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Biofuel Mandates in the EU by Member State in 2018

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Report Highlights:

This report provides an overview on the biofuel use mandates in the various EU-28 member states.
It supplements the EU-28 Biofuel Annual Report.

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Introduction:

The 2009 [EU Energy and Climate Change Package](#) set out a 10 percent minimum target for renewable energy consumed by the transport sector to be achieved by all EU member states (MS) in their countries in 2020. Many MS have adopted minimum biofuel use mandates in order to achieve this goal. This report provides an overview about the current and future mandates from the various MS. The tables represent the status quo, as of May 11, 2018. If changes are being discussed but not yet adopted these are mentioned in the text below the tables.

In addition, the [Renewable Energy Directive \(RED\)](#) stipulates that biofuels can only be counted against EU and/or member state targets if they fulfill the following minimum greenhouse gas (GHG) reduction requirements:

	Minimum % GHG savings of each biofuel compared to the respective fossil fuel
2009-2017	35%
2018 and onwards	50% for biofuels produced in installations that started production on or before Oct 5, 2015. 60% for biofuels produced in installations that started production after Oct 5, 2015.

Source: Art. 7 b of EU Directive 98/70/EC as revised by Directive (EU) 2015/1513

<http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1502451943595&uri=CELEX:01998L0070-20151005>

The institutions of the European Union are currently negotiating a review of RED, RED II. If approved, RED II would introduce new minimum GHG savings for biofuel compared to fossil fuel of 70 percent for biofuels produced in installations that started production after January 1, 2021.

Abbreviations and definitions used in this report

% Cal =	percent energy content
% Vol =	percent volume
% Biodiesel =	minimum percentage of biodiesel in total diesel use
% Bioethanol =	minimum percentage of bioethanol in total gasoline use
% Overall =	minimum percentage of biofuels in total fuel use
All of the above refer to fuel use in the transport sector	
Biodiesel =	Fatty acid methyl ester produced from agricultural or waste feedstock (vegetable oils, animal fat, recycled cooking oils) used as transport fuel to substitute for petroleum diesel
Bioethanol =	Ethanol produced from agricultural feedstock used as transport fuel
CNG =	Compressed natural gas
Double counting =	Certain biofuels are counted twice against the mandates. Definition and eligible feedstocks vary by MS.
EC =	European Community or European Commission - depending on the context
ETBE =	Ethyl tert-butyl ether, an oxygenate gasoline additive containing 47% vol ethanol
EU =	European Union
FAME =	Fatty acid methyl ester
FQD =	EU Fuel Quality Directive 98/70/EC amended by directives 2009/30/EC and (EU) 2015/1513
GHG =	greenhouse gas
GJ =	Gigajoule = 1,000,000,000 Joule or 1 million KJ
HVO =	Hydrotreated Vegetable Oil
Ktoe =	1000 MT of oil equivalent = 41,868 GJ = 11.63 GWh
LPG =	Liquefied petroleum gas
MJ =	Megajoule
MS =	Member State(s) of the EU
MWh =	Mega Watt hours = 1,000 Kilo Watt hours (KWh)
N/A =	Not applicable
RED =	EU Renewable Energy Directive 2009/28/EC
TME =	Biodiesel based on animal fats
Toe =	Tons of oil equivalent = 41,868 MJ = 11.63 MWh
UCO =	Used cooking oil/ recycled vegetable oil
UCOME =	UCO based methyl ester biodiesel
UK =	United Kingdom

Mandates by Member State:

In order to provide context, current, expired, and future mandates are listed. For easy reference, mandates applicable in 2018 are bolded.

Austria

	Overall Percentage (energy content, % cal)	Biodiesel (% cal)	Bioethanol (% cal)	Double counting*
Since 2012	5.75	6.3	3.4	Yes
2020	8.75			

Source: Fuels Order 2012

*Double counting: Waste materials and residual products from agricultural and forestry production including fisheries and aquaculture, residues from processing, cellulosic non-food materials or lingo-cellulosic materials.

