



SolidStandards

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



**D6.1f
National Industry
Position Paper
Lithuania**



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

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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 *Lithuania*.

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

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 Lithuania

1.1. General description of the market

The total electricity consumption of Lithuania is ~ 10 TWh, total heat consumption – 20 TWh. Around 50 % of heat is produced in district heating and the other 50 % is produced in private households, public buildings, i.e. objects not connected to the district heating.

Electricity from renewable energy in 2011 had ~ 12 % of the market share, out of which ~ 4 % was produced from hydro energy, ~ 4 % - from wind and ~ 4 % from biomass/biogas. The bigger part, ~ 88 % of electricity was imported: ~ 8 % from the EU, and ~ 80 % from the Russian Federation.

District heating utilized from renewable energy in a form of solid biomass (wooden chips, firewood, straw and wood pellets,) ~ 27 % of the market share, and in private households ~ 80 % of the market share (mainly in a form of firewood, wood briquettes, wood and straw pellets). Other 73 % of the district heating market share was produced from non renewable energy, major part being natural imported gas (2012 data).

Type of organization active on market	Estimate number of companies active on market	Comments
Solid biofuel producers	~ 50	
Solid biofuel trader and/or logistics providers	~ 50	
Solid biofuel users: small-medium sized (< 1 MW)	29	<i>Not connected to DH users</i>
Solid biofuel users: large scale (> 1 MW)	75	<i>Connected to DH users – 29 Not connected to DH users - 46</i>
Consumer association [name]	Lithuanian District Heating Association	<i>President Mr. V. Stasiunas</i>
Industrial association [name]	Lithuanian Biomass Energy Association LITBIOMA	<i>President Mr. Remigijus Lapinskas</i>
Combustion, gasification or fuel production equipment manufacturers	~ 10	
Certification, inspection or testing bodies	5	
Laboratory / Research organization	3	

Remark: It is possible that a company is active in more than one type of the industry segment

1.2. General figures of the market

Annual turnover and production volumes for each type of solid biofuels

Only aggregated data is available, therefore the information will be presented as follows:

Production turnover of solid biofuels in Lithuania (2012)

District heating for heat production – wooden chips, sawdust, firewood – 46 413 200,88 EUR

District heating for heat production - straw – 498 725,67 EUR

District heating for electricity production - wood chips – 14 082 483,78 EUR

* Counting average price 750 Lt, i.e. 217,21 EUR / toe (ton of oil equivalent)

Production volumes for solid biofuels in Lithuania (2012):

District heating for heat production – wooden chips, sawdust, firewood - 213674 toe (x5.8) – 1 239 309,2 t

District heating for heat production - straw - 2296 toe (x5.8) – 13 316,8 t

District heating for electricity production - wood chips - 64832 toe (x5.8) – 376 025,6 t

Annual turnover and bioenergy production for bioenergy plants

District heating bioenergy plants and their installed capacity in Lithuania:

Nr.	Heating producers	Installed capacity of biofuel plants	Installed capacity of condensing economizers
		MW	MW
1	"Vilniaus energija"	62,4	18,3
2	"Kauno energija"	14,8	4,5
3	"Litesko"	73,1	6,4
4	"Panevėžio energija"	45,5	5,3
5	"Šiaulių energija"	27,0	8,2
6	"Utenos šilumos tinklai"	18,0	2,5
7	"E energija"	11,5	3,2
8	"Mažeikių šilumos tinklai"	36,0	6
9	"Jonavos šilumos tinklai"	3,1	2,8
10	"Šilutės šilumos tinklai"	19,5	2,7
11	"Tauragės šilumos tinklai"	22,7	7

Nr.	Heating producers	Installed capacity of biofuel plants	Installed capacity of condensing economizers
		MW	MW
12	"Plungės šilumos tinklai"	7,8	
13	"Radviliškio šiluma"	14,2	3,9
14	"Varėnos šiluma"	19,1	
15	"Izobara"	23,6	
16	"Raseinių šilumos tinklai"	14,8	
17	"Kaišiadorių šiluma"	6,5	
18	"Fortum Švenčionių energija"	8,5	
19	"Anykščių šiluma"	1,4	
20	"Ignalinos šilumos tinklai"	17,9	1,7
21	"Fortum Joniškio energija"	1,0	1,2
22	"Širvintų šiluma"	7,7	2,4
23	"Molėtų šiluma"	11,7	1,7
24	"Birštono šiluma"	4,0	
25	"Šakių šilumos tinklai"	3,8	
26	"Šilalės šilumos tinklai"	11,3	
27	"Pakruojo šiluma"	2,3	0,6
28	"Lazdijų šiluma"	9,6	
29	"Komunalinių paslaugų centras"	2,0	
	Total	501,0	78,4

In 2012 turnover of the district heating bioenergy producers was ~ 1, 989 billion Lt (~ 576 000 000 EUR).

