass cascading principle, taking into consideration the regional and local economic and technological circumstances, the maintenance of the necessary carbon stock in the soil and the quality of the soil and the ecosystems;

Table 5a: : Production and consumption of biofuels under Article 21(2) (ktoe)[31]

Article 21(2) biofuels	2015	2016
Production - Used cooking oil	30	33
Consumption - Fuel type X (Please specify)	N/A	N/A
Total production of biofuels under Article 21(2)	30	33
Total consumption of biofuels under Article 21(2)	58	67
% share of biofuels under Article 21(2) from total RES-T	29 %	32 %

Source: MEKH

Table 5b: Production and consumption of biofuels in Hungary (mln litres)

Year		**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016***
Production (million litres)	**Bioethanol**	30	30	304	358	372	501	540
	Biodiesel, traditional	118	137	138	140	133	135	130
	Biodiesel, from frying oil	43	25	25	19	19	31	30
Raw material demand (thousand tonnes)	**Bioethanol**	76	76	759	896	930	1253	1350
	Biodiesel, traditional	294	341	345	351	332	338	325
Use (million litres)	**Bioethanol**	91	111	95	102	73	80	-
	Biodiesel, traditional	93	109	110	98	103	131	-
	Biodiesel, from frying oil	66	43	42	34	33	68	-
Biofuel share (en%)	**in petrol**	4.1	4.3	4.0	2.7	4.7	3.3	-
	in gas oil	4.5	4.6	4.5	5.2	5.4	4.8	-
	Total	4.4	4.5	4.4	4.3	5.2	4.3	-
Renewable energy in transport (en%)		6.0	6.0	5.9	6.2	6.9	6.2	-

Notes: Only industry estimates are available for 2016. Biofuel share is to be understood without multipliers. The share of renewable energy increased by multipliers, calculated cumulatively with electricity and biogas use.
Source: Calculations made by the Research Institute of Agricultural Economics (AKI) on the basis of Eurostat SHARES and MEKH data (data on frying oil was calculated by AKI on the basis of Eurostat data)

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9 Information on the estimated impacts of the production of biofuels and bioliquids on biodiversity, water resources, water quality and soil quality within Hungary in 2015 and 2016

There was only a slight change in land use in Hungary during the period 2003-2016. According to statistical data, the area of arable land averaged 4.33 million hectares for the years 2012-2016, representing a decrease of 179 thousand hectares (4 %) compared to the average of the period 2004-2008 before the Renewable Energy Directive was adopted (see Table 6).

In Hungary, grain maize and rape seed are the primary raw materials of national biofuel production and it is assumed that a part of the volume sold on foreign markets is also used to produce biofuels in foreign processing plants. The harvested area of maize decreased by 1.6 % (1.157 million hectares) over the five-year period between 2012 and 2016 compared to the average of the period 2004-2008, while its share in arable land increased from 26.1 % to 26.7 %. The harvested area of rape was 168 thousand hectares on average between 2004 and 2008, which increased by 25.5 percent in the average of the period 2012-2016. Despite the intensive growth in area, rape seed occupied only 4.9 percent of the arable land area with an average harvested area of 211 thousand hectares. The popularity of the plant continuously grew among Hungarian farmers by 2010: while in 2003, 1.6 % of the arable land was used to produce rape seed, this ratio increased to 6 % by 2010. In the following years, the share of rapeseed within arable land was around 5 %.

The area of crops used to produce biofuels has only changed slightly over the last 13 years so it can be stated that the change in production structure had no effect on water resources. In Hungary, the amount of water used to irrigate agricultural land increased by an average of 12.6 percent (13.5 million cubic metres) in the period 2012-2016 compared to the average of 2004-2008. The annual size of irrigated areas fluctuated strongly between 2003 and 2016; however, the average of the five-year periods between 2004 and 2008 and between 2012 and 2016 remained unchanged at around 104 000 hectares. The share of irrigated land in arable and agricultural lands is still extremely low in Hungary compared to the rest of the EU. It follows from the above that the production of raw materials for biofuels and liquid fuels in 2014 and 2016 did not reach a high enough level in Hungary to place an extra load on environmental resources.

Table 6: Change in land use in Hungary during the period 2003-2016

Year	Arable land	Maize	Maize share	Rapeseed	Rapeseed share	Total water use	Irrigated area
	1000 ha	1000 ha	%	1000 ha	%	million m3	1000 ha
2003	4 516	1 145	25.4	71	1.6	167.9	148.6
2004	4 510	1 190	26.4	105	2.3	112.5	120.6
2005	4 513	1 198	26.5	122	2.7	53.8	75.2
2006	4 510	1 215	26.9	142	3.1	70	78.2
2007	4 506	1 079	23.9	225	5	150.3	121.1
2008	4 503	1 192	26.5	247	5.5	87	80.1
2009	4 502	1 177	26.1	261	5.8	131	107.1
2010	4 322	1 079	25	259	6	46.1	44.9
2011	4 322	1 230	28.5	234	5.4	108.7	101
2012	4 324	1 191	27.5	165	3.8	160.3	124.9
2013	4 326	1 243	28.7	198	4.6	282	96
2014	4 331	1 191	27.5	214	4.9	173	130
2015	4 332	1 146	26.5	220	5.1	108.4	80.5
2016	4 332	1 012	23.4	257	5.9	94	97.7
2004-2008	**4 508**	**1 175**	**26.1**	**168**	**3.7**	**106.9**	**104**
2012-2016	**4 329**	**1 157**	**26.7**	**211**	**4.9**	**120.4**	**104.3**
Change %	-4	-1.6	2.8	25.5	31.4	12.6	0.03

