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Subject: Report on the consumption and production of renewable energy sources in the transport sector

CURRENT DEVELOPMENTS AND FULFILMENT OF COMMITMENTS REGARDING THE USE OF RENEWABLE ENERGY SOURCES IN THE TRANSPORT SECTOR BY 2025, RELATED LEGAL DOCUMENTS AND OBLIGATIONS OF FUEL SUPPLIERS FROM 2030 ONWARDS

Petr JEVIČ, Pavla MĚKOTOVÁ

1. Introduction

This report outlines current developments, production and consumption figures for biodiesel – fatty acid methyl esters (FAME), paraffinic diesel from the hydrogenation of vegetable oils, fatty acid esters and solutions (HVO, HEFA), bioethanol fuel, ethyl-tert-butyl-ether (ETBE) produced from it, blended fuels, biofuels in the form of liquefied light hydrocarbons (bio-LPG) and biomethane (bio-LNG), compressed biomethane (bio-CNG) and renewable electricity.

In terms of policy and related programmes, Directive 2018/2001/EU of the European Parliament and of the Council on the promotion of the use of energy from renewable sources (hereinafter 'RED II') was adopted at EU level in 2018 for the period 2021–2030. Most of the provisions of the RED II Directive entered into force on 1 January 2021. This Directive was amended in October 2023 by Directive (EU) (EU) 2023/2413, hereinafter referred to as the 'RED III Directive', to bring it into line with the EU's ambitions to reduce greenhouse gas emissions (hereinafter 'GHG emissions') and achieve carbon neutrality by 2050. From the perspective of national law, the transposition deadline for the RED III Directive was set by the legal and administrative provisions of the Member States as 31 May 2025. The transposition of this Directive into Czech law was effected by an amendment to Act No. 201/2012 Coll., on Air Protection, on 22 January 2025, and by an amendment to Act No. 165/2012 Coll., on Supported Energy Sources, on 4 March 2025. Some EU Member States had not yet transposed the RED III Directive into national law by 2025 (e.g. the German Bundestag implemented the RED III Directive on 23 April 2026).

2. Definitions and methodological approach

In terms of terminology, this report uses the following relevant terms as defined in the RED III Directive:

- ***'biofuels'*** – liquid fuel used for transport produced from biomass,
- ***'biogas'*** – gaseous fuel produced from biomass,
- ***"biomethane"*** – biogas purified to natural gas quality and used for transport,
- ***"biomass fuels"*** – gaseous and solid fuels produced from biomass,
- ***'liquid and gaseous fuels from renewable sources of non-biological origin used in the transport sector'*** means liquid and gaseous fuels used in the transport sector other than biofuels or biogas, the energy content of which is derived from renewable sources other than biomass **(RFNBOs)**,
- ***'advanced biofuel and biogas'*** means liquid and gaseous fuel produced from feedstocks listed in Annex IX.A,
- ***'advanced biofuel and biogas'*** means liquid and gaseous fuels produced from feedstocks listed in Annex IX.B
- ***'recycled carbon-based fuel'*** – liquid and gaseous fuels produced from sources of liquid and solid waste of non-renewable origin that are not suitable for material recovery … **(RCF)**.

In October 2023, the EU adopted Regulation 2023/2405 on sustainable aviation fuels (SAF). The European Commission (EC) defines SAF as aviation fuels in the form of advanced and mature biofuels, renewable paraffinic fuels from synthesis or hydrogenation, RFNBOsand RFC. **RFNBOs also includes hydrogen, electricity for liquefied PtL or PtG gas. These are classified as E-fuels, i.e. fuels produced using renewable electricity 'E'.**

The methodological approach is based on the requirement to specify production capacities, production and consumption of renewable liquid and gaseous fuels, from the perspective of the international and domestic markets and the use of raw materials for their production. Furthermore, in relation to the share of bio-components in diesel and motor petrol, determine the GHG emission intensity and associated specific GHG emissions – emission factors for renewable energy sources in transport.

3. Production capacity, production and consumption of renewable liquid and gaseous fuels from the perspective of the international and domestic markets

The dynamics of the market for sustainable renewable liquid and gaseous fuels are influenced by documents from individual EU Member States transposing the targets, programme, commitments and obligations arising from the RED II, FQD, RED III Directives and related approved delegated acts. These include Commission Implementing Regulation (EU) 2022/996 'on rules for the verification of sustainability criteria and GHG emission savings, and criteria for low risk of indirect land-use change. Furthermore, Commission Regulation (EU) 2023/1640 "on the methodology for determining the share of transport biofuels and biogas produced from biomass processed in a co-processing process with fossil fuels". Commission Delegated Regulation (EU) 2024/1405 "amending Annex IX to the RED II Directive as regards the addition of feedstocks for the production of biofuels and biogas" has also been adopted. Further significant impacts are caused by EU anti-dumping and anti-subsidy rules (Commission Regulation 2017/2321 setting out the applicable duty rates), and the current economic situation influenced by geopolitical factors. Since February 2022, the armed conflict between the Russian Federation and Ukraine has been causing inflationary pressures, leading in several EU Member States to temporary changes in mandatory biofuel quotas and to changes in penalties for failing to meet these quotas. The current armed conflict in Iran is causing damage to production infrastructure and the closure of major routes in the Middle East. It is driving up prices of oil (+40%), gas and fertilisers. It is also driving up prices of agricultural commodities (+5%) – wheat, rapeseed and soya.

3.1 International market

FAME & HVO/HEFA/SAF

In 2024, as shown in Table 1, global FAME production rose by 2.4% compared to 2023, reaching 44.776 million tonnes. Indonesia remains the world's largest producer of FAME in 2024, with production of 11.447 million tonnes (3.8% less than in 2023). Globally, production of renewable paraffinic diesel HVO/HEFA rose by 14.2% in 2024 compared to 2023 to 15.458 million tonnes. Of this total, almost 61% was produced in the USA (see Table 2).

Table 1: Global FAME production in 2020–2024

FAME	**2020**	**2021**	**2022**	**2023**	**2024**	**INDEX 2024/2023**
					(thousand tonnes)	**(-)**
EU	10,931	10,388	10,110	9,920	**9,757**	**0.98**
Canada	355	315	245	252	**408**	**1.62**
USA	6,044	5,458	5,396	5,658	**5,568**	**0.98**
Argentina	1,157	1,724	1,910	831	**1,162**	**1.40**
Brazil	5,660	5,954	5,523	6,624	**8,010**	**1.21**
Colombia	530	580	650	700	**705**	**1.00**
Peru	164	183	183	175	**175**	**1.00**

China	1,250	1,725	2,200	2,250	**1,725**	**0.77**
India	190	155	160	200	**220**	**1.10**
Indonesia	7,560	9,030	10,400	11,900	**11,447**	**0.96**
Malaysia	906	976	1,162	1,700	**1,950**	**1.15**
Philippines	165	165	189	204	**232**	**1.14**
Thailand	1,622	1,459	1,224	1,469	**1,467**	**1.00**
Other	1,791	1,801	1,784	1,824	**1,950**	**1.07**
Total	38,326	39,913	41,136	43,707	**44,776**	**1.02**

Source*: S & P Global Commodity Insights, May 2025; Biodiesel & CO. 2024/2025, UFOP, 1st September 2025,* www.ufop.de

Table 2: Global HVO/HEFA production in 2020–2024

HVO/HEFA	**2020**	**2021**	**2022**	**2023**	**2024**	**INDEX 2024/2023**
	(thousand tonnes)					**(-)**
EU	3,326	3,572	3,290	3,722	**3,393**	**0.91**
USA	1,575	2,406	4,379	7,656	**9,413**	**1.23**
Rest of the world	1,621	1,644	2,050	2,156	**2,652**	**0.23**
Total	6,522	7,622	9,719	13,534	**15,458**	**1.14**

Source*: S&P Global Commodity Insights, May 2025; Biodiesel & CO. 2024/2025, 1stSeptember 2025,* www.ufop.de

In 2024, compared with 2023, as shown in Table 3, Indonesia became the world's largest consumer of FAME, with 10 million tonnes. The sharpest decline in consumption over the same period
(by 15.1%) was observed in the EU. Global FAME consumption in 2024 fell by 0.5%.

Table 3: Global FAME consumption in 2020–2024

FAME	**2020**	**2021**	**2022**	**2023**	**2024**	**INDEX 2024/2023**
	(thousand tonnes)					**(-)**
EU-27	**11,368**	**11,779**	**11,523**	**11,602**	9,851	**0.85**
Canada	435	325	370	494	419	**0.85**
USA	6,250	5,485	5,309	6,459	6,388	**0.99**
Argentina	477	438	712	581	774	**1.33**
Brazil	5,045	5,993	5,486	6,515	7,973	**1.22**
Colombia	502	598	686	699	705	**1.01**
Peru	251	317	325	336	345	**1.03**
China	220	229	243	280	350	**1.25**
India	45	9	35	200	210	**1.05**
Indonesia	6,460	6,992	8,815	9,881	10,000	**1.01**
Malaysia	763	773	1,116	1,100	1,110	**1.01**
Philippines	142	168	190	200	230	**1.15**
Thailand	1,435	1,126	968	1,091	1,157	**1.06**
Rest of the world	2,484.4	2,193	2,332	2,432	2,122	**0.87**
Total	**35,877**	**36,425**	**38,110**	**41,870**	**41,634**	**0.99**

Source: *S & P Global Commodity Insights, May 2025; Biodiesel & CO. 2024/2025, 1st September 2025,* www.ufop.de

As shown in Table 4, global HVO/HEFA consumption in 2024 rose by 18.1% to 15.619 million tonnes. The US remains the largest consumer of this paraffinic diesel, accounting for 65% (10.157 million tonnes)

Table 4: Global consumption of HVO/HEFA in 2020–2024

HVO/HEFA	**2020**	**2021**	**2022**	**2023**	**2024**	**INDEX 2024/2023**
	(thousand tonnes)					**(-)**
EU-27	**3,272**	**3,271**	**2,951**	**3,716**	**3,375**	**0.91**
Canada	306	350	375	**450**	**1,267**	**2.82**
USA	2,195	3,158	4,708	**8,470**	**10,157**	**1.20**
Rest of the world	273	348	425	**592**	**820**	**1.39**
Total	**6,046**	**7,127**	**8,459**	**13,228**	**15,619**	**1.18**

Source: *S & P Global Commodity Insights, May 2025; Biodiesel & CO. 2024/2025, 1st September 2025,* www.ufop.de

Production, imports, and gross consumption of FAME, HVO/HEFA/SAF in the EU for the years 2020–2025 are shown in Table 5.

Table 5: Opening stocks, production, imports, exports, consumption and production capacity of FAME, HVO, HEFA/SAF in the EU for 2020–2025

Calendar year	**2020**	**2021**	**2022**	**2023**	**2024**	**2025 f**
Unit	**million litres**					
Opening stocks (excluding SAF)	670	680	715	715	720	650
Production of which:	15,629	16,030	15,393	15,702	15,770	16,070
HVO/HEFA/SAF	3,629	4,121	3,482	4,457	4,640	5,040
FAME imports	3,449	3,224	3,465	3,994	2,315	1,450
FAME exports	1,914	1,346	971	1,702	1,905	750
Consumption	17,154	17,873	17,887	17,989	16,250	16,750
Final stocks (excluding SAF)	680	715	715	720	650	670
FAME production capacity						
Number of biorefineries **(-)**	174	171	162	161	161	162
Nominal capacity **(million litres)**	19,824	20,019	20,128	20,370	20,381	20,425
Capacity utilisation **(%)**	60.5	59.5	59.2	55.2	54.6	54.0

HVO/HEFA/SAF production capacity						
Number of biorefineries **(-)**	15	16	17	20	22	23
Nominal capacity **(million litres)**	5,487	6,327	6,437	6,990	7,884	8,011
Capacity utilisation **(%)**	66.1	65.1	54.1	63.8	58.9	62.5

Source: *EU FAS Posts, GAIN report, Number: E 42 025-0004, 12 August 2015* ***f – forecast***

Table 5 also provides data on the number, nominal capacity and utilisation of biorefineries. Biorefineries for the production of HVO/HEFA are usually designed to produce SAF. As shown in Table 6, a slight decline in FAME production of approximately 1% and an 8.6% increase in HVO/HEFA/SAF production are expected in the EU by 2025 (see Table 7).

Table 6: FAME production by Member State, including the Czech Republic, in the EU ***in millions of litres***

Calendar year	**2020**	**2021**	**2022**	**2023**	**2024**	**2025 f**
Germany	3,875	3,837	3,790	4,003	4,020	4,040
Poland	1,081	1,138	1,110	1,108	1,130	1,150
Netherlands	1,136	1,136	1,136	1,136	1,136	1,140
France	1,851	1,203	1,074	1,031	1,050	1,050
Spain	1,698	1,429	1,529	907	900	900
Belgium	568	568	568	704	704	700
Italy	618	560	551	642	648	650
Austria	333	335	361	366	365	360
Czech Republic	290	274	271	292	283	272
Others	550	1,429	1,521	1,056	894	768
Total	**12,000**	**11,909**	**11,911**	**11,245**	**11,130**	**11,030**

Source*: EU FAS Posts, GAIN report, Number: E42 025 – 0004, 12 August 2025,* ***f – forecast***

Table 7: HVO/HEFA production by EU Member State, ranked by production in 2025 ***in millions of litres***

Calendar year	**2020**	**2021**	**2022**	**2023**	**2024**	**2025 f**
Netherlands	1,203	1,247	1,099	1,327	1,346	1,346
Spain	535	409	300	667	850	950
Italy	797	750	549	814	820	833
France	476	641	641	641	641	641
Finland	381	753	610	605	603	603
Sweden	208	312	278	369	321	577
Others	29	9	5	34	59	90
Total	**3,629**	**4,121**	**3,482**	**4,457**	**4,640**	**5,040**

Source/Note: *EU FAS Posts, GAIN report, Number: E42 025 – 0004, 12 August 2025,*
f - forecast

If, in 2024, consumption of FAME and HVO/HEFA/SAF fell by 9.7% compared to 2023 to 16,250 million litres, as shown in Table 8, the increase in consumption in 2025 is estimated at 16,750 million litres, i.e. approximately 3.1% above consumption in 2024.

Table 8: Consumption of FAME and HVO/HEFA by Member State, including the Czech Republic, in the EU ***in millions of litres***

Calendar year	**2020**	**2021**	**2022**	**2023**	**2024**	**2025 f**
France	2,997	3,142	3,169	3,124	3,124	3,120
Germany	3,583	2,974	2,952	3,038	2,404	2,580
Spain	1,810	1,774	1,676	2,307	2,175	2,450
Italy	1,654	1,851	1,812	1,904	1,912	1,920
Poland	1,076	1,076	1,200	1,259	1,234	1,280
Sweden	1,596	1,691	1,770	1,680	811	870
Belgium	454	738	650	796	810	750
Finland	381	692	532	532	532	530
Austria	444	498	472	515	515	530
Romania	384	453	521	506	501	500
Czech Republic	406	401	361	345	312	309
Others	2,369	2,583	2,772	1,983	1,920	1,911
Total	**17,154**	**17,873**	**17,887**	**17,989**	**16,250**	**16,750**

Source/Note: *EU FAS Posts, GAIN report, Number: E42 025 – 0.004, 12 August 2025,*
f - forecast

FUEL BIOETHANOL AND ETBE

Production, imports, exports, consumption and stock movements of fuel bioethanol are shown in Table 9. Almost all of this is bioethanol produced from food and feed crops. A small amount of advanced bioethanol is produced from lignocellulosic biomass. Table 9 also contains data on the number of plants, their nominal capacities and utilisation rates for the years 2020–2025, as well as the balance of by-products in the form of dried distillers' grains (DDG)s and maize oil (see below).

Table 9: Production, imports, exports and consumption of fuel bioethanol, including stock movements, and data on biorefineries for its production in the EU for 2020–2025

Calendar year	**2020**	**2021**	**2022**	**2023**	**2024**	**2025 f**
Unit	**million litres**					
Initial stocks of fuel bioethanol	310	392	362	582	420	178
Production, of which:	4,909	5,141	5,363	5,310	5,506	5,700
advanced – cellulose	35	70	70	90	30	30
Imports of which:	939	681	1,249	1,234	1,252	1,570
ETBE (45% bioethanol content)	26	19	18	87	123	154
Export	596	100	100	100	100	100
Consumption	5,170	5,752	6,292	6,606	6,900	7,210
Final stocks of fuel bioethanol	392	362	582	420	178	138
Biorefineries for the production of bioethanol from food and feed crops						
Number **(-)**	54	58	53	55	53	53

Nominal capacity **(million litres)**	7,459	8,051	8,089	8,249	8,241	8,500
Utilisation of rated capacity **(%)**	66	64	66	64	67	67
Biorefineries for the production of advanced cellulosic bioethanol						
Number **(-)**	2	3	3	2	1	1
Nominal capacity **(million litres)**	40	110	110	100	35	35
Utilisation of rated capacity **(%)**	88	64	64	90	86	86
Production of by-products in thousands of tonnes						
Dried distillers' grains with solubles (DDGs) **(thousand tonnes)**	3,618	3,374	3,993	4,042	4,231	4,385
Corn oil **(thousand tonnes)**	188	193	212	207	213	213

Source: *EU FAS Posts, USDA Foreign Agricultural Service-GAIN report, number: E 42 025-0004, Biofuels annual, 12 August 2015;* ***f – forecast***
ETBE: HS code 29091910; ETBE containing 45% bioethanol – volume calculated in the table

As can also be seen from the more detailed Table 8, fuel bioethanol production in 2024 rose by 3.7% compared to 2023, reaching 5,506 million tonnes. The largest increases were recorded in Poland (26.6%) and Germany (9.6%). In 2025, an increase of 3.5% to 5,700 million tonnes is expected.

Table 10: Bioethanol production by EU Member State, including the Czech Republic, ***in millions of litres***

Calendar year	**2020**	**2021**	**2022**	**2023**	**2024**	**2025 f**
France	975	962	1,111	1,124	1,139	1,200
Germany	700	738	759	727	797	795
Belgium	620	633	649	649	658	660
Hungary	629	662	632	590	595	635
Netherlands	481	519	519	570	570	570
Poland	276	338	404	429	543	560
Spain	501	553	497	547	542	540
Austria	222	246	259	246	247	245
Czech Republic	110	114	104	100	106	111
Others	395	376	429	328	309	384
Total	4,909	5,141	5,363	5,310	5,506	5,700

Source/Note: *EU FAS post, USDA Foreign Agricultural Service – GAIN report, number E42025-0,004; Biofuels annual, 12 August 2025;* ***f-forecast***

Fuel bioethanol consumption, including ETBE, converted to its bioethanol content among major motor fuel distributors in the EU for the years 2020–2025 is shown in Table 11.

