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Report Highlights:

The Bulgarian Renewable Energy Act (REA) established a national target of 16% of renewable energy in total energy consumption and 10% in transportation fuel consumption by 2020, and 6% share in the total reduction of GHG emissions based on sustainability criteria. Biofuel mandates lagged behind the goals and accounted for 5.7% in 2014. In July 2015, Bulgarian legislators postponed bioethanol mandates for 3 years and the current mandate of 7% will not be changed until 2018. Biodiesel producers plan to use in MY2015/16 more soybean oil due to expected higher local production of soybeans as a result of EU greening requirements.

Executive Summary:

The Bulgarian Renewable Energy Act (REA) established a national target of 16% of renewable energy in total energy consumption and 10% in transportation fuel consumption by 2020, and 6% share in the total reduction of GHG emissions based on sustainability criteria.

As of 2015, Bulgaria already outperformed the set goals and reported that the share of renewable energy in total energy consumption at the end of 2013 was at 19%. This goal was achieved mainly as a result of hydro energy (42%), wind energy (28%) and solar energy (10%) in total renewable energy consumption, while biofuel mandates lagged behind the goals and accounted for 5.7% in 2014 (Eurostat). Blending of biofuels with fossil fuels has been mandatory in Bulgaria since January 1, 2012.

Bulgaria has sufficient capacities for biofuel production but they are currently underused. Feedstock for biofuel production is mostly local. Bulgarian producers use locally grown rapeseed and sunflower seeds for biodiesel and grains (wheat and corn) as feedstock for ethanol production. While there is exportable surplus of feedstock available, over the last two years imports of biodiesel prevailed.

In July 2015, Bulgarian legislators postponed bioethanol mandates for 3 years and the current mandate of 7% will not be changed until 2018. Biodiesel producers plan to use in MY2015/16 more soybean oil due to expected higher local production of soybeans as a result of EU greening requirements.

General Information:

II. Policy and Programs

In May 2011 Bulgaria transposed the EU Renewable Energy Directive into local Renewable Energy Act (Official Gazette #35 of May 3, 2011). Since then the law has been amended 12 times, including 4 amendments made in 2015, with the last one made in July 2015 (Official Gazette #56 of July 24, 2015).

In 2011 the policy makers introduced sustainability criteria for biofuels to the law and later adopted an implementing Regulation #302 of November 26, 2012, published in Official Gazette #95 of December 4, 2012 and enforced since January 3, 2013. In general, the legislation says that (Article 37) bio-fuels are sustainable if they lead, as a result of consumption of produced bio-fuels and liquid fuels from biomass, to a minimum 35% reduction in GHG emissions as of December 2016; 50% as of January 2017; and at least 60% for bio-fuels and liquid fuels from biomass generated in plants where the production has started from January 1, 2017 – until January 2018. Many of the local producers currently use ISCC certification for sustainability.

The Ministry of Environment was granted a leading role in adoption and monitoring of the sustainability criteria. A new administration, Agency for Sustainable Energy Development (or Energy Efficiency Agency www.seea.government.bg), has a key role for any issues related to renewable energy production, control, consumption and trade. The Agency is also the author of country progress reports regarding the renewable energy to the EC.

Despite the harmonization with the EU law in 2011, the biofuel mandates were postponed for 2012.

The mandate for 4% biodiesel and 2% bio-ethanol blending which was valid and supposed to be implemented as of May 1, 2011, was canceled. The law introduced the following schedule for biofuel mandates introduced effectively in 2012:

Biodiesel		Bio-ethanol	
January 1, 2012	5%	June 1, 2012	2%
June 1, 2012	6%	March 1, 2013	3%
		September 1, 2013	4%
		March 1, 2014	5%
		September, 1, 2014	6%
		March 1, 2015	7%
		September,1 2015	8%
		March 1, 2016	9%

In July 2015, the last amendment to the Renewable Energy Act changed the time schedule for bioethanol as follows:

September 1, 2015 was changed to September 1, 2018	8%
March 1, 2016 was changed to March 1, 2019	9%

Bulgaria does not apply double counting for biofuels. The country used to apply tax incentives for biofuels in 2009 - 2011 but the program was discontinued in 2011.

For more details on the EU biofuels policy, situation and market please refer to the [EU-28 Biofuels Annual 2015](#) report in our GAIN system available at <http://gain.fas.usda.gov>.

