Market data 2017

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German Bioethanol Industry Association

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Overview

The German Bioethanol Industry Association (Bundesverband der deutschen Bioethanolwirtschaft - BDB^{e}) gives a mixed assessment of the past year. Bioethanol production in Germany reached around 673,000 tonnes in 2017, representing a decrease of almost 9% compared to the previous year. The use of bioethanol for admixtures in fuels also fell slightly by 1.6% to just under 1.2 million tonnes according to the final communication of the Federal Office for Economic Affairs and Export Control (BAFA) for the year 2017.

On the positive side, sales of Super E10 increased and the greenhouse gas balance of certified domestic bioethanol improved: according to official figures calculated by the Federal Agency for Agriculture and Food (BLE) - most recently for 2016 - bioethanol used for fuel has reduced carbon emissions by 75% compared to fossil-based petrol. In 2015, this figure was still around 71%. A further improvement in the greenhouse gas balance of bioethanol is expected in 2018.

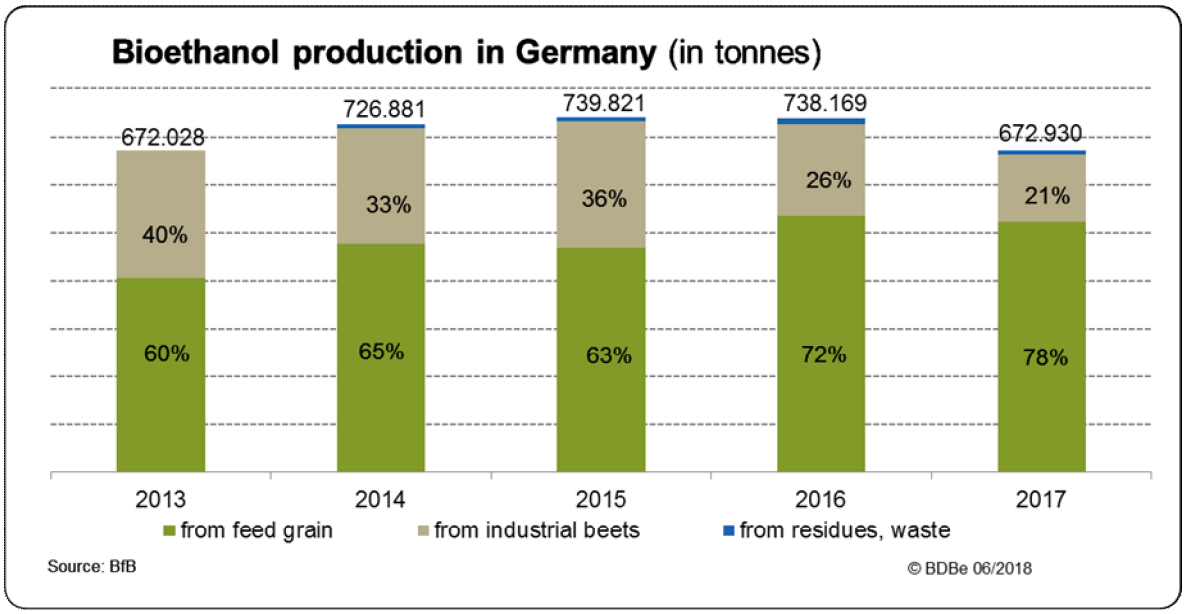
1. Production 2017

Bioethanol produced from industrial beets, feed grain and residues and waste from the bioethanol plants located in the former federal states of East Germany totalled 672,930 tonnes in 2017. This is a decline of 8.8% compared to the previous year which saw a production volume of 738,169 tonnes.

141,401 tonnes of bioethanol came from industrial beets, 26% less than in 2016. This is equivalent to raw material input of 1.5 million tonnes of beets or 4.4 percent of the estimated total of 34.1 million tonnes of beets harvested in Germany in 2017. The decline in beet-based bioethanol production can be attributed to the closure of a bioethanol plant which lasted several months.

522,638 tonnes of bioethanol were produced from domestic feed grain in 2017, a slight decline of 2.2%. 2.1 million tonnes of feed grain were used as raw material for bioethanol production. This corresponds to 4.7% of Germany's grain harvest of 45.5 million tonnes in 2017.

At around 9,000 tonnes, 28% less bioethanol was produced from residues and waste, for example from the food industry, than in the previous year (12,310 tonnes).