Table 11: Bioethanol consumption by Member State in the EU ***in millions of litres***

Calendar year	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**

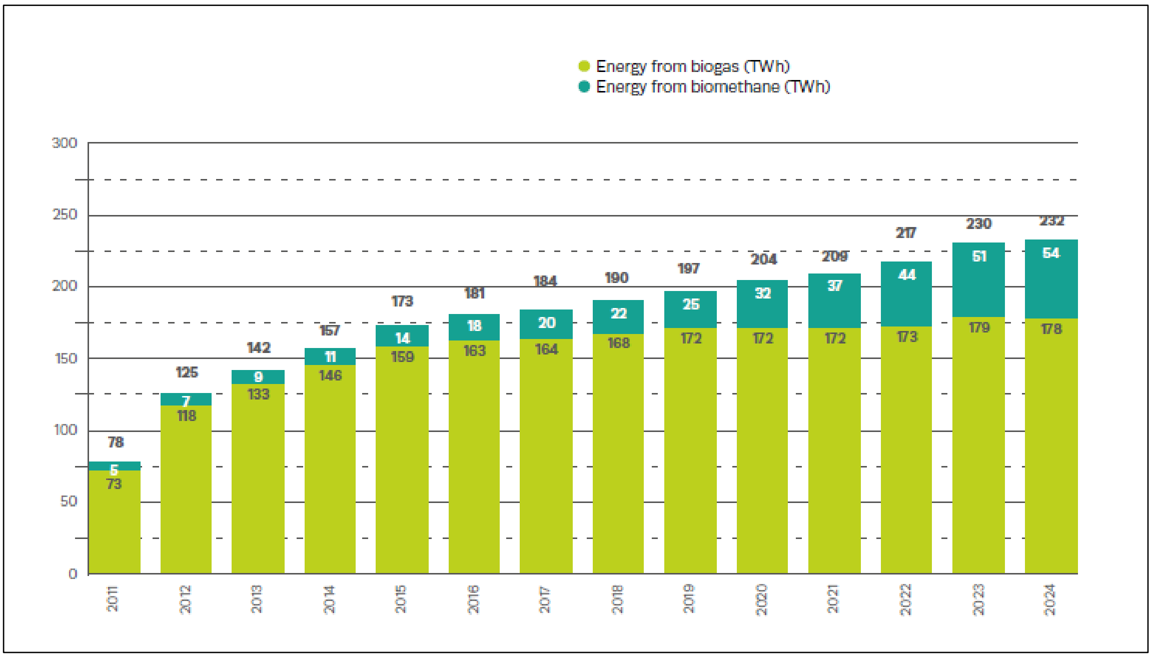
France	1,087	1,378	1,648	1,625	1,723	1,735
Germany	1,378	1,467	1,508	1,581	1,622	1,645
Netherlands	430	444	477	505	525	545
Poland	359	409	456	478	506	520
Belgium	223	277	296	324	335	340
Sweden	187	229	297	371	304	335
Spain	195	248	224	306	310	315
Hungary	167	180	184	161	175	175
Czech Republic	141	147	161	126	186	195
Others	1,003	973	1,041	1,129	1,214	1,405
Total	**5,170**	**5,752**	**6,292**	**6,606**	**6,900**	**7,210**

Source/Note: *EU FAS post, USDA Foreign Agricultural Service – GAIN report, number E42025-0,004, Biofuels annual, 12 August 2025;* ***f-forecast***

Following the UK's departure, the EU-27 has shifted from being a net exporter to a net importer of fuel bioethanol. Since 2019, consumption has exceeded production. Based on the overall increase in motor petrol consumption in the EU-27 and the continued expansion of the E10 market in many countries, bioethanol consumption is projected to grow by 4.5% in both 2024 and 2025. Three factors play a key role in the rising consumption of petrol: economic growth driving road transport, the replacement of diesel vehicles with petrol ones, and the relatively low price of bioethanol compared to petrol.

BIOMETHANE AND BIOGAS

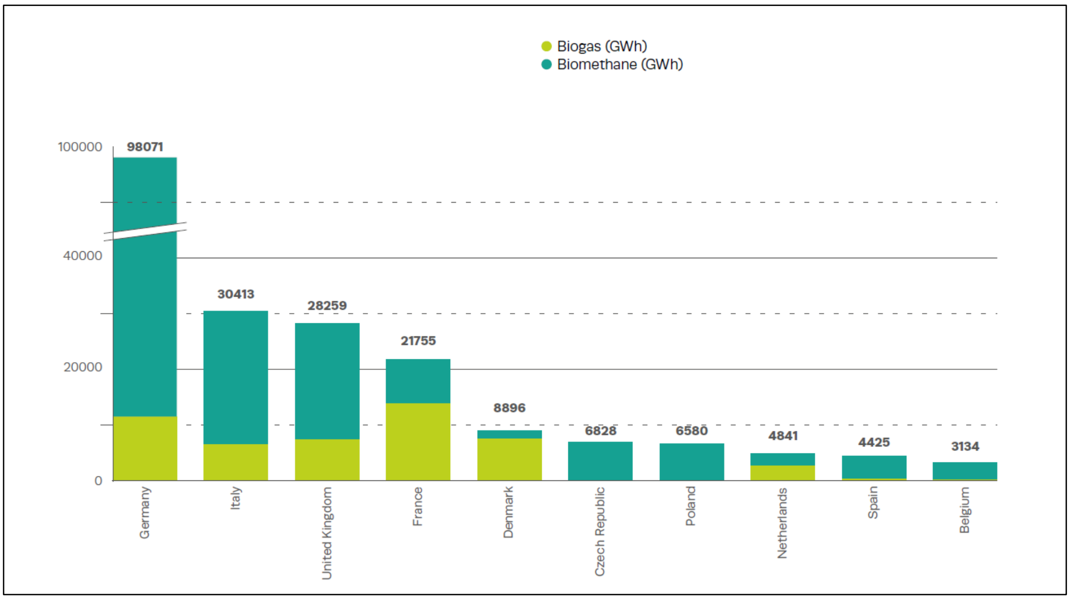
The development of combined energy production from biogas and biomethane in Europe between
2011–2024 is shown in Fig. 1.



***Source:** European Biogas Association (EBA), Statistical Report 2025*

*Fig. 1: Combined production of biomethane and biogas in Europe in 2011–2024 in **TWh***

In 2024, total energy production increased by 0.9% compared with 2023, rising from 230 to 232 TWh. During the same period, energy production from biomethane increased from 51 to 54 TWh, i.e. by 5.9%, whilst biogas production fell by 0.6%, from 179 TWh in 2023 to 178 TWh in 2024. Although biogas production remains significant, biomethane is the fastest-growing segment. The production of 54 TWh of biomethane corresponds to 5.2 billion m^3_N. Biomethane production capacity in Europe is growing steadily. From 5.5 billion m^3 $(_N)$in 2022 to 7 billion m^3_Nin the first quarter of 2025. In 2024, there were 19,706 biogas plants and 1,620 biomethane production units in Europe. Data on combined European biomethane and biogas production in 2024 are shown in Fig. 2. Germany leads with 98 TWh, followed by Italy (30 TWh), England (28 TWh) and France (22 TWh).

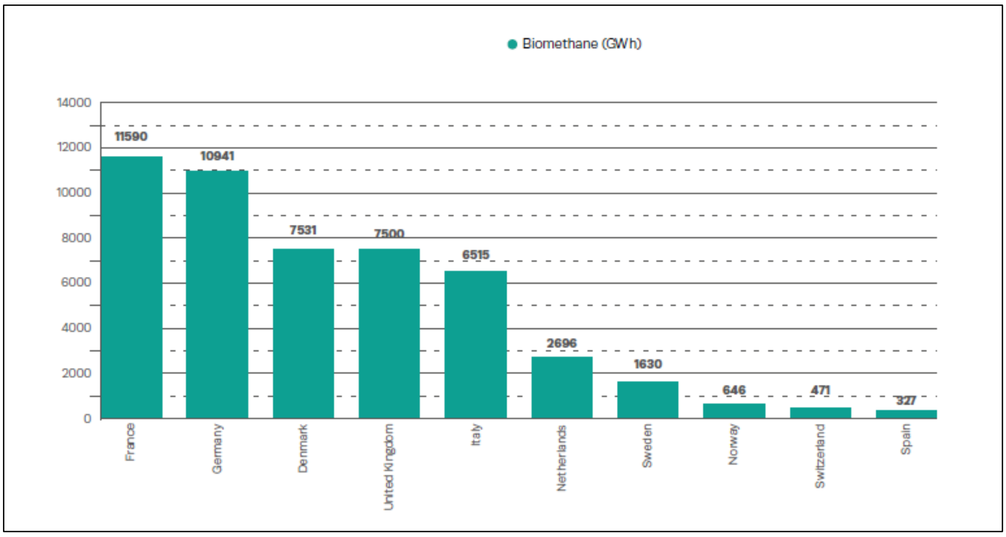


Source: *European Biogas Association (EBA), Statistical Report 2025*

Fig. 2: Biogas and biomethane production in the top ten countries in 2024 in descending order in ***GWh***

Authors' note: *Production in the Czech Republic converted to biomethane. With a total of 1,280 million* m³ of *biogas* N(51% CH₄) and 5,300 tonnes of biomethane *produced*, based on MPO data for 2024, this amounts to 6,179.2 + 73.3 = 6,252.5 GWh

As shown in Fig. 3, the largest producers of biomethane in 2024 were France (11,590 GWh), Germany (10,491 GWh), Denmark (7,531 GWh), the United Kingdom (7,500 GWh) and Italy (6,515 GWh). For comparison, as noted in the caption under Fig. 2, biomethane production in the same year was 73 GWh.



Source: *European Biogas Association (EBA), Statistical Report 2025*

Fig. 3: Biomethane production in the top ten countries in 2024, ranked in descending order in ***GWh***

3.2 Domestic market

Total domestic nominal FAME production capacity, including rapeseed oil methyl esters (RME), used cooking oil methyl esters (UCOME), methyl esters of animal fats (TME) and methyl esters of free fatty acid solutions (FFAME), which are currently in operation, as shown in Table 12, amounts to 340,000 tonnes per year. Furthermore, as shown in Table 13, two biorefineries are in operation for the production of fuel-grade bioethanol with an annual nominal capacity of 132,000 tonnes (1,700,000 hl/year).

Table 12: Current FAME/MEŘO production capacities ***in the Czech Republic*** *(utilisation of 330 days per year in three-shift operation)*

Company name	Year of commencement or resumption of **production*)**	Annual production capacity FAME/MEŘO (t)	Key raw material used
Chemoprojekt, a.s. Ústí n. L. site	2018 *)	70,000 (UCOME)	used cooking oils
Preol, a.s. Lovosice	2009	150,000 RME (MEŘO)	rapeseed oil
Primagra, a.s. Milín	2007	35,000 (UCOME)	used cooking oils
Temperatior, s.r.o. Liberec	2009	70,000 (TME)	animal fats from Category 1 and 2 by-products
Glycona s.r.o. Otrokovice	May 2021 *)	15,000 (FFAME)	solutions of free fatty acids from processing and refining
TOTAL	-	**340,000**	-

Source*: SVB/VÚZT, v.v.i., 2024*

Table 13: Bioethanol distilleries ***in the Czech Republic*** *and their annual capacity*

Company name	Year of commencement of production or trial operation *)	Annual production capacity		Raw material used
		hl	**t***	
Tereos TTD, a.s. Dobrovice	2006	1,000,000	79,000	sugar beet and its derivatives, biogenic residues
Ethanol Energy, a.s. (Vrdy distillery)	2007	700,000	55,200	maize, cereals, biogenic residues
TOTAL		**1,700,000**	**132,226**	

Source*: Czech Distillers' Association, 2024, * Density values at 15% vol. were used for conversions: 777.8 $^{kg/m^3}$*

In 2019, the first biomethane production plant in the Czech Republic, with an annual capacity of 4 million $^{m^3}{}_N$, was completed and approved. Following ERU registration and the issuance of a licence, the plant was in 2020. As shown in Table 14, there are currently 12 production facilities in operation with a nominal capacity of approximately 27.8 million $^{m^3}{}_N$, i.e. approximately 19,608 tonnes or 272,332 MWh. Of these 12 biomethane production plants, 6 received investment support. In 2024, construction also began on another agricultural biomethane plant in Krákořice near

Štenberk with a capacity of 2.6 million m^3_N per year. This plant is designed to process manure, feed residues and other on-site waste products, which also contributed to the construction being carried out without investment support. Most biogas plants feed biomethane into the distribution network. Only two plants supply biomethane outside the distribution network. These are the plants in Herálec (Jihlava public transport buses) and Mladá Boleslav (Mladá Boleslav public transport buses).

*Table 14: Biomethane production capacities in **the Czech Republic***

Company name	**Year Licence issued**	**Annual production capacity**			**Key raw material used raw materials**
		m^3_N	**t**	**MWh**	
EFG Rapotín	**2020**	4,000,000	2,822.4	39,200	Food waste and leftovers
ORGANIC TECHNOLOGY Horní Suchá	**2022**	2,890,000	2,039.2	28,322	Food waste and leftovers
ZOCHP Litomyšl	**2022**	1,716,000	1,210.8	16,816.8	Agricultural residues, including slurry
COMPAG Mladá Boleslav	**2023**	1,275,000	899.7	12,495	Food waste and leftovers
GASEA HERÁLEC	**2023**	1,200,000	846.9	11,760	Agricultural residues, including slurry
Havlíčkův Brod Wastewater Treatment Plant	**2023**	756,000	533.4	7,408.8	Sewage sludge
Prague Wastewater Treatment Plant	**2023**	1,220,000	860.8	11,956	Sewage sludge
Agrikomp Rakvice	**2024**	1,250,000	882	12,250	Agricultural waste, including slurry
Jarošovice Composting Plant	**2024**	3,500,000	2,469.6	34,300	Agricultural waste, including slurry
EFG Vyškov	**2024**	3,500,000	2,469.6	24,300	Food waste and leftovers
Dobruška	2024	3,882,000	2,739.1	38,043.6	Agricultural residues and slurry
Krákořice Clearing	2025	2,600,000	1,834.6	25,480	Agricultural residues and slurry
Total	**-**	**27,789,000**	**19,608.1**	**272,332.2**	**-**

Source/Note: REX SOLUTIONS - Ing. O. Delong, 29 November 2024; Updated 19 May 2025
SUR LIE, CZ Biom Ing. O. Malinovský
Conversions. ***1 m^3_N = 0.0098 MWh; 1 MWh = 0.072 t****; calorific value of biomethane 50 MJ/kg*
its combustion heat 1.1–1.11 times the calorific value
Density of biomethane at 15°C, pressure 101.325 kPa: 0.7049 kg/m^3_N. From conversion: 0.7056 kg/m^3_N

Domestic FAME production, imports of FAME and HVO/HEFA (SAF), and their consumption as a biofuel component in diesel between 2020 and 2025 are shown in Table 15. The decline in FAME production in 2025 compared to 2024 was 2.3%, which is less than the 3.1% decline in 2024/2023. In 2025, 22.8 thousand tonnes of HVO/HEFA were consumed, of which 8.9 thousand tonnes were used as pure XTL fuel (in 2024 2.5 thousand tonnes). In 2025, domestic production capacity for FAME was utilised at approximately 73%, which is 2.3% less than in 2024.

Table 15: FAME production, FAME and HVO/HEFA imports, gross consumption of FAME and HVO/HEFA as a bio-component in diesel, and utilisation of domestic production capacity in the Czech Republic in 2020–2025

		2020	2021	2022	**2023**	**2024**	**2025**	**Index 2025/2024**
		(t)						**(-)**
FAME production [5]		258,647	244,794	242,048	260,790	252,788	**246,974**	**0.98**
Imports of FAME [1] + HVO/HEFA [1]		189,402	198,565	219,594	154,464	172,023	**182,636**	**1.06**
FAME exports [1]		141,760	144,389	132,655	104,421	142,479	**134,121**	**0.94**
Continuation of Table 15								
FAME for blending [3), 4)]		292,854	287,776	269,978	278,436	261,629	**256,162 [E]**	**0.98**
HVO/HEFA [4]	Total [4]	60,737	60,892	45,010	25,508	14,432	**22,841 [E]**	**1.58**
	For blending	60,737	60,892	45,010	25,508	11,938	**13,933 [E]**	**1.17**
	As pure XTL fuel [1]	-	-	-	-	2,494	**8,907**	**3.57**
MEŘO B100 as a pure fuel [2]		20,121	-	-	-	-	**-**	**-**
SMN HVO/HEFA 30 [2]		183 222	-	-	-	-	**-**	**-**
Utilisation of FAME production capacity		**(%)**						
		76.1	72.0	71.2	76.7	74.3	**72.6**	**0.98**

***Note**: Density values at 15°C were used for this calculation: FAME/MEŘO: 891.9 kg/m^3 ; HVO/HEFA: 777.9 kg/m^3 ; SMN B30: 853.6 kg/m^3 ; SMN HVO/HEFA 30: 823.5 kg/m^3 ; diesel: 837.2 kg/m^3*

***Source**: **1)** MPO - Eng (MPO) 6-12*
***2)** General Directorate of Customs (gives quantities in litres, converted to tonnes)*
***3)** taking into account initial and final stocks*
***4)** Ministry of the Environment, Reports on greenhouse gas emissions from supplied fuels stated in litres, converted to tonnes*
***5)** CARC (VÚZT, v.v.i.) & SVB*
E, CARC survey (VÚZT, v.v.i.) & SVB + MPO

Similar data for fuel bioethanol are presented in Table 16. Whilst the increase in production in 2024 compared to 2023 reached 6.7%, for 2025/2024 it is 26.0%. A 24% increase in bioethanol consumption in 2025 compared to the previous year can also be expected.

Table 16: Production, imports, exports and gross consumption of fuel bioethanol, ETBE and E85 ethanol in the Czech Republic and utilisation of domestic production capacity in 2020–2025

	2020	**2021**	**2022**	**2023**	**2024**	**2025**	**Index 2025/2024**
	(t)						**(-)**
Production [1) 5)]	85,688	88,545 [5]	80,538 [5]	77,462 [5]	82,670 [5]	**104,508 [5]**	**1.26**
Imports	15,886	31,352	41,921 [1]	63,648 [1]	86,451 [1]	**87,783 [1]**	**1.02**
Exports [1]	13,036	36,591	9,197	14,133	12,227	**5,643**	**0.46**
Gross consumption for blending and for the production of ETBE [2), 3)]	83,532	87,779	91,263	98,046	112 204	**139,133 [E]**	**1.24**
ETBE for blending [4) 2)]	55,590	57,840	73,000 [1]	79,588 [1]	69,849 [1]	**45,321 [1]**	**0.65**
E85 ethanol [2]	357	3	2	2	-	**-**	**-**
Utilisation of bioethanol	**(%)**						

production capacity	**63.9**	**66.0**	**60.1**	**57.7**	**61.6**	**77.6**	**1.26**

Note: *Density values at 15 °C were used for conversions: 777.8 kg/m^3 for bioethanol, ETBE – containing 47% bioethanol and 53% fossil isobutane 750 kg/m^3, E85 ethanol (77.27% v/v bioethanol) 770.2 kg/m^3, motor petrol 744.2 kg/m^3*

Source: *[1)] MPO - Eng (MPO) 6-12; [2)] Taking into account opening and closing stocks*

[3)] Ministry of the Environment, Reports on greenhouse gas emissions from supplied fuels as stated in l, converted to t.

