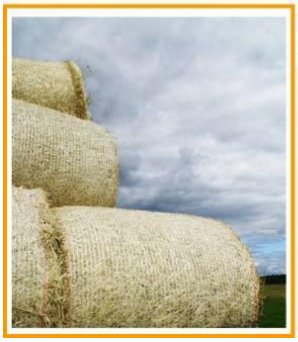





SolidStandards

Enhancing the implementation of quality and sustainability standards and certification schemes for solid biofuels (EIE/11/218)



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National Industry Position Paper
Bulgaria

Co-funded by the Intelligent Energy Europe Programme of the European Union

The SolidStandards project

The SolidStandards project addresses ongoing and recent developments related to solid biofuel quality and sustainability issues, in particular the development of related standards and certification systems. In the SolidStandards project, solid biofuel industry players will be informed and trained in the field of standards and certification and their feedback will be collected and provided to the related standardization committees and policy makers.

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About this document

This document is part of **Deliverable 6.1** of the SolidStandards project. It is the National position paper of Bulgaria. This document was prepared in **June 2013** by:

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Foreword

CEN, the European Committee for Standardisation, represented in this consortium by NEN, is interested in gathering the opinions of industry representatives for the development of new standards, the revision of existing standards, and the representation of European interests within international standardisation (ISO) procedures. The SolidStandards project offers an excellent opportunity to collect a large number of viewpoints through direct contact with industry representatives. In addition, a broader, public approach has been applied to collect feedback from industry players other than those participating in trainings. Furthermore, experience gained through the project has been used to provide recommendations to CEN and the solid biofuel community how to cope with new developments on solid biofuel markets.

The findings of this task under WP 6 of the SolidStandards project will be summarised in a final European industry position paper on international standards for solid biofuels.

This report contains the feedback collection and analysis from Bulgaria

This national report includes the following:

1. Description of national biofuel markets based on **available data**
2. Description of standardisation activities
3. Description of certification activities
4. Overview of standardisation and certification needs
5. Results of discussion with national mirror committee
6. Summary of national industry needs

The objectives are:

- To explain the industry points of view to standardisation committees
- To initiate and support the development of additional standards (e.g. on biomass storage)
- To increase the practical applicability of standards under development
- To bring European industry viewpoints into on-going CEN and ISO standardisation processes
- To provide the necessary feedback on existing standards in order to facilitate their revision in the future

ERATO Holding Plc will discuss this national industry paper with the national mirror *committee of Bulgarian Institute for Standardisation in Bulgaria (BDS).*
NEN will consolidate all national papers to one, overall European industry position paper about international standards for solid biofuels.
The final European industry position paper will be presented to CEN/TC 335 and/or ISO/TC 238 and distributed among the members of these technical committees.

1. Description of the national biofuels market of Bulgaria

1.1. General description of the market

The national biofuels market in Bulgaria is dynamically developed for the last few years. In the recent 5 years, the country is increasingly talking about alternative energy sources and energy efficiency. We are seeing the impact of our current online pricing and constant fluctuations in price levels in the international and Bulgarian energy markets, which led to a continuous increase in the retail prices of fuel oil, natural gas, LPG and coal, as well as secondary energy - electricity and heat. As a result, there was a strong increase in the activity of investors and consumers concerning the potential of alternative energy sources, particularly solid biomass.

Industry using conventional fuels and energies generates greenhouse gases and thus increases the greenhouse effect. The only way to reduce pollution and achieve the so-called "zero greenhouse effect" and "zero emission" is the utilization of waste wood biomass as a fuel component. In the utilization of waste biomass for energy the carbon dioxide emitted is considered non harmful since it is again absorbed by the plant in the stages of its growth.

The new Forest Act in Bulgaria regulates the process of extraction of timber, including woody biomass. Separation of control and administrative functions of the business will create conditions and incentives for increased production. The Forest Act allows the conclusion of long-term contracts that would encourage investment in energy production from biomass.

What are the resources in the forests of Bulgaria?

- The total stock of forests of the country by the end of 2010 amounted to 643,013,812 cubic meters standing wood pulp;
- The average annual growth of wood from the forests of Bulgaria amounts to 14.4 million cubic meters;
- When intended for use in Project Plan 6.64 million cubic meters, wood produced in 2010 amounted to 5.67 million m^3 - 85% (volume of standing wood pulp harvested is 6.72 million m^3 which represents about 50% of the total annual growth); firewood is the main part of the wood from the category "wood."
- Main energy component of the biomass of the "wood" and "twigs" and amounted to an average of about 3.2 million m^3. Increased use of firewood in the country is about three times in the last 10 years (National Statistical Institute - NSI). This is due to its relatively low price compared to the ever-increasing prices of fuel oil, natural gas and coal, as well as their electricity and heat.

