2021 MARKET DATA

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Overview

The German Bioethanol Industry Association (Bundesverband der deutschen Bioethanolwirtschaft – BDBe) gives a positive review for the year 2021. In Germany last year, sales of bioethanol as a fuel additive in petrol increased significantly by 4.5% to 1.15 million tonnes from the previous year. In a slowly rebounding fuel market, in which the volume of petrol sold rose only slightly by 1.6% to 16.5 million tonnes, the percentage of bioethanol blended with the petrol types Super E10, Super Plus and Super (E5) increased from 6.4% by volume in 2020 to 6.6% by volume last year. Sales of Super E10 petrol in particular showed positive development: The market share of Super E10 rose considerably from 14.0% in 2020 to more than 17.0% in 2021. Domestic bioethanol production also expanded slightly last year.

Bioethanol production in 2021

The bioethanol plants located in the federal states of Brandenburg, Mecklenburg-Western Pomerania, Saxony-Anhalt and Bavaria stepped up bioethanol production for the second year in a row. Last year, more than 700,000 tonnes of bioethanol were produced. Compared to 2020, this is an increase of 0.6%.

Nearly 580,000 tonnes (83%) of production came from feed grain and around 121,000 tonnes (17%) from sugar beet pulp. A low proportion of bioethanol was also produced from residues and waste materials, which was again not precisely quantified by the Federal Office for Agriculture and Food (BLE).

Bioethanol production by raw material (in tonnes)

Total grain		2021	579,934	−1.6 %
		2020	589,276	
of which:	Maize	2021	98,245	−44.9 %
		2020	178,442	
	Wheat	2021	220,411	+ 11.0 %
		2020	198,655	
	Other	2021	261,278	+ 23.1 %
		2020	212,179	
Molasses/sugar beet pulp		2021	121,183	+ 12.4 %
		2020	107,856	
Residues and waste		no data	no data	
Total*		2021	701,117	+ 0.6 %
		2020	697,132	

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

Source: Federal Office for Agriculture and Food (BLE)

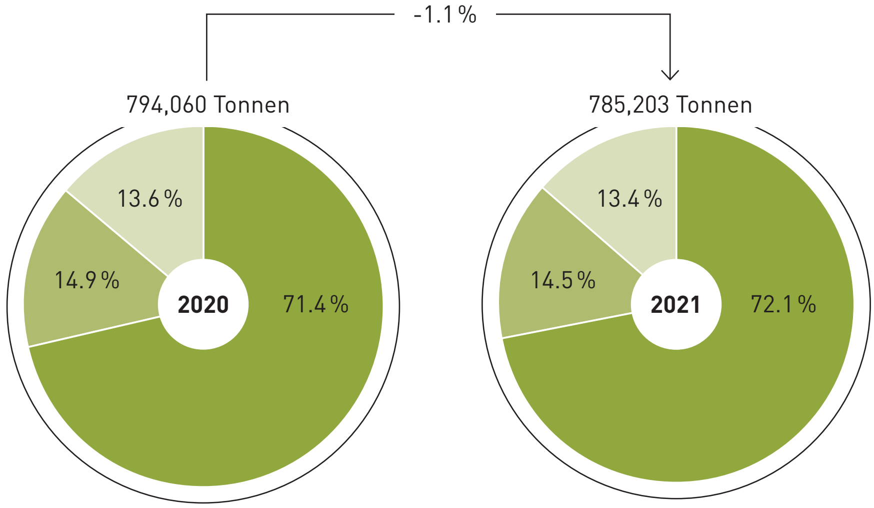
The bioethanol volume of 121,000 tonnes from sugar beet pulp or molasses (+12.4% compared to 2020) corresponds to a raw material input of 1.3 million tonnes of sugar beets. This means approx. 150,000 tonnes more sugar beets were processed into bioethanol last year than in 2020. The quantity processed represents 4.0% of Germany's beet harvest.

Feed grain was used to produce just under 580,000 tonnes of bioethanol last year (-1.6% compared to 2020). Around 2.4 million tonnes of feed grain were used as a feedstock for this purpose. This corresponds to 5.6% of Germany's grain harvest of 42.4 million tonnes in 2021.

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: protein feedstock and other products for the food and feed industry, gluten for aquaculture and biogenic carbon dioxide for beverages, organic fertilisers and biogas.

The volume of bioethanol sold by producers, traders and importers in 2021 fell slightly by 1.1% to roughly 785,000 tonnes compared to 2020 (795,000 tonnes). Sales of bioethanol for use as fuel (2021: 565,985 tonnes) decreased only by 0.2%. The volume of bioethanol sold to the food and beverage industry (-3.7%) and to the chemical and pharmaceutical industry (-3,0%) also decreased from 2020 levels.

Use of Bioethanol by industry (in tonnes)



Automotive fuels	2021	565,985	–0.2 %
	2020	567,161	
Food and beverages	2021	114,180	–3.7 %
	2020	118,605	
Industry	2021	105,038	–3.0 %
	2020	108,294	
Total*	2021	785,203	–1.1 %
	2020	794,060	

*including declarations from traders, importers

Source: Federal Office for Agriculture and Food (BLE)

Bioethanol consumption 2021 on the fuel market

In a slightly rebounding petrol market in 2021, in which 1.6% more petrol was sold than in the previous year at 16.5 million tonnes (2020: close to 16.3 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), increased significantly by 4.5% to just under 1.15 million tonnes (2019: 1.10 million tonnes). More than 157,000 tonnes of bioethanol were used for ETBE production, which is equivalent to 25% more than in 2020 (126,000 tonnes). The share of bioethanol on the petrol market rose to 6.6% by volume (2020: 6.4% by volume).