[4)] General Directorate of Customs ***(bioethanol volume 47% v/v)*** *[5)] Czech Distillers' Association*

[E)] ***CARC/SVB + MPO estimate***

Table 17 shows biomethane production in the Czech Republic, its injection into the natural gas network, direct use in the form of bio-CNG, imports, gross consumption and the utilisation of domestic production capacity. Of particular note is the 30.3% increase in biomethane production in 2025 compared to 2024. It is therefore clear that the first domestic biomethane production plants have already begun to operate at full capacity, whilst the development of new projects is still in its infancy. To supplement the related data, Table 18 shows biogas consumption for energy purposes in 2023 and 2024 by type of biogas plant in the Czech Republic (this table provides more detailed data on the Czech Republic than that shown in Figure 2).

Table 17: Biomethane production in the Czech Republic, its injection into the natural gas network, direct use in the form of bio-CNG, imports, gross consumption and utilisation of domestic production capacity in 2020 and 2025

	2020	2021	2022	2023	2024	**2025**	**Index 2025/2024**
	(t)						**(-)**
Biomethane production [1)]	507.3	807.2	918.0	2,073.1	5,275.1	**12,149.7**	**2.30**
BioCNG consumption – 'stand-alone system' [1)]	-	-	-	74.8	366.9	**338.0**	**0.92**
Biomethane injected into the natural gas network [1)]	507.3	807.2	918.0	1,998.3	4,908.2	**11,817.4**	**2.41**
Imports of petrol or diesel by the supplier [2)]	478.6	15,098.0	31,787.3	25,430.0	26,334.1	**28,450.0 E**	**1.08**
Total gross consumption	985.9	15,905.2	32,705.3	27,503.1	31,609.2	**40,599.7**	**1.28**
Utilisation of domestic production capacity	**(%)**						-
	44.9	71.5	39.2	22.5	29.8	**62.0**	**2.08**

Source: *[1)] ERU, processed by the Ministry of Industry and Trade – data given in thousands of m^3_N; [2)] Ministry of the Environment, Emissions Report; [E)] CARC/SVB estimate*

For conversion: 1 MWh = 0.072 t; 1 m^3_N = 0.0098 MWh

Table 18: Biogas consumption for energy purposes in 2023 and 2024 by type of biogas plant in the Czech Republic

Type of biogas plant	Number (-)	Consumption of biogas produced (m^3_N)	**Index 2024/2023**

	2023	2024	2023	2024	
Municipal WWTP	94	93	67,044,648	60,462,653	**0.90**
Industrial WWTPs	18	19	16,114,935	15,717,075	**0.97**
Agricultural	408	402	1,178,144,532	1,158,066,918	**0.98**
Landfill	64	65	58,477,559	45,617,244	**0.78**
TOTAL	**584**	**579**	**1,309,781,674**	**1,279,863,890**	**0.98**

Source: *MPO – Renewable Energy Sources in 2024/ www.mpo.cz; CARC*

4. Bio-components in motor fuels in the EU and the Czech Republic

Table 19 shows the development of consumption of diesel with FAME and HVO/HEFA bio-components in aviation fuels and kerosene in the EU between 2020 and 2025[f] .

Table 19: Use of diesel with bio-components, FAME, HVO/HEFA/SAF in the EU between 2020 and 2025

Year	2020	2021	2022	2023	**2024**	**2025 [f]**	**Index 2024/2023**
Unit	**million litres**						
FAME + HVO/HEFA in road transport	15,840	16,204	15,900	16,345	14,600	14,600	**0.89**
FAME + HVO/HEFA + SAF total	17,154	17,873	17,887	17,989	16,250	16,750	**0.40**
Diesel fuel with bio-components in road and off-road transport [1)]	219,018	232,889	234,290	228,083	224,917	219,068	**0.99**
Total diesel with bio-components [2)]	288,351	299,641	300,677	288,035	282,907	277,047	**0.98**
Total aviation fuels and kerosene [3)]	28,407	34,239	51,804	57,989	60,622	**61,255**	**1.05**

Source: *USDA, GAIN Report Number: E42 025-0004, Biofuels annual: 12 August 2025,* ***f – forecast***

Notes: 1) All road and off-road transport, including construction, agriculture and forestry. Excludes rail, heavy marine diesel engines (diesel pool),

2) Includes all road and off-road use as specified in point 1, plus rail, heavy marine engines and stationary engines (diesel pool),

3) Includes all private, commercial and military aviation kerosene fuels (both fossil and bio-based) + others.

Taking into account the consumption of automotive petrol, including bio-components and bioethanol, including ETBE (converted to the bioethanol content therein – 45 % v/v) in the EU for the years 2020–2025 is presented in Table 20.

Table 20. Consumption of motor petrol, including bio-components, fuel-grade bioethanol (including ETBE) and its share of consumption in ***the EU*** *in 2020–2025 ᶠ*

	Unit	Year						INDEX 2024/2023
		2020	2021	2022	2023	**2024**	2025 **f**	
Consumption of motor petrol, including biofuels	million litres	86,029	93,429	98,966	102,488	106,647	111,233	**1.04**
Consumption of bioethanol fuel, incl. ETBE	million litres	5,170	5,752	6,292	6,606	6,900	7,210	**1.04**
Share of bioethanol in motor petrol consumption	% v/v	6.01	6.16	6.36	6.45	6.47	6.48	**1.00**

Source: *USDA, GAIN Report, Number: E 42 025-0.004, Biofuels annual; 12 August 2025,* ***f – forecast***

Domestic consumption of diesel without bio-components, consumption of FAME and HVO/HEFA, total diesel including bio-components (corresponding to the quality specified in ČSN EN 590 - 2026) and the share of these bio-components in total consumption for the years 2020–2025 ᶠare shown in Table 21.

Table 21: Consumption of diesel fuel without bio-components and average volume shares of FAME and HVO/HEFA (bio-components) in the years 2020–2024 in the Czech Republic

	Unit	2020	2021	2022	2023	**2024**	**INDEX 2024/2023**
Consumption of diesel fuel without bio-components	million litres	4,840.6	5,194.7	5,300.8	5,426.7	**5,523.4**	**1.02**
FAME consumption		328.3	322.6	302.7	312.2	**293.3**	**0.94**
HVO/HEFA consumption		78.1	78.3	57.9	32.8	**18.6**	**0.57**
Total diesel fuel, including bio-components	% v/v	5,247.0	5,596.6	5,661.4	5,771.7	**5 835.3**	**1.01**
Total bio-components		406.4	400.9	360.6	345.0	**311.9**	**0.90**
Share of bio-components in diesel fuel in total diesel consumption		7.7	7.2	6.4	6.0	**5.3**	**0.88**

Source: *Ministry of the Environment, Reports on greenhouse gas emissions from supplied fuels, Ministry of the Environment*

Since 2020, when the share of biofuels was at its highest (7.7%), their share has been steadily declining, reaching 5.3% in 2024, which is 11.7% less than in 2023. This figure represents only 68.8% of the share of biofuels in 2020. The year-on-year increase in diesel consumption, including biofuels, was as follows: 2021/2020 **6.7%**, 2020/2021 **1.2%**, 2023/2022 **1.9%** and 2024/2023 **1.1%.**

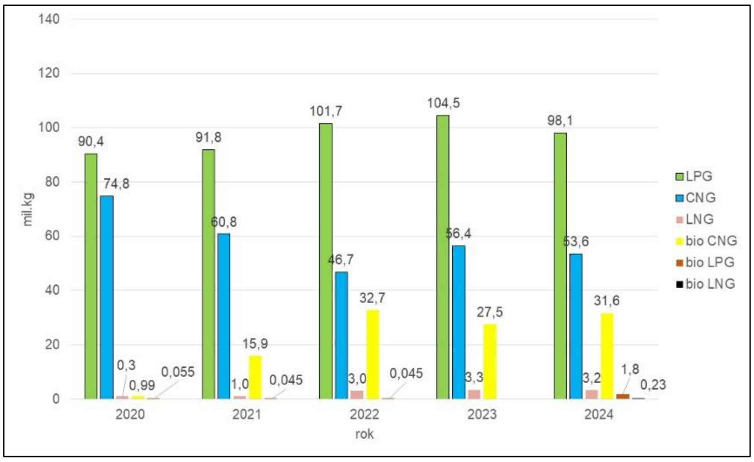
Table 22 shows domestic consumption of motor petrol, consumption of fuel-grade bioethanol (including ETBE), and the average volume percentage of bioethanol content—both with and without bio-components (corresponding to the quality specified in ČSN EN 228-2026), including ETBE—for the years 2020–2024. Here, the trend is significantly more positive compared to the proportion of bio-components in diesel. In 2024, the proportion reached 8.22%, an increase of 30.5% compared to 2023 (6.3%). It is also 27% higher than the same indicator in the EU (see Table 20). The increase in consumption of motor petrol, including bio-components, was as follows: 2021/2020 **4.0%**, 2022/2021 **5.9%**, 2023/2022 **6.2%** and 2024/2023 **12.7**%. For blending in motor petrol, 45 litres of biomethanol were also used in 2024.

Table 22: Domestic consumption of motor petrol without bio-components, consumption of bioethanol including ETBE, and the average volume share of bioethanol content including ETBE (bio-components) in motor petrol in the Czech Republic in 2020–2024

	Unit	2020	2021	2022	2023	**2024**	**INDEX 2024/2023**
Consumption of motor petrol without biofuel content	million litres	1,615.6	1,678.5	1,778.9	**1,887.1**	**2,082.4**	**1.10**
Bioethanol consumption, incl. ETBE		107.4	112.8	117.3	**126.1**	**186.5**	**1.48**
Total motor petrol, including biofuels		1,723.0	1,791.3	1,896.2	**2,013.2**	**2,268.9**	**1.12**
Share of biofuels of total motor petrol consumption	% v/v	6.2	6.3	6.2	**6.3**	**8.22**	**1.3**

Source: *Ministry of the Environment, Reports on greenhouse gas emissions from supplied fuels, Ministry of the Environment*

The balance of consumption of LPG, CNG, LNG and their renewable equivalents bio-CNG, bio-LPG and bio-LNG is shown in Fig. 4.



Source: *Ministry of the Environment, Reports on GHG emissions from supplied fuels*

Fig. 4: Consumption of LPG, CNG, LNG, bio-LPG and bio-CNG in the of fuels ***in the Czech Republic*** *in 2020–2024*

The reduction in LPG consumption in 2024 compared to 2023, when it was at its highest to date, amounted to 6.1%. Bio-LPG accounted for 1.8% of total consumption in 2024. Consumption of compressed natural gas (CNG) in 2024 stood at 53,560,547 kg. This is 5.0% less than in the previous year. Meanwhile, consumption of bio-CNG rose by 14.9% to 31,609,234 kg (in advanced form). Its share thus reached 37.1%

In the motor fuel market, 3,230,403 kg of liquefied natural gas and 230,782 kg of advanced bio-LNG (6.5% of total consumption) were sold in 2024.

5. Establishment of the Union UDB database and implementation of feedstock for the production of renewable liquid and gaseous fuels

The proposal for a Commission Regulation (EU) supplementing the RED III Directive by further expanding the scope of data to be included in the Union database to include relevant data from the place of production or collection of raw materials used in the production of renewable liquid and gaseous fuels (hereinafter the draft UDB delegated act) was published in the autumn of 2024. In November of the same year, it was discussed by the EC Committee on Fuel Sustainability. The production of feedstock, including land use for the production of food and feed crops, is the first link in the renewable energy supply chain. The second link is the so-called first collection point for the handling and storage of biomass/intermediate products, encompassing all activities related to collection, storage and transport to the premises of the subsequent facility responsible for converting it into liquid and gaseous fuel. This may also include the collection of residual biomass and biogenic waste intended for this conversion.

Once fully operational, the UDB should play a key role in strengthening the fight against fraudulent claims regarding renewable liquid and gaseous fuels and in meeting the targets of the RED III Directive.

The feedstocks for the production of advanced and mature s listed in Annexes IX.A and IX.B of the RED II Directive are further supplemented and specified by Commission Delegated Directive (EU) 2024/1405 of 14 March 2024, amending Annex IX to the RED II Directive.

As a result of the ongoing implementation of the RED III Directive, discussions are therefore taking place at EU level to adopt measures to significantly tighten requirements and the regulatory framework in order to prevent fraud and ensure fair competition. This involves the recording and verification of duly declared feedstocks for the production of advanced renewable liquid and gaseous fuels. The competent authority for registration and recognition in Germany, for example, is the Federal Institute for Agriculture and Nutrition (BLE). The corresponding sustainability certificate is registered in the 'NABISY' database, which is managed by the BLE. This sustainability document provides manufacturers, distributors and competent authorities in other Member States with sufficient proof of registration and thus of the successful certification of the plant and the input raw materials used.

The minutes of the EC Committee meeting on the sustainability of renewable liquid and gaseous fuels (MoE, 17 April 2026) provide an update on the current status of work on the UBD, as presented by the EC. The EC is currently focusing on harmonising feedstock codes. Germany is facing issues in this area because some UDB codes differ from those used in the NABISY database. The EC is in discussions with the Association of Issuers of Guarantees of Origin (AIB) regarding the possibility of integrating the registers of guarantees of origin (Article 19 of the RED III Directive) with the UDB. The aim is to transfer guarantees of origin to the UDB for the purpose of recording them, not to demonstrate compliance with sustainability criteria. The EC does not plan a phased introduction of the UDB, and recording should take place from the first collection point.

5.1 Implementation of feedstocks for the production of FAME, HVO/HEFA/SAF and fuel bioethanol in the EU

Table 23 lists the feedstocks used in the EU for the production of FAME and HVO/HEFA/SAF in the years 2020–2025[f] .

Table 23: Feedstocks used in the EU for the production of FAME and HVO/HEFA/SAF in the years 2020–2025

Feedstock	2020	2021	2022	2023	2024	2025 [f]	INDEX 2024/2023
	(thousand tonnes; %)						(-)
Rapeseed oil	5,800 $^{39.7}$	6,075 $^{40.6}$	5,507 $^{38.3}$	5,630 $^{38.4}$	5,755 $^{39.1}$	5,650 $^{36.5}$	**1.02**
Used cooking oil (UCO)	3,500 $^{24.8}$	4,000 $^{26.7}$	4,370 $^{30.4}$	4,000 $^{27.3}$	4,100 $^{27.8}$	4,500 $^{29.1}$	**1.03**
Animal fats	1,250 $^{8.6}$	1,300 $^{8.7}$	900 $^{6.2}$	880 $^{6.0}$	885 $^{6.0}$	1,230 $^{8.0}$	**1.00**
Soybean oil	900 $^{6.2}$	780 $^{5.2}$	950 $^{6.6}$	1,200 $^{8.2}$	840 $^{5.7}$	700 $^{4.5}$	**0.70**
Sunflower oil	240 $^{1.6}$	225 $^{1.5}$	310 $^{2.2}$	310 $^{2.1}$	290 $^{2.0}$	280 $^{1.8}$	**0.94**
Palm oil	1,500 $^{10.3}$	890 $^{5.9}$	320 $^{2.2}$	214 $^{1.5}$	85 $^{0.5}$	70 $^{0.4}$	**0.40**
Others – tall oil from pulp production; palm oil distillates (PFAD); palm oil mill effluent (POME); free fatty acids (FFA); sewage sludge	1,412 $^{9.6}$	1,711 $^{11.4}$	2,023 ^{14,1}	2,420 $^{16.5}$	2,780 $^{18.9}$	3,030 $^{19.6}$	**1.09**

Source/Note: *EU FAS post, USDA Foreign Agricultural Service – GAIN report, number E42025-0,004, Biofuels annual, 12 August 2025;* ***f-forecast***

Rapeseed oil has historically been the main and most significant feedstock for production in the EU. In 2024, it accounted for 39% of total feedstock use and, according to forecasts, could account for 37% in 2025. This slight decline can be attributed to new EU obligations for SAF, which will increase the attractiveness of residual biomass and biogenic waste, as SAF can only be produced from these feedstocks.

Used cooking oil (UCO) is a highly attractive feedstock. In 2024, it remained the second most important feedstock and is expected to retain this position in 2025. US tariffs on Chinese imports and the end of tax breaks for American producers of fuel blends may redirect UCO to the EU in 2025, which explains the increase in UCO imports in the first four months of 2025 (January–April 2024: 558,000 tonnes, January–April 2025: 706,000 tonnes). The trends in imports, own collection within the EU and total UCO consumption in the EU for the years 2020–2024 are presented in Table 24. The largest importers of UCO into the EU, in descending order, are: China (392,000 tonnes), Malaysia (217,000 tonnes), England (141,000 tonnes), Saudi Arabia (97,000 tonnes) and the Russian Federation (78,000 tonnes).

As can be seen from Table 23, ***animal fats*** accounted for 6.0% of all feedstocks used in the production of TME and HVO/HEFA/SAF in 2024 (885,000 tonnes). A significant increase in the consumption of this feedstock is expected in 2025, particularly for the production of HVO/HEFA/SAF.

The technical standard for FAME, ČSN EN 14 214+A2 (2019), restricts the use of vegetable oils, animal fats, their intermediates and residues with medium to high free fatty acid (FFA) content, such as ***soya oil***, palm oil and tallow. FAME from soya oil (SME) does not meet the iodine value prescribed by this standard, which has a negative impact on oxidative stability.