According to data from the National Statistical Institute for renewable energy sources - 2009 (http://www.nsi.bg/otrasal.php?otr=30&a1=2391&a2=2392#cont) primary energy production of firewood, wood waste and other solid waste is 697 thousand toe or over 65% of all renewable energy sources. The share of firewood, wood waste and other solid waste is 95.2% of final energy consumption (relative to all RES). Firewood used by consumers for heating up 7.4% of final energy consumption in 2009. The share of the technical potential of solid biomass is 34% of the total potential of renewable energy sources in Bulgaria.

Type of organization active on market	Estimate number of companies active on market	Comments
Solid biofuel producers	54	*30 Wood Pellets Producers* *14 Wood Chips Producers* *10 Wood Briquettes Producers*
Solid biofuel trader and/or logistics providers	11 31	*Structures in the solid biofuel producers* *Wholesalers and resellers*
Solid biofuel users: small-medium sized (< 1 MW)	Over 160 Over 70	*Municipality Buildings such as kindergartens, schools, hospitals, administrative buildings* *Small and Medium Enterprises including hotels and greenhouses*
Solid biofuel users: large scale (> 1 MW)	3	*Biomass Thermal Plants in Bansko (10MW capacity), Haskovo (2MW capacity) and Ihtiman (3MW Capacity)*
Consumer association		*Bulgarian National Association of Consumers (BNAC)*
Industrial association		*Association of Forestry Companies in Bulgaria (AFCB)* *Bulgarian Branch Chamber of Woodworking and Furniture industries (BBCWFI)* *The Bulgarian Greenhouse Growers' Association (BGGA*) *Bulgarian Hotel and Restaurant Organisation (BHRA)* *Energy Utilisation Biomass Association (EUBA)*
Combustion, gasification or fuel production equipment manufacturers	7 3	*Manufacturers of hot water firewood, pellets, wood chips boilers, fireplaces and stoves using pellets and wood* *Producers of wood chippers, pellet presses, coolers, hammer mils and auxiliary process equipment*
Certification, inspection or testing bodies	1	*Bulgarian Institute for Standardisation*
Laboratory / Research organization	7/4	

1.2. General figures of the market

Solid biofuel production figures per type of biofuel **)	**Overall annual turnover x.1.000 EUR*)**			**Overall production volume Ton/year**		
	2010	**2011**	**2012**	**2010**	**2011**	**2012**
Total	16745	24915	36240	214200	250740	320400
Wood pellets	9350	13930	18000	85000	99500	120000
Wood briquettes	1020	1433	2160	10200	12000	14400
Wood chips	765	1194	1680	17000	20000	24000
Firewood	5610	8358	14400	102000	119000	144000
Non-woody pellets						
Straw						
Energy production per type of producer **)	**Overall annual turnover x.1.000 EUR*)**			**Overall production volume GJ/year**		
	2010	**2011**	**2012**	**2010**	**2011**	**2012**
Total	5972	4078	3858	186624	113184	101520
Small-medium sized (< 1 MW)						
Large-scale (> 1 MW)	5972	4078	3858	186624	113184	101520

*) This data is based on data that was available during the SolidStandards project (2013).

What is the technical potential of RES in Bulgaria under actual estimation for 2009? *(Source: Directive 2009/28/EO – Forecast document).*

RES, regarding Regulation 1099/2008r. for energy statistics	**Technical potential, ktoe**
Hydro energy	1290
Geothermal energy	18
Solar energy	389
Energy from tidal and wave	No data
Wind energy	315
Solid biomass	**1524**
Biogas	280
Liquid fuel	366
Total	**4495**

The share of the technical potential of solid biomass is 34% of the total potential of renewable energy sources in Bulgaria.

Forecast for the production of heat from renewable sources by 2015 (Source: National long-term plan for renewable energy 2005-2015).

RES	Condition and forecast for production of thermal energy from RES			
	2003		till 2015	
	GWh	Ktoe	GWh	ktoe
Biomass (incl. landfill gas)	**8 244**	**709**	**14 233**	**1227**
Solar thermal collectors	39	3	239	21
Geothermal energy	419	36	1081	93
Total	8 698	748	15 593	1 341
Increase compared to 2003	over 1.8 times ; ~ **6.6%** annualy			

2. Standardisation activities

2.1. National standardisation activities

The Bulgarian Institute for Standardization (BDS) is the national executive body for standardization in the Republic of Bulgaria. BDS develops, accepts and approves Bulgarian standards, participates in the work of international and European organizations for standardization, as its main target is to defend the Bulgarian interests in that sphere.

