2022 MARKET DATA

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Overview

The German Bioethanol Industry Association (BDBe) sees the past year 2022 in a positive light. In Germany last year, sales of bioethanol as a fuel additive in petrol increased by 2.9% to 1.19 million tonnes from the previous year. In a significantly rebounding fuel market, in which the volume of petrol sold rose by 3.5% to nearly 17.0 million tonnes, the percentage of bioethanol blended with the petrol types Super E10, Super Plus and Super (E5) remained almost unchanged from the previous year at 6.6% by volume in 2022. In contrast, there was a sharp increase in sales of Super E10: its market share grew considerably by almost 43% from 17.2% in 2021 to nearly 24.0% in 2022. Domestic bioethanol production also increased slightly last year.

Bioethanol production in 2022

The bioethanol plants, most of which are located in federal states in former East Germany, increased their production of bioethanol despite volatile prices for energy and feedstocks. Last year, roughly 715,500 tonnes of bioethanol were produced. Compared to 2021, this represents an increase of 2.0%.

Of this amount, 642,500 tonnes (89.8%) came from feed grain and around 73,000 tonnes (10.2%) from sugar beet pulp. A small percentage of bioethanol was also produced from residues and waste materials, which was not precisely quantified by the Federal Office for Agriculture and Food (BLE).

Bioethanol production by raw material (in tonnes)

Total grain		2022	642,492	+ 10.8 %
		2021	579,934	
of which:	Maize	2022	141,022	+ 43.5 %
		2021	98,245	
	Wheat	2022	298,366	+ 35.4 %
		2021	220,411	
	Other	2022	203,104	- 22.3 %
		2021	261,278	
Molasses/sugar beet pulp		2022	72,987	- 39.8 %
		2021	121,183	
Residues and waste		no data	no data	
Total*		2022	715,479	+ 2.0 %
		2021	701,117	

* Total without residues and waste, no data due to antitrust law

Source: Federal Office for Agriculture and Food (BLE)

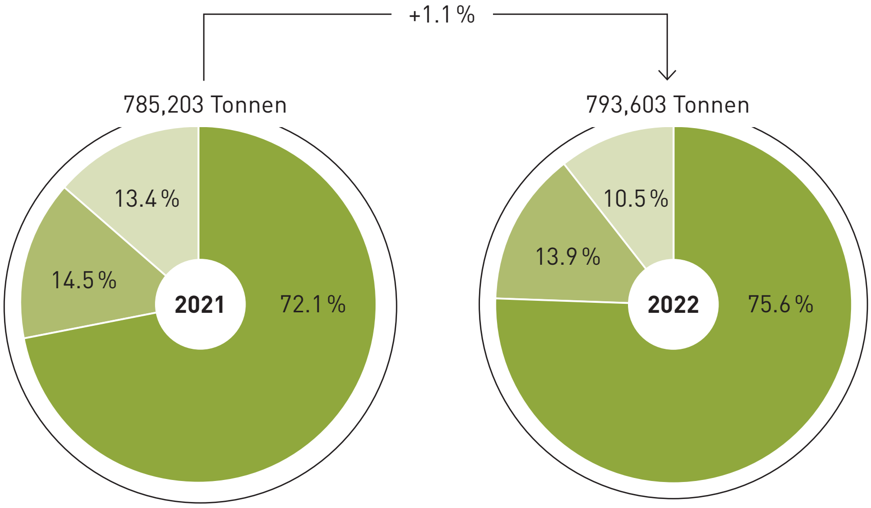
The bioethanol volume of 73,000 tonnes from sugar beet pulp or molasses (-39.8% compared to 2021) corresponds to a raw material input of approx. 790,000 tonnes of sugar beets. This means that nearly 500,000 tonnes fewer sugar beets were processed into bioethanol last year than in 2021. The quantity of processed represents 2.8% of Germany's beet harvest.

Feed grain was used to produce 642,500 tonnes of bioethanol last year (+10.8% compared to 2021). Around 2.7 million tonnes of feed grain were used as a feedstock for this purpose. This corresponds to 6.2% of Germany's grain harvest, with a total harvest volume of almost 43.5 million tonnes in 2022.

In addition to bioethanol, the other plant components of the processed raw materials supplied proteins, dietary fibres, minerals and vitamins, which were processed into high-quality co-products. Also produced were valuable protein animal feeds and other products for the food and animal feed industries, organic fertiliser and biogas, as well as biogenic carbonic acid for beverages and other uses.

The volume of bioethanol sold by producers, traders and importers increased slightly by 1.1% to over 793,500 tonnes compared to 2021 (785,000 tonnes). The increase is the result of the greater use of bioethanol for fuel (2022: 600,000 tonnes / 2021: 566,000 tonnes). The volume of bioethanol sold to the food and beverage industry (-3.7%) and to the chemical and pharmaceutical industry, on the other hand, (-20.3%) decreased significantly from 2021 levels.

Use of Bioethanol by industry (in tonnes)



Automotive fuels	2022	599,942	+ 6.0 %
	2021	565,985	
Food and beverages	2022	109,955	– 3.7 %
	2021	114,180	
Industry	2022	83,706	– 20.3 %
	2021	105,038	
Total*	2022	793,603	+ 1.1 %
	2021	785,203	

*including declarations from traders, importers

Source: Federal Office for Agriculture and Food (BLE)

Bioethanol consumption 2022 on the fuel market

In a petrol market that continued to expand in 2022, in which almost 17.0 million tonnes of petrol were sold, 3.5% more than in the previous year (2021: 16.5 million tonnes), the consumption of bioethanol, which was added to the petrol types Super E10, Super Plus and Super (E5) or used to produce ethyl tertiary butyl ether (ETBE), also increased by 2.9% to just under 1.19 million tonnes (2021: 1.15 million tonnes). Around 131,000 tonnes of bioethanol were used for ETBE production, which is 16.6% less than in 2021 (157,500 tonnes). The share of bioethanol in the petrol market was 6.6% by volume, as in the previous year.