Source: KHS

10. Estimate of the net greenhouse gas (GHG) emission savings due to the use of energy from renewable sources

Table 7: Estimated net GHG emission savings from the use of renewable energy (t CO_2eq)

Environmental aspects	2015	2016
***Total estimated net GHG emission saving from using renewable energy*[32]**	**6 314.**	**6 331.7**
- Estimated net GHG saving from the use of renewable electricity	6 023	6021
- Estimated net GHG saving from the use of renewable energy in heating and cooling		
- Estimated net GHG saving from the use of renewable energy in transport	291.4	310.7

11. Information and estimate concerning the excess/deficit production of energy from renewable sources compared to the indicative trajectory which could be transferred

[32] Net greenhouse gas emission savings from the use of renewable energy were calculated taking account of the specific CO_2 emissions of various fuel types, the typical values for biofuels under Part A of Annex V to the RED, and the typical values for electricity and energy for cooling and heating under Commission Communication COM(2010)/11.

to/imported from other Member States and/or third countries. Estimated potential for joint projects until 2020

No excess was transferred to or imported from other Member States in the years 2015-2016. The energy policy instruments of Hungary ensure that the target shares are met, and therefore it will likely not be needed to import excess from other Member States in the future either.

Hungary is open to cooperating with other Member States to transfer excess renewables production statistically and to establish common support schemes. Currently no quantitative information can be provided on such projects or examples of cooperation, because no such cooperation has been established yet.

Table 8: Actual and estimated excess (+) and/or deficit (-) production of renewable energy compared to the indicative trajectory which could be transferred to/from other Member States and/or third countries in [Member State] (ktoe)[33,34]

	2009	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	2017	2018	2019	2020
Actual/estimated excess or deficit production (Please distinguish per type of renewable energy and per origin/destination of import/export)*	n/a	**968**	**1 150**	**1 213**	**1 295**	**883**	**970**	**803**				

*The figures for the period 2009 to 2015 are actual values, while the figures for the other periods were estimated in accordance with the contents of Hungary's Renewable Energy Utilisation Action Plan.

[33] Please use actual figures to report on the excess production in the two years preceding submission of the report, and estimates for the following years up 2020. In each report the Member State may correct the data of the previous reports.
[34] When filling in the table, for deficit production please mark the shortage of production using negative numbers (e.g. –x ktoe).

11.1 Details of statistical transfers, joint projects and joint support scheme decision rules

Pursuant to Articles 6, 7, 9 and 11 of the RED, Member States may agree on statistical transfers, joint projects and joint support schemes (collectively: 'cooperation mechanisms').

Pursuant to the RED, the substantial elements of these agreements are stipulated in the agreements concluded by the Member States – in this particular case by Hungary – and the EEA States (or third countries, where applicable).

Hungary did not conclude a cooperation agreement with any country until 31 December 2014. In accordance with the relevant articles of the RED, Hungary transposed the concepts of joint investment, joint support schemes and statistical transfer in Section 1(1)(6), (7) and (13) of Decree No 1/2012 of the Minister for National Development of 20 January 2012 on the calculation methodology of the share of energy from renewable sources ('the Calculation Decree'). The Calculation Decree sets forth the national calculation methodologies and procedures for determining the share of energy from renewable sources for cooperation mechanisms, too. Thus, the individual statutory conditions necessary for the conclusion of intergovernmental agreements are available.

The Calculation Decree therefore stipulates – in line with the RED – that if Hungary concludes cooperation agreements with other countries, the provisions of the cooperation agreements have to be taken into account when determining the share of energy from renewable sources in Hungary. The Calculation Decree prescribes, *inter alia*, that the quantity of energy from renewable sources transferred by Hungary to another country under, e.g., a statistical transfer may not be taken in account when determining the share of energy from domestic renewable sources, or, on the contrary, the quantity received from other Member States has to be added to the domestic share.

The establishment of the regulations ensures the possibility for Hungary to transfer its statistical excess – in accordance with the provisions of the RED – to other Member States under the provisions of the cooperation agreement if such demand arises.

12. Information on how the share for biodegradable waste in waste used for producing energy has been estimated in Hungary, and what steps have been taken to improve and verify such estimates

The following table shows the energy production from biodegradable wastes and resources usable for energy purposes for the years 2013 to 2016, compiled on the basis of authorisation data.

Supplementary table: Energy production from biodegradable wastes

		2013	2014	2015	2016
Renewable electricity produced	MWh	135 600	136 660	207 287	245 059
Renewable thermal energy	TJ	288.88	400.0	483	505

Source: MEKH

In Hungary, the utilisation of wastes to produce energy is increasing and is becoming a more and more accepted method of energy production. Previously waste utilisation was only carried out at the Waste Utilization Works operated by FKF Nonprofit Zrt., whereas today energy is produced from recoverable materials in another four locations in Hungary. Recoverable materials include RDF/SRF waste or products generated from solid municipal waste. (Use locations: Mátrai Erőmű Zrt. – Visonta, Duna-Dráva Cement Kft. – Vác and Beremend, LaFarge Cement Magyarország Kft. – Királyegyháza. Experimental use locations: Pannon Hőerőmű Zrt. – Pécs, Bakonyi Erőmű Zrt. – Ajka. Authorised pilot plant: Hamburger Hungária Kft. – Dunaújváros).