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Introduction of E10 may curb biodiesel consumption in Germany

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Report Highlights:
The German Government has doubled to 10% the allowable amount of ethanol in gasoline. Starting January 1, 2011, E10, blended fuel containing 90 percent gasoline and 10 percent bioethanol will be freely sold in Germany. This is expected to increase bioethanol demand and imports. However, because the overall biofuel mandate remains unchanged it is also expected that the increase in bioethanol's market share may reduce consumption of biodiesel in Germany.

General Information:

On November 5, 2010, the German Bundesrat (comparable to the U.S. Senate) approved draft legislation to allow E10 (a gasoline mix of 90 percent gasoline and 10 percent bioethanol by volume) to be sold at gas stations in Germany starting January 1, 2011. The German Cabinet and the Bundestag (comparable to the U.S. House of Representatives) had already given their approval. The legislation will be published in the German Federal Gazette (BGBl) shortly. Currently, the typical gasoline sold in Germany is an E5 blend.

This is the second attempt at introducing E10 in Germany. The first attempt in 2008, initiated by then Minister of Environment Sigmar Gabriel, failed after protests from car importers and the powerful German drivers association (ADAC), which claimed that up to 3 million imported cars would not be able to use this type of gasoline. In the meantime, the EU adopted directive 2009/30 which requires member states to amend national legislation to allow marketing of E10. In addition, the situation in Germany has changed as the German equivalent of the U.S. "cash for clunkers" program removed a substantial number of old cars from the road. According to the Ministry of the Environment (BMU), about 90 percent of gasoline powered cars in Germany are now able to use E10 without problems. The new legislation also requires that: 1) the new gasoline be labeled (for example: "Super E10"); and, 2) gas stations offering E10 must also offer E5 until 2013.

Implications for the German bioethanol market

The introduction of E10 is an important move to increase the use of bioethanol in Germany. In light of the limited presence of flexible fuel cars, most bioethanol use occurs through blends. In 2009, total bioethanol consumption in Germany amounted to 902,500 MT. This included 9,000 MT of E85; 202,000 MT in ETBE, and 692,700 MT in E5 blends. With the introduction of E10, bioethanol consumption could increase to 2.05 million MT in 2011 (based on a projected total gasoline consumption of 19.6 million MT, a specific weight of 0.745 kg/l for gasoline and 0.782 for bioethanol). According to the *Association of the German Bioethanol Sector* (BDBe), 590,000 MT of bioethanol was produced in Germany in 2009, while production capacity was 880,000 MT. An additional capacity of 570,000 MT is currently under construction. Considering the sustainability criteria for biofuels and feedstocks that kick in on January 1, 2011, and the fact that German producers seem to be ahead in building capacity compared to other countries in the region, BDBe hopes that German producers will be able to capitalize on the introduction of E10 and increase market share. However, the figures stated above show that the introduction of E10 will increase the room for bioethanol imports even if German producers run their facilities at 100 percent capacity. As a result of the EU import tariff of €10.2/hl for denatured ethanol, the majority of imports are expected to originate from other EU member states.

Side effects on biodiesel consumption

Germany has a biofuel use mandate in place that consists of three parts: an overall mandate, which is set at 6.25 percent of fuels sales on an energy basis (currently 137 GJ). Below this umbrella there are two specific mandates of 4.4 percent for biodiesel (translating into 1.6 million MT) and 2.8 percent for bioethanol (892,000 MT). The gap between the specific mandates and the overall mandate may be filled with a biofuel of choice (for example biodiesel, bioethanol, pure vegetable oil, BtL).

For example: Assuming a company sells fuel with an total energy content of 2000 Joule, of which 50 percent is diesel fuel and 50 percent gasoline, the company's total biofuel requirement amounts to 130 joule. Of this the company is required to sell at least 44 Joule in the form of biodiesel and 28 joule in the form of bioethanol. For the remaining 58 joule the company can choose which biofuel it wants to sell.

In the absence of E10, most of the unspecified part of the mandate was filled with biodiesel, in the form of a B7 blend, up to the blend wall, and as B100 for the exceeding volumes. Under the current market situation, biodiesel use outside the mandate is minimal because B100 (100 percent biodiesel) is not able to compete with diesel. In general, fuel companies tend to prefer to meet their obligations with blends rather than B100. The Introduction of E10 largely eliminates the need to use B100. In 2009, total German biodiesel consumption amounted to 2.54 million MT. This included 2.27 Million MT in blends and 265,000 MT as B100.

Table 1: Projected Fuel Consumption in Germany in 2011

Diesel		Gasoline		Total		6.25 % energy mandate
1000 MT	GJ	1000 MT	GJ	1000 MT	GJ	GJ
30,900	1,329	19,600	843	50,500	2,172	136

Source: FAS/Berlin based on extrapolation of data from *MWV projection of oil use until 2025* and *Official Mineral Oil* [consumption] *Data* for 2001-2009.

Table 2: German biofuel mandates and blends translated into GJ and 1000 MT

	Biodiesel				Bioethanol				Total	Over-all mandate	Gap to overall man-date	additional biodiesel if gap is filled with biodiesel	Maximum total biodiesel use
Scenario	percent		1000 MT	GJ	percent		1000 MT	GJ	GJ	GJ	GJ	1000 MT	1000 MT
Fuel specific mandates	4.4	E	1,585	58	2.8	E	874	24	82	136	54	1,468	3,054
B7 + E5	7.0	V	2,272	84	5.0	V	1,029	28	112	136	24	645	2,917
B7+ E10	7.0	V	2,272	84	10.0	V	2,058	56	140	136	-4	0	2,271

Source: FAS/Berlin calculations

Note: E = based on energy content, V= based on volume, MT = metric tons, GJ = Giga joule

Energy content (source: RED)

in MJ/kg: Diesel 43, biodiesel 37, gasoline 43, bioethanol 27

in MJ/l: Diesel 36, biodiesel 33, gasoline 32, bioethanol 21

Specific weight (Source: German Agency for Economics and Export Monitoring)

in kg/l: Diesel 0.837, biodiesel 0.879, gasoline 0.745, bioethanol 0.782

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| Status of Biomass Sustainability Certification in Germany | Bio-Fuels, Trade Policy Monitoring | Berlin | Germany | 3/15/2010 As of July 1, 2010, biofuels will need a "proof of sustainability" certificate from an approved sustainability system in order to be eligible for tax incentives or mandates in Germany. In order to be able to certify production, U.S. industry can work with an existing German certification system or develop its own system and have it approved in Germany. Information on requirements for approval of certification systems can be obtained from the German Federal Agency for Agriculture and Nutrition ... Status of Biomass Sustainability Certification in Germany Berlin Germany 3-11-2010
| Reduction of German Biofuel Use Mandates Enter into Force | Bio-Fuels | Berlin | Germany | 8/17/2009 Legislation changing the existing German biofuel support law was published in the German Federal Law Gazette (Bundesgesetzblatt) on July 20, 2009. The changes include a delay in the energy tax increase on pure biodiesel, a reduction of the biofuel use mandates, and the exclusion of biofuels which previously received direct state aid from the German biofuels support benefits. The legislation entered into force on July 21, 2009, however, the reduction in the mandates and tax will be applied retr... Reduction of German Biofuel Use Mandates Enter into Force Berlin Germany 8-7-2009