According to the Rules for Standardization Activities, Part 2: "Organization of the standardization activities" the Bulgarian Institute for Standardization has published its Work programme for standardization for 2013, approved by the Managing Board. The programme includes:

- Items for development of Bulgarian standards at national level
- Items for implementation of international and European standards through translation into Bulgarian
- Items for development of European standards under the different stages of CEN/CENELEC programmes. The current programmes of the technical committees with the drafts of European and international standards could be tracked online at BDS website.

BDS has a full data base on standards and provides information and consultancy services regarding national, European, international and foreign standards. Bulgarian Institute for Standardization publishes an Official BDS Bulletin which is a monthly edition, containing information on the following issue:

- Approved Bulgarian standards
- Withdrawn Bulgarian standards
- Drafts of European standards at Enquiry stage of development
- Drafts of European standards at Formal vote stage of development
- Adopted European standards

- Corrigendum of standards
- Notifications of drafts of foreign standards
- Other useful for standardization work information.

The Official Bulletin is available for sale through subscription or it can be purchased directly from BDS at the Customer Services Department.

2.2. National standards

The regulatory framework in Bulgaria is poorly developed. Till 2000 in the field of the solid biomass fuels, the only national standard is BDS ISO 1928:2000 Solid mineral fuels - Determination of gross calorific value by the bomb calorimetric method and calculation of net calorific value is implemented. As the name indicates, this standard is designed for mineral fuels, but due to the absence of a specific standard it is used for biomass fuels too.

In Bulgaria there are BDS standards to be used for determination of the legislative and informative parameters of the biogenic materials. Therefore the introduction of these standards will open the way for new initiatives and will lay the grounds for solving many of the problems.

The Bulgarian Institute for standardization accepted the following standards in 2010 and 2011:

- BDS EN 14961-1:2010 – Solid biofuels. Specification and fuel classes. Part 1: General requirements.
- BDS EN 14961- 2:2011 – Solid biofuels. Specification and type of fuels. Part 2: Wood pellets for non industrial use.
- BDS EN 14961- 3:2011 – Solid biofuels. Specification and type of fuels. Част 3: Wood briquettes for non industrial use.
- BDS EN 14961-4:2011 – Solid biofuels. Specification and type of fuels. Част 4: Wood pellets for non industrial use.
- BDS EN 14961-5:2011 – Solid biofuels. Specification and type of fuels. Част 5: Firewood for non industrial use.

Now, the Bulgarian Industry in the field of biofuels in general wants to use all existing European standards about solid biofuels. There is not any Bulgarian certification organization at the moment.

2.3. Uptake of European standards

Currently the companies involved in EU standards about solid biofuels do not use successfully any standards for wood pellets, wood chips, briquettes and firewood.

In 2008 ERATO company created its own methodology for determination of some normative parameters of wood pellets. This was a reason because a lot of pellet manufacturer's cannot use any solid biofuel standard and the pellet market was chaotic.

The methodology of ERATO includes 10 classes of wood pellets (see the table below) and in the fuel laboratory wood pellets were tested to determine the following properties:

- Asch content,
- Moisture,
- Mechanical durability.

Class	Ash, Ai	Mechanical Durability, DU
A	Ai ≤0,6%	DU≥97%
AB	Ai ≤0,6%	DU<97%
B	0,6%≤Ai≤1,0%	DU≥97%
BC	0,6%≤Ai≤1,0%	DU<97%
C	1,0%≤Ai≤2,0%	DU≥97%
CD	1,0%≤Ai≤2,0%	DU<97%
D	2,0%≤Ai≤3,0%	DU≥97%
DE	2,0%≤Ai≤3,0%	DU<97%
E	Ai>3,0%	DU≥97%
EF	Ai>3,0%	DU<97%

There is no laboratory in Bulgaria for testing solid biofuels regarding European standards at the moment including standards connected with:

- Terminology
- Quality assurance
- Sampling and sample preparation
- Physical and mechanical properties
- Chemical properties

Specific barriers for development of solid biofuel market in Bulgaria:

- Normative barriers:

- Problems in the field of thermal energy trade for centralized and decentralize heat supply;
- Reconsideration of the methods for calculating electricity and heat energy prices which are produced by combined way;
- Heat and electricity developers and project sponsors do not have stimulus for renewable energy production because there are not enough financial guaranties and more comfort procedures;
- Non sufficient administrative capacity of municipalities for conducting RES projects especially biomass project for electricity and heat supply using local resources;

- Wood working and wood processing plants do not have law's obligation for energy efficiency and wood waste utilization for energy purposes. This lead to groundlessness on bio fuels sale and higher wood biomass prices.

- Financial barriers:

- Difficult access to financial capital in the condition of economic crisis;
- Low stage or impossibility for insurance of RES project co-financing (own contribution);
- High price of the financial resource in the condition of bankable loan;
- Low stage of the purposefully sources adoption by Operational programs of EU, National and International projects and programs;
- There is no developed CO_2 emissions market in the country and it is a reason for impossibility to compensate the project investment cost;
- There is a risk for servicing of bank credits and an executable debt.