Not connected to district heating bioenergy plants and their installed capacity in Lithuania:

Nr.	Heating producers	Installed capacity of biofuel plants (MW)
1.	„Simega“	28,7
2.	„Kretingos šilumos tinklai“	19,6
3.	„Nemenčinės komunalininkas“	0,6
4.	„Skuodo šiluma“	5,4
5.	„KRM“	3,8
6.	„Klaipėdos mediena“	14
7.	„Tauragės Tauras“	0,6
8.	Kėdainių urėdija	0,7
9.	„Pakiršinės katilinė“	3
10.	„Kauno medis“	2,4
11.	Raseinių urėdija	0,6
12.	Biržų urėdija	4,8
13.	„Narbutas ir Co“	0,5
14.	„Vestransa“	0,5
15.	„Utenos elektrotechnika“	4
16.	Sasnavos katilinė	0,5
17.	„Jonavos energetika“	1,5
18.	„Alytaus namai“	1,5
19.	„Girių bizonas“	5
20.	„Šeduvos komunalininkas“	1,5
21.	„Kupiškio Simega“	2
22.	„Grigiškės“	3,5
23.	„Pajūrio mediena“	64
24.	Kvėdama šilalės rajonas	2
25.	„Utenos duona“	0,4
26.	„Panevėžio linai“	0,3

Nr.	Heating producers	Installed capacity of biofuel plants (MW)
27.	A.Jasevičiaus ind. įm. Rumšiškės	0,35
28.	Šilumos vid. m-klos katil.	1,28
29.	„Plungės bioenergija“	28
30.	Salantų katilinė	0,6
31.	Ūkininkas, Kėdainiai	0,64
32.	Rūdiškių katilinė	4
33.	Energijos problemų institutas	0,5
34.	Vilkyčiai, Šilutės raj.	5
35.	Didžiasalio katilinė	3
36.	Matuizų plytinė	6,5
37.	Vidmantų kat. Kretingos r.	1,28
38.	Rietavo katilinė	2,5
39.	Kretingos RK. Nr.2	20
40.	„Girių bizonas“	0,32
41.	„Kauno baldai“	1,2
42.	„Liepsna“	2
43.	Pagirių šiltnamiai	10
44.	Krekenavos katilinė	2
45.	Kačerginės vaikų sanat.	0,6
46.	Juodupė, Rokiškio raj.	0,5
47.	Viekšnių šiluma ir vand.	2
48.	Sangrūda Kalvarijos komun.	0,32
49.	„KRM“	0,3
50.	„Multimeda“, Radviliškis	2
51.	„Jūrės medis“, Jūrė	3
52.	„Nilma“, Kaunas	2

Nr.	Heating producers	Installed capacity of biofuel plants (MW)
53.	„Guodra“	0,8
54.	„Gijus“, Šiauliai	1
55.	„Ukmergės baldai“	3
56.	Daugų ŽŪM, Daugai	1,7
57.	„Vilmakas“	2,8
58.	„Lumberlita“	1
59.	„Vilniaus baldų kombinatas“	6
60.	„Klaipėdos baldai“	3,6
61.	„VVARF“, Plungė	0,65
62.	„Akadas“	0,7
63.	„Skimuva“	2,8
64.	„Alkesta“	2,8
65.	„Litoda“	0,65
66.	„Sakuona“ Klaipėdos raj.	4
67.	„Vilbaldas“	2,5
68.	Kazlų rūdos miškų urėdija	0,8
69.	Jurbarko miškų urėdija	0,5
70.	Viešvilės ŽŪM	0,5
71.	Smalininkų A.ŽŪM	0,5
72.	„Ortas“	0,5
73.	„Lota“	0,5
74.	„Savy“	0,5
75.	Strūnos pensionatas	1
	Total	310,1

**Small-medium sized (<1 MW) heat producers are highlighted in blue colour.*

Total installed capacity of bioenergy plants in Lithuania is 811 MW.

Solid biofuels market share regarding the renewable energy production in Lithuania for electricity is ~ 1/3 (~ 33 %), for heating - ~ 95 %.

Solid biofuels market share regarding the total energy production in Lithuania for electricity is ~ 4 % and heating regarding district heating is ~ 27 % and regarding the private households ~ 80 % of the market share.

2. Standardisation activities

2.1. National standardisation activities

In Lithuania there is one national mirror committee - Lithuanian standards board (LST). It was established by the Resolution No. 125 of 25 April 1990 of the Lithuanian Government. Lithuanian Standards Board is the budgetary institution of public administration functioning as National Standards Body (NSB) and within its competence taking part in establishing and implementing the policy of the Government of Lithuania within the standardisation field, carrying out other functions provided by the Laws and other legal acts of Lithuania and taking active part in the activities of international and European standardisation organizations by representing interests of Lithuanian economy.