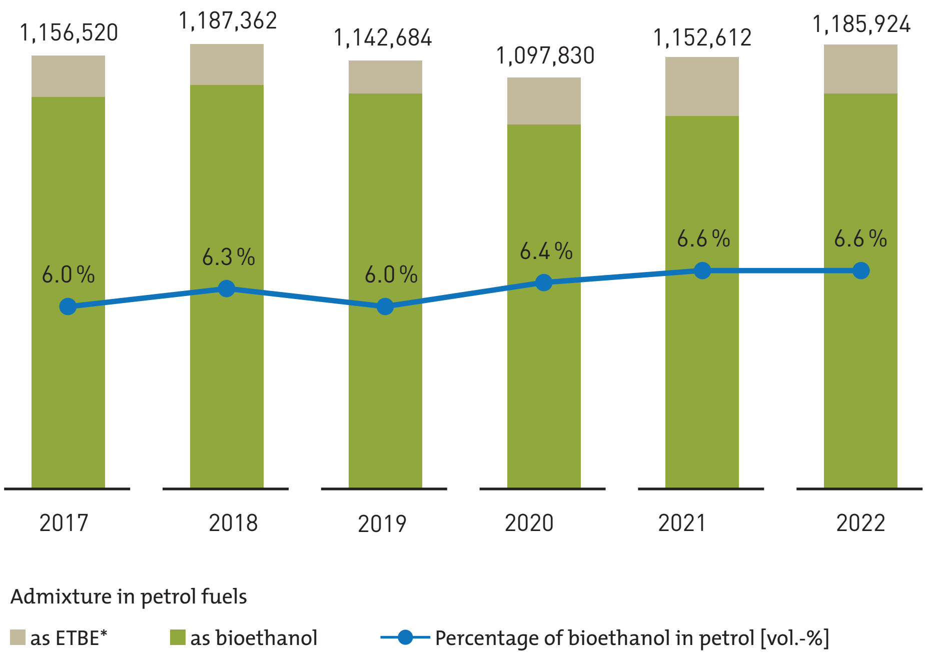
Bioethanol use on the fuel market (in tonnes)

Total bioethanol consumption		2022	1,185,924	+ 2.9 %
		2021	1,152,612	
of which:	Bioethanol for use as an admixture	2022	1,054,629	+ 6.0 %
		2021	995,170	
	Bioethanol for ETBE*	2022	131,295	- 16.6 %
		2021	157,442	
Engine fuels (incl. bioethanol)		2022	16,996,009	+ 3.5 %
		2021	16,428,279	
Percentage of bioethanol in engine fuels [Vol.-%]		2022	6.6 %	
		2021	6.6 %	

*Ethyl *tertiary* butyl ether, gasoline additive produced on the basis of bioethanol

Source: Federal Office of Economic Affairs and Export Control (BAFA)

Bioethanol as an admixture in petrol fuels (in tonnes)



*ETBE: ethyl *tertiary* butyl ether, additive produced on the basis of bioethanol

Source: Federal Office of Economic Affairs and Export Control (BAFA)

The market share of Super E10 in petrol sales also increased considerably from 17.1% last year to 23.7%. The absolute sales volume in this case was over 4.0 million tonnes (+42.9%). This figure was 2.8 million tonnes the previous year. At 12.2 million tonnes in 2022, Super E5 achieved a market share of nearly 72.0%. In the previous year, the 12.7 million tonnes of

Super (E5) sold represented a market share of 77.2%. The market share of Super Plus, which is also blended with up to 5.0% bioethanol, was 4.5% in 2022, considerably below the previous year's level (2021: 5.6%). At almost 762,000 tonnes, 17.6% less Super Plus was sold than in the previous year (2021: 925,000 tonnes).

Sales of petrol types 2021 and 2022 (in tonnes)

			Change	Market share
Super Plus	2022	761,844	- 17.6 %	4.5 %
	2021	924,899		5.6 %
Super (E5)	2022	12,206,178	– 3.8 %	71.8 %
	2021	12,685,389		77.2 %
Super E10	2022	4,027,987	+ 42.9 %	23.7 %
	2021	2,817,991		17.2 %
Total	2022	16,996,009	+ 3.5 %	
	2021	16,428,279		

Source: Federal Office Economic Affairs and Export Control (BAFA) © BDBe 03/2023

Outlook 2023

The positive upward trend in sales of Super E10, which has been apparent for several years, has continued and even picked up considerable speed recently. In addition to the price difference between Super E10 and Super (E5) of around 5 to 6 cents/litre nationwide, higher fuel prices and greater environmental awareness among car drivers are likely to play a role. Super E10 is now available in 15 EU member states and in the United Kingdom. Austria has recently created the regulatory conditions for an early market launch, and in Poland, Super E10 will be available nationwide in the near future.

In Germany, the greenhouse gas reduction quota, which will gradually increase until 2030, was raised from 7.0 to 8.0% at the beginning of 2023 and is set to rise to 9.25% next year. This, along with the exclusion of palm oil-based biofuels from counting towards the quota, will ensure stable bioethanol consumption in the fuel market. This will require that policymakers refrain from making any regulatory interventions in the market such as further limiting eligibility of biomass-based fuels for counting towards the quota. The impact of the Ukraine conflict on energy prices and further developments on agricultural markets, especially on sugar and grain prices, remains to be seen.