Belgium

	Overall Percentage	Biodiesel (% vol)	Bioethanol (% vol)	Double counting
Until Dec 31, 2016		6.0	4.0	Possible upon approval
From January 1, 2017		6.0	8.5	

Source: [Law of July 7, 2013](#); [Law of July 21, 2017](#)

Since the increase of the bioethanol mandate at the beginning of 2017, the majority of Belgian gasoline became E10, with the exception of a remnant market for bioethanol-free gasoline for older cars and small engines like lawnmowers.

Bulgaria

Current legislation:

Biodiesel (% vol)		Bioethanol (% vol)		Double counting
Since June 1, 2012	6	September, 1, 2014	6	No
		March 1, 2015	7	
		January 1, 2018	8	
		January 1, 2019	9	
		January 1, 2020	10	

On May 30, the Cabinet approved an amendment to the Renewable Energy Law to transpose directive 2015/1513/EU into national law. In addition, it will introduce sustainability criteria (traceability) for second generation biofuels.

Proposed but not yet adopted changes to article 47 of the Bulgarian Renewable Energy Law:

Biodiesel (% vol)		Bioethanol (% vol)		Cap on crop based biofuels (% vol)	2nd Generation (% cal)	Double counting
Since June 1, 2012	6	September, 1, 2014	6	-	-	No
		March 1, 2015	7			
	5/1*	September 1, 2018	8			
		March 1, 2019	9			
		January 1, 2020	10	7	0.05	

* Starting September 1, 2018, the mandate will be split in five percent conventional first generation biodiesel and one percent second generation biodiesel.

Croatia

	Overall Percentage (% cal)	Biodiesel	Bioethanol	Double counting
2014	3.18	2.83	0.35	Second generation and waste based biofuels
2015	3.88	3.04	0.84	
2016	4.89	3.94	0.90	
2017	5.89	4.83	0.94	
2018	6.92	5.75	0.97	
2019	7.85	6.61	0.98	
2020	8.81	7.49	1.00	

Source: Act on Biofuels for Transport (Official Gazette 65/09, 145/10, 26/11 and 144/12)

http://narodne-novine.nn.hr/clanci/sluzbeni/2010_04_42_1066.html

http://narodne-novine.nn.hr/clanci/sluzbeni/2010_11_125_3243.html

Czech Republic

The Act on Air Protection was amended in 2016 and the amendment no. 369/2016 came into force as of January 1, 2017. Volume based mandates for biodiesel and for bioethanol remained the same at 6.0 and 4.1 percent respectively. The target to reach 10.0 percent share of biofuels and renewable electricity in transportation on total consumption by 2020 remains 10.0 percent. The obligation to reduce GHG emissions from fossil fuels was set at 2.0 percent to be achieved by December 31, 2014. The GHG reduction target increased to 3.5 percent (which is lower than the original target of 4.0 percent) by December 31, 2017, and to 6.0 percent by December 31, 2020.

	Share of biofuels and renewable electricity in transportation on total consumption (% cal)	Obligation to reduce total GHG emissions by (%)	Biodiesel (% vol)	Bioethanol (% vol)	Double counting
2014 - 2016		2	6	4.1	No
2017 - 2019		3.5			
2020	10.00	6			

Another amendment to the Act on Air Protection is currently in the legislative process. If approved, it will introduce double counting as of 2018 or 2019 and allow, along with biofuels, the use of LPG (liquefied petroleum gas), CNG (compressed natural gas) and electricity, when meeting the GHG emissions reduction goal.

Denmark

	Overall Percentage (% cal)	Advanced Biofuels (% cal)	Biodiesel (% cal)	Bioethanol (% cal)	Double counting
Since 2012	5.75				
2020	5.75	0.9*			

Source: Stratas

* The advanced mandate excludes UCO and animal fats.