Bioethanol production in Germany by raw material (in tonnes)						
	2013	**2014**	**2015**	**2016**	**2017**	**± 2016/2017**
Feed grain	404.954	475.962	467.272	534.589	522.638	-2,2%
Industrial beets	267.074	242.714	264.665	191.270	141.401	-26,1%
Residues, waste	0	8.205	7.884	12.310	8.892	-27,8%
Total	**672.028**	**726.881**	**739.821**	**738.169**	**672.930**	**-8,8%**

Source: BfB © BDBe date 06/18

In addition to bioethanol, the other plant components of the raw materials such as proteins, dietary fibres, minerals and vitamins supplied high-quality co-products: protein feed from grains, concentrated feed from industrial beets and other products for the food and feed industry, gluten for aquaculture or biogenic carbon dioxide for beverages.

2. Consumption 2017

The German petrol market grew in 2017 with around 18.3 million tonnes sold. Bioethanol reached an almost unchanged share of 6.0% by volume of the total petrol market (2016: 6.1% by volume).

Nearly 1.2 million tonnes of bioethanol were consumed for fuel in 2017. Despite an overall increase in fuel consumption, bioethanol consumption fell slightly by 1.6 per cent compared to last year.

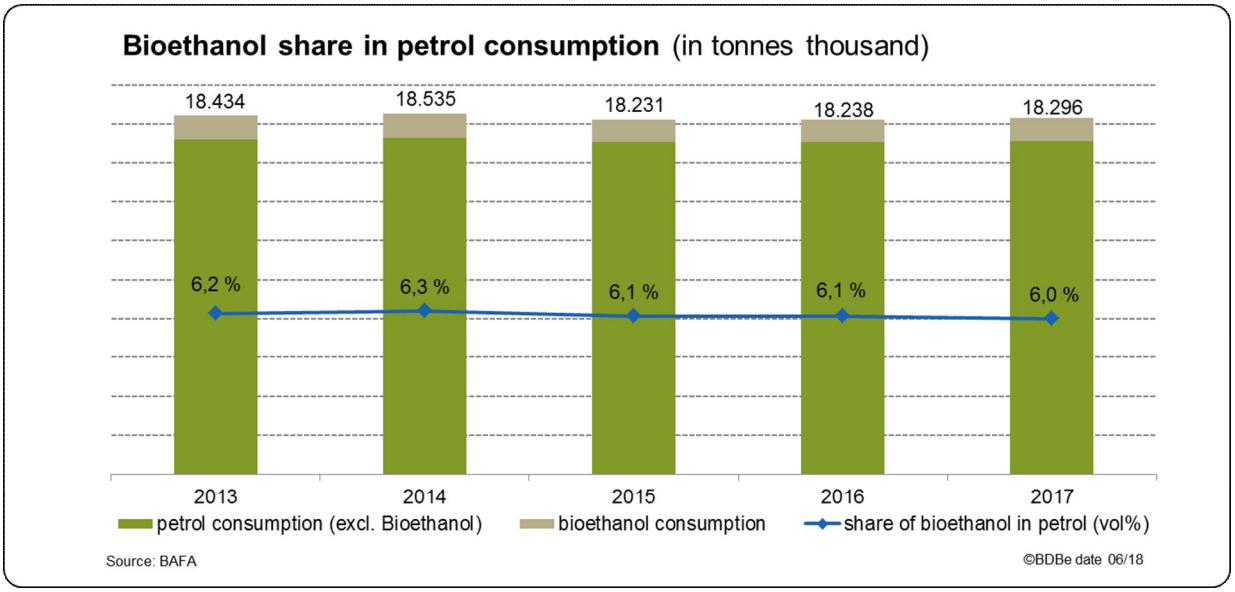
Bioethanol is most commonly used in Germany as an admixture for **Super E5**, **Super Plus** and **Super E10** fuels and as a petrol additive called **ETBE** (ethyl tert-butyl ether). ETBE is made from bioethanol and isobutene extracted from natural gas and is added to petrol to improve its combustion properties due to its higher octane.

