

## EU harmonized standards related to solid biofuels

GIZ DKTI programme “Development of a sustainable bioenergy market in Serbia EU” supported the translation of 12 EU harmonized standards related to solid biofuels into Serbian language in order to enable production and utilization of solid biofuels in line with EU best practices.

The priority list of standards related to solid biofuels was created in close cooperation with Institute of Standardization of Serbia.

Established Technical Committee for solid biofuels provided their technical expertise and adequate suggestions regarding terminology related to quality management systems of wood fuels according to the determinations of EN standards, EN plus system of wood fuels (pellets) as well as certification of quality of wood fuels, energy balances, appraisal of operational and investment costs with subsequent economic evaluation.

The standards are published on the website of the Institute of Standardization of Serbia.

### Short review of the published standards related to solid biofuels:

#### 1. SRPS EN 14588:2011 idt EN 14588:2010

Solid biofuels - Terminology, definitions and descriptions

[http://www.iss.rs/standard/?natstandard\\_document\\_id=50685](http://www.iss.rs/standard/?natstandard_document_id=50685)

##### Scope:

This European Standard defines terms concerned in all standardization work within the scope of CEN/TC 335. According to CEN/TC 335 this European Standard is applicable to solid biofuels originating from the following sources: - products from agriculture and forestry; - vegetable waste from agriculture and forestry; - vegetable waste from the food processing industry; - wood waste, with the exception of wood waste which may contain halogenated organic compounds or heavy metals as a result of treatment with wood preservatives or coating, and which includes in particular such wood waste from construction- and demolition waste; - cork waste; - fibrous vegetable waste from virgin pulp production and from production of paper from pulp, if it is co-incinerated at the place of production and heat generated is recovered. The embedding of the scope within the biomass/biofuel field is given in Figure 1. NOTE 1 CEN/TC 335 considers that wood waste, including wood waste originating from construction and demolition waste are included in the scope of CEN/TC 335 and of the scope of the mandate M/298 "solid biofuels", unless they contain halogenated organic compounds or heavy metals as a result of treatment with wood preservatives or coatings [8]. NOTE 2 There are more terms included within this European Standard as covered by the mandate due to clarification and differentiation. NOTE 3 Changes of ownership of the fibrous vegetable waste between paper and pulp company and the operator of the co-incineration plant in which the waste is used does not affect the inclusion of the waste in the scope of mandate M/298. Other standards with a different scope than this European Standard can have different definitions than this standard.

## **2. SRPS EN 14778:2012 idt EN 14778:2011**

Solid biofuels – Sampling

[http://www.iss.rs/standard/?natstandard\\_document\\_id=50683](http://www.iss.rs/standard/?natstandard_document_id=50683)

### Scope:

This European Standard describes methods for preparing sampling plans and certificates and taking samples of solid biofuels, for example, from the place where the raw materials grow, from production plant, from deliveries e.g. lorry loads, or from stock. It includes both manual and mechanical methods, and is applicable to solid biofuels that are either: - fine (particle size up to about 10 mm) and regularly-shaped particulate materials that can be sampled using a scoop or pipe, for example: sawdust, olive stones and wood pellets; - coarse or irregularly-shaped particulate materials, particle sizes up to about 200 mm that can be sampled using a fork or shovel, for example: wood chips and nut shells, forest residue chips, and straw; - baled materials for example: baled straw or grass; - large pieces (particles sizes above 200 mm) which are either picked manually or automatically; - vegetable waste, fibrous waste from virgin pulp production and from production of paper from pulp that has been dewatered; - round wood. It may be possible to use this standard on other solid biofuels. The methods described in this European Standard may be used, for example, when the samples are to be tested for moisture content, ash content, calorific value, bulk density, durability, particle size distribution, ash melting behaviour and chemical composition. The methods are not intended for obtaining the very large samples required for the testing of bridging properties.

## **3. SRPS EN 14780:2012 idt EN 14780:2011**

Solid biofuels - Sample preparation

[http://www.iss.rs/standard/?natstandard\\_document\\_id=50682](http://www.iss.rs/standard/?natstandard_document_id=50682)

### Scope:

This European Standard describes methods for reducing combined samples (or increments) to laboratory samples and laboratory samples to sub-samples and general analysis samples and is applicable to solid biofuels. The methods described in this European Standard may be used for sample preparation, for example, when the samples are to be tested for calorific value, moisture content, ash content, bulk density, durability, particle size distribution, ash melting behaviour, chemical composition, and impurities. The methods are not intended to be applied to the very large samples required for the testing of bridging properties.