Since January 2012, fuel companies are obliged to ensure that biofuels make up at least 5.75 percent of total annual sales of fuel. The companies are obliged to report meeting the 5.75 percent obligation to the Danish Energy Agency (DEA) annually. The DEA encourages them to use the voluntary certification schemes.

The Danish Biofuel Act is to be amended in order to enable mixes with 10.0 percent biofuels by 2020, subject to an analysis of alternative methods of meeting the renewable energy target for transport.

Finland

	Overall Percentage (% cal)	Biodiesel	Bioethanol	Double counting
2014	6.0			
2015	8.0			
2016	10			
2017	12			
2018	15			
2019	18			
2020 and onwards	20			

Source: Stratas

France

	Bioethanol (objective, % cal)	Biodiesel (objective, % cal)	Double counting
2010 to 2013	7	7	No
2014 to 2016	7 of which up to 0.25% double-counted bioethanol	7.7 of which up to 0.35% double-counted biodiesel	Cellulosic biofuels and waste biofuels up to the maximum values stated on the left
Since 2017	7.5 of which up to 0.3% double-counted bioethanol	7.7 of which up to 0.35% double-counted biodiesel	

Since 2014, advanced biofuels have been doubled counted. The quantity of advanced biofuels that can be double counted is limited in order to favor biofuels produced in France (if it was not limited, this measure could lead to an increase in imports of advanced biofuels at the expense of domestic “conventional” biofuels).

Germany

	% Cal	% GHG savings (BImSchG)*	Cap on crop based biofuel (% cal)	2 nd Generation (% cal)	Double counting
2009-2014	6.25 overall 4.4 biodiesel 2.8 bioethanol	-	-	-	2011-2014 HVO, UCOME only; TME excluded
2015-2016		3.5			No
2017		4.0			
2018-2019					
2020		6.0	6.5	0.05 a)	
2021				0.1 b)	
2022-2023				0.2 c)	
2025 and onwards				0.5	

Sources:

§ 37a Federal Act on Protection against Air Pollution

(Bundes-Immissionsschutzgesetz) <http://www.gesetze-im-internet.de/bimsg/37a.html>

§13 +14 of the 38th Implementation Ordinance on the Federal Act on Protection against Air Pollution

http://www.gesetze-im-internet.de/bimsg_38_2017/13.html

http://www.gesetze-im-internet.de/bimsg_38_2017/14.html

*Percentage of GHG savings of total fuel use (fossil and renewable) compared to the hypothetical GHG emissions had all the fuel been of fossil origin

a) Companies that put on the market 20 PJ or less of biofuels in the previous year are exempted

b) Companies that put on the market 10 PJ or less of biofuels in the previous year are exempted

c) Companies that put on the market 2 PJ or less of biofuels in the previous year are exempted

Double counting expired at the end of 2014 with the transition to a GHG reduction mandate. Since then, HVO and UCO based biodiesel enjoy competitive advantages only based on their higher GHG reduction compared to first generation biofuels.

Failing to meet the mandates is sanctioned with the following penalties:

Year	Penalty
2009-2014 ¹ :	Biodiesel: 19 Euro per GJ underallocated Bioethanol: 43 Euro per GJ underallocated
2015 ²	0.47 Euro per kg CO ₂ eq underallocated

Source:

§ 37c (2) Federal Act on Protection against Air Pollution

(Bundes-Immissionsschutzgesetz) <http://www.gesetze-im-internet.de/bimsg/37c.html>

Greece

	Overall Percentage (% cal)	Biodiesel	Bioethanol	Double counting
2014-2016	5.75			No
2017-2019	7.00			
2020	10			

In 2012, decision 4062 (FEK 70/A/30.3.2012) harmonized the Greek legislation with Directive 2009/28/EC. As a result, the increased mandate of 10.0 percent in 2020 can be met either by domestic production or imports (the lower mandate was only allowed to be filled with domestic production).