LST develops and improves national standardisation system, sets up technical committees for the preparation of Lithuanian standards and other publications as well as coordinates their preparation, establishes procedures for the adoption of international, European and foreign standards as Lithuanian standards, adopts, publishes and distributes Lithuanian standards and other publications applied on a voluntary basis, seeks that copyright of International and European standards is not infringed in Lithuania, provides information on standards, technical regulations and legal acts on conformity assessment procedures valid in Lithuania and their drafts.

LST implements Lithuanian standards program, participates in implementation of European Union directives. Activities of technical committees are based on the consensus principle, i.e. interested parties (producers, consumers and representatives of state, scientific and public organizations) make decisions by consensus. Standardisation Council deals with strategical and inter-branch standardisation matters.

LST participates in the implementation of quality management system in accordance with ISO 9001 standard.

There are following units within LST:

- Standardization Division,
- Planning, proofreading and publishing Division,
- Information Division,
- Accounting and Administration Division,
- Standards Library.

Technical committees assist in the implementation of Lithuanian standards program through the preparation of Lithuanian standards and other publications. Technical committee 71 (LSTTK 71) is responsible for the standardisation of solid biofuels. This committee is working within the scope of sustainably produced biomass, solid biofuels and solid recovered fuels for energy applications. The objectives of LSTTK 71 are:

- standardisation of solid biofuels and solid recovered fuels terminology, technical requirements, sampling and sample preparation methods;
- standardisation of biomass terminology, technical requirements and assessment measures for evaluation of renewable energy sources` compliance to sustainability criteria set in the Directive 2009/28/EC.

So far, regarding solid biofuels in Lithuania, there are 69 national and adopted European standards. More information about these standards will be provided in the following chapter.

2.2. National standards

Regarding solid biofuels standardisation in Lithuania, there was only one standard adopted by LST, namely LST 1986:2007 - Solid fuel - Fuel peat. This standard determines peat that is used for fuel and peat briquettes technical requirements, methods for the determination of its qualities and technical supply conditions. Other standards were adopted for Lithuania from the Committee for European Standardisation (CEN). Basically, they cover:

- Solid biofuels terminology, definitions and descriptions, methods for the determination of solid biofuels qualities, fuel specifications and classes, sampling and sample preparation, fuel quality assurance and conversion of analytical results from one basis to another;
- Solid recovered fuels terminology, definitions and descriptions, methods for the determination of solid recovered fuels qualities, fuel specifications and classes and quality management systems.
- Sustainability criteria for the production of biofuels and bioliquids for energy applications.

All these standards involve no obligation at national level.

National and adopted European standards regarding solid biofuels in Lithuania:

LST 1986:2007	Solid fuel - Fuel peat
LST CEN/TR 15404:2011	Solid recovered fuels - Methods for the determination of ash melting behaviour by using characteristic temperatures
LST CEN/TS 15149-3:2006	Solid biofuels - Methods for the determination of particle size distribution - Part 3: Rotary screen method
LST CEN/TS 15370-1:2007	Solid biofuels - Method for the determination of ash melting behaviour - Part 1: Characteristic temperatures method
LST CEN/TS 15401:2010	Solid recovered fuels - Determination of bulk density
LST CEN/TS 15405:2010	Solid recovered fuels - Determination of density of pellets and briquettes
LST CEN/TS 15406:2010	Solid recovered fuels - Determination of bridging properties of bulk material
LST CEN/TS 15412:2010	Solid recovered fuels - Methods for the determination of metallic aluminium
LST CEN/TS 15414-1:2010	Solid recovered fuels - Determination of moisture content using the oven dry method - Part 1: Determination of total moisture by a reference method
LST CEN/TS 15414-2:2010	Solid recovered fuels - Determination of moisture content using the oven dry method - Part 2: Determination of total moisture content by a simplified method
LST CEN/TS 15639:2010	Solid recovered fuels - Determination of mechanical durability of pellets
LST EN 14588:2011	Solid biofuels - Terminology, definitions and descriptions
LST EN 14774-1:2010	Solid biofuels - Determination of moisture content - Oven dry method - Part 1: Total moisture - Reference method
LST EN 14774-2:2010	Solid biofuels - Determination of moisture content - Oven dry method - Part 2: Total moisture - Simplified method