Biofuel Market and Consumption

The biofuels industry in Bulgaria is still at an early developing stage. This is related to the size of the economy and lower consumption of fossil fuels, as well as with the lack of encouraging business and economic environment for production and use of biofuels.

Since 2007, when Bulgaria became an EU member, motor gasoline consumption has declined by 30% (Table 1). Consumption of diesel oil fluctuated with a peak in 2012 (1,612 ktoe) but then declined due to the economic recession in 2013. Preliminary data for 2014 show a rebound in consumption for both gasoline and diesel of 471 ktoe and 1,739 ktoe, respectively (Table 2). Data for the first 5 months of 2015 compared to the corresponding period of 2014 indicates stable gasoline consumption and 8.5% growth in diesel consumption.

Despite timely harmonization of local legislation with the EU, biofuel production and use remained below 1% until 2011. The fossil fuels market is dominated by a very few companies which did not have an economic interest in the use of biofuels as no sufficient stimulus was provided by the legislators. For this reason the biofuel industry had a challenging start and only in 2011 did the share

of biodiesel become 1.1%, growing to 6.5% or equal to the mandate in 2013. Bioethanol faced even more difficulties and 2013 was the first year when the mandate was effectively implemented at 1.8%.

Tentative estimates show that the 2014 mandate of 5% -6% for bioethanol and 6% for biodiesel, which corresponds to use of 23-28 ktoe of bioethanol (above the national target of 15 ktoe) and 104 ktoe of biodiesel (below the national target of 110 ktoe), have a potential to be implemented. It still remains to be seen if Bulgaria will meet these goals, however, preliminary reports indicate that it is more likely for the biodiesel mandate to be met rather than that for bioethanol.

The industry, however, already expressed concerns regarding the implementation of 2015 mandates. The challenges come from the fact that the country expects a lower and more expensive rapeseed crop, and in addition, current hot and dry weather is affecting the sunflower crop as well. Higher priced rapeseed and sunflower oils may stimulate more use of soybean oil or to encourage use of new raw materials such as used cooking oils. Nevertheless, industry reports that the market players have generated good experience in the period 2012 – 2014, and the trade may see better development from 2015 onward.

Biofuel Production

In the years after EU accession, Bulgaria enjoyed high foreign investment in renewable energy projects, especially in wind and solar energy, while investments in bio-fuels were mainly local.

Local players invested in significant production capacities in hopes that the abundance of local grain and oilseeds crops in a combination with the EU market will provide good opportunities for development. However, investors had no experience and there was a lack of professional expertise in the sector. In addition, legislative environment was unstable and unpredictable. As a result, many players left the sector and production capacities declined from 228 ktoe (2008) to only 86 ktoe in 2013 or by 62%. The reduction for biodiesel was at 68% and for bioethanol at 17%. (Table 1)

In the period 2008-2010, production of biofuels was small but still exceeding consumption. Since 2011, with the implementation of the mandates, biodiesel production has not been sufficient and/or competitive to cover the market needs so blenders were importing substantial amount of biodiesel to fulfill their obligations. In 2013 bioethanol production equaled to consumption, however, biodiesel production was reported at 39 ktoe compared to 96 ktoe use, or only 40% of the consumption as the remaining were imports, reportedly from Romania. (Tables 1 and 3)

Data about biofuel production and use is limited and often contradictory due to the small market size and the few players. For example, European Biodiesel Board has data about biodiesel capacity for 2014 at 378 ktoe vs 86 ktoe (Eurostat); and for bioethanol the capacity is indicated at 115 ktoe by ePURE vs 22 ktoe (Eurostat). A special survey made by the Ministry of Environment shows biofuel production capacities in 2012 at 336 ktoe. (Tables 1 and 3). In addition, the total fossil fuel market is often subject of fiscal and quality inspections due to reported grey market.

The most used raw materials for biofuels are wheat and corn for bioethanol, and rapeseed oil and sunflower oil for biodiesel. Palm oil or used cooking oils are not currently used by the industry although market reports indicate that this situation may change in 2015/16. In MY2014/15, select biodiesel

producers began to use also soybean oil in small quantities to test the product. Due to EU greening requirements, in 2015 Bulgaria planted for the first time, more area under soybeans and the crushers plan to produce and use more soybean oil in MY2015/16 if the crop is competitively priced. There is no official and/or public data about the volume of raw materials used for biofuels.

Government Audit and National Plan Implementation

The inability to achieve previously set goals for biofuel mandates was subject of a special audit carried out by the Government Audit Chamber: <http://www.bulnao.government.bg/bg/articles/neobhodimi-sa-speshni-dejstviq-za-narastvane-na-dela-na-biogorivata-u-nas-ustanovi-smetnata-palata-1477>.