- Barriers for solid biofuels utilization:

- Low level of technique and technology for wood biomass utilization;
- Insufficient investment for delivering of specializing equipment for production, transport, preservation and processing of wood biomass;
- Insufficient practice for National policy application for developing and subsidizing of bio fuels production based on wood biomass waste;
- Lack of financing for R&D activities for production and new technology implementation of biomass fuels.

3. Certification activities

The Bulgarian producers of biomass fuels use the following foreign standards:

- ASTM 1288 – Standard test method for the durability of biomass pellets
- CEN/TS 15210-1:2005 – Solid biofuels - Methods for the determination of mechanical durability of pellets and briquettes - Part 1: Pellets.
- CEN/TS 15210-2:2005 – Solid biofuels - Methods for the determination of mechanical durability of pellets and briquettes - Part 2: Briquettes.
- DIN 51731 – Testing of solid fuels – compressed untreated wood – requirements and testing.
- DIN 51731:1996. Testing of solid fuels - Compressed untreated wood - Requirements and testing.
- DIN 51749 – Determination of the fuel carbon content.
- ONORM M 7135:2000: Compressed wood or compressed bark in natural state - Pellets and briquettes - Requirements and test specifications.
- SN 166000:2001. Testing of solid fuels - Compressed untreated wood - Requirements and testing.
- SS 187120:1998. Biofuels and peat – Pellets – Classification.

In 2010 some of the pellet manufacturers started a development business through testing of their production (some normative parameters) using standard EN 14961-2 Wood pellets for non-industrial use.

Some of these certification systems are for the producers of biofuels. In the meantime the current certification schemes are much important especially when the produced wood pellets will be exported in EU countries.

There are no sustainability certification schemes in Bulgaria at the moment.

4. Standardisation and certification needs

4.1. Feedback collection about standards for transport/storage

There is a need for acquiring specific knowledge and skills about the European standards for quality, safety, security and health in the field of solid biofuels production transport and logistics.

4.2. Feedback collection per type of biomass

The participants in the training have given remarkable feedback regarding the necessity of using all European standards for solid biofuels:

For wood pellets:

- EN 14961-1, Fuel specification and classes - Part 1: General requirements
- EN 14961-2, Fuel specification and classes - Part 2: Wood pellets for non industrial use
- EN 15234-2, Fuel quality assurance - Part 2: Wood pellets for non-industrial use

For wood briquettes:

- EN 14961-3, Fuel specification and classes - Part 3: Wood briquettes for non industrial use

For wood chips:

- EN 14961-1, Fuel specification and classes - Part 1: General requirements
- EN 14961-4, Fuel specification and classes - Part 4: Wood chips for non industrial use

Firewood:

- EN 14961-1, Fuel specification and classes - Part 1: General requirements
- EN 14961-5, Fuel specification and classes - Part 5: Firewood for non industrial use

4.3. Feedback collection about quality certification

The participants in the training i.e. representatives of pellets and briquettes manufacturers, wood chips and firewood producers in the trainings would like to introduce quality certification schemes in their facilities in the future

4.4. Other standardisation and certification needs

During the trainings the necessity from general government policy and campaign in the field of standardization and certification process connecting with solid biofuel producers was also indicated.

5. Results of discussion of feedback collection with national mirror committee

The feedback collection was discussed with the National Institute for Standardisation (BDS) - CEN/TC-member.

The meeting with the representatives of BDS was held on 6th March 2013 in Sofia. The participant list includes the following representatives of the National Institute for Standardisation:

Ms. Bojidarka Haralampieva – Chief of the Department Construction, Structures and Materials to the Directorate standardization.

Ms. Ekaterina Slavova – Secretary of the Department Construction, Structures and Materials to the Directorate standardization.

The main discussion was connected with the high level and quality of the SolidStandards training, the need from implementation of all European standards for solid biofuel in the market, quality of sustainable certification schemes and sustainability and general policy of the government in the field of establishment of mechanisms and instruments for adopting of standards for national industry.

6. Summary of national industry needs

The implementation of the international standards for industry in Bulgaria can be a very good opportunity from national point of view connected with the market conditions and development and sustainability in the field of solid biofuels production, transport and logistics.

The main conclusions are as follows:

- Need for establishment of certification organisations which can make the process of standardisation in Bulgaria.
- The parliament and government support in the field of establishment of low framework in the solid biofuels market including measures for standardisation and certification.
- Overcome of normative, financial and political barriers for standardisation and certification process in Bulgaria.
- Active participation of Bulgarian Institute for Standardisation (BDS) in the current EU standards implementation and the next standards acceptance and approval in the future.
- Creating of dissemination activities on national and regional level which will support the market players.