LST EN 14774-3:2010	Solid biofuels - Determination of moisture content - Oven dry method - Part 3: Moisture in general analysis sample
LST EN 14775:2010	Solid biofuels - Determination of ash content
LST EN 14778:2011	Solid biofuels - Sampling
LST EN 14780:2011	Solid biofuels - Sample preparation
LST EN 14918:2010	Solid biofuels - Determination of calorific value
LST EN 14961-1:2010	Solid biofuels - Fuel specifications and classes - Part 1: General requirements
LST EN 14961-2:2011	Solid biofuels - Fuel specifications and classes - Part 2: Wood pellets for non-industrial use
LST EN 14961-3:2011	Solid biofuels - Fuel specifications and classes - Part 3: Wood briquettes for non-industrial use
LST EN 14961-4:2011	Solid biofuels - Fuel specifications and classes - Part 4: Wood chips for non-industrial use
LST EN 14961-5:2011	Solid biofuels - Fuel specifications and classes - Part 5: Firewood for non-industrial use
LST EN 14961-6:2012	Solid biofuels - Fuel specifications and classes - Part 6: Non-woody pellets for non-industrial use
LST EN 15103:2010	Solid biofuels - Determination of bulk density
LST EN 15104:2011	Solid biofuels - Determination of total content of carbon, hydrogen and nitrogen - Instrumental methods
LST EN 15105:2011	Solid biofuels - Determination of the water soluble chloride, sodium and potassium content
LST EN 15148:2010	Solid biofuels - Determination of the content of volatile matter
LST EN 15149-1:2011	Solid biofuels - Determination of particle size distribution - Part 1: Oscillating screen method using sieve apertures of 1 mm and above
LST EN 15149-2:2011	Solid biofuels - Determination of particle size distribution - Part 2: Vibrating screen method using sieve apertures of 3,15 mm and below
LST EN 15150:2012	Solid biofuels - Determination of particle density
LST EN 15210-1:2010	Solid biofuels - Determination of mechanical durability of pellets and briquettes - Part 1: Pellets
LST EN 15210-2:2011	Solid biofuels - Determination of mechanical durability of pellets and briquettes - Part 2: Briquettes
LST EN 15234-1:2011	Solid biofuels - Fuel quality assurance - Part 1: General requirements
LST EN 15234-2:2012	Solid biofuels - Fuel quality assurance - Part 2: Wood pellets for non-industrial use
LST EN 15234-3:2012	Solid biofuels - Fuel quality assurance - Part 3: Wood briquettes for non-industrial use
LST EN 15234-4:2012	Solid biofuels - Fuel quality assurance - Part 4: Wood chips for non-industrial use
LST EN 15234-5:2012	Solid biofuels - Fuel quality assurance - Part 5: Firewood for non-industrial use
LST EN 15234-6:2012	Solid biofuels - Fuel quality assurance - Part 6: Non-woody pellets for non-industrial use
LST EN 15289:2011	Solid biofuels - Determination of total content of sulfur and chlorine
LST EN 15290:2011	Solid biofuels - Determination of major elements - Al, Ca, Fe, Mg, P, K, Si, Na and Ti
LST EN 15296:2011	Solid biofuels - Conversion of analytical results from one basis to another
LST EN 15297:2011	Solid biofuels - Determination of minor elements - As, Cd, Co, Cr, Cu, Hg, Mn, Mo, Ni, Pb, Sb, V and Zn
LST EN 15357:2011	Solid recovered fuels - Terminology, definitions and descriptions
LST EN 15358:2011	Solid recovered fuels - Quality management systems - Particular requirements for their application to the production of solid recovered fuels
LST EN 15359:2012	Solid recovered fuels - Specifications and classes
LST EN 15400:2011	Solid recovered fuels - Determination of calorific value
LST EN 15402:2011	Solid recovered fuels - Determination of the content of volatile matter
LST EN 15403:2011	Solid recovered fuels - Determination of ash content
LST EN 15407:2011	Solid recovered fuels - Methods for the determination of carbon (C), hydrogen (H) and nitrogen (N) content
LST EN 15408:2011	Solid recovered fuels - Methods for the determination of sulphur (S), chlorine (Cl),