Table 24: Trends in imports, own collection and total quantities of UCO ***in the EU*** *from 2020 to 2024 in tonnes*

	2020	**2021**	**2022**	**2023**	2024	**Index 2024/2023**
China	273,019	618,014	912,818	338,362	391,829	**1.16**
Malaysia	239,865	166,185	161,596	226,068	217,236	**0.92**
England	153,043	119,819	191,533	201,804	140,825	**0.70**
Saudi Arabia	65,037	66,862	81,107	85,247	96,811	**1.13**
Russian Federation	99,498	82,078	72,720	83,798	78,299	**0.93**
Argentina	27,921	23,701	2,867	37,915	51,034	**1.35**
Chile	34,428	61,387	53,577	7,107	41,256	**5.80**
Iran	185	3,628	11,709	10,919	33,319	**3.05**
Belarus	21,676	21,193	20,418	28,427	31,108	**1.09**
South Africa	16,073	44	23,413	27,117	30,117	**1.11**
Singapore	7,162	5,258	2,420	8,991	29,467	**3.28**
Egypt	20,496	312	3,130	22,727	28,405	**1.25**
United Arab Emirates	9,935	20,292	13,460	22,248	24,985	**1.12**
Kazakhstan	23	-	769	16,188	24,244	**1.50**
Thailand	-	-	6,929	43,755	23,668	**0.54**
Israel	158	1,518	6,313	16,664	17,508	**1.05**
Indonesia	59,308	56,499	37,366	45,194	15,754	**0.34**
Iraq	1,020	2,761	3,343	5,390	10,398	**1.93**
Switzerland	11,565	11,870	14,145	10,617	10,390	**0.98**
Hong Kong	6,352	2,480	3,256	17,641	9,988	**0.57**
Peru	6,909	9,266	8,597	5,569	9,785	**1.76**
Ukraine	1,427	2,717	3,004	5,386	9,639	**1.79**
Kuwait	5,496	6,757	8,187	10,938	9,578	**0.88**
Continued from Table 24						
Lebanon	3,213	1,757	2,781	7,483	7,986	**1.07**
Jordan	2,881	6,130	1,747	7,246	7,979	**1.10**
Taiwan	7,781	1,289	1,359	11,358	7,887	**0.69**
Colombia	7,523	5,372	8,654	2,265	7,354	**3.24**
Serbia	4,758	5,114	3,934	4,826	6,757	**1.40**
Morocco	2,897	5,577	7,047	5,998	6,449	**1.07**
Japan	10,530	10,238	3,322	8,389	6,184	**0.74**
USA	77,519	22,233	28,519	5,042	5,047	**1.00**
Qatar	1,758	1,143	1,659	1,210	4,567	**3.77**
Norway	5,136	3,377	4,131	2,428	4,324	**1.78**
Costa Rica			321	542	3,674	**6.78**
Bahrain	2,586	1,253	1,113	3,371	3,538	**1.05**
Vietnam	8,971	6,378	49,247	16,511	3,091	**0.19**
Turkey		918	2,979	273	3,027	**11.09**
Panama	2,745	2,791	3,652	2,660	2,906	**1.09**
Tunis	1,073	1,042	933	1,392	2,238	**1.61**
Georgia	486	499	861	1,472	2,215	**1.50**
Others	16,168	20,603	22,646	32,091	34,267	**1.07**
Imports into the EU	1,505,705	1,436,151	1,789,966	1,387,835	1,135,553	**0.82**
Within the EU-27	1,607,933	1,992,082	2,613,837	2,248,112	2,505,414	**1.11**
Total	3,113,638	3,428,233	4,403,803	3,635,947	3,640,967	**1.00**

Source: *EUROSTAT/AMI*

In previous years, the volume of soybean oil used as a feedstock was significantly higher than in 2024 and 2025. This was due to high demand for SME from the United States in response to tax incentives for producers of fuel blends, which ended in January 2025. As a result, nearly 17% less soya oil is expected to be used for SME production in the EU in 2025 compared to 2024.

Sunflower oil accounted for 2% of total raw materials in the EU in 2024. It is mainly used in Greece and Bulgaria. In 2024, these two Member States consumed 52% of total sunflower oil, followed by smaller quantities used in Hungary, France, Poland, Romania and Lithuania.

Palm oil is being phased out as a feedstock for FAME (PME) and HVO/HEFA/SAF by 2030, and its consumption is therefore steadily declining. ***The category – other feedstocks*** listed in Table 24 – shows the largest increase in consumption. In 2024, this category increased by 14.8% year-on-year. This diverse group includes tall oil, free fatty acids (FFA), palm oil mill effluent (POME), palm fatty acid distillates (PFAD), fresh and empty fruit bunches (FFB and EFB), and cottonseed oil. A further increase of 9% is expected in 2025, driven primarily by rising consumption of tall oil from pulp production and brown grease.

In terms of the origin of raw materials, a large proportion of soya oil in the EU is produced from imported soya. By contrast, most rapeseed oil is of domestic origin. The forecast for 2025, according to which 5.65 million tonnes of rapeseed oil will be used for RME (renewable motor fuel) production, corresponds to approximately 14 million tonnes of rapeseed. This also generates approximately 8.5 million tonnes of rapeseed meal as a by-product, used for feeding livestock. Similarly, 3.5 million tonnes of soya beans are crushed to produce 0.7 million tonnes of soya oil, with approximately 2.8 million tonnes of soya meal produced as a by-product.

The feedstocks used for the production of fuel bioethanol in the EU in 2020–2025^{f}are shown in Table 25. In the EU, almost all fuel bioethanol is produced from **cereals and sugar beet derivatives.**

Table 25: Feedstocks used in the EU for the production of fuel bioethanol in ***2020–2025*** ^{f}

Feedstock	2020	2021	2022	2023	2024	2025 ^{f}	**Index 2024/2023**
Unit	**(thousand tonnes; %)**						
Wheat	3,002 $^{18.2}$	2,592 $^{13.7}$	2,760 $^{15.6}$	2,993 $^{18.0}$	3,005 $^{17.4}$	3,070 $^{17.0}$	**1.00**
Grain maize	6,472 $^{39.2}$	6,641 $^{35.2}$	7,303 $^{41.3}$	7,153 $^{43.0}$	7,356 $^{42.6}$	7,540 $^{41.8}$	**1.03**
Barley	593 $^{3.6}$	655 $^{3.5}$	616 $^{3.5}$	679 $^{4.2}$	948 $^{5.5}$	1,110 $^{6.2}$	**1.40**
Rye	444 $^{2.7}$	592 $^{3.1}$	427 $^{2.4}$	166 $^{0.1}$	130 $^{0.7}$	130 $^{0.7}$	**0.78**
Triticale	1,048 $^{6.4}$	1,258 $^{6.6}$	1,651 $^{9.3}$	1,922 $^{11.6}$	2,078 $^{12.0}$	2,160 $^{12.0}$	**1.08**
Diabetes	4,788 $^{29.1}$	6,872 $^{36.4}$	4,660 $^{26.3}$	3,339 $^{20.1}$	3,640 $^{21.1}$	3,890 $^{21.6}$	**1.09**
Residual cellulose biomass	140 $^{0.8}$	280 $^{1.5}$	280 $^{1.6}$	360 $^{2.2}$	120 $^{0.7}$	120 $^{0.7}$	**0.33**

Source: *EU FAS Post, GAIN report, Number E42 025-0,004, 12 August 2025;* ***f-forecast***

Wheat is used predominantly in Germany and France. The abundant supply **of maize** in Central Europe, particularly in Hungary, Poland and the Czech Republic, supports the production of maize-based bioethanol in this region. In Poland, the availability of Ukrainian maize was reportedly one of the factors influencing the decision to introduce E10. Maize is also the preferred cereal in the Netherlands, Belgium and Spain, where most bioethanol biorefineries are located in ports. This raw material is imported here from third countries, particularly Ukraine. The motivation is the use of non-genetically modified (non-GMO) maize, given the desired non-GMO feed quality of the resulting distillers' dried grains with solubles (DDG_s). The use **of barley** as a feedstock for bioethanol production is expected to increase further by 2025, mainly due to higher utilisation in Hungary.

In France, Germany, the Czech Republic, Belgium and Austria, **sugar beet and its derivatives** are processed in biorefineries combining a sugar factory with a distillery. Overall, the use of sugar beet for bioethanol production in 2023 was significantly lower (down 26.3% on 2022 and 51% on 2021), partly due to the ban on neonicotinoids, which are used to combat aphids damaging crops. This had a negative impact on sugar beet production in 2022 and on bioethanol production in 2023. In 2024 and 2025, the use of sugar beet for bioethanol production increased again due to higher supply in the EU. The quantity of sugar beet used for the production of fuel bioethanol is estimated at 3.64 million tonnes in 2024 and 3.89 million tonnes in 2025.

In the EU, it is estimated that 14.0 million tonnes of cereals will be required to achieve the projected production of 5.70 billion litres of fuel bioethanol in 2025, representing an increase of approximately 490,000 tonnes compared to 2024. This is roughly 5.1% of total cereal production in the EU. As mentioned above, the by-products of the bioethanol production process are DDG_S, wheat gluten, maize oil and yeast concentrates. In 2025, the level of by-product production is expected to reach 4.37 million tonnes, representing an increase of approximately 150,000 tonnes compared to 2024. This represents 2.7% of total feed grain consumption in the EU.

5.2 Use of feedstock for the production of renewable liquid and gaseous fuels sold on the domestic fuel market and associated agricultural land use

5.2.1 Raw materials for domestic FAME production and for the production of FAME and HVO/HEFA consumed on the domestic market

The energy and percentage shares of individual types of FAME produced in the Czech Republic in 2024 are shown in Fig. 4 and in 2025 in Fig. 5. FAME production in the Czech Republic by type of feedstock is presented in Table 26.

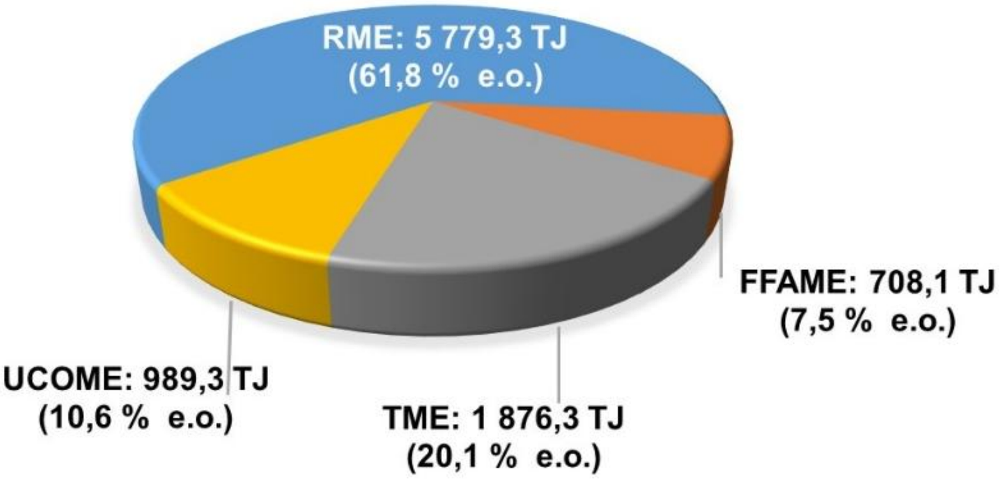


Fig. 4: Energy and percentage shares of individual types of FAME produced ***in the Czech Republic***
in 2024. ***Total FAME 252,788 t = 9,353.156 TJ***

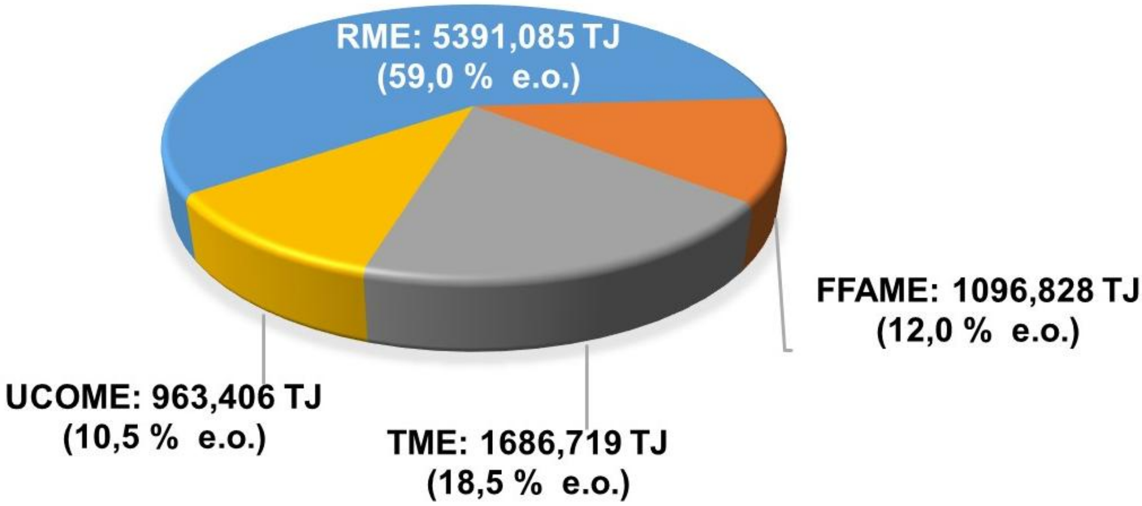


Fig. 5: Energy and percentage shares of individual types of FAME produced ***in the Czech Republic***
in 2025. ***Total FAME 245,974 t = 9,138.038 TJ***

Table 26: FAME production (UCOME, RME, TME, FFAME) in the Czech Republic by type of feedstock in 2025

FAME	**Input bio-feedstocks**	**2025**			**Index 2025/2024**
		(t)	**(TJ)**	**(% e.o.)**	**(-)**
From food and feed crops (RME)	Rapeseed oil	**145,705**	**5,391.1**	**59.0**	**0.93**
Advanced from feedstock IX.A RED II and DEL. ACT 2024/1405 (FFAME, FAME)	Free fatty acids (FFA) as residues from refining, waste from the processing and production of vegetable oil and crude glycerine	**29,644**	**1,096.8**	**12.0**	**1.80**

Derived from input bio-feedstocks IX.B RED II and DEL. ACT 2024/1405 (UCOME, TME)	Used cooking oils (UCO) and animal fats, categories 1 and 2	**71,625**	**2,650.1**	**29.0**	**0.92**

NOTE: *Calorific value of FAME 37 MJ/kg dry matter*

In 2025, compared to 2024, rapeseed oil consumption fell by 6.7% and remains the most widely used feedstock for the production of sustainable FAME, accounting for 59% of all raw materials. This is followed by animal fats (categories 1 and 2) at 18.5%, then FFAME (12.0%) and UCOME (10.5%). In terms of the nature of the feedstock, RME produced from rapeseed oil, i.e. from food and feed crops, accounted for 59% (61.8% in 2024). Advanced FAME accounted for 12% (6.5% in 2024) and mature FAME for 29% (30.6% in 2024).

In 2025, 359,891 tonnes of rapeseed were consumed by RME producers, which is 6.7% less than in 2024. The share of rapeseed area whose production was processed into RME reached 35.3% in 2025, which is 15.3% less than in 2024. The relevant indicators for the summer of 2020–2025 are shown in Table 27.

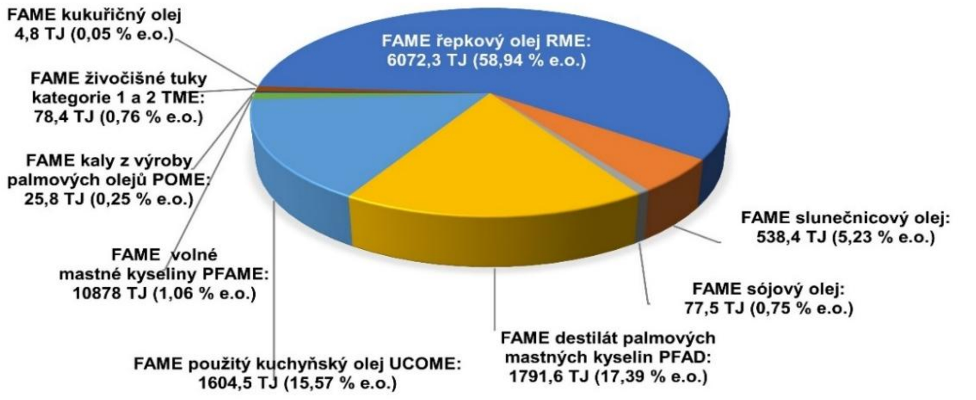
Table 27: Balance of sown areas and production of oilseed rape used for RME production (MEŘO)
in the period 2020–2025 in the Czech Republic

	Unit	2020	2021	2022	2023	2024	**2025**	**Index 2025/2024**
FAME production 1)	t	258,647	244,794	242,048	260,790	252,788	**246,974**	**0.98**
of which RME 2)		171,714	146,191	119,222	160,113	156,198	**145,705**	**0.93**
Rapeseed consumption for MEŘO production **3)**	t	424,134	361,092	294,478	395,479	385,809	**359,891**	**0.93**
Rapeseed harvest area 4)	ha	368,214	342,315	343,964	379,944	343,380	**335,854**	**0.98**
Rapeseed yield 4)	t/ha	3.38	2.99	3.39	3.45	2.76	**3.04**	**1.10**
Rapeseed production 4)	t	1,245,328	1,024,928	1,166,393	1,309,496	946,891	**1,021,724**	**1.08**
Area of rapeseed, at a given yield, used for MEŘO production	ha	125,483	120,767	86,867	114,632	139,786	**118,385**	**0.85**
Proportion of rapeseed areas whose production was processed into RME	%	34.1	35.3	25.2	29.0	40.7	**35.3**	**0.87**

Source: [1] *MPO – Eng (MPO) 6-12*
[2] *SVB Prague*
[3] *VÚZT & SVB with regard to the efficiency of rapeseed oil extraction and its re-esterification – 2.47 kg of rapeseed per 1 kg of MEŘO*
[4] *Source: ČSÚ*

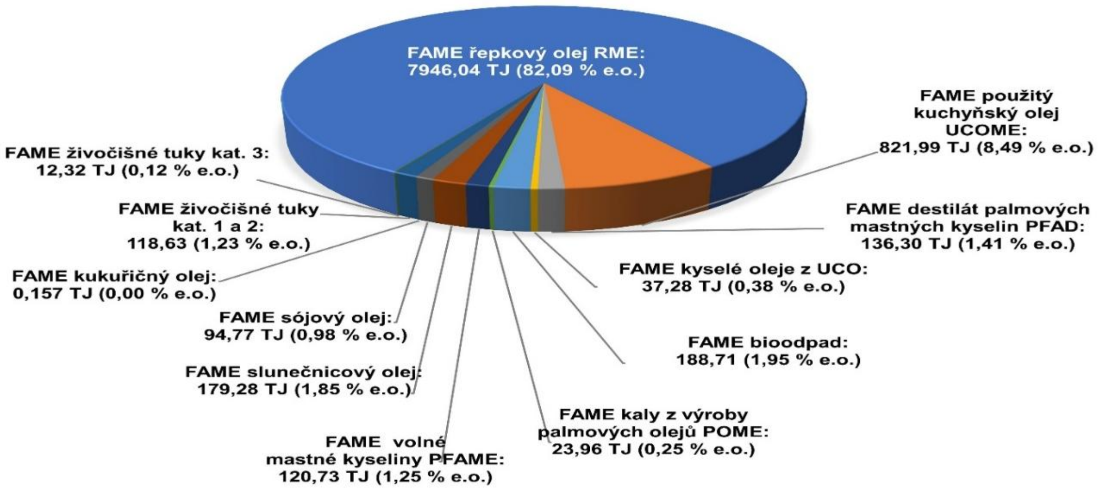
During the processing of rapeseed into RME in 2025, 193,873 tonnes of rapeseed extracted meal (non-GMO) were produced, replacing 174,486 tonnes of imported soya meal (GMO) and 7,440 tonnes of kosher pharmaceutical glycerine. In addition, 3,069 tonnes of 80% feed-grade glycerine and approximately 17,000 tonnes of crude glycerine and 2,000 tonnes of distillation residues were produced for further energy and raw material use.

On the domestic market, where both domestic and imported FAME are used, the raw materials listed in terms of energy and percentage shares in 2023 in Fig. 6 (for comparison) and in 2024 in Fig. 7 were used for production.



