

Sustainability and Quality in Biomass Logistics and Trade Centres (BLTC)

Requirements and benefits for the BLTC



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Sustainability and Quality are at the core of the Biomass Logistics and Trade Centre (BLTC) concept. Biomass Logistic and Trade Centres (BLTCs) are local or regional centres with optimised logistics and trading organisations, where different woody bioenergy products (possibly also heat) are marketed at standardised quality, focusing on the domestic market uptake. It's an innovative business model competitively operating as an intermediary to organise local woody bioenergy value chains between local biomass suppliers and customers of different scales from private households up to large heat and power plants.

Certain sustainability requirements are set by the EU timber regulation for trading wood. In addition voluntary sustainability schemes for forest certification safeguard long-term resource availability and make sustainability claims visible. Quality certification (ENplus and DINplus) and ISO and EN standards for solid wood fuels have been developed. The aim of these is to have a common comparable product and methodology to evaluate quality parameters.

Sustainability

A BLTC operator needs to know where the raw materials are coming from. The wood needs to be sourced legally from sustainably managed forests. In the EU it is a legal requirement, due to the EU timber regulation, to know where the wood comes from, and this applies also to imports. The origin of the raw material may also affect quality of the wood fuels, hence it is good practice to know this.

Sustainability standards define good social, economic and environmental practices. Credible standards have clear and defined objectives agreed upon by stakeholders. There are multiple sustainability standards i.e. FSC® (Forest Stewardship Council®), PEFC (Programme for the Endorsement of Forest Certification), ISO standard for sustainability of solid

biomass and national standards. The certifications based on sustainability standards are better known, **FSC and PEFC certifications for forest management and Chain of Custody** being the most prominent worldwide. A BLTC can be **Chain of Custody (CoC) certified** to ensure the end user that the wood used in the production of wood fuels is coming from certified forests. Chain of Custody standards contain the requirements for sourcing, processing, selling and tracing certified products and raw materials. Credible CoC supports the truthfulness of sustainability claims and labels made on products. CoC is a suitable way for BLTCs to ensure their customers that the raw materials are coming from sustainable sources, bringing credibility to the operation.

Additional information: www.pefc.org www.fsc.org www.iso.org/iso/home/standards.htm

EU Timber regulation

The regulation **counters the trade in illegally harvested timber** and timber products through three key obligations¹:

- 1) It prohibits the placing on the EU market of illegally harvested timber and products derived from such timber;
- 2) It requires EU traders who place timber products on the EU market for the first time to exercise '**due diligence**'. Once on the EU market, **traceability** of timber products through the supply chain needs to be ensured, hence it is compulsory to
- 3) **keep records** of suppliers and customers for a minimum of 5 years.

"In order to recognize good practice in the forestry sectors, certification or other third party verified schemes that include verification of compliance with applicable legislation may be used in the risk assessment procedure" (Recital 19 EU-Timber Regulation).

Benefits of EU Timber regulation

- Prohibits and sanctions illegal wood trade
- Necessary for market access in the EU
- Ensures that wood origin is known and traceable
- Reputation and marketing benefit in Serbia

Additional information: http://ec.europa.eu/environment/forests/timber_regulation.htm

Chain of Custody Certification



Chain of Custody (CoC) refers to all steps in the supply chain that take possession of the certified product, hence ensuring that the end product is coming from certified forests. Chain of Custody allows the producer of wood fuels to use the

product claims on their products, such as the FSC logo. For a BLTC willing to be CoC certified the first step is to have an idea of the certified forest resources in the area. FSC certified forests exist in the target countries, but PEFC forest management certification is at the moment non-existent in the region. If the BLTC has a significant area of certified forests in the area, and wishes to be FSC CoC certified, it should contact an accredited certification body active in the region². The certification body will do an initial audit, and if the BLTC meets the certification requirements it becomes certified. After being certified, the certification body will do audits to the BLTC to ensure that the BLTC is still meeting the criteria.