	fluorine (F) and bromine (Br) content
LST EN 15410:2011	Solid recovered fuels - Methods for the determination of the content of major elements (Al, Ca, Fe, K, Mg, Na, P, Si, Ti)
LST EN 15411:2011	Solid recovered fuels - Methods for the determination of the content of trace elements (As, Ba, Be, Cd, Co, Cr, Cu, Hg, Mo, Mn, Ni, Pb, Sb, Se, Tl, V and Zn)
LST EN 15413:2011	Solid recovered fuels - Methods for the preparation of the test sample from the laboratory sample
LST EN 15414-3:2011	Solid recovered fuels - Determination of moisture content using the oven dry method - Part 3: Moisture in general analysis sample
LST EN 15415-1:2011	Solid recovered fuels - Determination of particle size distribution - Part 1: Screen method for small dimension particles
LST EN 15415-2:2012	Solid recovered fuels - Determination of particle size distribution - Part 2: Maximum projected length method (manual) for large dimension particles
LST EN 15415-3:2012	Solid recovered fuels - Determination of particle size distribution - Part 3: Method by image analysis for large dimension particles
LST EN 15440:2011	Solid recovered fuels - Methods for the determination of biomass content
LST EN 15440:2011/AC:2011	Solid recovered fuels - Methods for the determination of biomass content
LST EN 15442:2011	Solid recovered fuels - Methods for sampling
LST EN 15443:2011	Solid recovered fuels - Methods for the preparation of the laboratory sample
LST EN 15590:2011	Solid recovered fuels - Determination of the current rate of aerobic microbial activity using the real dynamic respiration index
LST EN 16126:2012	Solid biofuels - Determination of particle size distribution of disintegrated pellets
LST EN 16127:2012	Solid biofuels - Determination of length and diameter of pellets
LST EN 16214-1:2012	Sustainability criteria for the production of biofuels and bioliquids for energy applications - Principles, criteria, indicators and verifiers - Part 1: Terminology
LST EN 16214-3:2012	Sustainability criteria for the production of biofuels and bioliquids for energy applications - Principles, criteria, indicators and verifiers - Part 3: Biodiversity and environmental aspects related to nature protection purposes
LST EN 16214-4:2013	Sustainability criteria for the production of biofuels and bioliquids for energy applications - Principles, criteria, indicators and verifiers - Part 4: Calculation methods of the greenhouse gas emission balance using a life cycle analysis approach

2.3. Uptake of European standards

CURRENT application of European standards by the participants of trainings:

Terminology standards "Terminology - EN 14588: Solid biofuels – Terminology, definitions and descriptions" are used by 35 participants:

Fuel specification and classes standards are used by 27 participants:

- 27 participants apply "Fuel specification and classes - EN 14961-1: Solid biofuels – Fuel specifications and classes – Part 1: General requirements" standard
- 18 participants apply "Fuel specification and classes - EN 14961-2: Solid biofuels – Fuel specifications and classes – Part 2: Wood pellets for non-industrial use" standard
- 1 participant applies "Fuel specification and classes - EN 14961-3: Solid biofuels – Fuel specifications and classes – Part 3: Wood briquettes for non-industrial use" standard
- 2 participants apply "Fuel specification and classes - EN 14961-4: Solid biofuels – Fuel specifications and classes – Part 4: Wood chips for non-industrial use" standard
- 1 participant applies "Fuel specification and classes - EN 14961-6: Solid biofuels – Fuel specifications and classes – Part 6: Non-woody pellets for non-industrial use" standard

Quality assurance standards are used by 6 participants:

- 6 participants apply "Quality assurance - EN 15234-1: Solid biofuels – Fuel quality assurance – Part 1: General requirements" standard
- 3 participants apply "Quality assurance - EN 15234-2: Solid biofuels – Fuel quality assurance – Part 2: Wood pellets for non-industrial use" standard
- 1 participant applies "Quality assurance - EN 15234-6: Solid biofuels – Fuel quality assurance – Part 6: Non-woody pellets for non-industrial use" standard

Physical and mechanical properties standards are used by 2 participants:

- 2 participants apply "Physical and mechanical properties - EN 14774-1: Solid biofuels – Determination of moisture content – Oven dry method – Part 1: Total moisture – Reference method" standard
- 1 participant applies "Physical and mechanical properties - EN 14775: Solid biofuels – Determination of ash content" standard
- 1 participant applies "Physical and mechanical properties - EN 14918: Solid biofuels – Determination of calorific value" standard
- 1 participant applies "Physical and mechanical properties - EN 15103: Solid biofuels – Determination of bulk density" standard

Sampling, sample preparation and Chemical properties standards at the moment are not used by any of the trainings participants.

In the FUTURE trainings participants are probably going to apply:

Terminology standards "Terminology - EN 14588: Solid biofuels – Terminology, definitions and descriptions" - 4 participants:

Fuel specification and classes standards - 16 participants:

- 16 participants are probably going to apply "Fuel specification and classes - EN 14961-1: Solid biofuels – Fuel specifications and classes – Part 1: General requirements" standard
- 3 participants are probably going to apply "Fuel specification and classes - EN 14961-2: Solid biofuels – Fuel specifications and classes – Part 2: Wood pellets for non-industrial use" standard
- 2 participants are probably going to apply "Fuel specification and classes - EN 14961-3: Solid biofuels – Fuel specifications and classes – Part 3: Wood briquettes for non-industrial use" standard
- 4 participants are probably going to apply "Fuel specification and classes - EN 14961-4: Solid biofuels – Fuel specifications and classes – Part 4: Wood chips for non-industrial use" standard
- 10 participants are probably going to apply "Fuel specification and classes - EN 14961-6: Solid biofuels – Fuel specifications and classes – Part 6: Non-woody pellets for non-industrial use" standard