Total FAME 10,302.0 TJ; (without multipliers)
Source: *Ministry of the Environment, Report on GHG emissions from supplied fuels for 2023*

Fig. 6: Energy and percentage shares of FAME produced from used feedstocks and consumed on the domestic fuel market in 2023



Total FAME 9,680.2 TJ; (without multipliers)
Source: *Ministry of the Environment, Report on GHG emissions from supplied fuels for 2024*

Fig. 7: Energy and percentage shares of FAME produced from used feedstocks and consumed on the domestic fuel market in 2024

There were twelve feedstocks used for FAME production and sold on the domestic fuel market in 2024 (eight in 2023). Rapeseed oil held an absolutely dominant position at 82.09% e.o. (58.94% e.o. in 2023). Used cooking oil (UCO) accounted for 8.49% e.o. (15.57% e.o. in 2023) and PFAD for 1.41% e.o. (17.39% e.o. in 2023). Table 27 shows the shares of FAME consumed on the domestic fuel market by type of feedstock.

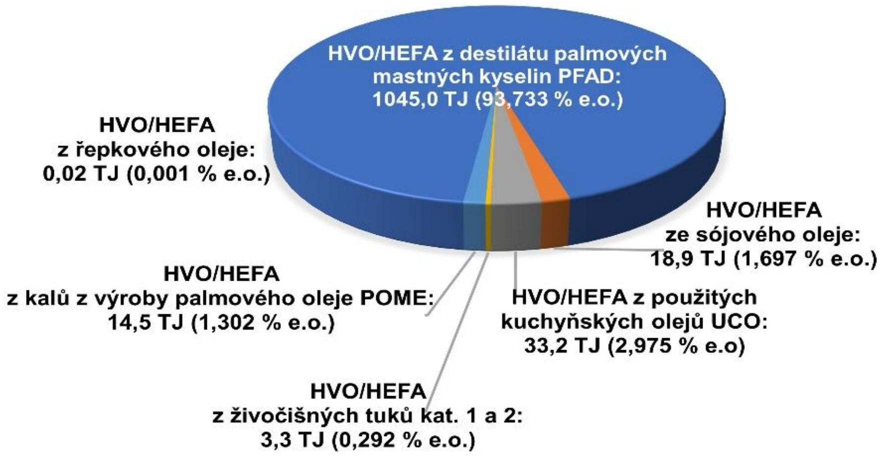
Table 27: FAME on the domestic diesel market by nature of the feedstock for their production in 2024

FAME	Feedstocks	2024			Index 2024/2023
		(l)	(TJ)	(% y-o-y)	(-)
From food and feed crops	Rapeseed; palm fatty acid distillate (PFAD); sunflower, soya, animal fats, category 3	**253 597 514**	**8,367.72**	**86.45**	**0.99**
Advanced from input bio-feedstocks IX.A RED II and DEL. ACT 2024/1405	Acid oils from UCO, biowaste; palm oil mill effluent (POME); free fatty acids (FFA), maize oil	**11,237,571**	**370.84**	**3.83**	**2.66**
Derived from raw materials IX.B RED II and DEL. ACT 2024/1405	Used cooking oils, animal fats, categories 1 and 2	**28,503,710**	**940.62**	**9.72**	**0.56**

Source: *Ministry of the Environment, Reports on greenhouse gas emissions from supplied fuels in 2024*
Calorific value of FAME 33 MJ/l

Whilst approximately 226,184 tonnes of FAME were used from food and feed crops on the domestic market in 2024, domestic production amounted to 145,705 tonnes in the same year. 10,023 tonnes of advanced FAME were consumed and 29,644 tonnes were produced. In 2024, 71,625 tonnes of advanced FAME were produced and 25,422 tonnes were consumed.

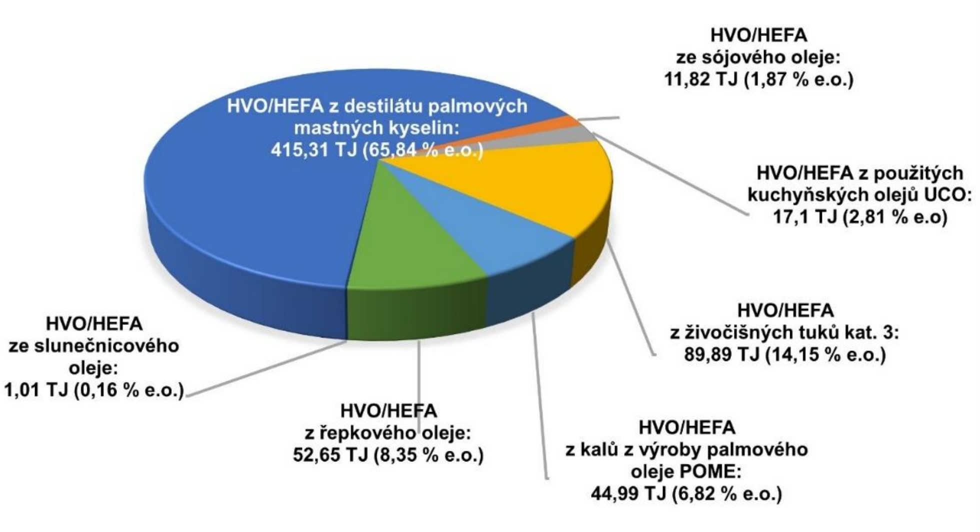
To date, only imported HVO/HEFA/SAF have been available on the domestic market. The energy and percentage shares of HVO/HEFA produced from the input raw materials used and consumed on the domestic fuel market in 2023 are shown in Fig. 8 (for comparison) and in 2024 in Fig. 9.



Total HVO/HEFA 1,114.9 TJ; (without multipliers)
Source: *Ministry of the Environment, Reports on GHG emissions from supplied fuels for 2023*

Fig. 8: Energy and percentage shares of HVO/HEFA produced from used feedstocks and consumed on the domestic fuel market in 2023

Table 28 shows the volume, energy and percentage shares of HVO/HEFA consumed in the domestic fuel market by type of feedstock in 2024. Comparing 2024 with 2023, there was a 46.4% decrease in the use of food and feed crops for the production of HVO/HEFA. Demand
for advanced HVO/HEFA, whilst demand for mature HVO/HEFA fell to 46.9%.



Total HVO/HEFA 630.77 TJ; (excluding multipliers)
Source: *Report on GHG emissions from supplied fuels for 2024*

Fig. 9: Energy and percentage shares of HVO/HEFA produced from the raw materials used and consumed on the domestic fuel market in 2024

Table 28: HVO/HEFA on the domestic diesel market by nature of feedstock in 2024

HVO/HEFA	Feedstocks	2024			Index 2024/2023
		(l)	(TJ)	(% y-o-y)	(-)
From food and feed crops	PFAD palm fatty acid distillate, rapeseed, soya, sunflower, animal fat cat. 3	**16,784,714**	**570.68**	**90.47**	**0.54**
Advanced from input raw materials IX.A RED II and DEL. ACT 2024/1405	Palm oil mill effluent (POME)	**1,264,471**	**42.99**	**6.82**	**2.96**
Derived from raw materials IX.B RED II and DEL. ACT 2024/1405	Used cooking oils (UCO)	**502,880**	**17.10**	**2.71**	**0.50**

Source: *Report on GHG emissions from supplied fuels for 2024*
Calorific value of HVO/HEFA 34 MJ/l

5.2.2 Domestic feedstocks for the production of fuel bioethanol, fuel bioethanol and biomethanol consumed on the domestic market

As can be seen from Fig. 10, which shows the production of fuel bioethanol by type of feedstock in 2024, and from Table 11 for 2025, bioethanol from grain maize accounted for 68.85% e.o. of total production in 2024 and 56.27% e.o. in 2025. Bioethanol from molasses accounted for 17.49% e.o. in 2024 and 23.64% e.o. in 2025. Whilst advanced bioethanol from stillage, a residue from alcohol distillation, accounted for 6.31% e.o. in 2024, this figure rose to 7.19% e.o. in 2025.

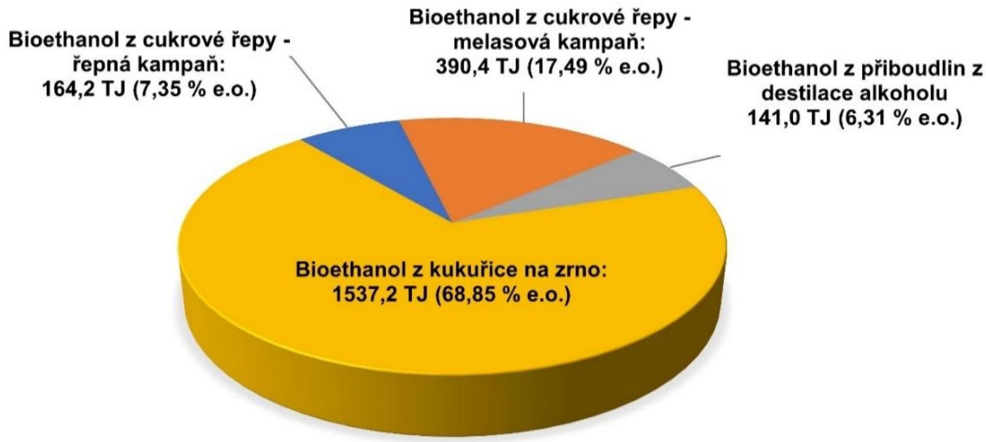


Fig. 10: Shares of fuel bioethanol produced ***in the Czech Republic*** *from the bio-feedstocks used in 2024.* ***Total production 106.32 million litres = 2,232.8 TJ***

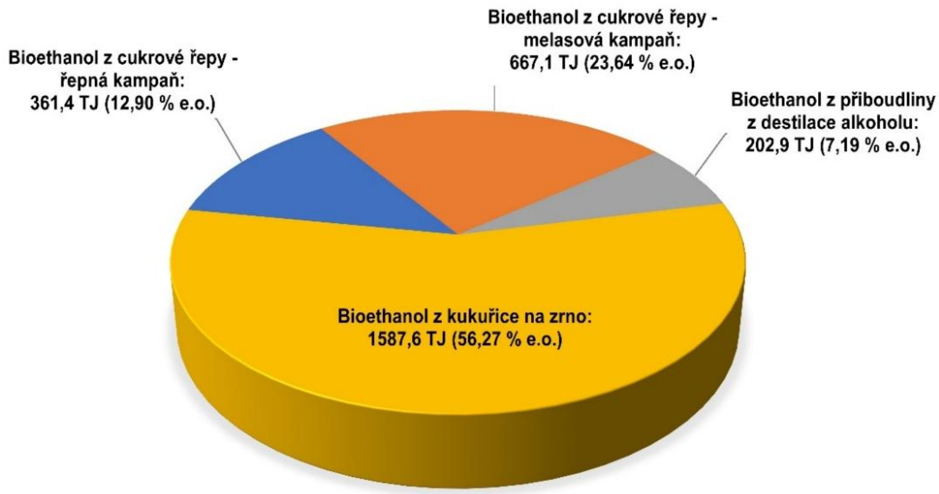


Fig. 11: Shares of fuel bioethanol produced ***in the Czech Republic*** *from the input raw materials used in 2025.* ***Total production 134.36 million litres = 2,821.7 TJ***

Table 29 shows the production of fuel bioethanol by type of feedstock in 2025.

Table 29: Production of fuel bioethanol in the Czech Republic by type of feedstock in 2025

Bioethanol for fuel	**Feedstock**	**2025**			**Index 2025/2024**
		(l)	(TJ)	(% e.o.)	(-)
From food and feed crops	Sugar beet, diffusion juice, molasses, grain maize	**124,703,300**	**2,618.8**	**92.8**	**1.25**
Advanced from input raw materials IX.A RED II and DEL. ACT (EU) 2024/1405	By-products from alcohol distillation	**9,659,900**	**202.9**	**7.2**	**1.44**
Developed	-	**-**			**-**

Source: *Czech Distillers' Association, 2025*
Calorific value of bioethanol 21 MJ/l

Conventional fuel bioethanol produced in 2025 from food and feed crops accounts for 92.8% of total production (93.7% in 2024), with advanced bioethanol accounting for 7.2% (6.3% e.o. in 2024)

Table 30 provides an overview of the sugar beet and grain maize used for the production of fuel bioethanol.

For the production of this bio-component, including ETBE, approximately 447,000 tonnes of sugar beet and approximately 189,000 tonnes of grain maize were consumed in 2025. This represents, when related to the harvested areas and associated yields in the Czech Republic, 11.8% of the harvested area of sugar beet (5.2% in 2024) and 20.5% of the harvested area of grain maize (25.7% in 2024). Through the cascade processing of these commodities, 212,000 tonnes of sugar beet pulp and 38,700 tonnes of DDG_Swere produced simultaneously.

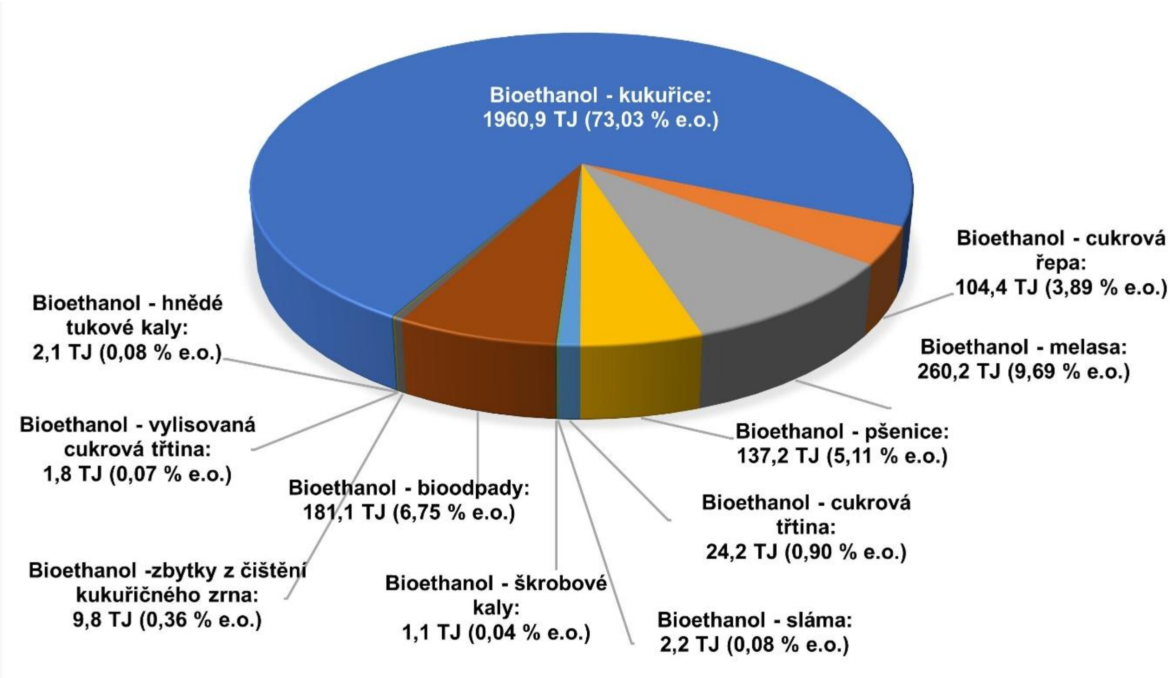
The energy and percentage shares of fuel bioethanol produced from the raw materials used and consumed on the domestic fuel market are shown in Fig. 12 for 2023 and in Fig. 13 for 2024.

Table 30: Balance of sugar beet and grain maize used for the production of fuel bioethanol in the period 2019–2025

	Unit	2020	2021	2022	2023	2024	**2025**	**Index 2025/2024**
Production of fuel bioethanol 1), 2)								
total, of which:	t	85,688	88,545	80,538	77,462	82,699	**96,994**	**1.17**
- sugar beet		31,553	35,499 [2]	32,781[2]	18,756	20,541	**38,193**	**1.86**
- maize grains		54,135	53,046 [2]	47,757[2]	52,813	56,935	**58,802**	**1.03**
Consumption of raw materials for bioethanol from 3)	t							
- sugar beet		369,170	415,338	383 538	208,192	240,330	446,858	**1.86**
- maize grains		173,773	170,278	153,300	164,530	182,761	188,754	**1.03**
Harvested area: 4)								
- sugar beet	ha	59,684	61,234	58,238	58,803	65,912	53,293	**0.81**
- grain maize		87,231	102,438	80,453	64,369	87,482	90,586	**1.04**
Yield: 4)								
- sugar beet	t/ha	61.51	67.69	69.64	65.20	69.56	74.05	**1.06**
- wheat		6.14	6.32	6.07	6.44	5.96	6.67	**1.12**
- maize grains		9.46	9.65	7.95	7.88	8.14	8.86	**1.09**
Production: 4)								
- sugar beet	t	3,671,229	4,145,058	4,055,471	3,833,868	4,584,713	3,946,556	**0.86**
- maize grains		825 499	988,038	639,467	507,540	712,241	802,737	**1.13**
Area:								
- sugar beet	ha	6,002	6,136	5,507	3,193	3,455	6,305	**1.82**
- grain maize		18,369	17,645	19,283	21,514	22,452	21,304	**0.96**
at a given yield, used for bioethanol production								
Proportion of land								
- of sugar beet	%	10.1	10.0	9.5	5.4	5.2	11.8	2.27
- grain maize		21.1	17.2	24.0	33.4	25.7	23.5	0.91
processed into bioethanol of the total area under these crops								

***Source**: 1) MPO - Eng (MPO) 6-12; 2) Czech Distillers' Association 3) VÚZT & SVB – yield balance: sugar beet 11.70 kg* *per 1 kg of bioethanol, i.e. 9.1 kg per 1 l of bioethanol; maize grain: 3.21 kg per 1 kg of bioethanol, i.e. 2.5 kg per 1 l of bioethanol*

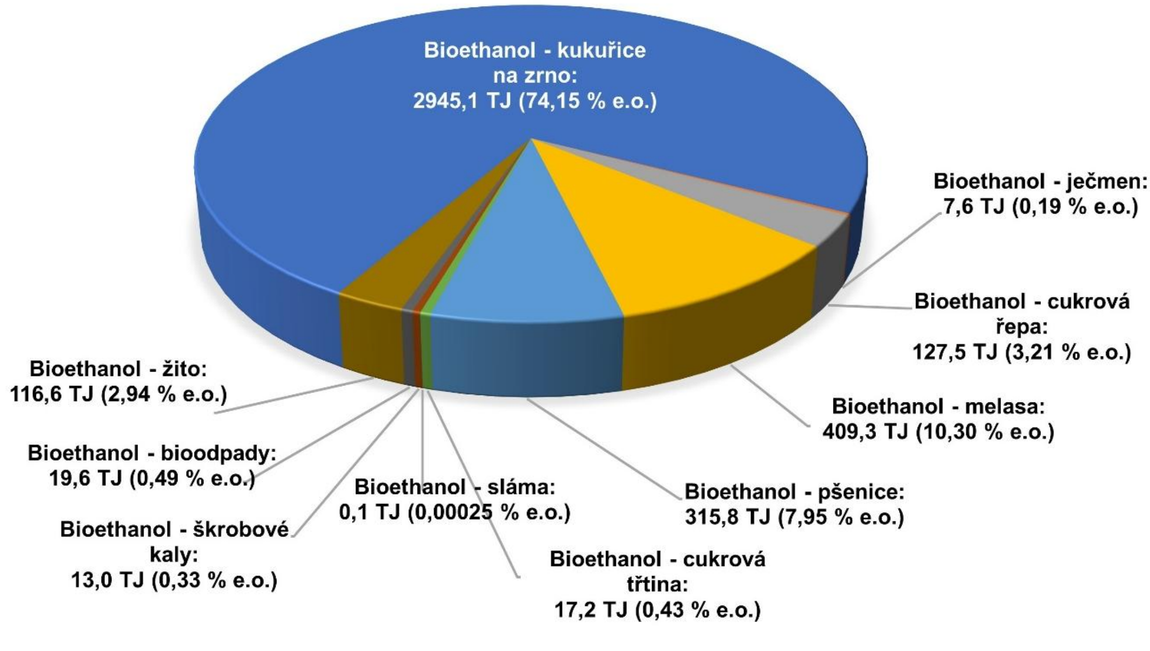
4) *Czech Statistical Office*



***Source**: Report on GHG emissions from supplied fuels for 2023*

Fig. 12: Energy and percentage shares of fuel bioethanol produced from the raw materials used and consumed on the domestic market in 2023

Total: 2,685.0 TJ (excluding multipliers) – 126,055,474 l



***Source**: Report on GHG emissions from supplied fuels for 2024*

Fig. 13: Energy and percentage shares of fuel bioethanol produced from the raw materials used and consumed on the domestic market in 2024
Total: 3,971.7 TJ (excluding multipliers) – 186,465,624 l

In 2024, fuel bioethanol from the following feedstocks was used on the domestic motor petrol market, in descending order: grain maize 74.15% e.o., molasses 10.30% e.o., wheat 7.95% e.o., sugar beet (diffusion juice) 3.21%, rye 2.94% e.o. The share of other raw materials did not exceed 1% e.o. In the motor petrol market (see Table 31), 99.2% e.o. of bioethanol from food and feed crops was used in 2024.