Law 3054/2002 and its amendments mandate producers and distributors of petrol and diesel to blend their fuels with a certain amount ("quota") of biofuels. The quota is specified in the "distribution scheme," reviewed every year, and set at 7 percent for 2017 and 2018. The quota for 2019 will be published by April 2019 and is currently forecast to remain unchanged at 7 percent.

Hungary

According to [Hungary's National Renewable Energy Action Plan](#) and EU requirements (RED), 10.0 percent of the transport fuel has to come from renewable sources such as biofuels by 2020. This obligation has come into force by the CXVII/2010 Act on promoting the use of renewable energy and the reduction of greenhouse gas emission of energy used in transport. By 2020, 56.8 percent (304 ktoe) of renewable energy sources used in transport has to be bioethanol and 37.8 percent (202 ktoe) has to be biodiesel in Hungary.

	Overall Percentage (% cal)	Biodiesel (% cal)	Bioethanol (% cal)	Double counting
2014-18		4.9	4.9	Waste materials and residual products from agricultural and forestry production including biofuels from non-food cellulosic and ligno-cellulosic materials
2020		202 Ktoe	304 Ktoe	

Sources:

2014-15: Government Decree No. 343/2010 on requirements and certification of sustainable biofuel production

2020: [Hungary's National Renewable Energy Action Plan](#)

Double counting: §2 (4) of CXVII/2010 Act on promoting the use of renewable energy and the reduction of greenhouse gas emission of energy used in transport.

Ireland

	Overall Percentage (% energy content)	Double counting
2010 - 2012	4.166	No
2013 - 2016	6.383	Yes, UCO and Cat 1 Tallow
2017-2018	8.695	
2019 and onwards	11.111 (10 % by vol is proposed)	

A draft order has been published by the Irish government that proposes to increase the total blend mandate to 10 percent by volume from January 1, 2019. Policy changes have also been announced that reduce the amount of carryover between years of obligation certificates. More information: [National Oil Reserves Agency News](#)

Italy

Year	Overall biofuels (% percentage by energy content)	Of which advanced biofuels (% by energy content, double counted)	Advanced biofuels necessary for fulfilling the targets (% by energy content)
2015	5	-	-
2016	5.5	-	-
2017	6.5	-	-
2018	7	0.1	0.6
2019	8	0.2	0.6
2020	9	1.0	0.8
2021	10	1.6	0.8
2022	10	2	1

Ministerial Decree of December 13, 2017

Italy was the first EU Member State to mandate the use of advanced biofuels. Ministerial Decree of October 10, 2014 originally required gasoline and diesel to contain at least 1.2 percent of advanced biofuel made of waste and non-food feedstocks as of January 2018 and 2019, rising to 1.6 percent in 2020 and 2021, and 2 percent by 2022. On December 13, 2017, the Italian Ministry of Economic Development published a Decree lowering the biofuels mandate from 2018 to 2020 to the levels shown in the table above.

The Netherlands

	Overall Percentage (% cal)	Biodiesel (% cal)	Bioethanol (% cal)	Double counting
2014	5.5			Yes
2015	6.25			
2016	7.0			
2017	7.75			
2018	8.5			
2019	9.25			
2020	10.0			

Dutch Emission Authority

The physical volume of biofuels blended is lower than the mandate as a large percentage of the volume blended is double counting biodiesel. Of the total biofuel use in 2014, 60 percent was double counting fatty acid methyl ester (FAME), and 8.0 percent single counting FAME (the report with 2015 figures is not public yet). The feedstock share for the consumed biodiesel was as follows: animal fat (32 percent), UCO (49 percent), and glycerin (7 percent). Note: feedstock share for biodiesel produced in the Netherlands is not known and may be different.