Quality assurance standards - 8 participants:

- 8 participants are probably going to apply "Quality assurance - EN 15234-1: Solid biofuels – Fuel quality assurance – Part 1: General requirements" standard
- 4 participants are probably going to apply "Quality assurance - EN 15234-2: Solid biofuels – Fuel quality assurance – Part 2: Wood pellets for non-industrial use" standard
- 3 participants are probably going to apply "Quality assurance - EN 15234-4: Solid biofuels – Fuel quality assurance – Part 4: Wood chips for non-industrial use" standard

- 8 participants are probably going to apply "Quality assurance - EN 15234-6: Solid biofuels – Fuel quality assurance – Part 6: Non-woody pellets for non-industrial use" standard

Sampling and sample preparation standards – 4 participants:

- 4 participants are probably going to apply "Sampling and sample preparation - EN 14778: Solid biofuels – Sampling" standard
- 4 participants are probably going to apply "Sampling and sample preparation - EN 14780: Solid biofuels – Sample preparation" standard

Physical and mechanical properties standards – 4 participants:

- 2 participants are probably going to apply "Physical and mechanical properties - EN 14774-1: Solid biofuels – Determination of moisture content – Oven dry method – Part 1: Total moisture – Reference method" standard
- 2 participants are probably going to apply "Physical and mechanical properties - EN 14774-2: Solid biofuels – Determination of moisture content – Oven dry method – Part 2: Total moisture – Simplified method" standard
- 2 participants are probably going to apply "Physical and mechanical properties - EN 14774-3: Solid biofuels – Determination of moisture content – Oven dry method – Part 3: Moisture in general analysis sample" standard
- 3 participants are probably going to apply "Physical and mechanical properties - EN 14775: Solid biofuels – Determination of ash content" standard
- 3 participants are probably going to apply "Physical and mechanical properties - EN 14918: Solid biofuels – Determination of calorific value" standard
- 4 participants are probably going to apply "Physical and mechanical properties - EN 15103: Solid biofuels – Determination of bulk density" standard
- 1 participant is probably going to apply "Physical and mechanical properties - EN 15148: Solid biofuels – Determination of the content of volatile matter" standard
- 2 participants are probably going to apply "Physical and mechanical properties - EN 15210-1: Solid biofuels – Determination of mechanical durability of pellets and briquettes – Part 1: Pellets" standard
- 2 participants are probably going to apply "Chemical properties - EN 15289: Solid biofuels – Determination of total content of sulfur and chlorine" standard

Chemical properties standards "Chemical properties - EN 15289: Solid biofuels – Determination of total content of sulfur and chlorine" are probably going to be applied by 4 participants.

3. Certification activities

Description of applied certification systems for biofuels

In 2012 European Pellet Council (EPC) awarded association LITBIOMA with the exclusive right to license Lithuanian companies with ENplus brand. This is the only certification scheme implemented in Lithuania. So far, two companies have been ENplus certified – „Baltwood“ Ltd and „Granulita“ Ltd.

Association LITBIOMA considers ENplus certification system to be very important, however so far the certification process in Lithuania is rather slow.

Description of be players involved in the development and/or use certification of biofuels

LITBIOMA as a national association managing Enplus certification system in Lithuania is one of the main players involved in the development of this certification scheme. In order to strengthen

the strategically important heat and electricity production and biofuel market in Lithuania, the association is actively collaborating with various public institutions, providing help to its members and safeguarding their interests.

First producers that are certified in Lithuania with ENplus:

“Baltwood” Ltd is a part of „Grigiškės“ group of companies. It was established in year 2003 as a manufacturer of wooden pallets. Today the main company products include solid wood panels, sawn timber, wooden pallets, biofuel pellets and garden sheds. The company processes up to 100,000 m³ of softwood per year, the products are sold in domestic and foreign markets.

“Granulita” Ltd is a wood pellets producer, with annual production of up to 50 000 t. Today the main aim of the company is to produce ecological highest quality fuel, which is produced with the lowest possible costs.

Description of the relation to national legislation

Wood pellets standards set in the En plus certification system are European standards also adopted by LST. These standards are:

- *Solid biofuels - Fuel specifications and classes - Part 2: Wood pellets for non-industrial use*
- *Solid biofuels - Fuel quality assurance - Part 2: Wood pellets for non-industrial use*

Developments and expectations in the field of certification

As En plus quality certification system with time receives more interest, association LITBIOMA is expecting that the certification process will be accelerated. Furthermore, due to solid biofuels standards and certification systems becoming more and more recognized, it is also expected that other certification systems will also be implemented in Lithuania.