1. Source: EU-TR leaflet: http://ec.europa.eu/environment/forests/pdf/EUTR_Leaflet_EN.pdf



Main two different certification schemes labels, FSC® and PEFC

Benefits of Chain of Custody Certification

- Customer is ensured of the products legality and sustainability
- Helps in complying with EU timber regulation
- Improves management procedures
- Increases transparency in the supply chain
- Supports access on the international market
- Marketing benefit

Additional information: www.fsc.org www.pefc.org

Quality

Assured quality is at the core of the BLTC concept, and a competitive advantage over other supply chains. To ensure constant good quality, the BLTC needs to take care of quality assurance of the products. Quality standards and product certificates play a significant role in ensuring good constant quality wood fuels. At the moment there are two widely used certification systems in Europe regarding

solid biofuels, ENplus pellets and DINplus pellets. Both certification schemes exist also for briquettes but their uptake is limited. The use of EN and ISO standards is increasing, and are mostly used when measuring properties, in product descriptions and contracts to ensure a standardized methodology and terminology.

ISO and EN standards in solid wood fuels

The **ISO 17225-series** is a collection of standards for solid biofuels. The 17225-1 states the general requirements for raw materials and their origin (i.e. harvesting residues, saw dust, whole tree chips), as well as the general requirements for different types of solid biofuels. The additional parts (2-7) of ISO 17225 are describing in more detail the requirements for different types of solid biofuels. Using the product labelling identified in the ISO 17225 standards is recommended, as it makes the fuel characteristics comparable to other suppliers. These standards are available via national standardisation organisations.

professionals in the business. It sets requirements for the biofuels producer on:

Traceability – ensuring that the origin of the feedstock is known throughout the supply chain for both the type and the geographic origin.

Production requirements – the specification of the biofuel according to ISO 17225 and how to ensure this is met.

Transportation, handling and storage – to maintain the quality of the biofuel during the supply chain.

Fuel analysis and specification – measuring and specifying the biofuel properties.

Product declaration of fuel quality and labelling – the producer ensures in writing the quality and origin of the biofuel in the product declaration given to the customer.



The EN standard 15234-1 “Solid biofuels – Fuel quality assurance – Part 1: General requirements” sets the basic principles in fuel quality assurance for

Benefits of quality standards

- Clear definitions of quality, making competition more transparent
- Clear product descriptions in a standardised manner
- Comparable standardised measurements between market actors
- Standardised quality assurance system

2. List of accreditation bodies for FSC certification <http://www.accreditation-services.com/archives/standards/fsc>



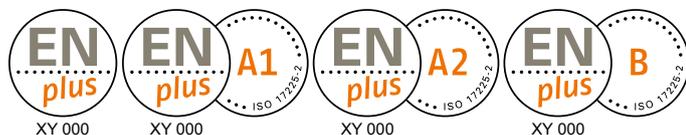
The quality needs to be assessed and measured at the BLTC. The **moisture content** is one of the most important quality measures. In the images you can see sampling of incoming raw material and moisture measurement according to the ISO standards:

- a) chain saw equipped with sample collector
- b) taking a sample from truck load
- c) weighing of sample with a scale before and after drying for defining the moisture content
- d) oven to dry the sample

Additional information: www.ce.eu www.iso.org/iso/home/standards.htm

ENplus pellets

In the ENplus certification scheme all the companies in the supply chain from the mill to the end user need to be certified when selling bulk pellets. The BLTC does not need to be certified if the BLTC sells only sealed bagged pellets. The ENplus certification for a trader selling bulk pellets (here the BLTC) sets rules for the marketing, storage, transport vehicles, delivery, sampling and sample storage of the pellets.



The aim is to ensure that the quality of the pellets remains high at the end user. At the moment there are multiple ENplus certified producers in Bulgaria, Croatia and Serbia producing around 350.000 tonnes per year.

Benefits of ENplus certification

- Well known worldwide with global production and hence large supply base
- Well defined quality requirements which are maintained until the end-user
- Quality is assured by the ENplus seal

Additional information: www.enplus-pellets.eu

DINplus pellets

DINplus certifies the production plant only. DINplus pellets can be sold without being certified but DINCertco offers a possibility to become certified as a "DIN-Approved Qualified Enterprise of Pellet Logistics" within the supply chain. This is applicable for a trader or transportation company (here the BLTC). It ensures that only certified wood pellets bearing the quality mark DINplus are supplied and delivered according to the Austrian ÖNORM M 7136 standard. Certified wood pellets must be stored and transported separately from non-certified pellets. Apart from the requirements applicable to warehousing, certain requirements

pertaining to intermediate storage, the transport vehicles, delivery to the final customer, as well as the delivery personnel must be fulfilled. At the moment there are no DINplus certified producers in Bulgaria, Serbia or Croatia.