Table 31: Fuel bioethanol on the domestic motor petrol market by type of feedstock used in its production in 2024

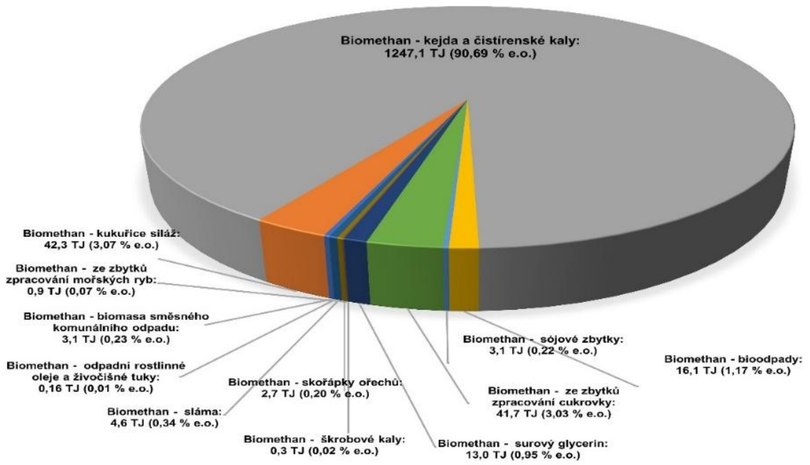
Fuel bioethanol	**Feedstock**	**2024**			**Index 2023/2022**
		(l)	(TJ)	(% y-o-y)	(-)
From food and fodder crops	Sugar beet, sugar cane, barley, grain maize, molasses, wheat, rye	**184,931,350**	**3,939.0**	**99.2**	**1.58**
Advanced from input materials IX.A RED II and DEL. ACT (EU) 2024/1405	Biowaste, starch sludge, wheat straw	**1,534,275**	**32.7**	**0.8**	**0.17**

***Source**: Ministry of the Environment, Report on GHG emissions from fuels for 2024*
Calorific value of bioethanol 21 MJ/l

In 2024, advanced biomethanol produced from bio-waste also became a bio-component in motor petrol, amounting to 459 l.

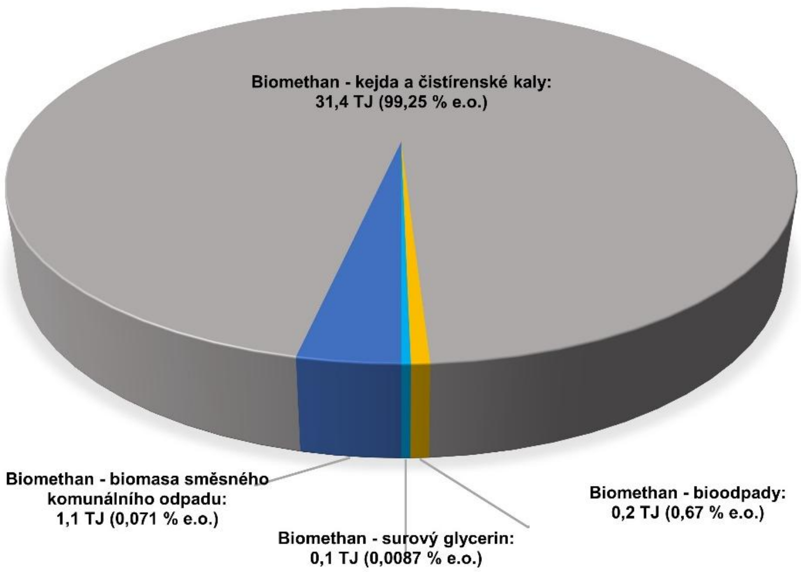
5.2.3 Feedstocks used for the production of biomethane, bioLNG and bioLPG consumed on the domestic market

The feedstocks used for domestic biomethane production (Table 17), also specified in Table 14, are all listed in Annex IX.A of the RED II Directive and the aforementioned EC Delegated Directive (EU) 2018/2001. All domestic biomethane is therefore advanced. The energy content and percentage shares of biomethane produced from the input raw materials used and purchased to reduce GHG emissions from transport fuels are presented in Fig. 14 for 2023 and in Fig. 15 for 2024.



Source: Ministry of the Environment, Report on GHG emissions from supplied fuels for 2023

Fig. 14: Energy and percentage shares of biomethane produced from used feedstocks and purchased to reduce GHG emissions from transport fuels in 2023 in the Czech Republic
Total: 1,375.2 TJ (excluding multipliers) – 27,503,112 kg

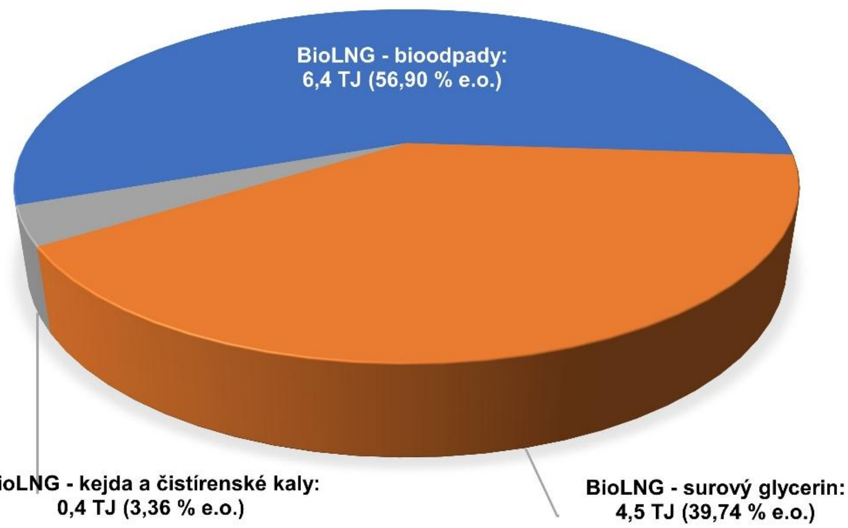


Source: *Ministry of the Environment, Report on GHG emissions from supplied fuels for 2024*

Fig. 15: Energy and percentage shares of biomethane produced from used feedstocks and purchased to reduce GHG emissions from transport fuels in 2024 in the Czech Republic
Total: 1,580.5 TJ (excluding multipliers) – 31,609,234 kg

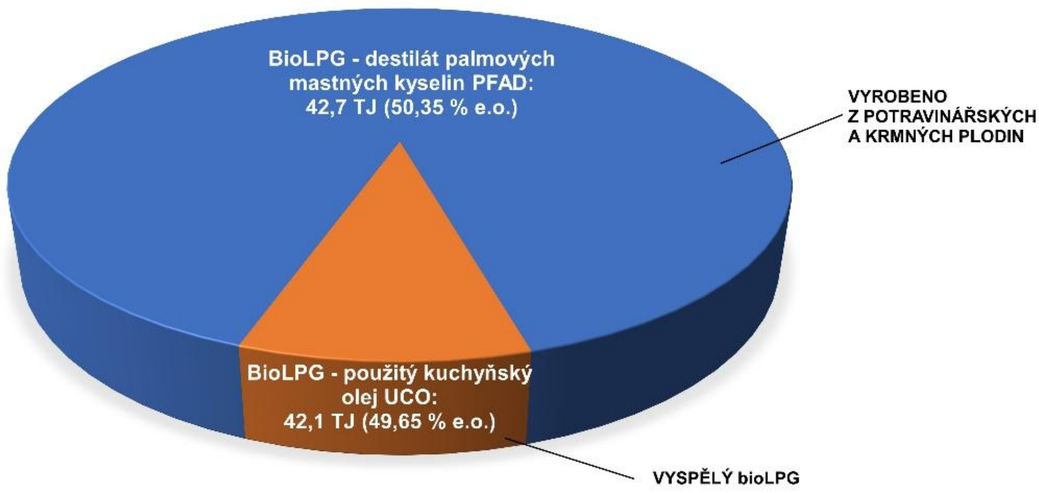
In 2024, only advanced biomethane (bioCNG) was also used on the domestic fuel market, in a quantity of 31,609.234 t. In 2023, biomethane from food and feed crops accounted for 3.08% e.o. (845,758 kg) and advanced biomethane 26,657.354 tonnes (96.92% e.o.).

Figure 16 shows similar data for bioLNG and Figure 17 for bioLPG.



Source: *Ministry of the Environment, Report on GHG emissions from supplied fuels for 2024*

Fig. 16: Energy and percentage shares of advanced bioLNG produced from used feedstocks and purchased to reduce GHG emissions from transport fuels in 2024 in the Czech Republic
Total: 11.3 TJ (excluding multipliers) – 230,782 kg



Source: *Ministry of the Environment, Report on GHG emissions from supplied fuels for 2024*

Fig. 17: Energy and percentage shares of advanced bioLPG produced from used feedstocks and purchased to reduce GHG emissions from transport fuels in 2024 in the Czech Republic
Total: 84.9 TJ (excluding multipliers) – 1,845,379 kg

In summary, the consumption of FAME, HVO/HEFA, bioethanol, biomethane, bioLNG, bioLPG and biomethanol by type of feedstock is shown in Table 32.

Table 32: Consumption of renewable liquid and gaseous fuels on the domestic market by type of feedstock in 2023 and 2024

Type of RES	Unit	From cultivated crops		Advanced IX. A		Mature IX. B		Total	
		2023	2024	2023	2024	2023	2024	2023	2024
FAME	*mil. l* *index* 2024/23	**256,965**	**253,597** 0,99	**4,221**	**11,238** 2,67	**50,997**	**28,5** 0,56	**312,183**	**293,3** **0,94**
HVO		**31,292**	**16,785** 0,54	**0.427**	**1,264** 3,02	**1,071**	**0,5** 0,47	**32,790**	**18,6** **0,56**
Bioethanol		**116,760**	**184,931** 1,58	**9,295**	**1,534** 0,16	**-**	**-**	**126,055**	**186,5** **1,48**
Biomethane	*mil. kg* *index* 2024/23	**0.846**	**-**	**26,657**	**31,609** 1,18	**-**	**-**	**27,503**	**31,609** **1,15**
Bio-LNG		**-**	**-**	**-**	**0.231**	**-**	**-**	**-**	**0.231**
Bio LPG		**-**	**0.929**	**-**	**-**	**-**	**0.916**	**-**	**1.845**
Biomethanol	**l**	**-**	**-**	**-**	**459**	**-**	**-**	**-**	**459**

Source: *Ministry of the Environment, Reports on GHG emissions from supplied fuels*

HVO consumption fell significantly by more than 43% e.o. in 2024 compared to 2023, whilst bioethanol consumption rose by approximately 48% and biomethane consumption by almost

15% e.o. Faced with a 6% GHG emission reduction target for fuels, distributors prioritised bioethanol and biomethane over HVO/HEFA.

5.2.4 Use of agricultural land for the production of feedstocks for renewable liquid and gaseous fuels for the transport sector

Sustainable production of domestic biofuels from food and feed crops concerned only RME and the corresponding portion of fuel bioethanol. No feedstock from food and feed crops was used for domestic biomethane production. The use of agricultural land for the production of RME and bioethanol from cultivated crops is shown in Table 33.

Table 33: Agricultural land used for the production of sustainable biofuels from cultivated crops in the Czech Republic in 2024 and 2025

	Agricultural land requirement (ha)		**INDEX 2025/2024**
	2024	2025	**(-)**
RME production (see Tables 26 and 27)	139,786	118,385	**0.85**
Bioethanol production (see Table 30)	25,907	27,609	**1.07**
TOTAL	165,693	145,994	**0.88**
Cultivated agricultural land *: - of which arable	3,534,610 2,525,359	3,541,954 2,501,180	**1,002** **0.990**
Proportion used for the production of biofuels from cultivated crops: - from cultivated agricultural land - from arable land	 4.69 6.56	 4.12 5.84	 **0.88** **0.89**

*) *CZSO, utilised agricultural area, 2024 & 2025*

In 2025, 5.84% of arable land was used for the production of sustainable biofuels (RME and fuel-grade bioethanol). By comparison, the figure for 2024 was 6.56%.

6. Intensity of greenhouse gas emissions from transport fuels in the Czech Republic and related specific greenhouse gas emissions as emission factors for renewable energy sources in transport

Specific greenhouse gas (hereinafter GHG) emissions or emission factors for fuels, renewable liquid and gaseous fuels and bioliquids, defined as the combination of GHG emissions per unit of mass or volume of energy, include GHG emissions from the cultivation or extraction of raw materials, from processing, from transport and distribution, and use, and may also include verified savings. The emission factor is also an essential piece of data **in sustainability verification protocols**, e.g. Proof of Sustainability (PoS) for Biofuels, Bioliquids and Biomass fuels, Proof of Sustainability (PoS) for Biogas and Biomethane, and the Sustainability Declaration for materials and intermediate products. **To demonstrate compliance with sustainability criteria**, the relevant legal documents (see below) impose an obligation on sellers and importers of biomass, producers, importers and sellers of biofuels, and importers and sellers of diesel or petrol containing bio-components to issue these documents certifying compliance with sustainability criteria. Similarly, this applies to demonstrating compliance with these criteria for the obligation to ensure a minimum quantity of advanced biomethane, RFNBOs and the obligation to reduce GHG emissions from gaseous fuels via a gas pipeline (**by applying GO or PoS guarantees of origin**) or without using the gas network (stand-alone system) **PoS or an audited equivalent protocol**.

6.1. Emission factors for fossil and renewable liquid and gaseous fuels and electricity

The average emission factors for FAME, HVO/HEFA, bioethanol, bio-CNG, bio-LPG and their fossil equivalents are shown in Table 34. The reduction in greenhouse gas emission intensity from fuels in the years 2020–24 is shown in Table 35. For 2030, the RED III Directive sets this target at 14.5%, which corresponds to a 29% share of renewable energy in transport. In the Czech Republic, an amendment to the relevant legislation (see below) has established an obligation for fuel suppliers to reduce GHG emissions by 11% from 1 January 2030 and in each subsequent calendar year, with a growth trajectory from 2026 (see Table 45).

Table 34: Average emission factors for FAME biodiesel and renewable paraffinic diesel from HVO/HEFA, bioethanol, bio-CNG, bio-LPG, bio-LNG and biomethanol in 2020–2024 and emission factors for fossil motor fuels ***in the Czech Republic***

	Unit	2020	2021	2022	2023	**2024**	**Fossil motor fuels**
FAME	**g CO_{2eq} /MJ**	19.3	21.3	20.7	19.7	**22.3**	**DIESEL 95.1**
HVO/HEFA		6.9	6.9	9.2	11.2	**13.9**	
Bioethanol		14.6	12.0	13.0	9.5	**10.0**	**PETROL 93.3**
bio-CNG		14.4	14.3	- 26.6	- 88.7	**- 99.1**	**CNG 69.3**
Bio LPG		15.8	23.9	22.5	-	**7.0**	**LPG 73.6**
bio-LNG		-	-	-	-	**9.5**	**LNG 74.5**
biomethanol		-	-	-	-	**37.3**	**Methanol 97.1**

Source*: Ministry of the Environment, Reports on GHG emissions from supplied fuels for the years 2020–2024*

Table 35: Reduction in GHG emission intensity from fuels in the Czech Republic in 2020–2024 and the target under the RED III Directive for 2030 and its transposition into Czech legislation

	Unit	2020	2021	2022	2023	**2024**	**Target for 2030**	
							RED III	**Czech Republic**
GHG emissions intensity from fuels	g CO_{2eq}/MJ	88.4	88.3	88.4	88.3	**88.3**	**80.37**	**83.66**
Base value from 2010		94.1					**94**	

Reduction in GHG emissions from transport fuels	%	6.1	6.2	6.1	6.2	**6.2**	**14.5**	**11**

Source: *Ministry of the Environment, Reports on GHG emissions from supplied fuels for the years 2020–2024,*
Directive (EU) 2023/2413 of the European Parliament and of the Council on the promotion of energy from renewable sources (RED III)

Taking into account the requirement for a minimum greenhouse gas emission saving of 65% for biofuels and biomethane, and 70% for liquid and gaseous fuels from renewable non-biological sources (RFNBOs), the maximum emission factor is 32.9 g CO_{2eq} /MJ$(\frac{94-32{,}9}{94} * 100)$ for sustainable biofuels and biomethane and 28.2 g CO_{2eq} /MJ RFNBOs .

Table 36 shows the actual values of the emission factors for FAME and HVO/HEFA. The cultivation phase has the greatest impact on the emission factors of biofuels from cultivated crops, encompassing the effects of all inputs such as seeds, fertilisers, agrochemicals, energy, etc. This also includes the effect of nitrous oxide and methane released during cultivation.