Applied sustainability certification schemes

The same En plus quality certification includes sustainability aspects of wood pellets.

4. Standardisation and certification needs

4.1. Feedback collection about standards for transport/storage

Application of standards about transport/storage (now or expected in the future)

The questionnaires did not contain a question particularly oriented in trainings participants' application of transport/storage standards.

Awareness of (other) existing standards

According to the feedback from the questionnaires 21 out of 74 trainings participants knew Austrian standard ÖNORM M 7136 on pellet transport and storage, however only 1/3 (7) of them thought that this kind of standard is also needed in Lithuania or at EU level.

36 trainings participants knew certification systems (e.g., offered by German DINCERTCO or EN plus) for pellet logistics and transport companies, 26 of them thought that this kind of certification would also be needed in Lithuania or at EU level.

17 trainings participants knew Austrian standard ÖNORM M 7137 on pellet storage silos and storage rooms for small end-users, 6 of them thought that this kind of standard is also needed in Lithuania or at EU level.

16 trainings participants knew certification systems (e.g. offered by German DINCERTCO) for pellet storage rooms and silos for small end-users, 10 of them thought that this kind of certification is also needed in Lithuania or at EU level.

Potential need for European standards for quality, safety, security and health aspects

50 trainings participants believe that there should be standards on health and security aspects for pellet storage at the end-users. 26 of them indicated that the risks may occur within dust explosion, 20 - off-gassing or self-ignition and 14 as one of the risks indicated fungi spores. 12 participants said that such standards are not needed.

9 participants indicated that similar initiatives are also needed for wood chips, 7 – for firewood and 6 - for non-woody fuels.

4.2. Feedback collection per type of biomass

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

Out of 74 trainings participants almost half of them (36, i.e. 48 %) are dealing with wood pellets.

25 out of these participants indicated that the classification system in EN 14961-1 is useful for the description of the quality of the pellets.

31 (i.e. 86 %) of all trainings participants dealing with wood pellets indicated that fuel specifications according to EN 14961-2 match the needs of the market.

33 (i.e. 94 %) of 35 participants who answered the question about the requirements (threshold values) defined in EN 14961-2 indicated that they agree with it.

When asked about the quality classes for wood pellets 29 (i.e. 80 %) participants indicated that three classes are enough, 5 (i.e. 13 %) participants indicated that three classes are too few and 2 (i.e. 5 %) participants indicated that three classes for wood pellets are too many.

26 (i.e. 76,5 %) of 33 participants who answered the question about the usefulness of integrated quality assurance system for production, trade and delivery of pellets (as defined in EN 15234-2) indicated that it is useful. With its necessity did not agree 8 (i.e. 23,5 %) of the trainings participants.

32 (i.e. 88,9 %) out of these 36 participants indicated that fuel quality assurance according to EN 15234-2 is realizable, whereas 4 (i.e. 11,1 %) participants indicated that it is not realizable.

For wood briquettes

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

2 respondents out of 74 trainings participants indicated that they are dealing with wood briquettes.

When asked whether there should be separate requirements in EN 14961-3, enabling the classification of bark briquettes (ash content > 3 % necessary) both of them agreed with it.

Both participants also agreed that the N-content of Class B with 1% (EN 14961-3) is fine.

1 of the participants thought that if chemically untreated material is used (classes A1 and A2 of EN 14961-3) there should not be threshold values for heavy metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn).

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*

21 respondents out of 74 trainings participants indicated that they are dealing with wood chips.

When asked about the future ISO 17225-1 all or almost all 21 trainings participants agreed with all suggested combinations (i.e. including only one property table for wood chips and hog fuel and stating only the traded form separately; including only one particle size table for wood chips for industrial use (acc. to EN 14961-1) and wood chips for non-industrial use (acc. to EN 14961-4); proposed particle sizes for inclusion in the future ISO 17225-1 standard on fuel specifications of wood chips: P16, P31, P45, P63, P100 and P300).

Also, 20 (i.e. 95,2 %) participants dealing with wood chips indicated that there should not be separate particle size requirements for forest chips (needles, increased amount of fines), stem wood or industrial wood residues and used wood. 20 participants also thought that a specific maximum length of particles cannot be produced and guaranteed with the raw material “forest residues” and “whole trees”.

When asked whether there should be the property class for fines like F25+, ≥ 25 % fines (< 3,15 mm), to be able to classify e.g., forest residues 10 (i.e. 47,6 %) participants indicated that it is needed and 11 (i.e. 52,4 %) – that it is not.