Benefits of DINplus certification

- Well known in Europe with large supply base
- Well defined quality requirements, and if the companies are DIN-Approved in logistics, it is ensured that the initial quality is maintained until the end-user
- Quality is assured by the DINplus seal

Additional information: <http://www.dincertco.de/en>

BULGARIA



Bulgaria, as an EU country, is following the laws of the European Union and hence the forest regulation is developed. At the moment there is a strong will to push for forest certification in private forests as some support and benefits for forest owners are only available for certified forests. As with other EU laws, Bulgaria is compliant to the EU timber regulation. The Executive Forest Agency is the organisation in charge of implementing the regulation. There are several recognised monitoring organisations working in Bulgaria on the EU timber regulation, but none based there.

All state forests in Bulgaria are in the process of becoming FSC certified in forest management. In 2015 around 25% of the forest area was FSC certified. The certified forests are managed by 18 legal entities, of which 16 were the state-owned territorial forestry units. The Bulgarian authorities have chosen a step-by-step certification approach – every territorial forestry unit to apply and obtain a separate FSC certification. A National Standard for FSC Forest Management Certification is under development and foreseen to be ready by September 2017. There are no PEFC certificates in forest management at the moment.



In November 2015, there were 174 FSC Chain of Custody (CoC) certified companies, of which 7 were involved in wood chips and 115 companies in rough fuel wood trade. Most of the certified companies are active on the export markets, where customers require it. At the moment CoC Certification is not in high demand in domestic markets. Increasing public awareness of CoC certification for woody bioenergy products will increase local demand for CoC certified wood fuels.



At the moment wood chips are used in larger scale plants, pellets in small and medium scale and firewood is a significant fuel for heating in rural areas. The use of standards is limited, and mainly required by large scale Bulgarian consumers and export markets. The EN and ISO wood fuel standards have been adopted by the Bulgarian Institute for Standardization³ and the main ones have been translated into Bulgarian. The smaller scale users of solid biofuels (domestic population and business⁴) do not expressly demand official quality certification of the biofuels consumed because it is seen that it increases the biofuels' price. Word of mouth is still an important way to evaluate quality and find the best suppliers. The price is usually dependant on quality, but quality measurement is often more of an approximation. Using standardised product descriptions would support competition, as the fuel quality will be easier to link to price, as the product descriptions are more similar between competitors.

In 2015 there was one ENplus certified pellet producer in Bulgaria mainly focusing on export markets. It might be plausible for the BLTC to become ENplus certified if it is close by to the certified pellet plant. This will act as a competitive advantage, but educating the consumers on the benefits of certified production over the current practice of plants measuring their quality in accredited laboratories and referencing to the ISO standards in their product descriptions can be difficult.



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3. Bulgarian institute of standardization <http://www.bds-bg.org>

CROATIA

Croatia joined the EU in 2013 and hence the same laws of the Union apply or are being transposed into national legislation. In Croatia the Ministry of Agriculture Directorate for Forestry is in charge of implementing the EU timber regulation. There are multiple recognised monitoring organisations for the EU Timber regulation which can work in Croatia, but none based there.



Hrvatske Sume, the public enterprise managing the state forests is FSC certified. As the state owned forest area is high, around 80% of forest in Croatia is FSC certified. In November 2015 there were a total of 284 FSC CoC certified companies, of which 178 companies were active in wood chips and particles, 80 companies in wood chips and 134 companies in rough fuel wood. There are multiple international certifying bodies which are active in Croatia in FSC Chain of Custody certification. As the amount of certified forest is abundant,

it is suggested that Croatian BLTC operators aim for getting their BLTCs FSC Chain of Custody certified. Currently there is no PEFC certified forest in Croatia.

At the moment users in the Croatian market do not demand standardised solid biofuels. Only pellet producers are applying standards and certification schemes (*ENplus*, *DINplus*) for export purposes. In 2015 October, there were 11 certified (or in process of being certified) *ENplus* producers in Croatia. The production amount is expected to be in the range 200.000-250.000 tonnes in 2015. The domestic pellet market is in its infancy, but if pellet consumption increases *ENplus* certified deliveries are recommended, as there is significant domestic production. Reliable fuel quality, which is ensured by *ENplus*, supports also “the switching to biomass” decision of the consumer.