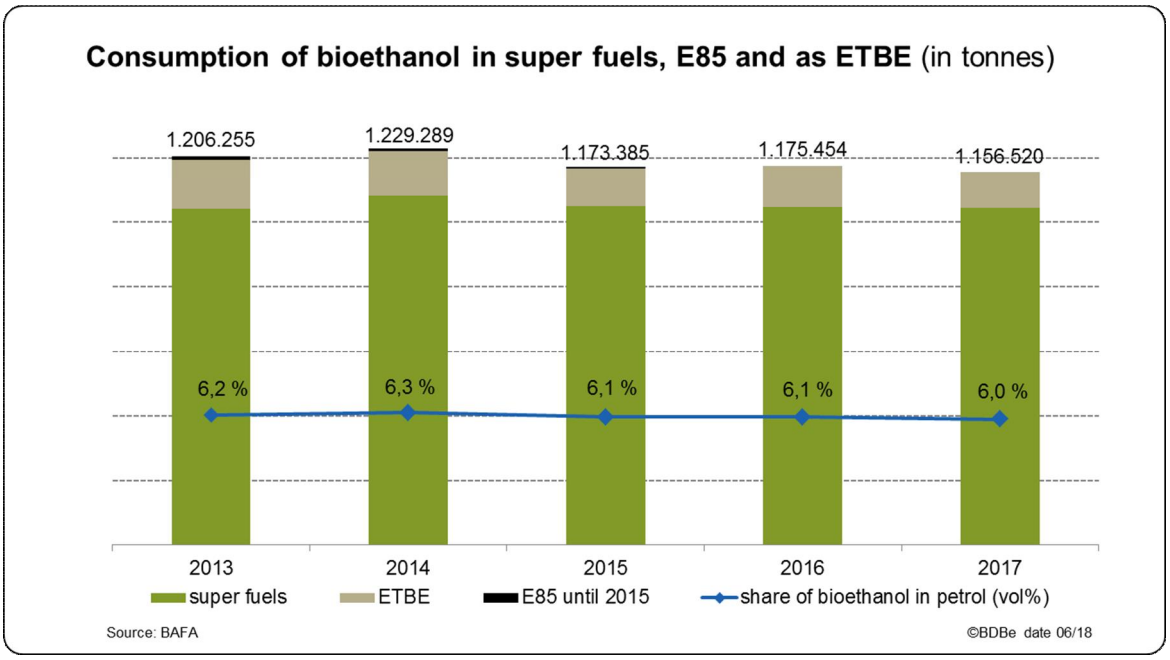
Only just under 111,400 tonnes of bioethanol were used in **ETBE**, 13.5% less than in the previous year.

Bioethanol (EtOH) in petrol 2016 and 2017 (in tonnes)

	2016	2017	Change > previous year
EtOH in ETBE	128.760	111.440	-13,5%
EtOH as an admixture	1.046.694	1.045.080	-0,2%
EtOH total	**1.175.454**	**1.156.520**	**-1,6%**
Total petrol without EtOH	17.062.295	17.139.504	0,5%
Total petrol with EtOH	**18.237.749**	**18.296.024**	**0,3%**
Percentage of EtOH by volume in petrol	6,1%	6,0%	

Source: BAFA ©BDBe date 06/18





At 15.0 million tonnes in 2017, **Super E5** achieved a slightly lower market share of 82.1%. In the previous year, the figure was 15.1 million tonnes, which represents a market share of 82.8%.

At around 830,000 tonnes, **Super Plus** maintained its market share of the previous year at 4.5%.

Sales of **Super E10** fuel, which contains up to 10% bioethanol, rose in 2017 to 2.4 million tonnes which is equivalent to a market share of 13.4%. The figure was 12.6% the previous year.

Petrol 2016 and 2017 (in tonnes)

	2016	Market share 2016	2017	Market share 2017
Super Plus	837.019	4,6%	830.289	4,5%
Super E5	15.098.530	82,8%	15.023.928	82,1%
Super E10	2.302.150	12,6%	2.441.807	13,4%
Total	**18.237.749**		**18.296.024**	

Source: BAFA ©BDBe date 06/18

3. Outlook 2018

The BDB[e] assumes that the increased greenhouse gas savings quota on 1 January 2017 will have a positive impact on the use of bioethanol as a petrol admixture this year. **According to preliminary figures from the BAFA**, bioethanol consumption **rose by more than 9%** between **January and the end of April 2018** in a year-on-year comparison.

Since 1 January 2015, fuel companies have been required by law to reduce carbon emissions from fuels. In 2015 and 2016 there was a mandatory savings target of 3.5%. A mandatory savings target of 4.0% was introduced on 1 January 2017 and this level is expected to increase further to 6.0% on 1 January 2020.

Since the GHG savings target was introduced, BDB[e] has advocated for this target to be increased faster and continuously to prevent carbon emissions from all fuels.
A higher level of acceptance of Super E10 among consumers would also positively impact the sales of domestic bioethanol. Of more than 30 million currently registered passenger cars with petrol engines, only a few passenger car models are still dependent on Super (E5) or Super Plus fuels.

Bioethanol is the most widespread biofuel in the world and also an important component of sustainable mobility in Germany. The German Bioethanol Industry Association (BDBe) represents the interests of the biofuel sector's member companies and associations, spanning agricultural production of the raw materials all the way to industrial production and processing of bioethanol and all co-products (DDGS, CDS, biogenic carbon dioxide, gluten, yeast, biomethane, organic fertiliser).