## **4. SRPS EN 15234-1:2012 idt EN 15234-1:2011**

Solid biofuels - Fuel quality assurance - Part 1: General requirements

[http://www.iss.rs/standard/?natstandard\\_document\\_id=50681](http://www.iss.rs/standard/?natstandard_document_id=50681)

### Scope:

This European Standard defines the procedures to fulfil the quality requirements (quality control) and describes measures to ensure adequate confidence that the biofuel specification is fulfilled (quality assurance). This European Standard covers the whole chain, from supply

of raw materials to point of delivery to the end-user. According to the mandate given for the standardisation work, the scope of the CEN/TC 335 only includes solid biofuels originating from the following sources: - products from agriculture and forestry; - vegetable waste from agriculture and forestry; - vegetable waste from the food processing industry; - wood waste, with the exception of wood waste which may contain halogenated organic compounds or heavy metal as a result of treatment with wood preservatives or coating, and which includes in particular such wood waste originated from construction and demolition waste; □ fibrous vegetable waste from virgin pulp production and from the production of paper from pulp, if it is co-incinerated at the place of production and heat generated is recovered; □ cork waste. NOTE 1 The quality assurance systems applied to the operation of conversion plants fuelled by solid biofuels are outside the scope of this European Standard. NOTE 2 Health, safety and environmental issues for solid biofuels are important and need special attention, however they are outside the scope of this European Standard. NOTE 3 For the avoidance of doubt, demolition wood is not included in the scope of this European Standard. Demolition wood is defined as “used wood arising from demolition of buildings or civil engineering installations” (EN 14588:2010, 4.52). NOTE 4 The biofuels covered by this European standard are identical to the fuels exempted from the Directive 2000/76/EC [Article 2.2 a) from i) to v)] on incineration of waste. NOTE 5 Aquatic biomass is not included in the scope of this European Standard.

## **5. SRPS EN 15234-2:2012 idt EN 15234-2:2012**

Solid biofuels - Fuel quality assurance - Part 2: Wood pellets for non-industrial use

[http://www.iss.rs/standard/?natstandard\\_document\\_id=50681](http://www.iss.rs/standard/?natstandard_document_id=50681)

### Scope:

This European Standard defines the procedures to fulfil the quality requirements (quality control) and describes measures to ensure adequate confidence that the wood pellet specification described in EN 14961-2 is fulfilled (quality assurance). This European Standard covers the production and delivery chain, from purchasing of raw materials to point of delivery to the end-user. This European standard covers only quality assurance for wood pellets produced from the woody biomasses stated in EN 14961-1:2010, Table 1 and EN 14961-2.

## **6. SRPS EN 15234-3:2012 idt EN 15234-3:2012**

Solid biofuels - Fuel quality assurance - Part 3: Wood briquettes for non-industrial use

[http://www.iss.rs/standard/?natstandard\\_document\\_id=50681](http://www.iss.rs/standard/?natstandard_document_id=50681)

### Scope:

This European Standard defines the procedures to fulfil the quality requirements (quality control) and describes measures to ensure adequate confidence that the wood briquette specification described in EN 14961-3 is fulfilled (quality assurance). This European Standard covers the production and delivery chain, from purchasing of raw materials to point of delivery to the end-user. This European standard covers only quality assurance for wood briquettes produced from the woody biomasses stated in EN 14961-1:2010, Table 1 and EN 14961-3.

## **7. SRPS EN 15234-4:2012 idt EN 15234-4:2012**

Solid biofuels - Fuel quality assurance - Part 4: Wood chips for non-industrial use

[http://www.iss.rs/standard/?natstandard\\_document\\_id=50673](http://www.iss.rs/standard/?natstandard_document_id=50673)

### Scope:

This European Standard defines the procedures to fulfil the quality requirements (quality control) and describes measures to ensure adequate confidence that the wood chips specification for non-industrial use as described in EN 14961-4 is fulfilled (quality assurance). This European Standard covers the raw material supply, production and delivery chain, from purchasing of raw materials to point of delivery to the end-user. This European standard covers only quality assurance for wood chips produced from the woody biomasses stated in EN 14961-1:2010, Table 1 and EN 14961-4.

## **8. SRPS EN 15234-5:2012 idt EN 15234-5:2012**

Solid biofuels - Fuel quality assurance - Part 5: Firewood for non-industrial use

[http://www.iss.rs/standard/?natstandard\\_document\\_id=50672](http://www.iss.rs/standard/?natstandard_document_id=50672)

### Scope:

This European Standard defines the procedures to fulfil the quality requirements (quality control) and describes measures to ensure adequate confidence that specification of firewood described in EN 14961-5 is fulfilled (quality assurance). This European Standard covers the raw material supply, production and delivery chain, from purchasing of raw materials to point of delivery to the end-user. This European standard covers only quality assurance for firewood produced from the woody biomasses stated in EN 14961-1:2010, Table 1 and EN 14961-5.