The findings of the audit were published in June 2015 while the audit covered the period 2008-2012. The findings say that biofuel consumption is at a low level, the growth in use as a share in transport fuels is slowing, and that urgent measures need to be taken to guarantee the observation of sustainability criteria. The audit strongly recommends an introduction of economic stimulus for application of sustainability criteria. The audit also confirms that the national targets for 2010, 2011 and 2012 have not been achieved.

Another finding is that no resources have been allocated for R&D for second generation biofuels. The national plan for second generation biofuels calls for use of only 4 ktoe compared to total use of 287 ktoe biofuels by 2020.

National Biofuel Targets and Implementation 2010-2015						
	2010	2011	2012	2013	2014	2015
Targets per the National Plan (ktoe)						
-Biodiesel	33	46	64	85	110	140
-Bioethanol	0	1	3	5	15	19
Consumption						
-Biodiesel	14	17	86	-	-	-
-Bioethanol	3	0	0	-	-	-
Source: Government Audit Report 2015, p.75						

The audit also reveals that the authorities do not do enough to effectively control the biofuels sector from production to final consumption. The MinAg does not monitor energy crops and what volumes are used for biofuels. This monitoring was carried out before 2010 when the MinAg used a domestic support program for energy crops but it was terminated after 2010.

As of today, the sector is represented through two industry organizations – National Biofuel Association <http://www.biofuels-bg.org/> and National Petroleum and Gas Association <https://bpga.wordpress.com/>

Table 1. Transport Fuels Market Development 2007-2013

Transport Fuels - ktoe

Years	2007	2008	2009	2010	2011	2012	2013
Production Biofuels - ktoe	2.0	11.0	11.0	11.0	14.0	7.0	47.0
Biogasoline	0.0	0.0	0.0	0.0	0.0	0.0	8.0
Biodiesel	0.0	9.0	11.0	11.0	14.0	7.0	39.0
Other Liquid Biofuels	2.0	2.0	0.0	0.0	0.0	0.0	0.0
Final Consumption Biofuels - ktoe	2.0	4.0	4.0	13.0	17.0	86.0	104.0
Biogasoline	0.0	0.0	0.0	0.0	0.0	0.0	8.0
Biodiesel	0.0	2.0	3.0	10.0	17.0	86.0	96.0
Other Liquid Biofuels	2.0	2.0	0.0	3.0	0.0	0.0	0.0
Final Consumption Petroleum Products - ktoe	2,609	2,762	2,681	2,608	2,616	2,698	2,399
LPG	382	365	388	374	349	370	398
Motor Gasoline	627	628	647	611	564	540	442
Gas/Diesel Oil	1,376	1,544	1,470	1,441	1,511	1,612	1,387
Final Consumption Gas Products - ktoe							
Natural Gas	299	293	189	207	264	268	251
Biofuels Production Capacity - kton	45	228	192	193	94	64	86
Biogasoline	0	30	0	0	0	0	22
Biodiesel	0	198	192	193	94	64	64
Other Liquid Biofuels	45	0	0	0	0	0	0
Share of Biofuels in Transport Fuels - %	0.1%	0.1%	0.1%	0.5%	0.6%	3.1%	4.2%
of Biogasoline in Motor Gasoline	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.8%
of Biodiesel in Gas/Diesel Oil	0.0%	0.1%	0.2%	0.7%	1.1%	5.1%	6.5%

Source: Eurostat - <http://ec.europa.eu/energy/en/statistics/country>

Table 2. Fossil Fuel Supply and Market Deliveries

Fossil Fuel Supply and Market Deliveries (ktoe)							
	2010	2011	2012	2013	2014	2015 January- May	2014 January- May
Production							
Gasoline	1,479	1,536	1,658	1,757	1,599	712	543
Diesel	1,599	1,831	2,198	2,103	1,980	831	694
Deliveries to the market							
Gasoline	643	499	506	404	471	187	185
Diesel	1,408	1,487	1,771	1,650	1,739	692	638

Source: National Statistical Institute

Table 3. Biofuel Production 2007-2013

Biofuel Production 2007-2013, MT							
	2007	2008	2009	2010	2011	2012	2013
Bioethanol	0	0	0	0	0	0	8,000
Biodiesel	0	8,700	10,800	11,000	14,100	7,100	39,100

Source: Eurostat

End of Report.