Table 36: Actual values of FAME and HVO/HEFA emission factors applied to the fuel market in 2022 to 2024 and to domestic producers in 2023–2025

Biofuel and feedstock		**2022**	**2023**	**2024**	**Production in the Czech Republic**
Unit		**(g $_{CO_2eq}$/MJ)**			
FAME	RME	28.2	24.7	24.52	15.56; 19.12; 22.83; 26.28
	UCOME	9.4	9.8	9.33	8.23; 8.34
	TME – animal fats, categories 1 and 2	12.7	14.4	14.43	13.18
	FFAME	9.4	9.6	6.76	9.09; 12.88; 6.7
	Palm fatty acid distillate (PFAD)	14.3	15.1	15.58	-
	Corn oil	9.2	14.1	9.17	-
	Palm oil mill effluent (POME)	16.1	21.9	21.19	-
	Sunflower oil	27.3	9.1	26.17	-
	SME soya oil	28.3	34.4	22.36	-
	Acid oils from UCO	-	-	10.89	
	Biowaste	-	-	5.75	
	TME – Category 3 animal fats	-	-	10.90	
HVO/HEFA	PFAD	9.2	11.4	13.79	--
	Edible fats, categories 1 and 2 [1] and 3 [2]	8 [1] and 9.3 [2]	-	8.59 [3]	--
	UCO	5.5	5.8	7.17	--
	Rapeseed oil	27.2	24.7	23.64	--
	Soya oil	32.5	11.4	31.55	-
	Palm oil mill effluent (POME)	-	11.5	12.16	-
	Animal fats, categories 1 and 2	-	11.1	-	-

	Sunflower oil	-	-	19.50	-

Source: *Ministry of the Environment, Reports on GHG emissions from fuels for the years 2022, 2023 and 2024, production in the Czech Republic: CARC & SVB survey*

Table 37 similarly presents the actual emission factors for fuel bioethanol and biomethanol sold on the domestic fuel market in 2022–2024 and for fuel bioethanol produced in 2023–2025.

Table 37: Actual emission factors for bioethanol and biomethanol fuels used domestically between 2022 and 2024, and for bioethanol produced in the Czech Republic in 2023, 2024 and 2025

The fuel market in the Czech Republic		**2022**	**2023**	**2024**	**Production in the Czech Republic**
Unit		**(g $_{CO_2eq}$/MJ)**			
Bioethanol	Sugar beet – beet campaign	27.8	25.6	25.88	27.01; 25.71
	Sugar cane	14.3	25.4	22.65	-
	Brown fat cells	3.2	3.2	-	-
	Barley	21.3	-	17.77	-
	Maize	10.0	5.8	6.16	6.0; 6.50
	Corn cobs	12.8	12.4	-	-
	Molasses – molasses campaign	18.1	17.3	16.58	17.6
	Wheat	24.3	25.7	22.66	-
	Starch sludge	27.1	22.6	23.00	-
	Biowaste	4.9	7.1	12.25	-
	Other grains	11.1; 19.9	-	-	-
	Rye	-	-	27.74	-
	Wheat straw	-	15.7	15.70	-
	Distillation residues	-	-	-	7.42; 7.54
Biomethanol	Biowaste	22.5	-	15.70	-

Source: *Ministry of the Environment, Reports on GHG emissions from supplied fuels for the years 2022, 2023 and 2024*
For production in the Czech Republic: CARC SVB survey

For information, Table 38 shows GHG emissions from the cultivation of sugar beet, grain maize and rapeseed in Czech regions at the NUTS 2 level. These crops are currently the most important raw materials for the production of conventional biofuels. Table 38 also shows the amount of direct and indirect N_2O emissions from the soil arising during cultivation (the GWP potential is 265 kg CO_2eq/t).

Table 38: GHG emissions from the cultivation of sugar beet, grain maize and oilseed rape in Czech NUTS 2 regions

	CZ01	CZ02	CZ03	CZ04	CZ05	CZ06	CZ07	CZ08
Unit	**(kg CO_2eq/t dry matter), (% of N_2O emissions from total GHG emissions)**							

Sugar beet, of which	94.5	97.5	0.0	97.2	93.5	98.5	101.8	112.1
N_2O direct and indirect	29.1	32.4	0.0	30.7	30.3	32.5	36.3	54.9
from soil	30.8	33.2	0.0	31.6	32.4	33.0	35.7	49.0
Grain maize, of which	196.7	200.5	236.0	162.7	215.7	223.5	232.5	281.2
N_2 Direct and indirect	56.9	69.0	87.4	47.7	86.0	69.2	102.6	148.1
from soil	28.9	34.4	37.0	29.3	39.9	31.0	44.1	52.7
Rapeseed of which	495.8	482.6	607.0	534.8	672.8	528.1	678.6	770.1
N_2 Direct and indirect	176.4	177.9	303.4	236.2	353.1	195.4	372.8	473.9
from soil	35.6	36.9	49.9	44.2	52.5	37.0	54.9	61.5

Note: *CZ01 – Prague; CZ02 Central Bohemia; CZ03 South-West; CZ04 North-West; CZ05 North-East; CZ06 South-East; CZ07 Central Moravia; CZ08 Moravia-Silesia*
Source: *GHG emissions from crop cultivation processed by VÚZT/VÚRV in 2023–24. For rapeseed, the values were approved by Commission Implementing Decision (EU) 2024/2624 of 8 October 2024 and, inter alia, for sugar beet and grain maize by Commission Implementing Decision (EU) 2025/473 of 12 March 2025*

Actual emission factor values for biomethane (bioCNG), bioLNG and bioLPG traded on the domestic market in 2022–2024 and for biomethane (bioGNG) produced in the Czech Republic in 2023–2025.

Table 39: Actual emission factors for biomethane (bioCNG), bioLNG and bioLPG traded on the domestic market in 2022–2024 and for biomethane (bioCNG) produced in the Czech Republic in 2023–2025

The fuel market in the Czech Republic		**2022**	**2023**	**2024**	**Production in the Czech Republic 2023–2025**
Unit		**(g $_{CO_2eq}$/MJ)**			
BioCNG - - biomethane	Biomass from mixed municipal waste	15.0	14.0	16.34	-
	Maize silage	14.4	12.9	-	-
	Barn manure and slurry	-63.3	-99 to -127.32	-99.79	-29.1 to -100
	Sewage sludge	6.5	6.0	5.5	5.0
	Biowaste	19.9	15.4	-4.68	5.5 to 13
	Animal fats, categories 1 and 2	15.5	14.0	-	-
	Animal fats, category 3	16.6	-	-	-
	Crude glycerine	17.5	19.3	35	-
	Starch sludge	26.5	30.7	-	-
	Other cereals – rye	9.8	30.3	-	-
	Straw	20.9	14.1	-	-
	Waste vegetable oils and animal fats	24.2; 19	18.6	-	-
	Biomass from industrial waste	14.0	21.2	-	-
	Walnut shells	34	32.1	-	-
BioLPG	UCO	22.5	-	6.29	-
	Palm fatty acid distillate (PFAD)	-	-	7.70	-

Bio-LNG	Biowaste	-	-	6.29	-
	Crude glycerine	-	-	13.81	-
	Cattle manure and slurry, sewage sludge	-	-	14.24	-

Source: *Ministry of the Environment, Reports on GHG emissions from fuels; Actual emission factor values for biomethane produced in the Czech Republic – REX Solutions, 29 November 2024, and Ing. O. Malinovský, SUR LIE & CZ BIOM*

Commission Implementing Regulation (EU) 2022/996 sets out in Annex IX, alongside standard values for GWP emission factors, fertilisers, fuels and other related data, the carbon intensity of electricity produced and consumed in the EU and its Member States in 2019. Delegated Act (EU) 2023/1185 of 10 February 2023, supplementing the RED II Directive by setting a minimum value for GHG emission savings from carbon-containing RCFs and specifying the methodology for assessing GHG emission savings from RFNBOs in the transport sector and carbon-containing RCFs, Table A contains the GHG emission intensity of electricity in 2020 at the level of EU Member States. The current emission factors, including the aforementioned electricity emission factors, which should be used for these purposes in the Czech Republic, are set out in Table 40.

Table 40: Current electricity emission factors

	Emission factor value g CO_{2eq} /kWh_{el}	Source, description
Electricity from reference fossil fuel	(183 g CO_{2eq} /MJ) **658.8** (183 : (1/3.6)	Directive 2018/2001 of the European Parliament and of the Council of 11 December 2018 (known as RED II) point 19, B. METHODOLOGY; Annex VI)
Solar electricity	**Standardised value** [1)] **73.504**	Ecoinvent v. 3.9.1, 2022: Electricity production, photovoltaic, 3 kWp flat-roof installation, multi-si (RoW); ISCC EU 205, version 4.1, 2024
Wind power	**Standardised value** [1)] **14.748**	Ecoinvent v. 3.9.1, 2022: Electricity production, wind, 1–3 MW turbine, on-grid (RoW); ISCC EU 205, version 4.1, 2024
Carbon intensity of electricity generated and consumed in **2019** – low voltage – including generation emissions, excluding construction emissions	**Czech Republic: 549** [1)] EU: 308	Implementing Regulation (EU) 2022/996 of 14 June 2022, Annex IX.
Emissions intensity of electricity in the EU in 2020	**Czech Republic: 132.5 g CO_{2eq}/MJ – 477** [1)] Poland: 196.5 g CO_{2eq} /MJ Slovakia: 45.6 g CO_{2eq}/MJ Austria: 39.7 g CO_{2eq} /MJ Germany: 99.3 g CO_{2eq}/MJ	Commission Delegated Regulation (EU) 2023/1185 of 10 February 2023, Table A
Energy mix of gross electricity generation in the Czech Republic in **2025**	**330** **In the calculation, RES are considered CO_{2eq} neutral, i.e. with zero emissions** [2)] **(Fig. 18)**	Statistical calculations: bufka@mpo.gov.cz Carbon footprint reporting: michal.danhelka@mzp.gov.cz

Of the total electricity generation in the Czech Republic from fossil fuels	**860**	Regarding Decrees No. 140/2021 and No. 141/2021 petr.vozka@mpo.gov.cz
"Residual energy mix" for electricity consumption in the Czech Republic in **2025** 3), 4)	**450** 3), 4)	

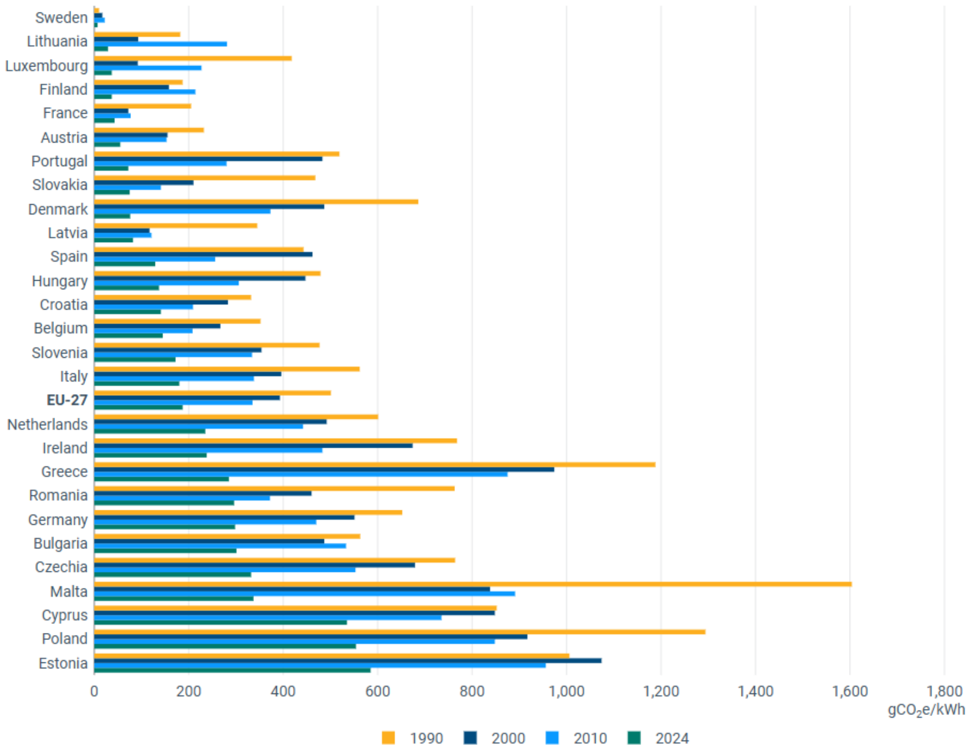
1) Used to determine specific GHG emissions from processing and related stationary operations.

2) For transport purposes, electricity from renewable sources has an emission factor of 0 g CO_{2eq} /$kWh_{el.}$. Within the method for calculating the emission factor based on the electricity market, it is possible to primarily reduce the carbon footprint using a certificate of origin. This calculation does not take into account electricity generation within the Czech Republic, but rather electricity supplied directly to the consumer (see below: CO_2 emission factor value from electricity generation and consumption, Ministry of Industry and Trade, June 2025).

3) If the origin and composition of the supplied electricity are unknown, the CO_2 emission factor value calculated from the so-called residual energy mix is used. For the Czech Republic, this is compiled by the European Association of Issuing Bodies (AIB) and published by OTE, a.s. This mix represents the total annual composition of energy sources in electricity consumption in the Czech Republic, excluding the share covered by applied guarantees of origin.

4) OTE, a.s. (hereinafter "OTE") is authorised under Act No. 458/2000 Coll. to issue guarantees of origin for energy in the Czech Republic, to maintain records of these guarantees, including their transfers, redemption, cancellation and revocation, and to recognise guarantees of origin issued abroad. OTE is a member of the European Association of Guarantees of Origin Issuers (AIB)

Figure 18 shows the intensity of GHG emissions from electricity generation at the level of individual EU countries in 1990, 2000, 2010 and 2024. These emission factors from gross electricity generation, published by the Ministry of Industry and Trade, are calculated by multiplying the primary energy of fossil fuels in a given year, allocated by fuel type to gross electricity generation, by specific emission factors in kg CO_{2eq}/kWh for the given fuels (renewable sources 0, nuclear sources 0, lignite and hard coal 1.00, natural gas 0.40, oil and petroleum products 0.80 and others 0.40). The resulting total value is divided by the total gross electricity generation in the Czech Republic.



Source: *MPO*

Fig. 18: GHG emission intensity as an emission factor in g CO_{2eq} /kWh from gross electricity generation
at the level of individual EU countries in 1990, 2000, 2010 and 2024

6.2. Reduction in GHG emissions from transport fuels through the use of renewable energy sources, in mass units

The reduction in GHG emission intensity from transport fuels between 2021 and 2024 is shown in Table 41. The reduction is relative to the baseline standard for motor fuels of 94.1 g CO_{2eq} /MJ and is achieved through the use of renewable liquid and gaseous fuels, including electricity. It also includes a reduction in emissions from extraction (UER).

Table 41: Reduction in GHG emissions from transport fuels in mass units in 2021–2024 – ***relative to the baseline standard for motor fuels in 2010: 94.1 g CO_{2eq}/MJ***

RES/UER		**2021**				**2022**				**2023**			
		GHG emissions from RES	GHG emissions from fossil fuels	GHG emission reductions through the use of RES	Share of individual RES in the reduction	GHG emissions from RES	GHG emissions from fossil fuels	GHG emission reductions through the use of RES	Share of individual RES in the reduction	GHG emissions from RES	GHG emissions from fossil fuels	Reduction in GHG emissions through the use of RES	Share of individual RES in the reduction
		(kt)			(% y/y)	**(kt)**			(% m/m)	**(kt)**			(% m/m)
RES	FAME	227	1,002	**775**	**57.5**	206.8	940.0	**733.0**	**52.9**	203	969	**766**	**53.7**
	HVO/HEFA	18	250	**232**	**17.2**	18.1	185.1	**167.0**	**12.09**	12	105	**93**	**6.5**
	Bioethanol	28	223	**195**	**14.5**	32.0	231.9	**150.0**	**14.4**	25	253	**228**	**16.0**
	BioCNG – biomethane	11	75	**64**	**4.7**	-43.5	154.1	**198.0**	**14.2**	- 122	129	**251**	**17.6**
	BioLPG	0.05	0.19	**0.14**	**0.0**	0.0	0.2	**0.2**	**0.01**	-	-	**-**	**-**
	Electricity	0	82	82	**6.1**	0.0	88.6	**89.0**	**6.4**	0.0	89	**89**	**6.2**
	Total RES	284.05	1,632.19	**1,348.14**	-	213.4	1,599.9	**1,386.5**	-	118	1,545	**1,427**	-
UER [2)]	Reduction in emissions from mining	-	-	247.11	-	-	-	**238.28**	-	-	-	**250.96**	**-**
Total	**Renewables**	-	-	1,595.25	-	-	-	**1,624.8**	-	-	-	**1,678.0**	-

Continued from Table 41

RES/UER		**2024**			
		GHG emissions from RES	GHG emissions from fossil fuels	GHG emission reductions through the use of RES	Share of individual RES (UER) in the reduction
		(kt)			(% y/y)
RES	FAME	215.9	911.0	**695.1**	**46.6**
	HVO/HEFA	8.8	59.4	**50.6**	**3.4**
	Bioethanol	39.7	373.8	**334.1**	**22.4**
	BioCNG – biomethane	- 156	148.7	**304.7**	**20.4**
	BioLPG	0.6	8.0	**7.2**	**0.5**
	Electricity	0.1	1.1	1.0	**0.07**
	Bioethanol	0.000	0.000	0.00	**0.00**
	Electricity	0.0	99.3	99.3	**6.63**

	Total RES	109.1	1,601.1	**1,492.0**	85.3
UER [2)]	Reduction in emissions from mining	-	-	258.1	14.7
Total	**RES and UER**	-	-	1,750.1	-

Source: Ministry of the Environment, Reports on GHG emissions from supplied fuels for the years 2021, 2022, 2023, 2024. Electricity: Ministry of Industry and Trade, Share of RES in gross consumption according to the **EUROSTAT – SHARES** ***calculation methodology***

7. Gross final energy consumption from fossil and renewable sources in the transport sector

Gross final consumption of RES in the transport sector is defined as the sum of all biofuels, biomass fuels and liquid and gaseous fuels from renewable sources of non-biological origin ($RFNBO_S$)used in the transport sector. However, $RFNBO_S$ used in the transport sector and produced from electricity from renewable sources are only counted when calculating the amount of electricity produced in a Member State from renewable sources (e.g. hydrogen produced from renewable electricity).

The share of RES in gross final energy consumption in the transport sector according to the EUROSTAT – SHARES methodology in accordance with the RED II Directive for the years 2019–2024 is shown in Table 42. The current version of this tool applies to calculations from 2021 onwards. Values for previous years remain unchanged.