Poland

	Overall Percentage (% cal)	Biodiesel (% cal)	Bioethanol (% cal)	Double counting
2014 - 2017	7.1			Yes
2018	7.5			
2019	8.0			
2020	8.5			

FAS Warsaw

Portugal

Initially, in 2017 the overall mandate was 9.0 percent, with a bioethanol specific target of 2.5 percent in terms of energy. [Decree- Law 69/2016](#) retroactively eliminated the bioethanol specific target since 2016. Also, according to [Law 42/2016](#) the overall consumption mandate for 2017 has been revised down, keeping it at 7.5 percent. The overall mandates for 2018 through 2020 remain unchanged.

	Overall Percentage (% cal)	Biodiesel (% cal)	Bioethanol/ ETBE (% cal)	Double counting
2014	5.5	-	-	Yes
2015	7.5	-	2.5	
2016-2017	7.5	-	-	
2018	9	-	-	
2019-2020	10	-	-	

Sources:

Consumption targets: [Decree-Law 117/2010](#), Decree-Law 69/2016, and Law 42/2016.

Double counting: [Decree-Law 117/2010](#) and [Annex III in Implementing Order 8/2012](#). A comprehensive list updated on December 2016 can be found [here](#).

Domestic non-food raw materials, used to receive 1.3 TdB (Biofuel Entitlements) per Toe produced. Each Toe of biofuel produced out of domestic agricultural raw materials was granted with 1.1 TdB. However this additional value for domestic raw materials is just valid at the domestic level and could not be reported to the EC as part of the mandate compliance. It was only in 2016 when TdBs were issued for the first and last time to biofuel produced out of domestic raw materials, as this special treatment was revoked by [Decree-Law 69/2016](#).

For additional information about Portugal's biofuel sector see GAIN Report [SP1722](#).

Romania

	Overall Percentage (% cal)*	Biodiesel (% cal)	Bioethanol (% cal)	Double counting
2014 - 2015	N/A	5.0	4.5	N/A
2016 - 2018		6.5	4.5	
2019		6.5	8.0	
2020	10	6.5	8.0	

For additional information about Romania's biofuels sector, please see the country report.

Slovak Republic

	Overall Per-centage (% cal)	2nd Generation Biofuels (% cal)	Double Counting
2018	5.8		Yes
2019	6.9	0.1	
2020	7.6	0.5	
2021	8.0		
2022-2024	8.2		
2025-2030			

Source : Act no. 309/2009 on Support of Renewable Energy Resources

Slovakia amended its Act no. 309/2009 on Support of Renewable Energy Sources. The amendment no. 181/2017 came into force as of August 1, 2017. It updated the overall blending percentage and introduced mandates for 2nd generation biofuels, as well as targets for 2020 – 2030. Annex 1 of the Act no. 309/2009 was removed as of January 1, 2018 (by Act no. 268/2017). This eliminated specific blending mandates for individual kinds of biofuels. For mandates applicable prior to 2018 please consult page 11 of our [2017 report](#).

Slovenia

	Overall Percentage (% cal)	Biodiesel (% cal)	Bioethanol (% cal)	Double counting
2010	5			Yes
2011	5.5			
2012	6			
2013	6.5			
2014	7			
Since 2015	7.5			

Source: Stratas

Spain

	Overall Percentage (% cal)	Biodiesel (% cal)	Bioethanol (% cal)	Double counting
2013-2015	4.1	4.1	3.9	N/A
2016	4.3	-	-	
2017	5	-	-	
2018	6	-	-	
2019	7	-	-	
2020	8.5	-	-	

Consumption mandates followed a steady upward trend until 2013, when, the downward revision of mandates introduced by Royal Decree-Law 4/2013 reduced Spain's biofuels market size.

Royal Decree 1085/2015 removed specific targets and only tepidly increased the consumption targets for the 2016-2020 period. Interestingly, only the consumption target proposed for 2019 will be higher than the original mandate established back in 2012, prior to the downward revision of targets carried out in 2013.

On April 16th, 2014, the Government of Spain published the list of raw material eligible for double counting against biofuels consumption mandates in the Official Gazette. This list includes used oils of animal or vegetal origin, and animal fats (Categories 1 and 2 of Regulation (EC) 1069/2009). However, double counting will only enter into force after more detailed guidelines are issued.