## **9. SRPS EN 15234-6:2012 idt EN 15234-6:2012**

Solid biofuels - Fuel quality assurance - Part 6: Non-woody pellets for non-industrial use

[http://www.iss.rs/standard/?natstandard\\_document\\_id=50671](http://www.iss.rs/standard/?natstandard_document_id=50671)

### Scope:

This European Standard defines the procedures to fulfil the quality requirements (quality control) and describes measures to ensure adequate confidence that the non-woody pellet specification described in EN 14961-6 is fulfilled (quality assurance). This European Standard covers production and delivery chain, from purchasing of raw materials to point of delivery to the end-user. This European standard covers only quality assurance for non-woody pellets produced from the non-woody biomasses stated in EN 14961-1:2010, Table 1 and EN 14961-6.

## **10. SRPS CEN/TR 15569:2010 idt CEN/TR 15569:2009**

Solid biofuels - A guide for a quality assurance system

[http://www.iss.rs/standard/?natstandard\\_document\\_id=50686](http://www.iss.rs/standard/?natstandard_document_id=50686)

Scope:

This guide has been developed to provide information about the solid biofuel Quality Assurance and presents a methodology that helps operators in the solid biofuels industry design an appropriate Quality Assurance system according to their demands. It acts as a supporting document for the application of the CEN/TS 15234 developed by CEN/TC 335. This guide is applicable for all operators dealing with solid biofuels within the scope of CEN/TC 335 from the following sources (CEN/TS 14961): - products from agriculture and forestry; - vegetable waste from agriculture and forestry; - vegetable waste from food processing industry; - wood waste, with the exception of wood waste which may contain halogenated organic compounds or heavy metals as a result of treatment with wood preservatives or coating, and which includes in particular such wood waste originated from construction and demolition waste; - fibrous vegetable waste from virgin pulp production and from production of paper from pulp, if it is co-incinerated at the place of production and heat generated is recovered; - cork waste.

**11. SRPS EN 16214-3:2013 idt 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

[http://www.iss.rs/standard/?natstandard\\_document\\_id=50132](http://www.iss.rs/standard/?natstandard_document_id=50132)

Scope:

This European Standard only defines procedures, criteria and indicators to provide the required evidence for: - production of raw material in areas for nature protection purposes; - harvesting of raw material from highly biodiverse non-natural grassland; and - cultivation and harvesting on peatland. This European Standard specifies requirements relevant for the provision of evidence by economic operators that the production, cultivation and harvesting of raw materials is in accordance with legal or other requirements concerning the areas mentioned above. This European Standard is applicable to production, cultivation and harvesting of biomass for biofuels and bioliquids production.

**12. SRPS EN 16214-4:2013 idt EN 16214-4:2013**

Sustainability criteria for the production of biofuels and bioliquids for energy applications - Principles, criteria, indicators and verifiers - Part 1: Terminology

[http://www.iss.rs/standard/?natstandard\\_document\\_id=46857](http://www.iss.rs/standard/?natstandard_document_id=46857)

Scope:

This European Standard specifies a detailed methodology that will allow any economic operator in a biofuel or bioliquid chain to calculate the actual GHG emissions associated with its operations in a standardised and transparent manner, taking all materially relevant aspects into account. It includes all steps of the chain from biomass production to the end transport and distribution operations. The methodology strictly follows the principles and rules stipulated in the RED and particularly its Annex V, the EC decision dated 10 June 2010 "Guideline for calculation of land carbon stocks" for the purpose of Annex V to Directive

2009/28/EC (2010/335/EU) [5] as well as any additional interpretation of the legislative text published by the EU Commission. Where appropriate these rules are clarified, explained and further elaborated. In the context of accounting for heat and electricity consumption and surpluses reference is also made to Directive 2004/8/EC [6] on "the promotion of cogeneration based on a useful heat demand in the internal energy market" and the associated EU Commission decision of 21/12/2006 "establishing harmonised efficiency reference values for separate production of electricity and heat" [7]. The main purpose of this standard is to specify a methodology to estimate GHG emissions at each step of the biofuel/bioliquid production and transport chain. The specific way in which these emissions have to be combined to establish the overall GHG balance of a biofuel or bioliquid depends on the chain of custody system in use and is not per se within the scope of this part 4 of the EN 16214 standard. Part 2 of the standard, addresses these issues in detail also in accordance with the stipulations of the RED. Nevertheless, Clause 6 of this part of the standard includes general indications and guidelines on how to integrate the different parts of the chain.