*Table 42: Development of gross final energy consumption, energy consumption from RES and their energy share in the transport sector in 2019–2024 with multipliers according to the EUROSTAT-SHARE^{S}methodology – **administrative status***

Transport sector		Unit	2020	2021	2022	2023	2024
Energy used in the transport sector (renewable sources in the denominator with a multiplier)		(TJ) (% of total)	257,588.50	278,326.60	**283,855.60**	**289,461.80**	300,831.20
Renewable energy sources in road transport (electricity) 1)			82.40	43.21 (0.062)	**55.12** (0.078)	**68.01** (0.094)	**99.60** (0.132)
Renewable energy sources in rail transport (electricity) 2			1,747.90	792.65 (0.427)	**860.76** (0.455)	**842.89** (0.436)	923.35 (0.460)
Renewable energy sources in other modes of transport (electricity)			45.50	38.10 (0.014)	**41.83** (0.015)	**32.14** (0.011)	32.72 (0.011)
Biofuels in accordance with legislation			15,642.30	14,347.51 (6.237)	**13,524.58** (5,693)	**12,724.95** (5,112)	14,056.34 (5,139)
Advanced	**IX.A**[3)]		270.00 (0.10)	3,011.13 (2.164)	**2,635.44** (1.857)	**2,070.75** (1,431)	1,403.96 (0.933)
Developed	**IX.B**[3)]		3,400.00 (1.32)				
From food and fodder crops			11,972.30 (4.648)	11,336.37 (4.073)	**10,889.14** (3,836)	**10,654.19** (3,681)	12,652.38 (4,206)
Total renewable sources (in the numerator with multipliers)			24,169.70	18,758.56	**17,713.45**	**16,364.21**	**17,276.44**
Share of RES in final energy consumption in transport		**(% of total)**	**9.38**	**6.74**	**6.24**	**5.65**	**5.74**

Source: *Share of renewable energy sources in gross final energy consumption – EUROSTAT methodology – SHARE^s, December 2024,* *www.mpo.cz*

Note: Multipliers: ***1) 2019 – 2020: 5x; 2021 – 2024: 4x***

2) 2019 – 2020: 2.5x; 2021 – 2024: 1.5x

3) 2019 – 2024: 2x

The multipliers specified in the note below Table 42 were used for the calculations in that table. Their use, for example for renewable energy sources in road transport, is justified by the fact that, as it is not possible to include in the statistics, through special metering (home charging), all electricity supplied to road vehicles should be accounted for through special measurements; therefore, to ensure the proper accounting of the positive impacts of electrified transport based on energy from renewable sources, multiplier coefficients should be used. The values in the first and penultimate rows of Table 42 are determined using these multipliers. **Furthermore, the SHARES methodology takes into account only RES in transport, excluding energy consumption (diesel including bio-components) in agriculture, forestry and construction.**

Table 43 shows actual gross final energy consumption, energy consumption from RES and their energy share in the transport sector for the years 2022–2024. **The item 'energy used in the transport sector' includes fossil fuels, renewable sources and renewable electricity, including consumption in agriculture, forestry and construction (excluding air transport).**

*Table 43: Gross final energy consumption, energy consumption from RES and their energy share in the transport sector in 2022 and 2024 – **physical figures without multipliers***

Year		Unit	2022	2023	2024
Energy used in the transport sector (fossil fuels, renewable sources and renewable electricity)		TJ (% of total)	**271,568.79**	**278,799.71**	**289,447.91**
Renewable energy sources in road transport (electricity) **1)**			**55.10 (0.020% e.o)**	**68.0 (0.024)**	**99.60 (0.034)**
Renewable energy sources in rail transport (electricity) **1)**			**860.80 (0.317% e.o)**	**842.90 (0.302)**	**923.35 (0.319)**
Renewable energy sources in other modes of transport (electricity) **1)**			**41.80 (0.015 % e.o)**	**32.10 (0.011)**	**32.72 (0.011)**
Sustainable renewable liquid and gaseous fuels	**Total: of which**		**16,095.0 (5.927% e.o.)**	**15,477.06 (5,551)**	**15,959.35 (5,513)**
	Advanced – Raw Materials IX.A		**2,028.7 (0.747% e.o.)**	**1,684.68 (0.604)**	**2,038.31 (0.704)**
	developed – raw materials IX.B		**1,969.9 (0.725% e.o.)**	**1,719.34 (0.617)**	**999.87 (0.345)**
	from food and feed crops		**12,097.4 (4.454% e.o.)**	**12,073.04 (4.330)**	**12,921.17 (4.464)**
Total renewable energy sources			**17,052.7**	**16,420.06**	**17,015.02**
Share of RES in final energy consumption in transport		% e.o.	**6.30**	**5.89**	**5.88**

Source: *Ministry of the Environment, Reports on GHG emissions from supplied fuels for 2022, 2023 and 2024*

1) Share of renewable energy sources in gross final energy consumption – EUROSTAT methodology – SHARES , December 2025, www.mpo.cz

The share of RES in gross final energy consumption in transport, according to the EUROSTAT methodology, was 5.74% e.o. in 2024, whilst the actual figure, according to the report on GHG emissions from fuels for 2024, was 5.88% e.o. The role of RES in transport in the share of RES in gross final energy consumption in the Czech Republic in 2020–2024 is illustrated in Table 44.

Table 44: Share of renewable energy in the Czech Republic in 2020–2024 according to the Eurostat – SHARES methodology

	Unit	2020	2021	2022	2023	2024	Index 2024/2023

Share of electricity consumption	(% of total)	14.82	14.47	15.50	16.45	17.93	**1.09**
Share of transport consumption		7.87	6.74	6.24	5.65	5.74	**1.02**
Share of heating and cooling		23.65	24.35	25.82	27.67	29.06	**1.05**
Total share of final energy consumption		17.37	17.61	18.12	18.55	19.21	**1.03**

Source: *MPO – Renewable Energy Sources in 2024/ www.mpo.cz; January 2026*

8. Specification of the national commitments and obligations of fuel suppliers under the transposed RED III Directive in the Czech Republic

The process of transposing Directive (EU) 2023/2413 of the European Parliament and of the Council of 18 October 2023 (RED III), amending Directive (EU) 2018/2001, Regulation (EU) 2018/1999 and Directive 98/70/EC as regards the promotion of energy from renewable sources, and repealing Council Directive (EU) 2015/652, with a transposition deadline set for 21 May 2025, was finalised by the adoption of Act No. 42/2025 Coll. of 22 January 2025 and Act No. 87/2025 Coll. of 4 March 2025. Act No. 42/2025 amends Act No. 201/2012 Coll., on Air Protection, as amended **(hereinafter the 'amended Air Protection Act')**. Act No. 87/2025 amends Act No. 458/2028 on the conditions for doing business and the exercise of state administration in the energy sectors and on amendments to certain acts (the Energy Act), as amended, and other related acts, including an amendment to the Act on Supported Energy Sources **(hereinafter the amendment to the Act on Supported Energy Sources)**. Both Acts take into account the extension of the scope of application to all suppliers of **motor** fuels, i.e.: **petrol, diesel, liquefied petroleum gas, compressed or liquefied natural gas, compressed or liquefied hydrogen, biofuel, compressed or liquefied biomethane or other fuel from renewable sources, blended fuel, compressed or liquefied renewable fuel of non-biological origin, or compressed or liquefied recycled fuel containing carbon, which are used to power road vehicles, special-purpose vehicles, rail vehicles or vessels on inland waterways, including recreational craft. The 'selected fuels'** specified in the legislation **do not include compressed hydrogen, compressed renewable fuel of non-biological origin, compressed natural gas, compressed biomethane and compressed recycled carbon-containing fuel**. This has enabled the expansion of the group of fuel suppliers who, within the meaning of the RED III Directive, are subject to the obligation to ensure a minimum share of advanced liquid and gaseous renewable fuels and renewable fuels of non-biological origin, and the obligation to reduce greenhouse gas emissions from fuels. A new definition of 'supply' has been introduced so that it is possible to clearly define the person in the fuel production and supply chain who is obliged to fulfil and demonstrate compliance with the specified obligations. In accordance with the RED III Directive, this obligated person is the person who pays excise duty or gas tax on the fuels supplied. As no tax is payable on hydrogen, the liable person is the person who supplies hydrogen to the premises of a filling station or dispensing unit. As the RED III Directive removes the possibility of taking into account emission reductions from extraction (UER) when calculating greenhouse gas emission reductions from supplied fuels, the definition of the term 'emissions from extraction' has been removed from the legislation. Furthermore, the definition of electricity for transport purposes has been removed, as all obligations now apply solely to fuels.

The main lead agency for the RED III Directive in the Czech Republic is the Ministry of Industry and Trade, with the Ministry of the Environment acting as a co-lead agency. Thus, unlike in many other EU Member States, the RED III Directive was incorporated into the Czech Republic's legal framework in 2025.

Based on data on the greenhouse gas emission intensity of individual types of renewable energy sources in transport, and whilst ensuring compliance with the minimum target for advanced renewable liquid and gaseous fuels, renewable fuels of non-biological origin, and the cap on advanced renewable liquid and gaseous fuels, Table 20 summarises the national commitments and obligations of fuel suppliers for the years 2023–2030 (and beyond).

Table 45: Statutory national commitments and obligations of fuel suppliers and measures for the use of renewable energy sources in the transport sector in the Czech Republic by 2030 and beyond

<table>
<tr><th>Year</th><th>Advanced liquid and gaseous renewable fuels from feedstocks IX.A, including renewable fuels of non-biological origin ($RFNBO_s$)</th><th>Reduction in greenhouse gas emissions from fuels</th><th>Limit for renewable liquid and gaseous fuels from food and feed crops</th><th>Limit for advanced renewable liquid and gaseous fuels from feedstock IX.B</th><th>Multipliers</th></tr>
<tr><td></td><td>(% e.o.)</td><td>(%)</td><td>(% e.o.)</td><td>(% e.o.)</td><td>(-)</td></tr>
<tr><td>2025</td><td>1.07</td><td>6
of which UER
1</td><td>7</td><td rowspan="6">1.7</td><td rowspan="6">x 2 for advanced renewable fuels, including $RFNBO_s$
x 2 for advanced renewable fuels
x 4 for renewable electricity in road transport
x 1.5 for renewable electricity in rail transport
x 1.2 for renewable aviation and marine fuels</td></tr>
<tr><td>2026</td><td>1.25</td><td>6.25</td><td rowspan="5">5.6</td></tr>
<tr><td>2027</td><td>1.5</td><td>6.75</td></tr>
<tr><td>2028</td><td>2.5</td><td>7.5</td></tr>
<tr><td>2029</td><td>3.75</td><td>8.75</td></tr>
<tr><td>2030 and beyond</td><td>5.5
$RFNBO_s$ min 1</td><td>11</td></tr>
</table>

Source:

- *Act No. 42/2025 Coll., amending Act No. 201/2012 Coll., on the protection of the air, as amended, and other related acts. The Act specifies the obligations of suppliers of liquid fuels.*
- *Act No. 87/2025 Coll., amending Act No. 458/2000 Coll., the "Energy Act", as amended, and other related acts, including Act No. 165/2012 Coll., on supported energy sources. The Act specifies the obligations regarding gaseous fuels.*

SANCTIONS:

- *CZK 2 for each MJ of undelivered advanced liquid or gaseous renewable fuel, including fuels of non-biological origin ($RFNBO_s$) .*
- *CZK 10 for every kg of greenhouse gas emissions from fuels that have not been reduced.*

***UER** – Upstream emission reduction cannot be claimed from 2026*

In accordance with the updated methodological guidelines of the Air Protection Department of the Ministry of the Environment for persons authorised to certify the production chain of sustainable biofuels and to verify emissions reports for fuel suppliers under the amended Air Protection Act, compliance with the targets set out in this Act and in the Act on Supported Energy Sources is demonstrated by the fuel supplier, by means of a report on greenhouse gas emissions from the fuel supplied by them for the previous calendar year (hereinafter referred to as the "emissions report"), verified by an authorised person in accordance with Section 32(1)(f) of the Air Protection Act. A supplier of liquid fuels must send the emissions report by 30 June of the following calendar year to the locally competent customs office and the Ministry of the Environment. A supplier of gaseous fuels must send it by the same deadline to the State Energy Inspectorate, the Ministry of Industry and Trade and the Ministry of the Environment.

In April 2026, motor fuel distributors organised within the Czech Association of the Petroleum Industry and Trade (CAPPO) initiated an amendment to the Czech Parliament aimed at easing the ramp-up curve for reducing GHG emissions from fuels and the shares of advanced renewable fuels and RFNBOs as shown in Table 46.

Table 46: Proposal to adjust the ramp-up curves for motor fuel suppliers' obligations

Year	Reduction of GHG emissions from motor fuels		Advanced renewable fuels and RFNBOs	
	Enacted	Amendment	Enacted	Amendment
Unit	**(%)**		**(% e.o.)**	
2027	6.75	**6.50**	1.5	**1.25**
2028	7.50	**7.00**	2.5	**2.00**
2029	8.75	**8.00**	3.75	**3.50**

Source: *CAPPO, April 2026*

The proposal maintains the direction set out in the transposed RED III Directive, but adjusts its timeline by modifying the annual obligations for the years 2027 to 2029. However, the 2030 target remains unaffected.
The proposers argue.

- Given the current reality of the availability of advanced renewable fuels RFNBOs, the associated infrastructure and the market's economic absorption capacity, there is no increase
- The number of vehicles, particularly in heavy-duty transport using CNG and LNG, where a high proportion of bio-components in bioCNG and bioLNG is anticipated, is not increasing,
- Although support for biomethane has been newly established, it is currently in the start-up phase of the auction and procurement process. New capacity will therefore only become available in the required volume in later years.

8.1 Credit system

In connection with amendments to the Act on Supported Sources, a credit system (KRES) will come into effect on 1 July 2026. This forms part of the system for recording the use of renewable energy sources in transport (EVOZED), operated by the market operator, OTE a.s. The essence of this system lies in the issuance of credits for electricity generated from renewable sources that is consumed for charging electric vehicles. These credits can then be used to meet the obligation to reduce greenhouse gas emissions from fuels.

- **Issuance of credits (Section 47e et seq.)**
  - **Credits are issued for** the **amount of electricity from RES** generated at a production facility holding a licence for the generation of electricity from RES.
  - The electricity generation facility must be connected **at a transfer point where a charging station is also connected**, which is registered in the register of charging stations in accordance with the Fuel Act.
  - **Credits are issued up to a maximum of the total amount of electricity consumed at the given charging station** for charging electric vehicles.
  - OTE issues credits in electronic form upon application by the charging station operator.
  - The application for the issuance of credits must be submitted **no later than 6 months from the end of the accounting period**, which is one calendar month. In order for credits to be issued, the charging station operator is obliged **to register the charging station in the market operator's system** and to provide information on the amount of electricity generated and consumed.
  - **The measurement of electricity generated and consumed** must be carried out using a secondary metering device, which is a specified meter in accordance with the Metrology Act.
  - The market operator **verifies and records the information provided**.
  - Credits are issued **for every 1 kWh of electricity**.
  - The greenhouse gas emission savings corresponding to 1 kWh of electricity from renewable energy sources are set out in implementing legislation.
- **Handling of credits**
  - Credits are **valid until 30 June of the year following the year in which the electricity was generated.**
  - OTE **records the credits issued and transfers them** between account holders.
  - An account holder may be **the operator of a charging station** connected at a transfer point where a RES electricity generation facility is also connected, **or a fuel supplier**.
  - The account holder **redeems credits by marking them in the register to offset greenhouse gas emissions** against the fuel supplier's obligations.
  - Account holders are obliged **to provide the market operator with complete and accurate information necessary for the transfer and use of credits**.
- **Use of credits:**
  - Credits may **be used to fulfil the obligation to reduce greenhouse gas emissions** from fuels.
  - This obligation applies **to suppliers of gaseous fuels**.
  - The national energy mix does not include the amount of electricity from RES for which

credits have been applied.

- Records and supervision:
  - **OTE operates an electronic register of RES use in transport,** which includes the management of the credit system, including accounts, issuance, transfers, application and cancellation of credits

The planned launch date of KRES is subject to the issuance of the relevant implementing regulation.

List of abbreviations

Biodiesel	generic name for fatty acid methyl esters (FAME)
Bio-CNG/Bio-LNG	Compressed/Liquefied biomethane
Bio LPG	biofuel in the form of liquefied light hydrocarbons (propane-butane)
CNG/LNG	Compressed/Liquefied Natural Gas
EC (European Commission)	European Commission (EC)
E-fuels	Fuels based on renewable electricity, abbreviated to PTX (E-fuels)
EP (European Parliament)	European Parliament
EU ETS	European Union Emissions Trading Scheme
FFAME (Free fatty acid methyl esters)	Free fatty acid methyl esters
FAME (Fatty acid methyl esters)	Fatty acid methyl esters
GO	Guarantee of origin (GO) electronic document RES
GWP (global warming potential)	Global warming potential – GWP_{CH4} =25; GWP_{N2O} =265; GWP_{CO2} =1
HVO/HEFA (Hydrotreated vegetable oils/Hydroprocessed esters and fatty acids)	Hydrogenated vegetable oils/hydroprocessed esters and fatty acids
ILUC (Indirect land-use change)	indirect land-use change
LCA (Life cycle assessment)	life cycle assessment
RES	Renewable Energy Sources
PtL (Power-to-liquid)	conversion of electricity into liquid fuels
PtG (Power-to-gas)	conversion of electricity into gaseous fuels
PtX (Power-to-X)	conversion of electricity into an energy carrier
RCF (Recycled Carbon Fuels)	carbon-containing recycled fuel
D-FQD	Directive 2009/30/EC of the European Parliament and of the Council on the specification of motor fuels
RED (EU Renewable Energy Directive 2009/28/EC)	Directive 2009/28/EC of the European Parliament and of the Council on the promotion of the use of energy from renewable sources
RED II (EU Renewable Energy Directive 2018/2001)	Directive 2018/2001 of the European Parliament and of the Council on the promotion of the use of energy from renewable sources
RED III (EU Renewable Energy Directive 2023/2413)	Directive 2023/2413 of the European Parliament and of the Council amending Directive (EU) 2018/2001, Regulation (EU) 2018/1999 and Directive 98/70/EC as regards the promotion of energy from renewable sources, and repealing Council Directive (EU) 2015/652
$RFNBO_S$ ("Renewable liquid and gaseous transport fuels of non-biological origin"	liquid and gaseous fuels from renewable sources of non-biological origin
RME (Rapeseed oil methyl ester)	rapeseed oil methyl esters (RME)
SAF (Sustainable aviation fuel)	sustainable aviation fuel
SME (Soybean oil methyl ester)	soybean oil methyl esters

TME (Tallow methyl ester)	methyl esters of animal fats
UCO (Used cooking oil/recycled vegetable oil)	used cooking oils/recycled vegetable oils
UCOME (Used cooking methyl ester)	methyl esters of used cooking oils
UDB (Union Database for Biofuels)	Union Database for Biofuels
XTL	Labelling of paraffinic diesel

Energy units

Energy units	**Megajoule (MJ)**	**Kilowatt-hour (kWh)**	**Terajoule (TJ)**	**Petajoule (PJ)**
1 megajoule (MJ)	1	0.28	0.000001	0.000 000 001
1 kilowatt-hour (kWh)	3.60	1	0.0000036	0.000 000 0036
1 terajoule (TJ)	1,000,000	280,000	1	0.001
1 petajoule (PJ)	1,000,000,000	280,000,000	1,000	1

Contents

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