2/3 (14, i.e. 66,7 %) of all trainings participants dealing with wood chips indicated that a maximum cross sectional area in EN 14961-1 is needed, 1/3 – that it is not necessary. A bit more, 15 (i.e. 75 %) participants indicated that it is needed in EN 14961-4.

The majority of the participants dealing with wood chips (19, i.e. 90,5 %) also indicated that to have net calorific value as received as a normative property is useful.

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*

None of the trainings participants are dealing with firewood.

Non-woody pellets

- *EN 14961-6, Fuel specification and classes-Part 6: Non-woody pellets for non industrial use*
- *EN 15234-6, Fuel quality assurance - Part 6: Non-woody pellets for non-industrial use*

18 (i.e. 24,3%) respondents out of 74 trainings participants indicated that they are dealing with non-woody pellets.

The major part - 13 (i.e. 72,2 %) out of these 18 participants indicated that three raw material type classes (cereal straw pellets, miscanthus pellets, reed canary grass pellets) for non-woody pellets are enough.

2/3 (12, i.e. 66,7 %) participants indicated that the maximum amount of additives in case the raw material for pellet is blend in EN 14961-1 or EN 14961-6 should be stated and almost all participants (17, i.e. 94,4 %) indicated that EN 14961-1 or EN 14961-6 should also state what kind of additives are not allowed.

10 (i.e. 58,8 %) participants who are dealing with non-woody pellets agreed that parameters regarding impurities assessment (e.g., soil) should be included.

Almost all participants (17, i.e. 94,4 %) indicated that fuel quality assurance according to EN 15234-6 is feasible. However, only 8 (i.e. 44,4 %) indicated that they intend to implement EN 14961-6 and 15234-6.

Straw

- *EN 14961-1, Fuel specification and classes - Part 1: General requirements*
- *EN 15234-1, Solid biofuels - Fuel quality assurance - Part 1: General requirements*

2 out of 3 participants (i.e. 66,7 %) indicated that straw quality assurance system matches the needs of the market.

4.3. Feedback collection about quality certification

According to the feedback from the questionnaires out of all mentioned quality standards and quality certification schemes (EN 14961-2, ÖNorm M 7135, DIN plus, EN plus, etc.) 2 trainings participants indicated that they are already using EN plus certification scheme.

When indicating the importance of these quality standards and quality certification schemes the votes were distributed very similarly: 23 points for both EN 14961-2 and ÖNorm M 7135, 25 points for DIN plus and EN plus quality standards and quality certification schemes. However, when taking a look at the median it can be seen that EN 14961-2 and ÖNorm M 7135 were valued 3 points, DIN plus – 4 points and the highest 5 points numerical value, which means that more points were given for higher (i.e. very important) position was given to EN plus certification scheme.

4.4. Other standardisation and certification needs

Trainings participants did not provide any other standardisation needs existing in this field.

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

There was no possibility to discuss the feedback from the trainings with the national mirror committee.

6. Summary of national industry needs

Lithuanian energy policy places an increasingly great emphasis on the development of renewable energy sources (RES). The development of RES will ensure an attractive alternative to traditional energy because the combustion of fossil energy sources substantially increases environmental pollution and accelerates climate warming, also increasing the severity/frequency of natural disasters. The use of renewable energy sources not only helps to resolve problems of climate change, but also creates conditions to combat poverty and problems of energy and economic exclusion. As it is known, Lithuanian target is to increase the share of renewable energy sources to at least 23 % of the country's final gross energy consumption by year 2020.

With a view to creating more favourable conditions for the development of renewable energy sources in the country, one cannot deny the importance of the standardisation and certification of one of the main RES in Lithuania – solid biofuels. All parties benefit from standardisation through increased product quality as well as lower transactions costs and prices. Besides that, consumers become better informed about their choices, so conformity to recognized standards becomes increasingly important. This is crucial for biomass, because the different quality characteristics determine the amount of electricity that can be produced with the biomass and whether the biomass is suitable for the power plant.

However, despite the understanding of the standardisation and certification importance, it seems that most producers and suppliers in Lithuania still use locally agreed standards which are widely accepted in the “local” markets. A good example of this rather slow change is the uptake of the En plus certification – although the application of this scheme is possible since 2012, so far only two companies have been certified. This could be explained by the fact that standards are voluntary and therefore it takes time for the companies to see a genuine benefit and uptake it by their own volition. Despite that, association LITBIOMA highly encourages gradual progress in belief that, with cooperation of the European Union and all involved countries, the uptake of standards and certification schemes will further accelerate the solid biofuels products safety, which in turn will lead to development of a healthier and more beneficial produce.