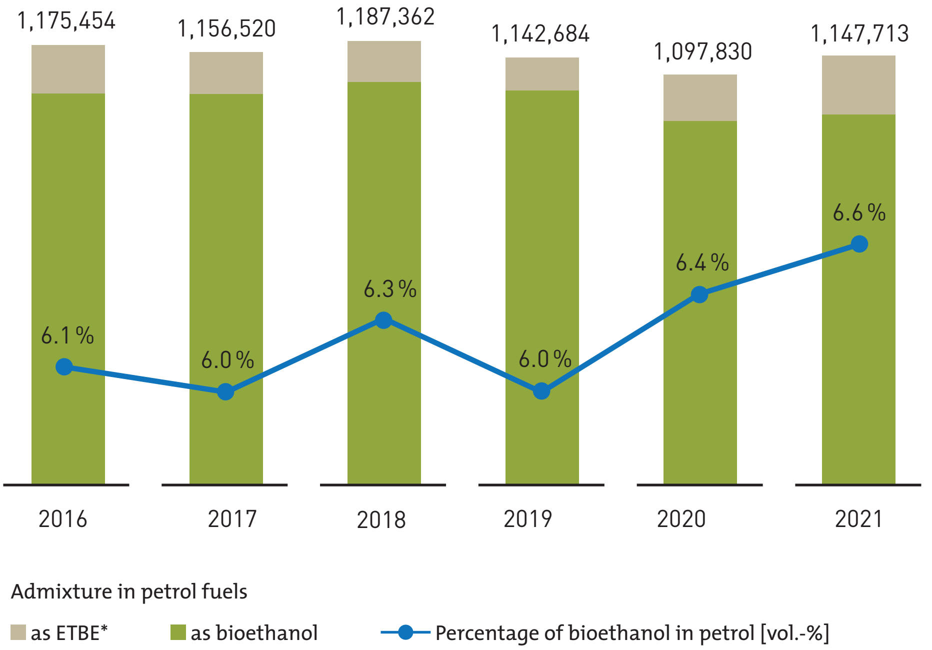
Bioethanol use on the fuel market (in tonnes)

Total bioethanol consumption		2021	1,147,713	+4.5 %
		2020	1,097,830	
of which:	Bioethanol for use as an admixture	2021	990,271	+1.9 %
		2020	971,943	
	Bioethanol for ETBE*	2021	157,442	+ 25.1 %
		2020	125,887	
Engine fuels (incl. bioethanol)		2021	16,514,582	+1.6 %
		2020	16,259,058	
Percentage of bioethanol in engine fuels [Vol.-%]		2021	6.6 %	
		2020	6.4 %	

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

Source: Federal Office of Economic Affairs and Export Control (BAFA) © BDBe 04/2022

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) © BDBe 04/2022

The market share of Super E10 in petrol sales also increased again to 17.1% (2020: 13.9%). The absolute sales volume in this case was 2.8 million tonnes. This figure was 2.3 million tonnes in the previous year. At 12.8 million tonnes in 2021, Super E5 achieved a market share of 77.3%. In the previous year, the 13.1 million tonnes of Super (E5) sold represented a market share of 80.7%. The market share of Super Plus, which is also blended with up to

5.0% bioethanol, was 5.6% in 2021, slightly above the previous year's level (2020: 5.4%). At almost 927,000 tonnes, 5.6% more Super Plus was sold than in the previous year (2020: 878,000 tonnes).

Sales of petrol types 2021 and 2020 (in tonnes)

			Change	Market share
Super Plus	2021	926,769	+5.6%	5.6%
	2020	877,923		5.4%
Super (E5)	2021	12,761,880	−2.8%	77.3%
	2020	13,124,861		80.7%
Super E10	2021	2,825,933	+25.2%	17.1%
	2020	2,256,274		13.9%
Total	2021	16.514.582	+1.6%	
	2020	16,259,058		

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

Outlook 2022

The positive upward trend in sales of Super E10, which has been apparent for several years, is continuing. Over the course of 2021, this trend was once again evident, not least due to generally rising fuel prices. In December 2021, the market share of Super E10 was over 20%. The price difference between Super E10 and Super (E5) at the filling station has levelled off at 5 to 6 cents/litre nationwide since the beginning of 2021. Super E10 is now available in 15 EU member states, and the market launch also began in the UK in autumn 2021.

At the beginning of 2022, the greenhouse gas reduction quota was raised from 6.0 to 7.0%. In 2023, it is set to rise to 8.0% and then incrementally to 25% by 2030. The share of sustainable biofuels in the transport sector will generally continue to increase as a result. It is currently unclear how the situation on global agricultural markets will develop due to the current Ukraine conflict, as well as the prices for mineral oil and natural gas, and what impact this will have on domestic bioethanol production and fuel sales.