The EN and ISO standards for wood fuels have been adopted into Croatian standards by the Croatian standards institute⁴, but they have rarely been translated into the national language, hence slowing their uptake. Three accredited laboratories are capable of measuring wood fuels quality in Croatia. One certification and inspection body can certify biofuel quality according to biofuel standards. Hence the infrastructure for proper quality assurance exists and promotional efforts of the benefits for standards are needed for their increased market uptake. BioRES supports local partners to integrate international quality assurance for wood input and output of BLTCs and sustainability requirements into the business models of BLTCs



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SERBIA

As Serbia is not an EU country, EU timber regulation is not mandatory for trade within the country. However BLTC operators complying with the requirements of the EU timber regulation would provide evidence of trading legal wood in Serbia in addition to having a possibility to export to EU markets. Serbia has developed forestry laws in place which set suitable sustainability standards for forest management, but their enforcing is lacking, leading to illegal harvesting and unsustainable practices in forestry. The BLTC operator should hence have good knowledge on where the raw material is coming from, an EU timber regulation requirement, hence compliance with the regulation is recommended.



At the moment 40% of forest area in Serbia is FSC certified, mainly state owned forest companies. There are 174 companies which are FSC Chain of Custody certified, of these 28 companies are active in wood chips and particles and 3 only in wood chips. 13 companies are Chain of Custody certified in rough fuel wood trade. There are multiple international certifying bodies which are active in Serbia in FSC Chain of Custody certification and forest management certification. Applying Chain of Custody certification would ensure legality and sustainability of wood in domestic markets, but at the moment certified products (e.g. FSC Chain of custody certification) are not demanded by domestic users. Most of the FSC certified wood products are exported. Awareness campaigns and promotional efforts, are needed to increase the consumers' knowledge on the benefits of sustainable wood supply chains. In the medium to long term, increased consumer demand for more sustainable products will make certified products from certified sustainably managed forests more relevant in the domestic markets.



In 2015 October there were 7 certified (or in process of being certified) ENplus producers in Serbia and no traders. The production amount in 2015 is expected to be 100.000-150.000 tonnes, mainly oriented at export markets. At the moment ENplus certified producers gain a better price on the export markets compared to the domestic market. There is hence potential for growth in the domestic market for certified quality wood fuels. Hence ENplus certified deliveries for domestic consumers of a BLTC is suggested, going

hand in hand with further market development efforts. At the moment there are no DINplus certified pellet producers in Serbia.

The Institute for Standardization of Serbia⁵ has adopted the main ISO and EN standards regarding solid biofuels into national standards. The main standards related to wood fuels have also been translated into Serbian. The translations have been done in 2015. The uptake is relatively good, and standards are referenced to in supply contracts, and the BLTC operator should aim at referencing to standards in supply contracts. Further uptake could help users gain trust in the quality of wood fuels, which is an important competitive advantage of a BLTC. Charcoal as a wood fuel needs to be considered in the Serbian context. Regarding charcoal the most suitable suggestion is to give the product description of charcoal according to ISO 17225-1.



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BioRES project aims at introducing the innovative concept of “Biomass Logistic and Trade Centres” (BLTCs) in Serbia, Croatia and Bulgaria, based on international cooperation with European technology leaders. The overall objective of BioRES is to increase market uptake of domestic supply chains for quality-controlled woody bioenergy products from sustainable forestry and wood residues by means of developing BLTCs as regional hubs.

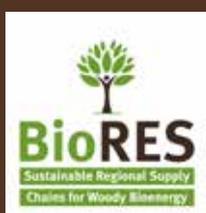
The BioRES project consortium is consisting of 9 partner organisations from 8 European countries. BioRES is coordinated by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH in cooperation with the Regional Energy agencies KSENA (SI) and REGEA (HR), the European Biomass Association (AEBIOM) and National Biomass Associations Serbio (RS) and BGBIOM (BG), the Natural Resources Institute Luke (FI), the Agriculture Chamber of Styria (AT), the Agriculture and Energy Marketing Network CARMEN e.V.(DE).

AEBIOM

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AEBIOM is the common voice of the bioenergy sector with the aim to develop a sustainable bioenergy market based on fair business conditions. AEBIOM is a non profit Brussels-based international organisation founded in 1990 that brings together around 30 national associations and 90 companies from all over Europe.



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