The enforcement of the double counting provision would contribute to further reducing the market for biofuels made from conventional feedstock. This potential market reduction will mainly affect the biodiesel sector, as no bioethanol raw material has been granted double counting. In the current scenario, Spanish biodiesel that qualifies for double counting is being exported to neighboring EU member states where the double credit is already in place.

For additional information about Spain's biofuel sector see GAIN Report [SP1723](#) (Biodiesel) and [SP1724](#) (Bioethanol).

Sweden

In Sweden, biofuels policy is based on tax exemptions. Based on this policy, Sweden succeeded in realizing the 10.0 percent blending of biofuels in the transport sector. However, in 2016, the government has decided to impose a tax on E-85 which until then had been set at zero. It is expected that this will favor gasoline use at the expense of E-85.

United Kingdom

Historic information:

	Overall Percentage (% vol)		Double Counting
2008-2009	2.50		
2009-2010	3.25		
2010-2011	3.50		
2011-2012	4.00		Approved waste and residue feedstocks
2012-2013	4.50		
2013-2017	4.75		

Future blend mandates:

	Overall Percentage (% cal)	Development fuel target (%cal)	Double counting
04/15/17 – 04/14/18	4.987	–	Certain waste or residue feedstocks determined by scheme Administrator; plus energy crops and renewable fuels of non-biological origin; also development fuels
04/15/18 – 12/31/18	7.817	–	
2019	9.180	0.109	
2020	10.637	0.166	
2021	10.679	0.556	
2022	10.714	0.893	
2023-2031	Increasing each year in 0.025 percent increments by volume until:	Increasing each year in 0.23 percent increments by volume until:	
2032	10.959	3.196	

New blend mandate legislation and accompanying policy came into force in the UK on April 15, 2018. This aims to double the use of renewable fuels in the transport sector in the next 15 years. A new requirement for blending “development fuel” from 2019 is outlined in the table above. This refers to fuel made from certain sustainable wastes or residues, excluding segregated oils and fats such as UCO and tallow or a renewable fuel of non-biological origin (RFNBO). A development fuel must also be one of the following fuel types: hydrogen, aviation fuel, substitute natural gas (i.e. renewable methane) or a fuel that can be blended to give 25 percent or more renewable fraction in the final blend while still meeting fuel technical and quality standards. The UK has capped the maximum amount of renewable transport fuel that can be derived from relevant (food) crops. This will be a maximum of 4 percent by volume in the period 2018 to 2020, and then must reduce incrementally to reach 2 percent in 2032.

As part of the new landscape for biofuels in transport, the UK government will work with industry on the potential roll out of the E10 blend. No time line has been given as yet.

More information: [Renewable Transport Fuel Obligation Guidance](#)

Related reports:**EU Biofuels Annual 2018**

This report will be release in July 2018 and can then be accessed through:

<https://gain.fas.usda.gov/Pages/Default.aspx>

EU Biofuels Annual 2017|Biofuels|The Hague|EU-28|6/27/2017

Approaching the 2020 mandates laid down in the Renewable Energy Directive (RED), EU bioethanol and biodiesel consumption is forecast to grow in 2017 and 2018. On November 30, 2016, the European Commission (EC) published a new legislative proposal (RED II) for the period 2021-2030. The RED II progressively caps the use of food-based biofuels.

The blending rates for advanced biofuels are stepwise increased between 2020 and 2030, which aims to boost the market for these non-food based biofuels. ...

[Biofuels Annual_The Hague_EU-28_6-19-2017](#)

Biofuel Mandates in the EU by Member State in 2017|Biofuels Trade Policy Monitoring|Berlin|EU-28|6/7/2017

This report provides an overview on the biofuel use mandates in the various EU-28 member states. It supplements the EU-28 Biofuels Annual Report.

[Biofuel Mandates in the EU by Member State in 2017_Berlin_EU-28_6-1-2017](#)